# Revised Data Summary Report: Results of the Revised <br> Supplemental Sampling Plan Additional Data for Risk Assessment 

Koppers Inc. Site Gainesville, FL

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Prepared by
AMEC Earth and Environmental Inc.

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Revised Data Summary Report: Results of the Revised Supplemental Sampling Plan Additional Data for Risk Assessment Koppers Inc. Site<br>Gainesville, FL

This Revised Data Summary Report (RDSR) documents the results of the soil and sediment data collection activities conducted by Beazer East Inc. (Beazer) during November and December of 2006 at the Koppers Inc. (KI) portion of the Cabot Carbon/Koppers Superfund Site in Gainesville Florida (Site). Following a review of the historical on-Site soil and sediment sampling data and discussions among representatives of Beazer, U.S. Environmental Protection Agency (EPA) Region 4, Florida Department of Environmental Protection (FDEP), and Alachua County, soil and sediment data collection activities were conducted, samples were analyzed, and data validation was initiated. All work was conducted in accordance with the Revised Supplemental Sampling Plan - Additional Data for Risk Assessment, Cabot Carbon/Koppers Superfund Site, Gainesville, Florida (Revised Workplan; Beazer, 2006a), which was submitted to EPA on September 25, 2006, with revisions and additions outlined in Beazer's October 31, 2006 follow-up letter (Beazer, 2006b). This document is a revision of the March 2007 Data Summary Report (DSR) submitted by AMEC Earth and Environmental Inc. (AMEC, 2007a) and incorporates changes resulting from a reanalysis (AMEC, 2007b) of certain PCDD/F samples that were potentially affected by quantitation bias.

This RDSR provides background on the Site, an overview of the historical soil and sediment investigation activities there, a discussion of data needs for risk assessment, and an overview of the implementation of the Sampling Plan. In addition, it provides a discussion and rationale for any points of departure from the Sampling Plan and an overview of the findings of the data validation process. Finally, it provides a general summary of the results of the sampling. The results presented in the RDSR are intended to provide a basis for discussions concerning the best approach to be taken in evaluating potential risks at the Site and ultimately making risk management decisions.

### 1.0 BACKGROUND AND PROJECT SETTING

The Site encompasses approximately 90 acres of land within the northern part of the city limits of Gainesville, Florida. It is zoned industrial and is the only parcel of land that is operating as industrial in the area. The next closest area zoned industrial is the Gainesville Industrial Area, which is located several miles to the north. The former Cabot Carbon property, located east of the Site, the marshy area to the north of the old Cabot Carbon facility, and the property to the east and south of the Site are zoned commercial. The land to the west and northwest of the Site is zoned single family and multiple family residential. Scattered small businesses and a trailer park are located to the north/northwest of the Site. Commercial facilities border the Site
to the south and east along NW 23rd Avenue and north Main Street. To the northeast, the adjacent land is primarily undeveloped and heavily vegetated (Figure 1).

The Site is characterized by relatively featureless terrain that slopes generally toward the northnortheast. Low swampy areas are prevalent in an undeveloped, heavily vegetated area to the northeast of the Site. A drainage ditch bisects the Site from southwest to northeast, carrying surface run-off toward Springstead Creek, located approximately 750 feet to the north.

The central and northern portions of the Site are primarily used for wood storage. The Site is serviced by a series of railroad sidings that enter the northeast corner. A main rail line of the Seaboard Coastline Railroad forms the eastern boundary of the Site.

The former and current processing facilities are located within the southeastern corner of the Site. This area, referenced herein as the Process Area, includes the former processing buildings, former tank containment and cooling pond areas, former drip track areas, and the currently operating process buildings and drip tracks. The central and northern portions of the Site have been cleared and graded and are now used as storage areas. These portions of the Site also contain a network of railroad tracks, gravel access roads, and a wood chipping area.

The former North and South Lagoons were used to manage wastewater generated by the treatment process. Based on aerial photographs, it appears that the North Lagoon operated from 1956 until the 1970s, and the South Lagoon operated from 1943 (or earlier) through 1975 or 1976. Both lagoons have been closed, covered and graded and the areas are currently used for storage of utility poles.

Wood treatment activities are ongoing on the Site and KI is currently treating wood with CCA in a smaller process building and separate drip tracks. These are located to the west of the former process building and drip tracks.

Over time, shallow soil fill, including crushed limestone, has been placed over much of the Site and continued surface maintenance is ongoing as part of routine site-related activities. This maintenance includes the addition of soil fill and crushed limestone and surface grading as necessary.

For the foreseeable future, it is expected that land uses in the area will continue to be the same as current uses. The Site is expected to remain zoned for industrial use and adjacent lands are expected to remain mixed residential and commercial.

### 2.0 CURRENT ON-SITE SOIL AND SEDIMENT COLLECTION ACTIVITIES

In September of 2005, Beazer asked AMEC Earth and Environmental (AMEC) to review the existing soil and sediment data to determine whether the existing data were adequate to provide a robust basis for conducting a human health risk assessment (HHRA) for the Site. This review included evaluating the existing soil and sediment data to identify whether: 1) historical sampling efforts were complete in terms of the areas sampled and the constituents analyzed; 2) the depths of sampling were representative of the depths that will need to be evaluated in the HHRA for the Site; and, 3) the quality of the data, in terms of analytical methods and detection limits used, was adequate.

### 2.1 Evaluation of Historical Soil Data

AMEC compiled all of the existing historical surface and subsurface soil data that had been collected from the Site and evaluated it to determine whether constituents of potential concern (COPCs) had been adequately characterized and delineated vertically and horizontally. In addition, AMEC considered whether the data that had been collected to date were adequate to characterize potential exposures that might occur at the Site. The review reached the conclusions summarized below.

- Previous sampling efforts provided data for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) metals, and polychlorinated dioxins and furans (PCDD/Fs). However, in some areas and depth increments, the numbers of samples that included analysis of this full suite of constituents were limited.
- The majority of previously collected soils data were from source areas with limited sampling in other areas of the Site. As a result, the historical data did not provide a strong basis for estimating soil concentrations for COPCs Site-wide. The review concluded that collecting additional data from portions of the Site with limited historical characterization would improve the estimates of Site-wide constituent concentrations.
- The number of true surface soil samples (i.e., samples that include ground surface and are not deeper than one foot) that had been collected was limited and most of the available "surface" soil samples included the 0 to 2 foot depth horizon. Because exposures to constituents in surface soils will likely occur within the top six inches of soil (or shallower), the review recommended collecting additional surface soil samples that include ground surface and have a total depth of one foot or less.
- Many of the historical samples were collected prior to 1990 and thus were 15 or more years old. Given the passage of time and that the Site remains an active industrial facility, constituent concentrations may have changed due to degradation, transport, and placement of cover. The review concluded that the older surface soil sampling data might not be representative of current Site conditions and recommended that additional sampling occur to identify current concentrations of COPCs in Site soils.
- Available data for PCDD/F concentrations below 1 part per billion ( ppb ) were limited. During previous sampling events, field immunoassay screening was used to determine
whether PCDD/F concentrations in certain locations exceeded EPA's previously established remedial goal of 1 ppb . If they did not, the samples were not sent to the laboratory for analysis. As a result, there were no quantitative results available for those samples that the immunoassays indicated had concentrations less than 1 ppb . The review recommended collecting additional PCDD/F data.
- Finally, limited sampling had been conducted of the sediments found in the drainage ditch that traverses the Site. To better understand the concentrations of constituents in drainage ditch sediments, the review recommended additional sampling of drainage ditch sediments.

To address these data gaps, AMEC recommended that additional soil and sediment sampling be conducted at the Site. The goals of this sampling effort were the following:

- Better characterize the COPC concentrations outside of the source areas and along Site boundaries;
- Collect additional surface soil samples to evaluate potential worker exposures;
- Provide more data on the spatial distribution of PCDD/Fs throughout the Site;
- Characterize current COPC concentrations in the sediments of the on-site drainage ditch;
- Confirm previous subsurface soil sampling results;
- Provide adequate data for the HHRA and spatial averaging; and
- Provide more information for evaluation of the potential for off-Site transport of COPCs.


### 2.2 Selection of Sample Locations and COPCs

In February of 2006, Beazer submitted a Sampling Workplan to EPA for approval (Beazer, 2006c). That plan proposed additional soil and sediment sampling. The Sampling Workplan proposed that soil samples be collected at the nodes of a 300 -ft by 300 -foot square grid over the entire Site. The sampling described in the plan was designed to ensure that the resulting data set would provide an adequate representation of surface soil conditions throughout the Site. In addition more focused sampling in some portions of the Site was also judged to be necessary to provide additional delineation (both horizontal and vertical) of constituents in the vicinity of potential or suspected source areas as well as portions of the Site boundary.

Initially, it was proposed that surface soil samples be collected from the 0 to 0.5 foot depth increment for use in evaluating potential risks associated with contact with COPCs in surface soils. It was also proposed that subsurface soil samples be collected from the 0.5 to 6 foot depth increment for use in evaluating potential risks associated with contact with COPCs in subsurface soils. A maximum sample depth of 6 feet was selected because this was the likely
maximum depth of any potential future subsurface work at the site (e.g., utility installation and/or repair).

Four sediment sample locations were proposed to characterize constituent concentrations in the drainage ditch. Sediment samples were proposed for the locations where the ditch crossed the northern and southern boundaries of the Site and two additional sample locations were proposed for central portions of the ditch.

Constituents evaluated in previous sampling efforts varied, with some samples limited to PAHs and other samples analyzed for a full suite of constituents. Previous investigations and risk assessment activities had indicated that potential risks at the Site were largely attributable to the presence of PAHs, pentachlorophenol, arsenic and PCDD/Fs. However, given that previous investigations did not consistently evaluate all COPCs, and that some samples had elevated or missing detection limits, the Sampling Workplan proposed analyzing soil and sediment samples for a full suite of COPCs including VOCs, SVOCs, and selected metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver). In addition, the Sampling Workplan proposed analyzing a subset of samples for $2,3,7,8$-substituted PCDD/Fs.

In August of 2006, Beazer received comments from EPA, FDEP, and Alachua County concerning the February 2006 Sampling Workplan. In those comments, the Agencies made the following requests:

- Collect samples from the 0 to 0.25 foot soil interval in selected locations and analyze for metals, PCDD/Fs, VOCs and SVOCs.
- Summarize the historical data as an appendix to the sampling plan;
- Collect soil samples from a few additional locations;
- Instead of collecting composite subsurface samples in the interval between 6 inches and 6 feet, collect samples in the interval between 6 inches and 2 feet.
- Collect sediment samples from additional locations in the drainage ditch;
- Conduct background sediment sampling;
- Add 1,1-biphenyl to the SVOC analysis and copper, antimony and vanadium to the metals analysis;
- Modify detection limits for phenolic compounds to ensure that they are below soil screening target levels established by FDEP.

In response to these comments, Beazer submitted a Revised Workplan, which incorporated most, but not all of the requested changes (Beazer, 2006a). Specifically, Beazer agreed to make the following modifications to the Sampling Workplan:

- Collect samples from the 0 to 0.25 foot depth increment at all surface soil sampling locations proposed in the Workplan, rather than a subset of sample locations;
- Summarize soil sampling data in an Appendix to the Workplan;
- Collect subsurface samples that are composites of the depth interval between 6 inches and 2 feet.
- Collect subsurface samples that are composites of the depth interval between 2 feet and 6 feet.
- Collect sediment samples from three additional locations along the drainage ditch.
- Collect one additional sediment sample immediately up-gradient from the Site, south of the southern boundary of the site. In addition, collect one sediment sample at the northern boundary of the Site.

Subsequent to the submission of the Revised Workplan, representatives of Beazer, AMEC, GeoTrans, FDEP, EPA, and Alachua County met in Atlanta to discuss the historical data, the Revised Workplan, and the proposed risk assessment approach. During that meeting, agreement was reached about additional modifications to the Revised Workplan. These modifications included the following:

- Eliminate surface water sampling from the drainage ditch;
- Collect deeper ( 0.5 to 2 foot) sediment samples at two locations along the drainage ditch, as long as the water table does not interfere with this collection;
- Add an additional surface soil sampling location between SS68 and SS89 and evaluate it for all analytes;
- Add PCDD/F sampling locations along the southern and eastern boundaries of the Site and move samples along the western boundary of the Site so that they are more evenly distributed.

In addition, in re-reviewing the historical data for the Site, Beazer proposed to collect some additional, focused samples in certain areas, particularly in the source areas, to provide a more robust characterization of those areas. All of these additional modifications were summarized in an October 31, 2006 letter from Beazer to EPA (Beazer, 2006b).

### 2.3 Field Sampling and Laboratory Analysis

Implementation of the Revised Workplan was initiated November 29, 2006 and completed on December 5, 2006. A summary of the sample collection and the analytical protocols used is provided in the following sections, as are the analytical results. More specific information about
sampling and analytical protocols can be found in the Revised Workplan and its Quality Assurance Project Plan (QAPP) (Beazer, 2006a).

### 2.3.1 On-Site Soil Sample Collection

Prior to initiating field activities, sample locations were marked by a field geologist and the locations were reviewed with on-site personnel to determine whether any of these locations were associated with the presence of underground utilities. After consideration of Site-specific factors, four sampling locations (described below) needed to be re-located.

- Soil sample SS33 had to be relocated approximately 130 feet to the southwest because the original sample location was under a pile of wood chips (bark pile) that was approximately ten feet high;
- Soil sample SS46 had to be relocated approximately 20 feet to the northeast because the original sample location was positioned under process equipment;
- Soil sample SS77 had to be relocated approximately 14 feet to the west because the original sample location was positioned beneath process equipment; and,
- Sediment sample SD09 had to be relocated approximately 40 feet to the south to remain within the chain link boundary fence. It was collected just inside the fence on the Koppers property.

At locations where only shallow soil samples (i.e., 0 to 0.25 foot and 0.25 foot to 0.5 foot bgs) were collected, samples were collected using a stainless steel hand trowel. The hand trowel was used to excavate a hole to a depth of 0.25 ft bgs. The hole was made of sufficient diameter to collect the required soil volume. Soils were carefully removed from the excavation and placed into a stainless steel bowl. Upon completion, the field geologist excavated the same hole to a depth of 0.5 feet bgs and placed those soils in a second stainless steel bowl. The soil was screened in the field for total VOC using a photo ionization detector (PID).

The work plan indicated that the deeper samples ( 0.5 to 6 feet) would be collected with a Geoprobe or equivalent direct push rig. However, the drilling company that was used had a safety protocol that required that all borehole locations be cleared of subsurface utilities to a depth of five feet below the ground surface using a hand auger. Since the deeper samples were to be collected only to a depth of six feet below the ground surface, it did not make sense to use a drill rig to complete the remaining one foot of drilling. Thus the deeper samples collected at each location were collected using the hand auger.

After screening a sample for the presence of VOCs with a PID, the geologist classified each soil interval in accordance with the Unified Soil Classification System (USCS). In addition, each sample was evaluated in the field for visual evidence of impacts (e.g., staining). The PID reading for each boring was recorded in a field notebook and on a soil boring log form for each
location. The PID was calibrated each day according to manufacturer specifications and the results were recorded in the field log book. Sample locations were identified and recorded using a hand-held global positioning system (GPS) meter.

Sediment samples were collected as composite samples. Since there was no water in the ditch, disturbances at one sampling location had no potential to affect the other sampling locations. Thus, the order of the sampling did not begin at the furthest downstream location and proceed to successive upstream locations. Sediment samples were collected by hand using a stainless steel sampling instrument.

In order to reduce the potential for cross-contamination between borings, to the extent possible, sampling locations in areas that appeared to be less affected by elevated constituent concentrations were sampled first. Available Site data and knowledge regarding current and historical site operations were used to make a determination as to which areas were anticipated to have lower constituent concentrations.

Samples for VOC analysis and headspace-screening were collected first, as soon as possible after opening the acetate liner or removing the soil from the ground using the trowel, followed by SVOCs, PCDD/Fs (if required) and metals, in that order. Discrete VOC soil samples were collected using Terra Core samplers. Non-VOC samples from each of the required depth intervals were placed in separate stainless steel sample bowls and homogenized. The samples were then transferred into the proper sample containers and labeled.

Site-specific sample identification numbers were assigned prior to sample collection. Each sample was identified in the field notebook and field sampling form by a unique six digit alphanumeric code, using the following identification scheme.

- Sample Matrix code: The sample matrix code describes the matrix (e.g., "SS" for soil, SD for sediment).
- Location Code: The sample location code followed the sample matrix code and consisted of a two-digit code that indicated the sample location (e.g., SS01, SS85), or a three digit code for sample locations "100" and higher. Locations codes lower than 10 were preceded by a zero (e.g., "01", "02", etc.).
- Depth Code: Soil samples from intervals 0 to 0.25 feet were designated as "A"; those from 0.25 to 0.5 ft were designed as " B ", and those from 0.5 to 2 ft bgs and 2 to 6 ft bgs were designated as "C" and "D", respectively.
- Sample Type: The last letter of the sample identification was (A) for regular samples, (B) for duplicates, (C) for MS/MSD and (D) for equipment blanks.

Once labeled, samples were placed in a cooler with ice. They were then shipped to Columbia Analytical Services (CAS) for laboratory analyses.

Upon completion, each boring was filled with bentonite grout to ground level where there was no existing surface cover (e.g., dirt, landscaping, etc.). In areas where there was existing surface cover, the borings were filled with bentonite grout or bentonite hydrated pellets to 1 foot bgs and the top foot was filled with material similar to the existing cover material (i.e., asphalt where there was asphalt, concrete where there was concrete, etc.).

### 2.3.2 Sample Analytical Protocols and Results

Sample analysis was conducted as outlined in Table 3 of the Revised Workplan. Sample analysis for VOCs, SVOCs and metals was conducted by the CAS laboratory in Jacksonville, FL. Sample analysis for dioxins/furans was conducted by the CAS laboratory in Houston, TX. Selective ion monitoring (SIM) was undertaken for the analysis of PAHs and pentachlorophenol in order to ensure that detection limits would be as low as possible.

### 2.3.3 Quality Assurance/Quality Control

As outlined in the QAPP, the overall quality assurance (QA) objective for this program was to provide defensible results to characterize site conditions and to support risk assessment and potential remediation needs for the Site. In order to meet these objectives, procedures for field sampling, laboratory analysis, chain-of-custody and reporting were developed and implemented in order that they would result in data of known and acceptable quality.

Procedures for sampling, laboratory analysis, chain-of-custody and reporting followed the procedures outlined in the QAPP that was developed for the Workplan with the following exceptions.

- According to the QAPP, a trip blank was to be included in the cooler with all VOC samples. The proper protocol for trip blanks is that each day that VOC samples are collected, a trip blank is to be included in the cooler and accompany the VOC samples from collection through shipment to the lab. The typical procedure would be that all the VOC samples collected each day are stored and shipped in one cooler that contains a trip blank. The field team did not consolidate all the VOC samples into one cooler and, therefore, had to include a trip blank in each of the seven coolers shipped on a single day. No other trip blanks were shipped on the other days of sampling.
- Metals were analyzed by 6020 (ICP-MS) and not 6010 as described in the QAPP in order to achieve lower detection limits.
- The laboratory did not utilize the appropriate samples submitted for MS/MSD as there was no indication on the chain-of-custody as to which samples should be used for this purpose. The laboratory did, however, complete MS/MSD analysis for project samples for metals, SVOCs and PAH. Matrix spikes for VOCs were not prepared and analyzed,
due to limited volume. The laboratory also performed an LCS/LCSD in order to show precision.
- No matrix spike samples were prepared or analyzed for dioxins. The laboratory did prepare and analyze LCS/LCSD samples for dioxins to demonstrate precision.


### 3.0 DATA VALIDATION

Data for the analyses of the soils and sediments for VOCs, SVOCs, and metals were validated in general accordance with EPA National Functional Guidelines for Organic Data Review (EPA, 1999a), EPA National Functional Guidelines for Inorganic Data Review (EPA, 2004), and EPA Region IV Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services (EPA, 1999b). The data validation report for these data is provided in Appendix B.

Data for the analyses of the soils for dioxins and furans was validated in general accordance with EPA National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) (EPA, 2005) and the EPA Region IV Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry (EPA, 2002). As discussed in the original Data Summary Report (DSR) (AMEC, 2007a), AMEC's data validation of the PCDD/F analytical data, provided by CAS's Houston laboratory, indicated that many of the PCDD/F results were estimates with indeterminate, but likely low, bias. Based on these concerns, all samples potentially affected by this bias were identified and sent to a second analytical laboratory (Vista Analytical Laboratories) for reanalysis. Once the Vista analyses were complete, the data underwent validation using the same approach applied to the CAS analytical results. The data validation report for these data is provided in Appendix C.

### 3.1 Data Review

The laboratory-based QA/QC for VOCs, SVOCs and metals analyzed by the CAS laboratory in Jacksonville, FL was generally acceptable, including initial and continuing calibrations, instrument tunes, method blanks and laboratory control samples. Holding times were met for all initial extractions and analyses. A limited number of samples required re-extraction and reanalysis for PAHs by SIM due to significant method blank contamination in their initial analysis, and these re-extractions were performed after holding times were exceeded. Analytical results for acenaphthene, fluorene, phenanthrene and 2-methylnaphthalene were rejected in a small number of these samples.

Matrix interferences were noted to affect the VOC analyses in samples SS077CA, SS100CA, SS100DA, SS100DB, SD006AC and data were rejected for isopropylbenzene, 1,3dichlorobenzene, 1,4-dichlorobenezene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane
and 1,2,4-trichlorobenzene. All VOC analytes were rejected for sample SS073BA, again, due to severe matrix interferences.

For the dioxin and furan analyses conducted by the CAS laboratory in Houston, TX, results for samples with low levels of dioxins and furans (concentrations of 2,3,7,8-TCDD TEQ at approximately $200 \mathrm{ng} / \mathrm{kg}$ or below) are generally acceptable. Instrument tuning, calibrations, and laboratory control sample recoveries met method requirements. However, matrix interferences present in samples with higher concentrations of dioxins and furans (greater than 2,3,7,8-TCDD TEQ of about $200 \mathrm{ng} / \mathrm{kg}$ ) were not successfully removed during sample preparation and as a result, the apparent recoveries of the internal standards were well above method limits in such samples. For those samples, the laboratory could not provide reliable data on recoveries of hexa-, hepta- and octachlorinated PCDDs or PCDFs. The laboratory subsequently adjusted the results from dilutions of these samples in a manner that AMEC considered likely to introduce low bias to their final reported results.

While it was evident that PCDDs and PCDFs were present in samples in which the laboratory reported concentrations greater than about $200 \mathrm{ng} / \mathrm{kg} 2,3,7,8-\mathrm{TCDD}$ TEQ, the accuracy of the quantitations could not be determined. AMEC evaluated the data for samples affected by these interferences and subsequent laboratory data adjustment and made conservative estimates of the potential bias. The major contributors to the $2,3,7,8-$ TCDD TEQ at this Site are $1,2,3,4,6,7,8-H p C D D$ and OCDD. In most cases, the laboratory assumed that the recoveries of the affected hexa-, hepta-, and octachlorinated internal standards had been near 100 percent. However, in blanks, laboratory control samples, and relatively clean field samples not affected by the interference, recoveries of the HpCDD internal standard were typically 60 percent, while the OCDD internal standard frequently recovered near 20 to 30 percent. As a conservative approach, AMEC recalculated 2,3,7,8-TCDD TEQ for the affected samples using the assumption that the HpCDD recovery could have been as low as 33 percent and that the OCDD recovery could have been as low as 10 percent. Results of this analysis indicated that the laboratory reported results for some of these samples could be underestimated by as much as a factor of 4.

Based on these concerns, AMEC (2007a) recommended that the above described dioxin samples with potential bias due to matrix interference, inadequate cleanup, sample dilution, and inappropriate adjustments of dilution results be re-analyzed for dioxins and furans using smaller
sample volume, additional extract cleanup procedures, and more appropriate data reduction practices. Fifty-five ${ }^{1}$ samples with potential low bias were sent to Vista for reanalysis. In addition, CAS was not able to recover the cleanup standard for sample SS100DA, resulting in invalid data for all non-detected congeners. AMEC sent this sample to Vista for reanalysis to obtain usable data for the sample, not because of potential low bias. Four other samples were sent to Vista as "controls" to confirm the absence of a low bias in other samples. Three of these samples (SS026BA, SS057DA, and SS095BA) had acceptable internal standard recoveries and no data adjustments were made. The fourth control sample (SS100DB) had matrix interferences present with one internal standard recovery outside of limits but no dilution was required.

Once the Vista analyses were complete, the data underwent validation using the same approach applied to the CAS analytical results. The validation documented that Vista had used appropriate cleanup procedures to remove interferences. With one exception, all recoveries of internal standards were within method control limits. AMEC did not identify any reason to expect a consistent bias (high or low) in the results reported by Vista and determined that the results were valid as reported with minimal qualifications.

TEQ concentrations were calculated based on reported CAS and Vista analytical results, using the WHO (van den Berg et al., 2006) toxic equivalency factors. Table 1 presents the comparison of these results. If there was no bias, one would expect that the sample results would vary between the two laboratories, that roughly half of the sample results from CAS would be higher and half of the results lower than the results reported by Vista. However, this was not the case. TEQ concentrations reported by CAS were higher than those reported by Vista for only four of the 55 samples (7.3\%) with potential low bias. (Table 1 provides a comparison of sample results by presenting a ratio of the Vista concentrations and the CAS concentrations for the same samples. Ratios that are greater than 1 indicate that the CAS results were lower than the Vista results.) This comparison substantiated the concern that some of the CAS analytical

[^0]results had a consistent low bias and, thus, underestimated PCDD/F concentrations in soil and sediment samples by about a factor of two. While results for the control samples differed between the two laboratories, no consistent bias was expected nor was such a bias observed.

### 3.2 Overall Data Useability

As specified in the QAPP, 10 percent of the samples underwent full Tier III validation for all analyses while the remaining samples underwent Tier II validation. The data obtained from the CAS laboratory in Jacksonville are generally usable and of good quality. While VOC analytes were rejected in one sample, due to severe matrix interferences, no data were rejected for metals or for SVOCs, except PAHs as described above. The overall data set is approximately 98 percent complete.

Based on the comparison described above, AMEC has concluded that the PCDD/F analytical results reported by CAS, for those samples that required dilution, are not reliable predictors of PCDD/F concentrations in those locations at the Site and that the analytical data provided by Vista provide a more reliable representation of Site soil conditions. As a result, AMEC has updated the soil and sediment sampling database by replacing the PCDD/F results reported by CAS with those reported by Vista for those sampling locations for which analytical data were provided by both Vista and CAS. Using these updated data, AMEC has revised the report tables and Appendix A, such that the data now provide a more reliable basis for any Site-related risk assessments or remedial activities.

### 4.0 SUMMARY OF CURRENT DATA

All of the analytical results are presented in Appendix A, which reports the analytical results for all non-PCDD/F constituents that were reported in the March 2007 DSR, and updates the PCDD/F results from CAS with the new results reported by Vista, for those samples for which reanalysis was completed. As indicated earlier, previous investigations have indicated that the key constituents, from a risk assessment point of view, are arsenic, PAHs, pentachlorophenol, and dioxins/furans. This sampling effort has indicated that this is still true as discussed below.

### 4.1 Soils

Surface soil samples were collected from two depth increments ( 0 to 0.25 foot and 0.25 to 0.5 foot depth increments) at a total of 95 locations throughout the Site. Forty-eight of those samples were collected from the nodes of the 300 -foot by 300 -foot grid. The remaining 47 locations were selected to provide more focused sampling in areas requiring additional characterization. All of these surface soil samples were analyzed for VOCs, SVOCs and metals.

Soil from 40 surface soil locations was also analyzed for PCDD/Fs. Twenty-eight of these samples were collected from grid nodes. The remaining 22 samples were focused on the
perimeter of the Site, in areas that had not previously been sampled for PCDD/Fs, and within and adjacent to areas suspected of having elevated concentrations of other COPCs.

Subsurface soil samples ( 0.5 to 2 foot and 2 to 6 foot) were collected from 47 of the locations from which surface soil samples were collected. Twenty-five of those samples were collected from nodes of the grid; the remaining 22 samples were more focused soil samples collected primarily within known source areas. All of these surface soil samples were analyzed for VOCs, SVOCs and metals.

A subset of 30 subsurface locations was analyzed for PCDD/Fs. Nineteen of those samples were collected from nodes of the sampling grid. The remaining 11 samples were focused primarily within and adjacent to areas suspected of having elevated concentrations of other COPCs.

Table 2 provides a summary of the constituents that were detected in on-Site soils along with the numbers of detections, minimum concentrations and maximum concentrations. As an initial screen, maximum concentrations for each constituent were compared with the industrial soil screening concentration target levels (SCTLs) developed by FDEP (where available) and with the EPA Region IX commercial soil preliminary remediation goals (PRGs) when SCTLs were not available. This comparison indicated that most of the constituents detected had maximum concentrations that were below the screening level SCTL/PRG. For a limited number of constituents, the maximum values exceeded their SCTLs. These included the key constituents listed above (arsenic, PAHs, pentachlorophenol, and dioxins/furans), chromium, lead and bis(2chloroethyl)ether. There were no SCTLs or PRGs available for two of the constituents analyzed that had detectable results (4-bromophenyl phenyl ether and 4-chlorophenyl phenyl ether). However, each of the constituents was only detected in one out of 334 samples analyzed and thus these are not likely to be COPCs in the risk assessment.

It should be noted that both the SCTLs and the PRGs are highly conservative screening tools due to the conservative assumptions that are used to derive them. Consequently they may not be representative of the types of potential exposures that are occurring at the Site. These Sitespecific exposures will need to be evaluated in the human health risk assessment that is to be conducted for the Site.

The maximum detected concentration of $3,700 \mathrm{mg} / \mathrm{kg}$ for chromium was in the top 3 inches of soil at sample location SS95, which is located in the South Lagoon area. This concentration exceeds FDEP's SCTL of $470 \mathrm{mg} / \mathrm{kg}$ for industrial soil. However, more than 95 percent of the analytical results for chromium, at all depths, were below the SCTL of $470 \mathrm{mg} / \mathrm{kg}$. Thus chromium is not likely to be an important contributor to Site risks.

The maximum detected concentration of $2,200 \mathrm{mg} / \mathrm{kg}$ for lead was located in the top 3 inches of soil at SS32 which is located northwest of the North Lagoon area. This exceeds FDEP's SCTL of $1,400 \mathrm{mg} / \mathrm{kg}$ for industrial soil. However, all other samples at all depths had concentrations that were well below the SCTL for lead. Thus lead is not likely to be an important contributor to overall Site risks.

The maximum detected concentration of bis(2-chloroethyl)ether ( $1.3 \mathrm{mg} / \mathrm{kg}$ ) exceeded the industrial SCTL of $0.5 \mathrm{mg} / \mathrm{kg}$. However, this constituent was detected in only one out of 334 samples collected and was found along the southern boundary of the Site. Thus it does not appear to be Site-related.

### 4.1.1 Results by Depth

All data for all constituents analyzed in soil samples are provided in Tables 3 through 6. Table 2 provides a summary of the minimum, maximum, and arithmetic mean concentrations of each constituent at each soil depth.

Analytical results for the key constituents at each sampling depth are summarized below. Results are also provided by key constituent in Figures 2 through 6.

### 4.1.1.1 0 to 0.25 Foot Soils

A total of 95 samples were collected from the 0 to 0.25 foot depth increment. The samples taken from 41 of those locations were analyzed for all constituents. The remaining samples were analyzed for VOCs, SVOCs and metals only. General trends for key constituents are summarized below.

## Arsenic

Arsenic has been detected at all of the locations sampled. Concentrations range from 1.3 to $3,600 \mathrm{mg} / \mathrm{kg}$. The highest concentration is detected at location SS95 in the South Lagoon area. The Site-wide arithmetic mean concentration is $126 \mathrm{mg} / \mathrm{kg}$.

## BAPTE

PAHs are detectable at all locations sampled. BAPTE concentrations range from 5.2 to 41,597 $\mu \mathrm{g} / \mathrm{kg}$. The highest concentration is located at location SS96, which is just to the west of the South Lagoon area. The Site-wide arithmetic mean concentration is $5,600 \mu \mathrm{~g} / \mathrm{kg}$.

## Total PAH

Total PAH concentrations range from 50.48 to $292,400 \mu \mathrm{~g} / \mathrm{kg}$ with the highest concentration located at SS96, which is located just to the west of the South Lagoon area. The Site-wide arithmetic mean concentration of total PAHs is $42,000 \mu \mathrm{~g} / \mathrm{kg}$.

## Pentachlorophenol

Pentachlorophenol concentrations range from non-detect to $160,000 \mu \mathrm{~g} / \mathrm{kg}$. The highest concentration was measured in sample SS58, which is located on the western edge of the Process Area. The Site-wide arithmetic mean concentration is $3,300 \mu \mathrm{~g} / \mathrm{kg}$.

## PCDD/Fs

One or more PCDD/F congeners was detected at all locations analyzed for these constituents. The TEQ concentrations range from $18 \mathrm{ng} / \mathrm{kg}$ to $78,817 \mathrm{ng} / \mathrm{kg}$. The highest TEQ concentration of PCDD/Fs is also found at SS58, which is located on the western edge of the Process Area. The Site-Wide arithmetic mean concentration in the top 3 inches is $2,926 \mathrm{ng} / \mathrm{kg}$.

### 4.1.1.2 $\quad 0.25$ to 0.5 Foot Soils

A total of 95 samples were collected from the 0.25 to 0.5 foot depth increment. The samples taken from 41 of those locations were analyzed for all constituents. The remaining samples were analyzed for VOCs, SVOCs and metals only. General trends for key constituents are summarized below.

## Arsenic

Arsenic has been detected at all of the locations sampled. Concentrations range from 0.6 to $720 \mathrm{mg} / \mathrm{kg}$. The highest concentration is detected at SS95 which is located in the South Lagoon area. The Site-wide arithmetic mean concentration at this depth is $65 \mathrm{mg} / \mathrm{kg}$.

## BAPTE

PAHs are detectable at all locations sampled. BAPTE concentrations range from 0.99 to $138,100 \mu \mathrm{~g} / \mathrm{kg}$. The highest concentration is located at location SS58, which is located on the western edge of the Process Area. The Site-wide arithmetic mean concentration at this depth is $7,500 \mu \mathrm{~g} / \mathrm{kg}$.

## Total PAH

Total PAH concentrations range from 11.5 to $2,533,800 \mu \mathrm{~g} / \mathrm{kg}$ with the highest concentration located at SS82, which is located in the Process Area. The Site-wide arithmetic mean concentration of total PAHs at this depth is $84,700 \mu \mathrm{~g} / \mathrm{kg}$.

## Pentachlorophenol

Pentachlorophenol concentrations range from non-detect to $630,000 \mu \mathrm{~g} / \mathrm{kg}$. The highest concentration was also measured in sample SS58, which is located on the western edge of the Process Area. The Site-wide arithmetic mean concentration at this depth is $8,300 \mu \mathrm{~g} / \mathrm{kg}$.

## PCDD/Fs

One or more PCDD/F congeners was detected at all locations analyzed for these constituents. The TEQ concentrations range from $2.44 \mathrm{ng} / \mathrm{kg}$ to $29,954 \mathrm{ng} / \mathrm{kg}$. The highest concentration is also found at SS58, which is located on the western edge of the Process Area. The Site-wide arithmetic mean TEQ concentration at this depth is $1,942 \mathrm{ng} / \mathrm{kg}$.

### 4.1.1.3 $\quad 0.5$ to 2 Foot Soils

A total of 47 samples were collected from the 0.5 to 2 foot depth increment. The samples taken from 27 of those locations were analyzed for all constituents. The remaining samples were analyzed for VOCs, SVOCs and metals only. General trends for key constituents are summarized below.

## Arsenic

Concentrations of arsenic range from non-detect to $430 \mathrm{mg} / \mathrm{kg}$. The highest concentration is detected at SS95 which is located in the South Lagoon area. The Site-wide arithmetic mean concentration at this depth is $25 \mathrm{mg} / \mathrm{kg}$.

## BAPTE

PAHs are detectable at all locations sampled. BAPTE concentrations range from 0.98 to $526,150 \mu \mathrm{~g} / \mathrm{kg}$. The highest concentration is located at location SS101, which is located in the North Lagoon area. The Site-wide arithmetic mean concentration at this depth is $16,000 \mu \mathrm{~g} / \mathrm{kg}$.

## Total PAH

Total PAH concentrations range from 13.9 to $11,048,200 \mu \mathrm{~g} / \mathrm{kg}$ with the highest concentration of Total PAH was also located at SS101, which is located in the North Lagoon area. The Site-wide arithmetic mean concentration of total PAHs at this depth is $431,000 \mu \mathrm{~g} / \mathrm{kg}$.

## Pentachlorophenol

Pentachlorophenol concentrations range from non-detect to $160,000 \mu \mathrm{~g} / \mathrm{kg}$. The highest concentration was also measured in sample SS101, which is located in the North Lagoon area. The Site-wide arithmetic mean concentration at this depth is $25,000 \mu \mathrm{~g} / \mathrm{kg}$.

## PCDD/Fs

One or more PCDD/F congeners was detected at all locations analyzed for these constituents. The TEQ concentrations range from $0.33 \mathrm{ng} / \mathrm{kg}$ to $5,984 \mathrm{ng} / \mathrm{kg}$. The highest concentration is found at SS99, which is located in the Process Area. The Site-wide arithmetic mean TEQ concentration at this depth is $320 \mathrm{ng} / \mathrm{kg}$.

A total of 47 samples were collected from the 2 to 6 foot depth increment. The samples taken from 27 of those locations were analyzed for all constituents. The remaining samples were analyzed for VOCs, SVOCs and metals only. General trends for key constituents are summarized below.

## Arsenic

Concentrations of arsenic range from non-detect to $280 \mathrm{mg} / \mathrm{kg}$. The highest concentration is detected at SS95 which is located in the South Lagoon area. The Site-wide arithmetic mean concentration at this depth is $11 \mathrm{mg} / \mathrm{kg}$.

## BAPTE

PAHs are detectable at all locations sampled. BAPTE concentrations range from 0.99 to $589,260 \mu \mathrm{~g} / \mathrm{kg}$. The highest concentration is located at location SS101, which is located in the North Lagoon area. The Site-wide arithmetic mean concentration at this depth is $22,000 \mu \mathrm{~g} / \mathrm{kg}$.

## Total PAH

Total PAH concentrations range from 11.74 to $12,359,100 \mu \mathrm{~g} / \mathrm{kg}$ with the highest concentration also located at SS101, which is located in the North lagoon area. The Site-wide arithmetic mean concentration of total PAHs at this depth is $607,000 \mu \mathrm{~g} / \mathrm{kg}$.

## Pentachlorophenol

Pentachlorophenol concentrations range from non-detect to $360,000 \mu \mathrm{~g} / \mathrm{kg}$. The highest concentration is in sample SS28, which is located just to the northwest of the South Lagoon area. The Site-wide arithmetic mean concentration at this depth is $12,000 \mu \mathrm{~g} / \mathrm{kg}$.

## PCDD/Fs

One or more PCDD/F congeners was detected at all locations analyzed for these constituents. The TEQ concentrations range from $0.28 \mathrm{ng} / \mathrm{kg}$ to $568 \mathrm{ng} / \mathrm{kg}$. The highest concentration is found at SS94, which is located on the western edge of the North Lagoon area. The Site-wide arithmetic mean TEQ concentration at this depth is $49 \mathrm{ng} / \mathrm{kg}$.

### 4.2 Sediment

Surface sediments ( 0 to 0.5 foot depth) were collected from a total of nine locations along the drainage ditch that traverses the Site. In addition, deeper 0.5 to 2 foot sediment samples were collected from two locations (SD04 and SD06) and analyzed (Figure 7). All sediment samples were analyzed for VOCs, SVOCs, metals and PCDD/Fs. Table 7 provides a summary of the constituents that were analyzed in sediments, along with the numbers of detections, minimum
concentrations and maximum concentrations. All data for all constituents analyzed in sediment samples are provided in Table 8.

## Total PAH

Total PAH concentrations in surficial sediments ranged from 3,759 to $124,049 \mu \mathrm{~g} / \mathrm{kg}$. The maximum concentration was measured in SD02, which is located approximately 100 feet north of the southern point of entry into the Site. The arithmetic mean total PAH concentration for all surficial sediment samples was $51,000 \mu \mathrm{~g} / \mathrm{kg}$.

The two deeper sediment samples had concentrations of 60,290 and 7,165 $\mu \mathrm{g} / \mathrm{kg}$. These were located at sample locations SD04 and SD06, respectively.

## BAPTE

BAPTE concentrations in surficial sediments ranged from 548 to $18,682 \mu \mathrm{~g} / \mathrm{kg}$. The maximum concentration was also measured at sampling location SD02. The arithmetic mean BAPTE concentration for all surficial sediment samples was $7,300 \mu \mathrm{~g} / \mathrm{kg}$.

The two deeper sediment samples had concentrations of 8,662 and $1,031 \mu \mathrm{~g} / \mathrm{kg}$. These were located at sample locations SD04 and SD06, respectively.

## Arsenic

Arsenic concentrations in surficial sediments ranged from 1.7 to $390 \mathrm{mg} / \mathrm{kg}$. The maximum concentration was measured in SD05, which is located just southeast of the North Lagoon area. The arithmetic mean arsenic concentration for all surficial sediment samples was $124 \mathrm{mg} / \mathrm{kg}$.

The two deeper sediment samples had concentrations of 270 and $52 \mathrm{mg} / \mathrm{kg}$. These were located at sample locations SD04 and SD06, respectively.

## PCDD/Fs

TEQ concentrations in surficial sediments ranged from 54 to $2,891 \mathrm{ng} / \mathrm{kg}$. The maximum concentration was measured in SD06, which is located just to the east of the North Lagoon area. The arithmetic mean TEQ concentration for all surficial sediment samples was $992 \mathrm{ng} / \mathrm{kg}$.

The two deeper sediment samples had TEQ concentrations of 4,602 and $379 \mathrm{ng} / \mathrm{kg}$. These were located at sample locations SD04 and SD06, respectively.

## Pentachlorophenol

Pentachlorophenol concentrations in surficial sediments ranged from non-detect to $1,800 \mu \mathrm{~g} / \mathrm{kg}$. The maximum concentration was also measured in SD06, which is located just to the east of the North Lagoon area. The arithmetic mean pentachlorophenol concentration for all surficial sediment samples was $860 \mathrm{mg} / \mathrm{kg}$.

The two deeper sediment samples had concentrations of 1,800 and $200 \mu \mathrm{~g} / \mathrm{kg}$. These were located at sample locations SD04 and SD06, respectively.

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Figures


## Figure 1

## Site Location Map

## Beazer East, Inc

Pittsburgh, Pennsylvania Koppers Inc. Facility Gainesville, Florida

Earth \& Environmental, Inc







## Tables

Table 1. Comparison of Analytical Results from Vista and CAS on a Total TEQ Basis Koppers Inc. Site, Gainesville, FL

|  |  | Total TEQ |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Sample ID | Units | CAS | VISTA | Vista/CAS Ratio |
| Control Samples - Low levels, no internal standard anomalies |  |  |  |  |
| SS026BA | ng/kg | 117.4 | 78.3 | 0.7 |
| SS057DA | ng/kg | 0.7 | 2.6 | 3.7 |
| SS095BA | ng/kg | 279.6 | 362.8 | 1.3 |
| SS100DB | ng/kg | 21.3 | 50.2 | 2.4 |
| Apparent Sample Difference |  |  |  |  |
| SS024CA | \|ng/kg | 389.6 | 4.3 | - |
| Reanalysis due to CAS failure to recover cleanup standard |  |  |  |  |
| SS100DA | ng/kg | 11.5 | 25.2 | 2.2 |
| Reanalysis for internal standard/matrix interferences/dilution calculations |  |  |  |  |
| SD004AA | ng/kg | 203.1 | 293 | 1.4 |
| SD004BA | ng/kg | 2408.4 | 4601.6 | 1.9 |
| SS002AA | ng/kg | 79.2 | 108.0 | 1.4 |
| SS002AC | ng/kg | 54.0 | 104.6 | 1.9 |
| SS003BA | ng/kg | 91.1 | 113.5 | 1.2 |
| SS005BA | ng/kg | 499.1 | 791.9 | 1.6 |
| SS006AA | ng/kg | 554.3 | 907.2 | 1.6 |
| SS006BA | ng/kg | 488.0 | 748.1 | 1.5 |
| SS020AA | ng/kg | 698.1 | 795.2 | 1.1 |
| SS026AA | ng/kg | 1248.6 | 2503.2 | 2.0 |
| SS035AA | ng/kg | 47.6 | 80.6 | 1.7 |
| SS037AA | ng/kg | 445.1 | 632.7 | 1.4 |
| SS037BA | ng/kg | 376.0 | 572.7 | 1.5 |
| SS038AA | ng/kg | 1769.2 | 1741.3 | 1.0 |
| SS038AC | ng/kg | 1340.8 | 1525.2 | 1.1 |
| SS041BA | ng/kg | 531.4 | 731.5 | 1.4 |
| SS044AA | ng/kg | 1532.2 | 3406.1 | 2.2 |
| SS044BA | ng/kg | 2073.1 | 5501.1 | 2.7 |
| SS046BA | ng/kg | 988.0 | 1494.1 | 1.5 |
| SS058AA | ng/kg | 20845.5 | 78816.5 | 3.8 |
| SS058BA | ng/kg | 23883.5 | 29954.3 | 1.3 |
| SS062AA | ng/kg | 509.3 | 1003.5 | 2.0 |
| SS066AA | ng/kg | 627.9 | 925.9 | 1.5 |
| SS068BA | ng/kg | 2697.7 | 7502.0 | 2.8 |
| SS070AA | ng/kg | 2611.9 | 4020.6 | 1.5 |
| SS070AB | ng/kg | 2154.8 | 2800.9 | 1.3 |
| SS070BA | ng/kg | 6621.4 | 9051.8 | 1.4 |
| SS076AA | ng/kg | 610.3 | 848.0 | 1.4 |
| SS076BA | ng/kg | 785.4 | 945.7 | 1.2 |
| SS081AA | ng/kg | 223.8 | 362.8 | 1.6 |
| SS081BA | ng/kg | 199.8 | 216.1 | 1.1 |
| SS082AA | ng/kg | 272.1 | 994.8 | 3.7 |
| SS082BA | ng/kg | 1548.1 | 2891.1 | 1.9 |
| SS082CA | ng/kg | 529.2 | 1625.9 | 3.1 |
| SS084BA | ng/kg | 379.1 | 554.9 | 1.5 |
| SS086AA | ng/kg | 1674.2 | 1991.6 | 1.2 |
| SS086BA | ng/kg | 2517.1 | 3275.6 | 1.3 |
| SS086CA | ng/kg | 94.3 | 126.2 | 1.3 |
| SS088AA | ng/kg | 2195.2 | 3604.3 | 1.6 |
| SS093AA | ng/kg | 837.0 | 1371.3 | 1.6 |
| SS093BA | ng/kg | 134.8 | 187.6 | 1.4 |
| SS094BA | ng/kg | 514.0 | 697.7 | 1.4 |
| SS094CA | ng/kg | 343.0 | 688.5 | 2.0 |
| SS094DA | ng/kg | 476.4 | 568.0 | 1.2 |
| SS095AA | ng/kg | 3045.4 | 5839.5 | 1.9 |
| SS096AA | ng/kg | 4253.1 | 7160.8 | 1.7 |
| SS096CA | ng/kg | 603.9 | 242.9 | 0.4 |
| SS099BA | ng/kg | 5332.7 | 7257.4 | 1.4 |
| SS099CA | ng/kg | 2768.6 | 5984.1 | 2.2 |
| SS100AA | ng/kg | 366.1 | 2108.2 | 5.8 |
| SS100BA | ng/kg | 2780.0 | 2333.6 | 0.8 |
| SS100CA | ng/kg | 179.4 | 141.0 | 0.8 |
| SS101AA | ng/kg | 5707.1 | 4893.3 | 0.9 |
| SS101BA | ng/kg | 3448.9 | 4397.2 | 1.3 |
| SS101CA | ng/kg | 290.1 | 914.9 | 3.2 |

Table 2. Soil Sample Summary
Koppers Inc. Site, Gainesville, FL

| Lab Method | Compound | Number of Samples | Number of Detects | Minimum Detection | Maximum Detection | Units | Location of Maximum Detection | Minimum Reporting Limit | Maximum Reporting Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SVOC (SIM) | 2-METHYLNAPHTHALENE | 321 | 211 | 1.7 | 700000 | ug/kg | SS101DA | 1.6 | 81000 |
|  | ACENAPHTHENE | 321 | 130 | 3 | 910000 | ug/kg | SS101DA | 2.8 | 150000 |
|  | ACENAPHTHYLENE | 321 | 290 | 2.8 | 18000 | ug/kg | SS058BA | 2.7 | 3300 |
|  | ANTHRACENE | 321 | 310 | 0.74 | 1400000 | ug/kg | SS101CA | 0.63 | 3400 |
|  | BENZO(A)ANTHRACENE | 321 | 312 | 0.73 | 930000 | ug/kg | SS101DA | 0.52 | 2800 |
|  | BENZO(A)PYRENE | 321 | 307 | 2 | 400000 | ug/kg | SS101DA | 1.2 | 6200 |
|  | BENZO(B)FLUORANTHENE | 321 | 312 | 1 | 650000 | ug/kg | SS101DA | 0.83 | 4500 |
|  | BENZO(G,H,I)PERYLENE | 321 | 310 | 0.99 | 63000 | ug/kg | SS058BA | 0.67 | 830 |
|  | BENZO(K)FLUORANTHENE | 321 | 311 | 0.78 | 190000 | ug/kg | SS058BA | 0.67 | 3700 |
|  | CHRYSENE | 321 | 315 | 0.74 | 790000 | ug/kg | SS101DA | 0.5 | 2700 |
|  | DIBENZO(A,H)ANTHRACENE | 321 | 309 | 0.57 | 26000 | ug/kg | SS058BA | 0.53 | 650 |
|  | FLUORANTHENE | 321 | 312 | 1.5 | 1200000 | ug/kg | SS101DA | 0.61 | 32000 |
|  | FLUORENE | 321 | 192 | 1.9 | 900000 | ug/kg | SS101DA | 1.6 | 81000 |
|  | INDENO(1,2,3-CD)PYRENE | 321 | 310 | 1 | 220000 | ug/kg | SS101DA | 0.9 | 4700 |
|  | NAPHTHALENE | 321 | 225 | 1.1 | 1200000 | ug/kg | SS101DA | 0.53 | 28000 |
|  | PENTACHLOROPHENOL | 321 | 272 | 1.1 | 630000 | ug/kg | SS058BA | 0.72 | 3800 |
|  | PHENANTHRENE | 321 | 276 | 3.6 | 2500000 | ug/kg | SS101DA | 3.4 | 180000 |
|  | PYRENE | 321 | 316 | 0.57 | 810000 | ug/kg | SS101DA | 0.54 | 28000 |
| Dioxin | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 151 | 152 | 0.898 | 522000 | ng/kg | SS058AA | 0.028 | 522000 |
|  | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 151 | 152 | 12.833 | 3240000 | ng/kg | SS058AA | 0.046 | 3240000 |
|  | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 143 | 152 | 0.179 | 45300 | ng/kg | SS058AA | 0.041 | 45300 |
|  | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 141 | 152 | 0.171 | 15700 | ng/kg | SS058AA | 0.015 | 15700 |
|  | 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 146 | 152 | 0.143 | 24400 | ng/kg | SS058AA | 0.017 | 24400 |
|  | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 136 | 152 | 0.117 | 10200 | ng/kg | SS058AA | 0.018 | 10200 |
|  | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 150 | 152 | 0.385 | 105000 | ng/kg | SS058AA | 0.018 | 105000 |
|  | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 84 | 152 | 0.096 | 4250 | ng/kg | SS058AA | 0.016 | 4250 |
|  | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 147 | 152 | 0.242 | 49500 | ng/kg | SS058AA | 0.018 | 49500 |
|  | 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 121 | 152 | 0.037 | 1430 | ng/kg | SS058AA | 0.015 | 1430 |
|  | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 140 | 152 | 0.134 | 6350 | ng/kg | SS058AA | 0.015 | 6350 |
|  | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 135 | 152 | 0.129 | 21000 | ng/kg | SS058AA | 0.017 | 21000 |
|  | 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 126 | 152 | 0.135 | 3300 | ng/kg | SS058AA | 0.011 | 3300 |
|  | 2,3,7,8-TETRACHLORODIBENZOFURAN | 71 | 152 | 0.427 | 266 | ng/kg | SS058AA | 0.012 | 266 |
|  | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 74 | 152 | 0.238 | 291 | ng/kg | SS058AA | 0.009 | 291 |
|  | OCTACHLORODIBENZOFURAN | 152 | 152 | 2.716 | 2460000 | ng/kg | SS058AA | 0.044 | 2460000 |
|  | OCTACHLORODIBENZO-P-DIOXIN | 152 | 152 | 43.117 | 31000000 | ng/kg | SS058AA | 0.057 | 31000000 |
|  | TOTAL HEPTACHLORINATED DIBENZOFURANS | 152 | 152 | 0.898 | 2420000 | ng/kg | SS058AA | 0.028 | 2420000 |
|  | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 152 | 152 | 16.054 | 7220000 | ng/kg | SS058AA | 0.046 | 7220000 |
|  | TOTAL HEXACHLORINATED DIBENZOFURANS | 152 | 152 | 1.018 | 558000 | ng/kg | SS058AA | 0.015 | 558000 |
|  | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 152 | 152 | 0.741 | 546000 | ng/kg | SS058AA | 0.017 | 546000 |
|  | TOTAL PENTACHLORINATED DIBENZOFURANS | 152 | 152 | 0.174 | 48400 | ng/kg | SS058AA | 0.011 | 48400 |
|  | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 148 | 152 | 0.295 | 24300 | ng/kg | SS058AA | 0.015 | 24300 |
|  | TOTAL TETRACHLORINATED DIBENZOFURANS | 137 | 152 | 0.117 | 5510 | ng/kg | SS058AA | 0.012 | 5510 |
|  | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 127 | 152 | 0.078 | 1890 | ng/kg | SS058AA | 0.009 | 1890 |

Table 2. Soil Sample Summary
Koppers Inc. Site, Gainesville, FL

| Lab Method | Compound | Number of Samples | Number of Detects | Minimum Detection | Maximum Detection | Units | Location of Maximum Detection | Minimum Reporting Limit | Maximum Reporting Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Metals | ANTIMONY | 321 | 130 | 0.37 | 200 | mg/kg | SS032AA | 0.32 | 3.5 |
|  | ARSENIC | 321 | 305 | 0.44 | 3600 | mg/kg | SS095AA | 0.39 | 5.3 |
|  | BARIUM | 321 | 321 | 1.6 | 180 | mg/kg | SS011BA | 0.34 | 3.7 |
|  | CADMIUM | 321 | 40 | 0.3 | 1.9 | $\mathrm{mg} / \mathrm{kg}$ | SS040AA | 0.28 | 3 |
|  | CHROMIUM | 321 | 321 | 0.95 | 3700 | mg/kg | SS095AA | 0.09 | 2.1 |
|  | COPPER | 321 | 315 | 0.33 | 2200 | mg/kg | SS095AA | 0.29 | 6.7 |
|  | LEAD | 321 | 321 | 0.88 | 2200 | mg/kg | SS032AA | 0.12 | 1.3 |
|  | SELENIUM | 321 | 8 | 0.93 | 2.1 | mg/kg | SS064AA | 0.8 | 8.7 |
|  | SILVER | 321 | 1 | 0.61 | 0.61 | mg/kg | SS095AA | 0.36 | 3.9 |
|  | VANADIUM (FUME OR DUST) | 321 | 262 | 0.97 | 34 | $\mathrm{mg} / \mathrm{kg}$ | SS062BA | 0.86 | 9.3 |
|  | MERCURY | 321 | 320 | 0.0046 | 3.2 | mg/kg | SS095AA | 0.0041 | 0.052 |

Table 2. Soil Sample Summary
Koppers Inc. Site, Gainesville, FL

| Lab Method | Compound | Number of Samples | Number of Detects | Minimum Detection | Maximum Detection | Units | Location of Maximum Detection | Minimum Reporting Limit | Maximum Reporting Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| VOC | 1,1,1-TRICHLOROETHANE | 321 | 0 |  |  |  |  | 0.054 | 0.29 |
|  | 1,1,2,2-TETRACHLOROETHANE | 321 | 0 |  |  |  |  | 0.054 | 0.16 |
|  | 1,1,2-TRICHLOROETHANE | 321 | 0 |  |  |  |  | 0.04 | 0.32 |
|  | 1,1-DICHLOROETHANE | 321 | 0 |  |  |  |  | 0.056 | 0.16 |
|  | 1,1-DICHLOROETHYLENE | 321 | 0 |  |  |  |  | 0.053 | 0.41 |
|  | 1,2,4-TRICHLOROBENZENE | 321 | 0 |  |  |  |  | 0.094 | 0.36 |
|  | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 321 | 0 |  |  |  |  | 0.081 | 1.2 |
|  | 1,2-DIBROMOETHANE | 321 | 0 |  |  |  |  | 0.049 | 0.14 |
|  | 1,2-DICHLOROBENZENE | 321 | 3 | 0.52 | 0.66 | ug/kg | SS039AA | 0.038 | 0.19 |
|  | 1,2-DICHLOROETHANE | 321 | 0 |  |  |  |  | 0.043 | 0.24 |
|  | 1,2-DICHLOROPROPANE | 321 | 0 |  |  |  |  | 0.023 | 0.13 |
|  | 1,4-DICHLOROBENZENE | 321 | 3 | 0.51 | 0.72 | ug/kg | SS094DA | 0.038 | 0.21 |
|  | ACETONE | 321 | 122 | 3 | 660 | ug/kg | SS024BA | 0.26 | 6 |
|  | BENZENE | 321 | 8 | 0.53 | 130 | ug/kg | SS101DA | 0.04 | 0.94 |
|  | BROMODICHLOROMETHANE | 321 | 0 |  |  |  |  | 0.038 | 0.7 |
|  | BROMOMETHANE | 321 | 0 |  |  |  |  | 0.074 | 0.77 |
|  | CARBON DISULFIDE | 321 | 0 |  |  |  |  | 0.43 | 3.9 |
|  | CARBON TETRACHLORIDE | 321 | 0 |  |  |  |  | 0.065 | 0.84 |
|  | CFC-11 | 321 | 0 |  |  |  |  | 0.065 | 0.63 |
|  | CFC-12 | 321 | 0 |  |  |  |  | 0.08 | 0.77 |
|  | CHLORINATED FLUOROCARBON (FREON 113) | 321 | 0 |  |  |  |  | 0.087 | 0.87 |
|  | CHLOROBENZENE | 321 | 0 |  |  |  |  | 0.024 | 0.96 |
|  | CHLORODIBROMOMETHANE | 321 | 0 |  |  |  |  | 0.031 | 0.6 |
|  | CHLOROETHANE | 321 | 0 |  |  |  |  | 0.079 | 0.87 |
|  | CHLOROFORM | 321 | 2 | 0.57 | 2 | ug/kg | SS008AA | 0.048 | 0.82 |
|  | CHLOROMETHANE | 321 | 0 |  |  |  |  | 0.076 | 1.1 |
|  | CIS-1,2-DICHLOROETHYLENE | 321 | 0 |  |  |  |  | 0.047 | 0.63 |
|  | CIS-1,3-DICHLOROPROPENE | 321 | 0 |  |  |  |  | 0.022 | 0.7 |
|  | CYCLOHEXANE | 321 | 4 | 0.63 | 1.2 | ug/kg | SS101DA | 0.054 | 0.92 |
|  | DICHLOROMETHANE | 321 | 6 | 5.3 | 8.5 | ug/kg | SS020BA | 0.06 | 0.94 |
|  | ETHYLBENZENE | 321 | 11 | 0.42 | 83 | ug/kg | SS100CA | 0.023 | 1.1 |
|  | ISOPROPYLBENZENE | 321 | 1 | 0.74 | 0.74 | ug/kg | SS095DA | 0.03 | 1.2 |
|  | m,p-Xylenes | 321 | 10 | 1 | 210 | ug/kg | SS100CA | 0.058 | 2.1 |
|  | M-DICHLOROBENZENE | 321 | 0 |  |  |  |  | 0.032 | 0.12 |
|  | METHYL ACETATE | 321 | 1 | 2.1 | 2.1 | ug/kg | SS002AA | 0.11 | 0.46 |
|  | METHYL ETHYL KETONE | 321 | 16 | 1.9 | 22 | ug/kg | SS082BA | 0.31 | 2.7 |
|  | METHYL ISOBUTYL KETONE | 321 | 2 | 20 | 22 | ug/kg | SS101CA | 0.4 | 1.8 |
|  | METHYL N-BUTYL KETONE | 321 | 0 |  |  |  |  | 0.49 | 2.4 |
|  | METHYLBENZENE | 321 | 38 | 0.48 | 140 | ug/kg | SS100DA | 0.024 | 1.1 |
|  | METHYLCYLOHEXANE | 321 | 11 | 0.085 | 8.8 | ug/kg | SS101DA | 0.052 | 1.1 |
|  | O-XYLENE | 321 | 12 | 0.64 | 130 | ug/kg | SS100CA | 0.023 | 0.96 |
|  | STYRENE (MONOMER) | 321 | 12 | 0.73 | 230 | ug/kg | SS100DA | 0.027 | 1.1 |
|  | TERT-BUTYL METHYL ETHER | 321 | 0 |  |  |  |  | 0.043 | 0.77 |
|  | TETRACHLOROETHYLENE | 321 | 1 | 0.71 | 0.71 | ug/kg | SS073AA | 0.04 | 0.96 |
|  | TRANS-1,2-DICHLOROETHENE | 321 | 0 |  |  |  |  | 0.058 | 0.92 |
|  | TRANS-1,2-DICHLOROPROPENE | 321 | 0 |  |  |  |  | 0.028 | 0.72 |
|  | TRIBOMOMETHANE | 321 | 0 |  |  |  |  | 0.044 | 0.94 |
|  | TRICHLOROETHYLENE | 321 | 0 |  |  |  |  | 0.052 | 0.96 |
|  | VINYL CHLORIDE | 321 | 0 |  |  |  |  | 0.07 | 0.58 |

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Table 2. Soil Sample Summary
Koppers Inc. Site, Gainesville, FL

| Lab Method | Compound | Number of Samples | Number of Detects | Minimum Detection | Maximum Detection | Units | Location of Maximum Detection | Minimum Reporting Limit | Maximum Reporting Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SVOC | 2,4,5-TRICHLOROPHENOL | 321 | 2 | 45 | 290 | ug/kg | SS082BA | 14 | 180 |
|  | 2,4,6-TRICHLOROPHENOL | 321 | 0 |  |  |  |  | 37 | 480 |
|  | 2,4-DICHLOROPHENOL | 321 | 0 |  |  |  |  | 18 | 230 |
|  | 2,4-DIMETHYLPHENOL | 321 | 20 | 22 | 3800 | ug/kg | SS100DA | 20 | 250 |
|  | 2,4-DINITROPHENOL | 321 | 0 |  |  |  |  | 13 | 160 |
|  | 2,4-DINITROTOLUENE | 321 | 1 | 82 | 82 | ug/kg | SS067BA | 10 | 130 |
|  | 2,6-DINITROTOLUENE | 321 | 0 |  |  |  |  | 37 | 480 |
|  | 2-CHLORONAPHTHALENE | 321 | 0 |  |  |  |  | 17 | 220 |
|  | 2-CHLOROPHENOL | 321 | 0 |  |  |  |  | 19 | 240 |
|  | 2-METHYLPHENOL (O-CRESOL) | 321 | 0 |  |  |  |  | 13 | 160 |
|  | 2-NITROANILINE | 321 | 1 | 30 | 30 | ug/kg | SS067BA | 23 | 290 |
|  | 2-NITROPHENOL | 321 | 0 |  |  |  |  | 15 | 190 |
|  | 3,3'-DICHLOROBENZIDINE | 321 | 0 |  |  |  |  | 35 | 450 |
|  | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | 321 | 0 |  |  |  |  | 14 | 180 |
|  | 3-NITROANILINE | 321 | 1 | 37 | 37 | ug/kg | SS067BA | 18 | 230 |
|  | 4,6-DINITRO-2-METHYLPHENOL | 321 | 2 | 28 | 60 | ug/kg | SS067BA | 9.6 | 130 |
|  | 4-BROMOPHENYL PHENYL ETHER | 321 | 1 | 53 | 53 | ug/kg | SS067BA | 10 | 130 |
|  | 4-CHLORO-3-METHYLPHENOL | 321 | 1 | 34 | 34 | ug/kg | SS067BA | 17 | 220 |
|  | 4-CHLOROPHENYL PHENYL ETHER | 321 | 1 | 35 | 35 | ug/kg | SS067BA | 23 | 290 |
|  | 4-METHYLPHENOL (M/P-CRESOL) | 321 | 6 | 29 | 3800 | ug/kg | SS101DA | 27 | 350 |
|  | 4-NITROPHENOL | 321 | 0 |  |  |  |  | 18 | 230 |
|  | BENZYL BUTYL PHTHALATE | 321 | 13 | 22 | 180 | ug/kg | SS067BA | 19 | 240 |
|  | BIPHENYL | 321 | 12 | 2400 | 110000 | ug/kg | SS101CA | 160 | 19000 |
|  | BIPHENYL | 321 | 12 | 2400 | 110000 | ug/kg | SS101DA | 160 | 19000 |
|  | BIS(2-CHLORETHOXY)METHANE | 321 | 0 |  |  |  |  | 18 | 230 |
|  | BIS(2-CHLOROETHYL)ETHER | 321 | 1 | 1300 | 1300 | ug/kg | SS054AA | 16 | 200 |
|  | BIS(2-CHLOROISOPROPYL) ETHER | 321 | 0 |  |  |  |  | 22 | 280 |
|  | BIS(2-ETHYLHEXYL)PHTHALATE | 321 | 83 | 20 | 780 | ug/kg | SS051AA | 17 | 220 |
|  | CARBAZOLE | 321 | 223 | 19 | 160000 | ug/kg | SS100DB | 17 | 2100 |
|  | DIBENZOFURAN | 321 | 213 | 14 | 350000 | ug/kg | SS101CA | 14 | 1700 |
|  | DIETHYL PHTHALATE | 321 | 1 | 64 | 64 | ug/kg | SS067BA | 13 | 160 |
|  | DIMETHYL PHTHALATE | 321 | 1 | 36 | 36 | ug/kg | SS067BA | 10 | 130 |
|  | DI-N-BUTYL-PHTHALATE | 321 | 1 | 190 | 190 | ug/kg | SS067BA | 63 | 810 |
|  | DI-N-OCTYL-PHTHALATE | 321 | 5 | 20 | 180 | ug/kg | SS042AA | 16 | 200 |
|  | DI-N-OCTYL-PHTHALATE | 321 | 5 | 20 | 180 | ug/kg | SS067BA | 16 | 200 |
|  | HEXACHLORO-1,3-BUTADIENE | 321 | 0 |  |  |  |  | 18 | 230 |
|  | HEXACHLOROBENZENE | 321 | 1 | 78 | 78 | ug/kg | SS067BA | 8.5 | 110 |
|  | HEXACHLOROCYCLOPENTADIENE | 321 | 0 |  |  |  |  | 12 | 150 |
|  | HEXACHLOROETHANE | 321 | 0 |  |  |  |  | 18 | 230 |
|  | NITROBENZENE | 321 | 0 |  |  |  |  | 21 | 270 |
|  | N-NITROSO-DI-N-PROPYLAMINE | 321 | 0 |  |  |  |  | 19 | 240 |
|  | N-NITROSODIPHENYLAMINE | 321 | 1 | 86 | 86 | ug/kg | SS067BA | 12 | 150 |
|  | P-CHLOROANILINE | 321 | 0 |  |  |  |  | 27 | 350 |
|  | PHENOL | 321 | 0 |  |  |  |  | 17 | 220 |
|  | P-NITROANILINE | 321 | 3 | 34 | 70 | ug/kg | SS067BA | 13 | 160 |
| ```SVOC = semivolatile organic compound VOC = volatile organic compound \(\mathrm{mg} / \mathrm{kg}=\) miligram per kilogram ug/kg = microgram per kilogram \(\mathrm{ng} / \mathrm{kg}=\) nanogram per kilogram``` |  |  |  |  |  |  |  |  |  |

Table 3. Soil Results 0-0.25 Feet Koppers Inc. Site, Gainesville, Florida

| Sample | Total PAH | PENTACHLOROPHENOL Concentration Units | ARSENIC <br> Concentration Units | BAPTEQ |  | Dioxin TEQ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Concentration Units |  |  | Concentration | Units | Concentration | Units |
| SS001AA | 8448.8 ug/kg | 120 J ug/kg | $20 \mathrm{mg} / \mathrm{kg}$ | 1172.4 | ug/kg | 17.65 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS002AA | 10928.5 J ug/kg | 150 J ug/kg | 4.1 J mg/kg | 1588 | ug/kg | 108.03 J | $n g / \mathrm{kg}$ |
| SS002AC | 11606 J ug/kg | 170 J ug/kg | $5.9 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1726.1 | ug/kg | 104.57 J | $n g / \mathrm{kg}$ |
| SS003AA | 3984.5 J ug/kg | 150 J ug/kg | $6 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 531.84 | ug/kg | 186.22 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS004AA | 13215 J ug/kg | 56 J ug/kg | 5.8 mg/kg | 1928.9 | ug/kg |  |  |
| SS005AA | 9531 J ug/kg | 190 J ug/kg | $5 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1175 | ug/kg | 177.62 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS006AA | 18997 J ug/kg | 480 J ug/kg | $17 \mathrm{mg} / \mathrm{kg}$ | 2367.3 | ug/kg | 907.16 J | $n g / k g$ |
| SS007AA | $1485.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 150 J ug/kg | $4.2 \mathrm{mg} / \mathrm{kg}$ | 160.14 J | ug/kg | 268.19 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS008AA | 32849.5 J ug/kg | 870 J ug/kg | $4.8 \mathrm{mg} / \mathrm{kg}$ | 4318.1 | ug/kg |  |  |
| SS009AA | 1882.8 J ug/kg | 180 J ug/kg | $1.3 \mathrm{mg} / \mathrm{kg}$ | 207.98 J | ug/kg |  |  |
| SS010AA | 9497.5 ug/kg | 76 J ug/kg | $16 \mathrm{mg} / \mathrm{kg}$ | 1016.06 | ug/kg |  |  |
| SS010AB | 9517.5 ug/kg | 79 J ug/kg | $12 \mathrm{mg} / \mathrm{kg}$ | 1092.37 | ug/kg |  |  |
| SS011AA | 9060 J ug/kg | 61 J ug/kg | $11 \mathrm{mg} / \mathrm{kg}$ | 1162.59 J | ug/kg |  |  |
| SS012AA | 11309 J ug/kg | 530 ug/kg | $49 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1665.1 | ug/kg |  |  |
| SS012AC | $11410.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 550 ug/kg | $33 \mathrm{~J} \mathrm{mg/kg}$ | 1676.1 | ug/kg |  |  |
| SS013AA | 32841 J ug/kg | 490 ug/kg | $48 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1875.4 | ug/kg |  |  |
| SS014AA | 19759.5 J ug/kg | 330 J ug/kg | $94 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 2952.6 | ug/kg |  |  |
| SS015AA | 11795 J ug/kg | 310 J ug/kg | $61 \mathrm{mg} / \mathrm{kg}$ | 1315 | ug/kg |  |  |
| SS016AA | 38895 J ug/kg | 950 J ug/kg | $21 \mathrm{mg} / \mathrm{kg}$ | 5358.6 | ug/kg |  |  |
| SS017AA | 13952 J ug/kg | 1300 ug/kg | $10 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1542.3 | ug/kg |  |  |
| SS018AA | 37085 J ug/kg | 560 ug/kg | 3.1 J mg/kg | 3783.2 | ug/kg |  |  |
| SS019AA | $6242.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 160 J ug/kg | $5.6 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 810.5 | ug/kg |  |  |
| SS020AA | 7256.45 ug/kg | 730 ug/kg | $35 \mathrm{mg} / \mathrm{kg}$ | 1032.24 | ug/kg | 795.17 J | $n g / k g$ |
| SS021AA | $165510 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | $15000 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | $1500 \mathrm{mg} / \mathrm{kg}$ | 23175 | ug/kg |  |  |
| SS022AA | 1058.88 J ug/kg | 31 J ug/kg | $4.2 \mathrm{mg} / \mathrm{kg}$ | 134.53 | ug/kg | 67.99 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS022AB | 969.18 J ug/kg | 28 J ug/kg | $4.2 \mathrm{mg} / \mathrm{kg}$ | 124.91 | ug/kg | 61.96 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS023AA | 33336 J ug/kg | 1600 J ug/kg | $16 \mathrm{mg} / \mathrm{kg}$ | 3318.6 | ug/kg |  |  |
| SS024AA | 4134 J ug/kg | 0.75 U ug/kg | $25 \mathrm{mg} / \mathrm{kg}$ | 414.87 J | ug/kg | 207.72 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS025AA | 11604 J ug/kg | 800 ug/kg | $79 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1270.1 J | ug/kg |  |  |
| SS026AA | 67522 J ug/kg | 2900 J ug/kg | $77 \mathrm{mg} / \mathrm{kg}$ | 11256.2 | ug/kg | 2503.19 J | $n g / k g$ |
| SS027AA | 24395 J ug/kg | 1100 ug/kg | $17 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 2956.7 | ug/kg |  |  |
| SS028AA | 170492 J ug/kg | 2600 J ug/kg | $5 \mathrm{mg} / \mathrm{kg}$ | 23410 | ug/kg |  |  |
| SS028AB | 182115 J ug/kg | 3200 J ug/kg | $4.3 \mathrm{mg} / \mathrm{kg}$ | 25300 | ug/kg |  |  |
| SS029AA | 670.7 J ug/kg | 110 J ug/kg | $4.5 \mathrm{mg} / \mathrm{kg}$ | 69.797 J | ug/kg |  |  |
| SS030AA | 11925.5 J ug/kg | 7.4 U ug/kg | $8.7 \mathrm{mg} / \mathrm{kg}$ | 1790.3 J | ug/kg |  |  |
| SS031AA | 15150 J ug/kg | 390 ug/kg | $91 \mathrm{mg} / \mathrm{kg}$ | 2299.2 | ug/kg |  |  |
| SS032AA | 26286 J ug/kg | 1900 J ug/kg | $36 \mathrm{mg} / \mathrm{kg}$ | 2622.1 | ug/kg |  |  |
| SS033AA | 50.48 J ug/kg | 0.74 U ug/kg | $52 \mathrm{mg} / \mathrm{kg}$ | 5.2125 J | ug/kg |  |  |
| SS034AA | $14400 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 940 ug/kg | $11 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1845.2 | ug/kg |  |  |
| SS035AA | $15409 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 220 J ug/kg | $11 \mathrm{mg} / \mathrm{kg}$ | 2488.6 | ug/kg | 80.63 J | $n g / k g$ |
| SS036AA | 6229.5 J ug/kg | 190 J ug/kg | $77 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 713.52 | ug/kg |  |  |
| SS036AC | 6332.5 ug/kg | 210 J ug/kg | 120 J mg/kg | 751.2 | ug/kg |  |  |
| SS037AA | 62400 J ug/kg | 690 J ug/kg | $120 \mathrm{mg} / \mathrm{kg}$ | 7971.5 | ug/kg | 632.65 J | $n g / k g$ |
| SS038AA | 26359 J ug/kg | 1900 ug/kg | $430 \mathrm{mg} / \mathrm{kg}$ | 3346.5 | ug/kg | 1741.34 J | $n g / k g$ |
| SS038AC | 21536.5 ug/kg | 1400 ug/kg | 330 mg/kg | 2755 | ug/kg | 1525.18 J | $n g / k g$ |
| SS039AA | 6744.25 ug/kg | 270 J ug/kg | $77 \mathrm{mg} / \mathrm{kg}$ | 820.9 | ug/kg |  |  |
| SS040AA | 30609.5 ug/kg | 6500 ug/kg | 310 mg/kg | 3299.5 | ug/kg |  |  |
| SS041AA | 15463 J ug/kg | 410 ug/kg | $37 \mathrm{mg} / \mathrm{kg}$ | 2136.2 J | ug/kg | 1497.61 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS042AA | 54195 J ug/kg | 310 J ug/kg | $23 \mathrm{mg} / \mathrm{kg}$ | 6941.3 | ug/kg |  |  |
| SS043AA | 37865 J ug/kg | 830 J ug/kg | $17 \mathrm{mg} / \mathrm{kg}$ | 3395.6 | ug/kg | 212.39 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS044AA | 215190 ug/kg | 3000 J ug/kg | $35 \mathrm{mg} / \mathrm{kg}$ | 39093 | ug/kg | 3406.06 J | $n g / k g$ |
| SS045AA | $16100.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 280 J ug/kg | $29 \mathrm{mg} / \mathrm{kg}$ | 2456.5 J | ug/kg |  |  |
| SS046AA | 26768.6 ug/kg | 570 ug/kg | $12 \mathrm{mg} / \mathrm{kg}$ | 4144.2 | ug/kg | 365.99 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS047AA | 1896.88 J ug/kg | 490 J ug/kg | $6.7 \mathrm{mg} / \mathrm{kg}$ | 276.65 J | ug/kg |  |  |
| SS047AC | 2220.9 J ug/kg | 320 J ug/kg | 6.1 mg/kg | 315.87 J | ug/kg |  |  |
| SS048AA | 13712 J ug/kg | 510 J ug/kg | $49 \mathrm{mg} / \mathrm{kg}$ | 1665.3 | ug/kg |  |  |
| SS049AA | $6760.5 \mathrm{ug} / \mathrm{kg}$ | 150 J ug/kg | $40 \mathrm{mg} / \mathrm{kg}$ | 800.35 | ug/kg |  |  |
| SS050AA | 16929.5 J ug/kg | 340 J ug/kg | 200 J mg/kg | 1847 J | ug/kg |  |  |
| SS051AA | 20276 J ug/kg | 1300 ug/kg | $57 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 2773.6 | ug/kg |  |  |
| SS052AA | 46045 J ug/kg | 1200 J ug/kg | $97 \mathrm{mg} / \mathrm{kg}$ | 4071.7 J | ug/kg |  |  |
| SS054AA | 23968 J ug/kg | 320 J ug/kg | $26 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 2844.3 | ug/kg |  |  |
| SS054AB | 24536 J ug/kg | 330 J ug/kg | $23 \mathrm{mg} / \mathrm{kg}$ | 2923.4 | ug/kg |  |  |

Table 3. Soil Results 0-0.25 Feet Koppers Inc. Site, Gainesville, Florida

| Sample | Total PAH Concentration Units | PENTACHLOROPHENOL Concentration Units | ARSENIC Concentration Units | BAPTEQ <br> Concentration | Units | Dioxin TEQ <br> Concentration | Units |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS057AA | $1436.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | $130 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | $17 \mathrm{mg} / \mathrm{kg}$ | 173.04 J | ug/kg | 51.32 J | ng/kg |
| SS058AA | 242545 J ug/kg | $160000 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 220 mg/kg | 29793 | ug/kg | 78816.50 J | $n g / k g$ |
| SS059AA | 49400 J ug/kg | $3400 \mathrm{ug} / \mathrm{kg}$ | 200 J mg/kg | 4550.9 | ug/kg |  |  |
| SS060AA | 33685 J ug/kg | 1000 J ug/kg | 200 J mg/kg | 3502.2 | ug/kg |  |  |
| SS062AA | 30597.4 J ug/kg | 7.9 U ug/kg | $82 \mathrm{mg} / \mathrm{kg}$ | 3284.5 | ug/kg | 1003.45 J | $n g / k g$ |
| SS064AA | 18474 J ug/kg | 560 ug/kg | 70 mg/kg | 2260.9 | ug/kg |  |  |
| SS066AA | 11288 J ug/kg | 350 J ug/kg | $81 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1376.62 J | ug/kg | 925.88 J | $n g / k g$ |
| SS066AB | 15498 J ug/kg | 510 J ug/kg | $95 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1816.6 | ug/kg | 570.90 J | ng/kg |
| SS067AA | 114655 J ug/kg | 3200 J ug/kg | 230 J mg/kg | 14841 | ug/kg |  |  |
| SS068AA | 23797 J ug/kg | 1400 J ug/kg | 160 mg/kg | 2865.3 | ug/kg | 911.22 J | ng/kg |
| SS069AA | 15138.5 J ug/kg | 57 J ug/kg | $26 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1997.7 | ug/kg |  |  |
| SS070AA | 79105 J ug/kg | 3700 J ug/kg | $48 \mathrm{mg} / \mathrm{kg}$ | 10249.6 | ug/kg | 4020.65 J | $n g / k g$ |
| SS070AB | 88320 J ug/kg | 2700 J ug/kg | $53 \mathrm{mg} / \mathrm{kg}$ | 12305.5 | ug/kg | 2800.90 J | $n g / k g$ |
| SS071AA | $3661.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 35 J ug/kg | 6.1 mg/kg | 491.87 | ug/kg | 39.54 J | ng/kg |
| SS072AA | 34827.5 ug/kg | 7100 ug/kg | $63 \mathrm{mg} / \mathrm{kg}$ | 3566 | ug/kg |  |  |
| SS073AA | 92460 J ug/kg | 8100 ug/kg | 180 J mg/kg | 12852.4 | ug/kg |  |  |
| SS074AA | 138850 ug/kg | 2700 J ug/kg | $110 \mathrm{mg} / \mathrm{kg}$ | 17492 | ug/kg |  |  |
| SS075AA | 69748 J ug/kg | 910 ug/kg | 260 mg/kg | 10539.5 | ug/kg |  |  |
| SS076AA | 58388 J ug/kg | 830 J ug/kg | 120 mg/kg | 7690.5 | ug/kg | 848.04 J | $n g / k g$ |
| SS077AA | 218800 J ug/kg | 670 J ug/kg | $6.4 \mathrm{mg} / \mathrm{kg}$ | 26542 | ug/kg |  |  |
| SS078AA | $1265.015 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 21 J ug/kg | $6.9 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 176.93 | ug/kg |  |  |
| SS079AA | 25247.5 J ug/kg | 1800 ug/kg | $140 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 3186.3 | ug/kg |  |  |
| SS080AA | 6305 ug/kg | 150 J ug/kg | $5.4 \mathrm{mg} / \mathrm{kg}$ | 780.35 | ug/kg | 83.40 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS081AA | 39712.5 ug/kg | 140 J ug/kg | $19 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 4809.1 | ug/kg | 362.84 J | $n g / k g$ |
| SS082AA | $46402.9 \mathrm{ug} / \mathrm{kg}$ | $910 \mathrm{ug} / \mathrm{kg}$ | $14 \mathrm{mg} / \mathrm{kg}$ | 6531.2 | ug/kg | 994.84 J | $n g / k g$ |
| SS083AA | $14865.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 660 J ug/kg | $46 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1649.3 | ug/kg |  |  |
| SS084AA | 1044.3 ug/kg | 72 ug/kg | $4.4 \mathrm{mg} / \mathrm{kg}$ | 97.57 | ug/kg | 57.46 J | ng/kg |
| SS085AA | 27265 J ug/kg | 2600 ug/kg | 120 J mg/kg | 3349.4 | ug/kg |  |  |
| SS086AA | $14905.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 850 J ug/kg | $49 \mathrm{mg} / \mathrm{kg}$ | 1724.5 | ug/kg | 1991.60 J | $n g / k g$ |
| SS087AA | 19529 J ug/kg | 590 ug/kg | $17 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1971.1 | ug/kg |  |  |
| SS088AA | 59753 ug/kg | 2400 J ug/kg | $120 \mathrm{mg} / \mathrm{kg}$ | 8262.9 | ug/kg | 3604.30 J | $n g / k g$ |
| SS089AA | 155600 J ug/kg | 8600 ug/kg | 170 J mg/kg | 17355 | ug/kg |  |  |
| SS090AA | 71545 J ug/kg | 2500 J ug/kg | 120 J mg/kg | 8164.7 | ug/kg |  |  |
| SS091AA | 72370 ug/kg | $8100 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | $600 \mathrm{mg} / \mathrm{kg}$ | 9826.5 | ug/kg |  |  |
| SS092AA | 75920 J ug/kg | 4100 ug/kg | 130 J mg/kg | 10298.2 | ug/kg |  |  |
| SS093AA | 26734.5 J ug/kg | 830 ug/kg | $57 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 3348.6 | ug/kg | 1371.30 J | $n g / k g$ |
| SS094AA | 10898 J ug/kg | 180 J ug/kg | $30 \mathrm{mg} / \mathrm{kg}$ | 1398.2 | ug/kg | 277.53 J | ng/kg |
| SS094AB | 8850.5 J ug/kg | 170 J ug/kg | $25 \mathrm{mg} / \mathrm{kg}$ | 1092.13 | ug/kg | 303.81 J | ng/kg |
| SS095AA | 63160 J ug/kg | $15000 \mathrm{ug} / \mathrm{kg}$ | 3600 mg/kg | 9186.8 | ug/kg | 5839.49 J | $n g / k g$ |
| SS096AA | 292400 J ug/kg | 9000 ug/kg | $450 \mathrm{mg} / \mathrm{kg}$ | 41597 | ug/kg | 7160.76 J | $n g / k g$ |
| SS097AA | 2602.85 ug/kg | 180 J ug/kg | 2.7 mg/kg | 343.06 | ug/kg | 61.53 J | ng/kg |
| SS098AA | 9321 J ug/kg | 7.5 U ug/kg | $7.7 \mathrm{mg} / \mathrm{kg}$ | 1091.61 | ug/kg | 336.82 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS099AA | 12432 J ug/kg | 16 U ug/kg | 1.8 mg/kg | 1661.1 | ug/kg | 276.39 J | ng/kg |
| SS100AA | 55392 J ug/kg | 900 J ug/kg | 290 J mg/kg | 5661.1 | ug/kg | 2108.21 J | $n g / k g$ |
| SS101AA | 209470 J ug/kg | 3100 ug/kg | $57 \mathrm{mg} / \mathrm{kg}$ | 36974 | ug/kg | 4893.35 J | $n g / \mathrm{kg}$ |

Notes:
$\mathrm{mg} / \mathrm{kg}$ : miligrams per kilogram $\quad \mathrm{U}=$ non-detect
ng/kg: nanograms per kilogram $\quad \mathrm{J}=$ estimated detect
ug/kg: micrograms per kilogram
Dioxin $T E Q$ values in italics are new results from Vista laboratory

Table 4. Soil Results 0.25-0.5 Feet Koppers Inc. Site, Gainesville, FL


Table 4. Soil Results 0.25-0.5 Feet Koppers Inc. Site, Gainesville, FL

| Sample | Total PAH | PENTACHLOROPHENOL Concentration Units | ARSENIC Concentration Units | BAPTEQ | Dioxin TEQ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Concentration Units |  |  | Concentration Units | Concentration Units |
| SS051BA | 67065 J ug/kg | $1400 \mathrm{ug} / \mathrm{kg}$ | $63 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 7582.1 ug/kg |  |
| SS052BA | 39325 J ug/kg | 1300 J ug/kg | $25 \mathrm{mg} / \mathrm{kg}$ | 3543.4 J ug/kg |  |
| SS054BA | 22418.5 J ug/kg | 96 J ug/kg | $20 \mathrm{mg} / \mathrm{kg}$ | $2870.3 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ |  |
| SS057BA | $32.7 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 11 J ug/kg | 0.6 mg/kg | $1.72 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | $3.23 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS058BA | 1890300 J ug/kg | 630000 J ug/kg | $78 \mathrm{mg} / \mathrm{kg}$ | $138100 \mathrm{ug} / \mathrm{kg}$ | $29954.34 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS059BA | 86160 J ug/kg | 2600 ug/kg | 200 J mg/kg | $9961.2 \mathrm{ug} / \mathrm{kg}$ |  |
| SS060BA | 20415 J ug/kg | 710 J ug/kg | 160 J mg/kg | 2200.8 ug/kg |  |
| SS062BA | 11547.45 J ug/kg | 8.1 U ug/kg | $12 \mathrm{mg} / \mathrm{kg}$ | 1528.3 ug/kg | 308.31 J ng/kg |
| SS064BA | 12227.25 J ug/kg | 260 J ug/kg | $110 \mathrm{mg} / \mathrm{kg}$ | $1579.2 \mathrm{ug} / \mathrm{kg}$ |  |
| SS066BA | $525.3 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 20 J ug/kg | $54 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | $54.41 \mathrm{ug} / \mathrm{kg}$ | 32.71 J ng/kg |
| SS067BA | 61335 J ug/kg | 2900 J ug/kg | 220 J mg/kg | 7662.6 J ug/kg |  |
| SS067BB | 68924.5 J ug/kg | 2100 J ug/kg | 120 J mg/kg | $6509.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ |  |
| SS068BA | 35653 J ug/kg | 3400 ug/kg | 190 mg/kg | 3898.8 J ug/kg | $7501.99 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS069BA | 14446 J ug/kg | 15 U ug/kg | $14 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | $2195.4 \mathrm{ug} / \mathrm{kg}$ |  |
| SS070BA | 143290 J ug/kg | 7500 ug/kg | $61 \mathrm{mg} / \mathrm{kg}$ | 21362 ug/kg | $9051.81 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS071BA | 2463.5 J ug/kg | 25 J ug/kg | $4.6 \mathrm{mg} / \mathrm{kg}$ | $324.45 \mathrm{ug} / \mathrm{kg}$ | $28.24 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS072BA | 45678.5 ug/kg | 9200 ug/kg | $59 \mathrm{mg} / \mathrm{kg}$ | $4785.6 \mathrm{ug} / \mathrm{kg}$ |  |
| SS073BA | 125620 J ug/kg | 6700 ug/kg | 150 J mg/kg | 19110 ug/kg |  |
| SS074BA | 132210 ug/kg | 4500 J ug/kg | $55 \mathrm{mg} / \mathrm{kg}$ | 16809.4 ug/kg |  |
| SS075BA | 172775 J ug/kg | 900 J ug/kg | 120 mg/kg | 25646 J ug/kg |  |
| SS076BA | 82435 J ug/kg | 1100 J ug/kg | $130 \mathrm{mg} / \mathrm{kg}$ | 10999.6 ug/kg | $945.70 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS077BA | 6410.5 J ug/kg | 7.4 UJ ug/kg | $1.3 \mathrm{mg} / \mathrm{kg}$ | 791.35 J ug/kg |  |
| SS078BA | 373.57 J ug/kg | 5.8 J ug/kg | 0.86 J mg/kg | 48.69 J ug/kg |  |
| SS079BA | 41744 J ug/kg | 1800 J ug/kg | $86 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 5387 ug/kg |  |
| SS080BA | 2583.5 J ug/kg | 7.5 U ug/kg | $0.95 \mathrm{mg} / \mathrm{kg}$ | 431.94 J ug/kg | $6.17 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS080BB | 1140.7 J ug/kg | 98 J ug/kg | $1 \mathrm{mg} / \mathrm{kg}$ | 129.92 J ug/kg | $4.49 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS081BA | 17945 J ug/kg | 120 J ug/kg | 5.8 J mg/kg | $2533.5 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | $216.06 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS082BA | 2533800 ug/kg | 3300 J ug/kg | $39 \mathrm{mg} / \mathrm{kg}$ | 67690 ug/kg | $2891.05 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS083BA | 22576 J ug/kg | 990 ug/kg | $45 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 2432.2 ug/kg |  |
| SS084BA | 13508 ug/kg | 910 ug/kg | $13 \mathrm{mg} / \mathrm{kg}$ | 1818.2 ug/kg | $554.94 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS085BA | 157810 J ug/kg | 13000 ug/kg | $69 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 21066 ug/kg |  |
| SS086BA | 34607 J ug/kg | 3100 J ug/kg | $42 \mathrm{mg} / \mathrm{kg}$ | 3997.6 J ug/kg | $3275.61 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS086BB | 38950 J ug/kg | 2800 J ug/kg | $41 \mathrm{mg} / \mathrm{kg}$ | 4387.6 J ug/kg | $2431.99 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS087BA | 14336.5 J ug/kg | 530 ug/kg | $18 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 1603.4 J ug/kg |  |
| SS088BA | 10713 J ug/kg | 580 J ug/kg | $50 \mathrm{mg} / \mathrm{kg}$ | 1456.96 ug/kg | $487.17 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS089BA | 126415 J ug/kg | 12000 ug/kg | $86 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 14033 ug/kg |  |
| SS090BA | 52895 J ug/kg | 1900 J ug/kg | $41 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | $4917.9 \mathrm{ug} / \mathrm{kg}$ |  |
| SS090BC | 44065 J ug/kg | 1500 J ug/kg | $35 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | $4087.9 \mathrm{ug} / \mathrm{kg}$ |  |
| SS091BA | 42541 J ug/kg | 3200 ug/kg | $110 \mathrm{mg} / \mathrm{kg}$ | $5384.6 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ |  |
| SS092BA | 85960 J ug/kg | 5100 ug/kg | 130 J mg/kg | $10843.2 \mathrm{ug} / \mathrm{kg}$ |  |
| SS093BA | 13970.5 J ug/kg | 150 J ug/kg | $16 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | $1892.5 \mathrm{ug} / \mathrm{kg}$ | $187.64 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS094BA | 19825 J ug/kg | 750 ug/kg | $28 \mathrm{mg} / \mathrm{kg}$ | 2618.5 J ug/kg | $697.69 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS095BA | 5734 J ug/kg | $1000 \mathrm{ug} / \mathrm{kg}$ | 720 mg/kg | $870.74 \mathrm{ug} / \mathrm{kg}$ | 362.78 J ng/kg |
| SS096BA | 264215 J ug/kg | 2900 J ug/kg | $140 \mathrm{mg} / \mathrm{kg}$ | 39099 ug/kg | $658.60 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS097BA | $125.19 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | 17 J ug/kg | $1.9 \mathrm{mg} / \mathrm{kg}$ | $14.173 \mathrm{~J} \mathrm{ug} / \mathrm{kg}$ | $2.44 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS098BA | 2357 ug/kg | 0.89 U ug/kg | 2.1 mg/kg | $104.83 \mathrm{ug} / \mathrm{kg}$ | $40.27 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS099BA | 70100 ug/kg | 20000 ug/kg | $15 \mathrm{mg} / \mathrm{kg}$ | $9806.1 \mathrm{ug} / \mathrm{kg}$ | 7257.42 J ng/kg |
| SS100BA | 102240 ug/kg | 3300 J ug/kg | 120 J mg/kg | 17617.5 ug/kg | $2333.61 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |
| SS101BA | 237910 J ug/kg | $3100 \mathrm{ug} / \mathrm{kg}$ | $55 \mathrm{mg} / \mathrm{kg}$ | 44986 J ug/kg | $4397.23 \mathrm{~J} \mathrm{ng} / \mathrm{kg}$ |

Notes:
$\mathrm{mg} / \mathrm{kg}$ : miligrams per kilogram $\quad \mathrm{U}=$ non-detect
ng/kg: nanograms per kilogram J = estimated detect
ug/kg: micrograms per kilogram
Dioxin TEQ values in italics are new results from Vista laboratory

Table 5. Soil Results 0.5-2 Feet
Koppers Inc. Site, Gainesville, FL

| Sample | Total PAH |  | PENTACHLOROPHENOL Concentration Units |  | ARSENIC <br> Concentration Units |  | BAPTEQ |  | Dioxin TEQ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Concentration | Units |  |  | Concentration | Units | Concentration | Units |
| SS001CA | 47.84 J | ug/kg | 0.87 U | ug/kg |  |  | 100 | mg/kg | 4.8715 J | ug/kg | 0.58 J | ng/kg |
| SS003CA | 5673 J | ug/kg | 7.7 UJ | ug/kg | 19 J | mg/kg | 568.79 J | ug/kg | 4.41 J | ng/kg |
| SS003CB | 2673.5 J | ug/kg | 7.6 UJ | ug/kg | 14 J | mg/kg | 314.75 J | ug/kg | 3.06 J | ng/kg |
| SS005CA | 8480 | ug/kg | 280 J | ug/kg | 4.3 J | mg/kg | 1097.5 | ug/kg | 117.70 J | ng/kg |
| SS007CA | 629.82 J | ug/kg | 9.8 J | ug/kg | 1.4 | mg/kg | 95.68 | ug/kg | 8.28 J | ng/kg |
| SS020CA | 420.15 J | ug/kg | 46 | ug/kg | 9.2 | mg/kg | 54.38 | ug/kg | 72.69 J | ng/kg |
| SS020CC | 431.2 J | ug/kg | 46 | ug/kg | 9.9 | mg/kg | 56.49 | ug/kg | 65.62 J | ng/kg |
| SS022CA | 15.99 J | ug/kg | 0.73 U | ug/kg | 0.96 | mg/kg | 0.98 | ug/kg | 2.55 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS024CA | 303.8 J | ug/kg | 2.2 J | ug/kg | 0.42 UJ | mg/kg | 34.27 | ug/kg | 4.27 J | $n g / k g$ |
| SS026CA | 251.67 | ug/kg | 13 J | ug/kg | 26 | mg/kg | 36.35 | ug/kg | 4.93 J | ng/kg |
| SS026CC | 296.57 | ug/kg | 14 J | ug/kg | 35 | mg/kg | 45.51 | ug/kg | 6.17 J | ng/kg |
| SS028CA | 8100 J | ug/kg | 66000 | ug/kg | 0.66 | mg/kg | 992.65 | ug/kg |  |  |
| SS029CA | 13.925 J | ug/kg | 0.75 U | ug/kg | 0.53 | mg/kg | 1.06 J | ug/kg |  |  |
| SS030CA | 2337.37 J | ug/kg | 0.73 U | ug/kg | 1.1 J | mg/kg | 260.72 J | ug/kg |  |  |
| SS031CA | 149.32 J | ug/kg | 3.9 J | ug/kg | 0.41 UJ | mg/kg | 18.45 J | ug/kg |  |  |
| SS035CA | 125.22 J | ug/kg | 0.73 U | ug/kg | 0.47 J | mg/kg | 17.06 J | ug/kg | 0.76 J | ng/kg |
| SS036CA | 22630 J | ug/kg | 100 J | ug/kg | 0.53 | mg/kg | 742.4 J | ug/kg |  |  |
| SS038CA | 205.93 J | ug/kg | 17 J | ug/kg | 100 | mg/kg | 21.95 | ug/kg | 2.73 J | ng/kg |
| SS039CA | 85.77 J | ug/kg | 13 J | ug/kg | 3.7 | mg/kg | 9.69 J | ug/kg |  |  |
| SS041CA | 947.07 J | ug/kg | 29 J | ug/kg | 3.3 J | mg/kg | 127.76 J | ug/kg | 69.02 J | ng/kg |
| SS045CA | 122.3 J | ug/kg | 1.1 J | ug/kg | 62 | mg/kg | 13.45 J | ug/kg |  |  |
| SS046CA | 830.75 J | ug/kg | 47 | ug/kg | 0.78 | mg/kg | 99.53 | ug/kg | 54.48 J | ng/kg |
| SS047CA | 35805 J | ug/kg | 600 | ug/kg | 4.9 | mg/kg | 5363.5 | ug/kg |  |  |
| SS048CA | 364 J | ug/kg | 18 J | ug/kg | 0.43 U | mg/kg | 41.05 | ug/kg |  |  |
| SS049CA | 17983.2 J | ug/kg | 130 J | ug/kg | 22 J | mg/kg | 2707.7 J | ug/kg |  |  |
| SS052CA | 7678.3 J | ug/kg | 110 J | ug/kg | 19 | mg/kg | 848.45 | ug/kg |  |  |
| SS057CA | 39.66 J | ug/kg | 11 J | ug/kg | 0.66 J | mg/kg | 1.82 J | ug/kg | 4.24 J | ng/kg |
| SS057CB | 26.99 J | ug/kg | 11 J | ug/kg | 0.41 U | mg/kg | 2.02 J | ug/kg | 2.39 J | ng/kg |
| SS062CA | 30283.75 J | ug/kg | 7.5 U | ug/kg | 9.6 | mg/kg | 5527.8 | ug/kg | 7.20 J | ng/kg |
| SS062CC | 53477 J | ug/kg | 7.9 U | ug/kg | 13 | mg/kg | 9508.5 | ug/kg | 10.38 J | ng/kg |
| SS064CA | 539.72 J | ug/kg | 44 | ug/kg | 1.4 | mg/kg | 53.7 | ug/kg |  |  |
| SS066CA | 183.8 J | ug/kg | 16 J | ug/kg | 9.3 J | mg/kg | 13.7 J | ug/kg |  |  |
| SS068CA | 390.97 J | ug/kg | 8.8 J | ug/kg | 31 J | mg/kg | 44.55 J | ug/kg | 11.33 J | ng/kg |
| SS070CA | 9440 J | ug/kg | 440 | ug/kg | 8.2 | mg/kg | 1292.28 | ug/kg |  |  |
| SS072CA | 18109.5 J | ug/kg | 1600 | ug/kg | 14 | mg/kg | 1955.2 | ug/kg |  |  |
| SS072CC | 39855 J | ug/kg | 3300 | ug/kg | 16 | mg/kg | 4501 | ug/kg |  |  |
| SS075CA | 9443.5 J | ug/kg | 39 J | ug/kg | 23 J | mg/kg | 1436.85 J | ug/kg |  |  |
| SS077CA | 714200 J | ug/kg | 310 J | ug/kg | 14 J | mg/kg | 56963 J | ug/kg |  |  |
| SS078CA | 203.67 J | ug/kg | 2.7 J | ug/kg | 0.99 J | mg/kg | 21.9 J | ug/kg |  |  |
| SS080CA | 344.47 J | ug/kg | 0.73 U | ug/kg | 0.48 J | mg/kg | 14.17 J | ug/kg | 1.49 J | $\mathrm{ng} / \mathrm{kg}$ |
| SS082CA | 722760 J | ug/kg | 770 | ug/kg | 91 | mg/kg | 26757 | ug/kg | 1625.92 J | $n g / k g$ |
| SS084CA | 334.06 | ug/kg | 0.74 U | ug/kg | 22 | mg/kg | 44.28 | ug/kg |  |  |
| SS086CA | 374930 J | ug/kg | 1700 | ug/kg | 7.6 | mg/kg | 7391 J | ug/kg | 126.21 J | $n g / k g$ |
| SS088CA | 1064 J | ug/kg | 26 J | ug/kg | 2.5 | mg/kg | 99.78 J | ug/kg | 38.78 J | ng/kg |
| SS091CA | 1223.34 J | ug/kg | 51 | ug/kg | 58 J | mg/kg | 152.2 J | ug/kg |  |  |
| SS094CA | 3850400 J | ug/kg | 2900 | ug/kg | 6.5 | mg/kg | 10842 | ug/kg | 688.53 J | $n g / k g$ |
| SS095CA | 181.34 J | ug/kg | 26 J | ug/kg | 430 | mg/kg | 25.64 | ug/kg | 8.36 J | ng/kg |
| SS096CA | 18667 J | ug/kg | 580 J | ug/kg | 31 | mg/kg | 2842.6 | ug/kg | 242.89 J | $n g / k g$ |
| SS097CA | 18.355 J | ug/kg | 0.85 U | ug/kg | 0.48 U | mg/kg | 1.19 J | ug/kg | 0.33 J | ng/kg |
| SS098CA | 1156.03 J | ug/kg | 0.76 U | ug/kg | 2.1 | mg/kg | 51.27 | ug/kg | 14.80 J | ng/kg |
| SS099CA | 27260.65 | ug/kg | 15000 | ug/kg | 3.1 | mg/kg | 4516.1 | ug/kg | 5984.11 J | $n g / k g$ |
| SS100CA | 3312400 | ug/kg | 930 J | ug/kg | 3.6 J | mg/kg | 66544 | ug/kg | 140.98 J | $n g / k g$ |
| SS101CA | 11048200 J | ug/kg | 160000 J | ug/kg | 1.5 | mg/kg | 526150 | ug/kg | 914.92 J | $n g / k g$ |

Notes:
$\mathrm{mg} / \mathrm{kg}$ : miligrams per kilogram $\quad \mathrm{U}=$ non-detect
ng/kg: nanograms per kilogram $J=$ estimated detect
ug/kg: micrograms per kilogram
Dioxin TEQ values in italics are new results from Vista laboratory

Table 6. Soil Results 2-6 Feet
Koppers Inc. Site, Gainesville, FL

| Sample | Total PAH |  | PENTACHLOROPHENOL Concentration Units | ARSENIC Concentration Units | BAPTEQ |  | Dioxin TEQ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Concentration | Units |  |  | Concentration | Units | Concentration | Units |
| SS001DA | 17.78 J | ug/kg | 0.75 U ug/kg | $8.6 \mathrm{mg} / \mathrm{kg}$ | 1.27 J | ug/kg | 0.66 | ng/kg |
| SS003DA | 460.2 J | ug/kg | 2.5 J ug/kg | $5.4 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 63.76 | ug/kg | 4.31 | ng/kg |
| SS005DA | 1579 | ug/kg | 12 J ug/kg | $14 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 214.11 | ug/kg | 24.68 | ng/kg |
| SS007DA | 93.965 J | ug/kg | 0.72 U ug/kg | 0.42 U mg/kg | 11.93 J | ug/kg | 1.84 | ng/kg |
| SS007DB | 115.37 J | ug/kg | 0.72 U ug/kg | $0.44 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 16.41 J | ug/kg | 1.61 | ng/kg |
| SS020DA | 397.95 J | ug/kg | 36 J ug/kg | 3.8 mg/kg | 52.47 | ug/kg | 100.52 | ng/kg |
| SS022DA | 44.81 J | ug/kg | 0.75 U ug/kg | 0.41 U mg/kg | 1.436 J | ug/kg | 1.79 | ng/kg |
| SS024DA | 6665 J | ug/kg | 100 J ug/kg | $18 \mathrm{mg} / \mathrm{kg}$ | 960.44 | ug/kg | 10.16 | ng/kg |
| SS026DA | 267.83 | ug/kg | 8.7 J ug/kg | $0.44 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 39.47 | ug/kg | 10.41 | ng/kg |
| SS028DA | 3080.55 J | ug/kg | 360000 ug/kg | $0.97 \mathrm{mg} / \mathrm{kg}$ | 126.71 J | ug/kg |  |  |
| SS028DC | 2715.25 J | ug/kg | 180000 ug/kg | 0.68 mg/kg | 60.63 J | ug/kg |  |  |
| SS029DA | 12.99 J | ug/kg | 0.79 U ug/kg | $0.73 \mathrm{mg} / \mathrm{kg}$ | 1.06 J | ug/kg |  |  |
| SS030DA | 194.67 J | ug/kg | 0.73 U ug/kg | 0.42 U mg/kg | 27.29 J | ug/kg |  |  |
| SS031DA | 195.97 J | ug/kg | 4.6 J ug/kg | $1.2 \mathrm{mg} / \mathrm{kg}$ | 25.8 J | ug/kg |  |  |
| SS031DB | 114.67 J | ug/kg | 3.6 J ug/kg | 0.41 U mg/kg | 14.3 J | ug/kg |  |  |
| SS035DA | 109.73 J | ug/kg | 0.75 U ug/kg | $0.45 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 15.1 J | ug/kg | 0.81 | ng/kg |
| SS036DA | 2195 | ug/kg | 13 J ug/kg | 0.43 U mg/kg | 77.58 | ug/kg |  |  |
| SS038DA | 50.52 J | ug/kg | 12 J ug/kg | $19 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 4.19 J | ug/kg | 9.95 | ng/kg |
| SS038DB | 143.15 J | ug/kg | 13 J ug/kg | $120 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 17.01 J | ug/kg | 4.21 | ng/kg |
| SS039DA | 24.54 J | ug/kg | 10 J ug/kg | $1.4 \mathrm{mg} / \mathrm{kg}$ | 1.56 J | ug/kg |  |  |
| SS041DA | 113.05 J | ug/kg | 1.5 J ug/kg | 0.43 U mg/kg | 7.53 J | ug/kg | 9.80 | ng/kg |
| SS045DA | 390 J | ug/kg | 2.5 J ug/kg | $1 \mathrm{mg} / \mathrm{kg}$ | 56.12 | ug/kg |  |  |
| SS046DA | 436.45 J | ug/kg | 23 J ug/kg | 0.43 U mg/kg | 56.84 | ug/kg | 74.65 | ng/kg |
| SS047DA | 7662.25 J | ug/kg | 94 J ug/kg | $1.4 \mathrm{mg} / \mathrm{kg}$ | 1388.47 | ug/kg |  |  |
| SS048DA | 204.47 J | ug/kg | 13 J ug/kg | 0.44 U mg/kg | 23.95 | ug/kg |  |  |
| SS049DA | 1010 J | ug/kg | 5.6 J ug/kg | $1.7 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 85.9 J | ug/kg |  |  |
| SS052DA | 3089.2 J | ug/kg | 48 J ug/kg | $11 \mathrm{mg} / \mathrm{kg}$ | 356.02 | ug/kg |  |  |
| SS057DA | 11.74 J | ug/kg | 11 J ug/kg | 0.56 mg/kg | 1.29 J | ug/kg | 2.58 | $n g / k g$ |
| SS062DA | 172.77 J | ug/kg | 0.74 U ug/kg | 0.77 mg/kg | 21.32 J | ug/kg | 1.11 | ng/kg |
| SS064DA | 315.82 J | ug/kg | 14 J ug/kg | $0.75 \mathrm{mg} / \mathrm{kg}$ | 40.38 | ug/kg |  |  |
| SS066DA | 83.28 J | ug/kg | 0.73 UJ ug/kg | 0.68 J mg/kg | 5.44 J | ug/kg |  |  |
| SS066DC | 134.92 J | ug/kg | 0.73 UJ ug/kg | $0.83 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 7.25 J | ug/kg |  |  |
| SS068DA | 201.57 J | ug/kg | 13 J ug/kg | 0.77 J mg/kg | 29.07 J | ug/kg | 9.01 | ng/kg |
| SS070DA | 1056.6 J | ug/kg | 41 ug/kg | $1.1 \mathrm{mg} / \mathrm{kg}$ | 137.2 | ug/kg |  |  |
| SS072DA | 1384.17 J | ug/kg | $43 \mathrm{ug} / \mathrm{kg}$ | $0.89 \mathrm{mg} / \mathrm{kg}$ | 76.33 | ug/kg |  |  |
| SS075DA | 909.9 J | ug/kg | 5.1 J ug/kg | 2.1 J mg/kg | 125.76 J | ug/kg |  |  |
| SS077DA | 3085500 J | ug/kg | 89 J ug/kg | $0.94 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 75380 J | ug/kg |  |  |
| SS077DB | 2838800 J | ug/kg | 76 U ug/kg | $0.7 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 64735 J | ug/kg |  |  |
| SS078DA | 112.1 J | ug/kg | 1.1 J ug/kg | $0.97 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 11.89 J | ug/kg |  |  |
| SS080DA | 404.27 J | ug/kg | 0.74 U ug/kg | 0.39 U mg/kg | 4.75 J | ug/kg | 0.40 J | ng/kg |
| SS082DA | 1784.3 | ug/kg | 0.76 U ug/kg | $7.9 \mathrm{mg} / \mathrm{kg}$ | 50.51 | ug/kg | 1.64 J | ng/kg |
| SS084DA | 49.495 J | ug/kg | 0.83 U ug/kg | $0.62 \mathrm{mg} / \mathrm{kg}$ | 1.31 J | ug/kg |  |  |
| SS086DA | 20891.13 J | ug/kg | 120 ug/kg | $57 \mathrm{mg} / \mathrm{kg}$ | 446.93 J | ug/kg | 40.37 | ng/kg |
| SS088DA | 557 J | ug/kg | 15 J ug/kg | $0.79 \mathrm{mg} / \mathrm{kg}$ | 63.09 J | ug/kg | 16.23 J | ng/kg |
| SS091DA | 165.03 J | ug/kg | 9.1 J ug/kg | $5.2 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 19.63 J | ug/kg |  |  |
| SS094DA | 9011600 J | ug/kg | 120000 J ug/kg | $1.3 \mathrm{mg} / \mathrm{kg}$ | 311350 | ug/kg | 568.03 J | $n g / k g$ |
| SS095DA | 414.5 | ug/kg | $42 \mathrm{ug} / \mathrm{kg}$ | $280 \mathrm{mg} / \mathrm{kg}$ | 46.01 | ug/kg | 11.25 J | ng/kg |
| SS096DA | 6801.25 | ug/kg | 7.5 U ug/kg | $16 \mathrm{mg} / \mathrm{kg}$ | 1021.46 | ug/kg | 86.61 | ng/kg |
| SS097DA | 15.04 J | ug/kg | 0.75 U ug/kg | 0.4 U mg/kg | 0.99 | ug/kg | 0.28 J | ng/kg |
| SS098DA | 6148.3 J | ug/kg | 7.7 U ug/kg | $0.66 \mathrm{mg} / \mathrm{kg}$ | 497.37 | ug/kg | 5.59 J | ng/kg |
| SS099DA | 1102.12 | ug/kg | 68 ug/kg | $0.5 \mathrm{U} \mathrm{mg} / \mathrm{kg}$ | 98.44 | ug/kg | 23.94 J | ng/kg |
| SS100DA | 4655800 J | ug/kg | 890 U ug/kg | $0.83 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 81870 | ug/kg | 25.24 J | $n g / k g$ |
| SS100DB | 3621600 J | ug/kg | 860 U ug/kg | $3.2 \mathrm{~J} \mathrm{mg} / \mathrm{kg}$ | 70793 | ug/kg | 50.22 J | $n g / k g$ |
| SS101DA | 12359100 J | ug/kg | 150000 J ug/kg | $1.1 \mathrm{mg} / \mathrm{kg}$ | 589260 | ug/kg | 376.14 J | ng/kg |

Notes:
$\mathrm{mg} / \mathrm{kg}$ : miligrams per kilogram
$\mathrm{U}=$ non-detect
$\mathrm{ng} / \mathrm{kg}$ : nanograms per kilogram
$\mathrm{J}=$ estimated detect
$\mathrm{ug} / \mathrm{kg}$ : micrograms per kilogram
Dioxin TEQ values in italics are new results from Vista laboratory

Table 7. Sediment Sample Summary
Koppers Inc. Site, Gainesville, FL

| Lab Method | Compound | Number of Samples | Number of Detects | Minimum Detection | Maximum Detection | Units | Location of Maximum Detection | Minimum Reporting Limit | Maximum Reporting Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SVOC (SIM) | 2-METHYLNAPHTHALENE | 13 | 0 |  |  |  |  | 17 | 360 |
|  | ACENAPHTHENE | 13 | 0 |  |  |  |  | 30 | 650 |
|  | ACENAPHTHYLENE | 13 | 10 | 110 | 1600 | ug/kg | SD004BA | 29 | 630 |
|  | ANTHRACENE | 13 | 13 | 170 | 2400 | ug/kg | SD005AA | 6.7 | 150 |
|  | BENZO(A)ANTHRACENE | 13 | 13 | 180 | 7700 | ug/kg | SD002AA | 5.5 | 120 |
|  | BENZO(A)PYRENE | 13 | 13 | 320 | 12000 | ug/kg | SD002AA | 12 | 270 |
|  | BENZO(B)FLUORANTHENE | 13 | 13 | 620 | 17000 | ug/kg | SD002AA | 8.8 | 200 |
|  | BENZO(G,H,I)PERYLENE | 13 | 13 | 360 | 11000 | ug/kg | SD002AA | 7.1 | 160 |
|  | BENZO(K)FLUORANTHENE | 13 | 13 | 300 | 10000 | ug/kg | SD002AA | 7.1 | 160 |
|  | CHRYSENE | 13 | 13 | 330 | 12000 | ug/kg | SD002AA | 5.3 | 120 |
|  | DIBENZO(A,H)ANTHRACENE | 13 | 13 | 110 | 3100 | ug/kg | SD002AA | 5.6 | 130 |
|  | FLUORANTHENE | 13 | 13 | 350 | 17000 | ug/kg | SD002AA | 6.5 | 150 |
|  | FLUORENE | 13 | 0 |  |  |  |  | 17 | 360 |
|  | INDENO(1,2,3-CD)PYRENE | 13 | 13 | 350 | 10000 | ug/kg | SD002AA | 9.5 | 210 |
|  | NAPHTHALENE | 13 | 0 |  |  |  |  | 5.6 | 130 |
|  | PENTACHLOROPHENOL | 13 | 12 | 110 | 1800 | ug/kg | SD004BA | 7.7 | 170 |
|  | PENTACHLOROPHENOL | 13 | 12 | 110 | 1800 | ug/kg | SD006AC | 7.7 | 170 |
|  | PHENANTHRENE | 13 | 13 | 110 | 6300 | ug/kg | SD002AA | 36 | 790 |
|  | PYRENE | 13 | 13 | 410 | 16000 | ug/kg | SD002AA | 5.7 | 130 |
| Dioxin | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 13 | 13 | 299.355 | 29000 | ng/kg | SD004BA | 0.104 | 29000 |
|  | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 13 | 13 | 2167.649 | 191000 | ng/kg | SD004BA | 1.81 | 191000 |
|  | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 13 | 13 | 19.036 | 1790 | ng/kg | SD004BA | 0.593 | 1790 |
|  | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 13 | 13 | 7.976 | 732 | ng/kg | SD004BA | 0.095 | 732 |
|  | 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 13 | 13 | 15.867 | 1790 | ng/kg | SD004BA | 0.044 | 1790 |
|  | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 13 | 13 | 6.714 | 580 | ng/kg | SD004BA | 0.117 | 580 |
|  | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 13 | 13 | 57.074 | 5360 | ng/kg | SD004BA | 0.051 | 5360 |
|  | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 10 | 13 | 0.416 | 174 | ng/kg | SD004BA | 0.063 | 174 |
|  | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 13 | 13 | 37.582 | 3060 | ng/kg | SD004BA | 0.048 | 3060 |
|  | 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 13 | 13 | 1.039 | 68.1 | ng/kg | SD004BA | 0.037 | 68.1 |
|  | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 13 | 13 | 5.735 | 491 | ng/kg | SD004BA | 0.035 | 491 |
|  | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 13 | 13 | 6.707 | 1150 | ng/kg | SD004BA | 0.074 | 1150 |
|  | 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 13 | 13 | 1.202 | 208 | ng/kg | SD004BA | 0.047 | 208 |
|  | 2,3,7,8-TETRACHLORODIBENZOFURAN | 11 | 13 | 0.716 | 44.3 | ng/kg | SD004BA | 0.433 | 44.3 |
|  | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 12 | 13 | 0.971 | 32.8 | ng/kg | SD004BA | 0.021 | 32.8 |
|  | OCTACHLORODIBENZOFURAN | 13 | 13 | 1547.207 | 128797.468 | ng/kg | SD006AA | 0.207 | 108000 |
|  | OCTACHLORODIBENZO-P-DIOXIN | 13 | 13 | 21217.949 | 2048970.2 | ng/kg | SD006AA | 0.389 | 1580000 |
|  | TOTAL HEPTACHLORINATED DIBENZOFURANS | 13 | 13 | 1227.101 | 115000 | ng/kg | SD004BA | 0.104 | 115000 |
|  | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 13 | 13 | 9512.174 | 598000 | ng/kg | SD004BA | 0.117 | 598000 |
|  | TOTAL HEXACHLORINATED DIBENZOFURANS | 13 | 13 | 327.093 | 28700 | ng/kg | SD004BA | 0.095 | 28700 |
|  | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 13 | 13 | 819.129 | 57400 | ng/kg | SD004BA | 0.044 | 57400 |
|  | TOTAL PENTACHLORINATED DIBENZOFURANS | 13 | 13 | 63.436 | 4880 | ng/kg | SD004BA | 0.047 | 4880 |
|  | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 13 | 13 | 58.86 | 4100 | ng/kg | SD004BA | 0.035 | 4100 |
|  | TOTAL TETRACHLORINATED DIBENZOFURANS | 13 | 13 | 12.677 | 681 | ng/kg | SD004BA | 0.026 | 681 |
|  | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 13 | 13 | 5.934 | 346 | ng/kg | SD004BA | 0.021 | 346 |

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Table 7. Sediment Sample Summary
Koppers Inc. Site, Gainesville, FL

| Lab Method | Compound | Number of Samples | Number of Detects | Minimum Detection | Maximum Detection | Units | Location of Maximum Detection | Minimum <br> Reporting Limit | Maximum Reporting Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Metals | ANTIMONY | 13 | 11 | 0.43 | 8.6 | mg/kg | SD003AA | 0.34 | 0.8 |
|  | ARSENIC | 13 | 13 | 1.7 | 390 | mg/kg | SD005AA | 0.41 | 0.96 |
|  | BARIUM | 13 | 13 | 6.5 | 110 | mg/kg | SD001AA | 0.36 | 0.84 |
|  | CADMIUM | 13 | 8 | 0.35 | 3.1 | mg/kg | SD003AA | 0.29 | 0.68 |
|  | CHROMIUM | 13 | 13 | 8.5 | 710 | mg/kg | SD004BA | 0.09 | 0.22 |
|  | COPPER | 13 | 13 | 14 | 320 | mg/kg | SD004BA | 0.3 | 0.7 |
|  | LEAD | 13 | 13 | 6.5 | 450 | mg/kg | SD004BA | 0.13 | 0.3 |
|  | SELENIUM | 13 | 3 | 1.5 | 3.1 | mg/kg | SD003AA | 0.85 | 2 |
|  | SILVER | 13 | 0 |  |  |  |  | 0.38 | 0.87 |
|  | VANADIUM (FUME OR DUST) | 13 | 13 | 1.3 | 28 | mg/kg | SD003AA | 0.91 | 2.1 |
|  | MERCURY | 13 | 13 | 0.026 | 2 | mg/kg | SD004BA | 0.0044 | 0.033 |

Table 7. Sediment Sample Summary
Koppers Inc. Site, Gainesville, FL

| Lab Method | Compound | Number of Samples | Number of Detects | Minimum Detection | Maximum Detection | Units | Location of Maximum Detection | Minimum Reporting Limit | Maximum Reporting Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| VOC | 1,1,1-TRICHLOROETHANE | 13 | 0 |  |  |  |  | 0.13 | 0.35 |
|  | 1,1,2,2-TETRACHLOROETHANE | 13 | 0 |  |  |  |  | 0.069 | 0.2 |
|  | 1,1,2-TRICHLOROETHANE | 13 | 0 |  |  |  |  | 0.14 | 0.38 |
|  | 1,1-DICHLOROETHANE | 13 | 0 |  |  |  |  | 0.066 | 0.19 |
|  | 1,1-DICHLOROETHYLENE | 13 | 0 |  |  |  |  | 0.18 | 0.5 |
|  | 1,2,4-TRICHLOROBENZENE | 13 | 0 |  |  |  |  | 0.16 | 0.44 |
|  | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 13 | 0 |  |  |  |  | 0.51 | 1.5 |
|  | 1,2-DIBROMOETHANE | 13 | 0 |  |  |  |  | 0.059 | 0.17 |
|  | 1,2-DICHLOROBENZENE | 13 | 0 |  |  |  |  | 0.082 | 0.23 |
|  | 1,2-DICHLOROETHANE | 13 | 0 |  |  |  |  | 0.11 | 0.3 |
|  | 1,2-DICHLOROPROPANE | 13 | 0 |  |  |  |  | 0.057 | 0.16 |
|  | 1,4-DICHLOROBENZENE | 13 | 0 |  |  |  |  | 0.091 | 0.26 |
|  | ACETONE | 13 | 12 | 3.4 | 140 | ug/kg | SD003AA | 2.7 | 7.3 |
|  | BENZENE | 13 | 0 |  |  |  |  | 0.41 | 1.2 |
|  | BROMODICHLOROMETHANE | 13 | 0 |  |  |  |  | 0.31 | 0.85 |
|  | BROMOMETHANE | 13 | 0 |  |  |  |  | 0.34 | 0.94 |
|  | CARBON DISULFIDE | 13 | 0 |  |  |  |  | 1.7 | 4.7 |
|  | CARBON TETRACHLORIDE | 13 | 0 |  |  |  |  | 0.37 | 1.1 |
|  | CFC-11 | 13 | 0 |  |  |  |  | 0.28 | 0.76 |
|  | CFC-12 | 13 | 0 |  |  |  |  | 0.34 | 0.94 |
|  | CHLORINATED FLUOROCARBON (FREON 113) | 13 | 0 |  |  |  |  | 0.38 | 1.1 |
|  | CHLOROBENZENE | 13 | 0 |  |  |  |  | 0.42 | 1.2 |
|  | CHLORODIBROMOMETHANE | 13 | 0 |  |  |  |  | 0.27 | 0.73 |
|  | CHLOROETHANE | 13 | 0 |  |  |  |  | 0.38 | 1.1 |
|  | CHLOROFORM | 13 | 0 |  |  |  |  | 0.36 | 0.99 |
|  | CHLOROMETHANE | 13 | 0 |  |  |  |  | 0.47 | 1.4 |
|  | CIS-1,2-DICHLOROETHYLENE | 13 | 0 |  |  |  |  | 0.28 | 0.76 |
|  | CIS-1,3-DICHLOROPROPENE | 13 | 0 |  |  |  |  | 0.31 | 0.85 |
|  | CYCLOHEXANE | 13 | 0 |  |  |  |  | 0.4 | 1.2 |
|  | DICHLOROMETHANE | 13 | 0 |  |  |  |  | 0.41 | 1.2 |
|  | ETHYLBENZENE | 13 | 0 |  |  |  |  | 0.44 | 1.3 |
|  | ISOPROPYLBENZENE | 13 | 0 |  |  |  |  | 0.48 | 1.4 |
|  | m,p-Xylenes | 13 | 0 |  |  |  |  | 0.91 | 2.6 |
|  | M-DICHLOROBENZENE | 13 | 0 |  |  |  |  | 0.053 | 0.15 |
|  | METHYL ACETATE | 13 | 0 |  |  |  |  | 0.2 | 0.56 |
|  | METHYL ETHYL KETONE | 13 | 1 | 11 | 11 | ug/kg | SD003AA | 1.2 | 3.3 |
|  | METHYL ISOBUTYL KETONE | 13 | 0 |  |  |  |  | 0.74 | 2.1 |
|  | METHYL N-BUTYL KETONE | 13 | 0 |  |  |  |  | 1.1 | 3 |
|  | METHYLBENZENE | 13 | 6 | 0.87 | 3.5 | ug/kg | SD002AA | 0.44 | 1.3 |
|  | METHYLBENZENE | 13 | 6 | 0.87 | 3.5 | ug/kg | SD003AA | 0.44 | 1.3 |
|  | METHYLCYLOHEXANE | 13 | 0 |  |  |  |  | 0.46 | 1.3 |
|  | O-XYLENE | 13 | 0 |  |  |  |  | 0.42 | 1.2 |
|  | STYRENE (MONOMER) | 13 | 0 |  |  |  |  | 0.45 | 1.3 |
|  | TERT-BUTYL METHYL ETHER | 13 | 0 |  |  |  |  | 0.34 | 0.94 |
|  | TETRACHLOROETHYLENE | 13 | 0 |  |  |  |  | 0.42 | 1.2 |
|  | TRANS-1,2-DICHLOROETHENE | 13 | 0 |  |  |  |  | 0.4 | 1.2 |
|  | TRANS-1,2-DICHLOROPROPENE | 13 | 0 |  |  |  |  | 0.32 | 0.88 |
|  | TRIBOMOMETHANE | 13 | 0 |  |  |  |  | 0.41 | 1.2 |
|  | TRICHLOROETHYLENE | 13 | 0 |  |  |  |  | 0.42 | 1.2 |
|  | VINYL CHLORIDE | 13 | 0 |  |  |  |  | 0.25 | 0.7 |

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Table 7. Sediment Sample Summary
Koppers Inc. Site, Gainesville, FL

| Lab Method | Compound | Number of Samples | Number of Detects | Minimum Detection | Maximum Detection | Units | Location of Maximum Detection | Minimum Reporting Limit | Maximum Reporting Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SVOC | 2,4,5-TRICHLOROPHENOL | 13 | 0 |  |  |  |  | 14 | 310 |
|  | 2,4,6-TRICHLOROPHENOL | 13 | 0 |  |  |  |  | 38 | 860 |
|  | 2,4-DICHLOROPHENOL | 13 | 0 |  |  |  |  | 18 | 410 |
|  | 2,4-DIMETHYLPHENOL | 13 | 0 |  |  |  |  | 20 | 460 |
|  | 2,4-DINITROPHENOL | 13 | 0 |  |  |  |  | 13 | 290 |
|  | 2,4-DINITROTOLUENE | 13 | 0 |  |  |  |  | 11 | 240 |
|  | 2,6-DINITROTOLUENE | 13 | 0 |  |  |  |  | 38 | 860 |
|  | 2-CHLORONAPHTHALENE | 13 | 0 |  |  |  |  | 17 | 390 |
|  | 2-CHLOROPHENOL | 13 | 0 |  |  |  |  | 19 | 430 |
|  | 2-METHYLPHENOL (O-CRESOL) | 13 | 0 |  |  |  |  | 13 | 290 |
|  | 2-NITROANILINE | 13 | 0 |  |  |  |  | 23 | 530 |
|  | 2-NITROPHENOL | 13 | 0 |  |  |  |  | 15 | 340 |
|  | 3,3'-DICHLOROBENZIDINE | 13 | 0 |  |  |  |  | 36 | 810 |
|  | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | 13 | 0 |  |  |  |  | 14 | 310 |
|  | 3-NITROANILINE | 13 | 0 |  |  |  |  | 18 | 410 |
|  | 4,6-DINITRO-2-METHYLPHENOL | 13 | 0 |  |  |  |  | 9.8 | 230 |
|  | 4-BROMOPHENYL PHENYL ETHER | 13 | 0 |  |  |  |  | 11 | 240 |
|  | 4-CHLORO-3-METHYLPHENOL | 13 | 0 |  |  |  |  | 17 | 390 |
|  | 4-CHLOROPHENYL PHENYL ETHER | 13 | 0 |  |  |  |  | 23 | 530 |
|  | 4-METHYLPHENOL (M/P-CRESOL) | 13 | 0 |  |  |  |  | 28 | 620 |
|  | 4-NITROPHENOL | 13 | 0 |  |  |  |  | 18 | 410 |
|  | BENZYL BUTYL PHTHALATE | 13 | 4 | 57 | 570 | ug/kg | SD002AA | 19 | 430 |
|  | BIPHENYL | 13 | 0 |  |  |  |  | 160 | 3600 |
|  | BIS(2-CHLORETHOXY)METHANE | 13 | 0 |  |  |  |  | 18 | 410 |
|  | BIS(2-CHLOROETHYL)ETHER | 13 | 0 |  |  |  |  | 16 | 360 |
|  | BIS(2-CHLOROISOPROPYL) ETHER | 13 | 0 |  |  |  |  | 22 | 500 |
|  | BIS(2-ETHYLHEXYL)PHTHALATE | 13 | 9 | 50 | 2800 | ug/kg | SD003AA | 17 | 390 |
|  | CARBAZOLE | 13 | 13 | 48 | 1100 | ug/kg | SD002AA | 17 | 390 |
|  | DIBENZOFURAN | 13 | 10 | 16 | 280 | ug/kg | SD004BA | 14 | 310 |
|  | DIBENZOFURAN | 13 | 10 | 16 | 280 | ug/kg | SD005AA | 14 | 310 |
|  | DIETHYL PHTHALATE | 13 | 0 |  |  |  |  | 13 | 290 |
|  | DIMETHYL PHTHALATE | 13 | 0 |  |  |  |  | 11 | 240 |
|  | DI-N-BUTYL-PHTHALATE | 13 | 1 | 570 | 570 | ug/kg | SD002AA | 64 | 1500 |
|  | DI-N-OCTYL-PHTHALATE | 13 | 0 |  |  |  |  | 16 | 360 |
|  | HEXACHLORO-1,3-BUTADIENE | 13 | 0 |  |  |  |  | 18 | 410 |
|  | HEXACHLOROBENZENE | 13 | 0 |  |  |  |  | 8.7 | 200 |
|  | HEXACHLOROCYCLOPENTADIENE | 13 | 0 |  |  |  |  | 12 | 270 |
|  | HEXACHLOROETHANE | 13 | 0 |  |  |  |  | 18 | 410 |
|  | NITROBENZENE | 13 | 0 |  |  |  |  | 21 | 480 |
|  | N-NITROSO-DI-N-PROPYLAMINE | 13 | 0 |  |  |  |  | 19 | 430 |
|  | N-NITROSODIPHENYLAMINE | 13 | 0 |  |  |  |  | 12 | 270 |
|  | P-CHLOROANILINE | 13 | 0 |  |  |  |  | 28 | 620 |
|  | PHENOL | 13 | 0 |  |  |  |  | 17 | 390 |
|  | P-NITROANILINE | 13 | 0 |  |  |  |  | 13 | 290 |
| TOC | TOTAL ORGANIC CARBON | 13 | 13 | 910 | 12000 | mg/kg | SD003AA | 35 | 35 |
| $\begin{aligned} & \text { SVOC }=\text { semivolatile organic compound } \\ & \text { VOC }=\text { volatile organic compound } \\ & \mathrm{TOC}=\text { total organic carbon } \\ & \mathrm{mg} / \mathrm{kg}=\text { miligram per kilogram } \\ & \mathrm{ug} / \mathrm{kg}=\text { microgram per kilogram } \\ & \mathrm{ng} / \mathrm{kg}=\text { nanogram per kilogram } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |

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Table 8. Sediment Results

## Koppers Inc. Site, Gainesville, FL

| Sample | Sample Depth (ft.) | Total PAH Concentration | Units | PENTACHLOROPHENOL Concentration Units |  |  | ARSENIC <br> Concentration Units |  | BAPTEQ <br> Concentration Units |  |  | Dioxin TEQ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SD001AA | 0-0.5 | 38486.5 J | ug/kg | 110 | J | ug/kg | 2.1 | $\mathrm{mg} / \mathrm{kg}$ | 5449.6 J | J | ug/kg | 59.07 J | ng/kg |
| SD001AB | 0-0.5 | 60415.5 J | ug/kg | 83 | U | ug/kg | 1.7 | $\mathrm{mg} / \mathrm{kg}$ | 8245.6 J | J | ug/kg | 53.68 J | $\mathrm{ng} / \mathrm{kg}$ |
| SD002AA | 0-0.5 | 124049 J | ug/kg | 380 | J | ug/kg | 13 | $\mathrm{mg} / \mathrm{kg}$ | 18682 |  | ug/kg | 162.25 J | ng/kg |
| SD003AA | 0-0.5 | 84550 J | ug/kg | 820 | J | ug/kg | 160 | $\mathrm{mg} / \mathrm{kg}$ | 13028.6 |  | ug/kg | 752.03 J | ng/kg |
| SD004AA | 0-0.5 | 3758.6 J | ug/kg | 140 | J | ug/kg | 22 | $\mathrm{mg} / \mathrm{kg}$ | 548.33 |  | ug/kg | 292.98 J | $n g / k g$ |
| SD004BA | 0.5-2 | 60289.5 J | ug/kg | 1800 | J | ug/kg | 270 | $\mathrm{mg} / \mathrm{kg}$ | 8662 |  | ug/kg | 4601.57 J | ng/kg |
| SD005AA | 0-0.5 | 40828.5 J | ug/kg | 960 | J | ug/kg | 390 | mg/kg | 5758.2 |  | ug/kg | 1686.58 J | $\mathrm{ng} / \mathrm{kg}$ |
| SD006AA | 0-0.5 | 29212.5 J | ug/kg | 1400 | J | ug/kg | 280 | $\mathrm{mg} / \mathrm{kg}$ | 3661.6 J | J | ug/kg | 2890.91 J | $\mathrm{ng} / \mathrm{kg}$ |
| SD006AC | 0-0.5 | 35692.5 J | ug/kg | 1800 | J | ug/kg | 210 | $\mathrm{mg} / \mathrm{kg}$ | 4983.7 J | J | ug/kg | 2523.69 J | ng/kg |
| SD006BA | 0.5-2 | 7164.8 J | ug/kg | 200 | J | ug/kg | 52 | $\mathrm{mg} / \mathrm{kg}$ | 1030.28 J | J | ug/kg | 378.91 J | ng/kg |
| SD007AA | 0-0.5 | 37599.5 J | ug/kg | 1000 | J | ug/kg | 120 | $\mathrm{mg} / \mathrm{kg}$ | 5484 J | J | ug/kg | 513.56 J | ng/kg |
| SD008AA | 0-0.5 | 32717.5 J | ug/kg | 950 | J | ug/kg | 18 | $\mathrm{mg} / \mathrm{kg}$ | 4169 J | J | ug/kg | 501.02 J | $\mathrm{ng} / \mathrm{kg}$ |
| SD009AA | 0-0.5 | 48611 J | ug/kg | 1300 | J | ug/kg | 31 | mg/kg | 6790.5 J |  | ug/kg | 1474.06 J | ng/kg |

Notes:
$\begin{array}{ll}\mathrm{mg} / \mathrm{kg}: \text { miligrams per kilogram } & \mathrm{U}=\text { non-detect } \\ \mathrm{ng} / \mathrm{kg}: \text { nanograms per kilogram } & \mathrm{J}=\text { estimated detect }\end{array}$
ug/kg: micrograms per kilogram
Dioxin TEQ values in italics are new results from Vista laboratory

## Appendix A

## Revised Data Summary

|  |  |  | $\begin{gathered} \text { SD001 } \\ \text { SDOOAA } \\ \text { o.0.0.feet } \\ 1212 / 2006 \end{gathered}$ | $\begin{array}{\|c} \text { SD001 } \\ \text { SD001AB } \\ 0-0.5 \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SD002 } \\ \text { SD002AA } \\ \text { 0-0.5 feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SD003 } \\ \text { SDOO3AA } \\ 0-0.5 \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SD004 } \\ \text { SD004AA } \\ 0-0.5 \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SDOO5 } \\ \text { SDOO5AA } \\ 0-0.5 \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | SD006 <br> SD006AA 12/12/2006 | $\begin{array}{\|c\|c} \hline \text { SD006 } \\ \text { SD006AC } \\ 0-0.5 / \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c} \text { SD007 } \\ \text { SD007AA } \\ 0-0.5 \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SD008 } \\ \text { SD008AA } \\ 0-0.5 \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c} \text { SDO09 } \\ \text { SD009AA } \\ 0-0.5 \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{array}$ | $\begin{gathered} \text { SSO01 } \\ \text { SSO01AA } \\ 0-0.2 \text { feet } \\ 12.107 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSOO2 } \\ \text { SsoonA } \\ 0.0 .25+e t \\ 12105 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO02 } \\ \text { SSOO2AC } \\ 0-0.25 \text { feet } \\ 12.05 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO003 } \\ \text { SSO03AA } \\ 0-0.25 \text { feet } \\ 12 / 108 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS004 } \\ \text { SSOO4AA } \\ 0-0.25 \text { feet } \\ 12 / 105 / 2000 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO005 } \\ \text { SSOO5AA } \\ 0-0.25 \text { feet } \\ 12 / 108 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSOO6 } \\ \text { Ssoocta } \\ 0.0 .25+e t \\ 121 / 5 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO07 } \\ \text { SSOOPAA } \\ 0.0 .2 \text { feet } \\ 112 / 04 / 2006 \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BNASIM | 2-METHYLNAPHTHALENE | ugkg | ${ }^{190 \mathrm{UJ}}$ | ${ }^{180 \mathrm{UJ}}$ | ${ }^{290 \mathrm{UJ}}$ | ${ }^{360 \mathrm{UJ}}$ | 19 UJ | ${ }^{110 \mathrm{U}}$ | ${ }_{110 \mathrm{U}}^{10}$ | ${ }_{110 \mathrm{U}}^{110}$ | 85 U | 790 | 82 U | 17 U | ${ }^{42 \mathrm{~J}}$ | ${ }^{44 \mathrm{~J}}$ | 18 U | 76 J | ${ }^{30 \mathrm{~J}}$ | 99 | 21 U |
| BNASIM | ACENAPHTHENE | ugkg | 330 OJ | ${ }^{320} \mathrm{UJ}$ | ${ }^{520 \mathrm{OJ}}$ | ${ }^{650 \mathrm{OJ}}$ | 33 U | 200 UJ | 190 U | 190 U | 160 O | 150 U | 150 U | 30 U | 60 U | 60 U | 33 U | 70 U | 30 U | 64 J | 37 U |
| ENASIM | ${ }_{\text {A }}^{\text {ACENAPHTHYLENE }}$ |  | $\frac{3200}{460}$ | ${ }^{3100} \mathrm{~J}$ | $\frac{500 \cup}{1100}$ | ${ }^{800} 1700$ | 110 <br> 170 | $\frac{1500}{2400}$ | 1100 | ${ }^{1300}$ | $\stackrel{1200}{2300}$ | 8160 | $\stackrel{1400}{2300}$ | ${ }_{1} 94$ | 350 780 | ${ }_{860}^{370}$ | 360 300 | 760 | 330 370 | ${ }_{1800}$ | ${ }_{180}^{58 \mathrm{~J}}$ |
| ENASIM | BENZO(A)ANTHRACENE | ugkg | 2700 J | 4500 J | 7700 | 4000 | 180 | 2200 | 1600 | 1900 | 2100 | 2400 | 4000 | 890 | 680 | 710 | 180 | 730 | 710 | 1000 | 84 J |
| ENASIM | BENZO(A)PYRENE | ugkg | 3500 J | 5300 J | 12000 | 8300 | 320 | 3300 | 2100 | 2800 | 3200 | 2500 | 4200 | 770 | 1000 | 1100 | 310 | 1200 | 690 | 1300 | 98 J |
| BNASIM | BENZO(B) FLUORANTHENE | ugkg | 5200 J | ${ }^{7800} \mathrm{~J}$ | 17000 | 13000 | 620 | 7600 | ${ }^{44000 ~}$ | ${ }^{65000}$ | ${ }^{71000} \mathrm{~J}$ | ${ }^{50000}$ | 7300 J | 1000 | 1800 | 1900 | 470 | 1900 | 1400 | 2500 | 190 J |
| BNASIM | BENZOO(G,H,I)PERYLENE | ugkg | $\stackrel{2500 \mathrm{~J}}{2600}$ | 3600 J <br> 6000 | $\stackrel{11000}{1000}$ | 8200 | 360 300 | $\begin{array}{r}3300 \\ 350 \\ \hline\end{array}$ | 2700 | 3300 3100 | 3600 310 | 2200 | 3300 | 430 | 730 | 770 | 600 <br> 360 | 1200 | $\begin{array}{r}750 \\ 880 \\ \hline 8\end{array}$ | 1800 | 92 J |
| ENASIM | BENZO(K)FLUORANTHENE | ugkg | 2600 J | 4000 J | 10000 | 6100 | 300 | 3500 | 2900 | 3100 | 3100 | 2600 | 3600 | 920 | 1300 | 1400 | 360 | 1500 | 810 | 1600 | 160 J |
| BNASIM | CHRYSENE | ugkg | 3600 J | ${ }_{5600 \mathrm{~J}}^{1300}$ | 12000 | 7600 | 330 | 3200 | 2600 | $\stackrel{2700}{ }$ | 3000 | 3000 | 4500 | 1200 | 1000 | 1100 | ${ }^{240}$ | 900 | 900 | 1300 | ${ }^{140 \mathrm{~J}}$ |
| BNASIM | DiBENZO(A,H)ANTHRACENE | ugkg | 880 J | ${ }^{1300 \mathrm{~J}}$ | 3100 | 2200 | ${ }^{110}$ | 1100 | 710 J | ${ }^{10000}$ | 1000 | 690 | 1100 | 150 | 230 | 250 | 110 | 310 | 210 | 490 | 23) |
| BNASIM | FLUORANTHENE | ugkg | 6000 J | 9900 J | 17000 | 11000 | 350 | 3600 | 2700 | 3000 | 3000 | 4100 | 6200 | 1100 | 700 | 730 |  | 1100 | 1000 | 1700 | 140 J |
| BNASIM | FLUORENE | ugkg | 190 U | ${ }^{180 \mathrm{U}}$ | $\stackrel{2900}{ }$ | $\begin{array}{r}3600 \\ \hline 7500\end{array}$ | 19 U | $\frac{1100}{300}$ | $\stackrel{110 \mathrm{U}}{2001}$ | $\stackrel{110 \mathrm{U}}{31001}$ | 850 3300 | 790 | 82 U | 17 U | 33 U | 34 U | ${ }^{22} 3$ | 55 J | 27 J | 74 | 210 |
| ENASIM | (NDENO(1,2,3-CD) PYRENE | ${ }_{\text {ugkg }}$ | $\frac{2500 \mathrm{~J}}{63}$ | 3700 J <br> 6101 | ${ }_{98}^{1000}$ | ${ }^{7600}$ | ${ }^{350}$ | 3400 370 | ${ }_{35}^{2200 \mathrm{~J}}$ | 3100 J <br> 35 U | ${ }^{3300}$ | ${ }_{27}^{2100}$ | ${ }^{3200}$ | ${ }_{5}^{530}$ | 960 70 J | 1000 | ${ }^{48} \mathrm{~J}$ | ${ }^{1490}$ | 45 | ${ }^{2100}$ | $\stackrel{100 \mathrm{~J}}{30}$ |
| ENASIM | PENTACHLOROPHENOL | ugkg | 110 J | 83 U | 380 J | ${ }_{820}$ | 140 J | 960 J | 1400 J | 1800 J | 1000 J | 950 J | 1300 J | 120 J | 150 J | 170 J | ${ }_{150}$ | 56 J | 190 J | 480 J | 150 J |
| BNASIM | PHENANTHRENE | ugkg | 2500 J | 4400 J | 6300 | 3300 | 110 | 1100 | 680 | 770 | 620 | 850 | 640 | 200 | 140 J | 150 J | 59 J | 230 | 190 | 560 | 51 J |
| ENASIM | PYRENE | ugkg | 5500 J | 9100 J | 16000 | 10000 | 410 | 4400 | 3500 | 3900 | 3900 | 4700 | 6700 | 1000 | 1100 | 1100 | 280 | 1100 | 1500 | 1600 | 160 J |
| E160.3 | RESIDUE, TOTAL | percent | 82 | 85 | 52 | 42 | 83 | 70 | 73 | 75 | 89 | 96 | 92 | 92 | 91 | 90 | 84 | 78 | 91 | 94 | 74 |
| E1613/1668 | 1,2,3,4,4,6,7,8-HEPTACHLORODIBENZOFURAN | ngkg | 471.503 | ${ }^{299.355}$ | 1218.161 | 3980.893 | 1720 J | 7188.255 J | 12890.735 | 12368.641 | 2241.287 | 2269.698 | 6956.399 | 95.769 | 552 | 516 | ${ }^{865.786}$ |  | ${ }^{1007.751}$ | 4940 | 1382.001 |
| E1613/16688 | 1,2,3,4,6,7,8,-HEPTACHLORODIBENZO-P-DIOXIN | ngkg | 2167.649 J | 2332.96 J | 4790.201 J | 29952.762 | 12100 | 61111.156 J | 113521.121 | ${ }^{118482.361}$ | 22430.718 | ${ }^{22573.616}$ | 68762.65 | 746.826 | 5550 | 5330 | 10366.933 |  | ${ }^{7883.233}$ | ${ }^{37100}$ | 11911.19 |
| E1613/E1668 | 1, 1, 3, 4, ,7,8,9.HEPTACHLORODIBENZOFURAN |  | $\frac{27.425}{15295}$ | ${ }^{19.036}$ | $\frac{87.091}{3132}$ | 261.249 <br> 108799 | 101 | 666.384 <br> 307713 | 781.058 <br> 337888 | $\frac{831.528}{38101}$ | $\frac{1499.562}{68959}$ | 154.4 <br> 63276 | 505.843 <br> 027618 | 6.065 <br> 2.742 | -33.3 | 32 | 51.434 <br> 1375 |  | 66.966 <br> 2805 | 295 122 | 84.49 <br> 67726 |
| E1613/1668 |  | ngkg | -15.295 | ${ }^{7.976}$ | 31.32 <br> 1025 | 108.799 <br> 2497 | 41.7 | 307.713 <br> 77709 | ${ }^{3377.888}$ | ${ }^{381.01}$ | 68.959 <br> 17268 | 63.276 <br> 11277 | 207.618 <br> 220319 | ${ }^{2.742 \mathrm{~J}}$ | 11.2 | 10.5 | 13.745 <br> 3.265 |  | 28.905 | 122 |  |
| E1613/16168 | 1,2,3,4,7,8,-HEXACHLORODIBENZO-P-DIOXIN | ngkg | ${ }^{15.867}$ | 17.049 | 61.845 | $\stackrel{248.847}{ }$ | 116 | 778.099 | 627.983 | ${ }^{897.005}$ | 172.688 | 118.777 | 320.319 | 6.18 | 26 | 25.5 | ${ }^{37}$ |  | 74.532 | 366 | 81.23 |
| E1613/1668 | 1,2,3,3,7,8,8.HEXACHLORODIBENZOFURAN | ngkg | 10.203 | 6.714 | 30.804 | 90.76 | 35.4 | 272.193 | 272.906 | 308.254 | ${ }^{53.229}$ | 43.811 | 145.837 | 2.384 J | 6.97 | 5.93 | 6.566 |  | 27.546 | 103 | 34.0 |
| E1613/1668 |  | ngkg | 70.005 <br> 1091 | ${ }_{\text {57.074 }}$ | ${ }^{228.064}$ | 873.988 <br> 5097 | 344 | ${ }^{2296.117}$ | ${ }^{2916.046}$ | ${ }^{2744.239}$ | 478.148 <br> 3534 | 515.033 | ${ }^{1603.032}$ | ${ }^{166.72}$ | $\begin{array}{r}94.7 \\ \hline 29\end{array}$ | -96.2 | ${ }^{164.232}$ |  | ${ }^{1966.911}$ | ${ }_{211}$ | ${ }^{253.986}$ |
| E1613/1668 | 1,2,3,7,8,9,-HEXACHLORODIBENZO-P-DIOXIN | ngkg | ${ }^{17.582}$ | 40.95 | ${ }_{1}^{131.244}$ | ${ }_{568.666}$ | 203 | ${ }_{1878.327}$ | ${ }^{215151.293}$ | ${ }^{2164.638}$ | ${ }^{460.401}$ | ${ }_{357.236}$ | 894.758 | ${ }^{15.977}$ | 44.3 | 41.9 | ${ }^{159.479}$ |  | ${ }_{103.5555}$ | 34 | $\stackrel{1.263}{ }$ |
| E1613/E1668 | 1,2,3,7, 8-PENTACHLORODIBENZOFURAN | ngkg | ${ }^{2.8983}$ | ${ }^{1.039 ~ J}$ | ${ }^{4.384 \mathrm{~J}}$ | 11.247 J | 4.02 | 39.841 | 34.773 | 38.232 | 5.732 | ${ }^{6.668}$ | ${ }^{25.513}$ | ${ }^{0.312 \mathrm{~J}}$ | ${ }^{925} \mathrm{~J}$ | . 82 J | 0.525 U |  | 2.258 J | 9.44 | ${ }^{3.924 \mathrm{~J}}$ |
| E1613151668 | 1,2,3,7,8-PENTACHLOROODBENZOO-P-DIOXIN | ngkg | ${ }^{5.735 \mathrm{~J}}$ | 5.908 | ${ }^{23.991}$ | ${ }^{188.148}$ | 31.4 | 262.116 | ${ }^{275.06}$ | ${ }^{297.866}$ | ${ }^{45.834}$ | ${ }^{40.088}$ | ${ }^{110.689}$ | ${ }^{2.012 \mathrm{~J}}$ | 8.01 | 7.92 | 5.989 J |  | ${ }^{23.769}$ | 119 | 29.11 |
| E1613/E1668 |  | $\frac{\text { ngikg }}{\text { nokg }}$ | 6.707 <br> 6.107 | 7.043 <br> 102 J | 34.855 <br> 6.034 | 69.596 <br> 17717 | 70.7 | -226.209 | $\begin{array}{r}209.471 \\ \hline 5.499\end{array}$ | 402.492 | ${ }_{\text {¢ }} 76.552$ | 64 | ${ }^{121.49}$ | ${ }^{1.688}{ }^{\text {J }}$ | 11.6 | 10.8 | ${ }^{8.1743} \mathrm{~J}$ |  | ${ }^{23.235}$ | 194 | ${ }^{19.484}$ |
| E1613161668 |  | $\underbrace{\substack{\text { ngkg } \\ \text { ngkg }}}_{\text {ng }}$ | ${ }^{2.16129 \mathrm{~J}}$ | ${ }_{0}^{1.202 \mathrm{~J}}$ | ${ }_{\text {¢ }}^{6.034 \mathrm{~J}}$ | ${ }^{17.717} 9$ | $\frac{11.7}{2.5}$ | 59.613 <br> 36.63 | ¢ ${ }_{\text {53.499 }}$ | $\stackrel{60.601}{28.68}$ | ${ }^{9.3688}$ | ${ }_{1}^{6.802 \mathrm{U}}$ | $\frac{26.123}{5.843}$ | ${ }_{0}^{0.8685}$ | ${ }_{1.3}^{2.76}$ | $\stackrel{2.65}{1.35}$ | ${ }_{0}^{0.7439 \mathrm{U}}$ |  | ${ }^{3.2672 \mathrm{~J}}$ | 37.4 2.23 | ${ }^{7.5993}$ |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | kg | 0.971 J | 0.489 U | 2.096 | 7.099 | 2.28 | 20.378 | 18.272 | 20.158 | 3.117 | 1.934 | 5.994 | 0.198 U | 1.08 | 1.11 | 0.394 J |  | 1.096 J | 6.43 | 2.089 |
| E1613/16168 | OCTACHLORODIBENZOFURAN | ngkg | 2259.883 | 1547.207 | ${ }^{7043.425}$ | 25420.239 | 7070 | 25200.628 J | 28977.468 | 43067.986 J | 17032.908 | 16981.36 | 54657.892 | 458.957 | 3210 | 3070 | 5567.71 |  | 4225.438 | 19800 | 6975.365 |
| E1613/11668 | OCTACHLORODIBENZO.-P.DIOXIN | Rgkg | 27861.099 J | 21217.949 J | 63809.89 J | 347508.633 J | 107000 | 358022.507 J | 2048970.2 J | 543262.568 J | 55252.911 ${ }^{\text {J }}$ | 83836.084 J | 98634.635 J | 6956.787 J | 53000 | 51900 | ${ }^{87059.257 J}$ |  | 54339.63 J | 350000 | ${ }_{93948.363 \mathrm{~J}}$ |
| E16131/1668 | TOTAL HEPTACHLLORINATED DIBENZOFURANS | ngkg | ${ }^{21599.886}$ | ${ }_{\text {1277.101 }}^{1251}$ | ${ }^{4984.087}$ | ${ }^{1772992.235}$ | ${ }^{6250 \mathrm{~J}}$ | ${ }^{321880.258}$ | ${ }^{38893.095}$ | ${ }^{131299.932}$ | ${ }^{9718.995}$ | 9701.59 | ${ }^{225959.791}$ | ${ }^{372.964}$ | $\stackrel{2480}{23700}$ | ${ }^{2320}$ | ${ }^{4013.522}$ |  | ${ }^{36878.805}$ | ${ }^{193000}$ | 5565.629 |
| E1613/161688 | OTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | ngkg | ${ }^{15028.326}$ | ${ }^{95122.174}$ | ${ }^{23119.193}$ | ${ }^{89041.647}$ | ${ }^{38000}$ | 86441.89 | ${ }^{975471.885}$ | ${ }^{1292393908}$ | ${ }^{38674.621}$ | ${ }^{42952.016}$ | 62649.412 | 3274.27 | 3370 | 33800 | ${ }^{36959.214}$ |  | ${ }^{255666.216}$ | ${ }^{199900}$ | ${ }^{39697.859}$ |
| E16131E1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | ngkg | 631.498 | ${ }^{327.093}$ | 1299.486 | 4769.573 | 1780 J | ${ }^{1151212312}$ | 7476.872 | ${ }^{8199.636}$ | 1484.704 | ${ }^{2521.661}$ | ${ }^{39888.053}$ | 105.913 | 432 | 390 J | ${ }^{619.97}$ |  | ${ }^{10264.355}$ | ${ }^{4860} \mathrm{~J}$ | ${ }^{1789.126}$ |
| E16133/151688 |  | ${ }_{\text {ngikg }}$ | ${ }^{962.766}$ | 819.129 63.436 | 2580.304 <br> 266.335 | ${ }_{88801.578}^{88}$ | ${ }_{3260}^{4200}$ | ${ }^{28829.7116}$ 22159 | ${ }_{21059.855}^{2999}$ | ${ }_{231893.174}$ | 5752.868 418.301 | 5648.478 340.116 | ${ }^{14433.554} 1056.643$ | $\frac{281.288}{43.76}$ | 2310 | $\stackrel{2250}{56.3 J}$ | 3196.06 <br> 49.764 |  | ${ }^{2543,798} 163.551$ | ${ }_{\text {16100 }}^{1673}$ |  |
| E1613/161688 | TOTAL PENTACHLORIINATED DIBENZO-P.-DIOXINS | nglkg | 58.86 | 71.137 | 243.471 | ${ }^{779.834}$ | 253 | 2050.443 | 2012.418 | 2126.308 | 372.893 | ${ }^{295.654}$ | 765.171 | 26.007 | 105 | 103 | 149.454 |  | ${ }_{2} 215.062$ | 859 | 212.696 |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg | 15.456 | 12.677 | ${ }^{60.757}$ | 189.161 | 45.1 | ${ }^{423.346}$ | ${ }^{351.82}$ | 337.857 | ${ }^{61.331}$ | ${ }^{45.955}$ | ${ }^{132.492}$ | ${ }^{21.049}$ | 24.8 | 24.6 | 6.932 |  | ${ }^{27.493}$ | 110 J | 24.10 |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | ngkg | 9.214 | ${ }^{5.934}$ | 29.991 | ${ }^{46.249}$ | 30.4 | 183.054 | 143.364 | 152.94 | 25.415 | 20.132 | ${ }^{49.024}$ | ${ }^{8.239}$ | 19 | 21.2 | 2.768 |  | ${ }^{12.796}$ | 66.9 | 13.002 |
| SW6020 | Antimony | mgkg | ${ }^{0.43 \mathrm{~J}}$ | 0.38 UJ | 1.43 | 8.6 J | 0.49J | 4.75 | 4.2 J | 3.6 J | 2.05 | 0.35 UJ | ${ }^{0.53 \mathrm{~J}}$ | ${ }^{0.46 \mathrm{~J}}$ | 0.37 UJ | 0.39 J | 0.39 UJ | 43 UJ | ${ }^{0.344}$ | 0.36 UJ | 0.45 UJ |
| SW6020 | ARSENIC | mgkg | 2.1 | 1.7 | 13 | 160 | 22 | 390 | 280 | 210 | 120 | 18 | ${ }^{31}$ | ${ }^{20}$ | 4.15 | 5.9 J | 6.0 J | 5.8 | 5.0 J | 17 | 4.2 |
| SW6020 | BARIUM | mgkg | 110 | ${ }^{8.17}$ | 46 | 82 | 35 | 74 | 51 | 39 | 23 | 6.5 | ${ }^{13}$ | 13 | 11 J | 15 J | 42 | 30 | 16 | 18 | 6.5 E |
| SW6020 | CAROMIUM | $\frac{\mathrm{malkg}}{\text { malkg }}$ | $\frac{0.42 \mathrm{~J}}{9}$ | $\frac{0.32 \mathrm{U}}{8.5}$ | $\frac{1.7}{56}$ | $\frac{3.1}{500}$ | $\frac{0.32 \mathrm{U}}{57}$ | $\frac{1.1}{570 \mathrm{~J}}$ | 0.81 450 J | 0.63 340 J | $\frac{0.35 \mathrm{~J}}{220 \mathrm{~J}}$ | $\frac{0.30 \mathrm{U}}{22 \mathrm{~J}}$ | ${ }_{0}^{0.29 \mathrm{U}}$ | ${ }_{0}^{0.29 \mathrm{U}}$ | $\frac{0.32 \mathrm{U}}{4.5 \mathrm{~J}}$ | $\frac{0.32 \mathrm{U}}{6.7 \mathrm{~J}}$ | $\frac{0.34 \mathrm{U}}{13 \mathrm{~J}}$ | ${ }_{0}^{0.37 \mathrm{U}}$ | $\frac{0.29 \mathrm{U}}{11 \mathrm{~J}}$ | $\frac{0.31 \mathrm{U}}{20}$ | $\frac{0.39 \mathrm{U}}{81}$ |
| SW6020 | COPPER | mgkg | 18 | 16 | 64 | 260 | 32 | 310 | 240 | 180 | 120 | 14 | 26 | 6.8 | 5.15 | 7.3 J | 9.15 | 11 | 6.7 J | 18 | 5 |
| SW6020 | LEAD | mgkg | 62 J | 170 J | 280 | 430 | 42 | 75 | 59 | 51 | 41 | 6.5 | 12 | 35 J | 18 J | 25 J | 6.9 J | 14 | 14 J | 16 | 3.7 |
| SW6020 | SELENIUM | mgkg | 1.00 | 0.93 U | 1.5 U | 3.1 | 0.93 U | 1.9 | 1.10 | 1.10 | 0.93 U | 0.87 U | ${ }^{0.85 \mathrm{U}}$ | 0.85 U | 0.92 U | 0.92 U | 0.97 U | 1.10 | 0.85 U | 0.89 U | 1.14 |
| SW6020 | SILVER | mglkg | 0.46 U | 0.44 U | 0.72 U | 0.87 U | ${ }^{0.44 \mathrm{U}}$ | ${ }^{1.53 U}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.48 \mathrm{U}}$ | 0.42 U | 0.39 U | 0.38 U | 0.39 U | 0.41 U | 0.42 U | 0.44 U | ${ }^{148} \mathrm{U}^{14}$ | 0.38 U | 0.40 U | ${ }^{12.514}$ |
| SW6020 | VANADIUM (FUME OR DUST) | mglkg | 6.43 | 4.15 | 20 | 28 | 12 | 16 J | 13 J | 8.6) | 5.45 | 1.30 | 2.71 | 4.2 | 1.61 | 2.33 | 18 | 7.5 | 5.6 | 3.9 | 15 |
| SW7471 | MERCURY | mgkg | 0.032 | 0.026 J | 0.14 | 0.50 | 0.18 | 1.6 | 1.45 | 0.30 J | 0.70 | 0.087 | 0.16 | 0.12 | 0.41 | 0.32 | 0.039 J | 0.20 | ${ }^{0.066 \mathrm{~J}}$ | 0.095 | ${ }^{0.043}$ |
| SW8260 | 1,1,1-TRRCHLOROETHANE | ugkg | $0.15{ }^{0}$ | ${ }^{0.150}$ | ${ }^{0.350 ~}$ | $\stackrel{0.340}{ }$ | ${ }_{0}^{0.150}$ | $\stackrel{0.25 U}{0.24}$ | $\stackrel{0.210}{012}$ | 0.20 |  | ${ }_{0}^{0.13 \mathrm{U}}$ | $0.14{ }^{0}$ | ${ }^{0.144}$ | $0.15{ }^{0}$ | $0.15{ }^{0}$ | ${ }^{0.150}$ | 0.24 U | ${ }^{0.144}$ | 0.13 U | ${ }^{0.284}$ |
| SW8260 | -1,1,2.2-IETRACHLOROETHANE |  | 0.0810 | 0.083 | -0.20 | ${ }_{0}^{0.190}$ | 0.080 U | O.140 | 0.12 U 0.231 | ${ }^{0.11 \mathrm{U}}$ | -0.075 | 0.069U | 0.076U | 0.072 U | 0.080 U | $0.079{ }^{0}$ | 0 | 0.13U | 0.073 U | 0.071U | 0.15U |
| SW8260 |  |  | $\stackrel{0.160}{0.077}$ | $\stackrel{0.170}{0.079}$ | 0.38 ${ }^{0.190}$ | 0.37U | 0.16U | $\stackrel{0.270}{0.13}$ | $\stackrel{0.23 \mathrm{U}}{0.11 \mathrm{u}}$ | $\frac{0.210}{0.11 \mathrm{u}}$ | $\stackrel{0.15 \mathrm{U}}{0.072 \mathrm{U}}$ | ${ }_{0}^{0.14060}$ | $\stackrel{0.150}{0.073 \mathrm{U}}$ | $\stackrel{0.150}{0.069}$ | $\stackrel{0.167}{0.077}$ | $\stackrel{0.160}{0.075}$ | $\stackrel{0.160}{0.076 \mathrm{U}}$ | 0.25 U 0.13 u | $\stackrel{0.159}{0.069}$ | $\stackrel{0.14 \mathrm{U}}{0.068 \mathrm{U}}$ | O.300 |
| SW8260 | 1,1.-ICHLOROETHYLENE | ugkg | 0.21 U | 0.22 U | 0.50 U | 0.48 U | 0.21 U | 0.35 U | 0.30 U | 0.28 U | 0.20 U | 0.18 U | 0.20 U | 0.19 U | 0.21 U | 0.21 U | 0.21 U | 0.33 U | 0.19 U | 0.19 U | 0.39 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugkg | $0.19{ }^{0}$ | 0.19 UJ | 0.44 UJ | 0.43 UJ | 0.190 | 0.31 UJ | 0.26 UJ | 0.24 R | 0.18 UJ | 0.16 UJ | 0.18 U | $0.17{ }^{0}$ | 0.19 UJ | 0.18 UJ | 0.18 U | 0.29 | $0.17{ }^{0}$ | $0.17{ }^{\text {U }}$ | 0.34 U |
| SW8260 | 1, 12-DIBROMO-3-CHLOROPROPANE (DBCP) | $\underbrace{\substack{u g k g \\ \text { ugkg }}}_{\text {ug }}$ | 0.60 U 0.069 U | $\frac{0.61 \mathrm{UJ}}{0.070 \mathrm{U}}$ | $\frac{1.5 \mathrm{UJ}}{0.17 \mathrm{U}}$ | $\frac{1.4 \mathrm{UJ}}{0.16 \mathrm{U}}$ | ${ }_{0}^{0.6068}$ | ${ }_{0}^{0.99 \mathrm{UJ}}$ | 0.84UJ | 0.79 R 0.090 U | 0.56 UJ | 0.51 UJ 0.059 U | 0.57 U 0.065 U | 0.54 U 0.061 U | ${ }_{0}^{0.600 \mathrm{uJ}} 0$ | ${ }_{0}^{0.59 \mathrm{UJ}} 0$ | $\stackrel{0.59 \mathrm{U}}{0.067 \mathrm{U}}$ | $\frac{0.95 \mathrm{U}}{0.11 \mathrm{U}}$ | 0.54U | 0 |  |
| SW8260 | 1,2-DICHLOROBENZENE | ugkg | 0.096 U | 0.098 UJ | 0.23 UJ | 0.22 UJ | 0.094 U | 0.16 UJ | 0.14 UJ | 0.13 R | 0.089 UJ | 0.082 UJ | 0.090 U | 0.085 U | 0.095 UJ | 0.093 UJ | 0.094 U | 0.15 U | 0.086 U | 0.084 U | 0.18 |
| SW8260 | 12.-DICHLOROETHANE | ugkg | 0.13 U | 0.13 U | 0.30 U | 0.29 U | 0.13 U | 0.21 U | 0.18 U | 0.16 U | 0.12 U | 0.11 U | 0.12 U | 0.11 U | 0.13 U | 0.12 U | 0.12 U | 0.20 U | 0.11 U | 0.11 U | 0.23 U |
| Sw8260 | 1,2-DICHLOROPROPANE | ugkg | 0.066 U | 0.068 U | 0.16 U | 0.16 U | 0.066 U | 0.11 U | 0.093 U | 0.087 U | 0.062 U | 0.057 U | 0.063 U | 0.059 U | 0.066 U | 0.065 U | 0.065 U | 0.11 U | 0.060 U | 0.059 U | 0.13 U |
| SW8260 | 1,4-4IICHLOROBENZENE | ugkg | 0.11 U | 0.11 UJ | 0.26 UJ | 0.25 UJ | 0.11 U | 0.18 UJ | 0.15 UJ | ${ }^{0.14 \mathrm{R}}$ | 0.099 UJ | 0.091 UJ | 0.10 U | 0.095 U | 0.11 UJ | 0.11 UJ | 0.11 U | $0.17{ }^{0}$ | 0.096 U | 0.094 U | 0.20 U |
| SW8260 | ACETONE | ugkg | 3.10 | 3.6 J | 25 J | 140 J | ${ }^{3.8 \mathrm{~J}}$ | 8.55 | 66 J | 15 J | 3.43 | ${ }^{7.1}{ }^{1}$ | ${ }_{5}^{5.65}$ | 2.8 U | ${ }^{3.10}$ | 3.0 U | 3.0 U | 4.9 U | 2.8 U | 2.7U | 89 J |
| SW8260 | BENZENE | ugkg | ${ }^{0.48 \mathrm{U}}$ | 0.49 U | 1.20 | 1.10 | 0.47 U | 0.79 U | 0.67 U | ${ }^{0.63 U}$ | ${ }^{0.45 U}$ | ${ }^{0.410}$ | 0.45 | ${ }^{0.430}$ | ${ }^{0.480}$ | ${ }^{0.475}$ | 0.47U | ${ }^{0.750}$ | ${ }^{0.430}$ | - 0.42 U | ${ }^{0.890}$ |
| SW8260 | BROMODICHLOROMETHANE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{Ogkg}}$ | O.36 ${ }^{0.39 \mathrm{U}}$ | 0.37 U | 0.85 ${ }^{0.84 \mathrm{U}}$ | 0.82U | 0.35 U | 0.59 U | 0.50 ${ }^{0.50 \mathrm{U}}$ | 0.47 ${ }^{0.510 J}$ | 0.33 U 0.37 UJ | 0.31 U 0.34 UJ | 0.34 U <br> 0.37 U | 0.32 U 0.35 U | ${ }_{0}^{0.360 ~} 0$ | ${ }_{0}^{0.35 \mathrm{U}^{\text {UJ }}}$ | ${ }_{0}^{0.395 \mathrm{UJ}}$ | ${ }_{0}^{0.560 \mathrm{U}}$ | $\frac{0.32 \mathrm{U}}{0.36 \mathrm{UJ}}$ | $\frac{0.32 \mathrm{U}}{0.35 \mathrm{UJ}}$ | 0.66U |
| SW8260 | CARBON DISULFIDE | ugkg | 2.00 | 2.00 | 4.71 | 4.50 | 2.00 | 3.30 | 2.8 U | 2.6 U | 1.90 | 1.74 | 1.90 | 1.8 U | 2.00 | 1.90 | 2.00 | 3.10 | 1.8 U | 1.8 U | 3.70 |
| SW8260 | CARBON TETRACHLORIDE | ugkg | ${ }^{0.43 U}$ | ${ }^{0.44 U^{4}}$ | 1.10 | 0.994 | $\stackrel{0.43 \mathrm{U}}{ }$ | ${ }^{0.710 J}$ | 0.60 UJ | 0.56 UJ | ${ }^{0.40 \mathrm{UJ}}$ | ${ }^{0.37 \mathrm{UJ}}$ | 0.41 UJ | ${ }^{0.38 \mathrm{U}}$ | ${ }_{0}^{0.43 U^{4}}$ | ${ }^{0.42 U^{4}}$ | ${ }_{0}^{0.42 \mathrm{U}}$ | $\stackrel{0.68 \mathrm{U}}{0}$ | 0.39 | ${ }^{0.38 \mathrm{U}}$ | 0.80 ${ }^{\text {U }}$ |
| SW8260 | ${ }_{\text {CFF--11 }}$ | ${ }_{\text {ug }}^{\substack{\text { ugkg } \\ \text { ugkg }}}$ | $\stackrel{0.32 \mathrm{U}}{0.39 \mathrm{u}}$ | $\stackrel{0.33 \mathrm{U}}{0.40 \mathrm{u}}$ | 0.76 U 0.94 U | 0.74 U 0.90 U | $\stackrel{0.32 \mathrm{U}}{0.39 \mathrm{u}}$ | 0.53 U <br> 0.65 JJ | ${ }^{0.45 \mathrm{U}} 0$ | ${ }_{0}^{0.42 \mathrm{U}} 0$ | ${ }_{0}^{0.30 \mathrm{O}} 0$ | ${ }_{0}^{0.284 \mathrm{UJ}}$ | 0.30 U 0.37 UJ | $\stackrel{0.39 \mathrm{U}}{0.35}$ | 0.320 0.390 | 0.310 0.380 | $\stackrel{0.320}{0.39}$ | 0.50 U 0.62 u |  | 0.28 U 0.35 u | 0.59 U <br> 0.73 u |
| SW220 | CHLORINATED FLUOROCARBON (FREON 113) | ugkg | ${ }^{0.44 U}$ | 0.45 U | 1.10 | 1.10 | ${ }^{0.44 \mathrm{U}}$ | 0.73 U | 0.62 U | ${ }^{0.58 \mathrm{U}}$ | 0.41 U | 0.38 ${ }^{\text {U }}$ | ${ }^{0.42 \mathrm{U}}$ | 0.40 U | ${ }^{0.44 \mathrm{U}}$ | ${ }^{0.43 U}$ | ${ }^{0.44 U}$ | 0.70U | 0.40 U | 0.39 U | ${ }^{0.82 \mathrm{U}}$ |
| N8260 | CHLOROBENZENE | L9kg | 0.49 U | 0.50 U | 1.2 U | 1.2 U | 0.49 U | 0.81 U | 0.69 U | 0.64 U | 0.46 U | 0.42 U | 0.46 U | 0.44 U | 0.49 U | 0.48 U | 0.48 U | 0.77 U | 0.44 U | 0.43 U | 0.91 U |
| SW8260 | CHLORODIBROMOMETHANE | $\frac{\text { ugkg }}{\text { Lokg }}$ | $\frac{0.31 \mathrm{U}}{0.4401}$ | $\frac{0.32 \mathrm{U}}{0.45 \mathrm{UJ}}$ | $\frac{0.73 \mathrm{U}}{110}$ | $\frac{0.71 \mathrm{U}}{1101}$ | $\frac{0.31 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.514}{0.73 U}$ | 0.43 U 0.62 U | -0.40 | $\frac{0.29 \mathrm{U}}{0.41 \mathrm{u}}$ | $\frac{0.27 \mathrm{U}}{0.38 \mathrm{U}}$ | 0.290 | 0.28U | 0.310 | 0.30 | $\frac{0.30 \mathrm{U}}{0.44 \mathrm{U}}$ | 0.490 | 0.28 0 | 0.27 U | 0.57 |
| SW8260 | CHLOROFORM | uglkg | 0.42 U | 0.43 U | 0.99 U | ${ }^{0.96 \mathrm{U}}$ | 0.41 U | 0.69 U | 0.59 U | 0.55 U | 0.39 U | 0.36 U | 0.40 U | 0.37 U | 0.42 U | 0.41 U | 0.41 U | 0.66 U | 0.38 U | 0.37 U | 0.77 U |
| W8260 | CHLOROMETHANE | ugkg | 0.55 U | 0.56 U | 1.4 U | 1.30 | 0.55 U | 0.91 U | 0.78 U | 0.72 U | 0.52 U | 0.47 U | 0.52 U | 0.49 U | 0.55 U | 0.54 U | 0.54 U | $0.87{ }^{\text {U }}$ | 0.50 U | 0.49 U | 1.10 |
| SW8260 | CIS-1,2-DICHLOROETHYLENE | ugkg | 0.32 U | 0.33 U | 0.76 U | 0.74 U | 0.32 U | 0.53 U | 0.45 U | 0.42 U | 0.30 U | 0.28 U | 0.30 U | 0.29 U | 0.32 U | 0.31 U | 0.32 U | 0.50 U | 0.29 U | 0.28 U | 0.59 U |


|  |  |  | $\begin{gathered} \text { sDo01 } \\ \text { sDo011A } \\ 0.0 .5 \text { feet } \\ 12112120006 \\ \hline \end{gathered}$ |  | $\begin{array}{\|c} \text { SDOO2 } \\ \text { SDOO2AA } \\ \text { o-0.5 feet } \\ \text { 121212 } 22006 \\ \hline \end{array}$ |  |  | $\begin{array}{\|c\|c\|} \hline \text { SDOO5 } \\ \text { SDOO5AA } \\ \text { o.0.5eet } \\ 121212 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SD006 } \\ \text { SD006AA } \\ 0-0.5 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ |  | $\begin{gathered} \text { SD007 } \\ \text { SD007AA } \\ 0-0.5 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|c\|} \text { SDOO8 } \\ \text { SDooosA } \\ 0-0.5 \text { feet } \\ 1212122006 \\ \hline \end{array}$ | $\begin{array}{c\|} \text { SD009 } \\ \text { SDOO9AA } \\ 0-0.5 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c} \hline \text { SS001 } \\ \text { SSo01AA } \\ 0 .-0.25 \text { feet } \\ \text { 12/107/2006 } \\ \hline \end{array}$ | $\begin{gathered} \text { SS002 } \\ \text { SS002AA } \\ 0-0.25 \text { feet } \\ 12 / 105 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c} \text { SSOO2 } \\ \text { SSOO2AC } \\ \text { o-0.25 eet } \\ 12105 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c} \text { SS003 } \\ \text { SSo03AA } \\ \text { o-0.25 feet } \\ \text { 12/108/2006 } \\ \hline \end{array}$ |  | $\begin{gathered} \text { Ss005 } \\ \text { ssoo5AA } \\ 0-0.25 \text { feet } \\ 12 / 108 / 2006 \\ \hline \end{gathered}$ | SS006 <br> 0-0.25 feet 12/05/2006 | $\begin{gathered} \text { SS007 } \\ \text { SSOO7AA } \\ 0-0.25 \text { feet } \\ 121 / 04 / 20006 \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Methe | Analye | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIIS-1,3-DICHLOROPROPENE | ugkg | 0.36 U | 0.37 U | 0.85 U | ${ }_{0} 0.82 \mathrm{U}$ | 0.35 U | 0.59 U | 0.50 U | ${ }^{0.47 \mathrm{U}}$ | 0.33 U | ${ }^{0.31 \mathrm{U}}$ | 0.34 U | 0.32 U | 0.36 U | 0.35 U | 0.35 U | 0.56 U | 0.32 U | 0.32 U | 0.66 U |
| SW8260 | CYCLOHEXANE | ugkg | 0.47 U | ${ }^{0.48 \mathrm{U}}$ | 1.2 U | 1.10 | ${ }^{0.46 U^{4}}$ | 0.77 UJ | ${ }^{0.66 \mathrm{UJ}}$ | 0.61 UJ | ${ }^{0.440 J}$ | ${ }^{0.40 ~ U ~}$ | 0.44 UJ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.464}$ | $0.74{ }^{0}$ | ${ }^{0.42 \mathrm{U}}$ | 0.41 U | ${ }^{0.86 \mathrm{U}^{\text {U }}}$ |
| SW8260 | DICHLOROMETHANE | ugkg | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.493}$ | 1.20 | 1.14 | $\stackrel{0.47 \mathrm{U}}{0}$ | 0.79 U | $\stackrel{0.67 \text { U }}{0}$ | $\stackrel{0.63 \mathrm{U}}{0}$ | 0.45 U | $\stackrel{0.41 \mathrm{U}}{0.40}$ | 0.45 U | $\stackrel{0.43 \mathrm{U}}{0}$ | ${ }_{0}^{0.48 \mathrm{U}}$ | $\xrightarrow{0.47 \mathrm{U}}$ | 0.47 U | $\stackrel{0.75 \mathrm{U}}{0}$ | ${ }^{0.43 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{ }$ | ${ }_{0}^{0.899}$ |
| SW8260 | ETHYLBENZENE | ugkg | 0.52 U | ${ }^{0.53 \mathrm{U}}$ | 1.30 | 1.2 U | 0.51 U | 0.85 U | ${ }^{0.72 U^{4}}$ | ${ }^{0.674}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.44 \mathrm{U}}$ | ${ }^{0.499}$ | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.51 \mathrm{U}}$ | ${ }^{0.50 \mathrm{U}}$ | ${ }^{0.510}$ | ${ }^{0.810}$ | ${ }^{0.4614}$ | ${ }^{0.46 U^{4}}$ | $0.95{ }^{1.4}$ |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.57 U | 0.58 UJ | $1.4 \mathrm{UJ}^{\text {d }}$ | ${ }_{1}^{1.30 J}$ | 0.56 U | 0.93 UJ | 0.79 UJ | 0.74 R | 0.53 UJ | 0.48 UJ | 0.53 U | 0.50 U | 0.56 UJ | 0.55 UJ | ${ }^{0.56 U}$ | 0.89 U | 0.51 U | ${ }^{0.50} \mathrm{U}$ | 1.10 |
| SW8260 | m,p-xylenes | ugkg | 1.10 | 1.10 | 2.6 U | $\underline{2.5 U}$ | 1.14 | 1.8 U | 1.50 | 1.4 U | $0.99 \mathrm{U}^{0}$ | $0.91{ }^{\text {a }}$ | 1.00 | $0.95{ }^{0}$ | 1.10 | 1.10 | 1.10 | 1.7 U | $0.96 \mathrm{U}^{0}$ | 0.94 U | 2.00 |
| SW8260 | M-IICHLOROBENZENE | ugkg | 0.061U | 0.063 U J | 0.150J | 0.15 UJ | ${ }^{0.0614}$ | 0.110 | 0.086 U ${ }^{\text {O }}$ | 0.080 R | 0.057 UJ | ${ }^{0.053 ~ U ~}{ }^{\text {a }}$ | 0.058 U | ${ }^{0.055 ~ U ~}$ | 0.061 UJ | ${ }^{0.060 ~ U ~}{ }^{\text {a }}$ | 0.060U | O.097 U | 0.055 U | 0.054U | 0.12U |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.4 U | 1.40 | 3.3 U | 11 J | 1.40 | 2.30 | 1.90 | 1.8 U | 1.30 | 1.2 U | 1.3 U | 1.2 U | 1.40 | 1.40 | 1.40 | 2.2 U | 1.30 | 1.2 U | 2.50 |
| SW8260 | METHYL LSOBUTYL KETONE | ugkg | 0.87 | 0.89 U | 2.10 | 2.00 | -0.86 U | 1.5U | 1.30 | 1.2 U | $\stackrel{0.81 \mathrm{U}}{12 \mathrm{u}}$ | $\stackrel{0.74 u^{114}}{ }$ | $\stackrel{0.82 \mathrm{U}}{12 \mathrm{u}}$ | $\stackrel{0.77 \mathrm{U}^{114}}{ }$ | ${ }^{0.866}$ | $\stackrel{0.85 \mathrm{U}}{1.24}$ | ${ }_{0}^{0.85 \mathrm{U}}$ | 1.4 U | $\stackrel{0.78 \mathrm{U}}{18}$ | $\stackrel{0}{0.774}$ | ${ }_{2}^{1.70}$ |
| SW8260 | MEETHYL N-BUTYL KETONE | ugkg | 1.30 | 1.30 | 3.00 | 2.90 | 1.30 | 2.10 | 1.8 U | 1.6 U | 1.2 U | 1.10 | 1.2 U | 1.10 | 1.3 U | 1.20 | 1.2 UJ | 2.00 | 1.1 UJ | 1.10 | 2.30 |
| SW8260 | METHYL EENZENE | ugkg | 0.88 J | 0.87 J | 3.5 J | 3.5 J | 0.96 J | 0.85 U | 0.72 U | 0.67 U | ${ }^{0.48 \mathrm{U}}$ | 0.44 U | 0.49 U | ${ }^{0.46 \mathrm{U}}$ | 0.51 U | ${ }^{0.50 \mathrm{U}}$ | 0.51 U | ${ }^{2.810}$ | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.46 \mathrm{U}}$ | 0.95 U |
| SW8260 | METHYLCYLOHEXANE | uglkg | 0.54 U | $\stackrel{0.55}{0}$ | 1.30 | 1.30 | 0.54 U | 0.89 UJ | 0.76 UJ | $0.71{ }^{0.64}$ | 0.50 UJ | 0.46 UJ | 0.51 UJ | ${ }^{0.48 \mathrm{U}}$ | 0.54 U | 0.53 U | 0.53 U | 0.85 | 0.49 U | 0.48 U | 1.00 |
| SW8260 | O-XYLENE | ugkg | 0.49 U | 0.50 U | 1.2 U | 1.2 U | 0.49 U | 0.81 U | 0.69 U | 0.64 U | 0.46 U | 0.42 U | 0.46 U | 0.44 U | 0.49 U | 0.48 U | 0.48 U | 0.77 U | 0.44 U | 0.43 U | 0.91 U |
| SW8260 | STYRENE (MONOMER) | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} k \mathrm{~kg}}$ | 0.53 U 0.39 u | $\frac{0.54 \mathrm{U}}{0.40 \mathrm{U}}$ | $\frac{1.3 \mathrm{U}}{0.94 \mathrm{U}}$ | $\frac{1.3 \mathrm{U}}{0.90 \mathrm{U}}$ | $\frac{0.52 \mathrm{U}}{0.39 \mathrm{u}}$ | $\frac{0.87 \mathrm{U}}{0.65 \mathrm{U}}$ | $\frac{0.74 \mathrm{U}}{0.55 \mathrm{U}}$ | $\frac{0.69 \mathrm{U}}{0.51 \mathrm{u}}$ | $\frac{0.49 \mathrm{U}}{0.37 \mathrm{U}}$ | $\frac{0.45 \mathrm{U}}{0.34 \mathrm{U}}$ | $\frac{0.50 \mathrm{U}}{0.37 \mathrm{U}}$ | $\stackrel{0.47 \mathrm{U}}{0.35 \mathrm{U}}$ | $\frac{0.52 \mathrm{U}}{0.39 \mathrm{u}}$ | $\frac{0.51 \mathrm{U}}{0.38 \mathrm{u}}$ | $\frac{0.52 \mathrm{U}}{0.39 \mathrm{u}}$ | $\frac{0.83 \mathrm{U}}{0.62 \mathrm{u}}$ | $\frac{0.48 \mathrm{U}}{0.36 \mathrm{U}}$ | $\xrightarrow{0.47 \mathrm{U}}$ | $\frac{0.98 \mathrm{U}}{0.73 \mathrm{u}}$ |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.49 U | 0.50 U | 1.2 U | 1.20 | 0.49 U | 0.810 | 0.69 U | 0.64 U | 0.46 U | 0.42 U | 0.46 U | 0.44 U | 0.49 U | ${ }_{0}^{0.48 \mathrm{U}}$ | 0.48 U | 0.77 U | 0.44 U | 0.43 U | 0.91 U |
| SW8260 | TRANS-1,1-2-DICHLOROETHENE | ugkg | 0.47 U | 0.48 U | 1.2 U | 1.14 | 0.46 U | 0.77 U | 0.66 U | 0.61 U | 0.44 U | 0.40 U | 0.44 U | 0.42 U | 0.46 U | 0.46 U | 0.46 U | 0.74 U | 0.42 U | 0.41 U | 0.86 U |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ugkg | 0.37 U | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.88 \mathrm{U}}$ | ${ }^{0.85 \mathrm{U}}$ | 0.37 U | 0.61 U | ${ }^{0.52 \mathrm{U}}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.32 \mathrm{U}}$ | ${ }^{0.35 U}$ | ${ }^{0.33 \mathrm{U}}$ | 0.37 U | ${ }^{0.36 \mathrm{U}}$ | ${ }_{0} 0.36 \mathrm{U}$ | 0.58 U | ${ }^{0.33 \mathrm{U}}$ | ${ }^{0.33 \mathrm{U}}$ | 0.68 U |
| SW8260 | TRIBCMOMETHANE | uglkg | 0.48 U | 0.49 U | 1.24 | 1.14 | 0.47 U | $0.79{ }^{0 .}$ | 0.67 U | 0.63 U | 0.45 U | 0.41 U | 0.45 U | ${ }^{0.434}$ | 0.48 U | 0.47 U | 0.47 U | $0.75{ }^{0}$ | ${ }^{0.430}$ | 0.42 U | 0.89 U |
| SW8260 | TRRICHLOROETHYLENE | ugkg | 0.49 | 0.50 | 1.2 U 0 0.70 U | 1.2U | 0.49 U 0.29 u | 0.81U | $\xrightarrow{0.69 \mathrm{U}}$ | 0.64U | 0.46 U | -0.42 | 0.46U | 0.44U | 0.49 | 0.48 U | $\frac{0.48 \mathrm{U}}{0.29 \mathrm{U}}$ | 0.77 U 0.47 U | 0.44 U 0.27 U | 0.43 U 0.26 U | 0.91U |
| SW8270 | 2,4,5-TRICHLOROPHENOL | ugkg | 160 U | 160 U | 25 U | 310 U | 16 U | 19 U | 18 U | 18 U | 15 U | 14 U | 15 U | 15 U | 15 U | 15 U | 16 U | 17 U | 15 U | 14 U | 18 U |
| SW8270 | 2.4,6,-TRICHLOROPHENOL | ugkg | 440 U | 430 U | 70 U | 860 U | 44 U | 52 U | 50 U | 48 U | 41 U | 38 U | 40 U | 40 U | 40 U | 40 U | 43 U | 47 U | 40 U | 39 U | 49 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 210 U | 200 U | 33 U | 410 U | 210 | 25 U | 24 U | 23 U | 20 U | 18 U | 19 U | 19 U | 19 U | 19 U | 210 | 22 U | 19 U | 19 U | 23 U |
| SW8270 | 2,4-DIMETYYLPHENOL | ugkg | ${ }_{20}^{240}$ | ${ }_{230}^{230}$ | 37 U | ${ }^{4600}$ | 23U | 28 U | 27 U | 26 U | 22 U | 20 U | 210 | 210 | 210 | 22 U | $\stackrel{23 U}{15}$ | 25 U | 210 | 210 | 26 U |
| SW8270 | 2.4-DIINTROPHENOL | uglkg | 150 U | 150 U | 24 U | 2900 | 15 U | 18 U | 174 | 16 U | 14 U | 13 U | 14 U | 14 U | 14 U | 14 U | 15 U | 16 U | 14 U | 13 U | 17 U |
| SW8270 | 2,4-DIINTROTOLUENE |  | $\frac{120 U}{440 \mathrm{U}}$ | 120 U 430 U | 19 U | $\frac{240 U}{860}$ | $\frac{12 U}{44}$ | $\frac{14 U}{52 U}$ | $\frac{140}{50}$ | 14 U | $\frac{12 U}{410}$ | 11 U <br> 38 | 110 | 110 | 110 | 11 U | $\frac{12 \mathrm{U}}{43}$ | $\frac{13 U}{47}$ | 110 | 110 39 | 14 U |
| SW8270 | 2.CHLORONAPHTHALENE | ugkg | 200 U | 190 U | 31 U | 390 U | 20 U | 23 U | 22 U | 22 U | 18 U | 17 U | 18 U | 18 U | 18 U | 18 U | 20 U | 210 | 18 U | 18 U | 22 U |
| SW8270 | 2.CHLOROPHENOL | ugkg | 220 U | 220 U | 35 U | 430 U | 22 U | 26 U | 250 | 24 U | 210 | 19 U | 20 U | 20 U | 20 U | 20 U | 22 U | 24 U | 20 U | 20 U | 25 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | ugkg | 150 U | 150 U | 24 U | 290 U | 15 U | 18 U | 17 U | 16 U | 14 U | 13 U | 14 U | 14 U | 14 U | 14 U | 15 U | 16 U | 14 U | 13 U | 17 U |
| SW8270 | 2-NITROANLILINE | ugkg | ${ }^{2700}$ | ${ }^{260 \mathrm{U}}$ | ${ }_{4}^{43 U}$ | ${ }^{5300}$ | ${ }^{27 U}$ | 32 U | 310 | 30 U | 25 U | 23 U | 24 U | 24 UJ | 25 UJ | 25 UJ | 27 U | 29 UJ | 25 U | 24 UJ | 30 UJ |
| SW8270 | 2-NITROPHENOL | uglkg | 180U | $\stackrel{1700}{ }$ | $\frac{27 U}{664}$ | 340 U | 17 U | 20 U | 20 U | 19 U | 16 U | 15 U | 16 U | 16 U | 16 U | 16 U | 17 U | 18 U | 16 U | 15 U | 19 U |
| SW8270 | ${ }^{\text {3,3.-DICHLOROBENZIIINE }} 3$ | ugkg | 420 U | 400 U | 66 U | 810 U | 41 U | 49 U | 47 U | 46 U | 39 U | 36 U | 37 U | 37U | $\frac{38 \mathrm{UJ}}{15}$ | $\frac{38 \mathrm{UJ}}{15}$ | 41 U | $\xrightarrow{44 \mathrm{UJ}}$ | 38 U | $\frac{370 J}{1701}$ | 46 U |
| SW8270 | ${ }^{\text {3 }}$ 3.5.5-TRIMIMETHYL-2-CYCLOHEXENE-1-ONE | $\frac{u g k g}{u g k g}$ | $\frac{160 \mathrm{U}}{210 \mathrm{U}}$ | ${ }^{160 \mathrm{U}}$ | $\frac{250}{33}$ | $\frac{310 \mathrm{U}}{410 \mathrm{U}}$ | $\frac{160}{210}$ | $\frac{190}{25}$ | $\frac{18 \mathrm{U}}{24}$ | $\frac{18}{23}$ | $\frac{150}{20}$ | 14 U | 15 | 15 | $\frac{15 \mathrm{UJ}}{19 \mathrm{U}}$ | $\frac{15 \mathrm{UJ}}{19 \mathrm{U}}$ | $\frac{160}{210}$ | $\frac{170 J}{22 \mathrm{U}}$ | 150 | $\frac{14 \mathrm{UJ}}{19 \mathrm{U}}$ | $\frac{180}{230}$ |
| SW8270 | 4,6-DINTTRO-2-METHYLPHENOL | ugkg | 120 U | 120 U | 19 U | 230 U | 12 U | 14 U | 13 U | 13 U | 11 U | 9.8 U | 110 | 11 U | 11 U | 11 U | 12 U | 13 U | 11 U | 11 U | 13 U |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 120 U | 120 U | 19 U | 240 U | 12 U | 14 U | 14 U | 14 U | 12 U | 11 U | 110 | 110 | 11 U | 11 U | 12 U | 13 U | 11 U | 11 U | 14 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | ugkg | 200 U | 190 U | 31 U | 390 U | 20 U | 23 U | 22 U | 22 U | 18 U | 17 U | 18 U | 18 U | 18 U | 18 U | 20 U | 21 U | 18 U | 18 U | 22 U |
| SW8270 | 4.CHLOROPHENYL PHENYL ETHER | ugkg | 270 | 260 U | 43 U | 530 U | 27 U | 32 U | 31 U | 30 U | 25 U | 23 U | 24 U | 24 U | 25 U | 25 U | 27 U | 29 U | 25 U | 24 U | 30 U |
| SW8270 | 4-METHYLPHENOL (MP-CRESOL) | ugkg | 320 U | 310 U | 50 U | 620 U | 32 U | 38 U | 36 U | 35 U | 30 U | 28 U | 29 U | 29 U | 29 U | 29 U | 31 U | 34 U | 29 U | 28 U | 35 U |
| (ew | ${ }^{\text {a-NITROPHENOL }}$ BENZYL BUTYL PHTHALATE |  | $\stackrel{210 \mathrm{U}}{230 \mathrm{~J}}$ | $\stackrel{200 \mathrm{U}}{220 \mathrm{U}}$ | 33 U 570 J | 410 U 430 U | 22 U | $\stackrel{250}{57}$ | 24 U | 23 U 24 | 20U | 18 U | $\underline{190}$ | $\frac{19 \mathrm{UJ}}{20 \mathrm{U}}$ | $\frac{19 \mathrm{UJ}}{20 \mathrm{u}}$ | $\frac{19 \mathrm{UJ}}{20 \mathrm{U}}$ | 22 U | $\frac{22 \mathrm{UJ}}{24 \mathrm{U}}$ | $\underline{190}$ | $\frac{19 \mathrm{UJ}}{20 \mathrm{U}}$ | 23 UJ <br> 250 <br> 2 u |
| SW8270 | BIPHENYL | ugkg | 1900 U | 1800 U | 290 U | 3600 U | 190 U | 220 U | 210 U | 200 U | 170 U | 160 U | 170 U | $170 \cup$ | 170 U | 170 U | 180 U | 200 U | $170 \cup$ | 170 U | 210 U |
| SW8270 | BIS(2.CHLORETHOXYMETHANE | ugkg | 210 U | 200 U | 33 U | 410 U | 21 U | 25 U | 24 U | 23 U | 20 U | 18 U | 19 U | 19 U | 19 U | 19 U | 210 | 22 U | 19 U | 19 U | 23 U |
| SW8270 | BIS(2-CHLOROETHYLETHER | ugkg | 190 U | 180 U | 29 U | 360 U | 19 U | 22 U | 21 U | 20 U | 17 U | 16 U | 17 U | 17 U | 17 U | 17 U | 18 U | 20 U | 17 U | 17 U | 21 UJ |
| SW8270 | BIS(2-CHLOROISOPROPYL) ETHER | ugkg | 260 U | 250 U | 410 | 500 U | 26 U | 30 U | 29 U | 28 U | 24 U | 22 U | 23 U | 23 UJ | 24 UJ | 24 UJ | 25 U | 27 UJ | 24 U | ${ }^{23 \mathrm{UJ}}$ | 29 U |
| SW8270 | BIIS(2-ETHYLHEXYLPPHTHALATE | ugkg | $\frac{680 \mathrm{~J}}{50}$ | 190 U | 2600 | 2800 J | 50 J | 2000 | 700 | 95 J | 57 J | 17 U | 18 U | 18 U | 18 U | 20 J | 20 U | 210 | 240 | 22 J | 22 U |
| (ene270 |  | $\frac{u g k g}{u g k g}$ | 550 J 1600 | ${ }_{1200}$ | 1100 <br> 160 | $\frac{770 \mathrm{~J}}{310 \mathrm{U}}$ | ${ }_{75} 5$ | 510 280 | ${ }^{320} 150$ | 380 <br> 150 <br> 10 | 410 <br> 120 | 280 | 350 <br> 72 | 32 J 15 15 U | 75 | ${ }_{23}{ }_{23}$ | $\frac{30 \mathrm{~J}}{16}$ | ${ }_{48}^{44}$ | ${ }_{32 \mathrm{~J}}^{60 \mathrm{~J}}$ | $\stackrel{220}{110}$ | $\stackrel{34 \mathrm{~J}}{18}$ |
| SW8270 | DIETHYL PHTHALATE | ugkg | 150 U | 150 U | 24 U | 290 U | 15 U | 18 U | 17 U | 16 U | 14 U | 13 U | 14 U | 14 U | 14 U | 14 U | 15 U | 16 U | 14 U | 13 U | 17 U |
| SW8270 | DIMETHYL PHTHALATE | ugkg | 120 U | ${ }^{120} \mathrm{U}^{\text {a }}$ | 19 U | 240 U | 12 U | 14 U | 14 U | 14 U | 12 U | 110 | 110 | 110 | 11 U | 11 U | 12 U | 13 U | 110 | 110 | 14 U |
| SW8270 | D-N-BUTYL-PHTHALATE | $\frac{\text { ugkg }}{\text { ugkg }}$ | 750 100 | 720U | 570 | $\frac{1500 \mathrm{U}}{360 \mathrm{U}}$ | 74 U | 88 U | 84 U | 82 U | 69 U | 64 U | 67 U | 67 U | 68 U | 68 U | 730 | 79 U | 68 U | 66 U | 830 |
| SW8270 | D-N-OCTYL-PHTHALATE | ugkg | $\frac{190 U}{210 \mathrm{U}}$ | ${ }_{180 \mathrm{U}}^{1800}$ | 29 U | 360 | 190 | 22 L | 210 | 20 U | 17 U | $\frac{16 \mathrm{U}}{18 \mathrm{U}}$ | 17 U | 17 U | 17 U | 17 U | $\frac{18 \mathrm{U}}{21 \mathrm{u}}$ | 20 U | 17 U | 17 U | $\stackrel{21 U}{23}$ |
| SW8270 | HEXACHLOROBENZENE | ${ }_{\text {ugkg }}$ | 110 U | $\underline{980}$ | 16 U | 200 U | 10 U | 12 U | 12 U | 12 U | $\stackrel{2.4 U}{ }$ | ${ }^{18.70}$ | $\underline{19}$ | $\stackrel{1}{9.10}$ | 9.2 U | ${ }_{9} 9.30$ | $\underline{9.9 U}$ | 11 U | $\underline{192}$ | $\stackrel{1}{8.90}$ | 12 U |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | ugkg | 140 U | 130 U | 22 U | 270 | 14 U | 16 U | 16 U | 15 U | 13 U | 12 U | 12 U | 12 U | 13 U | 13 U | 14 U | 15 U | 13 U | 12 U | 15 U |
| SW8270 | HEXACHLOROETHANE | ugkg | 210 U | 200 U | 330 | 410 U | 210 | 250 | 24 U | 230 | 20 U | 18 U | 19 U | 19 U | 19 U | 19 U | 210 | 22 U | 19 U | 19 U | 23 U |
| SW8270 | NITROBENZENE | ugkg | 250 U | 240 U | 39 U | 480 U | 25 U | 29 U | 28 U | 27 U | 23 U | 210 | 22 U | 22 UJ | 22 U | 23 U | 24 U | 26 U | 22 U | 22 U | 27 U |
| 血W8270 | $\frac{\text { N-NITROSO-DI-N.PROPYLAMINE }}{\text { N-NTROSOOLIPHENYLAMINE }}$ | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { ugkg }}$ | $\frac{220 U}{140 \mathrm{U}}$ | 220 U 130 U | $\frac{350}{22 U}$ | $\frac{430 \mathrm{U}}{270 \mathrm{U}}$ | 22 U | $\frac{26 \mathrm{U}}{16}$ | $\frac{250}{16 U}$ | $\frac{24 \mathrm{U}}{15}$ | $\underline{210}$ | $\frac{190}{12 U}$ | 20 U | 20U | $\frac{20 \mathrm{UJ}}{13 \mathrm{U}}$ | $\frac{20 \mathrm{UJ}}{13 \mathrm{U}}$ | 22U | $\frac{24 \mathrm{UJ}}{15 \mathrm{U}}$ | $\underline{20 U}$ | $\frac{20 \mathrm{UJ}}{12 \mathrm{U}}$ | $\frac{25 U}{150}$ |
| SW8270 | P.CHLOROANILINE | ugkg | 320 U | 310 U | 50 U | 620 U | 32 U | 38 U | 36 U | 35 U | 30 U | 28 U | 29 U | 29 U | 290 | 29 U | 31 UJ | 34 U | 29 UJ | 28 U | 35 U |
| SW8270 | PHENOL | ugkg | 200 U | 190 U | 31 U | 390 U | 20 U | 23 U | 22 U | 22 U | 18 U | 17 U | 18 U | 18 U | 18 U | 18 U | 20 U | 210 | 18 U | 18 U | 22 U |
| SW8270 | $\frac{\text { P-NITROANLINE }}{\text { TOTAL ORGANIC CARBON }}$ | $\frac{\mathrm{ug} \text { kg }}{\text { mqkg }}$ | $\frac{150 \cup}{1970}$ | 150 U | 24 U | 290 U | 15 U | $\frac{18}{3810}$ | 1750 | 16 U | 14 U | 13 U | 14 U | 14 U | 14 U | 14 U | 15 U | 16 U | 14 U | 13 U | 17 U |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  |  |  |  | $\begin{gathered} \text { SSOO9 } \\ \text { SsoogA } \\ 0.0 .25 / \text { eet } \\ 1210512006 \end{gathered}$ | $\begin{gathered} \text { SSO10 } \\ \text { SSO10AA } \\ \text { O-0.25 feet } \\ 12 / 05 / 2006 \end{gathered}$ |  |  |  | $\begin{gathered} \text { SS012 } \\ \text { SS012AC } \\ 0-0.25 \text { feet } \\ 12 / 04 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSSO13 } \\ \text { SSO13A } \\ 0.0 .25 \text { feet } \\ 1210412006 \end{gathered}$ | $\begin{gathered} \text { SS014 } \\ \text { SSO14AA } \\ 0-0.25 \text { feet } \\ 12 / 04 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO15 } \\ \text { SSOO15AA } \\ 0-0.25 \text { feet } \\ 12120412006 \end{gathered}$ | $\begin{gathered} \text { SS016 } \\ \text { SSOO6AA } \\ 0-0.25 \text { feet } \\ 12 / 104 / 2006 \end{gathered}$ |  | $\begin{gathered} \text { SSO18 } \\ \text { SSO18AA } \\ 0-0.25 \text { feet } \\ 12 / 104 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS019 } \\ \text { SSo19AA } \\ 0-0.25 \text { feet } \\ 12 / 101 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO20 } \\ \text { SSO20AA } \\ 0-0.25 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO21 } \\ \text { SSO21AA } \\ 0-0.25 \text { feet } \\ 12 / 06 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO22 } \\ \text { SSo22AA } \\ 0-0.25 \text { feet } \\ 12 / 12 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO22 } \\ \text { SSO22AB } \\ 0-0.25 \text { feet } \\ 12 / 12 / 2006 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Metrod | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SNASIM | 2-METHYLNAPHTHALENE | uglkg | 32 U | ${ }^{17 \mathrm{U}}$ | 180 | 170 | 140 J | 26 J | 30 J | 30 J | ${ }^{130}$ | 94 | 84 | 29 J | 18 J | ${ }^{24 \mathrm{~J}}$ | 18 U | 560 | 1.7 U | 1.7 U | ${ }^{110 \mathrm{~J}}$ |
| SNASIM | ACENAPHTHENE | $\mathrm{ug}_{\mathrm{kg}}$ | 574 | 30 U | $\underline{610}$ | 610 | ${ }_{18}^{481}$ | 36 U | 350 460 | 36 U <br> 540 | 290 | 33J | 100 J | 31 J | 30 U | 30 U | 310 | 360 J 50 | 4.5J | 4.9 J | ${ }_{1010 \mathrm{U}}^{10}$ |
| ENASSIM | ACENAPHTHMLENE | $\frac{\text { ugkg }}{\text { ugkg }}$ | 880 1200 | 45J | $\frac{230}{410}$ | ${ }_{410}^{240}$ | ${ }_{350}$ |  | 460 | 540 790 | ${ }^{660}$ | 750 | 1150 | ${ }^{640}$ | 2100 | ${ }_{150}^{76}$ | 260 390 | $\stackrel{5500}{9700}$ | $\stackrel{48}{110}$ | 43 <br> 110 | $\xrightarrow[1100]{1700}$ |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 2100 | 110 J | 580 | 620 | 640 J | 750 | 760 | 1700 | 1100 | 750 | 2500 | 910 | 3300 | 410 | 440 | 11000 | 59 | 52 | 2300 |
| ENASIM | BENZOAPAPYRENE | ugkg | 2600 | 120 J | 620 | 650 | 700 J | 1100 | 1100 | 1100 | 1700 | 740 | 3300 | 920 | 2300 | 520 | 620 | 14000 | 76 | 72 | 1900 |
| ENASIM | BENZO(B) FLUORANTHENE | ugkg | 4700 | 280 J | 1100 | 1200 | 1300 J | 1600 | 1700 | 2200 | 3200 | 1400 | 5800 | 1800 | 4400 | 680 | 1400 | 23000 | 210 | 200 | 5000 |
| ENASIM | BENZO(G,H,JPERYLENE | ugkg | 2100 | 110 J | 470 | 480 | 550 J | 710 | 730 | 770 | 1900 | 830 | 2700 | 730 | 1200 | 480 | 470 | 13000 | 65 | 57 | 1400 |
| ENASIM | BENZO(K) FLUORANTHENE | ugkg | 3500 | 180 J | 810 | 840 | 860 J | 1400 | 1300 | 1900 | 2100 | 1200 | 4500 | 1500 | 3900 | 590 | 660 | 16000 | 83 | 72 | 3400 |
| ENASIM | CHRYSENE | ugkg | 3100 | 180 J | 960 | 970 | 990 J | 1100 | 1100 | 4400 | 1600 | 1000 | 3600 | 1300 | 4200 | 600 | 640 | 15000 | 100 | 88 | 4600 |
| ENASIM | IIBENZO(A,H)ANTHRACENE | ugkg | ${ }^{730}$ | 33 J | 160 | 190 | 190 J | 230 | 230 | 270 | 610 | 250 | 860 | 250 | 510 | 120 | 170 | 4100 | 24 | 21 | 460 |
| BNASIM | LUORANTHENE | ugkg | 3300 | 190 J | 1200 | 1100 | 850 | 840 | 830 | 9600 | 1500 | 1500 | 2600 | 1600 | 5700 | 890 | 630 | 16000 | 95 | 83 | 4300 |
| BNASIM | FLLOORENE | ugkg | 32 U | 170 | 34 U | 34 U | 36 J | 295 | 32 J | 35 J | 35 J | 40 | 71 J | 335 | 38 | 17 U | 18 U | 430 | 4.45 | 4.30 | 82 U |
| BNASIM | \|iNDENO(1,2,3.CD)PYRENE | ugkg | 2700 | 140J | 590 <br> 530 | 610 | 690 J <br> 180 | 850 | 860 | ${ }^{920}$ | 1900 | 970 | 3200 | 850 | 1600 | 550 | 510 | $\begin{array}{r}15000 \\ \hline 760\end{array}$ | 67 | 59 | 1900 |
| BNASIM |  | ugkg |  |  | ${ }_{3}^{330}$ | 290 | 180 J | 46 |  | 38 J | 110 | ${ }^{98}$ | 100 |  | 34 J | 293 | 5.9 C |  | ${ }_{0}^{0.56 \mathrm{U}}$ | 0.56U | $\stackrel{130 \mathrm{~J}}{1600}$ |
| ENASIM | PENTACHLOROPHENOL | ugkg | 870 J | 180 J | 76 J | 79 J | 61 J | 530 | 550 | 490 | 330 J | 310 J | 950 J | 1300 | 560 | 160 J | 730 | 15000 J | 31 J | 28 J | 1600 J |
| ENASIM | PHENANTHRENE | ugkg | 430 | 50 J | 810 | 700 | 480 | 130 | 140 | 330 | 300 | 280 | 380 | 320 | 260 | 350 | 120 | 4100 | 3.7 U | 3.70 | 620 |
| ENASIM | PYRENE | ugkg | 5400 | 240 J | 1000 | 1000 | 880 J | 1200 | 1200 | 8200 | 1600 | 1400 | 6500 | 1800 | 6600 | 750 | 910 | 17000 | 110 | 100 | 4300 |
| E160.3 | RESIDUE, TOTAL |  | 95 | 92 | 89 | 90 | 71 | 76 | 77 | 77 | 94 | 94 | 93 | 93 | 92 | 91 | 88 | 75 | 92 | 91 |  |
| E1613/E1668 | 1,2,3,4,6,7,8,-HEPTACHLOROODIBENZOFURAN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5180 |  | 379.158 | 301.594 |  |
| E1613) 11668 | 1, 2, 2, 4, , ,6,7,8.-HEPTACHLORODIBENZOO-P-DIOXIN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }^{37100}$ |  | ${ }^{2622.508}$ | ${ }^{2673.258}$ |  |
| E1613/E1668 | 1,2,3,4, , , ,9,-HEPTACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 289 |  | 20.77 | 15.658 |  |
| E1613/E1668 | 1, 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | ngikg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 104 |  | 15.4 | $\frac{12.215}{1917}$ |  |
| E1613/16668 | 1, 1, 3, $, 6,7,8$-HEXACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }_{5}^{53.15}$ |  | ${ }_{9}^{2.813}$ | ${ }^{7.949}$ |  |
| E1613/E1668 | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1040 |  | 68.112 | 54.68 |  |
| E1613/E1668 | 1,2,3,7,8,9,-HEXACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 15.5 |  | 0.802 U | 0.231 U |  |
| E1613/1668 | 1, 12,3,7,9,9.HEXACHLORODIBENZO-P-DIOXIN | ngikg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 403 <br> 343 |  | 68.889 <br> 1.43$)$ | 57.122 |  |
| E1613/E1668 | 1,2,3,7,8.PENTACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.43 |  | ${ }^{1.443 \mathrm{~J}}$ | 1.11 J |  |
| E1613/E1668 | 1,2,3,7,8.8PENTACHLORODIBENZO-P-DIOXIN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 55.1 |  | 8.03 | ${ }_{6}^{6.354}$ |  |
| E1613/E1668 | 2, 2,4,6,7,8.8.HEXACHLORODIBENZOFURAN | $\frac{\mathrm{ng} \mathrm{k} \text { g }}{\text { nokg }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 111 |  | $\frac{15.889}{2.881 \mathrm{~J}}$ | 12.679 <br> 1.973 |  |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\frac{11.5}{00}$ |  | ${ }_{0}^{2.8879}$ J | $\stackrel{1.593 \mathrm{U}}{ }$ |  |
| E1613/E1668 | 2,3,7,8,-TETRACHLORODIBENZO-P-DIOXIN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.32 |  | 0.251 U | 0.309 U |  |
| E1613/E1688 | OCTACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 27500 |  | 1977.085 | 1587.32 |  |
| E1613/E1668 | OCTACHLORODIBENZO-P-PIOXIN | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 351000 |  | 26076.179 | 26723.544 |  |
| E16131/E1668 | TTOTAL HEPTACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng} \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 25500 76900 |  | 1435.203 13920.245 | ${ }_{1}^{1158.502} 1$ |  |
| E1613/16688 | TOTAL HEXACHLORINATED DIBENZOFURANS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }^{417000}$ |  | ${ }_{\text {256.144 }}$ | ${ }_{314.796}$ |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6260 |  | ${ }^{1270.443}$ | 1009.248 |  |
| E1613\|E1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | ngkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 306 J <br> 268 |  | $\frac{74.858}{9301}$ | 59.226 <br> 7425 |  |
| E1613/E1668 | TOTAL PENTACHLORINATED DIBENZO-P.DIOXINS | $\xrightarrow{\text { ng }} \mathrm{l}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }^{268} 48.9 \mathrm{~J}$ |  | $\stackrel{93301}{157.626}$ | 74.25 133.657 |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P.DIOXINS | nglkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 49.9 |  | 31.115 | ${ }^{26.542}$ |  |
| SW6020 | ANTIMONY | mglkg | ${ }^{0.35 \mathrm{UJ}}$ | 0.36 UJ | 3.4 | ${ }^{3.3}$ | 1.6 J | 1.3 J | 0.96 J | ${ }^{0.61 \mathrm{~J}}$ | ${ }^{0.58 \mathrm{~J}}$ | ${ }^{0.40 \mathrm{~J}}$ | 0.36 UJ | 0.36 UJ | 0.37 UJ | ${ }^{0.35 \mathrm{U}}$ | 1.2 J | ${ }^{31}$ | 0.36 UJ | ${ }^{2.37 \mathrm{~J}}$ | 0.36 |
| SW6020 | ARSENIC | mglkg | 4.8 | 1.3 | 16 | 12 | 11 | 49 J | ${ }^{33} \mathrm{~J}$ | 48 J | 94 J | 61 | 21 | 10 J | 3.15 | 5.6 J | ${ }^{35}$ | 1500 | 4.2 | 4.2 |  |
| (ene $\begin{aligned} & \text { SW620 } \\ & \text { SW6020 }\end{aligned}$ | BARIUM | $\frac{\mathrm{mg} / \mathrm{kg}}{\mathrm{mg} \mathrm{kg}}$ | 6.3 0.30 U | ${ }^{16} 0$ | $\stackrel{60}{0.31 \mathrm{U}}$ | $\stackrel{47}{0.32 \mathrm{U}}$ | ${ }^{170} 0$ | 60 J 0.36 U | $\stackrel{40 \mathrm{~J}}{0.35 \mathrm{U}}$ | 32 0.360 | 38 <br> 0.290 | $\frac{19 \mathrm{E}}{0.30 \mathrm{U}}$ | 9.8 E 0.31 U | ${ }^{11}$ | ${ }^{16} 0$ | 8.9 <br> 0.30 U <br> 12 | 12 <br> 0.33 U | 1.5 | 8.1 0.31 U | 7.9 0.310 | 10 <br> 0.310 |
| SW6020 | CHROMUM | makg | 5.8 | 6.2 | 21 | 16 | 24 | 44 J | 29 J | 63 J | 70 J | 81 | 24 | 13 J | 5.8 J | 12 J | 210 | 2600 | 10 | 9.6 | 27 |
| SW6020 | COPPER | mgkg | 5.6 | 2.8 | 43 | 35 | 33 | 47 J | 31 J | 48 | 66 | 58 | 19 | 18 | 5.8 | 7.8 | 44 | 1100 | 6.0 | 5.6 | 22 |
| SW6020 | LEAD | mglkg | 6.3 | 14 | 170 | 140 | 100 | 46 J | 31 J | 20 | 27 | 15 | 6.0 | 7.7 | 9.4 | 54 | ${ }^{23}$ | 110 | 18 | 18 | 9.1 |
| SW6020 | SELENIUM | mgkg | 0.88 U | ${ }^{0.88 \mathrm{U}}$ | 0.90 U | 0.92 U | 1.2 U | 1.00 | 1.0 U | 1.10 | ${ }^{0.84 \mathrm{U}}$ | ${ }^{0.88 \mathrm{U}}$ | 0.89 U | 0.89 U | 0.91 U | ${ }^{0.86 U}$ | ${ }^{0.950}$ | 1.6 | 0.90 U | 0.91 U | 0.89 U |
| SW6020 | SILVER | mgkg | 0.40 U | 0.40 U | 0.41 U | 0.42 U | ${ }^{0.53 \mathrm{U}}$ | 0.47 U | 0.47 U | 0.48 U | 0.38 U | 0.40 U | 0.40 U | 0.40 U | 0.41 U | 0.39 U | 0.43 U | 0.49 U | 0.41 U | 0.41 U | 0.40 U |
|  | VANADIUM (FUME OR DUST) | ${ }_{\text {mglkg }}^{\text {mglkg }}$ | $\frac{0.97 \mathrm{~J}}{0.097}$ | 3.4 0.11 | $\frac{7.9}{0.36}$ | $\frac{6.1}{0.31}$ | $\frac{13}{0.31}$ | 8.01 | 5.5 J 0.14 | $\frac{6.1}{0.16}$ | 3.9 0.088 | $\frac{2.2}{0.096}$ | $\frac{1.8}{0.24}$ | $\frac{1.3}{0.29}$ | $\frac{2.4}{0.31}$ | $\frac{2.1}{0.054 \mathrm{~J}}$ | $\frac{1.0 \cup}{0.13}$ | $\frac{1.2 U}{1.7}$ | $\frac{1.4}{0.054}$ | $\frac{1.15}{0.054}$ | $\frac{1.2 \mathrm{~J}}{0.028}$ |
| SW8260 | 1,1,1,-TRICHLOROETHANE | ugkg | 0.13 U | 0.14 U | 0.17 U | 0.17 U | 0.25 U | 0.19 U | 0.19 U | 0.24 U | $0.13 \cup$ | 0.14 U | 0.13 U | 0.13 U | 0.14 U | 0.17 U | 0.15 U | 0.18 U | ${ }_{0}^{0.164}$ | ${ }_{0}^{0.14 \mathrm{U}}$ |  |
| SW8260 | 1,1,2,2,-TETRACHLOROETHANE | ugkg | 0.070 U | 0.072 U | 0.090 UJ | 0.093 U | 0.14 U | 0.10 U | 0.11 U | 0.13 U | $0.071{ }^{0}$ | 0.073 U | 0.0710 | 0.0710 | 0.074 U | 0.089 U | 0.079 U | 0.099 U | 0.084 U | 0.076 U | $0.076{ }^{\text {U }}$ |
| SW8260 | 1,1,2-TRICHLOROETHANE | ugkg |  |  | 0.18 UJ | 0.19 U | 0.27 U | 0.20 U | 0.21 U | 0.26 U |  | 0.15 U |  | 0.14 U | 0.15 U | 0.18 U | 0.16 U | 0.20 U | 0.17 U | 0.15 U |  |
| SW8260 | 1,1-DICHLOROETHANE | ugkg | 0.067 U | 0.069 U | 0.086 U | 0.089 U | 0.13 U | 0.096 U | 0.10 U | 0.13 U | 0.068 U | 0.070 U | 0.068 U | 0.068 U | $0.071 u^{0}$ | 0.085 U | 0.075 U | 0.094 U | 0.080 U | 0.073 U | 0.073 U |
| SW8260 | 1,1-DICHLOROETHYLENE | ugkg | 0.18 U | $0.19{ }^{\text {O }}$ | 0.24 U | 0.24 U | 0.35 U | 0.26 U | 0.27 U | 0.34 U | $\frac{0.19 \mathrm{U}}{0}$ | 0.19 U | $0.19{ }^{0}$ | 0.19 U | 0.20 | 0.23U | $\frac{0.210}{018}$ | 0.26U | 0.22 U | 0.20 U | 0.20 U |
| SW8260 |  | ${ }_{\text {ug }}^{\text {ugkg }}$ | $\stackrel{0.16 \mathrm{U}}{0.52 \mathrm{u}}$ | $\stackrel{0.17 \mathrm{U}}{0.54 \mathrm{u}}$ | $\frac{0.210 J}{0.67 \text { UJ }}$ | ${ }_{0}^{0.2290 ~} 0$ | $\stackrel{0.31 \mathrm{U}}{1.0 \mathrm{U}}$ | 0.23 0.75 JJ | $\frac{0.24 \mathrm{UJ}}{0.78 \mathrm{UJ}}$ | $\frac{0.300}{0.970}$ | ${ }_{0}^{0.160 J} 0$ | $\stackrel{0.170}{0.54 \mathrm{U}}$ | $\stackrel{0.17 \mathrm{U}}{0.53 \mathrm{U}}$ | $\stackrel{0.17 \mathrm{U}}{0.53 \mathrm{U}}$ | $\stackrel{0.17 \mathrm{U}^{0}}{0.55}$ | $\frac{0.21 \mathrm{U}}{0.66 \mathrm{U}}$ | $\frac{0.18 \mathrm{U}}{0.59 \mathrm{U}}$ | O.23UJ | $\frac{0.19 \mathrm{U}}{0.62 \mathrm{U}}$ | $\frac{0.18 \mathrm{UJ}}{0.57 \mathrm{UJ}}$ | $\stackrel{0.180}{0.57}$ |
| SW8260 | 1,2-DIBROMOETHANE | ugkg | 0.059 U | 0.062 U | 0.076 UJ | 0.079 U | 0.12 U | 0.085 U | 0.089 U | 0.12 U | 0.060 U | 0.062 U | 0.061 U | 0.061 U | 0.063 U | 0.076 U | 0.067 U | 0.084 U | 0.071 U | 0.065 U | 0.065 U |
| SW8260 | 1,2-DICHLOROBENZENE | ugkg | 0.082 U | 0.085 U | 0.11 UJ | 0.11 UJ | 0.16 U | 0.12 UJ | 0.13 UJ | 0.16 U | 0.084 UJ | 0.086 U | 0.084 U | 0.084 U | 0.088 U | 0.11 U | 0.093 U | 0.12 UJ | 0.099 U | 0.090 UJ | 0.090 U |
| SW8260 | 12-DICHLOROETHANE | ugkg | 0.11 U | 0.11 U | $0.14 \mathrm{U}^{0}$ | 0.15 U | 0.21 U | ${ }^{0.16 \mathrm{U}}$ | 0.16 U | 0.20 U | $0.11 \mathrm{U}^{\text {a }}$ | 0.12 U | 0.11 U | 0.11 U | 0.12 U | 0.14 U | 0.12 U | 0.15 U | 0.13 U | 0.12 U | 0.12 U |
| SW8260 | 1,2-DICHLOROPROPANE | $\frac{\text { ugkg }}{\text { ugkg }}$ | $\frac{0.057 U}{0.092 U}$ | 0.059 U | $\frac{0.074 \mathrm{U}}{0.12 \mathrm{UJ}}$ | -0.076 U | $\frac{0.11 \mathrm{U}}{0.18 \mathrm{U}}$ | 0.082U | $\frac{0.086 \mathrm{U}}{0.14 \mathrm{UJ}}$ | $\frac{0.11 \mathrm{U}}{0.18 \mathrm{U}}$ | $\frac{0.058 \mathrm{U}}{0.093 \mathrm{~J}}$ | 0.060 ${ }^{0.096}$ | 0.059 U | $\frac{0.058 \mathrm{U}}{0.094 \mathrm{U}}$ | 0.061U | $\frac{0.073 U}{0.12 U}$ | $\frac{0.065 \mathrm{U}}{0.11 \mathrm{U}}$ | - | $\frac{0.069 \mathrm{U}}{0.11 \mathrm{U}}$ | $\frac{0.062 \mathrm{U}}{0.10 \mathrm{UJ}}$ | $\frac{0.063 \mathrm{U}}{0.10 \mathrm{U}}$ |
| SW8260 | ACETONE | ugkg | 55 J | 2.8 U | 3.4U | ${ }^{3.6 \mathrm{U}}$ | 5.10 | $\stackrel{.8 .80}{3}$ | 4.0 u | 5.0 U | $\stackrel{\text { 2.7U }}{ }$ | $\underline{2.80}$ | $\stackrel{.0 .7 U}{ }$ | $\stackrel{.0 .70}{ }$ | 2.8 U | 3.4 U | 91 J | 3.8 U | 100 J | ${ }_{10} 110 \mathrm{~J}$ | 2.90 |
| SW8260 | BENZENE | ugkg | ${ }^{0.41 \mathrm{U}}$ | 0.43 U | ${ }^{0.53 U}$ | 0.55 U | 0.79 U | 0.60 U | 0.62 U | 0.77 U | 0.42 U | 0.43 U | 0.42 U | 0.42 U | 0.44 U | 0.53 U | 0.47 U | 0.59 U | 0.50 U | ${ }^{0.45 U}$ | 0.45 |
| SW8260 | BROMODICHLOROMETHANE | ugkg | ${ }^{0.31 \mathrm{U}}$ | 0.32 U | 0.40 U | $0.41{ }^{\text {U }}$ | 0.59 U | 0.44 U | 0.46 U | 0.58 U | 0.31 U | 0.32 U | 0.32 U | 0.32 U | 0.33 U | 0.40 U | 0.35 U | 0.44 U | 0.37 U | 0.34 U | 0.34 U |
| SW82600 | BROMOMETHANE | ugkg | 0.34 UJ | 0.35 UJ | 0.44 UJ | 0.45 JJ | 0.65 JJ | 0.49 U | ${ }^{0.51 \mathrm{U}}$ | ${ }^{0.63 U}$ | $\xrightarrow{0.35 \cup}$ | 0.36 UJ | 0.35 UJ | 0.35 UJ | 0.36 UJ | ${ }^{0.44 \mathrm{U}}$ | 0.39 UJ | 0.48 UJ | 0.41 UJ | 0.37 UJ | ${ }^{0.37 \mathrm{U}}$ |
| SW8260 | CARBON DISULFIIDE | $\frac{u g l k g}{u g k g}$ | $\xrightarrow{1.7 \mathrm{U}} \mathrm{U}$ | $\xrightarrow{1.8 \mathrm{U}}$ | $\frac{2.2 U}{0.48 \mathrm{U}}$ | $\frac{2.3 \mathrm{U}}{0.50 \mathrm{U}}$ | $\xrightarrow{3.3 \mathrm{U}}$ | $\frac{2.5 U}{0.54 \mathrm{U}}$ | $\frac{2.6 U}{0.56 U}$ | $\frac{3.2 \mathrm{U}}{0.69}$ | 1.8 U 0.38 U | $\stackrel{1.8 \mathrm{U}}{0.39 \mathrm{U}}$ | 1.8 U 0.38 U | 1.8 U 0.38 U | $\frac{1.8 \mathrm{U}}{0.40 \mathrm{U}}$ | $\xrightarrow{2.24} 0$ | $\frac{2.0 U}{0.42 \mathrm{U}}$ | 2.4 U 0.53 U | $\frac{2.14}{0.450}$ | $\frac{1.9 U}{0.410}$ | $\frac{1.9 U}{0.410}$ |
| SW8260 | CFC-11 | ugkg | 0.28 U | 0.29 U | ${ }_{0}^{0.36 \mathrm{U}}$ | 0.37 U | ${ }_{0}^{0.53 U}$ | 0.40 U | 0.41 U | ${ }^{0.52 \mathrm{U}}$ | ${ }_{0}^{0.28 U}$ | 0.29 U | ${ }^{0.28 \mathrm{U}}$ | ${ }^{0.28 U}$ | ${ }^{0.30 \mathrm{U}}$ | 0.35 U | 0.31 U | 0.39 U | 0.33 U | ${ }_{0}^{0.30 U}$ | ${ }^{0.30 \mathrm{U}}$ |
| SW8260 | CFC-12 | ugkg | 0.34 U | 0.35 U | 0.44 U | 0.45 U | 0.65 JJ | 0.49 U | ${ }^{0.51 \mathrm{U}}$ | 0.63 U | ${ }_{0}^{0.35 \mathrm{U}}$ | 0.36 U | 0.35 U | ${ }^{0.35 \mathrm{U}}$ | 0.36 U | 0.44 U | 0.39 U | 0.48 U | 0.41 U | 0.37 U | 0.37 U |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | ugkg | 0.38 U | 0.40 U | 0.49 U | 0.51 U | 0.73 U | 0.55 U | 0.57 U | 0.71 U | 0.39 U | 0.40 U | 0.39 U | ${ }^{0.394}$ | 0.41 U | 0.49 U | 0.43U | 0.54 U | 0.46 U | ${ }^{0.42 \mathrm{U}}$ | 0.42 |
| SW8260 | CHLLORODIBROMOMETHANE | $\frac{\text { ugkg }}{\text { ualkg }}$ | $\stackrel{0.42 \mathrm{U}}{0.27 \mathrm{U}}$ | 0.44 | 0.34 UJ | $\stackrel{0.36 \mathrm{U}}{ }$ | $\stackrel{0.81 \mathrm{u}}{0.51 \mathrm{u}}$ | $\stackrel{0.010}{0.380}$ | $\stackrel{0.64 \mathrm{U}}{0.40}$ | $\stackrel{0.50 \mathrm{U}}{0}$ | $\stackrel{0.43 \mathrm{U}}{0.270}$ | $\stackrel{0.450}{0.280}$ | $\stackrel{0}{0.437}$ | $\stackrel{0.43)}{0.27}$ | $\stackrel{0.45 \mathrm{U}}{0.28 \mathrm{U}}$ | $\stackrel{0.544}{0.34}$ | $\stackrel{0.48 \mathrm{U}}{0.30 \mathrm{U}}$ | $\stackrel{0.38 \mathrm{U}}{ }$ | $\stackrel{0.51 \mathrm{u}}{0.320}$ | $\stackrel{0.46 \mathrm{U}}{0.29 \mathrm{u}}$ |  |
| SW8260 | CHLOROETHANE | ugkg | 0.38 U | 0.40 U | 0.49 U | 0.51 U | 0.73 U | 0.55 U | 0.57 U | 0.71 U | 0.39 U | 0.40 U | 0.39 U | 0.39 U | 0.41 U | 0.49 U | 0.43 UJ | 0.54 U | 0.46 UJ | 0.42 UJ | 0.42 U |
| SW8260 | CHLOROFORM | ugkg | 2.0 J | 0.38 U | 0.47 U | 0.48 U | 0.69 U | 0.52 U | 0.54 U | 0.67 U | 0.37 U | 0.38 U | 0.37 U | ${ }^{0.37 \mathrm{U}}$ | 0.39 U | 0.46 U | ${ }^{0.414}$ | 0.51 U | 0.43 U | 0.39 U | 0.40 U |
| SW8260 | CHLLOROMETHANE | ugkg | $\stackrel{0.48 \mathrm{U}}{0}$ | $0.50{ }^{0.0}$ | $\stackrel{0.610}{036}$ | $\stackrel{0.64 \mathrm{U}}{0}$ | $\stackrel{0.92 \mathrm{U}}{ }$ | $\stackrel{0.69 \mathrm{U}}{0}$ | $\stackrel{0.714}{ }$ | $\stackrel{0.89 \mathrm{U}}{0}$ | $\stackrel{0.48 \mathrm{U}}{0}$ | ${ }_{0}^{0.50 \mathrm{U}}$ | 0.49 | 0.49 | 0.51U | $\stackrel{0.610}{035}$ | $\stackrel{0.544}{0314}$ | ${ }_{0}^{0.67]^{0}}$ | $\stackrel{0.57 \mathrm{U}}{03}$ | $\stackrel{0.52 \mathrm{U}}{ }$ | $\stackrel{0.52 \mathrm{U}}{030}$ |


|  |  |  | $\begin{gathered} \text { SSO008 } \\ \text { SSO08AA } \\ 0-0.25 \text { feet } \\ 12 / 105 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c} \text { SSOO9 } \\ \text { SsoogAt } \\ 0-0.05 \text { feet } \\ 12105 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO10 } \\ \text { SSOO10AA } \\ \text { o-0.25 feet } \\ \text { 12/05/2006 } \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { SSO11 } \\ \text { SSOO11AA } \\ \text { o.-.25 eet } \\ 12205 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { SSO12 } \\ \text { SSO12AA } \\ \text { o-0.25 feet } \\ 121 / 104 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS012 } \\ \text { SSO12AC } \\ 0-0.25 / \text { feet } \\ 121 / 104 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSOO13 } \\ \text { SSOABA } \\ 0.0 .25+e e t \\ 1210412006 \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { SSOO15 } \\ \text { SSOA } \\ 0.0 .25 \mathrm{AFet} \\ 1210412006 \\ \hline \end{gathered}$ | $\begin{array}{\|c} \text { SS016 } \\ \text { SS016AA } \\ 0.0 .25 \text { feet } \\ 12.104 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|l\|l\|} \hline \text { SSO17 } \\ \text { SSO17AA } \\ 0.0 .25 \text { feet } \\ 12104 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS018 } \\ \text { SSO18AA } \\ 0.0 .25 \text { feet } \\ 12 / 104 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO19 } \\ \text { SSO19AA } \\ 0.0 .25 \text { feet } \\ 122 / 01 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO20 } \\ \text { SSO20AA } \\ 0-0.25 \text { feet } \\ \text { 12/12/2006 } \\ \hline \end{gathered}$ | $\begin{array}{\|c} \text { SSO21 } \\ \text { SSO21AA } \\ 0.0 .25 \text { feet } \\ 12106 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS022 } \\ \text { SSO22AA } \\ 0-0.25 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | SS022 <br> SS022AB 0-0.25 feet $12 / 12 / 2006$ 12/12/2006 | $\begin{gathered} \text { SSO23 } \\ \text { Sso23AA } \\ 0-0.25 \text { feet } \\ 12101 / 2006 \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Metho | Analye | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIIS-1,3-DICHLOROPROPENE | ugkg | 0.31 U | 0.32 U | 0.40 UJ | 0.41 U | 0.59 U | 0.44 U | 0.46 U | 0.58 U | ${ }^{0.31 \mathrm{U}}$ | 0.32 U | 0.32 U | 0.32 U | 0.33 U | 0.40 U | 0.35 U | 0.44 U | 0.37 U | 0.34 U | 0.34 U |
| SW8260 | CYCLOHEXANE | ugkg | 0.40 U | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.523}$ | ${ }^{0.54 U^{4}}$ | $0.77{ }^{0}$ | ${ }^{0.58 \mathrm{U}}$ | ${ }^{0.600}$ | ${ }^{0.754}$ | ${ }^{0.410}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.410}$ | ${ }^{0.410}$ | ${ }^{0.43 U}$ | ${ }^{0.52 U}$ | ${ }^{0.464}$ | $0.57{ }^{\text {U }}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.444}$ | $0.44 \mathrm{U}^{0}$ |
| SW8260 | DICHLOROMETHANE | ugkg | 0.41 U | 0.43 U | 0.53 U | 0.55 U | 0.79 U | 0.60 U | 0.62 U | $0.77{ }^{\text {U }}$ | 0.42 U | 0.43 U | 0.42 U | 0.42 U | 0.44 U | ${ }^{0.53 U}$ | 0.47 U | 0.59 U | 0.50 U | 0.45 U | 0.45 U |
| SW8260 | ETHYLBENZENE | ugkg | 0.45 U | ${ }^{0.46 \mathrm{U}}$ | 0.57 UJ | 0.60 U | ${ }^{0.85 U}$ | 0.64 U | ${ }^{0.67 \mathrm{U}}$ | ${ }^{0.83}{ }^{\text {U }}$ | ${ }^{0.45 \mathrm{U}}$ | ${ }^{0.47 \mathrm{U}}$ | ${ }^{0.46 U^{4}}$ | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.47 \mathrm{U}^{\text {U }} \text { - }}$ | 0.57 U | ${ }^{0.500^{-5}}$ | ${ }^{0.63 U}$ | ${ }^{0.530}$ | ${ }^{0.499}$ | ${ }^{0.499}$ |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.49 U | 0.51 U | 0.63 UJ | 0.65 UJ | 0.94 U | 0.70 UJ | 0.73 UJ | 0.91 U | 0.49 UJ | 0.51 U | 0.50 U | 0.50 U | 0.52 U | 0.62 U | ${ }^{0.55 U}$ | 0.69 UJ | 0.58 U | 0.53 UJ | 0.53 U |
| SW8260 | m,p-xylenes | ugkg | 0.92 U | $0.95 \mathrm{U}^{0.054}$ | 1.2 UJ | 1.30 | 1.8 U | 1.40 | 1.4 U | 1.8 U | 0.93 U | 0.96 U | 0.94 u | 0.94 U | 0.98 U | 1.2 U | 1.10 | 1.34 | 1.10 | 1.00 | 1.00 |
| (ewz260 | M-DICHLOROBENZENE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { ualkg }}$ | $\frac{0.053 \mathrm{U}}{0.20 \mathrm{u}}$ | 0.055 ${ }_{0}^{0.21 \mathrm{U}}$ | ${ }_{\text {0, } 0.068 \mathrm{UJ}}^{0.26 \mathrm{U}}$ | $\frac{0.071 \mathrm{UJ}}{0.27 \mathrm{U}}$ | 0.11U | $\frac{0.076 \mathrm{UJ}}{0.29 \mathrm{U}}$ | $\frac{0.079 \mathrm{UJ}}{0.30 \mathrm{U}}$ | 0.0.099 | -0.054 UJ | $\frac{0.056 \mathrm{U}}{0.21 \mathrm{U}}$ | 0.054U | 0.054U | -0.056 0 | -0.068 ${ }_{0}^{0.26 U}$ | ${ }_{0}^{0.060 \mathrm{U}} 0$ | -0.075 U | 0.064U | -0.058 UJ | 0.058 U <br> 0.22 U |
| SW8260 | METHYL LTHYL KETONE | ugkg | 1.9 J | 1.2 U | 1.5 U | 1.6 U | 2.30 | 1.70 | 1.8 U | 2.20 | 1.2 U | 1.30 | 1.2 U | 1.2 U | 1.30 | 1.5 U | 2.93 | 1.7 U | 2.2 J | ${ }^{3.2 \mathrm{~J}}$ | 1.30 |
| SW8260 | METTYL ISOBUTYL KETONE | ugkg | $\stackrel{0.75 \mathrm{U}}{114}$ | ${ }_{0}^{0.78 \mathrm{U}}$ | 0.97 UJ | $\frac{1.00}{1.5}$ | 1.5 | 1.10 | 1.2 U | 1.4 U | $\stackrel{0.76 \mathrm{U}}{174}$ | 0.79 | $\stackrel{0.77 \text { U }}{114}$ | $\stackrel{0.77 \mathrm{U}^{114}}{ }$ | - 0.80 U | $\stackrel{0.96 \mathrm{U}}{1.4}$ | ${ }_{0}^{0.85 \mathrm{U}}$ | 1.15 | $\stackrel{0.90 \mathrm{U}}{ }$ | $\stackrel{0.82 \mathrm{U}}{ }$ | 0.82 U <br> 124 |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.14 | 1.10 | $1.4 \mathrm{UJ}^{\text {d }}$ | 1.50 | 2.10 | 1.6 | 1.6 U | 2.00 | 1.14 | 1.2 U | 1.10 | 1.14 | 1.2 U | 1.4 U | 1.2 UJ | 1.5 U | 1.3 UJ | 1.2 UJ | 1.2 U |
| SW8260 | METHYL EENZENE | ugkg | 0.45 U | 0.46 U | 0.57 UJ | 0.60 U | 0.85 U | ${ }^{0.64 U}$ | 0.67 U | ${ }^{2.83 U}$ | ${ }^{0.45 U}$ | 0.47 U | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.46 \mathrm{U}}$ | 0.47 U | 0.57 U | 0.50 U | 0.63 U | 0.53 U | 0.60 J | 0.49 U |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.47 U | 0.48 U | 0.60 UJ | 0.62 U | 0.90 UJ | 0.67 U | 0.70 U | 0.87 U | 0.47 U | 0.49 U | 0.48 U | 0.48 U | 0.50 U | 0.60 U | 0.53 U | 0.66 U | 0.56 U | 0.51 U | 0.51 U |
| SW8260 | ${ }_{\text {O-XYLENE }}^{\text {STYRENE }}$ | ${ }_{\text {ug }}^{\text {ugkg }}$ | -0.42U | 0.44U | 0.55 UJ | 0.57 | 0.81U | 0.61U | 0.64U | 0.79U | -0.43U | -0.45 | -0.43U | 0.43 U <br> 0.47 U | -0.45 | 0.54U | $\xrightarrow{0.48 \mathrm{U}}$ | 0.60 | 0.51U | 0.46 U <br> 050 | 0.46 U <br> 050 |
| SW8260 | TERT-BUTYL METHYL ETHER | ${ }_{\text {ugkg }}$ | 0.34 U | 0.35 U | 0.44 U | 0.45 U | 0.65 U | 0.49 U | 0.51 U | 0.63 U | 0.35 U | ${ }_{0}^{0.36 \mathrm{U}}$ | 0.35 U | 0.35 U | 0.36 U | 0.44 U | 0.39 U | 0.48 U | 0.41 U | 0.37 U | 0.37 U |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.42 U | 0.44 U | 0.55 UJ | 0.57 U | 0.81 U | 0.61 U | 0.64 U | 0.79 U | 0.43 U | 0.45 U | 0.43 U | 0.43 U | 0.45 U | 0.54 U | 0.48 U | 0.60 U | 0.51 U | 0.46 U | 0.46 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | ugkg | 0.40 U | 0.42 U | 0.52 U | 0.54 U | $0.77 \mathrm{U}^{0}$ | 0.58 U | 0.60 U | 0.75 U | 0.41 U | 0.42 U | 0.41 U | 0.41 U | 0.43 U | 0.52 U | 0.46 U | 0.57 U |  | ${ }^{0.44 \mathrm{U}}$ |  |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ugkg | 0.32 U | ${ }^{0.33 \mathrm{U}}$ | 0.41 UJ | ${ }_{0}^{0.43 U}$ | 0.61 U | ${ }^{0.460 ~}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.60 U}$ | ${ }^{0.32 \mathrm{U}}$ | ${ }^{0.34 U}$ | 0.33 U | 0.33 U | 0.34 U | 0.41 U | ${ }_{0} 0.36 \mathrm{U}$ | ${ }^{0.45 U}$ | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.35 \mathrm{U}}$ |
| SW8260 | TRIBCMOMETHANE | uglkg | 0.41 U | ${ }^{0.43 \cup}$ | ${ }^{0.535 \mathrm{~J}}$ | 0.55 U | 0.79 U | 0.60 U | 0.62 U | $0.77{ }^{0}$ | 0.42 | 0.43 | 0.42U | ${ }^{0.42 \mathrm{U}}$ | 0.44 U | ${ }^{0.534}$ | 0.47 U | $0.59{ }^{\text {O }}$ | ${ }^{0.50}$ | $0.45{ }^{0}$ | $0.45{ }^{0}$ |
| SW8260 | TRICHLOROETHYLENE |  | -0.42U | 0.44 U 0.27 U | 0.55 U 0.33 u | 0.57 $\begin{aligned} & 0.34 \mathrm{U} \\ & 0.0\end{aligned}$ | 0.81U | 0.61U | 0.64U | -0.79 | 0.43 U 0.26 U | 0.450.27 U | 0.43 U 0.26 U | 0.43 U 0.26 U | 0.45 U | ${ }^{0.54 U}$ | ${ }^{0.48 \mathrm{U}}$ | 0.60 U | $0.51{ }^{0.5}$ | ${ }^{0.460}$ | ${ }^{0.46 U^{2}}$ |
| SW8270 | 2,4,5-TRICHLOROPHENOL | ugkg | 14 U | 15 U | 15 U | 15 U | 19 U | 18 U | 17 U | 17 U | 14 U | 14 U | 14 U | 14 U | 15 U | 15 U | 15 U | 18 U | 15 U | 15 U | 0.280 |
| SW8270 | 2,4,6-TRICHLOROPHENOL | ugkg | 38 U | 40 U | 41 U | 410 | 51 U | 48 U | 47 U | 48 U | 39 U | 39 U | 39 U | 39 U | 39 U | 40 U | 41 U | 48 U | 40 U | 40 U | 40 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 18 U | 19 U | 20 U | 19 U | 24 U | 23 U | 23 U | 23 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 23 U | 19 U | 19 U | 19 U |
| SW8270 | 2,4-DIMETYYLPHENOL | ugkg | 20 U | 210 | 22 U | 22 U | 27 U | 250 | 250 | 250 | 210 | 210 | 210 | 210 | 210 | 210 | 22 U | 43 J | 210 | 210 | 21 U |
| SW8270 | 2.4-DIIITROPHENOL | ugkg | 130 | 14 U | 14 U | $\frac{14 U}{114}$ | 17 U | 16 U | 16 U | 16 U | 13 U | 130 | 13 U | 130 | 13 U | 14 U | 14 U | 16 U | 14 U | 14 U | 14 UJ |
| SW8270 | 2,6-DIIITROTOLUENE | ualkg | 38 U | 40 U | 41 U | 410 | 510 | 48 U | 47 U | 48 U | 39 U | 39 U | 39 U | 39 U | 39 U | 40 U | 41 U | 48 U | 40 U | 40 U | 40 U |
| SW8270 | 2.CHLORONAPHTHALENE | ugkg | 17 U | 18 U | 18 U | 18 U | 23 U | 21 U | 210 | 21 U | 18 U | 17 U | 18 U | 18 U | 18 U | 18 U | 19 U | 22 U | 18 U | 18 U | 18 U |
| SW8270 | 2.CHLOROPHENOL | ugkg | 19 U | 20 U | 210 | 210 | 26 U | 24 U | 24 U | 24 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 210 | 24 U | 20 U | 20 U | 20 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | ugkg | 13 U | 14 U | 14 U | 14 U | 17 U | 16 U | 16 U | 16 U | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 14 U | 16 U | 14 U | 14 U | 14 U |
| SW8270 | 2-NITROANLINE | ugkg | $\stackrel{24 \mathrm{UJ}}{15}$ | $\stackrel{240 J}{160}$ | 250 | 250 | 320 | 29 uJ | 29 UJ | 29 UJ | $\stackrel{24 \mathrm{UJ}}{15}$ | $\stackrel{24 \mathrm{UJ}}{15}$ | 24 UJ | 24 UJ | 24UJ | ${ }^{250 J}$ | 250 | 30 U | ${ }^{24 U}$ | ${ }^{25 U}$ | 24 UJ |
| SW8270 | 2-NTTROPHENOL | ugkg | 15 U | 16 U | 16 U | 16 U | 20 U | 19 U | 19 U | 19 U | 15 U | 15 U | 16 U | 16 U | 16 U | 16 U | 16 U | 19 U | 16 U | 16 U | 16 U |
| SW8270 | 3,3.5.5-TRIMERETHYLL-2.CCYCLOHEXENE-1-ONE | $\frac{\mathrm{ug} k \mathrm{l}}{\mathrm{ug} k g}$ | $\frac{36 \mathrm{UJ}}{14 \mathrm{UJ}}$ | $\frac{38 \mathrm{UJ}}{15 \mathrm{uj}}$ | $\frac{390}{15}$ | $\frac{380}{150}$ | 19 U | ${ }_{18}{ }^{18 \mathrm{U}}$ | 450 | ${ }_{17}^{45}$ | 14U | 14 U | $\frac{37 \mathrm{U}}{14}$ | 14 U | ${ }^{37 \mathrm{U}}$ | $\frac{38 \mathrm{U}}{15 \mathrm{uj}}$ | $\frac{390}{150}$ | ${ }_{18}^{46 \mathrm{U}}$ | 150 | 38U | 150 |
| SW8270 | 3-NITROANILINE | ugkg | 18 U | 19 U | 20 U | 19 U | 24 U | 23 U | 23 U | 23 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 23 U | 19 U | 19 U | 19 U |
| SW8270 | 4,6-DINTROO-2-METHYLPHENOL | ugkg | 9.90 | 110 | 110 | 110 | 14 U | 13 U | 13 U | 13 U | 110 | 10 U | 110 | 110 | 110 | 110 | 110 | 13 U | 110 | 110 | 11 U |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 110 | 11 U | 11 U | 110 | 14 U | 13 U | 13 U | 13 U | 11 U | 110 | 110 | 110 | 11 U | 110 | 12 U | 14 U | 11 U | 11 U | 110 |
| SW8270 | 4.CHLORO-3-METHYLPHENOL | ugkg | 17 U | 18 U | 18 U | 18 U | 23 U | 210 | 21 U | 21 U | 18 U | 17 U | 18 U | 18 U | 18 U | 18 U | 19 U | 22 U | 18 U | 18 U | 18 U |
| SW8270 | 4.CHLLOROPHENYL PHENYL ETHER | ugkg | 24 U | 24 U | 25 U | 25 U | 310 | 29 U | 29 U | 29 U | 24 U | 24 U | 24 U | 24 U | 24 U | 25 U | 25 U | 30 U | 24 U | 25 U | 24 U |
| SW8270 | 4-NITROPHENOL | ugkg | 18 UJ | 19 UJ | 20 UJ | 19 UJ | 24 UJ | ${ }_{23}{ }^{\text {UJ }}$ | 23 UJ | ${ }^{23} \mathrm{UJ}$ | 19 UJ | ${ }_{19} 19 \mathrm{UJ}$ | ${ }_{19} 19 \mathrm{UJ}$ | 19 UJ | 19 UJ | ${ }_{19} \mathrm{UJJ}^{2}$ | 20 U | ${ }_{23} 3 \mathrm{UJ}$ | 19 U | 19 U | ${ }_{19} 19 \mathrm{uj}$ |
| SW8270 | BENZYL BUTYL PHTHALATE | ugkg | 19 U | 20 U | 21 U | 21 U | 26 U | 24 U | 24 U | 24 U | 20 U | 20 U | 20 U | 20 U | 20 U | 45 J | 21 U | 24 U | 20 U | 20 U | 20 U |
| SW8270 | BIPHENYL | ugkg | 160 U | $170{ }^{\text {U }}$ | 170 | 170 | 220 U | 200 U | 200 U | 200 U | 160 U | 160 U | 170 U | $170{ }^{\text {U }}$ | 170 U | $170{ }^{\text {U }}$ | 180 U | 200 U | 170 UJ | 170 | $170{ }^{\text {U }}$ |
| SW8270 | BIS(2-CHLORETHOXYMETHANE | ugkg | 18 U | 19 U | 20 U | 19 U | 24 U | 23 U | 23 U | 23 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 23 U | 19 U | 19 U | 19 U |
| SW8270 | BiS(2-CHLOROETHYL)ETHER | ugkg | ${ }_{16 \mathrm{U}}^{16}$ | 17 U | ${ }_{2}^{17 \mathrm{U}}$ | 17 U | 22 U | 20 U | 20 U | 20 U | 16 U | $\frac{16 \mathrm{UJ}}{23}$ | 17 U | 17 U | 17 U | 17 U | 18 U | 20 U | 17 U | 17 U | 17 U |
| SW8270 | BIIS(2-CHLOROISOPROPYL ETHER | ugkg | 23 UJ | 23 UJ | 24 UJ | 24 UJ | 30 UJ | 28 U | 28 U | 28 U | 230 | 23 U | 230 | 23 U | 23 U | 24 UJ | ${ }^{24 U}$ | 28 UJ | 23 U | 24 U | ${ }^{236}$ |
| SW8270 | CARBAZOLE | ${ }_{\text {uglkg }}$ | 280 | 18 U | ${ }_{72}$ | ${ }_{74}{ }^{\text {J }}$ | ${ }_{100}$ | 230 | ${ }_{220}$ | 280 | 250 | ${ }^{350} \mathrm{~J}$ | ${ }_{150}$ | ${ }^{180}$ | 470 | ${ }_{51}$ | ${ }_{84}$ | 1400 | 18 U | 18 U | $\underline{60}$ |
| SW8270 | IIBENZOFURAN | Logkg | 100 J | 15 U | 90 J | 100 J | 91 J | 47 J | 50 J | 38 J | 130 J | 711 | 39 J | 43 J | 23 J | 30 J | 75 J | 300 | 83 J | 89 J | 15 U |
| SW8270 | DIETHYL PHTHALATE | ugkg | 13 U | 14 U | 14 U | 14 U | 17 U | 16 U | 16 U | 16 U | 130 | 13 U | 13 U | 13 U | 13 U | 14 U | 14 U | 16 U | 14 U | 14 U | 14 U |
| SW8270 | DIMETHYL PHTHALATE | $\frac{\text { ugkg }}{\text { ugk }}$ | 11 U | 11 U | 11 U | 11 U | 14 U | 13 U | 13 U | $\frac{13}{80}$ | $\frac{11 \mathrm{U}}{65}$ | 11 U | 11 U | 11 U | 110 | $\underline{110}$ | 12 U | 14 U | 11 U | 110 | 110 |
| SW8270 | D-N-BUTYL-PHTHALATE | ugkg | 64 U | 67 U | 69 U | 68 U | 86 U | 80 U | 80 U | 80 U | 65 U | 65 U | ${ }^{66 \mathrm{U}}$ | 66 U | 67 U | 68 U | 70 U | 82 U | 67 U | 68 U | 67 U |
| (eler $\begin{aligned} & \text { SW8270 } \\ & \text { SW8270 }\end{aligned}$ | D-N-OCTYL-PHTHALATE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { ugkg }}$ | 16 U | 17 U | ${ }^{17 \mathrm{U}}$ | 17 U | 22 U | 20 U | 20 U | 20 U | 16 U | 16 U | 17 U | 17 U | 17 U | 17 U | $\frac{18 \mathrm{U}}{20 \mathrm{U}}$ | 20 U | 17 U | 17 U |  |
| SW8270 | HEXACHLOROBENZENE | ugkg | 8.8 U | 9.10 | 9.40 | 9.30 | 12 U | 11 U | 11 U | 11 U | 8.9 U | 8.90 | 9.00 | 9.00 | 9.00 | 9.2 U | 9.5 U | 12 U | $9.1 \mathrm{UJ}^{\text {¢ }}$ | 9.2 U | 9.10 |
| (ew ${ }^{\text {SW8270 }}$ | HEXACHLOROCYCLOPENTADIENE | ugkg | 12 UJ | 12 U | 13 U | 13 U | 16 U | 15 U | 15 U | 15 U | 12 U | 12 U | 12 U | 12 U | 12 U | 13 U | 13 U | 15 U | 12 U | 13 U | 12 UJ |
| SW8270 | HEXACHLOROETHANE | $\frac{\mathrm{Lg} \text { kg }}{}$ | 18 U | 19 U | 20 U | 19 U | 24 U | $\frac{230}{274}$ | 23 U | $\frac{230}{274}$ | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | $\frac{230}{274}$ | 19 U | 19 U | 19 U |
| SW8270 | N-NITROSO-DI-N.PROPYLAMINE | ${ }_{\text {ugkg }}$ | 19 UJ | ${ }_{20}{ }^{20}$ | 210 | 210 | 26 U | 24 U | 24 U | 24 U | 20 U | 20 U | 20 U | 20 U | 20 U | ${ }_{20} 20 \mathrm{UJ}$ | 210 | 24 U | 20 U | 20 U | 20 U |
| SW8270 | N-NITROSODIPHENYLAMINE | ugkg | 12 U | 12 U | ${ }^{13} \mathrm{U}$ | 13 U | ${ }^{16 \mathrm{U}}$ | 15 U | 15 U | 15 U | 12 U | 12 U | 12 U | 12 U | 12 U | 13 U | 130 | 15 U | 12 U | 13 U | 12 U |
| SW8270 | P.CHLLOROANLINE | $\frac{\text { ugkg }}{\text { ugkg }}$ | $\underline{28} 17$ | $\underline{29 U}$ | $\frac{30 \mathrm{U}}{18}$ | $\underline{18 \mathrm{U}}$ | 37 U 23 | 310 | $\frac{34 \mathrm{U}}{21 \mathrm{U}}$ | $\frac{34 \mathrm{U}}{21 \mathrm{U}}$ | ${ }_{18}^{28}$ | $\underline{280}$ | ${ }_{18}^{28} \mathrm{U}$ | ${ }^{28} 18$ | $\underline{29 U}$ | ${ }_{18}^{29} \mathbf{U}$ | 30U | $\frac{35}{22 U}$ | $\underline{29 U}$ | $\underline{29 U}$ | $\underline{29 U}$ |
| V8270 | --NITROANILINE | ugkg | 13 U | 14 U | 14 U | 14 U | 17 U | 16 U | 16 U | 16 U | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 14 UJ | 16 U | 14 UJ | 14 UJ | 140 |
| sw9060 | TOTAL ORGANIC CARBON | malkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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Mg/kg: miligrams per kilorram
U = non-d
ugkg: micrograms ser kilogram result from Vistal laboratory
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|  |  |  | $\begin{gathered} \text { SS024 } \\ \text { SSO24AA } \\ 0 .-0.25 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO25 } \\ \text { SSO25AA } \\ 0-0.25 \text { feet } \\ 12 / 04 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { Ss026 } \\ \text { SS0026AA } \\ 0-0.25 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ |  |  | $\begin{array}{\|c\|} \hline \text { SSO28 } \\ \text { SSO28AB } \\ 0.0 .25 / \text { feet } \\ 12107712006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO29 } \\ \text { ssơ9AA } \\ 0.0 .25 \text { feet } \\ 122107 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO30 } \\ \text { sso30AA } \\ 0.0 .25 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO31 } \\ \text { SSOO31AA } \\ 0-0.25 \text { feet } \\ 121121212006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SS032 } \\ \text { SSO32AA } \\ 0.0 .25 \text { feet } \\ \text { 121/06/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c} \text { SSO33 } \\ \text { SSSO33AA } \\ 0-0.25 \text { feet } \\ 10266 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c} \text { SSO34 } \\ \text { SSOO3AAA } \\ \text { o-0.25 feet } \\ 12104 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO35 } \\ \text { Sso35AA } \\ 0-0.25 \text { feet } \\ 12 / 106 / 2000 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS036 } \\ \text { SSO36AA } \\ 0-0.25 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO36 } \\ \text { SSO36AC } \\ 0-0.25 \text { feet } \\ 12 / 1 / 6 / 2000 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO37 } \\ \text { SSO37AA } \\ 0-0.25 \text { feet } \\ 121 / 55 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO38 } \\ \text { SSOB8AA } \\ 0-0.25 \text { feet } \\ 12 / 107 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS038 } \\ \text { sso38AC } \\ 0-0.25 \text { feet } \\ 12 / 1 / 7 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO39 } \\ \text { sso39AA } \\ 0.0 .25 \text { feet } \\ 122107 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ENASIM | 2-METHYLNAPHTHALENE | $\underset{\text { ugkg }}{\substack{\text { ugkg } \\ \text { ugh }}}$ | ${ }_{10}^{40}$ | $\frac{30 \mathrm{~J}}{44}$ | $\underline{1600}$ | ${ }_{47}{ }^{35}$ | 160 U | $\underline{160 \cup}$ | 16 U | ${ }_{21}^{51}$ | $\frac{28 \mathrm{~J}}{45}$ | $\stackrel{830}{150}$ | ${ }^{1.60}$ | ${ }_{30}^{24 \mathrm{U}}$ | 40 u | ${ }_{30}^{40}$ | ${ }_{30}^{46}$ | ${ }_{170}{ }^{420}$ | $\frac{340}{60}$ | 37 U | $\underline{174}$ |
| ENASIM | ACENAPHTHYLENE | ugkg | 100 | 500 | 2100 | 910 | 3400 | 3400 | 28 U | 330 | 540 | 690 | 2.8 U | 680 | 770 | 190 | 200 | 1700 | 1000 | 750 | 250 |
| ENASIM | ANTHRACENE | ugkg | 180 | 820 | 3700 | 1800 | 4700 | 4900 | 43 | 450 | 1000 | 1500 | 5.8 | 1600 | 560 | 270 | 270 | 3600 | 1800 | 1200 | 530 |
| ENASIM | BENZO(A)ANTHRACENE | ugkg | 230 | 700 J | 3900 | 1800 | 15000 | 17000 | 36 | 880 | 950 | 1800 | 2.9 J | 880 | 1300 | 390 | 400 | 4000 | 1900 | 1500 | 430 |
| ENASIM | BENZO(A)PYRENE | $\frac{\text { ugkg }}{\text { ugagg }}$ | $\frac{230}{670}$ | $\frac{770 \mathrm{~J}}{1600 \mathrm{~J}}$ | 6800 13000 | 1800 3100 | 16000 22000 | $\xrightarrow{177000}$ | ${ }_{8}^{40}$ | ${ }_{1100}^{1900}$ | 1400 | 1500 3300 | $\frac{3.00}{5.8}$ | 1100 | 1600 1800 | 410 | $\frac{440}{820}$ | 4400 9800 | 1900 3400 | 1600 2500 | ${ }_{880}^{480}$ |
| ENASIM | BENZO(G,H,U)PERYLENE | ugkg | 190 | 590 J | 7600 | 1300 | 6500 | 6300 | 45 | 800 | 1100 | 1600 | 3.5 J | 1100 | 1100 | 470 | 480 | 4300 | 2100 | 1900 | 470 |
| BNASIM | BENZO(k)FLUORANTHENE | ugkg | 240 | ${ }^{12000 ~}$ | 6100 | 2400 | 20000 | 19000 | 63 | 920 | 1300 | 2900 | 4.9 | 1600 | 1700 | 690 | 660 | 6600 | 2400 | 2300 | 730 |
| BNASIM | CHRYSENE | ugkg | 470 | ${ }^{11000}$ | 5200 | 2700 | 20000 | 20000 | 67 | 1100 | 1200 | 3100 | 3.5 J | 1200 | 1600 | 620 | 600 | 5500 | 2500 | 2000 | 600 |
| ENASIM | DIBENZO(A,H)ANTHRACENE | ugkg | ${ }^{73} \mathrm{~J}$ | 190 J | 2100 | 480 | 2600 | 3100 | 12 J | 320 J | 400 | 410 | 0.91 J | 350 | 430 | ${ }^{130}$ | ${ }^{130}$ | 1600 | 660 | 530 | 150 |
| BNASIM | FLUORANTHENE | ugkg | 680 | 1400 | 3900 | 2900 | 18000 | 21000 | ${ }^{86}$ | 1300 | 1300 | 3600 | 4.7 | 1200 | 1300 | 740 | 750 | 6100 | 2900 | 2400 | ${ }^{730}$ |
| ENASIM | FLUORENE | ugkg | 10 | 41 | 160 U | 55 | 170 J | 190 J | 16 U | 29 J | 47 | 830 | 1.6 U | 32 J | 33 U | 17 U | 17 U | 110 | 46 J | 37 U | 17 U |
| BNASIM | INDENO(1, 2, 3, CD) PYRENE | ugkg | 190 | 670 |  | 1600 | 8900 | 8900 |  | 820 | 1100 | 1700 | ${ }^{3.8}$ | 1200 | ${ }^{1300}$ | 510 | 520 | 5200 | 12300 | 2000 | 520 |
| SNASIM | NAPHTHALENE | ugkg | 41 | 39 J | ${ }^{54 \mathrm{U}}$ | 58 100 100 | ${ }^{54 \mathrm{U}}$ | ${ }^{2200}$ | 5.4U | 81 | 40 | $\stackrel{48 \mathrm{~J}}{\stackrel{4}{1900}}$ | 0.54 U | ${ }^{39}$ | ${ }^{63} \mathrm{~J}$ | - 100 | ${ }_{43}^{4101}$ | 800 | 120 | 1300 | $\begin{array}{r}5.5 \mathrm{U} \\ \hline 2701\end{array}$ |
| ENASIM | ${ }^{\text {PENTACNLOROPHENOL }}$ | ${ }_{\text {ug }}^{\substack{\text { ugkg } \\ \text { ugkg }}}$ | ${ }^{0.750}$ | ${ }_{310}^{810}$ | ${ }_{3}^{2900}{ }^{390}$ | 1100 | ${ }^{26000}$ | 3200 J <br> 880 | ${ }_{35}^{110}$ | ${ }^{7.40}$ | 300 | 1900 J <br> 380 | $\frac{0.74 \mathrm{U}}{3.5}$ | 180 | 200 | 190 | 180 | 1700 | 1900 | 1480 | 2705 180 |
| ENASIM | PYRENE | ugkg | 680 | 1600 J | 6400 | 3100 | 32000 | 36000 | 79 | 1600 | 1700 | 3600 | 5.2 | 1500 | 1600 | 760 | 770 | 6400 | 2800 | 2300 | 760 |
| E160.3 | RESIDUE, TOTAL | percen | 94 | 83 | 95 | 65 | 96 | 96 | 95 | 95 | 89 | 91 | 96 | 92 | 93 | 91 | 91 | 94 | 91 | 83 | 93 |
| E1613/E1668 | 1, $1,2,3,4,6,7,8$. HEPTACHLORODIBENZOFURAN |  | ${ }^{93803.3639}$ |  | 13600 J 133000 |  |  |  |  |  |  |  |  |  | 459 |  |  | $\frac{3170}{24600}$ | ${ }^{10400}$ | ${ }^{93600}$ |  |
| E1613/E1668 | 1, 1, 2, 4, ,7,8,9,-HEPTACHLORODIBENZOFURAN | ngkg | ${ }^{49.142 \mathrm{~J}}$ |  | 789 J |  |  |  |  |  |  |  |  |  | 26.7 |  |  | 183 | 600 | 545 |  |
| E1613/E1668 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | ngkg | 29.689 |  | 423 |  |  |  |  |  |  |  |  |  | 14 |  |  | 68.8 J | 319 | 277 |  |
| E1613/1668 | 1, 2, ,3,4,7,8.-HEXACHLORODIBENVO-P-DIOXIN | ngkg | ${ }_{1}^{107.347}$ |  | ${ }^{346}$ |  |  |  |  |  |  |  |  |  | 25.8 |  |  | 229 | 606 | 577 |  |
| E16131E1668 | 1, 1, 2, 6, 6, , , 8.-HEXACHLCORODIBENZOFURAN | ngkg | ${ }^{33.176}$ |  | ${ }_{1217} 12$ |  |  |  |  |  |  |  |  |  | 8.32 |  |  | 84.6 | 175 | 161 |  |
| E1613/E1688 | 1,2,3,7,9,9-HEXACHLORODIBENZO-P-DIOXIN | ngkg | $\stackrel{221.695}{ }$ |  | 422 |  |  |  |  |  |  |  |  |  | ${ }^{3} 4.05$ |  |  | 436 | $\stackrel{87.6}{1160}$ | 1060 |  |
| E1613/E1668 | 1, 1, , 3,7,8.PENTACHLLORODIBENZOFURAN | ngkg | 2.938 J |  | 12.8 |  |  |  |  |  |  |  |  |  | 1.36 J |  |  | $0 \cup$ | ${ }^{16.5}$ | ${ }^{18.67}$ |  |
| E1613/E1668 | 1,2,3,7,8.PENTACHLORODIBENZO-P-DIOXIN | ngkg | ${ }^{43.826}$ |  | 59 |  |  |  |  |  |  |  |  |  | 6.29 |  |  | 90 | 187 | 177 |  |
| E1613/1668 | 2, 2, 4, , , ,7, , -HEXACHLORODIBENZOFURAN | ngkg | ${ }^{37.468}$ |  | 272 |  |  |  |  |  |  |  |  |  | 14.2 |  |  | 140 | 359 | ${ }^{336}$ |  |
| E1613/E1668 | 2,3,4, ,8.PEENACHLORODIBENZOFURAN | ngkg | 3.962 J |  | 78.8 |  |  |  |  |  |  |  |  |  | 3.93 |  |  | ${ }^{19.2 \mathrm{~J}}$ | $\stackrel{82.7}{12 .}$ | 79.2 |  |
| E1613/E1668 | 2, $2,3,7,7$, -TETRACHLORODIBENZOFURAN | ngkg ngkg | ${ }^{0.681 \mathrm{~J}} 3.618$ |  | 1.44 3.38 |  |  |  |  |  |  |  |  |  | . 792 J .507 |  |  | ${ }_{9}^{0.13}$ J | ${ }^{13.6 \mathrm{~J}}$ | ${ }^{13.47 \mathrm{~J}}$ |  |
| E1613] 16688 | OCTACHLORODIBENZOFURAN | ngkg | ${ }^{3762.337}$ |  | 94500 |  |  |  |  |  |  |  |  |  | 1960 |  |  | 13200 | 37700 | 33500 |  |
| E1613/E1668 | OCTACHLORODIBENZO-P-DIOXIN | ngkg | 58364.183 J |  | 1770000 |  |  |  |  |  |  |  |  |  | 36100 |  |  | 267000 | 689000 | 568000 |  |
| E16131/E1688 | TTOTAL HEPTACHLORINATED DIBENZOFURANS | $\xrightarrow{\text { ngkg }}$ ngkg | ${ }_{2}^{288889.654}$ |  | $\frac{80400}{667000}$ |  |  |  |  |  |  |  |  |  | $\xrightarrow{17850}$ |  |  | ${ }_{7}^{177800}$ | $\frac{41200}{187000}$ | ${ }^{37000}$ |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | ngkg | ${ }_{1}^{1183.037}$ |  | 13100 J |  |  |  |  |  |  |  |  |  | 365 |  |  | 3090 | 11100 | ${ }^{9650} \mathrm{~J}$ |  |
| E1613/1668 | TOTAL HEXACHL ORINATED DIBENZO-P.DIIXINS | ngkg | ${ }^{3200.893}$ |  | ${ }^{29200}$ |  |  |  |  |  |  |  |  |  | 1530 |  |  | 8480 | ${ }^{16600}$ | 14600 |  |
|  | ToTAL PENTACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ | 251.423 |  | $\frac{1000 \mathrm{~J}}{643}$ |  |  |  |  |  |  |  |  |  | $\frac{63.7}{80}$ |  |  | ${ }_{945}^{495}$ | 1020 | 1000 |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg | 30.232 |  | 100 J |  |  |  |  |  |  |  |  |  | 25.5 |  |  | 155 | 236 | 208 |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | ngkg | 24.409 |  | 41.8 |  |  |  |  |  |  |  |  |  | 17.5 |  |  | 107 | 122 | 120 |  |
| SW6020 | ANTMONY | mgkg | ${ }^{0.366 \mathrm{UJ}}$ | 0.69 J | 0.35 U | ${ }_{0} 0.51 \mathrm{UJ}$ | 0.35 ${ }^{\text {U }}$ | ${ }^{0.350}$ | 0.35 U | 0.46 J | ${ }^{0.3810 \mathrm{~J}}$ | 200 | ${ }^{0.350 J}$ | ${ }^{0.36 \mathrm{UJ}}$ | 0.98 ${ }^{11}$ | ${ }^{2} 7$ | ${ }^{3.5}$ | ${ }^{1.55}$ | 7.3 | 6.1 | 1.6 |
| SW6020 | $\frac{\text { ARSENIC }}{\text { BARIUM }}$ | $\frac{\mathrm{m}_{\text {g }} \mathrm{kgg}}{\text { mgkg }}$ | $\frac{25}{8.1}$ | 79, 16 | ${ }_{27}{ }^{77}$ | 17 J | ${ }^{5} 5$ | $\frac{4.3}{6.1}$ | $\frac{4.5}{6.7}$ | $\frac{8.7}{21}$ | ${ }^{91}$ | $\frac{36}{44}$ | ${ }_{9}^{52}$ | $\frac{113}{13}$ | ${ }_{63}^{11}$ | ${ }^{77 \mathrm{~J}}$ | ${ }^{120 \mathrm{~J}}$ | $\frac{120}{46}$ | $\frac{430}{37}$ | $\frac{330}{26}$ | ${ }_{17} 14$ |
| SW6020 | CADMIUM | mgkg | 0.30 U | ${ }_{0.35 \mathrm{U}}$ | 0.30 U | ${ }_{0}^{0.43 \mathrm{U}}$ | 0.30 U | 0.30 U | 0.30 U | 0.29 U | 0.32 U | 0.30 U | 0.30 U | 0.31 U | 0.30 J | 0.31 U | 0.40 J | 0.68 | 0.38 J | 0.38 J | 0.45 J |
| SW6020 | CHROMUM | mgkg | 34 | 87 J | 15 | 26 J | 8.2 J | 7.7 J | 11 J | 15 | 59 | ${ }_{5}^{53}$ | 3.9 | 16 J | ${ }^{17}$ | 80 J | 120 J | 99 | 690 | 680 J | 140 J |
| SW6020 | COPPER | mgkg | 19 | 74 | 22 | 27 | 5.0 J | 4.9 J | 5.4 J | 17 | 46 | 68 J | 1.25 | 16 | 22 J | 34 J | 57 J | 92 | 310 | 280 J | 63 J |
| SW6020 | LEAD | mgkg | 5.5 | 12 | 14 | 9.6 | 10 | 9.6 | 16 | 24 | 9.9 | 2200 | 3.1 | 9.0 | 160 | 14 | 15 | 440 | 39 | 29 | 34 |
| SW6020 | SELENUM | mgkg | 0.880J | 1.0U | 0.86U | 1.3U | 0.87U | 0.87U | -0.88 ${ }^{0.40}$ | 0.830J | -0.93 | 0.86 U | 0.87 ${ }^{0.89}$ | 0.900 | -0.86U | 0.90 | 0.91U | -0.87 | 0.89 - | 1.0U | 0.900 |
| SW6020 | SILVER ${ }^{\text {VANADIUM (FUME OR DUST) }}$ | $\frac{\mathrm{m} \mathrm{m}_{\text {kg }}}{\text { makg }}$ | 0.40 U | ${ }^{0.450}$ | ${ }^{0.390}$ | 0.57 U | 0.39 U | 0.39 | 0.40 U | 0.38 ${ }^{2}$ | 0.42 | ${ }^{0.394}$ | 0.39 U | ${ }^{0.41 U^{2}}$ | 0.39 U | 0.41 ${ }^{181}$ | 0.41 ${ }^{\text {a }}$ | 0.39 U | ${ }^{0.400}$ | ${ }^{0.460}$ | 0.41 |
| SW7471 | MERCURY | mgkg | ${ }_{0} 0.035$ | 0.65 | 0.11 | ${ }_{0}^{2.44}$ | ${ }_{0}^{1.14 \mathrm{~J}}$ | ${ }^{0.9 .16}$ | ${ }_{0.044 \mathrm{~J}}^{0.2}$ | $\frac{2.14}{0.14}$ | 1.39 | 1.1 | 0.035 | ${ }^{2.83}$ | 4.8 | ${ }_{0}^{1.045}$ | 3.651 0.051 | ${ }^{4.36}$ | ${ }_{0}^{0.950}$ | $\stackrel{1.10 J}{0.48 \mathrm{~J}}$ | ${ }_{0}^{3.19}$ |
| SW8260 | 1,1,1-TRRCHLOROETHANE | ugkg | $\stackrel{0.13 \mathrm{U}}{ }$ | ${ }^{0.200}$ | ${ }_{0}^{0.13 u^{0}}$ | ${ }_{0}^{0.264}$ | $0.13{ }^{0}$ | ${ }^{0.13 U}$ | 0.14 U | 0.18 U | 0.14 U | ${ }^{0.14 U}$ | 0.13 U | 0.17 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.27 U | 0.13 U |
| SW8260 | 1,1,2,2, 2-ETRACHLOROETHANE | ugkg | 0.070 U | ${ }^{0.111}$ | 0.070 U | 0.15 U | 0.069 U | 0.069 U | 0.072 U | 0.099 U | 0.075 U | 0.073 U | 0.070 U | 0.091 U | 0.076 U | 0.073 U | 0.073 U | $0.074 \mathrm{U}^{0}$ | 0.073 U | 0.15 U | 0.071 U |
| SW8260 | 1, 1,1,-TRICHLOROETHANE | $\frac{\mu \mathrm{g} k \mathrm{~kg}}{10 \mathrm{~kg}}$ | 0.14U | $\frac{0.21 \mathrm{U}}{0.100}$ | 0.14U | $\frac{0.29 \mathrm{U}}{014}$ | $\stackrel{0.14 \mathrm{U}}{0.066 \mathrm{U}}$ | 0.14U | 0.15U | 0.20 U 0.095 U | 0.15 U 0.071 U | $\frac{0.15 \mathrm{U}}{0.070 \mathrm{U}}$ | 0.14 U 0.066 U | $\frac{0.18 \mathrm{U}}{0.087 \mathrm{U}}$ | 0.15 U 0.072 U | 0.15U | 0.15 U 0.070 U | 0.15U | 0.15 U <br> 0.070 U <br>  <br>  | 0.29U | 0.14U |
| SW8260 | 1,1--ICHLOROETHYLENE | ugkg | 0 | $\stackrel{0.270}{0.4}$ | $\stackrel{0.18 \mathrm{U}}{0}$ | ${ }_{0}^{0.37 \mathrm{U}}$ | 0 | 0 | 0.190 | ${ }_{0}^{0.26 U}$ | $\stackrel{0.020}{ }$ | 0.19 U | 0.0 .18 U | ${ }_{0}^{0.24 \mathrm{U}}$ | 0.20 U | 0.19 U | 0.19 U | 0 | 0.19 U | ${ }_{0}^{0.38 \mathrm{U}}$ | 0.0 .19 U |
| W8260 | 1,2,4-TRICHLOROBENZENE | ugkg | ${ }_{0}^{0.16 U^{0}}$ | $\stackrel{0.24 U}{074}$ | ${ }_{0}^{0.156}$ | ${ }_{0}^{0.33 \mathrm{UJ}}$ | ${ }^{0.16 U^{0}}$ | ${ }_{0}^{0.16 U^{-24}}$ | $\stackrel{0.17 \mathrm{U}^{0.54}}{ }$ | $\stackrel{0.23}{0}$ | $\stackrel{0.17 \mathrm{U}^{0.54}}{ }$ | $0.17{ }^{0.17 \mathrm{UJ}}$ | ${ }_{0}^{0.164}$ | ${ }_{0}^{0.214}$ | ${ }^{0.150 \mathrm{UJ}}$ | ${ }_{0}^{0.17 \mathrm{U}^{0.54}}$ | $\frac{0.17 \mathrm{U}^{0.54}}{}$ | 0.17 UJ | ${ }_{0}^{0.17)^{0}}$ | $\stackrel{0.34 \mathrm{U}}{114}$ | $0.17 \mathrm{U}^{0.10}$ |
|  | (1,--DIBROMOMO-3-CHLOROPROPOPANE (DBCP) | ugikg | 0.52 U 0.060 U | 0.78 U 0.089 u | 0.52 UJ | 1.1 UJ 0.13 U | ${ }_{0}^{0.52 \mathrm{U}}$ | 0.52 U 0.059 U | 0.54U | 0.74 U 0.084 U | 0.56 U 0.063 U | 0.55 UJ | 0.52 U 0.059 U | ${ }_{0}^{0.677}{ }_{0}^{0.077 U}$ | 0.56 U J | 0.54 U 0.062 U | 0.54U | ${ }^{0.55 \mathrm{UJ}} 0.063 \mathrm{U}$ | 0.55 U | $\stackrel{1.10}{0.13}$ | $\frac{0.53 \mathrm{U}}{0.061 \mathrm{U}}$ |
| SW8260 | ${ }^{1,2 \text {-IICHLOROBENZENE }}$ | ugkg | 0.083 U | ${ }^{0.13 U}$ | 0.083 U | 0.17 UJ | 0.082 U | 0.082 U | 0.085 U | 0.12 U | 0.088 U | 0.087 UJ | 0.082 U | 0.11 U | 0.089 UJ | 0.086 U | 0.086 U | 0.087 UJ | 0.086 U | ${ }^{0.18 \mathrm{U}}$ | 0.66 J |
| SW8260 | 1,2-DICHLOROETHANE | ugkg | 0.11 U | 0.16 U | 0.11 U | 0.22 U | 0.11 U | 0.11 U | 0.11 U | 0.15 U | 0.12 U | ${ }^{0.12 \mathrm{U}}$ | 0.11 U | ${ }^{0.14 U}$ | 0.12 U | ${ }^{0.12 \mathrm{U}}$ | ${ }^{0.114}$ | 0.12 U | 0.12 U | 0.23 U | 0.11 U |
| 血W82600 | 1.2-DICHLOROPROPANE | $\frac{\text { ugkg }}{\text { ugkg }}$ | ${ }_{0}^{0.058 U}$ | $\frac{0.086 \mathrm{U}}{014 \mathrm{U}}$ | -0.058 U | -0.12 | 0.057U | 0.057 U | 0.059 U | $0.081{ }^{0}$ | 0.061 U | ${ }^{0.060 \mathrm{U}}$ | 0.057 U | 0.074 U | ${ }^{0.062 U}$ | $0.060 \mathrm{U}^{0}$ | 0.0000 | ${ }^{0.061 U^{0}}$ | 0.060 U | 0.12 U | 0.058 U |
| Sterse | ${ }_{\text {l }}^{\text {1,4-DICHLOROBENZENE }}$ | ${ }_{\text {ug }}^{\text {ugkg }}$ | 0.093 U <br> 5.7 J | $\frac{0.140}{4.0 \mathrm{U}}$ | $\frac{0.092 \mathrm{U}}{12 \mathrm{~J}}$ |  | $\stackrel{0.0910}{2.70}$ | $\stackrel{0.091 \mathrm{U}}{2.7 \mathrm{U}}$ | $\stackrel{0.095 \mathrm{U}}{2.8 \mathrm{u}}$ | $\frac{0.140}{6.3 \mathrm{~J}}$ | 0.098 U <br> .6 J | $\stackrel{0.097 \mathrm{UJ}}{2.8 \mathrm{U}}$ | $\frac{0.092 \mathrm{U}}{2.7 \mathrm{U}}$ | $\stackrel{0.12 \mathrm{U}}{3.5 \mathrm{U}}$ | $\stackrel{0}{0.099 \mathrm{U}}$ | $\frac{0.096 \mathrm{U}}{2.8 \mathrm{U}}$ | $\stackrel{0.096 \mathrm{U}}{2.8 \mathrm{U}}$ | $\frac{0.097 \mathrm{UJ}}{2.8 \mathrm{U}}$ | $\stackrel{0.096 \mathrm{U}}{2.8 \mathrm{U}}$ | $\stackrel{0}{0.60 \mathrm{U}}$ | $\stackrel{0.094 \mathrm{U}}{2.7 \mathrm{U}}$ |
| SW8260 | BENZENE | ugkg | ${ }^{0.42 \mathrm{U}}$ | 0.62 U | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.85 U}$ | ${ }^{0.410}$ | 0.41 U | ${ }^{0.43 \mathrm{U}}$ | 0.59 U | ${ }^{0.44 \mathrm{U}}$ | ${ }^{0.44 \mathrm{U}}$ | ${ }^{2.414}$ | 0.54 U | ${ }^{0.45 U}$ | ${ }^{0.43 U}$ | 0.43 U | ${ }^{0.44 \mathrm{U}}$ | 0.43 U | 0.87 U | 0.42 U |
| SW8260 | BROMODICHLOROMETHANE | ugkg | 0.31 U | ${ }^{0.46 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }^{0.630}$ | $\stackrel{0.314}{034}$ | ${ }_{0}^{0.314}$ | ${ }_{0}^{0.323}$ | $\stackrel{0.44 \mathrm{U}}{ }$ | $\stackrel{0.33 \mathrm{U}}{0}$ | ${ }_{0}^{0.336}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }^{0.40 \mathrm{U}}$ | $\stackrel{0.33 \mathrm{U}}{0}$ | ${ }^{0.32 \mathrm{U}}$ | $\stackrel{0.32 \mathrm{U}}{0.364}$ | ${ }_{0}^{0.334}$ | ${ }^{0.32 \mathrm{U}}$ | $0.65{ }^{0}$ | $\stackrel{0.32 \mathrm{U}}{ }$ |
| SW8260 | CARBON DISULFIDE | ugkg | 1.7 U | 2.6 U | 1.70 | 3.5 U | 1.7 U | 1.70 | 1.8 U | 2.4 U | 1.8 U | 1.8 U | 1.7 U | 2.2 U | 1.9 U | 1.8 U | 1.8 U | 1.8 U | 1.8 U | 3.6 U | 1.8 U |
| SW8260 | CARBON TETRACHLORIDE | ugkg | 0.38 U | 0.56 U | 0.37 U | 0.76 U | 0.37 U | 0.37 U | 0.38 U | 0.53 U | ${ }^{0.40 \mathrm{U}}$ | 0.39 U | ${ }^{1.37 U}$ | 0.48 U | ${ }^{0.40 \mathrm{U}}$ | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.78 U | ${ }^{0.38 \mathrm{U}}$ |
| SW8260 | CFC-11 | ugkg | ${ }^{0.284}$ | ${ }^{0.421 ~}$ | ${ }^{0.284}$ | ${ }^{0.57}$ | ${ }^{0.288}$ | ${ }^{0.284}$ | ${ }_{0}^{0.290 ~}$ | ${ }^{0.390}$ | ${ }^{0.300}$ | ${ }^{0.290}$ | ${ }^{0.284}$ | ${ }^{0.36 \mathrm{U}}$ | ${ }^{0.307}$ | ${ }^{0.299}$ | ${ }^{0.290}$ | ${ }^{0.299}$ | ${ }^{0.294}$ | ${ }^{0.588}$ | ${ }^{0.288}$ |
| SW8260 | ${ }^{\text {CFC-12 }}$ CHLORINATED FLUOROCARBON ( (REOON 113) | $\frac{\mu g \mathrm{~kg}}{\text { ugkg }}$ | 0.34 U 0.39 u | $\frac{0.51 \mathrm{u}}{0.58 \mathrm{U}}$ | $\xrightarrow{0.34 \mathrm{U}}$ | $\frac{0.70 \cup}{0.78 \mathrm{u}}$ | $\frac{0.34 \mathrm{JJ}}{0.38 \mathrm{U}}$ | 0.34 J 0.38 U | $\frac{0.35 \mathrm{uj}}{0.40 \mathrm{U}}$ | $\stackrel{0.48 \mathrm{U}}{0.54 \mathrm{U}}$ | $\xrightarrow{0.36 \mathrm{U}}$ | 0.36 U 0.40 U | $\stackrel{0.34 \mathrm{U}}{0.38 \mathrm{U}}$ | $\stackrel{0.44 \mathrm{U}}{0.50 \mathrm{U}}$ | 0.37 U 0.41 U | 0.36 U 0.40 U | $\frac{0.36 \mathrm{U}}{0.40 \mathrm{U}}$ | 0.36 | $\frac{0.36 \mathrm{UJ}}{0.40 \mathrm{U}}$ | $\frac{0.71 \mathrm{UJ}}{0.80 \mathrm{U}}$ | $\frac{0.35 \mathrm{UJ}}{0.39 \mathrm{U}}$ |
| SW8260 | CHLOROBENZENE | ugkg | 0.43 U | 0.64 U | 0.43 U | 0.87 U | 0.42 U | 0.42 U | 0.44 U | 0.60 U | 0.45 U | 0.45 U | 0.42 U | 0.55 U | 0.46 U | 0.45 U | 0.44 U | 0.45 U | 0.45 U | 0.89 U | 0.43 U |
| SW8260 | HLORODIBROMOMETHANE | ugkg | 0.27 U | 0.40 U | 0.27 U | 0.55 U | 0.27 U | 0.27 U | 0.28 U | 0.38 U | 0.29 U | 0.28 U | 0.27 U | 0.35 U | 0.29 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.56 U | 0.27 U |
| SW8260 | CHLOROETHANE | uglkg | 0.39 U | 0.58 U | 0.39 UJ | 0.78 U | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.38 \mathrm{U}}$ | 0.40 U | 0.54 U | 0.41 UJ | ${ }^{0.400}$ | ${ }^{0.38 \mathrm{U}}$ | 0.50 U | 0.41 U | ${ }^{0.40} \mathrm{U}^{\text {a }}$ | ${ }^{0.40 \mathrm{U}}$ | 0.410 | ${ }^{0.400}$ | ${ }^{0.800}$ | 0.39 U |
| SW8260 | CHLOROMETHANE | $\stackrel{\text { ugkg }}{\text { ugkg }}$ | $\stackrel{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\stackrel{0.54 \mathrm{U}}{0.72 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\stackrel{0.74 \mathrm{U}}{0.98 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.47 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.47 \mathrm{U}}$ | $\stackrel{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | ${ }_{0}^{0.510}$ | $\stackrel{0.39 \mathrm{U}}{0.51 \mathrm{U}}$ | $\stackrel{0.38 \mathrm{U}}{0.50 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | ${ }_{0}^{0.4720}$ | $\stackrel{0.39 \mathrm{U}}{0.52 \mathrm{U}}$ | $\stackrel{0.38 \mathrm{U}}{0.50 \mathrm{U}}$ | 0.38 U 0.50 U | $\frac{0.38 \mathrm{U}}{0.51 \mathrm{U}}$ | $\stackrel{0.38 \mathrm{U}}{0.50 \mathrm{U}}$ | $\frac{0.76 \mathrm{U}}{1.0 \mathrm{U}}$ | 0.37 U 0.49 U |
| SW8260 | CIIS-1,2-DICHLOROETHYLENE | ugkg | 0.28 U | 0.42 U | 0.28 U | 0.57 U | 0.28 U | 0.28 U | ${ }_{0}^{0.290}$ | 0.390 | ${ }_{0}^{0.30 \mathrm{U}}$ | ${ }_{0}^{0.290}$ | ${ }_{0}^{0.28 \mathrm{U}}$ | ${ }_{0}^{0.36 \mathrm{U}}$ | ${ }_{0}^{0.300}$ | 0.29 U | ${ }_{0}^{0.290}$ | 0.29 U | 0.29 U | 0.58 U | ${ }_{0}^{0.28 \mathrm{U}}$ |


|  |  |  | $\begin{array}{\|c} \text { SSO24 } \\ \text { SSO24AA } \\ 0-0.25 \text { feet } \\ 12 / 111 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO25 } \\ \text { ssones } \\ 0-0.25 \text { feet } \\ 1204 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS026 } \\ \text { SSO26AA } \\ 0-0.25 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO277 } \\ \text { SSO27AA } \\ 0.0 .25 \text { feet } \\ 12104 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO28 } \\ \text { SSO28AA } \\ 0.0 .25 \text { feet } \\ 1207 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { SSO288 } \\ \text { SSO28AB } \\ 0.0 .25 \text { feet } \\ 122.107 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \text { SSO29 } \\ \text { SSO29AA } \\ 0.0 .25 \text { feet } \\ 12 / 107 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO30 } \\ \text { SSO30AA } \\ 0.0 .25 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ |  | $\begin{array}{\|c\|} \hline \text { SSO32 } \\ \text { SSO32AA } \\ 0.0 .25 \text { feet } \\ 12206 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO33 } \\ \text { SSO33AA } \\ 0.0 .25 \text { feet } \\ 12.106 / 2006 \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { SS035 } \\ \text { SSO35AA } \\ 0.0 .25 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO36 } \\ \text { SSO36AA } \\ \text { o-0.25 feet } \\ \text { 12/106/2006 } \\ \hline \end{array}$ | $\begin{gathered} \text { SSO36 } \\ \text { SSO36AC } \\ 0-0.25 \text { feet } \\ \text { 12/106/2006 } \\ \hline \end{gathered}$ | $\begin{array}{\|c\|c} \hline \text { SSO37 } \\ \text { SSOO37AA } \\ 0-0.25 \text { feet } \\ 1205 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO38 } \\ \text { SSO38AA } \\ 0-0.25 \text { feet } \\ 121 / 07 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|c} \text { SSO38 } \\ \text { SSO38AC } \\ 0.0 .25 \text { feet } \\ 12 / 107 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO39 } \\ \text { SSO39AA } \\ 0.0 .25 \text { feet } \\ \text { 12/107/2006 } \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Metho | Analye | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| V8260 | CIIS-1,3-DICHLOROPROPENE | ugkg | 0.31 U | 0.46 U | 0.31 U | 0.63 U | 0.31 U | 0.31 U | 0.32 U | ${ }^{0.44 \mathrm{U}}$ | ${ }_{0}^{0.33 \mathrm{U}}$ | ${ }^{0.33 \mathrm{U}}$ | 0.31 U | 0.40 U | 0.33 U | 0.32 U | 0.32 U | ${ }^{0.33 \mathrm{U}}$ | 0.32 U | 0.65 U | ${ }_{0}^{0.32 \mathrm{U}}$ |
| SW8260 | CYCLOHEXANE | ugkg | ${ }^{0.410}$ | ${ }^{0.610}$ | 0.410 | ${ }^{0.83 \mathrm{U}^{\text {a }}}$ | ${ }^{0.401}$ | ${ }^{0.400}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.57 u^{4}}$ | ${ }^{0.43 U}$ | ${ }^{0.42 \mathrm{U}}$ | 0.40 U | ${ }^{0.524}$ | ${ }^{0.44 U}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.43 U}$ | ${ }^{0.42 U}$ | ${ }^{0.855}$ | ${ }^{0.414}$ |
| SW8260 | DICHLOROMETHANE | ugkg | 0.42 U | 0.62 U | 5.35 | 0.85 U | 0.41 U | 0.41 U | 0.43 U | 0.59 U | 0.44 U | 0.44 U | $0.41 \mathrm{U}^{\text {a }}$ | 0.54 U | 0.45 U | ${ }_{0}^{0.43 \mathrm{U}}$ | 0.43 U | 0.44 U | 0.43 U | 0.87 U | 0.42 U |
| SW8260 | ETHYLBENZENE | ugkg | 0.45 U | ${ }^{0.67 \mathrm{U}}$ | ${ }^{0.45 \mathrm{U}}$ | 0.91 U | 0.44 U | 0.44 U | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.630}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.47 \mathrm{U}}$ | $0.44{ }^{0}$ | ${ }^{0.58 U^{4}}$ | ${ }^{0.48 \mathrm{U}}$ | 0.47 U | 0.47 U | ${ }^{0.47 \mathrm{U}^{\text {U }} \text { - }}$ | ${ }^{0.474}$ | ${ }^{0.944}$ | ${ }^{0.46 \mathrm{U}^{0}}$ |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.49 U | 0.73 U | 0.49 U | 1.0 UJ | 0.48 U | 0.48 U | 0.50 U | 0.69 U | 0.52 U | 0.51 UJ | 0.49 U | 0.63 U | 0.53 UJ | 0.51 U | 0.51 U | 0.52 UJ | 0.51 U | 1.10 | 0.50 U |
| SW8260 | m,p-xylenes | ugkg | 0.93 U | 1.4 U | 0.92 U | 1.90 | 0.91 U | 0.91 U | $0.95 \mathrm{U}^{0}$ | 1.4 U | 0.984 | 0.97 U | 0.92 U | 1.2 U | $0.99 \mathrm{U}^{0}$ | $0.96 \mathrm{U}^{0}$ | $0.96{ }^{0}$ | 0.97 U | 0.96 U | 2.0 u | 0.944 |
| SW8260 | M-IICHLOROBENZENE | ugkg | 0.053 U | 0.080 U | $0.023 \mathrm{U}^{0.0214}$ | $0.11{ }^{0}$ | 0.053U | 0.053U | 0.055 U | 0.075 U | 0.057 U | 0.056 U | 0.053 U | O.069 ${ }^{0}$ | 0.057 UJ | 0.056 U | ${ }^{0.055 U}$ | 0.056 U | 0.056 U | 0.12U | 0.054 U |
| SW8260 | METHYL LTHYL KETONE | ugkg | 1.2 U | 1.8 U | 1.20 | 2.40 | 1.2 U | 1.2 U | 1.20 | 1.70 | 1.30 | 1.30 | 1.2 U | 1.6 U | 1.3 U | 1.30 | 1.30 | 1.3 U | 1.3 U | 2.5 U | $\frac{1.2 U}{}$ |
| SW8260 | METHYL ISOBUTYL KETONE | ugkg | 0.76 U | 1.2 U | 0.76 U | 1.6 U | 0.75 U | 0.74 U | 0.78 U | 1.10 | 0.80 U | 0.79 U | 0.75 U | 0.97 U | 0.81 U | 0.79 U | 0.78 U | 0.80 U | 0.79 U | 1.6 U | 0.77 U |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.10 | 1.6 U | 1.1 UJ | 2.20 | 1.14 | 1.14 | 1.10 | 1.5 U | 1.2 U | 1.2 U | 1.10 | 1.4 U | 1.2 U | 1.2 U | 1.10 | 1.2 U | 1.2 U | 2.30 | 1.10 |
| SW8260 | METHYL EENZENE | ugkg | 0.45 U | 0.67 U | 0.45 U | 0.91 U | 0.44 U | 0.44 U | ${ }_{0} 0.46 \mathrm{U}$ | ${ }^{0.63 U}$ | ${ }^{0.48 \mathrm{U}}$ | 0.47 U | 0.44 U | 0.58 U | 0.48 U | 0.47 U | 0.47 U | ${ }^{0.47 ~ U ~}$ | 0.47 U | 0.94 U | ${ }^{0.46 \mathrm{U}}$ |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.47 U | $0.70{ }^{0}$ | 0.47 U | 0.96 U | 0.46 U | 0.46 U | ${ }_{0}^{0.48 \mathrm{U}}$ | ${ }^{0.66 \mathrm{U}}$ | 0.50 U | 0.49 U | 0.47 U | $0.61{ }^{0.6}$ | 0.51 U | $0.49 \mathrm{U}^{0.5}$ | 0.49 U | ${ }_{0}^{0.50 \mathrm{U}}$ | 0.49 U | 0.98 U | 0.48 U |
| SW8260 | ${ }_{\text {O-XYLENE }}^{\text {STYRENE }}$ | ugkg | -0.43U | 0.64U | - 0.43 U | 0.87U | O.42U | 0.42 U <br> 0.45 | 0.44U | 0.60U | 0.45 U 0 0.49 u | -0.45 | -0.42U | 0.55 ${ }_{0}^{0.59}$ | -0.46 | O.45 $\begin{aligned} & 0.48 \\ & 0\end{aligned}$ | -0.44U | 0.45 U 0.48 U | 0.45 U <br> 0.484 | 0.89 U <br> 096 <br> 0914 | 0.43 U <br> 047 U |
| SW8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.34 U | 0.51 U | 0.34 U | 0.70 U | 0.34 U | 0.34 U | 0.35 U | 0.48 U | 0.36 U | 0.36 U | 0.34 U | 0.44 U | 0.37 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.71 U | ${ }_{0}^{0.35 \mathrm{U}}$ |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.43 U | 0.64 U | 0.43 U | 0.87 U | 0.42 U | 0.42 U | 0.44 U | 0.60 U | 0.45 U | 0.45 U | 0.42 U | 0.55 U | 0.46 U | 0.45 U | 0.44 U | 0.45 U | 0.45 U | 0.89 U | 0.43 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | ugkg | 0.41 | ${ }^{0.610}$ | ${ }^{0.414}$ | $\stackrel{0.83 \mathrm{U}}{ }$ | ${ }^{0.40 \mathrm{U}}$ | 0.40 | $\stackrel{0.42 \mathrm{U}}{ }$ | ${ }_{0}^{0.57]^{\text {U }}}$ | $\xrightarrow{0.43 \mathrm{U}}$ | $\xrightarrow{0.42 \mathrm{U}}$ | 0.40 | ${ }^{0.52}$ | 0.44U | $\stackrel{0.42 \mathrm{U}}{ }$ | ${ }^{0.42 \mathrm{U}}$ | $\xrightarrow{0.43 U}$ | $\stackrel{0.42 \mathrm{U}}{ }$ | 0.85 | ${ }^{0.414}$ |
| SW8260 | TRANS-1,2-DICHLOROPROPENE | ugkg | ${ }^{0.32 \mathrm{U}}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.32 \mathrm{U}}$ | ${ }^{0.655}$ | ${ }^{0.32 U}$ | ${ }^{0.32 \mathrm{U}}$ | ${ }^{0.33 \mathrm{U}}$ | ${ }^{0.45 U}$ | 0.34 U | 0.34 U | 0.32 U | 0.41 U | 0.35 U | 0.34 U | ${ }^{0.33 U}$ | 0.34 U | 0.34 U | 0.67 U | 0.33 U |
| Sw8260 | TRIBOMOMETHANE | ugkg | 0.42 U | 0.62 U | 0.42 U | 0.85 U | 0.41 U | 0.41 U | 0.43 U | 0.59 U | 0.44 U | 0.44 U | 0.41 U | 0.54 U | 0.45 U | 0.43 U | 0.43 U | 0.44 U | 0.43 U | 0.87 U | 0.42 U |
| SW8260 | TRICHLOROETHYLENE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\substack{\text { ugkg }}}$ | 0.43 U 0.26 U | 0.64 U 0.39 u | -0.43U | $\xrightarrow{0.87 \mathrm{U}}$ | 0.42 U 0.26 U | 0.42 U 0.25 U | 0.44U | 0.60 U 0.36 U | 0.45 U 0.27 U | 0.45 U 0.27 U | 0.42 U 0.26 U | 0.55 U 0.33 u | 0.46 U 0.28 U | 0.45 U | 0.44U | 0.45 U 0.27 U | 0.45 U 0.27 U | 0.89 ${ }_{0}^{0.54 \mathrm{U}}$ | 0.43 U <br> 0.26 U |
| SW8270 | 2,4,5-TRICHLOROPHENOL | ugkg | 14 U | 16 U | 140 U | 20 U | 140 U | 140 U | 14 U | 14 U | 15 U | 15 U | 14 U | 15 U | 14 U | 15 U | 15 U | 14 U | 15 U | 16 U | 14 U |
| SW8270 | 2,4,6,-TRICHLOROPHENOL | ugkg | 39 U | 44 U | 380 U | 56 U | 380 U | 380 U | 38 U | 38 U | 41 U | 40 U | 38 U | 40 U | 39 U | 40 U | 40 U | 39 U | 40 U | 44 U | 39 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 19 U | 210 | 180 U | 27 U | 180 U | 180 U | 18 U | 18 U | 20 U | 19 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 21 U | 19 U |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | ${ }^{210}$ | ${ }^{23 U}$ | ${ }^{2000}$ | 30 U | 200 U | 200 U | 20 U | 20 U | 22 U | 210 | 20 U | 210 | 210 | 210 | 210 | 24 J | 210 | 23 U | 210 |
| SW8270 | 2.4-DIIITROPHENOL | ugkg | 13 U | 15 U | $\stackrel{130 \mathrm{U}}{110}$ | 19 U | $\frac{130 \mathrm{U}}{110 \mathrm{u}}$ | $\frac{130 \mathrm{U}}{110 \mathrm{u}}$ | 130 | 13 U | 14 U | 14 U | 13 U | 14 U | 13 U | 14 U | 14 U | 13 U | 14 U | 15 U | 13 U |
| SW8270 | 2,6-DIIITROTOLUENE | ualkg | 39 U | 44 U | 380 U | 56 U | 380 U | 380 U | 38 U | 38 U | 41 U | 40 U | 38 U | 40 U | 39 U | 40 U | 40 U | 39 U | 40 U | 44 U | 39 U |
| SW8270 | 2-CHLORONAPHTHALENE | ugkg | 18 U | 20 U | $170 \cup$ | 25 U | 1700 | 1700 | 17 U | 17 U | 18 U | 18 U | 17 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 20 U | 18 U |
| SW8270 | 2.CHLOROPHENOL | ugkg | 20 U | 22 U | 190 U | 28 U | 190 U | 190 U | 19 U | 19 U | 210 | 20 U | 19 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 22 U | 20 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | ugkg | 13 U | 15 U | 130 U | 19 U | 130 U | 130 U | 13 U | 13 U | 14 U | 14 U | 13 U | 14 U | 13 U | 14 U | 14 U | 13 U | 14 U | 15 U | 13 U |
| SW8270 | 2-NITROANLINE | ugkg | ${ }^{24 U}$ | $\stackrel{27 \text { UJ }}{ }$ | ${ }_{2}^{240 \mathrm{O}}$ | 34 uJ | $\stackrel{230 \mathrm{U}}{15}$ | $\stackrel{2300}{150}$ | $\stackrel{24 \mathrm{UJ}}{15}$ | ${ }_{2}^{24 U}$ | 25 U | ${ }^{250}$ | ${ }^{23 U}$ | 24 UJ | 24 U | 25 U | 250 | ${ }^{24 U}$ | ${ }^{25} 16$ | ${ }^{27} 170$ | ${ }^{240 J}$ |
| SW8270 | 2-NTTROPHENOL | ugkg | 15 U | 17 U | 150 | 22 U | ${ }^{150} \mathrm{U}^{130}$ | 150 U | 15 U | 15 U | 16 U | 16 U | 15 U | 16 U | 16 U | 16 U | 16 U | 15 U | 16 U | 17 U | 16 U |
| SW8270 | 3,3.5.5-TRIMERETHYLL-2.CCYCLOHEXENE-1-ONE | $\frac{\mathrm{ug} k \mathrm{l}}{\mathrm{ug} k g}$ | ${ }^{37} 14$ | $\frac{410}{16 \mathrm{UJ}}$ | $\frac{360 \mathrm{U}}{140 \mathrm{O}}$ | ${ }_{23}^{50 \mathrm{UJ}}$ | ${ }_{360 \mathrm{U}}^{140 \mathrm{U}}$ | $\xrightarrow{360 \mathrm{U}}$ | $\frac{360}{140}$ | $\frac{36 \mathrm{U}}{14 \mathrm{U}}$ | 15 | ${ }^{38} 15$ | 14 U | 37 U 15 | $\frac{374}{14}$ | ${ }_{18} 15$ | ${ }_{15} 38$ | $\frac{37 \mathrm{UJ}}{14 \mathrm{U}}$ | 38 ${ }_{15}$ | $\frac{410}{16}$ | 14U |
| SW8270 | 3-NITROANLINE | ugkg | 19 U | 210 | 180 U | 27 U | 180 U | 180 U | 18 U | 18 U | 20 U | 19 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 210 | 19 U |
| SW8270 | 4,6-DINTROO-2-METHYLPHENOL | ugkg | 10 U | 12 U | 99 U | 15 U | 98 U | 98 U | 9.90 | 9.9 U | 110 | 110 | 9.8 U | 110 | 110 | 110 | 110 | 10 U | 110 | 12 U | 11 U |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 110 | 12 U | 110 U | 16 U | 110 U | 110 U | 11 U | 11 U | 12 U | 110 | 110 | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | 110 |
| SW8270 | 4.CHLORO-3-METHYLPHENOL | ugkg | 18 U | 20 U | 1700 | 25 U | $170{ }^{170}$ | 1700 | 17 U | 17 U | 18 U | 18 U | 17 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 20 U | 18 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | ugkg | 24 U | 27 U |  | 34 U | $\stackrel{230 \mathrm{U}}{20}$ | 230 U | 24 U | 24 U | 25 U | 25 U | 23 U | 24 U | 24 U | 25 U | 25 U | 24 U | 25 U | 27 U | 24 U |
| SW8270 | 4-NITROPHENOL | ugkg | 19 U | 21 UJ | ${ }_{180} 180$ | 27 U | ${ }^{180} \mathrm{UJ}$ | ${ }^{180} \mathrm{UJ}$ | 18 UJ | 18 U | 20 U | 19 UJ | 18 U | 19 U | 19 UJ | 19 U | 19 U | 19 UJ | 19 uJ | ${ }^{21 \mathrm{UJ}}$ | ${ }_{19} 19 \mathrm{UJ}$ |
| SW8270 | BENZYL BUTYL PHTHALATE | ugkg | 20 U | 22 U | 190 U | 28 U | 190 U | 190 U | 19 U | 19 U | 210 | 20 U | 19 U | 20 U | 20 U | 20 U | 20 U | 20 UJ | 20 U | 22 U | 20 U |
| SW8270 | BIPHENYL | ugkg | 160 UJ | 190 U | 1600 UJ | 230 U | 1600 U | 1600 U | 160 U | 160 U | 170 | $170{ }^{\text {U }}$ | 160 U | 170 | 170 U | $170{ }^{\text {U }}$ | 170 | 160 U | 170 | 190 U | 170 |
| 血W8270 | BIS(2-CHLORETHOXYMETHANE | $\frac{\text { ugkg }}{\text { Uokg }}$ | 19 U | 210 | $\frac{180 \mathrm{U}}{160}$ | 27 U | $\frac{180 U}{160}$ | 180 U | 18 U | $\frac{18}{164}$ | 20 U | 19U | 18 U | 19 U | 19 L | 19 U | 19 U | 19 U | 19 U | 21U | 19 U |
| (e) $\begin{aligned} & \text { SW8270 } \\ & \text { SW8270 }\end{aligned}$ | BIIS(2-CHLOROETHYLETYER | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { ugkg }}$ | ${ }_{216}{ }^{16}$ | $\frac{19 \mathrm{U}}{26 \mathrm{UJ}}$ | $\frac{160 \mathrm{U}}{230 \mathrm{U}}$ | $\stackrel{23 \mathrm{U}}{33 \mathrm{uj}}$ | $\frac{160 \mathrm{U}}{220 \mathrm{UJ}}$ | ${ }_{2}^{160 \mathrm{U}}$ | $\frac{16 \mathrm{UJ}}{23 \mathrm{U}}$ | ${ }^{16 \mathrm{U}}$ | $\frac{174}{240}$ | $\frac{17 \mathrm{U}}{24 \mathrm{UJ}}$ | $\frac{16 \mathrm{UJ}}{22 \mathrm{U}}$ | ${ }^{17 \mathrm{U}}{ }^{13}$ | ${ }^{17 \mathrm{U}} \mathbf{1 7}$ | $\frac{17 \mathrm{UJ}}{24 \mathrm{U}}$ | ${ }^{17 \mathrm{U}} \mathrm{U}$ | $\frac{16 \mathrm{U}}{23 \mathrm{UJ}}$ | $\frac{17 \mathrm{U}}{24 \mathrm{UJ}}$ | $\frac{19 \mathrm{U}}{26 \mathrm{UJ}}$ | $\frac{17 \mathrm{U}}{23 \mathrm{UJ}}$ |
| SW8270 | BIS(2-ETHYLHEXYL)PHTHALATE | uglkg | 18 U | 20 U | 170 U | 28 J | $170 \cup$ | 170 U | 17 U | 17 U | 18 U | 52 J | 17 U | 18 U | 18 U | 33 J | 32 J | 120 J | 24 J | 20 U | 18 U |
| SW8270 | CARBAZOLE | ugkg | 38 J | 160 J | 900 J | 410 | 700 J | 600 J | 17 U | 830 | 170 J | 240 | 17 U | 200 | 69 J | ${ }_{4}{ }^{\text {J }}$ | 50 J | 580 | 310 | 190 J | 75 J |
| SW8270 | IIBENZOFURAN | uglkg | 19 J | 45 J | 140 U | 36 J | 140 U | 140 U | 14 U | 150 J | 33 J | 32 J | 14 U | 24 J | 36 J | 31 J | 28 J | 360 | 150 J | 77 J | 49 J |
| SW8270 | DIETHYL PHTHALATE | ugkg | 13 U | 15 U | 130 U | 19 U | ${ }^{130 \mathrm{O}}$ | ${ }^{130 \mathrm{O}}$ | 13 U | 13 U | 14 U | 14 U | 13 U | 14 U | 13 U | 14 U | 14 U | 13 U | 14 U | 15 U | 13 U |
| SW8270 | DIMETHYL PHTHALATE | $\frac{\text { ugkg }}{\text { ugk }}$ | $\frac{11 \mathrm{U}}{65}$ | 12 U | $\frac{1100}{650}$ | 16 U | $\frac{110 \mathrm{U}}{600}$ | $\frac{110 \mathrm{U}}{600}$ | $\underline{11 \mathrm{U}}$ | 11 U | 12 U | 11 U | 11 U | 11 U | 11 U | $\underline{110}$ | 11 U | 11 U | $\underline{110}$ | 12 U | 110 |
| SW8270 | D-N-BUTYL-PHTHALATE | ugkg | 65 U | 74 U | $\frac{650 \mathrm{O}}{10}$ | 94 U | ${ }^{640 \mathrm{U}}$ | 640 U | 65 U | 65 U | 69 U | 68 U | 64 U | 67 U | 66 U | 68 U | 68 U | 65 U | 68 U | 74 U | 66 U |
| (ele $\begin{aligned} & \text { SW8270 } \\ & \text { SW8270 }\end{aligned}$ | D-N-OCTYL-PHTHALATE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { ugkg }}$ | 16 U | ${ }_{210} 19$ | 160 U 180 U | 230 <br> 27 | 160 U 180 U | $\frac{160 \mathrm{U}}{180 \mathrm{U}}$ | ${ }_{18}^{16 \mathrm{U}}$ | ${ }_{18}^{16 \mathrm{U}}$ | ${ }^{17 \mathrm{U}} \mathrm{U}$ | ${ }_{19}^{170}$ | ${ }_{18}^{16 \mathrm{U}}$ | 17 U | 17 U | 17 U | 17 U | $\frac{16 \mathrm{UJ}}{19 \mathrm{U}}$ | 17 U | $\frac{190}{210}$ |  |
| SW8270 | HEXACHLOROBENZENE | ugkg | 8.9 UJ | 10 U | 88 UJ | 13 U | 87 U | 87 U | 8.8 U | 8.80 | 9.40 | 9.20 | 8.7 U | 9.10 | 9.00 | 9.20 | 9.20 | 8.90 | 9.24 | 10 U | 9.00 |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | ugkg | 12 U | 14 U | 120 U | 17 U | 120 U | 120 U | 12 U | 12 UJ | 13 U | 13 U | 12 U | 12 U | 12 U | 13 U | 13 U | 12 U | 13 U | 14 U | 12 U |
| SW8270 | HEXACHLOROETHANE | ugkg | 19 U | 210 | ${ }^{180 \mathrm{U}}$ | 270 | ${ }_{180} 180$ | ${ }^{180 \mathrm{O}}$ | 18 U | 18 UJ | 20 U | 19 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 210 | 19 U |
| SW8270 | NTTROBENZENE | $\frac{\text { ugkg }}{\text { ugkg }}$ | 22 U | 25 U | 220U | 31U | $\underline{210 \mathrm{U}}$ | $\underline{2100}$ | 22 UJ | 22 U | 23 U | 22 U | 21 U | 22 U | 22 U | 22 U | 22 U | 22 U | $\frac{22 \mathrm{UJ}}{20 \mathrm{u}}$ | $\frac{25 \mathrm{UJ}}{22 \mathrm{U}}$ | $\frac{22 \mathrm{UJ}}{201}$ |
| 血W8270 | $\frac{\text { N-NITROSO-DI-N.PROPYLAMINE }}{\text { N-NTROSOOLIPHENYLAMINE }}$ | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { ugkg }}$ | 20 U | $\frac{22 \mathrm{UJ}}{14 \mathrm{U}}$ | $\frac{190 \mathrm{U}}{120 \mathrm{U}}$ | $\frac{28 \mathrm{UJ}}{17 \mathrm{U}}$ | $\frac{190 \mathrm{U}}{120 \mathrm{U}}$ | $\frac{190 \mathrm{U}}{120 \mathrm{U}}$ | $\frac{190}{12 U}$ | $\frac{19 \mathrm{U}}{12 \mathrm{U}}$ | $\underline{210}$ | 20U | 19 L | $\underline{120}$ | 20 U | $\underline{20 U}$ | $\underline{20 U}$ | $\underline{20 U}$ | 20U | 22U | $\frac{20 U}{12 \mathrm{U}}$ |
| V8270 | P.CHLOROANILINE | ugkg | 28 U | 32 U | 280 U | 40 U | 280 U | 280 U | 28 U | 28 U | 30 U | 294 | 28 U | 29 U | 28 V | 29 U | 29 | 28 U | 29 U | 32 U | 28 U |
| SW8270 | PHENOL | ugkg | 18 U | 20 U | 170 U | 250 | 170 U | 170 U | 17 U | 17 U | 18 U | 18 U | 17 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 20 U | 18 U |
| SW8270 | P-NITROANILINE | ugkg | 13 U | 34J | 130 UJ | 19 U | 130 U | 130 U | 13 U | 13 U | 14 U | 14 U | 13 U | 14 U | 13 U | 14 U | 14 U | 13 U | 14 U | 15 U | 13 U |
| SW9060 | TOTAL ORGANIC CARBON | mgakg |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



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U = non-d
ugkg: micrograms per kilogram reslus from Vistal laboratory
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|  |  |  | $\begin{gathered} \text { SSO40 } \\ \text { SSO40AA } \\ 0.0 .25 \text { feet } \\ 12 / 101 / 2006 \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO41 } \\ \text { SSO41AA } \\ \text { o-0.25 feet } \\ 12 / 111 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO42 } \\ \text { SSO42AA } \\ 0.0 .25 \text { feet } \\ 12 / 101 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO43 } \\ \text { SSO43AA } \\ 0.0 .25 \text { feet } \\ \text { 12/05/2006 } \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO044 } \\ \text { SSO44AA } \\ 0.0 .25 \text { feet } \\ 121 / 05 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO45 } \\ \text { SSO45AA } \\ 0.0 .25 \text { feet } \\ 12 / 11 / 2006 \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO46 } \\ \text { SSO46AA } \\ 0-0.25 / \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ |  |  | $\begin{array}{\|c\|} \hline \text { SSO48 } \\ \text { SSO48AA } \\ 0-0.25 / f e e t \\ 121 / 106 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO49 } \\ \text { SSO49AA } \\ 0.0 .25 / \text { feet } \\ 121 / 09 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO50 } \\ \text { Sso50AA } \\ 0.0 .25 \text { feet } \\ 121 / 04 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO51 } \\ \text { SSO51AA } \\ 0-0.25 \text { feet } \\ 12 / 104 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO52 } \\ \text { SSo52AA } \\ 0-0.25 \text { feet } \\ 12 / 109 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO54 } \\ \text { SSO54AA } \\ 0-0.25 \text { feet } \\ 12 / 101 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO54 } \\ \text { SSO54AB } \\ 0-0.25 \text { feet } \\ 12101 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO57 } \\ \text { SSo5AA } \\ 0-0.25 \text { feet } \\ 12 / 06 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO58 } \\ \text { SSO58AA } \\ 0-0.25 \text { feet } \\ 12 / 105 / 2006 \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SS059 } \\ \text { SSo59AA } \\ 0.0 .25 \text { feet } \\ 11 / 29 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ENASIM | $\frac{\text { 2-METHYLNAPHTHALENE }}{\text { ACENAPHTHENE }}$ | $\underset{\text { ugkg }}{\substack{\text { ugkg } \\ \text { ugh }}}$ | ${ }_{180}^{370}$ | $\frac{83}{45}$ | ${ }_{150}^{150}$ | 74 | ${ }_{9}^{400}$ | $\frac{193}{29}$ | ${ }_{33}^{190}$ | ${ }^{5.72}$ | ${ }_{5.3}^{5.4}$ | ${ }_{60}^{75}$ | ${ }_{30}^{39}$ | ${ }_{35}^{40 \mathrm{UJ}}$ | ${ }^{37}{ }^{37}$ | ${ }^{36} \mathbf{3 0}$ | ${ }^{380}$ | ${ }_{75}{ }^{45}$ | $\frac{18}{29}$ | ${ }_{580 \mathrm{~J}}^{610 \mathrm{O}}$ | ${ }_{260}^{260}$ |
| ENASIM | ACENAPHTHYLENE | ugkg | 1200 | 680 | 2200 | 790 | 8800 | 460 | 710 | 83 | 91 | 460 | 210 | 400 J | 830 | 1200 | 710 | 740 | 29 J | 7000 | 1400 |
| ENASIM | ANTHRACENE | ugkg | 2200 | 1300 | 2900 | 2000 | 22000 | 1000 | 2100 | 240 | 280 | 700 | 390 | 600 J | 1500 | 2200 | 1200 | 1300 | 51 | 15000 | 3300 |
| ENASIM | BENZO(A)ANTHRACENE | ugkg | 1500 | 830 | 3600 | 2900 | 9800 | 1100 | 1700 | 130 | 150 | 1100 | 410 | 1600 J | 1200 | 2200 | 1500 | 1500 | 85 | 15000 | 3300 |
| ENASIM | BENZO(A)PYRENE | $\frac{\text { ugkg }}{\text { ugagg }}$ | 1800 3900 | ${ }^{1200}$ | 4400 6400 | 1900 3900 | ${ }^{244000}$ | 1500 3000 J | 2500 6300 | $\frac{170}{340}$ J | 190 430 J | 950 1700 | $\frac{460}{1200}$ | $\frac{11000}{1800 ~}$ | 1600 | $\stackrel{2100}{9100}$ | 1700 2900 | 1700 3200 | 110 160 | $\frac{177000}{35000}$ | 2400 5800 |
| ENASIM | BENZO(G,H,U)PERYLENE | ugkg | 2800 | 1500 | 3000 | 1600 | 19000 | 1100 | 1600 | 120 | 140 | 940 | 440 | 830 J | 1900 | 2000 | 1500 | 1400 | 100 | 16000 | 2400 |
| BNASIM | BENZO(k)FLUORANTHENE | ugkg | 2700 | 1200 | 5600 | 3200 | 20000 | 1500 | 2200 | 150 | 170 | 1400 | 570 | ${ }^{1700 \mathrm{~J}}$ | 2200 | 4600 | 2200 | 2100 | 140 | 27000 | 4600 |
| BNASIM | CHRYSENE | ugkg | 2500 | 1200 | 5300 | 3600 | 13000 | 1500 | 2200 | 150 | 170 | 1300 | 650 | 2000 J | 1600 | 5700 | 2300 | 2400 | 140 | ${ }^{23000}$ | 4900 |
| ENASIM | DIBENZO(A,H)ANTHRACENE | ugkg | 640 | 440 J | 1100 | 570 | 7900 | 430 J | 650 | 46 J | 52 J | 310 | ${ }^{130}$ | 290 J | 560 | 580 | 490 | 550 | 26 J | 5500 | 870 |
| BNASIM | FLUORANTHENE | ugkg | 3300 | 1100 | 6700 | 8300 | ${ }^{13000}$ | 1300 | 1800 | 130 | 150 | 1600 | 790 | 2600 | 1800 | 6400 | 2900 | 3000 | 190 | 26000 | 200 |
| ENASIM | FLUORENE | ugkg | 990 | 45 | 110 J | 95 | 1000 | 32 J | 190 | 5.7 | 6.2 | 34 U | 17 U | 20 UJ | 44 | 62 | 45 J | 51 J | 16 U | 490 J | 340 |
| BNASIM | (NDENO(1,2,3-CD) PYRENE | ugkg | 2900 | ${ }_{1}^{1300}$ | $\begin{array}{r}3800 \\ \hline 100 \\ \hline\end{array}$ | $\stackrel{2100}{86}$ | 27000 | 1000 | 1700 | 120 | 140 <br> 13 | ${ }_{1100}^{110}$ | 430 | 980 | 1900 | ${ }^{2100}$ | 1900 | ${ }_{1800}^{1810}$ | 110 | 20000 | 3200 |
| ENASSIM |  | ugkg | 460 | $\frac{120}{10}$ | ${ }_{3100 \mathrm{~J}}^{190}$ | ${ }^{86}$ | $\begin{array}{r}620 \\ 3000 \\ \hline\end{array}$ | 25 J | 6.2 O | $\frac{0.56 \mathrm{U}}{.090}$ | 13 | 110 | 48 | 52 J | 55 | 47 | 570 | 610 | ${ }^{223}$ | 870 | 310 |
| ENASIM | ${ }^{\text {PENTACNLOROPHENOL }}$ | - | 12500 | ${ }_{3}{ }^{40}$ | 660 | 830 580 | $\stackrel{3000}{ }{ }^{3} 700$ | 120 | 570 | ${ }_{290}$ | $\begin{array}{r}320 \mathrm{~J} \\ \hline 28 \\ \hline\end{array}$ | 320 | 150 | 340 J 210 | 1300 300 | ${ }^{12000}$ | 320 J <br> 120 | $\stackrel{330 \mathrm{~J}}{1200}$ | $\frac{130 \mathrm{~J}}{63,}$ | $\begin{array}{r}160000 \mathrm{~J} \\ 3800 \\ \hline\end{array}$ | 3400 1800 |
| ENASIM | PYRENE | ugkg | 3000 | 1400 | 8000 | 6100 | 12000 | 2000 | 3000 | 180 | 200 | 1600 | 820 | 2700 J | 1900 | 7000 | 2400 | 2500 | 170 | ${ }_{30000}$ | 6900 |
| E160.3 | RESIIUE, TOTAL | percent | 76 | 88 | 82 | 93 | 81 | 94 | 82 | ${ }^{93}$ | 92 | 90 | 90 | 78 | 87 | 97 | 78 | 77 | 94 | 89 |  |
| E1613/E1668 | 1, $1,2,3,4,6,7,8$. HEPTACHLORODIBENZOFURAN |  |  | ${ }^{6851.683 \mathrm{~J}} 7$ |  |  | 188500 |  | ${ }_{14481.166}^{142655}$ |  |  |  |  |  |  |  |  |  | ${ }^{32555.043}$ | ${ }^{5220000} 3$ |  |
| E1613/E1668 | 1, 12, 3, ,7, 7,9,-HEPTACHLORODIBENZOFURAN | ngkg |  | 290.974 |  | 58.998 | 1150 |  | 215.118 |  |  |  |  |  |  |  |  |  | 16.1 | 45300 |  |
| E1613/E1668 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | ngkg |  | 139.501 J |  | 28.973 | 460 |  | ${ }^{99.502}$ |  |  |  |  |  |  |  |  |  | ${ }^{7} .026$ | 15700 |  |
| E1613/1668 | 1, 2, ,3,4,7,8.-HEXACHLORODIBENVO-P-DIOXIN | ngkg |  | ${ }^{3090649}$ |  | 64.92 | 625 |  | 100.819 |  |  |  |  |  |  |  |  |  | ${ }_{\text {14.329 }}$ | $\stackrel{2400}{1020}$ |  |
| E1613/E1668 | 1, 1, 3, .6,7,8.-HEXACHLORODIBENZOFURAN | $\frac{\text { ngkg }}{\text { nokg }}$ |  | $\frac{107.4 \mathrm{~J}}{1000.857}$ |  | 21.458 197.243 | $\stackrel{211}{2810}$ |  | ${ }_{\text {59.381 }}^{670.5}$ |  |  |  |  |  |  |  |  |  | $\frac{5.121 \mathrm{~J}}{5541}$ | ${ }_{10200 \mathrm{~J}}^{105000}$ |  |
| E1613/16668 | 1, 1, $, 3,7,8,9,9$ HEXACHLORODIBENZOFURAN | ngkg |  | ${ }_{3.496 ~ J}$ |  | ${ }_{2}^{2.035 \mathrm{~J}}$ | 108 |  | ${ }^{3.117 \mathrm{~J}}$ |  |  |  |  |  |  |  |  |  | ${ }_{0.178 \mathrm{~J}}$ | 4250 |  |
| E1613/E1668 | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | ngkg |  | 795.469 |  | 186.274 | 936 |  | 291.831 |  |  |  |  |  |  |  |  |  | ${ }^{42.325}$ | 49500 |  |
| E1613/E1668 | 1,2,3,7,8.PENTACHLORODIBENZOFURAN | ngkg |  | ${ }^{13.134}$ |  | ${ }^{3.729 \mathrm{~J}}$ | ${ }^{27.7 \mathrm{~J}}$ |  | ${ }^{11.223}$ |  |  |  |  |  |  |  |  |  | ${ }^{0.546 \mathrm{~J}}$ | 1430 |  |
| E16131/E1688 |  | $\xrightarrow{\text { ngkg }}$ ngkg |  | ${ }_{2}^{92.7653}$ |  | 22.764 <br> 15.643 | $\frac{127}{401}$ |  | 35.423 <br> 41.653 |  |  |  |  |  |  |  |  |  | $\frac{5.159 \mathrm{~J}}{5.114 \mathrm{~J}}$ | $\xrightarrow{6350}$ |  |
| E1613/E1668 | 2,3,4,7,8.PENTACHLORODIBENZOFURAN | ngkg |  | 18.499 |  | 5.065 J | 80.4 |  | 7.365 U |  |  |  |  |  |  |  |  |  | 0.755 J | 3300 |  |
| E1613/1668 | 2,3,7,8-TETRACHLORODIBENZOFURAN | ngkg |  | 4.618 |  | 1.152 J | 5.07 J |  | 0.762 J |  |  |  |  |  |  |  |  |  | 0.399 U | 266 |  |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  |  | 3.725 |  | 2.659 | 0 |  | 0.802 U |  |  |  |  |  |  |  |  |  | 0.433 J | 291 |  |
| E1613/E1668 | OCTACHLORODIBENZOFURAN | ngkg |  | 61558.538 J |  | 3759.499 | 100000 |  | 9634.89 J |  |  |  |  |  |  |  |  |  | 1284.938 | 2460000 |  |
| E1613/E1668 | OCTACHLORODIBENZO.P-PIOXIN | ngkg |  | ${ }^{9523880.323 \mathrm{~J}}$ |  | ${ }^{93290.894 \mathrm{~J}}$ | 2099000 |  | 136299.777 ${ }^{12504}$ |  |  |  |  |  |  |  |  |  | $\frac{20890.338 \mathrm{~J}}{110386}$ | ${ }^{310000000 ~} 2420000$ J |  |
|  | TTOTAL LEPTACHLORINATED DIBENZOFURANS | $\xrightarrow{\text { ng } \mathrm{lkg}} \mathrm{n}$ |  | ${ }^{163000.71}$ 8927628 |  | ${ }^{32164.209}$ | ${ }_{139000}$ |  | ${ }^{1255047.754}$ |  |  |  |  |  |  |  |  |  | ${ }_{6870.887}^{110.86}$ | ${ }_{72200000}$ |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | ngkg |  | 2805.128 |  | 999.986 | 15770 |  | 3011.546 |  |  |  |  |  |  |  |  |  | 241.479 | 558000 J |  |
| E1613/E1688 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | ngkg |  | 14328.771 |  | 3241.916 | ${ }^{72800}$ |  | ${ }^{8154.591}$ |  |  |  |  |  |  |  |  |  | 615.411 | 546000 |  |
|  | ToTAL PENTACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng} \text { gkg }}{\text { ngkg }}$ |  | 7433.276 <br> 725.645 |  | - 169.162 | $\frac{1300 \mathrm{~J}}{1550}$ |  | 340.874 291.315 |  |  |  |  |  |  |  |  |  | 30.082 56.215 | $\frac{48400 \mathrm{~J}}{24300}$ |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg |  | ${ }^{91.358}$ |  | ${ }^{23.332}$ | 106 |  | ${ }^{46.651}$ |  |  |  |  |  |  |  |  |  | ${ }^{9.186}$ | ${ }^{5510} \mathrm{~J}$ |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | ngkg |  | ${ }^{27.439}$ |  | 13.451 | 73.1 |  | 10.392 |  |  |  |  |  |  |  |  |  | 9.881 | 1890 |  |
| SW6020 | ANTIMONY | mgkg | 6.6 | ${ }^{0.91 \mathrm{~J}}$ | ${ }^{0.52 \mathrm{~J}}$ | 0.36 UJ | ${ }^{0.48 \mathrm{~J}}$ | 0.35 UJ | 0.39 UJ | 0.36 UJ | 0.36 UJ | ${ }^{0.93 \mathrm{~J}}$ | ${ }^{0.54 \mathrm{~J}}$ | 2.7 J | ${ }^{0.50} \mathrm{~J}$ | ${ }^{0.60 \mathrm{~J}}$ | 1.7 | 2.0 | ${ }^{0.344}$ | 2.7 J | 2.9 |
| SW6020 | ARSENIC | $\frac{m g k g}{\text { makg }}$ | 310 120 | ${ }^{37}$ | ${ }^{23}$ | 17 | 35 | 29 | 12 | 6.7 | 6.1 | 49 | 40 | 200 J | 57 J | 97 | ${ }^{265}$ | ${ }^{23}$ | 17 | 220 | 15 |
| SW6020 | BARIUM | $\frac{\mathrm{mg} / \mathrm{kg}}{\mathrm{m}_{\mathrm{l}} \mathrm{kg}}$ | 120 | $\stackrel{28}{0.33 \mathrm{U}}$ | $\stackrel{22}{0.35}$ | ${ }_{8}^{8.31 \mathrm{U}}$ | $\stackrel{21}{0.35 \mathrm{U}}$ | $\stackrel{24}{0.30 \mathrm{U}}$ | ${ }_{0}^{16}{ }^{16} \mathrm{U}$ | ${ }^{9.30 \mathrm{U}}$ | ${ }^{0.31 \mathrm{U}}$ | ${ }_{0}^{22}$ | ${ }_{0.31 \mathrm{U}}^{11}$ | $\stackrel{24}{0.37 \mathrm{U}}$ | ${ }_{0}^{19} \mathbf{1 9} \mathbf{U}$ | $\stackrel{16}{0.29 \mathrm{U}}$ | $\begin{array}{r}85 \\ \hline 0.54 \\ \hline\end{array}$ | ${ }^{76}$ | $\stackrel{62}{6.29 \mathrm{U}}$ | ${ }_{0}^{32}$ | 15 <br> 0.44 J |
| SW6020 | CHROMUM | mglkg | 530 | 61 | 46 | 22 | 46 | 7.9 | ${ }^{15}$ | 5.7 | 6.2 | 58 | 68 J | 320 J | 80 J | 190 J | 43 J | 40 | 31 | 310 | 260 J |
| SW6020 | COPPER | mgkg | 250 | 35 | 28 | 14 | 55 | 8.8 | 7.2 | 2.2 | 2.7 | 37 | 33 | 140 | 510 | 110 | 54 | 49 | 11 | 180 | 130 |
| SW6020 | EAD | mgkg | 270 | 39 | 12 | 4.9 | 17 | 8.7 | 5.9 | 5.2 | 5.3 | 14 | 6.7 | 22 | 19 | 17 | 150 | 140 | 800 | 130 | 14 |
| SW6020 | SELENUM | mgkg | 1.10 | $0.940^{0}$ | 1.0U | 0.90 U | 1.00 | 0.87 UJ | ${ }^{0.964}$ | ${ }^{0.88 \mathrm{UJ}}$ | 0.90 UJ | $\stackrel{0.93 \mathrm{U}}{ }$ | ${ }^{0.900}$ | 1.10 | 0.95 | ${ }^{0.830}$ | 1.10 | ${ }^{1.25}$ | 0.85 UJ | ${ }^{0.944}$ | ${ }^{0.860 ~}$ |
| SW6020 SW6020 | SILVAADIUM (FUME OR DUST) | $\frac{\mathrm{mgkg}}{\mathrm{m}_{\mathrm{g} k g}}$ | ${ }_{0.49 \mathrm{U}}^{5.8}$ | $\stackrel{0.43 \mathrm{~J}}{6.2 \mathrm{~J}}$ | $\frac{0.46 \mathrm{U}}{3.0 \mathrm{~J}}$ | $\stackrel{0.41 \mathrm{U}}{2.7}$ | $\stackrel{0.460}{2.5}$ | $\stackrel{0.39 \mathrm{~J}}{2.8 \mathrm{~J}}$ | $\stackrel{0.44 \mathrm{U}}{5.3}$ | $\stackrel{0.40 \mathrm{~J}}{2.9 \mathrm{~J}}$ | $\frac{0.41 \mathrm{U}}{3.1 \mathrm{~J}}$ | $\stackrel{0.42 \mathrm{U}}{5}$ | 0.400 J <br> 5.0 | 0.490 <br> 2.8 | $\stackrel{0.430}{2.5}$ | ${ }_{0}^{0.38 \mathrm{OJ}}$ | $\stackrel{0.48 \mathrm{U}}{12}$ | ${ }_{0}^{0.48 \mathrm{~J}}$ | 0.390 <br> 7.0 | $\stackrel{0.43}{1.2}$ | $\stackrel{0.39 \mathrm{U}}{0.92 \mathrm{U}}$ |
| SW7471 | MERCURY | mgkg | 0.97 | 0.28 | 0.13 | 0.088 | 1.5 | ${ }^{2.078}$ | 0.64 | 0.069 J | ${ }_{0}^{0.10 \mathrm{~J}}$ | 0.12 | 0.056 | 0.51 | 0.25 | 0.20 | 0.32 | 0.33 | 0.083 | 1.4 | 0.34 |
| SW8260 | 1,1,1-TRRCHLOROETHANE | ugkg | 0.19 U | 0.17 U | 0.27 U | 0.13 U | 0.20 U | 0.13 U | 0.15 U | 0.13 U | ${ }_{0}^{0.13 \mathrm{U}^{2}}$ | 0.14 U | ${ }^{0.160 ~}$ | ${ }^{0.188}$ | $0.15 \mathrm{U}^{0.15}$ | 0.14 U | 0.29 U | ${ }_{0}^{0.290}$ | ${ }^{0.14 U}$ | ${ }^{0.16 \mathrm{U}}$ | 0.13 U |
|  | 1,1,2,2,2-TETRACHLOROETHANE | ugkg | 0.10 U | 0.089 U | ${ }^{0.150}$ | 0.072 U | ${ }^{0.114}$ | 0.0710 | 0.081 U | 0.072 U | 0.072 U | 0.074 U | 0.083 U | 0.096 U | 0.082 U | 0.073 U | ${ }^{0.164}$ | ${ }^{0.16 \mathrm{U}}$ | 0.075 U | 0.087 U | 0.071 U |
| (ew | 1, 1 I, 2--TRICHLOROETHANE | ugkg | 0.20 U $0.096 \mathrm{U}^{2}$ | 0.18U | O.29 | 0.15U | $\frac{0.210}{01010}$ | 0.14 U 0 0 | $\frac{0.16 \mathrm{U}}{0.077 \mathrm{U}}$ | 0.15 U 0.068 U | 0.15U | $\frac{0.15 \mathrm{U}}{0.070 \mathrm{U}}$ | 0.17U | $\stackrel{0.19 \mathrm{U}}{0.092 \mathrm{U}}$ | 0.17 0 | O.15U | O.310 | $\frac{0.310}{0.1514}$ | 0.15 U | 0.180 | $\frac{0.14 \mathrm{U}}{0.068 \mathrm{U}}$ |
| SW8260 | 1,1-DICHLOROETHYLENE | ugkg | 0.26 U | ${ }_{0}^{0.23 U}$ | ${ }_{0}^{0.38 \mathrm{U}}$ | 0.19 U | 0.27 U | 0.190 | 0.21 U | 0.190 | 0.190 | 0.19 U | 0.22 U | 0.25 U | 0.0 .210 | 0.19 U | ${ }_{0}^{0.410}$ | ${ }_{0}^{0.41 U^{4}}$ | 0.020 | 0.0 .23 U | 0.190 |
| N8260 | $1,2,4$ TRICHLOROBENZENE | ugkg | 0.23 UJ | 0.21 UJ | 0.33 UJ | 0.17 U | 0.24 UJ | 0.17 U | 0.19 UJ | 0.17 U | 0.17 U | 0.17 U | 0.19 U | 0.22 U | 0.19 U | 0.17 U | 0.36 UJ | 0.36 UJ | 0.17 UJ | 0.20 UJ | 0.17 UJ |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | ${ }_{\text {ugikg }}^{\text {ugokg }}$ | ${ }_{0}^{0.750 \mathrm{UJ}}$ | 0.66 UJ | 1.1 UJ | 0.53 | ${ }^{0.788 \mathrm{UJ}}$ | 0.53 | 0.66 UJ | 0.53 ${ }_{0}^{0.061 u}$ | 0.54U | 0.55 ${ }^{0}$ | ${ }_{0}^{0.62 U}$ | 0.72U | 0.61 u | ${ }_{0}^{0.55 U}$ | 1.2 UJ | 1.2 UJ | 0.06 UJ | O. 0.65 UJ |  |
| SW8260 | 1,2-DICHLOROBENZENE | ugkg | 0.12 UJ | 0.11 UJ | 0.18 UJ | 0.085 U | 0.13 UJ | 0.084 U | $0.095 \mathrm{UJ}^{0}$ | 0.085 U | 0.085 U | 0.087 U | 0.098 U | 0.12 U | 0.097 U | 0.087 U | 0.19 UJ | 0.19 UJ | 0.088 UJ | 0.11 UJ | 0.084 U |
| SW8260 | 1,2-DICHLOROETHANE | ugkg | ${ }^{0.16 \mathrm{U}}$ | 0.14 U | 0.22 U | 0.11 U | ${ }^{0.16 \mathrm{U}}$ | 0.11 U | 0.13 U | 0.11 U | 0.11 U | 0.12 U | 0.13 U | 0.15 U | 0.13 U | 0.12 U | 0.24 U | 0.24 U | 0.12 U | 0.14 U | 0.11 U |
| SW8260 | 1,2-IICHLOROPROPANE | ugkg | 0.082 U | ${ }^{0.073 U}$ | $\stackrel{0.12 \mathrm{U}}{ }$ | 0.059 U | ${ }^{0.086 \mathrm{U}}$ | ${ }^{0.058 ~ U ~}$ | ${ }^{0.066 U}$ | 0.059 U | $0.059 \mathrm{U}^{0}$ | 0.060 U | 0.068 U | 0.079 U | 0.067 U | 0.060 U | 0.13 U | ${ }_{0}^{0.13 U}$ | 0.061 U | 0.071 U | 0.058 U |
| Sterse | ${ }_{\text {l }}^{\text {1,4-DICHLOROBENZENE }}$ | ${ }_{\text {ug }}^{\text {ugkg }}$ | $\frac{0.14 \mathrm{UJ}}{3.8 \mathrm{U}}$ | 0.12 <br> $\stackrel{5}{5.5 \mathrm{~J}}$ | $\stackrel{0.190 \mathrm{~J}}{5.5 \mathrm{U}}$ | $\xrightarrow{0.094 \mathrm{U}}$ | $\frac{0.14 \mathrm{UJ}}{4.0 \mathrm{u}}$ | 0.094 U <br> 120 J | $\frac{0.110 \mathrm{~J}}{6.9 \mathrm{~J}}$ | 0.094 U <br> 0.5 J | 0.095 ${ }_{\text {4.4 }}$ | 0.097 <br> 2.8 U | $\frac{0.11 \mathrm{U}}{3.2 \mathrm{U}}$ | $\stackrel{0.130}{3.70}$ | $\frac{0.110}{3.10}$ | $\stackrel{0.097 \mathrm{U}}{2.8 \mathrm{U}}$ |  | ${ }_{\text {O.210 }}^{\text {32 J }}$ | $\frac{0.098 \mathrm{UJ}}{2.9 \mathrm{U}}$ | $\stackrel{\text { 0.12 }}{\substack{\text { O }}}$ | 0.094 U <br> 2.7 U |
| SW8260 | BENZENE | ugkg | $0.59{ }^{\text {U }}$ | ${ }^{0.53 \mathrm{U}}$ | ${ }^{0.86 \mathrm{U}}$ | ${ }^{0.43 \mathrm{U}}$ | $0.62{ }^{0}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.43 U}$ | ${ }^{0.43 \mathrm{U}}$ | ${ }^{0.44 \mathrm{U}}$ | 0.49 | 0.57 | ${ }^{0.490}$ | ${ }^{0.44 U^{4}}$ | 0.92 U | ${ }^{0.930}$ | ${ }^{0.444}$ | ${ }^{0.52 \mathrm{U}}$ | 0.42 U |
| 血W82600 | BROMODICHLOROMETHANE | ugkg | 0.440 | ${ }^{0.390}$ | $0.64 \mathrm{U}^{0}$ | ${ }^{0.320 ~}$ | ${ }^{0.47]^{4}}$ | ${ }^{0.324}$ | ${ }^{0.366}$ | $\stackrel{0.32 \mathrm{U}}{ }$ | ${ }_{0}^{0.324}$ | ${ }_{0}^{0.334}$ | 0.37 U | ${ }_{0}^{0.434}$ | ${ }^{0.360}$ | ${ }_{0}^{0.330}$ | 0.69 u | $0.69{ }^{0}$ | ${ }^{0.334}$ | ${ }^{0.390}$ | $\stackrel{0.32 \mathrm{U}}{0}$ |
| SW8260 | CARBON DISULFIDE | ugkg | 2.5 U | 2.24 | 3.5 U | 1.8 U | 2.6 U | 1.8 U | 2.00 | 1.8 U | 1.8 U | 1.8 U | 2.10 | 2.4 U | 2.00 | 1.8 U | 3.8 U | 3.9 U | 1.9 U | 2.2 U | 1.8 U |
| SW8260 | CARBON TETRACHLORIDE | ugkg | 0.53 U | 0.47 U | 0.77 U | 0.38 U | 0.56 U | 0.38 U | 0.43 U | 0.38 ${ }^{\text {U }}$ | 0.38 U | 0.39 U | 0.44 U | 0.51 U | 0.44 U | 0.39 U | 0.83 U | 0.84 U | 0.40 U | ${ }^{2.46 \mathrm{U}}$ | ${ }^{0.38 \mathrm{U}}$ |
| SW8260 | CFC-11 | ugkg | ${ }^{0.40 \mathrm{U}}$ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.57}$ | ${ }^{0.29 U}$ | ${ }^{0.42 U}$ | ${ }^{0.28 \mathrm{U}}$ | ${ }^{0.32 \mathrm{U}}$ | ${ }^{0.29 \mathrm{U}}$ | ${ }^{0.294}$ | ${ }^{0.29 \mathrm{U}}$ | ${ }^{0.33 \mathrm{U}}$ | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.33} \mathrm{U}$ | ${ }^{0.29 \mathrm{U}}$ | ${ }^{0.62 U}$ | ${ }^{0.62 U}$ | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.355}$ | ${ }^{0.238}$ |
| SW8260 | ${ }^{\text {CFC-12 }}$ CHLORINATED FLUOROCARBON ( (REOON 113) | ugikg | $\frac{0.49 \mathrm{U}}{0.55 \mathrm{U}}$ | 0.43 U 0.49 u | $\frac{0.70 \mathrm{U}}{0.79 \mathrm{U}}$ | 0.35 | $\stackrel{0.51 \mathrm{u}}{0.58 \mathrm{u}}$ | 0.35 U 0.39 u | $\xrightarrow{0.394}$ | 0.35 U 0.39 u | 0.35 U 0.39 u | 0.36 U 0.40 U | 0.41U | $\stackrel{0.47 \mathrm{U}}{0.53 \mathrm{U}}$ | 0.40 0 | 0.36 U 0.40 U | $\frac{0.76 \mathrm{U}}{0.85 \mathrm{u}}$ | $\frac{0.77 \mathrm{U}}{0.86 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.41 \mathrm{U}}$ | 0.43U | 0.35 U 0.39 u |
| N8260 | CHLOROBENZENE | ugkg | 0.61 U | 0.54 U | 0.88 U | 0.44 U | 0.64 U | 0.43 U | 0.49 U | 0.44 U | 0.44 U | 0.45 U | 0.51 U | 0.59 U | 0.50 U | 0.45 U | 0.95 U | 0.96 U | 0.46 U | 0.53 U | 0.43 U |
| N8260 | LORODIBROMOMETHANE |  | 0.38 U | 0.34 U | 0.55 U | 0.27 U | 0.40 U | 0.27 U | 0.31 U | 0.27 U | ${ }^{0.28 U}$ | 0.28 U | 0.32 U | ${ }_{0}^{0.37 \mathrm{U}^{\text {U }}}$ | 0.31 U | 0.28 U | 0.59 U | ${ }^{0.60} \mathrm{U}$ | 0.29 U | 0.33 U | ${ }^{0.277}$ |
| SW8260 | CHLOROETHANE | ugkg | 0.55 U | 0.49 U | 0.79 U | 0.39 U | 0.58 U | 0.39 U | 0.44 UJ | 0.39 U | 0.39 U | ${ }^{0.40 \mathrm{U}}$ | 0.46 U | ${ }^{0.53} \mathrm{U}$ | ${ }^{0.45)}$ | ${ }^{0.400}$ | ${ }^{0.85}$ | 0.86 | 0.41 U | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.394}$ |
| (1)260 | CHLOROFORM | ugkg | 0.52 U | ${ }^{0.4614}$ | 0.75 U | 0.37 U | 0.54 U | 0.37 U | 0.42 U | 0.37 U | 0.37 U | 0.38 U | 0.43U | 0.50 U | 0.42 | 0.38 U | $\frac{0.810}{114}$ | 0.81 U | 0.39 U | 0.45 U | 0.37 U |
| SW8260 | CIIS-1,2-DICHLOROETHYLENE | ${ }_{\text {ug }}$ | $\stackrel{.690}{0.40}$ | ${ }_{0}^{0.615}$ | ${ }_{0}^{0.57 \mathrm{U}}$ | $\stackrel{0.49 \mathrm{U}}{0.29}$ | ${ }_{0}^{0.422}$ | 0.48 U | ${ }_{0}^{0.525}$ | ${ }_{0}^{0.490}$ | ${ }_{0}^{0.490}$ | 0.509 | ${ }_{0}^{0.53}$ | $\stackrel{.668}{0.38 \mathrm{U}}$ | ${ }_{0}^{0.536}$ | 0.50 | $0.1 .62{ }^{1.0}$ | ${ }_{0}^{1.620}$ | ${ }_{0}^{0.310}$ | ${ }_{0}^{0.655}$ | ${ }_{0}^{0.488}$ |


|  |  | Location <br> Sample ID Depth Sample Date | $\begin{gathered} \text { SSO40 } \\ \text { SSO40AA } \\ \text { O-0.25 feet } \\ 12 / 101 / 2006 \end{gathered}$ | SS041 <br> SS041AA 0-0.25 feet 12/11/2006 | $\begin{gathered} \text { SSO42 } \\ \text { SSO42AA } \\ 0 .-0.25 \text { feet } \\ 12 / 101 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO43 } \\ \text { SSOO43A } \\ \text { O-0.25 feet } \\ 12105 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO4A } \\ \text { SSO4AAA } \\ \text { o.-.0.25 feet } \\ 12105 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO45 } \\ \text { SSO45AA } \\ 0-0.25 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO46 } \\ \text { SSO46AA } \\ 0.0 .25 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|c\|} \hline \text { SSO47 } \\ \text { SsoutaA } \\ 0-0.25 f \text { feet } \\ 121112006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO47 } \\ \text { SS047AC } \\ 0-0.25 \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO48 } \\ \text { SSO04AA } \\ 0-0.25 \text { feet } \\ 12 / 106 / 2006 \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO49 } \\ \text { SSOO9AA } \\ 0.0 .25 / \text { feet } \\ 1210992006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO50 } \\ \text { SSO50AA } \\ 0.0 .25 \text { feet } \\ \text { 12/104/2006 } \\ \hline \end{gathered}$ | $\begin{array}{\|c} \text { SS051 } \\ \text { sson1AA } \\ 0-0.25 f \text { feet } \\ 1210412006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO52 } \\ \text { SSO52AA } \\ 0-0.25 \text { feet } \\ 12109 / 2006 \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO54 } \\ \text { SSO54AA } \\ 0-0.25 \text { feet } \\ 12 / 101 / 2006 \end{array}$ | $\begin{gathered} \text { Ss054 } \\ \text { SSo54AB } \\ 0-0.25 \text { feet } \\ 12 / 01 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS057 } \\ \text { SsoriA } \\ 0-0.25 \text { feet } \\ 12126012006 \end{gathered}$ | $\begin{gathered} \text { Ss058 } \\ \text { SSo585A } \\ 0-0.25 \text { feet } \\ 12 / 05 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c} \text { SS059 } \\ \text { Ssos5AA } \\ 0-0.25 \text { feet } \\ 11 / 29912006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Metho | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIS-13.3-IICHLOROPROPENE | Likg | 0.44 U | 0.39 U | 0.64 U | ${ }^{0.32 \mathrm{U}}$ | 0.47 U | 0.32 U | 0.36 U | 0.32 U | 0.32 U | 0.33 U | ${ }^{0.37 \mathrm{U}}$ | ${ }^{0.43 \mathrm{U}}$ | ${ }^{0.36 \mathrm{U}}$ | 0.33 U | 0.69 U | 0.69 U | ${ }^{0.33 \mathrm{U}}$ | 0.39 U | 0.32 U |
| SW8260 | CYCLOHEXANE | ugkg | ${ }^{0.58 \cup}$ | ${ }^{0.514}$ | ${ }^{0.836}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.610}$ | ${ }^{0.414}$ | ${ }^{0.470}$ | ${ }^{0.410}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.434}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.566}$ | ${ }^{0.47 u^{4}}$ | ${ }^{0.434}$ | ${ }^{0.900}$ | 0.91 U | ${ }^{0.434}$ | 0.50 | ${ }^{0.414}$ |
| SW8260 | DICHLOROMETHANE | ugkg | 0.59 U | ${ }^{0.53} \mathrm{U}$ | ${ }^{0.86 \mathrm{U}}$ | ${ }^{0.430}$ | ${ }^{0.62 U^{4}}$ | ${ }^{0.425}$ | ${ }^{0.48 \mathrm{U}}$ | 0.43U | $\stackrel{0.43 \mathrm{U}}{0}$ | 0.44 U | ${ }_{0}^{0.49 \mathrm{U}}$ | ${ }_{0}^{0.57)^{0}}$ | 0.49 | $\stackrel{0.44 \mathrm{U}}{0}$ | $\stackrel{0.92 \mathrm{U}}{ }$ | $\frac{0.93 \mathrm{U}}{10}$ | 0.44U | $\stackrel{0.52 \mathrm{U}}{ }$ | $\stackrel{0.42 \mathrm{U}}{0}$ |
| SW8260 | ETHYLBENZENE | ugkg | 0.64 U | ${ }^{0.57 U}$ | 0.92 U | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.67 \mathrm{U}}$ | 0.45 U | ${ }^{0.51 \mathrm{U}}$ | ${ }^{0.460}$ | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.47}$ | ${ }^{0.53}$ | ${ }^{0.624}$ | ${ }^{0.524}$ | ${ }^{0.47 u^{4}}$ | $0.99{ }^{1.9}$ | 1.00 | ${ }^{0.48 \mathrm{U}^{\text {a }} \text { - }}$ | ${ }^{0.566}$ | ${ }^{0.455}$ |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.70 UJ | 0.62 UJ | 1.10 UJ | 0.50 U | 0.74 UJ | 0.50 U | 0.56 UJ | 0.50 U | 0.50 U | 0.51 U | 0.58 U | 0.67 U | 0.57 U | 0.51 U | 1.1 UJ | 1.1 UJ | 0.52 UJ | 0.61 UJ | 0.50 U |
| SW8260 | m,p-xylenes | ugkg | 1.4 U | 1.2 U | 1.90 | 0.94U | $1.4 \mathrm{U}^{\text {d }}$ | 0.94 U | 1.14 | 0.94 U | 0.95 U | 0.97 U | 1.10 | 1.3 U | 1.14 | 0.97 U | 2.14 | 2.10 | 0.98 U | 1.2 U | 0.944 |
| SW8260 SW8260 | M-IICHLOROBENZENE | ${ }_{\text {uglkg }}^{\text {ugakg }}$ | ${ }^{0.076 \mathrm{UJ}}$ | $\frac{0.068 \mathrm{UJ}}{0.26 \mathrm{U}}$ | $\frac{0.11 \mathrm{UJ}}{0.42 \mathrm{U}}$ | 0.054U | ${ }^{0.080 \mathrm{UJ}}$ | 0.0.054 0 | - ${ }_{\text {0.061 }}^{0.0 \mathrm{~J}}$ | -0.054 ${ }_{0}^{0.21 \mathrm{U}}$ | -0.055 ${ }_{0}^{0.21 \mathrm{U}}$ | -0.056 ${ }_{0}^{0.22 \mathrm{U}}$ | $\frac{0.063 \mathrm{U}}{0.24 \mathrm{U}}$ | -0.073 0 | O. 0.022 U | 0.056 U | - 0.12 UJ | - 0.12 UJ | -0.057 UJ | $\frac{0.066 \mathrm{UJ}}{0.025}$ | $\frac{0.054 \mathrm{U}}{0.21 \mathrm{U}}$ |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.70 | 1.50 | 2.40 | 1.20 | 1.8 U | 1.20 | 1.40 | 1.2 U | 1.20 | 1.3 U | 1.40 | 1.6 U | 1.40 | 1.3 U | 2.6 U | 2.70 | 1.3 U | 1.50 | 1.2 U |
| SW8260 | METHYL LSOBUTYL KETONE | uglkg | 1.10 | $\stackrel{0.96 \text { U }}{1.4}$ | 1.6U | $\frac{0.77 \mathrm{U}}{114}$ | 1.2 U | $\stackrel{0.76 \mathrm{U}}{114}$ | 0.87 U | $\stackrel{0.77 \text { U }}{ }$ | $\frac{0.77 \mathrm{U}}{114}$ | 0.79 | -0.89 | 1.14 | - 0.88 U | 0.79U | $\frac{1.7 U}{24}$ | $\frac{1.70}{2.7}$ | $\stackrel{0}{0.80 \mathrm{U}}$ | 0.94U | $\stackrel{0.77 \text { U }}{114}$ |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.6 U | 1.4 U | 2.20 | 1.10 | 1.6 U | 1.10 | 1.30 | 1.10 | 1.10 | 1.2 U | 1.3 U | 1.5 U | 1.3 U | 1.2 U | 2.40 | 2.4 U | 1.2 U | 1.4 U | 1.10 |
| SW8260 | METHYLBENZENE | ugkg | 0.64 U | 0.57 U | 0.92 U | ${ }^{0.46 \mathrm{U}}$ | 0.67 U | 0.45 U | 2.6 J | 0.46 U | ${ }^{0.46 \mathrm{U}}$ | 0.47 U | 0.53 U | 0.62 U | 0.52 U | 0.47 U | 0.99 U | 1.00 | 0.48 U | 0.56 U | 0.45 U |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.67 U | 0.59 U | 0.96 U | ${ }^{0.48 \mathrm{U}}$ | 0.70 U | 0.48 U | $\stackrel{0.54 \mathrm{U}}{ }$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.48 \mathrm{U}}$ | 0.49 | ${ }^{0.561}$ | ${ }^{0.640}$ | ${ }^{0.550}$ | ${ }^{0.49 U^{0}}$ | $\underline{1.14}$ | 1.10 | $\stackrel{0.50 \mathrm{U}}{ }$ | ${ }^{0.58 \mathrm{U}^{0}}$ |  |
| SW8260 | O-XYLENE ${ }_{\text {STYRENE (MONOMER) }}$ | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{log}}$ | 0.61U | $\stackrel{0.54 \mathrm{U}}{0.58 \mathrm{u}}$ | 0.880 | 0.44 U 0.47 U | $\stackrel{0.64 \mathrm{U}}{0.69 \mathrm{U}}$ | 0.43 U 0.46 U | 0.49 U 0.53 u | 0.44 U 0.47 U | 0.44 U 0.47 U | 0.45U | 0.51 u 0.54 u | 0.59 U 0.63 u | 0.50 U 0.53 u | $\stackrel{0.45 \mathrm{U}}{0.48 \mathrm{u}}$ | $\frac{0.95 \mathrm{U}}{1.1 \mathrm{u}}$ | $\frac{0.96 \mathrm{U}}{1.1 \mathrm{U}}$ | 0.46 U 0.49 u | 0.53 U 0.57 u | $\stackrel{0.43 \mathrm{U}}{0.47 \mathrm{U}}$ |
| SW8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.49 U | 0.43 U | 0.70 U | 0.35 U | 0.51 U | 0.35 U | 0.39 U | 0.35 U | 0.35 U | ${ }_{0} 0.36 \mathrm{U}$ | 0.41 U | 0.47 U | 0.40 U | ${ }_{0}^{0.36 U}$ | ${ }_{0}^{0.76 \mathrm{U}}$ | 0.77 U | 0.37 U | 0.43 U | ${ }_{0}^{0.350}$ |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.61 U | 0.54 U | 0.88 U | 0.44 U | 0.64 U | 0.43 U | 0.49 U | 0.44 U | 0.44 U | 0.45 U | 0.51 U | 0.59 U | 0.50 U | 0.45 U | 0.95 U | 0.96 U | 0.46 U | 0.53 U | 0.43 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | ugkg | 0.58 U | ${ }^{0.514}$ | ${ }^{0.83 \mathrm{U}^{\text {a }}}$ | ${ }^{0.42 \mathrm{U}}$ | 0.61 U | ${ }^{0.410}$ | ${ }^{0.47 \mathrm{U}^{\text {U }}}$ | ${ }^{0.410}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.434}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.56 \mathrm{U}}$ | $\stackrel{0.47 ~}{0}$ | $\stackrel{0.43 \mathrm{U}}{ }$ | 0.90 U | 0.91 U | ${ }^{0.430}$ | $\xrightarrow{0.50}$ | ${ }^{0.410}$ |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ugkg | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.41 \mathrm{U}}$ | ${ }^{0.66 U}$ | ${ }^{0.33 \mathrm{U}}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.33 \mathrm{U}}$ | 0.37 U | ${ }^{0.33 U}$ | ${ }^{0.33 \mathrm{U}}$ | ${ }^{0.34 \mathrm{U}}$ | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.44 U}$ | ${ }^{0.37 U}$ | 0.34 U | 0.71 U | 0.72 U | ${ }^{0.34 \mathrm{U}}$ | ${ }^{0.400 ~}$ | 0.33 U |
| SW8260 | TRIBOMOMETHANE | Lgikg | 0.59 u | 0.53 U | ${ }^{0.860}$ | 0.43 U | 0.62 U | 0.42 U | 0.48 U | 0.43 U | ${ }^{0.43 U}$ | 0.44 U | 0.49 U | $0.57{ }^{\text {U }}$ | 0.49 U | 0.44 U | 0.92 U | ${ }^{0.934}$ | 0.44 U | ${ }^{0.52}{ }^{\text {U }}$ |  |
| SW8260 | TRICHLOROETHYLENE | Lgikg | 0.61 U | 0.54 U | 0.88 U | 0.44 U | 0.64 U | 0.43 U | 0.49 U | 0.44 U | ${ }^{0.44 U}$ | 0.45 U | 0.51 U | 0.59 U | 0.50 U | 0.45 U | 0.95 U | 0.96 U | ${ }^{0.464}$ | 0.53 U | 0.43 U |
| SW8260 | VINYL CHLORIDE | $\frac{\text { ugkg }}{\text { ugkg }}$ | $\frac{0.37 \mathrm{U}}{18 \mathrm{U}}$ | $\frac{0.33 \mathrm{U}}{15 \mathrm{U}}$ | $\frac{0.53 \mathrm{U}}{16 \mathrm{U}}$ | $\frac{0.26 \mathrm{U}}{15 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{160 \mathrm{u}}$ | $\frac{0.26 \mathrm{U}}{14 \mathrm{U}}$ | $\frac{0.30 \mathrm{U}}{16 \mathrm{U}}$ | $\frac{0.26 \mathrm{U}}{14 \mathrm{U}}$ | $\frac{0.26 \mathrm{U}}{15 \mathrm{U}}$ | $\frac{0.27 \mathrm{U}}{15 \mathrm{U}}$ | $\frac{0.31 \mathrm{U}}{15 \mathrm{U}}$ | ${ }^{0.35 \mathrm{U}}$ | $\frac{0.30 \mathrm{U}}{16 \mathrm{U}}$ | $\frac{0.27 \mathrm{U}}{14 \mathrm{U}}$ | $\frac{0.57 \mathrm{U}}{17 \mathrm{U}}$ | $\frac{0.58 \mathrm{U}}{17 \mathrm{U}}$ | $\frac{0.28 \mathrm{U}}{14 \mathrm{U}}$ | $\frac{0.32 \mathrm{U}}{150 \mathrm{u}}$ | $\frac{0.26 \mathrm{U}}{14 \mathrm{U}}$ |
| SW8270 | 2,4,6-TRICHLOROPHENOL | ugkg | 48 U | 410 | 44 U | 39 U | 450 U | 39 U | 44 U | 39 U | 40 U | 40 U | 40 U | 47 U | 42 U | 38 U | 47 U | 47 U | 39 U | 410 U | 39 U |
| SW8270 | 2.4-DICHLOROPHENOL | Lgikg | 23 U | 20 U | 210 | 19 U | 210 U | 19 U | 21 U | 19 U | 19 U | 19 U | 19 U | 22 U | 20 U | 18 U | 22 U | 22 U | 19 U | 200 U | 19 U |
| SW8270 | 2.4-DIMETHYLPHENOL | ugkg | 25 U | 22 U | 24 U | 210 | 240 U | 210 | 24 U | 210 | 210 | 22 U | 22 U | 25 U | 22 U | 20 U | 25 U | 25 U | 210 | 220 U | 210 |
| SW8270 | 2.4-DIINTROPHENOL | Lgikg | 16 UJ | 14 U | 15 UJ | 13 U | 150 U | 13 U | 15 U | 13 U | 14 U | 14 U | 14 U | 16 U | 14 U | 13 U | 16 U | 16 U | 13 U | ${ }^{140 \mathrm{U}}$ | $\frac{13 \mathrm{UJ}}{11 \mathrm{~J}}$ |
| SW8270 | 2,4-DINITROTOLUENE | Lgikg | 13 U | 12 U | 12 U | 11 U | 130 U | 110 | 12 U | 11 U | 11 U | 110 | 11 U | 13 U | 12 U | 110 | 13 U | 13 U | 11 U | 120 U | 11 U |
| SW8270 | 2,6-DIIITROTOLUENE | Lgkg | 48 U | 41 U | 44 U | 39 U | 450 U | 39 U | 44 U | 39 U | 40 U | 40 U | 40 U | 47 U | 42 U | 38 U | 47 U | 47 U | 39 U | 410 U | 39 U |
| SW8270 | 2.CHLORONAPHTHALENE | /kg | 210 | 19 U | 20 U | 18 U | 200 U | 18 U | 20 U | 18 U | 18 U | 18 U | 18 U | 210 | 19 U | 17 U | 210 | 210 | 18 U | 190 U | 18 U |
| SW8270 | 2-CHLOROPHENOL | ugkg | 24 U | 210 | 22 U | 20 U | 230 U | 20 U | 22 U | 20 U | 20 U | 20 U | 20 U | 24 U | 210 | 19 U | 24 U | 24 U | 20 U | 210 U | 20 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | Lgikg | 16 U | 14 U | 15 U | 13 U | 150 U | 13 U | 15 U | 13 U | 14 U | 14 U | 14 U | 16 U | 14 U | 13 U | 16 U | 16 U | 13 U | 140 U | 13 U |
| SW8270 | 2 2-NTROANLIINE | ugkg | 29 UJ | 25 U | 27 UJ | 24 UJ | 280 UJ | 24 U | 27 U | 24 U | 24 U | 25 U | 25 U | 29 uJ | 26 UJ | ${ }^{23 U}$ | 29 UJ | 29 UJ | ${ }^{24 U}$ | 250 U | ${ }^{24 U}$ |
| SW8270 | 2-NITROPHENOL | ugkg | 19 U | 16 U | 18 U | 16 U | 180 U | 15 U | 18 U | 16 U | 16 U | 16 U | 16 U | 18 U | 17 U | 15 U | 18 U | 19 U | 15 U | 160 U | 15 U |
| SW8270 SW8270 | 3,33-DICHLOROBENZIDINE | ugkg | 45 U | 39 U | 42 U | 37 U | $\frac{420 \mathrm{UJ}}{160}$ | 37 U | 42 U | 37 U | 37 U | 38 U <br> 15 | 38 U 15 | 44 U | $\frac{40 \mathrm{U}}{16 \mathrm{UJ}}$ | 36 U 14 U | $\stackrel{44 \mathrm{U}}{17 \mathrm{UJ}}$ | $\stackrel{44 \mathrm{U}}{17 \mathrm{UJ}}$ | $\begin{array}{r}37 \mathrm{U} \\ 14 \\ \hline\end{array}$ | 390 | 37 UJ |
| SW8270 |  | $\frac{u g k g}{\text { uokg }}$ | 18U | $\frac{150}{20}$ | $\frac{160}{210}$ | 15 U | $\frac{160 \mathrm{UJ}}{210 \mathrm{U}}$ | 14 U | $\frac{160}{210}$ | 14 U | 15 U | 15 U | 15 | $\frac{17 \mathrm{UJ}}{22 \mathrm{U}}$ | $\frac{16 \mathrm{UJ}}{20 \mathrm{U}}$ | 14 U | $\frac{170 J}{22 \mathrm{U}}$ | $\frac{17 \mathrm{UJ}}{22 \mathrm{U}}$ | 14 U | $\stackrel{150 \mathrm{U}}{200 \mathrm{U}}$ | $\frac{140}{190}$ |
| SW8270 | 4,6-D-DINTRO-2-METHYLPHENOL | ugkg | 13 V | 110 | 12 U | 110 | 120 U | 10 U | 12 U | 110 | 110 | 110 | 11 UJ | 13 U | 110 | ${ }^{9.7} \mathbf{7}$ UJ | 13 U | 13 U | 10 U | 110 U | 28 J |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | lgkg | 13 U | 12 U | 12 U | 11 U | 130 U | 110 | 12 U | 110 | 110 | 11 U | 11 UJ | 13 U | 12 U | 11 UJ | 13 U | 13 U | 110 | 120 U | 11 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | ugkg | 21 U | 19 U | 20 U | 18 U | 200 U | 18 U | 20 U | 18 U | 18 U | 18 U | 18 U | 21 U | 19 U | 17 U | 21 U | 21 U | 18 U | 190 U | 18 U |
| SW8270 | 4.CHLOROPHENYL PHENYL ETHER | ugkg | 29 U | 25 U | 27 U | 24 U | 280 U | 24 U | 27 U | 24 U | 24 U | 25 U | 25 U | 29 U | 26 U | 230 | 29 U | 29 U | 24 U | 250 O | 24 U |
| SW8270 | 4-METHYLPHENOL (MP-CRESOL) | ugkg | 35 U | 30 U | 32 U | 29 U | 320 U | 28 U | 32 U | 28 U | 29 U | 29 U | 29 U | 34 U | 31 U | 27 U | 34 U | 34 U | 28 U | 300 U | 28 U |
| SW8270 |  | ${ }_{\text {uga }}^{\text {ugkg }}$ ugag | $\stackrel{23 \mathrm{UJ}}{44 \mathrm{~J}}$ | 20 U | $\frac{21 \mathrm{UJ}}{22 \mathrm{U}}$ | $\frac{19 \mathrm{UJ}}{20 \mathrm{U}}$ | $\stackrel{210 \mathrm{UJ}}{230 \mathrm{U}}$ | $\frac{190}{20 U}$ | 22 U | $\underline{190}$ | $\underline{190}$ | $\underline{190}$ | $\underline{190}$ | $\frac{22 \mathrm{UJ}}{24 \mathrm{U}}$ | $\frac{20 \mathrm{UJ}}{21 \mathrm{u}}$ | 18 U | $\frac{22 \mathrm{UJ}}{61 \mathrm{~J}}$ | $\frac{22 \mathrm{UJ}}{24 \mathrm{U}}$ | $\underline{190}$ | $\frac{200 \mathrm{UJ}}{210 \mathrm{u}}$ |  |
| SW8270 | BIPHENYL | ugkg | 200 U | 180 U | 190 U | $170 \cup$ | 1900 U | 160 UJ | 190 U | 170 UJ | 170 UJ | 170 U | $170 \cup$ | 200 U | 180 U | 160 U | 200 U | 200 U | 160 U | 1700 U | 170 U |
| SW8270 | BIS(2.CHLORETHOXYMETHANE | ugkg | 23 U | 20 U | 21 U | 19 U | 210 U | 19 U | 21 U | 19 U | 19 U | 19 U | 19 U | 22 U | 20 U | 18 U | 22 U | 22 U | 19 U | 200 U | 19 U |
| SW8270 | BIS(2-CHLOROETHYL)ETHER | ugkg | 20 U | 18 UJ | 19 U | 17 U | 190 U | 16 U | 19 U | 17 U | 17 U | 17 U | 17 UJ | 20 U | 18 U | 16 UJ | 1300 | 20 U | 16 U | 170 | 17 U |
| SW8270 | BIS(2-CHLOROISOPROPYL) ETHER | ugkg | 28 UJ | 24 U | 26 UJ | 23 UJ | 260 UJ | 23 U | 26 U | 23 U | 23 U | 24 U | 24 U | 27 UJ | 25 UJ | 22 U | 27 UJ | 28 UJ | 23 U | ${ }^{240 \mathrm{UJ}}$ | 23 U |
| SW8270 | BIIS(2-ETHYLHEXYL)PHTHALATE | ugkg | 62 J | 20 J | 20 U | 45 J | 200 U | 18 U | 20 U | 18 U | 18 U | 18 U | 18 U | 210 | 780 | 17 U | 110 J | 120 J | 18 U | 540 J | 110 J |
| SW8270 | CARBAZOLE | ${ }_{\text {ugalkg }}^{\text {ugkg }}$ | 370 160 J | 230 <br> 87 <br> 8 | 350 <br> 89 <br> 80 | $\frac{120 \mathrm{~J}}{64}$ | $\stackrel{1200 \mathrm{~J}}{260 \mathrm{~J}}$ | 220 <br> 15 <br> 15 | 310 <br> 44 | 31 J <br> 14 | 32 J 15 | 180 J 110 J | 82 J <br> 34 | $\frac{140 \mathrm{~J}}{47}$ | 260 <br> 50 | ${ }_{8210 \mathrm{~J}}$ | 300 220 | 350 250 | 18 U | $\stackrel{2400}{550}$ | 260 190 |
| SW8270 | DIETHYL PHTHALATE | ugkg | 16 U | 14 U | 15 U | 13 U | 150 U | 13 U | 15 U | 13 U | 14 U | 14 U | 14 U | 16 U | 14 U | 13 U | 16 U | 16 U | 13 U | 140 U | 13 U |
| SW8270 | DIMETHYL PHTHALATE | ugkg | 13 U | 12 U | 12 U | 110 | 130 U | 110 | 12 U | 11 U | 110 | 110 | 110 | 13 U | 12 U | 11 U | 13 U | 13 U | 110 | 120 U | 11 U |
| SW8270 | D-N-BUTYL-PHTHALATE | ugkg | 80 U | 70 U | 750 | 66 U | 750 U | 65 U | 750 | 66 U | 67 U | 68 U | ${ }^{68 \mathrm{UJ}}$ | 79 U | 710 | 63 UJ | 79 U | 79 U | 65 U | $\frac{690}{}$ | 66 U |
| SW8270 | Dil-OCTYL-PHTHALATE | ${ }_{\text {uglkg }}^{\text {ugkg }}$ | 20 U | 18 U | 180 J | 17 U | 1900 | 16 U | 190 | 17 U | 17 U | 17 U | $\underline{17 U}$ | $\frac{20 U}{22 \mathrm{U}}$ | $\frac{18}{20}$ | 16 U 180 | 20 U | 20 U | 16 U | 170U | 17 U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 11 U | 9.50 | 110 | 9.00 | 110 U | ${ }_{8} 8.9 \mathrm{UJ}$ | 110 | ${ }_{9.0} \mathrm{UJ}^{1}$ | ${ }_{9} 9.1 \mathrm{UJ}$ | 9.30 | ${ }_{9.3} \mathrm{UJJ}^{\text {a }}$ | 11 U | ${ }^{9.60}$ | ${ }_{8}^{8.6 \mathrm{UJ}}$ | 11 U | 11 U | $\underline{8.90}$ | $\underline{94 U}$ | 8.9 U |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | glkg | 15 UJ | 13 UJ | 14 UJ | 12 U | 140 U | 12 U | 14 U | 12 U | 12 U | 13 U | 13 UJ | 15 U | 13 U | 12 UJ | 15 U | 15 U | 12 U | 130 U | 12 UJ |
| SW8270 | HEXACHLOROETHANE | ugkg | 230 | 20 U | 210 | 19 U | 210 U | 19 U | 210 | 19 U | 19 U | 19 U | 19 U | 22 U | 20 U | 18 U | 22 U | 22 U | 19 U | 200 U | 19 U |
| SW8270 | NITROBENZENE | ugkg | 27 U | 23 U | 25 U | 22 UJ | 250 U | 22U | 25 U | 22 U | 22 U | 230 | 23 U | 26 U | 24 U | 21 U | 26 U | 26 U | 22 U | 230 U | 22 U |
| SW8270 | $\frac{\text { N-NITROSO-D-D-N-PROPYLAMINE }}{\text { N-NITROSOOIPHENYLAMINE }}$ | $\underline{u g h k g ~}$ | $\frac{24 U}{150}$ | ${ }_{13} 210$ | $\frac{22 U}{14 \mathrm{U}}$ | 20U | $\frac{230 \mathrm{UJ}}{140 \mathrm{U}}$ | 20U | $\frac{22 U}{14}$ | 20 U | $\frac{20 \cup}{12 \mathrm{U}}$ | $\underline{20 U}$ | $\frac{20 \mathrm{U}}{13 \mathrm{UJ}}$ | $\frac{24 \mathrm{UJ}}{15 \mathrm{U}}$ | $\frac{21 \mathrm{UJ}}{13 \mathrm{U}}$ | $\frac{19 \mathrm{U}}{12 \mathrm{UJ}}$ | $\frac{24 \mathrm{UJ}}{15 \mathrm{U}}$ | $\frac{24 \mathrm{UJ}}{15 \mathrm{U}}$ | $\underline{20 U}$ | 210 U 130 U | $\frac{20 \mathrm{U}}{12 \mathrm{U}}$ |
| SW8270 | P.CHLOROANLINE | ugkg | 35 U | 30 U | 32 U | 29 U | 320 U | 28 U | 32 U | 28 U | 29 U | 290 | 290 | 34 U | 31 U | 27 U | 34 U | 34 U | 28 U | 300 U | , |
| SW8270 | PHENOL | ugkg | 210 | 19 U | 20 U | 18 U | 200 U | 18 U | 20 U | 18 U | 18 U | 18 U | 18 U | 210 | 19 U | 17 U | 210 | 210 | 18 U | 190 U | 18 U |
| SW8270 | P-NITROANLINE | $\frac{\text { uglkg }}{\text { maka }}$ | 16 U | 14 U | 15 U | 13 U | 150 U | 13 U | 15 U | 13 U | 14 U | 14 U | 14 U | 16 U | 14 U | 13 U | 16 U | 69 J | 13 U | 140 U | 13 U |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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Mg/kg: miligrams per kilorram
U = non-d
ugkg: micrograms per kilogram reslus from Vistal laboratory
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|  |  |  | $\begin{gathered} \text { SSO60 } \\ \text { SSO66AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO62 } \\ \text { SSO62A } \\ 0.0 .25 / e=t \\ 12010812006 \end{gathered}$ | $\begin{gathered} \text { SSO64 } \\ \text { SSO64AA } \\ 0-0.25 \text { feet } \\ 12108 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS066 } \\ \text { SS066AA } \\ 0.0 .25 \text { feet } \\ 12108 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS066 } \\ \text { SSS066AB } \\ 0-0.25 \text { feet } \\ 12 / 108 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO677A } \\ \text { SSO67AA } \\ 0-0.255 \text { feet } \\ 11 / 1 / 0012006 \end{gathered}$ | $\begin{gathered} \text { SSO68 } \\ \text { SS068AA } \\ 0-0.25 \text { feet } \\ 12 / 109 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO69 } \\ \text { SS069AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO70 } \\ \text { SSO70AA } \\ 0-0.25 \text { feet } \\ 12 / 12 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO70 } \\ \text { SSOT7AB } \\ 0-0.25 \text { feet } \\ 12 / 12 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO71 } \\ \text { SsoliAA } \\ 0.0 .25 f \text { feet } \\ 121012006 \end{gathered}$ | $\begin{gathered} \text { SSO72 } \\ \text { Ssor2AA } \\ 0.0 .05 f \text { feet } \\ 12071 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO73 } \\ \text { Sso73AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO74 } \\ \text { ssontaf } \\ 0-0.25 \text { feet } \\ 1210412006 \end{gathered}$ | $\begin{gathered} \text { SSO75 } \\ \text { SSO75AA } \\ 0-0.25 \text { feet } \\ 12109 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS076 } \\ \text { SSO76AA } \\ 0-0.25 \text { feet } \\ 12 / 105 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO77 } \\ \text { SSOT7AA } \\ \text { o-0.25f feet } \\ 12199212006 \end{gathered}$ | $\begin{gathered} \text { SSO78 } \\ \text { SSO78AA } \\ 0-0.25 \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{array}{\|c} \text { SSO79 } \\ \text { Ssor9AA } \\ 0-0.25 \text { feet } \\ 113002006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SNASIM | 2-METHYLNAPHTHALENE | uglkg | 200 | 17 U | ${ }^{66}$ | 49 J | ${ }^{72 \mathrm{~J}}$ | 290 J | 60 | 26 J | 110 | ${ }^{210 \mathrm{UJ}}$ | ${ }^{31 \mathrm{~J}}$ | 170 U | 390 | 480 | 400 | ${ }^{220}$ | 200 | 1.6 U | 56 J |
| EMASIM | ACENAPHTHENE | ${ }_{\text {uglkg }}$ | 150 O | 57J | 30 U <br> 57 | $\begin{array}{r}63 \mathrm{~J} \\ \hline\end{array}$ | 86 J <br> 150 | 2900 | 160 680 | 29 UJ 3701 | $\stackrel{950}{900}$ | 380 UJ <br> 200 <br> 100 | 29 U | 100 U <br> 1200 | 2200 | $\begin{array}{r}160 \\ 100 \\ \hline\end{array}$ | 79 <br> 80 | $\begin{array}{r}\text { 280 } \\ \hline 160\end{array}$ | 480 <br> 600 | 2.8 U | 57 U <br> 960 |
| ENASSIM | ACENAPHTHMLENE | $\frac{\text { ugkg }}{\text { ugkg }}$ | 1000 | 1700 | 540 | 380 640 | 450 | 3400 5500 | 680 1100 | 3700 <br> 900 | $\stackrel{2000}{4200}$ | $\xrightarrow{2100}$ | $\frac{47}{87}$ | $\frac{1200}{250}$ | $\frac{4000}{7500}$ | 2900 5100 | $\stackrel{1800}{2800}$ | $\stackrel{1600}{2800}$ | ${ }_{6500}^{6500}$ | ${ }^{32}$ | 960 1300 |
| ENASIM | BENZO(A)ANTHRACENE | ugkg | 2400 | 1800 | 1400 | 640 J | 1200 J | 8100 | 1500 | 1200 | 5700 | 6100 | 260 J | 2000 | 5400 | 8400 | 4600 | 3900 | 14000 | 83 | 1700 |
| ENASIM | BENZO(A)PYRENE | ugkg | 1900 | 1900 | 1300 | 790 J | 1100 J | 8300 | 1500 | 1200 | 6300 | 7600 | 320 J | 1900 | 7200 | 9400 | 6100 | 4500 | 17000 | 100 | 1800 |
| ENASIM | BENZO(B) FLUORANTHENE | ugkg | 4300 | 5100 | 2600 | 1600 | 2000 | 17000 | 5900 J | 2100 | 12000 | 16000 | 400 J | 4700 | 14000 | 19000 | 13000 J | 8700 | 28000 J | 250 J | 3500 |
| ENASIM | BENZO(G,H,JPERYLENE | ugkg | 1900 | 1400 | 1200 | 890 | 900 | 9200 | 1500 | 940 | 4200 | 5100 | 250 J | 2700 | 7800 | 13000 | 7000 | 3700 | 10000 J | 96 | 2200 |
| ENASIM | BENZO(K) FLUORANTHENE | ugkg | 2900 | 2200 | 1900 | 970 J | 1500 J | 12000 | 2300 | 1600 | 8100 | 7700 | 350 J | 3300 | 8500 | 14000 | 3300 | 5500 | 12000 | 110 | 2400 |
| ENASIM | CHRYSENE | ugkg | 3200 | 2500 | 1900 | 920 J | 1600 J | 11000 | 2300 | 1700 | 8600 | 8500 | 370 J | 3000 | 7400 | 12000 | ${ }^{6500}$ | 5500 | 22000 | 130 | 2300 |
| ENASIM | IBENZO(A,H)ANTHRACENE | ugkg | 660 | 500 | 400 | 280 | 280 | 2900 | 440 | 340 J | 1700 | 1900 | 71 J | 680 | 2700 | 3800 | 2000 J | 1400 | ${ }^{42000 ~}$ | ${ }^{33}$ | 620 |
| ENASIM | ELUORANTHENE | ugkg | 4800 | 5400 | 2200 | 1200 | 1500 | 12000 | 2000 | 1700 | 7100 | 7500 | 520 | 4200 | 7600 | 17000 | 6500 | 5600 | 40000 | 120 | 2700 |
| ENASIM | FLUORENE | ugkg | 180 J | 59 | 30 J | 110 J | 140 | 160 U | 54 | ${ }_{17 \mathrm{~J}}$ | 110 | 210 U | 16 U | 170 U | 310 | 180 | 89 | 110 | 520 | 1.6 U | 33 J |
| BNASIM | INDENO(1,2,3,CD) PYRENE | ugkg | 2400 | 1700 | 1400 | 720 J | 1000 J | 10000 | 1600 | 1100 | 3900 | 5100 | 310 J | 2800 | 9200 | 14000 | 6400 J | 4700 | 10000 | 94 | 2200 |
| ENASIM | NAPHTHALENE | ugkg | 270 | 5.8 U | 93 | 86 J | 130 J | 440 | 63 | 41 J | 170 | ${ }^{2200}$ | 33J | 55 U | 640 | ${ }^{730}$ | 580 | 290 | 500 | ${ }_{0}^{0.53}$ | 110 |
| SNASIM | PENTACHLOROPHENOL | ugkg | ${ }^{1000} \mathrm{~J}$ | 7.9 U | 560 | 3500 | 510 J | ${ }^{32000}$ | 1400 J | 57 J | ${ }^{37000}$ | ${ }^{27000}$ | 35 J | 7100 | 8100 | 2700 J | 910 | ${ }^{830} 0$ | 670 J | 21 J | 1800 |
| BNASIM | PYRENE | ugkg | 3900 | 4900 | 2200 | ${ }_{1300 \mathrm{~J}}$ | ${ }^{22000}$ | 13000 | $\stackrel{2400}{ }$ | ${ }_{10} 800$ | ${ }_{12000}$ | $\stackrel{95000}{ }$ | 430 J | $\stackrel{1400}{ }$ | 7500 | ${ }_{16000}$ | ${ }_{7300}$ | 15300 | $\stackrel{5900}{41000}$ | $\stackrel{3.50}{150}$ | 2800 |
| E160.3 | RESIDUE, TOTAL | percent | 92 | 89 | 92 | 96 | 96 | 94 | 96 | 95 | 68 | 72 | 94 | 93 | 93 | 95 | 95 | 96 | 95 | 97 | 96 |
| E1613/E1668 | 1,2,3,4,6,7,8,-HEPTACHLORODIBENZOFURAN | ngkg |  | 4260 |  | ${ }^{5270 \mathrm{~J}}$ | 2820.665 J |  | 3724.542 |  | 26900 J | 18700 |  |  |  |  |  | 4720 |  |  |  |
| E1613/E1668 | 1,2,3,4,6,7,8,HEPTACHLORODIBENZO-P-DIOXIN | ngkg |  | 39500 |  | 37300 | 18374.037 J |  | 35255.709 |  | 162000 | 115000 |  |  |  |  |  | 30800 |  |  |  |
| E1613/E1668 | 1,2,3,4,7,8,9.-HEPTACHLORODIBENZOFURAN | nglkg |  | 310 |  | 345 | 323.175 |  | 251.792 |  | 1750 | 1220 |  |  |  |  |  | 397 |  |  |  |
| E1613/E1668 | 1,2,2,4,7,8,-HEXACHLORODIBENZOFURAN | ngkg |  | ${ }^{134}$ |  | 131 | ${ }^{126.826}$ |  | ${ }^{112.475}$ |  | 693 | 470 |  |  |  |  |  | ${ }^{156}$ |  |  |  |
| E1613/E1668 | 1,2,3,4,7,8,-HEXACHLORODIBENZO-P-DIOXIN | ngkg |  | 382 |  | 361 | 266.169 |  | 241.605 |  | 1540 | 1050 |  |  |  |  |  | 397 |  |  |  |
| E1613/E1688 | 1,2,3,6,7,7.-HEXACHLORODIBENOOFURAN | ${ }_{\text {nglkg }}^{\text {ng }}$ |  | 110 |  | 121 | ${ }_{117.731}$ |  | ${ }^{85.988}$ |  | 571 | 381 |  |  |  |  |  | ${ }^{133}$ |  |  |  |
| E1613/E1688 | $\frac{1,2,3,6,7,8 \text { HEXACHLORODIBENZO-P-DIOXIN }}{123}$ | ngkg |  | ${ }^{1200}$ |  | 1060 | 84.7788 |  | 646.585 |  | 4640 | 3300 |  |  |  |  |  | 854 |  |  |  |
| E1613E1668 | 1,2,3,7,9,9-HEXACHLORODIBENZO-P-DIOXIN | ${ }_{\text {ng }}^{\substack{\text { ngkg } \\ \mathrm{ngkg}}}$ |  | 660 |  | 629 | ${ }_{7} 736.415$ |  | ${ }_{548.881}^{2.654}$ |  | 2620 | 1800 |  |  |  |  |  | 603 |  |  |  |
| E1613/E1668 | 1,2,3,7,8.PENTACHLORODIBENZOFURAN | ngkg |  | 18.8 J |  | 13.4 J | 16.078 |  | 9.218 |  | 59.6 J | ${ }^{42.5 \mathrm{~J}}$ |  |  |  |  |  | ${ }^{14.7 J}$ |  |  |  |
| E16131E1668 | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | ngkg |  | 132 |  | 99.6 | ${ }^{94.671}$ |  | ${ }^{79.705}$ |  | 430 | 293 |  |  |  |  |  | 126 |  |  |  |
| E1613/E1688 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | ngkg |  | 210 |  | 248 | 152 J |  | ${ }^{159.64}$ |  | 987 | 700 |  |  |  |  |  | 215 |  |  |  |
| E1613\|E1668 | 2,3,4, , 8. PENTACHLORODIBENZOFURAN | ngkg |  | 48.5J |  | 53.1 J | ${ }^{15.693}$ |  | ${ }^{13.28}$ |  | 180 | ${ }^{128}$ |  |  |  |  |  | 38.6 J |  |  |  |
| E1613/1668 | 2, $2,7,8$, -TETRACHLORODIBENZOFURAN | $\underbrace{\substack{\text { nokg }}}_{\text {ngkg }}$ |  | 193 |  | 4.2 J 6.59 J | 4.668 4324 |  | 3.095 |  | $\frac{11.6 \mathrm{~J}}{24.2}$ | $\frac{7.62 \mathrm{~J}}{0 \mathrm{U}}$ |  |  |  |  |  | 126 |  |  |  |
| E1613151668 | OCTACHLORODIBENZOFURAN | ngkg |  | 18200 |  | 21600 | 10543.474 ${ }^{\text {J }}$ |  | ${ }^{375998.204}$ |  | 108000 | 78200 |  |  |  |  |  | 17900 |  |  |  |
| E1613/E1668 | OCTACHLORODIBENZO-P-DIOXIN | ngkg |  | 391000 |  | 358000 | 78219.338 J |  | 793360.528 J |  | 1490000 | 1040000 |  |  |  |  |  | 309000 |  |  |  |
| E1613\|E1668 | TOTAL HEPTACHLORINATED DIBENZOFURANS | ngkg |  | 16200 |  | ${ }^{196000}$ | ${ }^{15156.573}$ |  | 11889.922 |  | 98300 J | 69000 |  |  |  |  |  | 15900 |  |  |  |
| E1613/E1688 | TTTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | ngkg |  | 130000 |  | 111000 | 44793.657 |  | 58503.211 |  | ${ }^{590000}$ | 424000 |  |  |  |  |  | 110000 |  |  |  |
| E1613/E1688 | TOTAL HEXACHLLORINATED DIBENZOFURANS | ${ }_{\text {nglkg }}$ |  | $\stackrel{4780 \mathrm{~J}}{1400}$ |  | ${ }_{5}^{5310 \mathrm{~J}}$ | ${ }^{4417.899}$ |  | ${ }_{\text {1866.143 }}^{1829}$ |  | 258800 J | ${ }^{178800} \mathrm{~J}$ |  |  |  |  |  | $\frac{4300 \mathrm{~J}}{1080}$ |  |  |  |
|  | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | $\frac{n g k g}{\substack{\text { nokg }}}$ |  | ${ }^{14000}$ |  | $\frac{10200}{681 \text { J }}$ | 7529.221 <br> 805.232 |  | 6232.151 <br> 45266 |  | 54100 3090 | 38800 <br> 2180 |  |  |  |  |  | 10800 |  |  |  |
| E1613/16668 | TOTAL PENTACHLORINATED DIBENZO-P-DIOXIINS | nglkg |  | 1220 |  | 618 | 510.076 |  | 397.021 |  | 3100 | 2180 J |  |  |  |  |  | 702 |  |  |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg |  | 114 |  | 89.4 | 106.932 |  | 52.995 |  | 440 J | 319 |  |  |  |  |  | 50 |  |  |  |
| E1613/E1688 | TOTAL TETRACHLORINATED DIBENZO-P.DIOXINS | nglkg |  | 270 |  | 18.5 | 39.753 |  | 29.752 |  | 263 | 123 |  |  |  |  |  | 37.7 |  |  |  |
| SW6020 | ANTIMONY | mgkg | 1.9 | 1.4 | 0.99 J | ${ }^{0.35 \mathrm{U}}$ | 1.1 | 2.7 | 1.2 J | ${ }^{0.42 \mathrm{~J}}$ | ${ }^{0.61 \mathrm{~J}}$ | ${ }^{0.68 \mathrm{~J}}$ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.77]^{3}}$ | 6.0 | 1.0 J | 2.2 J | 0.90 J | 0.35 UJ | 0.35 UJ | 1.4 |
| SW6020 | ARSENIC | mgkg | 2005 | 82 | 70 | 81 J | 95 J | 230 J | 160 | 26 J | ${ }^{48}$ | ${ }^{53}$ | 6.1 | ${ }^{63}$ | 180 J | 110 | 260 | 120 | 6.4 | 6.9 J | 140 J |
| SW6020 | BARIUM | $\mathrm{mg}_{\mathrm{k}}^{\mathrm{kg}}$ | 15 | 48 | 20 | ${ }^{13 \mathrm{~J}}$ | 19 J | ${ }^{31}$ | ${ }^{16}$ | ${ }^{15}$ | ${ }^{27}$ | ${ }^{29}$ | 24 | 21 | 41 | 30 E | 46 | 20 | 14 | 12 J | 10 |
| SW6020 | CADMUM | mglkg | $\frac{0.39 \mathrm{~J}}{230 \mathrm{~J}}$ | 0.53 ${ }^{250}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | $\frac{0.30 \mathrm{U}}{64 \mathrm{~J}}$ | - ${ }^{0.30 \mathrm{U}}$ | $\frac{0.30 \mathrm{U}}{3001}$ | $\stackrel{0.30 \mathrm{U}}{2701}$ | $\stackrel{0.300}{111}$ | ${ }_{0}^{0.390}$ | ${ }^{0.38 \mathrm{U}}$ | $\frac{0.30 \mathrm{U}}{}$ | 0.48 J | ${ }^{1.3}$ | - 0.30 J | $\frac{0.40 \mathrm{~J}}{}$ | $\stackrel{0.290}{230}$ | $\stackrel{0.30 \mathrm{U}}{141}$ | $\stackrel{0.300}{ }$ | $\stackrel{0.28 \mathrm{U}}{231}$ |
| SW6020 | COPPER | $\frac{\mathrm{mg} \text { kg }}{\text { mgkg }}$ | ${ }^{230}$ | $\frac{250}{85}$ | $\frac{170}{59}$ | ${ }_{33} 6$ | ${ }^{85} 5$ | 210 | $\frac{270}{140}$ | $\frac{11.6}{}$ | ${ }_{4}^{51}$ | 5 | $\frac{10}{14}$ | ${ }_{56}^{82}$ | $\stackrel{230}{ }$ | 100 | ${ }^{440}$ | ${ }_{1}^{230}$ | $\frac{14.7}{}$ | 5.6 J | $\frac{230}{} 160$ |
| SW6020 | LEAD | mgkg | 12 | 14 | 7.7 | 9.6 J | 34 J | 22 | 16 | 16 | 23 | 26 | 64 | 17 | 190 | 37 | 46 | 20 | 6.8 | 4.7 J | 10 |
| SW6020 | SELENIUM | mgkg | 0.84 U | 0.91 U | 2.1 | 0.87 U | 0.87 U | 0.87 U | 0.87 U | 0.86 U | 1.10 | 1.10 | 0.87 U | 0.90 U | 0.85 U | 0.85 U | 0.88 U | 0.84 U | 0.86 U | 0.86 U | 0.82 U |
| SW6020 | SIIVER | mglkg | 0.38 U | 0.41 U | 0.41U | 0.39 U | 0.39 U | 0.39 U | 0.39 UJ | 0.39 U | ${ }^{0.51 \mathrm{U}}$ | ${ }^{0.50 \mathrm{U}}$ | 0.39 U | 0.41 U | 0.38 U | 0.39 U | 0.40 UJ | 0.38 U | 0.39 UJ | 0.39 U | 0.37 U |
| SW6020 | VANADIUM (FUME OR DUST) | mglkg | 0.90 UJ | 3.3 | 3.0 | 1.11 | 2.01 | 0.93 ${ }^{\text {U }}$ | 0.93 U | 3.1 | 4.9 | 5.6 | ${ }^{6.65}$ | 5.4 | 6.3 | 2.7 | ${ }^{0.94 \mathrm{U}}$ | $0.91{ }^{0.911}$ | 1.6 | 3.15 | $0.88{ }^{0}$ |
| SW7471 | MERCURY | mgkg | 0.20 | ${ }^{0.225}$ | ${ }^{0.13 \mathrm{~J}}$ | ${ }^{0.12 \mathrm{~J}}$ | ${ }^{0.16 \mathrm{~J}}$ | ${ }^{0.47 \mathrm{~J}}$ | 0.11 | ${ }^{0.056 ~ J}$ | 0.84 | 0.94 | 0.062 | 0.73 | 1.9 | 0.39 | 0.24 | 0.11 | 0.043 | 0.025 J | 0.077 J |
| SW8260 | $\frac{1.1,1 .- \text { TRICHLOROETHANE }}{11.2}$ | $\frac{\text { ugkg }}{\text { ugkg }}$ | $\frac{0.14 \mathrm{U}}{0.074 \mathrm{U}}$ | $\stackrel{0.14 \mathrm{U}}{0.075 \mathrm{U}}$ | ${ }_{0}^{0.13 U}$ | $\stackrel{0.13 \mathrm{U}}{0.069 \mathrm{u}}$ | $\stackrel{0.13 \mathrm{U}}{0.070 \mathrm{u}}$ | $\frac{0.15 \mathrm{U}}{0.080 \mathrm{U}}$ | $\stackrel{0.13 \mathrm{U}}{0.070 \mathrm{U}}$ | $\stackrel{0.15 \mathrm{U}}{0.082 \mathrm{U}}$ | $\frac{0.28 \mathrm{U}}{0.16 \mathrm{U}}$ | $\frac{0.23 U}{0.134}$ | 0.14U | $\stackrel{0.13 \mathrm{U}}{0.072 \mathrm{U}}$ | ${ }_{0}^{0.13 U}$ | $\frac{0.13 \mathrm{U}}{0.070 \mathrm{u}}$ | $\stackrel{0.13 \mathrm{U}}{0.070 \mathrm{u}}$ | $\stackrel{0.13 \mathrm{U}}{0.069 \mathrm{u}}$ | $\frac{0.13 \mathrm{U}}{0.070 \mathrm{U}}$ | 0.17U | $\frac{0.14 U}{0.077 U}$ |
| SW8260 | 1,1,2-TRICHLOROETHANE | ugkg | 0.15 U | 0.15 | 0.15 O |  | ${ }_{0}^{0.14 U}$ | 0.16 U | 0.14 u | 0.17 U | ${ }_{0}^{0.314}$ | ${ }_{0}^{0.25 U}$ | 0.16 U | 0.14 u | ${ }_{0}^{0.15 U}$ | 0.14 U | 0.14 u | 0.14 u | 0.14 U | 0.18 U | 0.16 U |
| SW8260 | 1,1-DICHLOROETHANE | ugkg | 0.0710 | 0.0710 | 0.069 U | 0.066 U | 0.067 U | 0.077 U | 0.066 U | 0.078 U | 0.15 U | 0.13 U | $0.074{ }^{0}$ | 0.068 U | 0.069 U | 0.067 U | 0.067 U | 0.066 U | 0.067 U | 0.086 U | 0.074 U |
| SW8260 | 1,1.-IICHLOROETHYLENE | ugkg | 0.19 U | 0.20 U | 0.19 U | 0.18 U | 0.18 U | 0.21 U | 0.18 U | 0.22 U | 0.40 U | 0.33 U | 0.20 U | 0.19 U | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.24 U | 0.20 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugkg | 0.17 UJ | 0.17 U | 0.17 U | 0.16 U | 0.16 U | 0.19 UJ | 0.16 U | 0.19 U | 0.35 UJ | 0.29 UJ | 0.18 UJ | 0.17 U | 0.17 UJ | 0.16 UJ | 0.16 UJ | 0.16 U | 0.16 UJ | 0.21 U | 0.18 U |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | ugkg | 0.55 UJ | 0.56 U | 0.54 U | ${ }^{0.510}$ | 0.52 U | 0.60 UJ | 0.52 U | ${ }^{0.61 U}$ | 1.2 UJ | 0.94 UJ | 0.57 UJ | ${ }^{0.53 U}$ | 0.53 UJ | 0.52 UJ | 0.52 UJ | ${ }^{0.510}$ | 0.52 UJ | 0.67 U | $0.57{ }^{\text {U }}$ |
| SW8260 | 1,2-DIBROMOETHANE | ugkg | 0.063 U | 0.063 U | 0.061 U | 0.059 U | 0.059 U | 0.068 U | 0.059 U | 0.070 U | ${ }^{0.13 U}$ | ${ }^{0.11 U^{4}}$ | ${ }^{0.066 U}$ | 0.061 U | 0.061 U | 0.059 U | ${ }^{0.060 ~ U ~}$ | 0.059 U | 0.059 U | 0.076 U | 0.066 U |
| SW8260 | 1,2-DICHLOROBENZENE | ugkg | 0.088 U | 0.088 U | 0.085 U | 0.081 U | 0.082 U | 0.0955 | 0.082 U | $0.097{ }^{0}$ | 0.12 UJ | 0.15 JJ | $0.091{ }^{0}$ | 0.084 U | $0.085{ }^{0}$ | 0.082 U | 0.083 UJ | 0.081 U | 0.082 UJ | ${ }^{0.111}$ | 0.091 U |
| SW8260 | 12-DICHLOROETHANE | ugkg | 0.12 U | 0.12 U | 0.11 U | 0.11 U | 0.11 U | 0.13 U | 0.11 U | ${ }^{0.13 \mathrm{U}}$ | 0.24 U | 0.20 U | 0.12 U | 0.11 U | $0.11 \mathrm{U}^{\text {a }}$ | 0.11 U | 0.11 U | 0.11 U | $0.11{ }^{\text {U }}$ | 0.14 U | 0.12 U |
| SW8260 | 1,2-DICHLOROPROPANE | $\frac{\text { ugkg }}{\text { ugkg }}$ | 0.061U | 0.061U | 0.059 U | 0.057U | 0.057U | $\frac{0.066 \mathrm{U}}{0.11 \mathrm{UJ}}$ | 0.057U | $\frac{0.067 U}{0.11 U}$ | 0.13U | 0.11U | 0.063 U | $\frac{0.059 ~ U ~}{0.094 \mathrm{U}}$ | $\frac{0.059 \mathrm{U}}{0.094 \mathrm{UJ}}$ | ${ }^{0.057 U}$ | $\frac{0.058 \mathrm{U}}{0.092 \mathrm{UJ}}$ | 0.057U | $\frac{0.057 \mathrm{U}}{0.092 \mathrm{UJ}}$ | $\frac{0.074 \mathrm{U}}{0.12 \mathrm{U}}$ | $\frac{0.063 \mathrm{U}}{0.11 \mathrm{U}}$ |
| SW8260 | ACETONE | ugkg | 2.8 UJ | 110 J | 170 | 2.6 U | $\underline{2.70}$ | 3.10 | $\underline{2.70}$ | 3.10 | ${ }_{41 \mathrm{~J}}$ | 25 J | 3.0 u | $\stackrel{.0 .70}{ }$ | ${ }_{2}$ | $\frac{0.7 U}{}$ | $\frac{0.7 \mathrm{U}}{}$ | 2.6 U | 2.74 | 46 J | 3.0 U |
| SW8260 | BENZENE | ugkg | ${ }^{2.44 U}$ | ${ }^{0.44 \mathrm{U}}$ | ${ }^{0.43 U}$ | ${ }^{2.410}$ | ${ }^{2.41 \mathrm{U}}$ | ${ }^{0.48 \mathrm{U}}$ | 0.41 U | 0.49 U | ${ }^{0.91 \mathrm{U}}$ | ${ }^{0.75 U}$ | ${ }_{0} 0.46 \mathrm{U}$ | 0.42 U | ${ }_{0}^{2.43 U}$ | 0.41 U | ${ }_{0}^{2.42 \mathrm{U}}$ | ${ }^{2.41)}$ | 0.41 U | ${ }^{0.53 U}$ | 0.46 |
| SW8260 | BROMODICHLOROMETHANE | ugkg | 0.33 U | 0.33 U | 0.32 U | 0.31 U | 0.31 U | 0.36 U | 0.31 U | 0.36 U | 0.68 U | 0.56 U | 0.34 U | 0.32 U | 0.32 U | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 0.40 U | 0.34 U |
| SW82600 | BROMOMETHANE | ugkg | ${ }^{0.36 U}$ | ${ }^{0.36 \mathrm{U}}$ | ${ }_{0}^{0.35 \mathrm{U}}$ | 0.34 UJ | ${ }^{0.34 \mathrm{UJ}}$ | ${ }^{0.390}$ | $\stackrel{0.34 \mathrm{U}}{17}$ | 0.40 U | 0.750 J | 0.61 UJ | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.35 \mathrm{U}}$ | 0.34 UJ | ${ }_{0}^{0.34 \mathrm{U}}$ | ${ }^{0.34 \mathrm{UJ}}$ | $\stackrel{0.34 U}{ }$ | 0.044 UJ | ${ }^{0.38 \mathrm{U}}$ |
| SW8260 | CARBON DISULFIIDE | $\frac{u g l k g}{u g k g}$ | $\frac{1.8 \mathrm{U}}{0.40 \mathrm{U}}$ | $\frac{1.8 \mathrm{U}}{0.40 \mathrm{U}}$ | 1.8 U 0.38 U | $\xrightarrow{1.7 \mathrm{U}} \mathrm{O}$ | $\xrightarrow{1.7 \mathrm{U}} 0$ | $\frac{2.0 U}{0.43 U}$ | $\xrightarrow{1.7 \mathrm{U}} 0$ | $\frac{2.0 U}{0.44 \mathrm{U}}$ | $\xrightarrow{3.8 \mathrm{U}}$ | $\frac{3.1 \mathrm{U}}{0.67 \mathrm{U}}$ | $\frac{1.9 U}{0.41 U^{\prime}}$ | 1.8 U 0.38 U | 1.8 U 0.38 U | $\xrightarrow{1.7 \mathrm{U}} 0$ | $\xrightarrow{1.7 \mathrm{U}} \mathrm{O}$ | 1.7 U 0.37 U | $\xrightarrow{1.74} \begin{aligned} & \text { U }\end{aligned}$ | $\frac{2.2 U}{0.48 \mathrm{U}}$ | $\frac{1.9 U}{0.41 \cup}$ |
| SW8260 | CFC--11 | ugkg | ${ }_{0}^{0.300}$ | ${ }_{0}^{0.300}$ | ${ }_{0}^{0.290}$ | $\stackrel{0.27}{0 .}$ | ${ }_{0}^{0.284}$ | $\stackrel{0.32 \mathrm{U}}{0}$ | ${ }_{0}^{0.288}$ | $\stackrel{0.33 \mathrm{U}}{ }$ | 0 | ${ }_{0}^{0.50}$ | $\frac{0.314}{}$ | ${ }_{0}^{0.280}$ | 0.29 U | $\stackrel{0.280}{0.3}$ | 0.28 U | ${ }_{0}^{0.27 \mathrm{U}}$ | ${ }_{0}^{0.284}$ | ${ }_{0}^{0.36 \mathrm{U}}$ | 0.410 |
| SW8260 | CFC-12 | ugkg | 0.36 U | 0.36 UJ | ${ }_{0}^{0.35 \mathrm{U}}$ | 0.34 U | 0.34 U | 0.39 U | 0.34 U | 0.40 U | 0.75 U | 0.61 U | 0.38 U | ${ }^{0.35 \mathrm{UJ}}$ | 0.35 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.44 U | 0.38 U |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { uakg }}$ | 0.41U | 0.41 U 0.45 u | 0.39 u 0.44 u | 0.380.42 u <br> 0 | 0.38U | 0.44 U 0.49 u | $\stackrel{0.38 \mathrm{U}}{0.42 \mathrm{u}}$ | $\bigcirc$ | 0.84 U 0.93 u | 0.69 U | $042U$ | 0.39 U 0.44 u | 0.39 U <br> 0.444 | $\xrightarrow{0.38 \mathrm{U}}$ | 0.39 U 0.43 u | 0.38 U 0.42 U | 0.38 U 0.43 U | 0.49 U 0.55 u | 0.42 U 0.47 U |
| SW8260 | CHLORODIBROMOMETHANE | ugkg | 0.28 U | 0.29 U | 0.28 U | $\xrightarrow[0.26 U]{0.4}$ | 0.27 U | 0.314 | 0.27 U | 0.310 | 0.58 U | 0.48 U | 0.30 U | 0.27 U | 0.27 U | $\stackrel{0.27 \mathrm{U}}{0.0}$ | 0.27 U | ${ }_{0}^{0.266}$ | 0.27 U | 0.344 | 0.30 U |
| V8260 | CHLOROETHANE | ugkg | 0.41 U | 0.41 U | 0.39 U | 0.38 U | 0.38 U | 0.44 U | 0.38 U | 0.45 U | 0.84 UJ | 0.69 UJ | 0.42 U | 0.39 U | 0.39 U | 0.38 U | 0.39 U | 0.38 U | 0.38 U | 0.49 U | 0.42 U |
| SW8260 | CHLOROFORM | ugkg | ${ }_{0}^{0.38 \mathrm{U}}$ | 0.39 U | 0.37 U | ${ }_{0}^{0.36 \mathrm{U}}$ | 0.36 U | ${ }^{0.424}$ | 0.36 U | 0.43 U | $0.79{ }^{19}$ | 0.65 U | ${ }_{0}^{0.400}$ | ${ }^{0.37 \mathrm{U}^{0}}$ | ${ }^{0.37 \mathrm{U}}$ | ${ }^{0.364}$ | ${ }^{0.366}$ | ${ }^{0.366}$ | ${ }^{0.36 \mathrm{U}}$ | $0.47{ }^{\text {U }}$ | 0.40 U <br> 03 L |
| SW8260 | CIIS-1,2-DICHLOROE | ugkg | $\stackrel{0.51 \mathrm{U}}{0.30 \mathrm{U}}$ | ${ }_{0}^{0.51 \mathrm{U}}$ | $\xrightarrow[0.49 \mathrm{U}]{0.29}$ | $\stackrel{0.47 \mathrm{U}}{0.27 \mathrm{U}}$ | $\stackrel{0.48 \mathrm{U}}{0.28}$ | $\frac{0.55 \mathrm{U}}{0.32 \mathrm{U}}$ | $\stackrel{0.48 \mathrm{U}}{0.28 \mathrm{U}}$ | $\stackrel{0.56 \mathrm{U}}{0.33 \mathrm{U}}$ | $\frac{1.10}{1.610}$ | ${ }_{0}^{0.860 \mathrm{U}}$ | $\stackrel{0.53 \mathrm{U}^{0.31 \mathrm{U}}}{ }$ | $\stackrel{0.49 \mathrm{U}}{0.28 \mathrm{U}}$ | $\stackrel{0.49}{0.29}$ | $\stackrel{0.48 \mathrm{U}}{0.28 \mathrm{U}}$ | $\stackrel{0.48 \mathrm{U}}{0.28 \mathrm{U}}$ | ${ }_{0}^{0.477}$ | $\stackrel{0.48 \mathrm{U}}{0.28 \mathrm{u}}$ | $\stackrel{0.620}{ }$ | $\stackrel{0.53}{0.31 \mathrm{U}}$ |


|  |  |  | $\begin{gathered} \text { sso60 } \\ \text { sso60AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \end{gathered}$ | $\begin{gathered} \text { sso62 } \\ \text { sso62AA } \\ 0-0.25 \text { feet } \\ 12108 / 2006 \end{gathered}$ |  | $\begin{gathered} \text { SSO66 } \\ \text { SSO66AA } \\ 0-0.25 \text { feet } \\ 12108 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO66 } \\ \text { SSO66AB } \\ 0-0.25 \text { feet } \\ 12108 / 2006 \end{gathered}$ | $\begin{gathered} \text { Sso67 } \\ \text { sso67AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO68 } \\ \text { SSo68AA } \\ 0-0.25 \text { feet } \\ 12 / 09 / 2006 \end{gathered}$ | $\begin{array}{\|c} \text { SSO69 } \\ \text { Ssobent } \\ 0-0.05 \text { feet } \\ 1130012006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO70 } \\ \text { SSOT7AA } \\ 0-0.25 \text { feet } \\ 12122 / 2006 \end{gathered}$ | $\begin{array}{\|c\|c\|} \text { SSO70 } \\ \text { SSOToAB } \\ 0-0.25 \text { feet } \\ \text { 12/12/2006 } \end{array}$ | $\begin{gathered} \text { SS071 } \\ \text { SS071AA } \\ 0-0.25 \text { feet } \\ 12 / 101 / 2006 \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SS072 } \\ \text { SSO72AA } \\ 0-0.25 \text { feet } \\ 12 / 107 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO73 } \\ \text { Ssonza } \\ 0.0 .25 \text { feet } \\ 11103 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO74 } \\ \text { SSOT4AA } \\ 0.0 .25 f e e t \\ 1210412006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO75 } \\ \text { SSO75AA } \\ 0-0.25 \text { feet } \\ 12109 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO76 } \\ \text { SSO76AA } \\ 0-0.25 \text { feet } \\ 12105 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSOO7 } \\ \text { Ssol7AA } \\ 0.0 .25 \text { feet } \\ 12129912006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO78 } \\ \text { SSO78AA } \\ 0-0.25 \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO79 } \\ \text { SSO79AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Metrod | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIS-1,3-DICHLOROPROPENE | ugkg | $\stackrel{0.33 \mathrm{U}}{0.34 \mathrm{U}}$ | ${ }_{0}^{0.33 \mathrm{U}}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.64}$ | $\stackrel{0.31 \mathrm{U}}{0}$ | ${ }^{0.366}$ | ${ }^{0.68 \mathrm{U}^{\text {O }} \text { - }}$ | ${ }^{0.56 \mathrm{U}^{\text {a }} \text { - }}$ | ${ }_{0}^{0.344}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }_{0}^{0.314}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }_{0}^{0.314}$ | ${ }_{0}^{0.40 \mathrm{U}}$ | ${ }_{0}^{0.344}$ |
| SW8260 | CYCLOHEXANE | $\frac{\mathrm{lagkg}}{\substack{\text { ugk } \\ \text { Lokg }}}$ | $\stackrel{0.43 \mathrm{U}}{0.44 \mathrm{u}}$ | $\stackrel{0.43 \mathrm{U}}{0.44 \mathrm{u}}$ | $\stackrel{0.42 \mathrm{U}}{0.43 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.41 \mathrm{U}}$ | ${ }^{0.40 \mathrm{U}}$ | 0.46 U 0.48 u | $\stackrel{0.40 \mathrm{U}}{0.41 \mathrm{u}}$ | 0.48u | ${ }^{0.88 \mathrm{U}}$ | $\stackrel{0.73 U}{0.75 u}$ | 0.45 U 0.46 u | ${ }^{0.41 u^{0}}$ | 0.42 U 0.43 u | $\stackrel{0.40 \mathrm{u}}{0}$ | ${ }_{0}^{0.41 u^{\prime}}$ | 0.40 U 0.41 U | ${ }_{0}^{0.40 \mathrm{U}}$ | ${ }_{0}^{0.52 \mathrm{U}}$ | 0.45 U 0.46 u |
| SW8260 | ETHYLBENZENE | ugkg | $\stackrel{0.47 \mathrm{U}}{0.4}$ | $\stackrel{0.48 \mathrm{U}}{0.48}$ | $\stackrel{0.430}{0.46}$ | $\stackrel{0.410}{0.44 \mathrm{U}}$ | $\stackrel{0.450}{0.450}$ | $\stackrel{0.480}{0.51 \mathrm{U}}$ | $\stackrel{0.410}{0.44 \mathrm{U}}$ | $\stackrel{0.520}{ }$ | $\stackrel{0.980}{0.9}$ | $\stackrel{0.710}{0.810}$ | $\stackrel{0.490}{0}$ | $\stackrel{0.46 \mathrm{U}}{0}$ | $\stackrel{0.436}{0.46}$ | $\stackrel{0.450}{0.450}$ | $\stackrel{0.450}{0.45}$ | $\stackrel{0.444}{0.40}$ | $\stackrel{0.450}{0.45}$ | ${ }_{0}^{0.574}$ | $\stackrel{0.490}{ }$ |
| SW8260 | SOPROPYLBENZENE | ugkg | 0.52 U | 0.52 U | 0.50 U | 0.48 U | 0.49 U | 0.56 UJ | 0.49 U | $0.57{ }^{\text {U }}$ | 1.10 J | 0.88 UJ | 0.54 UJ | 0.50 U | 0.50 UJ | 0.49 UJ | 0.49 UJ | 0.48 U | 0.49 UJ | 0.63 U | 0.54 U |
| SW8260 | m.p.-xylenes | ugkg | 0.98 U | 0.98 U | 0.95 U | 0.91 U | 0.92 U | 1.14 | 0.92 U | 1.10 | 2.10 | 1.7 U | 1.10 | 0.94 U | 0.94 U | 0.92 U | 0.92 U | 0.91 U | 0.92 U | 1.2 U | 1.10 |
| SW8260 | M-IICHLOROBENZENE | ugkg | 0.056 U | 0.057 U | 0.055 U | 0.052 U | 0.053 U | 0.061 UJ | 0.053 U | 0.062 U | 0.12 UJ | 0.096 UJ | 0.059 UJ | 0.054 U | 0.054 UJ | 0.053 UJ | 0.053 UJ | 0.052 U | 0.053 UJ | 0.068 U | 0.059 |
| SW8260 | METHYL ACETATE | ugkg | ${ }^{0.22 U ~}$ | ${ }^{0.22 U ~}$ | ${ }^{0.214}$ | 0.20 U | 0.20 | 0.23 UJ | 0.20 U | 0.24 UJ | ${ }^{0.44 U^{2}}$ | ${ }^{0.37 \mathrm{U}}$ | ${ }^{0.23 U}$ | ${ }^{0.214}$ | ${ }^{0.21 U}$ | 0.20 U | ${ }^{0.21 \mathrm{U}}$ | 0.20 | 0.20 U | ${ }^{0.26 U}$ | 0.23 UJ |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.30 | 1.3 U | 1.2 U | 1.2 U | 1.2 U | 1.4 U | 1.2 U | 1.40 | 2.60 | 2.10 | 1.3 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.5 U | 1.30 |
| SW8260 | METTYL LSOBUTYL KETONE | ugkg | 0.80 U | ${ }^{0.80 \mathrm{U}}$ | $0.77{ }^{116}$ | $\stackrel{0.74 \mathrm{U}^{110}}{ }$ | $\stackrel{0}{0.75 \mathrm{U}}$ | ${ }^{0.86 \mathrm{U}}$ | $\stackrel{0.75 \mathrm{U}}{114}$ | ${ }^{0.88 \mathrm{U}^{134}}$ | $\underline{1.7 U}$ | 1.40 | ${ }^{0.83}{ }^{124}$ | $\stackrel{.77 \mathrm{U}^{114}}{ }$ | $0.77{ }^{114}$ | ${ }^{0.754}$ | $\stackrel{0}{0.76 \mathrm{U}^{116}}$ | ${ }^{0.744}$ | $\stackrel{0.754}{114}$ | $\stackrel{.974}{ }$ | ${ }^{0.83}$ |
| SW8260 | METHYL N-BUTYL LETONE | ugkg | 1.2 U | 1.2 U | 1.10 | 1.1 UJ | 1.1 UJ | 1.30 | 1.10 | 1.30 | 2.44 | 2.00 | 1.2 U | 1.14 | 1.10 | 1.14 | 1.14 | 1.10 | 1.14 | 1.4 U | 1.2 U |
| SW8260 | METHYLBENZENE | ugkg | 0.47 U | 0.48 U | 0.46 U | 0.44 U | ${ }^{1.450}$ | 0.51 J | 0.44 U | 0.52 U | 2.45 | ${ }^{0.81 \mathrm{U}}$ | 0.49 U | ${ }^{0.46 U}$ | ${ }^{0.46 \mathrm{U}}$ | ${ }^{\text {0.45 }}$ U | ${ }^{\text {0.45 }}$ | 0.44 U | ${ }^{\text {O.45 }}$ U | $0.57 \mathrm{U}^{0}$ | 0.45 |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.50 U | 0.50 U | 0.48 U | 0.46 U | 0.47 U | 0.54 U | 0.47 U | 0.55 U | ${ }^{1.10}$ | ${ }^{0.84 U}$ | 0.52 U | ${ }^{0.48 \mathrm{U}}$ | 0.48 U | 0.47 U | 0.47 U | 0.46 U | 0.47 U | 0.60 U | ${ }^{0.522}$ |
| SW8260 | O-XYLENE | ugkg | ${ }^{0.450}$ | ${ }^{0.45 \mathrm{U}}$ | ${ }^{0.44 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.426}$ | 0.49 U | ${ }^{0.425}$ | ${ }^{0.50}{ }^{\text {U }}$ | ${ }^{1.930}$ | $0.77{ }^{0.70}$ | 0.47 U | ${ }^{0.44 U^{4}}$ | ${ }^{0.44 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.43 \mathrm{U}}$ | ${ }^{0.425}$ | ${ }^{0.430}$ | ${ }^{0.550}$ | ${ }^{0.47 \mathrm{U}^{\text {U }}}$ |
| SW8260 | STYRENE (MONOMER) | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { Lokg }}$ | $\frac{0.48 \mathrm{U}}{0.364}$ | 0.49 U | $\frac{0.47 \mathrm{U}}{0.354}$ | $\frac{0.45 \mathrm{U}}{0.34 \mathrm{U}}$ | 0.46 U | 0.52 U | 0.45 U | 0.54U | 1.0 U | $\frac{0.82 \mathrm{U}}{0.614}$ | $\frac{0.50 \mathrm{U}}{088}$ | 0.47 | 0.47 U | 0.46 U | $\frac{0.46 \mathrm{U}}{0.34 \mathrm{U}}$ | 0.45 U | 0.46 U | 0.59 | 0.50 |
| SW8260 | TERT-BUTYL METHYL ETHER | ugikg | ${ }^{0.36 \mathrm{U}}$ | ${ }^{0.36 \mathrm{U}}$ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.34 U}$ | ${ }^{0.34 U}$ | 0.39 U | ${ }^{0.34 U}$ | ${ }^{0.40 \mathrm{U}}$ | ${ }^{0.754}$ | ${ }^{0.610}$ | ${ }^{0.384}$ | ${ }^{0.35 u^{0}}$ | ${ }^{0.3514}$ | $\stackrel{0.34 \mathrm{U}}{ }$ | ${ }^{0.34 U}$ | ${ }^{0.34 U}$ | $\stackrel{0.34 \mathrm{U}}{ }$ | ${ }^{0.444}$ | ${ }^{0.384}$ |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.45 U | 0.45 U | 0.44 U | 0.42 U | 0.42 U | 0.49 U | 0.42 U | 0.50 U | 0.93 U | 0.77 U | 0.47 U | 0.44 U | $0.71{ }^{0.71}$ | $\stackrel{0.42 \mathrm{U}}{ }$ | 0.43 U | 0.42 U | 0.43 U | 0.55 U | 0.47 U |
| SW8260 | TRANS-1,2-IICHLOROETHENE | $\xrightarrow{\text { ugkg }}$ | $\stackrel{0.43 \mathrm{U}}{0.34 \mathrm{U}}$ | $\stackrel{0.43 \mathrm{U}}{0.34 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{0.33 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.32 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.32 \mathrm{U}}$ | $\stackrel{0.46 \mathrm{U}}{0.37 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.32 \mathrm{U}}$ | $\stackrel{0.48 \mathrm{U}}{0.38 \mathrm{U}}$ | $\stackrel{0.88 \mathrm{U}}{0.70 \mathrm{U}}$ | $\stackrel{0.73 \mathrm{U}}{0.58 \mathrm{U}}$ | $\xrightarrow{0.45 \mathrm{U}}$ | 0.41 U 0.33 u | $\stackrel{0.42 \mathrm{U}}{0.33 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.32 \mathrm{U}}$ | $\stackrel{0.41 \mathrm{U}}{0.32 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.32 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.32 \mathrm{U}}$ | $\xrightarrow{0.52 U}$ | 0.45 U 0.35 U |
| SW8260 | TRIBOMOMETHANE | ugkg | 0.44 U | 0.44 U | 0.43 U | 0.41 U | 0.41 U | 0.48 U | 0.41 | 0.49 U | 0.91 U | 0.75 U | 0.46 U | 0.42 U | 0.43 U | 0.41 U | 0.42 U | 0.41 U | 0.41 U | 0.53 U | 0.46 U |
| SW8260 | TRICHLOROETHYLENE | ugkg | 0.45 U | 0.45 U | 0.44 U | 0.42 U | 0.42 U | 0.49 U | 0.42 U | 0.50 U | 0.93 U | 0.77 U | 0.47 U | 0.44 U | 0.44 U | 0.42 U | 0.43 U | 0.42 U | 0.43 U | $0.55{ }^{\text {U }}$ | 0.47 U |
| SW8260 | VINYL CHLORIDE | ugkg | 0.27 U | 0.27 U | 0.26 U | 0.25 U | 0.26 U | 0.30 U | 0.26 U | 0.30 U | ${ }^{0.56 U}$ | ${ }^{0.46 ~ U ~}$ | 0.28 U | 0.26 U | 0.26 U | 0.26 U | ${ }^{0.260 ~}$ | 0.25 | 0.26 U | ${ }^{0.33 U}$ | 0.28 U |
| SW8270 | 2,4,5-TRICHLOROPHENOL | ugkg | 15 U | 15 U | 15 U | 14 U | 14 U | 14 U | 14 U | 14 U | 20 U | 19 U | 14 U | 14 U | 15 U | 14 U | 14 U | 14 U | 140 U | 14 U | 14 U |
| SW8270 | 2,4,6-TRICHLOROPHENOL | ugkg | 40 U | 410 | 40 U | 38 U | 38 U | 39 U | 38 U | 38 U | 53 U | 50 U | 39 U | 39 U | 39 U | 38 U | 38 U | 38 U | 380 U | 38 U | 38 U |
| SW8270 | $\frac{\text { 2.4-DICHLOROPHENOL }}{24.0 \text { IMETHYTPHENOL }}$ | ugkg | 19 U | $\frac{20 \mathrm{U}}{22}$ | 19 U | 18 U | 18 U | $\frac{190}{214}$ | 18 U | $\frac{18 \mathrm{U}}{210}$ | 250 | 24 U | $\frac{190}{214}$ | $\frac{190}{214}$ | $\frac{190}{87}$ | $\frac{18}{22 J}$ | $\frac{18}{20}$ | $\frac{180}{20 U}$ | ${ }^{180 \mathrm{U}}$ | 180 | $\frac{18 \mathrm{U}}{20}$ |
| SW8270 | 4-DIINTROPHENOL | ugkg | 14 UJ | 14 U | 14 U | 13 U | 13 U | 13 U | 13 U | 13 | 18 U | 17 U | 13 U |  | 131 | 13 U | 13 U | 13 U | 130 U | 13 U | 13 |
| W8270 | 2,4-DIINTROTOLUENE | ugkg | 11 U | 12 U | 11 U | 11 U | 11 U | 110 | 11 U | 11 U | 15 U | 14 U | 110 | 11 U | 110 | 11 U | 11 U | 11 U | 110 U | 11 U | 11 U |
| SW8270 | 2,6-DINITROTOLUENE | ugkg | 40 U | 410 | 40 U | 38 U | 38 U | 39 U | 38 U | 38 U | 53 U | 50 U | 39 U | 39 U | 39 U | 38 U | 38 U | 38 U | 380 U | 38 U | 38 U |
| SW8270 | 2-CHLORONAPHTHALENE | ugkg | 18 U | 18 U | 18 U | 17 U | 17 U | 18 U | 17 U | 17 U | 24 U | 23 U | 18 U | 18 U | 18 U | 17 U | 17 U | 17 U | 170 | 17 U | 17 U |
| SW8270 | 2-METHYPPHENOL (O-CRESOL) | $\frac{\text { ugkg }}{\text { ugikg }}$ | 20 U | 14 U | $\underline{20 U}$ | 19 U | 19 | $\underline{130}$ | 19 l | 19 U | $\frac{270}{18}$ | $\underline{170}$ | 20 U | $\underline{130}$ | $\underline{130}$ | 19 U | 19 U | 19 U | $\stackrel{1900}{130}$ | 19 l | 19 U |
| SW8270 | 2-NITROANLINE | ugkg | 24 U | 25 U | 24 U | 230 | 23 U | 24 UJ | 23 U | 24 UJ | 33 U | 310 | 24 UJ | 24 U | 24 U | 24 UJ | 24 U | ${ }^{23} \mathrm{UJ}$ | ${ }_{200} 40$ | 24 U | ${ }_{23} 23 \mathrm{UJ}$ |
| SW8270 | 2-NITROPHENOL | ugkg | 16 U | 16 U | 16 U | 15 U | 15 U | 15 U | 15 U | 15 U | 210 | 20 U | 15 U | 16 U | 16 U | 15 U | 15 U | 15 U | ${ }^{150}{ }^{30}$ | 15 U | 15 U |
|  | 3,3-DICHLOROBENZIDINE | ugkg |  | 39 U | 37 U | 36 U |  | 37 U | 36 U | 36 U | 50 U | 48 U | 37 U |  |  | 36 O | ${ }^{360}$ | 36 U | ${ }_{3600}$ | 36 O |  |
| SW8270 | 3.,5,-TRIMEETHYL-2-CYCLOHEXENE-1-ONE | ugkg | 15 U | 150 | 150 | 14 U | 14 U | $\frac{140}{190}$ | 14U | $\frac{140}{184}$ | 25 | 19 U | 140 | $\frac{140}{19}$ | 150 | 140 | 14 U | 14 U | 140 | 14 U | $\frac{140}{184}$ |
| SW8270 | ${ }^{\text {4,-6-DINITRO-2-METHYLPHENOL }}$ | ${ }_{\text {ug }}^{\text {ugkg }}$ | ${ }_{11} 19 \mathrm{UJ}$ | 110 | 11 U | ${ }_{9}^{18.8}$ | ${ }_{9.8 \mathrm{U}}^{18}$ | 10 UJ | ${ }_{9}^{18.8}$ | ${ }_{10} 10 \mathrm{UJ}$ | 14 U | 14 U | 10 U | 11 U | ${ }_{11} 11 \mathrm{~J}$ | 9.90 | 9.9 UJ | 9.8 U | ${ }^{\text {1890 }}$ | $\stackrel{9}{9.9}$ | ${ }_{9.8 \mathrm{UJ}}$ |
| SW8270 | 4-BROMOPHENYL PHENYLETHER | ugkg | 110 | 12 U | 11 U | 11 U | 11 U | 11 U | 110 | 11 U | 15 U | 14 U | 11 U | 11 U | 11 U | 110 | 11 UJ | 11 U | 110 U | 110 | 11 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | ugkg | 18 U | 18 U | 18 U | 17 U | 17 U | 18 U | 17 U | 17 U | ${ }^{24 U}$ | 23 U | 18 U | 18 U | 18 U | 17 U | 17 U | 17 U | 170 U | 17 | 17 U |
| SW8270 | 4.CHLOROPHENYL PHENYL ETHER | ugkg | 24 U | 25 U | 24 U | 23 U | 230 | 24 U | 23 U | 24 U | 33 U | 310 | 24 U | 24 U | 24 U | 24 U | 24 U | ${ }^{23}$ | 240 U | 24 U | 230 |
| SW8270 | 4-METHYLPHENOL (MP-CRESOL) | ugkg | 29 U | 30 ${ }_{\text {U }}^{20}$ | $\frac{29 U}{1941}$ | $\frac{28 \mathrm{U}}{18}$ | $\frac{28 \mathrm{U}}{18 \mathrm{u}}$ | $\frac{28}{19}$ | 28 U | $\frac{28 \mathrm{U}}{18 \mathrm{u}}$ | $\frac{39 \mathrm{U}}{25}$ | 37U | $\frac{28 \mathrm{U}}{19}$ | 28U | 58J | $\frac{28 \mathrm{U}}{18 \mathrm{ul}}$ | $\frac{28 \mathrm{U}}{181}$ | $\frac{27 U}{1841}$ | $\frac{280 \mathrm{U}}{180 \mathrm{u}}$ | 28 U | 28U |
| SW8270 | 4 -NITROPPENOL | ugkg | 190 | 20 UJ | 19 UJ | 18 U | 18 U | 190 | 18 U | 18 U | 250 | ${ }^{24} 5$ | 1905 | 19 u | 20u | 18 U |  | 18 U | ${ }_{1000}^{1800}$ | 18 U | U |
| SW8270 | BENZY L BUTYL PHIHALATE | $\frac{\mathrm{ug} k g}{\mathrm{ugkg}}$ | ${ }_{170} 20$ | ${ }_{170} 210$ | ${ }_{170} 200$ | 160 U | 160 U | ${ }_{100} 160$ | 160 U | 1900 | $\stackrel{270}{230}$ | $\stackrel{250}{210}$ | ${ }_{160} 100$ | ${ }_{170} 20$ | ${ }_{170} 20$ | 1900 | 1900 | ${ }_{160} 190$ | ${ }_{1600} 190$ | 160 U | ${ }_{160}^{22 \mathrm{U}}$ |
| SW8270 | BIS(2-CHLORETHOXYMETHANE | ugkg | 19 U | 20 U | 19 U | 18 U | 18 U | 19 U | 18 U | 18 U | 25 U | 24 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 180 U | 18 U | 18 U |
| SW8270 | BIS(2-CHLOROETHYLETHER | ugkg | 17 U | 17 U | 17 U | 16 U | 16 U | 16 UJ | 16 U | 16 UJ | 23 U | 210 | 16 U | ${ }^{17 \mathrm{U}}$ | 17 U | 16 UJ | 16 UJ | 16 U | 160 UJ | 16 U | 16 U |
| SW8270 | BIS(2-CHLOROISOPROPYL) ETHER | ugkg | 23 U | 24 UJ | 23 UJ | 22 U | 22 U | 23 U | 22 U | 23 U | 31 U | 30 U | 23 UJ | 23 UJ | 23 U | 23 U | 23 U | 22 UJ | 230 U | 23 U |  |
| SW8270 | BIS2-ETHYLHEXYL)PHTHALATE | ugkg | 72 J | 18 U | 18 U | 56 J | 170 | 18 U | 170 | ${ }^{17}$ | 44 J | ${ }^{230}$ | 18 U | 96 J | 210 | 40 J | 170 | 170 | 1700 | 17 U | 29 J |
| SW8270 | CARBAZOLE | ugkg | ${ }^{120}$ J | 320 | 210 | ${ }^{180} \mathrm{~J}$ | 210 | 840 | 300 | 97 J | 1000 | 1200 | 24 J | 360 | 1500 | 850 | 850 | 390 | 1300 J | 17 U | 260 |
| SW8270 | DIBENZOFURAN | $\frac{\text { uglkg }}{\text { Likg }}$ | 120 | 93J | 98J | $\frac{170 \mathrm{~J}}{13 \mathrm{U}}$ | 180 J 13 U | 130 J 134 | $\begin{array}{r}93 \mathrm{~J} \\ 13 \mathrm{U} \\ \hline\end{array}$ | 14 U | 86J | 93J | 14 U | 250 <br> 134 <br> 1 | 510 <br> 13 <br> 1 | 290 134 | 330 <br> 134 | 100 J | 330 J <br> 1300 | 14 U | $\frac{41 \mathrm{~J}}{13}$ |
| (ew8270 | DiETHYL PHTHALATE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\mathrm{ug} k g}$ | 14 U | 14 U | 14 U | 13 U 11 U | 13 U 110 | 13 U <br> 110 | 13 U 11 U | 13 U 110 | 18 U | 17 U | 13 U <br> 110 | 13 U <br> 110 | 13 U 11 U | 13 U 110 | 13U | 13 U 11 U | 130 U 110 U | 13U | 13 U 110 |
| SW8270 | DI-N-BUTYL-PHTHALATE | ugkg | 67 U | 69 U | 67 U | 64 U | 64 U | 65 U | 64 U | 65 U | 90 U | 85 U | 65 U | 66 U | 66 U | 64 U | 65 UJ | 64 U | 650 U | 65 U | 64 U |
| SW8270 | DI-N-OCTYL-PHTHALATE | ugkg | 17 U | 17 U | 17 U | 16 U | 16 U | 16 U | 16 U | 16 U | 23 U | 210 | 16 U | 17 U | 17 U | 16 U | 16 U | 16 U | 160 U | 16 U | 20 J |
| SW8270 | HEXACHLORO-1,3-BUTADIENE | Likg | 19 U | 20 U | 19 U | 18 U | 18 U | 19 U | 18 U | 18 U | 25 U | 24 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 180 U | 18 U | U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 9.10 | 9.40 | 9.10 | 8.70 | 8.70 | 8.9 U | 8.70 | 8.8 U | 13 U | 12 U | 8.90 | 9.00 | 9.00 | 8.8 U | ${ }^{8.8 \mathrm{UJ}}$ | 8.7 U | 88 U | 8.8 U | 8.70 |
| SW8270 | HEXACHLLOROCYCLOPENTADIENE | $\frac{\text { ugkg }}{\text { ugkg }}$ | $\frac{12 \mathrm{UJ}}{12 \mathrm{U}}$ | 13U | 12 U | 12 U | 12 U | $\frac{12 \mathrm{UJ}}{12 \mathrm{U}}$ | $\frac{12 \mathrm{UJ}}{18 \mathrm{Ul}}$ | $\frac{12 \mathrm{UJ}}{18 \mathrm{U}}$ | $\frac{17 U}{254}$ | $\frac{16 U}{24 U}$ | $\frac{12 \mathrm{UJ}}{19 \mathrm{U}}$ | 12 U | 12 UJ | 12 U | $\frac{12 \mathrm{UJ}}{18 \mathrm{u}}$ | 12 U | $\frac{120 ~ U J}{180}$ | $\frac{12 U}{184}$ | $\frac{12 \mathrm{UJ}}{18 \mathrm{u}}$ |
| SW8270 | HEXACHLOROETHANE |  | 190 | 230 | 19 U | ${ }_{210}$ | $\frac{180}{210}$ | 190 | $\frac{18 \mathrm{UJ}}{21 \mathrm{U}}$ | ${ }_{22}{ }^{120}$ | $\frac{250}{30}$ | ${ }_{28}^{280}$ | 19 U | 19 U | 19 O | $\frac{180}{210}$ | $\underline{180}$ | 180 | $\stackrel{1800}{220}$ | ${ }_{18}^{180}$ | $\frac{180}{210}$ |
| SW8270 | N-NITROSO-DI-N.PROPYLAMINE | ugkg | 20 U | 210 | 20 U | 19 U | 19 U | 20 U | 19 U | 19 U | 27 U | 25 U | 20 U | 20 U | 20 U | 19 U | 19 U | 19 UJ | 190 U | 19 U | 19 U |
| (ew $\begin{aligned} & \text { SW8270 } \\ & \text { SW8270 }\end{aligned}$ | P-CHILOROANHLINE |  | 129 | ${ }_{30}^{13 \mathrm{U}}$ | $\underline{129}$ | ${ }_{28}^{12 \mathrm{UJ}}$ | ${ }^{12 \mathrm{U}}$ | ${ }_{28} 12 \mathrm{U}$ | ${ }_{28}{ }^{12}$ | $\frac{120}{28}$ | 170 | ${ }_{37}^{160}$ | ${ }_{28}^{120}$ | ${ }_{28}^{120}$ | $\underline{120}$ | $\frac{120}{28}$ | ${ }_{128}^{12 \mathrm{U}}$ | 127 | $\stackrel{1200}{280 \mathrm{U}}$ | 128 | 120 |
| SW8270 | PHENOL | ugkg | 18 U | 18 U | 18 U | 17 U | 17 U | 18 U | 17 U | 17 U | 24 U | 23 V | 18 U | 18 U | 18 U | 17 U | 17 U | 17 U | $170 \cup$ | 17 U | 17 U |
| SW8270 | P-NITROANILINE | ugkg | 14 U | 14 U | 14 U | 13 U | 13 U | 13 U | 13 U | 13 U | 18 U | 17 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 130 U | 13 U | 13 U |
|  | TOTAL ORGANIC CARBON |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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Mg/kg: miligrams per kilorram
    U = non-d
Lowioxin values in italics are new results from Vista laboratory
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|  |  |  | $\begin{gathered} \text { SSO80 } \\ \text { sso80AA } \\ 0-0.25 \text { feet } \\ \text { 12106/2006 } \\ \hline \end{gathered}$ | $\begin{array}{\|c} \text { SS081 } \\ \text { SsosiAA } \\ 0-0.25 f \text { feet } \\ 1201212006 \\ \hline \end{array}$ | $\begin{array}{\|c} \text { SS082 } \\ \text { Ssos2AA } \\ 0.0 .25 f f e e t ~ \\ 1210712006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO83 } \\ \text { SSo83AA } \\ 0.0 .25 \text { feet } \\ 12201 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO84 } \\ \text { sso84AA } \\ 0-0.25 \text { feet } \\ 12 / 10812006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO85 } \\ \text { SSO85AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO86 } \\ \text { sso86AA } \\ 0.0 .25 \text { feet } \\ 12 / 109 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SS087 } \\ \text { Sso87AA } \\ 0-0.25 / \text { feet } \\ 111 / 30 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS088 } \\ \text { SSO88AA } \\ 0-0.25 \text { feet } \\ 12 / 109 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO899 } \\ \text { SSo89AA } \\ 0.0 .25 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c} \text { sso90 } \\ \text { SSSOOPAA } \\ 0-0.25 \text { feet } \\ 11 / 3012006 \\ \hline \end{array}$ |  | $\begin{gathered} \text { SS092 } \\ \text { SSO092AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2000 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS093 } \\ \text { SSOO93AA } \\ 0-0.25 \text { feet } \\ 12 / 101 / 2000 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SS094 } \\ \text { sso94AAA } \\ 0.0 .25 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \text { SS094 } \\ \text { SSOO4AB } \\ 0-0.25 \text { feet } \\ 12 / 11 / 20066 \\ \hline \end{array}$ | $\begin{gathered} \text { SS095 } \\ \text { SSO95AA } \\ 0-0.25 \text { feet } \\ 12 / 106 / 2000 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS096 } \\ \text { SSOO96A } \\ 0-0.25 \text { feet } \\ 12 / 107 / 2000 \end{gathered}$ | $\begin{gathered} \text { Ss097 } \\ \text { sso97AA } \\ 0-0.25 \text { feet } \\ 12 / 107 / 2006 \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ENASIM | 2-METHYLNAPHTHALENE | $\underset{\text { ugkg }}{\substack{\text { ugkg } \\ \text { ugh }}}$ | ${ }_{31}^{58}$ | $\stackrel{220}{160}$ | $\frac{130}{160}$ | $\frac{160}{69}$ | ${ }_{12}^{25}$ | ${ }_{1200}^{120}$ | ${ }_{23}^{59}$ | ${ }_{28}^{42 \mathrm{UJ}}$ | $\frac{210}{76}$ | ${ }_{340}^{390}$ | ${ }^{270 \mathrm{~J}}$ | $\frac{360}{150}$ | ${ }_{310 \mathrm{O}}^{290}$ | ${ }_{59}^{69}$ | ${ }_{30}^{40}$ | $\frac{315}{}{ }^{39}$ | ${ }^{8400}$ | ${ }_{5200 \mathrm{~J}}$ | ${ }_{30}^{17 \mathrm{U}}$ |
| ENASIM | ACENAPHTHYLENE | ugkg | 160 | 950 | 1300 | 440 | 25 | 1000 | 530 | 410 J | 1400 | 5700 | 3400 | 2700 | 2300 | 840 | 320 | 300 | 2100 | 8600 | 97 |
| ENASIM | ANTHRACENE | ugkg | 430 | 1500 | 2600 | 840 | 50 | 2200 | 860 | 700 | 2000 | 12000 | 9500 | 3400 | 3700 | 1800 | 690 | 650 | 4600 | ${ }^{11000}$ | 110 |
| ENASIM | BENZO(A)ANTHRACENE | ugkg | 420 | 2400 | 2300 | 930 | 63 | 1700 | 980 | ${ }^{1500} \mathrm{~J}$ | 4200 | 11000 | 3700 | 4400 | 4900 | 1800 | 770 | 620 | 3100 | 23000 | 70 |
| ENASIM | BENZO(A)PYRENE | ugkg | 500 | 2800 | 4400 | 910 | 58 | 1900 | 1000 | ${ }^{11000 ~}$ | 5200 | 9800 | 4800 | 5700 | 5900 | 1900 | 790 | 610 | 5200 | 26000 | 220 |
| ENASIM | BENZO(B) FLUORANTHENE | ugkg | 800 | 5200 | 8000 | 1800 | 120 | 3700 | 2000 | ${ }^{2300 \mathrm{~J}}$ | ${ }^{12000}$ | 21000 | 9200 | ${ }_{13000}^{1300}$ | 11000 | 3800 | 2000 J | ${ }^{14000}$ | 8700 | ${ }^{41000}$ | 320 |
| ENASIM | BENZO(G,H.)P PR PRLENE | $\frac{\text { ugkg }}{\text { ugkg }}$ | 350 | 2800 4500 | 2200 4700 | 1100 | $\stackrel{41}{97}$ | 2100 | 1100 1500 | $\frac{1100 \mathrm{~J}}{1000 \mathrm{~J}}$ | $\frac{2600}{5700}$ | 9000 14000 | 5300 6900 | 5300 6900 | 6300 8100 | 2000 | 730 <br> 920 <br> 20 | 660 730 | 6500 7200 | ${ }^{19000}$ | 180 |
| BNASIM | BENZO(K)FLUORANTHENE | ugikg | 5 | 4500 | 4700 | 1500 | 97 | 2700 | 1500 1500 | $\stackrel{1900 \mathrm{~J}}{ }$ | 5700 5900 | $\stackrel{14000}{1500}$ | 6900 5700 | 6900 7500 | 8100 | 2600 | 920 | $\begin{array}{r}730 \\ 830 \\ \hline\end{array}$ | $\begin{array}{r}7200 \\ \hline 800\end{array}$ | 377000 <br> 2700 | 280 |
| ENASIM | CHRYSENE | $\frac{\text { ugkg }}{\text { ugaga }}$ | 650 110 | $\frac{4100}{880}$ | 4200 790 | 1300 330 | ${ }_{1}^{97}$ | $\frac{2400}{640}$ | $\frac{1500}{}$ | $\frac{2100 \mathrm{~J}}{340 \mathrm{~J}}$ | 5900 910 | $\frac{15000}{3100}$ | $\frac{5700}{1400}$ | 7500 1800 | 7200 2000 | $\frac{2600}{630}$ | 1000 250 | ${ }^{830}$ | ${ }^{4800}$ | $\frac{27700}{6600}$ | $\frac{260}{50}$ |
| BNASIM | FLUORANTHENE | ugkg | 770 | 5100 | 5900 | 1800 | 140 | 2800 | 1800 | ${ }^{3200}$ | 6300 | ${ }^{20000}$ | 6500 | 5900 | 7100 | 2800 | ${ }_{10} 1100$ | 970 | 4100 | ${ }^{24000}$ | 300 |
| ENASIM | FLUORENE | ugkg | 17 U | 85 U | 130 | 51 J | 9.3 | 120 J | 20 J | 16 UJ | 67 | 460 | 260 J | 140 | 1700 | 56 J | 32 J | 27 J | 160 J | 300 J | 17 U |
| BNASIM | INDENO(1,2,3-CD) PYRENE | ugkg | 420 | 3200 | 2600 | 1200 | 5 | 2400 | 1100 | ${ }^{1300 \mathrm{~J}}$ | 4700 | 11000 | 6000 | 5100 | 7200 | 2300 | 710 | 620 | 7300 | 22000 | 210 |
| BNASIM | NAPHTHALENE | ugkg | ${ }^{83}$ | 330 | 5.8 U | 270 | 61 | 170 | 78 | 65 J | 310 | 510 | 360 J | 520 | 390 | 85 | 66 J | 38 J | 780 | 400 |  |
| BNASIM | PENTACHLOROPHENOL | ugikg | 150 J 230 | 140J | 910 | $\begin{array}{r}660 \mathrm{~J} \\ \hline 500\end{array}$ | 72 | 260 | 8500 | 590 | 2400 J | 8600 3300 | 2500 J | ${ }^{81000}$ | $\stackrel{4100}{100}$ | 830 | $\begin{array}{r}1800 \\ \hline 150\end{array}$ | 170 | 15000 1600 | 9000 1700 | 180 |
| ENASIM | PHENANTHRENE | uglkg | 230 | 710 | 890 | 500 | 59 | 440 | 270 | 450 | 980 | 3300 1000 | 1200 | 1600 | 1400 | 430 | 150 | 140 | 1600 | 1700 | 81 |
| ENASIM | PYRENE | $\frac{\text { ugkg }}{\text { percent }}$ | $\frac{760}{90}$ | $\frac{4900}{89}$ | $\frac{6100}{89}$ | 179 | $\frac{120}{93}$ | $\frac{2800}{95}$ | $\stackrel{1800}{95}$ | $\frac{3000 \mathrm{~J}}{}{ }^{97}$ | 7200 90 | $\frac{19000}{93}$ | $\frac{6900}{89}$ | 7900 | $\frac{7900}{89}$ | 3000 92 | $\frac{1300}{94}$ | 1000 | $\frac{4100}{86}$ | $\frac{44000}{87}$ | $\frac{290}{91}$ |
| E1613/E1668 | , ,2,3,4,6,6,7,8-HEPTACHLORODIBENZOFURAN | nglkg | 403.423 | 1410 | 4870 |  | 247.929 |  | 8160 |  | 16500 |  |  |  |  | 6560 | 1215.129 | 1523.875 | 38200 | 41100 | 379.49 |
| E1613/E1688 | 1,2,3,4,6,7,8,HEPTACHLORODIBENZO-P-DIOXII | ngkg | 4081.925 | 14300 | 49900 |  | 2217.059 J |  | 73400 |  | 147000 |  |  |  |  | 52800 | 11169.318 | 12502.678 | 252000 | 299000 | ${ }^{2563.907 \mathrm{~J}}$ |
| E1613/E1668 | 1,2,3,4,7, ,9,-HEPTACHLORODIBENZOFURAN | ngkg | 21.199 | 99.3 | 354 |  | 14.528 |  | ${ }^{621}$ |  | 1360 |  |  |  |  | 584 | ${ }^{63.449}$ | ${ }^{69.533}$ | 2270 | 2690 | 23.79 |
| E1613F1668 | 1, 1, 2, 4, ,7,8.4-HEXACHLORODIBENZOFURAN | ngkg | -10.355 | $\frac{44.7 \mathrm{~J}}{171}$ | $\frac{158}{203}$ |  | 5.949 |  | $\begin{array}{r}296 \\ \hline 020 \\ \hline\end{array}$ |  | 516 |  |  |  |  | $\begin{array}{r}250 \\ \hline 59 \\ \hline\end{array}$ | $\begin{array}{r}33.01 \\ \hline 12178 \\ \hline 12\end{array}$ | 38.65 <br> 106203 <br> 1 | $\begin{array}{r}1460 \\ \hline 150\end{array}$ | 1070 | 82 |
| E1613/E1668 <br> E1613/E1668 | 1, $1,2,3,4,7$, -HEXACHLORODIBENZO-P--DIOXIN | ngkg | 25.341 J | 171 | 203 |  | 24.17 |  | $\frac{903}{209}$ |  | 1360 <br> 120 |  |  |  |  | 597 <br> 182 | $\frac{112.178}{28.618}$ | 106.203 | 1560 530 | $\begin{array}{r}2540 \\ \hline 734\end{array}$ | ${ }^{18.213}$ |
| E1613/E1668 | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | ngkg | 75.966 J | 366 | 847 |  | 50.892 |  | 2110 |  | ${ }^{4500}$ |  |  |  |  | 1430 | ${ }_{252.134}^{20.18}$ | ${ }^{280.697}$ | 7230 | ${ }_{9280}$ | ${ }^{16.6605}$ |
| E1613\|E1668 | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | ngkg | 0.168 U | 11.6 J | 35 J |  | ${ }^{0.332 \mathrm{~J}}$ |  | 68.4 |  | 146 |  |  |  |  | 85.3 | ${ }^{0.843 \mathrm{U}}$ | ${ }^{3} 7.795 \mathrm{U}$ | 251 | 263 | 0.414 J |
| E1613/E1668 | 1,2,3,7,8,9,-HEXACHLORODIBENZO-P-DIOXIN | ngkg | ${ }^{43.482}$ | 283 | ${ }^{336}$ |  | ${ }^{60.067}$ |  | 1490 |  | 2090 |  |  |  |  | ${ }^{836}$ | 260.014 | 272.524 | 3100 |  |  |
| E1613/E1668 | 1,2,3,7,8.PENTACHLORODIBENZOFURAN | ngkg | 1.02 J | $0 \cup$ | 10.3 J |  | ${ }^{0.87 \mathrm{~J}}$ |  | ${ }^{28.4 \mathrm{~J}}$ |  | 53.8J |  |  |  |  | 25.7J | ${ }^{3.234 \mathrm{~J}}$ | ${ }^{3.515}$ | ${ }^{60.6 \mathrm{~J}}$ | 79.5 | 1.134 J |
| E1613/E1668 | 12, 2, ,7,8.PENTACHLORODIBENZO-P-DIOXIN | nglkg | 8.069 | 62.4 J <br> 6.9 ] | 46.3 J <br> 135 |  | 9.009 |  | $\frac{310}{417}$ |  | $\frac{445}{827}$ |  |  |  |  | $\begin{array}{r}188 \\ \hline 358 \\ \hline\end{array}$ | 36.879 <br> 6224 | 37.762 <br> 6.238 | $\begin{array}{r}507 \\ 100 \\ \hline 100\end{array}$ | 739 | \% 5.774 J |
| E1613/1668 | 2, 2, 4, ,6,7, , , -HEXACHLORODIBENZOFURAN | ngkg | ${ }_{\text {¢ }}^{6.521}$ | $\frac{64.9 \mathrm{~J}}{15}$ | ${ }^{1355}$ |  | 4.624 U |  | ${ }_{4}^{417}$ |  | ${ }^{827}$ |  |  |  |  | $\begin{array}{r}358 \\ 355 \\ \hline\end{array}$ | -62.246 | 62.393 <br> 509 | 1100 | 1430 | ${ }^{8.1118}$ |
| E1613/E1668 | 2.3.4,7,8.PENTACHLORODIBENZOFURAN | ngkg | ${ }^{1.7977 \text { J }}$ | 15 J | ${ }^{35.6 \mathrm{~J}}$ |  | ${ }^{1.14814}$ |  | 80.2 |  | 161 |  |  |  |  | 83.5 <br> 5.11 | 5.042 | 5.021 | 191 | 278 | $\frac{3.247 \mathrm{~J}}{0.071 \mathrm{U}}$ |
|  |  | $\underbrace{\substack{\text { ngkg } \\ \text { nokg }}}_{\text {ng }}$ | ${ }_{0}^{0.647 \mathrm{~J}}$ | OU | ${ }_{5.42 \mathrm{~J}}$ |  | ${ }_{0}^{3.4771}$ |  | ${ }_{26.6}^{16 \mathrm{~J}}$ |  | $\frac{23.3}{41.2}$ |  |  |  |  | ${ }_{\text {L }}{ }_{1717}$ | ${ }_{2}^{0.787}$ | ${ }^{0.965}$ | $\stackrel{44.7}{44.7}$ | 33.7 <br> 9.7 | ${ }_{0}^{0.971 \mathrm{~J}^{\text {J }}}$ |
| E1613] 16688 | OCTACHLORODIBENZOFURAN | ngkg | 2308.291 | 5790 | 27200 |  | 1210.878 |  | 29800 |  | 78200 |  |  |  |  | 28800 | ${ }^{7795.11}$ | ${ }^{87288.224}$ | 148000 | 161000 | 1686.372 |
| E1613/E1668 | OCTACHLORODIBENZO-P-DIOXIN | ngkg | 39638.913 | 129000 | 649000 |  | ${ }^{22319.19 \mathrm{~J}}$ |  | 828000 |  | 1690000 |  |  |  |  | 526000 | 14968.634 J | 25970.353 J | 2440000 | 2750000 | 22685.558 J |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZOFURANS | ngkg | 1584.14 | 5410 | 22800 J |  | 908.407 |  | 30300 |  | ${ }^{65800}$ |  |  |  |  | 25600 | 4574.967 | ${ }^{4846.508}$ | 160000 | 182000 | ${ }^{1319.579}$ |
| E16131E1688 | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | ngkg | 178867.044 | 58500 | 328000 |  | ${ }^{9447.533}$ |  | 222000 |  | 582000 |  |  |  |  | 214000 | ${ }^{36196.429}$ | ${ }^{37966.146}$ | ${ }^{665000}$ | ${ }^{669000}$ | ${ }^{8462.151}$ |
| E16131/E1668 | ToTAL HEXACHLORINATED DIBENZOFUR ANS | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} k g}$ | ${ }^{3555.742}$ 1486.951 | 1530 6900 | 4800 <br> 17800 |  | ${ }^{236.26}{ }^{997.105}$ |  | ${ }^{95300}$ |  | $\frac{17900}{48200}$ |  |  |  |  | ${ }^{6960} 17100$ | ${ }_{4}^{13822.667}{ }_{4}$ | ${ }^{1438.116} 4{ }^{\text {522.216 }}$ | $\frac{39700 \mathrm{~J}}{47300}$ | $\frac{38600 \mathrm{~J}}{59300}$ | 306.808 789.596 |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | ngkg | 83.37 | 226 | 458 |  | ${ }_{50} 50.349$ |  | 1250 |  | 2950 |  |  |  |  | 11300 | 339.686 | 269.544 | 3960 J | ${ }_{5580}$ | 69.799 |
| E1613/E1668 | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | kg | ${ }^{138.831}$ | 704 | 681 |  | ${ }^{90.518}$ |  | 1930 |  | 2610 |  |  |  |  | 851 | 224.908 | 303.622 | 2700 | 3360 | ${ }^{78.483}$ |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg | 32.094 | 34.6 | 102 |  | 14.864 |  | 191 |  | 348 |  |  |  |  | 104 | 33.988 | 37.239 | 467 J | 620 J | ${ }^{26.161}$ |
| E1613/E1688 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | $\frac{\text { ngkg }}{\text { mokg }}$ | ${ }_{\text {22.394 }}^{0.43 \mathrm{~J}}$ | $\frac{81.3}{0.3}$ | $\frac{78.1}{0.41 \mathrm{~J}}$ |  | 5.79 0.36 UJ |  | ${ }^{188}$ |  | ${ }_{\text {235 }}^{0.965}$ |  |  |  |  | 73.5 0.3 J | $\frac{19.259}{0.36 \mathrm{UJ}}$ | - 22.753 | 285 160 | 253 <br> 11 | $\frac{14.949}{0.374}$ |
|  | ${ }^{\text {Antimony }}$ ARSENIC |  | 0.43 J | ${ }^{0.63 \mathrm{~J}} 19$ | ${ }^{0.41 \mathrm{~J}}$ | $\frac{1.15}{46 \mathrm{~J}}$ | $\frac{0.36 \mathrm{UJ}}{4.4}$ | ${ }^{0.86 \mathrm{~J}}$ | 0.56 J <br> 49 | $\frac{0.35 \mathrm{U}}{17 \mathrm{~J}}$ | 0.96 J 120 | ${ }_{12.1}^{1700}$ | ${ }_{120}^{1.8}$ | $\frac{4.5 \mathrm{~J}}{600}$ | ${ }_{130}^{2.0}$ | $\frac{0.63 \mathrm{~J}}{57 \mathrm{~J}}$ | 0.36 UJ <br> 30 <br> 0 | - | 160 3600 | 11 <br> 450 | 0.37U <br> 2.7 |
| SW6020 | BARIUM | mgkg | 34 | 32 | 25 | 15 | 16 | 30 | 15 | 6.4 | 28 | 32 | 23 | 58 | 22 | 14 | 8.7 J | 6.3 J | 27 | 37 | 27 |
| SW6020 | CADMIUM | mglkg | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }^{0.30 \mathrm{U}}$ | 0.32 U | ${ }^{0.36 \mathrm{U}}$ | ${ }^{0.36 \mathrm{~J}}$ | 0.30 U | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.30 \mathrm{U}}$ | 0.36 J | 0.29U | ${ }^{0.33 \mathrm{U}}$ | 0.80 | ${ }^{0.35 \mathrm{~J}}$ | ${ }^{0.30 \mathrm{U}}$ | 0.310 | ${ }^{0.30 \mathrm{U}}$ | 1.3 | 0.76 | 0.46 J |
| SW6020 | CHROMIUM | ngkg |  | 19 J | 14 | 62 J | 17 | 210 | 83 J | 34 J | 190 J | 260 J | 180 J | 880 | 230 J | 87 J | 39 | 35 | 3700 | 650 J | 5.1 |
| SW6020 | COPPER | mgkg | 15 | 18 | 13 | 43 | 4.7 | 120 | 44 | 17 | 110 | 160 | 120 | 490 | 130 | 46 | ${ }^{23}$ | 20 | 2200 | 510 J | 24 |
| 县W6020 | LEAD | $\frac{\text { mglkg }}{\text { makg }}$ | ${ }^{160}$ | $\stackrel{20}{0.87 \mathrm{U}}$ | 18 <br> 0.930 | $\frac{16}{1.00}$ | $\frac{3.0}{}$ | 15 <br> 088 <br> 10 | 11 | 4.3 <br> 0.864 | 32 <br> 0.914 <br> 0 | $\begin{array}{r}41 \\ 083 \\ \hline\end{array}$ | 30 <br> 0.944 | $\frac{88}{125}$ | $\begin{array}{r}29 \\ 0.944 \\ \hline\end{array}$ | ${ }^{11}$ | ${ }^{3.7}$ | ${ }^{3.3}$ | 65 <br> 0.94 UJ | 78 | 180 J |
| SW6020 | SELENIUM | $\frac{\mathrm{mg} \text { mag }}{\text { mglkg }}$ | $\stackrel{0.91 \mathrm{U}}{0.90}$ | $\stackrel{0.870}{0.39}$ | $\stackrel{0.93 \mathrm{U}}{0.42 \mathrm{U}}$ | $\stackrel{1.0 \cup}{0.47}$ | $\stackrel{0.890}{0.40}$ | $\stackrel{0.88 \mathrm{U}}{0.40}$ | ${ }_{0}^{0.860 ~}{ }^{0.39 \mathrm{UJ}}$ | 0.860 0.390 | ${ }_{0}^{0.910} 0$ | 0.83 U 0.38 u | 0.94 U 0.43 u | ${ }^{1.25} 0$ | 0.94U | 0.88 U 0.40 U | (0.890 | - 0.86 UJ | 0.94 0.0 J | 0.96 U 0.43 U |  |
| SW6020 | VANADIUM (FUME OR DUST) | mgkg | 12 | 6.9 | 9.9 | 2.4 | 6.8 | 1.8 | 2.8 | 0.92 UJ | 2.6 | 1.4 | 1.7 | 1.5 | 3.2 | 0.94 U | 2.8 J | 2.3 J | 1.0 uJ | 5.3 | 0.98 UJ |
| SW7471 | MERCURY | mgkg | 0.16 | 0.25 J | 0.22 | ${ }^{0.19 \mathrm{~J}}$ | ${ }^{0.018 \mathrm{~J}}$ | 0.20 | 0.54 | 0.14 | 0.88 | 0.80 | 0.50 | 1.3 | ${ }^{0.53 \mathrm{~J}}$ | ${ }^{0.073 \mathrm{~J}}$ | ${ }^{0.058}$ | ${ }_{0}^{0.058}$ | 3.2 | ${ }^{0.50 \mathrm{~J}}$ | 0.21 |
| SW8260 | 1,1,1.-TRICHLOROETHANE | ugkg | ${ }^{0.210}$ | 0.15 U | ${ }^{0.144}$ | ${ }^{0.214}$ | $0.17{ }^{0.174}$ | ${ }_{0}^{0.13 U^{4}}$ | ${ }^{0.133}$ | ${ }_{0}^{0.13 U^{0}}$ | $\stackrel{0.14 \mathrm{U}}{ }$ | 0.18 U | 0.14 U | ${ }^{0.210}$ | 0.18 U | $0.14{ }^{\text {O }}$ | ${ }^{0.16 U}$ | $0.17{ }^{\text {U }}$ | 0.15 U | ${ }^{0.14 \mathrm{U}}$ | ${ }_{0}^{0.190}$ |
|  | 1,1,2,2-TETRACHLOROETHANE | $\stackrel{\text { ugkg }}{ }$ | 0.12U | 0.080 U | 0.075 | 0.12 | 0.094 U | 0.070 U | 0.070 U | 0.070 | 0.074 U | 0.099 UJ | 0.074 0 | $\stackrel{0.12 \mathrm{U}}{0}$ | 0.096U | ${ }^{0.072 U}$ | 0.084U | 0.090 ${ }^{018}$ | ${ }_{0}^{0.078 \mathrm{U}}$ | 0 | 0.11 U |
| SW8260 | 1,1--1CICHLOROETHANE | ugkg | 0.114 | 0.076 U | 0.072 | 0.11 | 0.089 U | 0.067 U | 0.067 U | $\stackrel{0.14 \mathrm{U}}{0.067 \mathrm{U}}$ | $\stackrel{0.0710}{0.0}$ | $\stackrel{0}{0.094 \mathrm{U}}$ | ${ }_{0}^{0.071 \mathrm{U}}$ | $\stackrel{0.114}{0.230}$ | $\stackrel{0}{0.091 \mathrm{U}}$ | $\stackrel{0.159 \mathrm{U}}{ }$ | 0.080 U | $\stackrel{0.186 \mathrm{U}}{ }$ | $\stackrel{0}{0.074 \mathrm{U}}$ | $\stackrel{0}{0.073 \mathrm{U}}$ | $\stackrel{0.206 \mathrm{U}}{0}$ |
| SW8260 | 1,1-DICHLOROETHYLENE | ugkg | 0.30 U | 0.21 U | 0.20 U | 0.30 U | 0.24 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U | 0.26 U | 0.20 U | 0.30 U | 0.25 U | 0.19 U | 0.22 U | 0.24 U | 0.20 U | 0.20 U | 0.26 U |
| W8260 | 1,2,4-TRICHLOROBENZENE | ugkg | 0.27 UJ | ${ }^{0.18 \mathrm{U}^{0.5}}$ | $\stackrel{0.17 \mathrm{U}}{0}$ | $0.26 \mathrm{U}^{0.0}$ | ${ }_{0}^{0.220 ~}$ | ${ }^{0.150 \mathrm{UJ}}$ | ${ }^{0.16 U^{0}}$ | 0.15 UJ | 0.17 UJ | 0.23 ${ }^{0.230}$ | 0.17 UJ | 0.26 UJ | 0.22 J | ${ }_{0}^{0.17 U^{0}}$ | ${ }^{0.19 u^{2}}$ | ${ }_{0}^{0.214}$ | 0.15 UJ | ${ }_{0}^{0.187}$ | $\stackrel{0.23 \mathrm{U}}{0}$ |
| SW8260 | 1,2-DIIROMO-3-CHLOROPROPANE (DBCP) | $\underbrace{\substack{u g k g \\ \text { ugkg }}}_{\text {ug }}$ | 0.86 U ${ }_{0}^{0.098}$ | ${ }_{0}^{0.598}$ | 0.56 ${ }_{0}^{0.064 \mathrm{U}}$ | 0.84 U 0.096 U | 0.70 U 0.080 U | ${ }_{0}^{0.52 \mathrm{UJ}} 0$ | 0.52 U 0.060 U | 0.52 U ${ }_{0}^{0.059 \mathrm{U}}$ | ${ }_{0}^{0.55 \mathrm{uJ}} 0$ | - | 0.55 UJ | ${ }^{0.84 \mathrm{UJ}} 0$ | ${ }_{0}^{0.710 \mathrm{~J}^{0} \mathrm{O}}$ | 0.54 U 0.061 U | 0.62U | 0.67 U 0.076 U | ${ }_{0}^{0.580 \mathrm{UJ}}$ | 0.57 U 0.065 U | $\frac{0.75 \mathrm{U}}{0.085 \mathrm{U}}$ |
| SW8260 | 1,2-DICHLOROBENZENE | ugkg | 0.14 UJ | 0.094 U | 0.088 U | 0.14 U | 0.12 U | 0.083 UJ | 0.083 U | 0.082 U | 0.087 UJ | 0.12 UJ | 0.088 UJ | 0.14 UJ | 0.12 UJ | 0.085 U | 0.099 U | 0.11 U | 0.092 UJ | 0.090 U | ${ }^{0.12 \mathrm{U}}$ |
| SW8260 | 1,2-DICHLOROETHANE | ugkg | 0.18 U | 0.12 U | 0.12 U | ${ }^{0.18 \mathrm{U}}$ | 0.15 U | 0.11 U | 0.11 U | 0.11 U | 0.12 U | ${ }^{0.154}$ | 0.12 U | ${ }^{0.18 \mathrm{U}}$ | ${ }^{0.150}$ | 0.11 U | ${ }^{0.13 U}$ | 0.14 U | ${ }^{0.12 \mathrm{U}}$ | 0.12 U | 0.16 U |
| SW8260 | 1.2-DICHLOROPROPANE | $\frac{u g k g}{\text { ugkg }}$ | $\frac{0.095 \mathrm{U}}{0.16 \mathrm{UJ}}$ | $\frac{0.065 U}{0110}$ | ${ }_{0}^{0.061 U}$ | -0.093U | $\frac{0.077 \cup}{0134}$ | 0.058 U | 0.058U | ${ }_{0}^{0.057 U}$ | -0.061U | -0.081U | 0.061U | -0.093U | $\stackrel{0.078 \mathrm{U}}{0.13 \mathrm{U}}$ | 0.059 U | 0.069 U | 0 | 0.064 U | 0.063 U | 0.082 U |
| Sterse |  | ${ }_{\text {ug }}^{\text {ugkg }}$ | $\frac{0.16 \mathrm{UJ}}{4.4 \mathrm{u}}$ | $\frac{0.11 \mathrm{U}}{3.0 \mathrm{u}}$ | $\frac{0.099 \mathrm{U}}{2.9 \mathrm{u}}$ | $\frac{0.57 \mathrm{~J}}{4.3 \mathrm{U}}$ | $\stackrel{0.13 \mathrm{U}}{3.6 \mathrm{U}}$ | $\frac{0.093 \mathrm{UJ}}{2.7 \mathrm{UJ}}$ | $\frac{0.092 U}{2.70}$ | 0.092 U <br> 100 J | ${ }^{0.097} 260$ | 0.13 UJ <br> 3.8 UJ | $\stackrel{0.098 \mathrm{UJ}}{2.9 \mathrm{UJ}}$ | $\frac{0.150 J}{4.3 \mathrm{u}}$ | $\frac{0.130 \mathrm{~J}}{3.7 \mathrm{U}}$ | $\frac{0.095 \mathrm{U}}{2.8 \mathrm{U}}$ | $\stackrel{0.11 \mathrm{U}}{5.5 \mathrm{~J}}$ | 0.12 J <br> 0.9 J | $\frac{0.110 \mathrm{~J}}{3.0 \mathrm{U}}$ | $\stackrel{0.10 \mathrm{U}}{2.9 \mathrm{u}}$ | $\stackrel{0.14 \mathrm{U}}{3.8 \mathrm{U}}$ |
| SW8260 | BENZENE | ugkg | $0.68 \mathrm{U}^{0.5}$ | ${ }^{0.47 U^{4}}$ | ${ }^{0.44 U}$ | 0.67U | ${ }^{0.56 U}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | 0.41U | ${ }^{0.44 \mathrm{U}}$ | 0.58 U | 0.44 U | 0.67 U | $0.57{ }^{\text {U }}$ | ${ }^{0.43 U}$ | 0.50 | 0.53 U | ${ }^{0.46 \mathrm{U}}$ | 0.45 U | 0.60 U |
| 血W82600 | BROMODICHLOROMETHANE | ugkg | ${ }^{0.514}$ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.334}$ | ${ }^{0.50}$ | ${ }^{0.414}$ | ${ }_{0}^{0.314}$ | $\stackrel{0.314}{034}$ | ${ }_{0}^{0.314}$ | $\stackrel{0.334}{ }$ | 0.44 U | ${ }_{0}^{0.334}$ | ${ }_{0}^{0.50 \mathrm{U}}$ | ${ }^{0.422 ~}$ | ${ }_{0}^{0.323}$ | ${ }_{0}^{0.37 \mathrm{U}}$ | 0.40 U | ${ }^{0.344}$ | ${ }^{0.344}$ | 0.45 U |
| N8260 | CARBON DISULFIDE | ugkg | 2.8 U | $2.0 \cup$ | 1.9 U | 2.8 U | 2.30 | 1.70 | 1.70 | 1.7 U | 1.8 U | 2.4 U | 1.8 U | 2.8 U | 2.4 U | 1.8 U | 2.10 | 2.2 U | 1.9 U | 1.9 U | 2.5 U |
| N8260 | CARBON TETRACHLORIDE | ugkg | 0.61 U | 0.42 U | 0.40 U | 0.60 U | 0.50 U | 0.38 U | 0.37 U | 0.37U | 0.39 U | 0.52 U | 0.40 U | 0.60 U | 0.51 U | ${ }^{0.38 \mathrm{U}}$ | 0.45 U | 0.48 U | 0.41 U | ${ }^{0.414}$ | 0.54 U |
| SW8260 | CFC-11 | ugkg | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.32 \mathrm{U}}$ | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.45 U}$ | ${ }^{0.37 \mathrm{U}}$ | 0.28 U | 0.28 U | ${ }^{0.28 \mathrm{U}}$ | 0.29 U | 0.39 U | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.455}$ | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.299}$ | ${ }^{0.334}$ | ${ }^{0.364}$ | ${ }^{0.310}$ | ${ }^{0.300}$ | ${ }^{0.40 \mathrm{U}}$ |
| SW8260 | ${ }^{\text {CFC-12 }}$ CHLORINATED FLUOROCARBON ( (REOON 113) | $\frac{\mu g \mathrm{~kg}}{\text { ugkg }}$ | 0.56 U 0.63 U | 0.39 0 | $\frac{0.37 \mathrm{~J}}{0.41 \mathrm{U}}$ | 0.55 U <br> 0.62 U | $\stackrel{0.46 \mathrm{UJ}}{0.51 \mathrm{U}}$ | 0.34 U 0.39 u | $\xrightarrow{0.34 \mathrm{U}}$ | 0.34 U 0.38 U | $\xrightarrow{0.36 \mathrm{U}}$ | $\xrightarrow{0.48 \mathrm{U}}$ | O. 0.36 U | 0.55 ${ }_{0}^{0.62 \mathrm{U}}$ | 0.47 U 0.52 U | $\frac{0.35 \mathrm{U}}{0.40 \mathrm{U}}$ | 0.41 U 0.46 U | 0.44U | 0.38 U 0.43 U | $\frac{0.37 \mathrm{~J}}{0.42 \mathrm{U}}$ | $\frac{0.49 \mathrm{UJ}}{0.55 \mathrm{u}}$ |
| SW8260 | CHLOROBENZENE | ugkg | 0.70 U | 0.48 U | 0.46 U | 0.69 U | 0.57 U | 0.43 U | 0.43 U | 0.42 U | 0.45 U | 0.60 UJ | 0.45 UJ | 0.69 U | 0.58 U | 0.44 U | 0.51 U | 0.55 U | 0.47 U | 0.46 U | 0.61 U |
| SW8260 | HLORODIBROMOMETHANE | ugkg | 0.44 U | 0.30 U | 0.29 U | 0.43 U | 0.36 U | 0.27 U | 0.27 U | 0.27 U | 0.28 U | 0.38 UJ | 0.29 UJ | 0.43 U | 0.37 U | 0.28 U | 0.32 U | 0.34 U | 0.30 U | 0.29 U | 0.38 U |
| SW8260 | CHLOROETHANE | ugkg | 0.63 U | 0.44 U | 0.41 U | 0.62 U | 0.51 U | 0.39 U | 0.39 U | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.410}$ | 0.54 U | ${ }^{0.411}$ | 0.62 U | ${ }^{0.52 \mathrm{U}}$ | ${ }^{0.400}$ | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.49}$ U | ${ }^{0.43 U}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.55}$ |
| SW8260 | CHLLORORORMETHANE | $\frac{\mathrm{lg} / \mathrm{kg}}{\text { ugkg }}$ | 0.60 0 | $\stackrel{0.41 \mathrm{U}}{0.54 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.51 \mathrm{U}}$ | $\frac{0.59 \mathrm{U}}{0.77 \mathrm{U}}$ | $\stackrel{0.48 \mathrm{U}}{0.64 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\stackrel{0.38 \mathrm{U}}{0.51 \mathrm{U}}$ | ${ }_{0}^{0.514}$ | $\frac{0.39 \mathrm{U}}{0.51 \mathrm{U}}$ | $\frac{0.59 ~ U ~}{0.77)}$ | $\stackrel{0.50 \mathrm{U}}{0.650}$ | $\stackrel{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\stackrel{0.43 \cup}{0.57 \mathrm{U}}$ | $\stackrel{0.47 \mathrm{U}}{0.61 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.53 \mathrm{U}}$ | $\stackrel{0.40 \mathrm{U}}{0.52 \mathrm{U}}$ | $\xrightarrow[0.52 \mathrm{U}]{0.6}$ |
| SW8260 | CIS-1,2-DICHLOROETHYLENE | ugkg | 0.46 U | 0.32 U | 0.30 U | 0.45 U | 0.37 U | 0.28 U | 0.28 U | 0.28 U | 0.29 U | 0.39 U | 0.30 U | 0.45 U | 0.38 U | 0.29 U | 0.33 U | 0.36 U | 0.31 U | 0.30 U | 0.40 U |


|  |  |  | $\begin{gathered} \text { SSO80 } \\ \text { SSo80AA } \\ 0-0.25 \text { feet } \\ 12 / 166 / 2006 \end{gathered}$ | $\begin{gathered} \text { sso81 } \\ \text { ssoinia } \\ 0-0.25 \text { feet } \\ 12101 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS082 } \\ \text { SSO82AA } \\ 0-0.25 \text { feet } \\ 121 / 07 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS083 } \\ \text { SSo83AA } \\ 0-0.25 \text { feet } \\ 12101 / 2006 \end{gathered}$ | SS084 SSo84AA 0.0 .25 feet $12108 / 2006$ | $\begin{array}{\|c\|} \hline \text { SSO85 } \\ \text { SSO05AA } \\ 0.0 .25 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS086 } \\ \text { SSO88AA } \\ 0-0.25 \text { feet } \\ 12 / 09 / 2006 \end{gathered}$ | $\begin{array}{\|c} \text { SS087 } \\ \text { SSo87AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \end{array}$ | $\begin{gathered} \text { SS088 } \\ \text { SSo88AA } \\ 0-0.25 \text { feet } \\ 12 / 09 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO89 } \\ \text { SSo89AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO90 } \\ \text { SSO99AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS091 } \\ \text { Sso91AA } \\ 0.0 .25 \text { feet } \\ 121092 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO92 } \\ \text { SSo92AA } \\ 0-0.25 \text { feet } \\ 11 / 30 / 2006 \end{gathered}$ | $\begin{gathered} \text { sso93 } \\ \text { sso93AA } \\ 0-0.25 \text { feet } \\ 121 / 01 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO94 } \\ \text { SsoanA } \\ 0.0 .25 \text { feet } \\ 12112 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO94 } \\ \text { SSO94AB } \\ 0-0.25 \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO95 } \\ \text { Sso99AA } \\ 0-0.25 \text { feet } \\ 12 / 06 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS096 } \\ \text { SSO96AA } \\ 0-0.25 \text { feet } \\ 12 / 07 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO97 } \\ \text { SSO97AA } \\ 0-0.25 \text { feet } \\ 12107 / 2006 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Metrod | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIS-1,3-DICHLOROPROPENE | ugkg | ${ }^{0.514}$ | ${ }^{0.354}$ | ${ }_{0}^{0.33 \mathrm{U}}$ | ${ }^{0.50 \mathrm{U}}$ | ${ }_{0}^{0.41 U^{054}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }^{0.314}$ | $\stackrel{0.33 \mathrm{U}}{0}$ | ${ }^{0.440 J}$ | ${ }^{0.33 U J}$ | ${ }^{0.500^{05}}$ | ${ }_{0}^{0.42 U^{4}}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | $\stackrel{0.37 \mathrm{U}}{0}$ | ${ }^{0.40 U^{0}}$ | ${ }_{0}^{0.344}$ | ${ }_{0}^{0.344}$ | ${ }^{0.455}$ |
| SW8260 | CYCLOHEXANE | ugkg | ${ }^{0.670}$ | ${ }^{0.464}$ | ${ }_{0}^{0.43 \mathrm{U}}$ | ${ }_{0}^{0.650}$ | $\stackrel{0.54 U}{0.54}$ | 0.41U | $\stackrel{0.41 \mathrm{U}}{0}$ | ${ }_{0}^{0.400}$ | $\xrightarrow{0.434}$ | ${ }^{0.57 \mathrm{U}}$ | ${ }^{0.434}$ | ${ }_{0}^{0.654}$ | ${ }_{0}^{0.554}$ | -0.42U | 0.48 U 0.50 U | $\stackrel{0.52 \mathrm{U}}{0}$ | $\frac{0.45 \mathrm{U}}{0.46 \mathrm{U}}$ | 0.44U | 0.58 u <br> 0.60 u |
| SW8260 | ETHYLBENZENE | ugkg | $\stackrel{0.880}{0.74 \mathrm{U}}$ | $\stackrel{0.510}{0.41}$ | $\stackrel{0.44 \mathrm{U}}{0.48 \mathrm{U}}$ | $\stackrel{0.720}{0.750}$ | ${ }_{0}^{0.600}$ | $\stackrel{0.450}{0.45}$ | $\stackrel{0.450}{0.45}$ | $\stackrel{.450}{0.45}$ | $\stackrel{0.47 \mathrm{U}^{0}}{0.47 \mathrm{U}}$ | $\stackrel{0.53 \mathrm{UJ}}{0.0}$ | $\stackrel{0.48 \mathrm{UJ}}{0}$ | $\stackrel{0.720}{ }$ | $\stackrel{0.510}{0.610}$ | $\stackrel{0.460}{0.430}$ | $\stackrel{0.54 \mathrm{u}}{0}$ | $\stackrel{0.57{ }^{0}}{0.53}$ | ${ }_{0}^{0.50 \mathrm{U}}$ | $\stackrel{0.490}{ }$ | 0.604 |
| SW8260 | SOPROPYLBENZENE | ugkg | 0.81 UJ | 0.56 U | 0.52 U | 0.79 U | 0.65 U | 0.49 UJ | 0.49 U | 0.49 U | 0.52 UJ | 0.69 UJ | 0.52 UJ | 0.79 UJ | 0.67 UJ | 0.50 U | 0.59 U | 0.63 U | $0.54{ }^{\text {UJ }}$ | 0.53 U | 0.70 U |
| SW8260 | m.p-Xylenes | uglkg | 1.6 U | 1.10 | 0.99 U | 1.50 | 1.30 | ${ }^{0.933}$ | $\xrightarrow{0.929}$ | $\xrightarrow{0.923}$ | 0.97U | ${ }^{1.30 \mathrm{UJ}}$ | -0.98 UJ | 1.5 U | 1.3 U | $\xrightarrow{0.955}$ | 1.1U | 1.2U | 1.10 | 1.0U | 1.4 U |
| SW8260 | M-DICHLOROBENZENE | ugkg | ${ }^{0.0880 J}$ | 0.060 ${ }_{\text {O }}^{023}$ | 0.057 ${ }_{\text {O }}^{0.022}$ | -0.086 ${ }_{\text {O }}^{0.0}$ | 0.071U | ${ }^{0.053 ~}{ }^{\text {U J J }}$ | $\frac{0.053 \mathrm{U}}{0.0214}$ | -0.053 | ${ }^{0.056 ~ U ~}{ }^{\text {O }}$ | 0.075 U | 0.057 UJ | - 0.086 UJ | ${ }_{\text {orem }}^{0.073 \mathrm{JJ}}$ | 0.055 | 0.064U |  | ${ }^{0.0599 ~ U ~}$ | $\frac{0.058 \mathrm{U}}{0.02 \mathrm{u}}$ | -0.076 |
| SW8260 | METHYL ACEEATE | $\frac{\text { ugkg }}{\text { ugkg }}$ | $\frac{0.34 \mathrm{U}}{200}$ | $\frac{0.23 U}{1.4 U}$ | 0.22U | 0.33 | $\frac{0.27 \mathrm{U}}{1.6 \mathrm{U}}$ | $\frac{0.210}{120}$ | $\frac{0.21 \mathrm{U}}{12 \mathrm{U}}$ | $\frac{0.20 \mathrm{U}}{1.2 \mathrm{U}}$ | $\frac{0.22 \mathrm{U}}{1.3 \mathrm{U}}$ | $\frac{0.29 \mathrm{U}}{1.7 \mathrm{U}}$ | $\frac{0.22 \mathrm{U}}{1.3 \mathrm{U}}$ | $\frac{0.33 \mathrm{U}}{1.9 \mathrm{U}}$ | $\frac{0.28 \mathrm{U}}{1.6 \mathrm{U}}$ | $\frac{0.21 \mathrm{U}}{1.2 \mathrm{U}}$ | $\frac{0.24 \mathrm{U}}{1.4 \mathrm{U}}$ | $\frac{0.26 \mathrm{U}}{1.5 \mathrm{U}}$ | $\frac{0.230}{1.30}$ | $\frac{0.22 \mathrm{U}}{1.3 \mathrm{U}}$ | 0.29U |
| SW8260 | METTY L LIHCUKELONE | ${ }^{\text {ug }}$ | $\stackrel{2.00}{1.30}$ | ${ }^{1.85}$ | ${ }_{0}^{1.810}$ | 1.90 | $\stackrel{1.10}{1.10}$ | $\stackrel{1.26}{0.760}$ | ${ }_{0}^{1.760}$ | ${ }_{0}^{1.25}$ | ${ }^{1.30}$ | ${ }_{1}^{1.1 .1 \mathrm{UJ}}$ | ${ }^{1.80}{ }^{1.80 \mathrm{UJ}}$ | 1.30 | ${ }_{1.10}^{1.10}$ | ${ }_{0}^{1.78 \mathrm{U}}$ | ${ }_{0}^{1.90}$ | $0.97{ }^{1.9}$ | ${ }_{0}^{1.83 U}$ | ${ }_{0}^{1.820}$ | 1.10 |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.8 U | 1.2 U | 1.2 U | 1.8 U | 1.5 U | 1.10 | 1.10 | 1.10 | 1.2 U | 1.5 UJ | 1.2 UJ | 1.8 U | 1.5 U | 1.10 | 1.3 U | 1.4 U | 1.2 U | 1.2 U | 1.6 U |
| SW8260 | METHYLBENZENE | ugkg | 0.74 U | ${ }^{0.51 \mathrm{U}}$ | 0.48 U | 0.72 U | 0.60 U | 0.45 U | 0.45 U | 0.45 U | 0.47 U | 0.63 UJ | 0.48 UJ | 0.72 U | 0.61 U | 0.46 U | 0.54 U | 0.57 U | 0.50 U | 0.49 U | 0.64 U |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.77 U | ${ }^{0.53 U}$ | 0.50 U | 0.76 U | ${ }^{0.63 U}$ | 0.47 U | 0.47 U | $0.47{ }^{\text {U }}$ | 0.49 U | 0.660 J | 0.50 UJ | $0.76{ }^{\text {O }}$ | 0.64 U | 0.48 U | 0.56 U | 0.60 U | ${ }^{0.524}$ | 0.51 U | 0.67 U |
| SW8260 | O-XYLENE | ugkg | 0.70 U | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.46 \mathrm{U}}$ | 0.69 U | ${ }^{0.5714}$ | ${ }^{0.430}$ | ${ }^{0.43 U^{4}}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.450}$ | ${ }^{0.600 \mathrm{UJ}}$ | 0.45 UJ | ${ }^{0.694}$ | ${ }^{0.58 \mathrm{U}}$ | ${ }^{0.44 u^{4}}$ | ${ }^{0.514}$ | ${ }^{0.550}$ | ${ }^{0.4714}$ | ${ }^{0.46 U^{4}}$ | ${ }^{0.610}$ |
| SW8260 | STYRENE (MONOMER) | ugkg | 0.75 | 0.52 U | $\frac{0.49 \mathrm{U}}{037}$ | 0.74 | 0.61 U | 0.46 U | 0.46 U | 0.46 U | $\frac{0.48 \mathrm{U}}{0.364}$ | ${ }_{0}^{0.640 J}$ | 0.49 U J | 0.74U | $\frac{0.62 \mathrm{U}}{0.47 \mathrm{U}}$ | $\frac{0.47 \mathrm{U}}{0.354}$ | $\frac{0.55 ~ U}{0.414}$ | 0.59 U | 0.51U | 0.50 ${ }_{0}^{037}$ | 0.66 U |
| SW8260 | TERT-BUTYL METHYLETHER | 19 kg | ${ }^{0.560}$ | ${ }^{0.390}$ | 0.370 | 0.55 | ${ }^{0.460}$ | 0.34U | $\stackrel{0.340}{ }$ | $\stackrel{0.340}{ }$ | -0.36 | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.360}$ | 0.55 | 0.470 | 0.35 | 0.410 | 0.440 | ${ }^{0.380}$ | ${ }^{0.370}$ | 0.49 |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.70 | 0.48 U | 0.46 U | 0.69 U | $0.57 \mathrm{U}^{\text {U }}$ | 0.43 U | 0.43 U | 0.42 U | 0.450 | 0.60 UJ | 0.45 UJ | 0.69 U | 0.58 U | 0.44 U | $0.510^{0}$ | 0.55 | $0.47{ }^{\text {U }}$ | 0.46 U | $0.61{ }^{0}$ |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ugkg | ${ }_{0}^{0.53 U}$ | ${ }_{0}^{0.36 \mathrm{U}}$ | ${ }_{0}^{0.344}$ | ${ }_{0}^{0.520}$ | ${ }_{0}^{0.43 U}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.32 U}$ | $\stackrel{0.34 U}{0.45}$ | 0.45 UJ | 0.34 UJ | ${ }_{0}^{0.52 \mathrm{U}}$ | $\stackrel{0.54 \cup}{0.44}$ | O.33 | $\stackrel{0.38 \mathrm{U}}{0}$ | -0.41 | ${ }_{0}^{0.365}$ | -0.35 | 0.56 |
| SW8260 | TRIBOMOMETHANE | ugkg | 0.68 U | 74 | 0.44 U | 0.67 U | 0.56 | 0.42 U | 0.42 | 0.41 | 0.44 U | 0.58 UJ | 0.44 UJ | 0.67 U | 0.57 U | 0.43 U | 0.50 U | 0.53 U | 0.46 U | 0.45 U |  |
| SW8260 | TRICHLOROETHYLENE | ugkg | 0.70 U | 0.48 U | 0.46 U | 0.69 U | 0.57 U | 0.43 U | 0.43 U | 0.42 U | 0.45 U | 0.60 U | 0.45 U | 0.69 U | 0.58 U | 0.44 U | 0.51 U | 0.55 | 0.47 U | 0.46 U | 0.61 U |
| SW8260 | VINYL CHLORIDE | ugkg | 0.42 U | 0.29 U | ${ }^{0.28 U}$ | 0.41 U | 0.34 U | 0.26 U | 0.26 U | 0.26 U | 0.27 U | ${ }^{0.36 \mathrm{U}}$ | 0.27 U | 0.42 U | 0.35 U | 0.27 U | ${ }^{0.31 \mathrm{U}}$ | 0.33 U | 0.29 U | 0.28 U | 0.37 U |
| SW8270 | 2.4,5-TRICHLOROPHENOL | ugkg | 150 | 15 U | 15 U | 17 U | 14 U | 14 U | 14 U | 14 U | 15 U | 14 U | 15 U | 18 U | 15 U | 15 U | 14 U | 14 U | 16 U | 150 U | 15 U |
| SW8270 | 2,4,6-TRICHLOROPHENOL | ugkg | 40 U | 410 | 410 | 46 U | 390 | 39 U | 38 U | 38 U | 40 U | 39 U | 410 | 50 U | 410 | 40 U | 39 U | 38 U | 42 U | 420 O | 40 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 19 U | 20 U | 20 U | 22 O | 190 | 18 U | 18 U | 18 U | 190 | 19 U | 20 O | 24 U | 20 O | 190 | 19 | 18 U | 20 O | 200 O | 19 |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | 22 U | 22 U | 22 U | 250 | 210 | 210 | 20 U | 20 U | 22 U | 26 J | 22 U | 27 U | 22 U | 210 | 210 | 20 U | 230 | 220 U | 210 |
| SW8270 | 2,4-DINITROPHENOL | ugkg | 14 U | 14 UJ | 14 U | 16 UJ | 13 U | 13 UJ | 13 U | 13 UJ | 14 U | 13 UJ | 14 UJ | 17 U | 14 UJ | 14 UJ | 13 U | 13 U | 14 U | ${ }_{140}$ | 14 U |
| SW827 | 2,4-DNTOTOTUENE | ugkg | 40 |  | 12 | 154 |  |  | 110 | 110 | 40 | 39 | 414 | 140 | 12 | 40 | 39 | 130 | 12 u | 120 O | 111 |
| SW8270 | 2.CHLORONAPHTHALENE | ugkg | 18 U | 19 U | 18 U | 210 | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U | 22 U | 19 U | 18 U | 18 U | 17 U | 19 U | 190 U | 18 U |
| SW8270 | 2 -CHLOROPHENOL | ugkg | 20 U | 210 | 210 | 23 U | 20 U | 20 U | 19 U | 19 U | 20 U | 20 U | 210 | 25 U | 210 | 20 U | 20 U | 19 U | 210 | 210 U | 20 U |
| SW8270 | ${ }^{2}$-METHYLPHENOL (O-CRESOL) | ugkg | 14 U | 14 U | 14 U | 16 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 14 U | 17 U | 14 U | 14 U | 13 U | 13 U | 14 U | 140 U | 14 U |
| SW8270 | 2-NITROANILINE | ugkg | 25 U | 25 UJ | 25 U | 28 UJ | 24 U | 24 U | 24 U | 23 U | 25 U | 24 U | 25 U | 31 U | 25 UJ | 24 JJ | 24 U | 24 U | ${ }^{26 \mathrm{U}}$ | 260 U | 25 UJ |
| SW8270 | 2-NITROPHENOL | ugkg | 16 U | 16 U | 16 U | 18 U | 16 U | 15 U | 15 U | 15 U | 16 U | 16 U | 16 U | 20 U | 16 U | 16 U | 15 U | 15 U | 170 | 1700 | 16 U |
| SW8270 | 355 TPIMETYYL 2 -CYCL | ughg | 15 v | 15 U | 15 U | 174 | 140 | 14 l | 14 u | 14 U | 15 U | 14 U | 15 u | 184 | 15 U | 15 U | 14 U | 14 l | 16 U | 150 O | 15u |
| SW8270 | 3-NITROANILINE | ugkg | 19 U | 20 U | 20 U | 22 U | 19 U | 18 U | 18 U | 18 U | 19 U | 190 | 20 U | 24 U | 20 U | 19 U | 19 U | 18 U | 20 U | 200 U | 19 U |
| SW8270 | 4,6-DINTRO-2-METHYLPHENOL | ugkg | 11 U | 11 U | 11 U | 12 UJ | 11 U | 10 UJ | 9.9 U | 9.8 UJ | 11 UJ | 11 UJ | 11 UJ | 13 UJ | 11 UJ | 11 UJ | 10 U | 9.9 U | 110 | 110 U | 11 U |
| SW8270 | 4-BROMOPHENYLPHENYL ETHER | ugkg | 110 | 12 U | 12 U | 13 U | 110 | 110 | 110 | 110 | 11 UJ | 110 | 110 | 14 UJ | 12 U | 110 | 110 | 110 | 12 U | ${ }^{120 \mathrm{U}}$ | 11 |
| SW8270 | 4.CHLORO-3-METHYLPHENOL | ugkg | 18 U | 19 U | 18 U | 210 | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U | 22 U | 19 U | 18 U | 18 U | 17 U | 19 U | 190 U | 18 U |
| SW8270 | 4.CHLOROPHENYL PHENYL ETHER | ugkg | 25 U | 25 U | 25 U | 28 U | 24 U | 24 U | 24 U | 23 U | 25 U | 24 U | 25 U | 31 U | 25 U | 24 U | 24 U | 24 U | 26 U | 260 U | 25 U |
| SW8270 | 4-METHYLPHENOL (MP-CRESOL) | ugkg | 29 U | 30 U | 30 U | 33U | 28 U <br> 19 uj | $\frac{28 \mathrm{U}}{18}$ | 28 U | $\frac{27 U}{184}$ | $\frac{29 U}{194}$ | 28 U | 30 U | 360 | $\frac{30 \mathrm{U}}{20}$ | $\frac{29 U}{194}$ | $\frac{28}{190}$ | $\frac{28 \mathrm{U}}{18}$ | $\frac{310}{201}$ | $\stackrel{300 \mathrm{U}}{ }$ | $\frac{29 U}{1940}$ |
| SW8270 | 4 -NITROPPENOL | ugkg | 190 | 20 U | 20 uJ | 22 | 1903 | 180 | 18 U | 18 U | 190 | 190 | 20 | 25 u | 214 | 204 | 20 | 19 | 214 | $\stackrel{200 U 5}{2100}$ | $\underline{1900}$ |
| SW88270 | BENYY LUUTYL PHIHALATE | $\xrightarrow{\text { ugkg }}$ | ${ }_{170}{ }^{200}$ | ${ }_{170}^{210}$ | 170 | ${ }_{1020}$ | ${ }_{170}^{200}$ | ${ }_{100} 100$ | 190 U | 190 U | ${ }^{200}$ | ${ }_{170}^{200}$ | ${ }_{170}$ | ${ }_{210} 21$ | 170 | ${ }_{170}$ | ${ }_{160} 16$ | 160 UJ | ${ }_{180}^{2180}$ | ${ }^{21800}{ }^{180}$ | $\frac{20 \mathrm{U}}{170}$ |
| SW8270 | BIS(2-CHLORETHOXYMETHANE | ugkg | 19 U | 20 U | 20 U | 22 U | 19 U | 18 U | 18 U | 18 U | 19 U | 19 U | 20 U | 24 U | 20 U | 19 U | 19 U | 18 U | 20 U | 200 U | 19 U |
| SW8270 | BIS(2-CHLOROETHYLETHER | ugkg | 17 U | 17 UJ | 17 U | 19 UJ | 17 U | 16 U | 16 U | 16 U | 17 UJ | 17 U | 17 U | 21 UJ | 17 UJ | 17 UJ | 16 U | 16 U | 18 U | 180 U | 17 U |
| SW8270 | BIS(2-CHLOROISOPROPYL) ETHER | ugkg | 24 U | 24 U | 24 UJ | 27 U | 23 UJ | 23 U | 23 U | 22 U | 24 U | 23 U | 24 U | 29 U | 24 U | 23 U | 23 U | 23 U | 25 U | 250 UJ | 24 |
| SW8270 | BIS2-ETHYLHEXYLIPHTHALATE | ugkg | 23 J | 27 J | 27 J | 24 J | 18 U | 57 J | 17 U | 33 J | 18 U | 62 J | 33 J | 22 U | 32 J | 18 U | 18 U | 24 J | 19 U | 190 U | 18 U |
| SW8270 | CARBAZOLE | ugkg | 73 J | 160 J | 390 | 110 J | 18 U | 210 | 230 | 84 J | 730 J | 1200 | 670 | 1600 J | 490 | 270 | 74J | 65 J | 860 | 1500 J | 37 J |
| SW8270 | DIBENZOFURAN | ugkg | 24. | 94 J | 200 J | 140 J | 14 U | 67 J | 66 J 13 | 29 J | 210 | $\begin{array}{r}260 \\ 13 \\ \hline 1\end{array}$ | 180 J | ${ }^{370}$ | $\frac{120 \mathrm{~J}}{14}$ | 40 J | 25 J | 26J | 270 | 240 J | 15 U |
| SW8270 | DIETHYL PHTHALATE | ugkg | 14 U | 14 U | 14 U | 16 U | 130 | 130 | 13 U | 13 U | 14 U | 13 U | 14 U | 174 | 14 U | 14 U | 130 | 130 | 14 U | 140 U | 14 U |
| SW8270 | DIMETHY P PHTHALATE | ugkg | 110 | 12 U | 12 U | 13 U | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 14 U | 12 U | 110 | 11 U | 110 | 12 U | 120 U | 110 |
| SW8270 | DI-N-OCTYL-PHTHALATE | ugkg | 17 U | 17 U | 17 U | 19 U | 17 U | 16 U | 16 U | 16 U | 17 U | 170 | 17 U | 210 | 17 U | 17 U | 16 U | 16 U | 18 U | 180 U | 17 U |
| SW8270 | HEXACHLORO-1,3-BUTADIENE | Likg | 19 U | 20 U | 20 U | 22 U | 19 U | 18 U | 18 U | 18 U | 19 U | 19 U | 20 U | 24 U | 20 U | 19 U | 19 U | 18 U | U | 200 | 19 U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 9.30 | 9.4 U | 9.40 | 11 U | 9.00 | 8.8 U | 8.8 U | 8.6 U | ${ }^{9.3} \mathrm{UJ}$ | 9.00 | 9.40 | 12 UJ | 9.40 | 9.10 | ${ }^{8.9 \mathrm{UJ}}$ | ${ }^{8.8 \mathrm{UJ}}$ | 9.7 U | 96 U | 9.2 U |
| SW8270 | HEXACHLLOROCYCLOPENTADIENE | $\frac{\text { ugkg }}{\text { ugkg }}$ | 13 U | $\frac{13 \mathrm{UJ}}{204}$ | 13 U | $\frac{14 \mathrm{UJ}}{22 \mathrm{U}}$ | 12 U | $\frac{12 \mathrm{UJ}}{18 \mathrm{U}}$ | 12 U | $\frac{12 \mathrm{UJ}}{18 \mathrm{U}}$ | 13UJ | $\frac{12 \mathrm{UJ}}{12 \mathrm{U}}$ | $\frac{13 \mathrm{UJ}}{20 \mathrm{u}}$ | $\frac{16 \mathrm{UJ}}{24 \mathrm{U}}$ | $\frac{130 J}{204}$ | 12 UJ | 12 U | 12 U | 13 U | $\stackrel{130 \mathrm{U}}{2004}$ | 13U |
| SW8270 | HITROBENZENE | ugkg | 19 U | 230 | 230 | 220 | 19 O | 18 U | 18 U | $\underline{180}$ | 190 | 190 | 230 | 28 U | 230 | 19 U | 19 U | 18 U | 24 U | 200 U 230 U | 19U |
| SW8270 | N-NITROSOO-DI-N.-PROPYLAMINE | ugkg | 20 U | 210 | 21 U | 23 U | 20 U | 20 U | 19 U | 19 U | 20 U | 20 U | 21 U | 25 U | 210 | 20 U | 20 U | 19 U | 21 U | 210 U | 20 U |
| SW8270 | N-NITROSODIPHENYLAMINE | ugkg | 13 U | 13 U | 13 U | 14 U | 12 U | 12 U | 12 U | 12 U | 13 UJ | 12 U | 13 U | 16 UJ | 13 U | 12 U | 12 U | 12 U | 13 U | ${ }^{130 \mathrm{O}}$ | 13 U |
| SW8270 | CHLOROANLINE | ugkg | 29 U | 30 U | 30 U | 33 U | 28 U | 28 U | 28 UJ | 27 U | 29 U | 28 U | 30 U | 36 U | U | 29 U | 28 U | 28 U |  |  | 29 U |
| SW8270 | PHENOL | ugkg | 18 U | 19 U | 18 U | 21 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U | 22 U | 19 U | 18 U | 18 U | 17 U | 19 U | 190 U | 18 U |
| SW8270 | P-NTR ROANLINE | ugkg | 14 U | 14 U | 14 U | 16 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 14 U | 17 U | 14 U | 14 U | 13 U | 13 U | 14 U | 140 U | 14 U |
|  | TOTAL ORGANIC CARBON |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

```
Mg/kg: miligrams per kilorram
U = non-d
ugkg: micrograms per kilogram reslus from Vistal laboratory
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|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample ID } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{array}{\|c\|c\|} \hline \hline \text { Ssoon } \\ \text { ssonicis } \\ \text { o.25-5 feet } \\ 12107 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \hline \text { ssoon } \\ \text { ssoong } \\ \text { S.120.5 feet } \\ 12105 / 20006 \\ \hline \end{gathered}$ |  |  |  |  |  |  | $\begin{array}{\|c\|} \hline \hline \text { SSOOT7 } \\ \text { SSOO7BC } \\ 0.25-5.5 \text { feet } \\ 1210412006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SS5008 } \\ \text { Ssooge } \\ \text { o.25-5.5 feet } \\ 12105 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { Ssoong } \\ \text { ssoogeng } \\ \text { 0.12-5 feet } \\ 12105 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO10 } \\ \text { SS5010A } \\ 0.25-5.5 \text { eet } \\ 12105 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \hline \text { SSO11 } \\ \text { Sson1118 } \\ \text { o.25-5 feet } \\ 12105 / 2006 \\ \hline \end{array}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BNASIM | 2-METHYLNAPHTHALENE | ugkg | 17 U | 52 J | 85 | 67 J | 99 J | 660 | 150 | 44 J | 52 J | 16 U | 17 U | 140 | 220 J | 36 J | 34 J | 140 |
| ENASIM | ACENAPHTHENE | uglkg | 30 U | 59 U | 62 J | 39 J | 710 | 580 | 120 J | 68 U | 710 | 29 U | 29 U | 58 U | 52 J | 35 J | 32 U | 30 U |
| BNASIM | ACENAPHTHYLENE | ugkg | 29 U | 480 | 910 | 460 J | 720 J | 1900 | 1200 | 550 | 640 | 370 | 41 J | 190 | 230 J | 630 | 530 | 620 |
| BNASIM | ANTHRACENE | uglkg | 15 J | 1100 | 1800 | 520 J | 840 J | 6400 | 2500 | 1100 | 1300 | 400 | 150 | 350 | 340 | 1200 | 700 | 1300 |
| BNASIM | BENZO(A)ANTHRACENE | ug/kg | 32 J | 920 | 2800 | 710 J | 1100 J | 5600 | 1400 | 680 | 810 | 820 | 94 J | 410 | ${ }^{710} \mathrm{~J}$ | 1100 | 840 | 1500 |
| BNASIM | BENZO(A)PYRENE | ugkg | 41 | 1400 | 6100 | 930 J | 1400 J | 6500 | 1700 | 1000 | 1300 | 1200 | 110 J | 460 | 610 J | 1600 | 900 | 3900 |
| ENASIM | BENZO(B) FLUORANTHENE | uglkg | 59 | 2500 | 12000 | 1500 J | 2200 J | 13000 | 3000 | 1800 | 2100 | 1700 | 220 J | 870 | 1000 J | 2500 | 1700 | 7100 |
| BNASIM | BENZO(G,H,U)PERYLENE | ugkg | 33 J | 950 | 2900 | 880 J | 1400 J | 5500 | 2400 | 1100 | 1300 | 920 | 95 J | 360 | 480 J | 980 | 810 | 5500 |
| BNASIM | BENZO(K)FLUORANTHENE | ugkg | 52 | 1700 | 5900 | ${ }^{1100 ~ J}$ | 1700 J | 6500 | 2300 | 1300 | 1700 | 1400 | 160 J | 580 | 660 J | 2000 | 1300 | 5000 |
| BNASIM | CHRYSENE | uglkg | 46 | 1300 | 4900 | 880 J | 1200 J | 7200 | 1600 | 940 | 1200 | 1100 | 150 J | 690 | 960 J | 1600 | 1500 | 2500 |
| ENASIM | DIBENZO(A,H)ANTHRACENE | uglkg | 8.3 J | 320 | 1200 | 220 J | 350 J | 1200 | 740 | 310 | 370 | 310 | 27 J | 130 | 190 J | 380 | 260 | 1300 |
| BNASIM | FLUORANTHENE | ugkg | 60 | 910 | 6500 | 940 J | 1700 J | 12000 | 2400 | 860 | 1000 | 970 | 170 | 730 | 860 | 1100 | 2300 | 1200 |
| BNASIM | FLUORENE | ugkg | 17 U | 38 J | 89 | 29 J | 66 J | 560 | 100 | 38 U | 42 J | 16 U | 17 U | 32 U | 38 J | 40 J | 32 J | 29 J |
| ENASIM | INDENO(1,2,3-CD) PYRENE | uglkg | 35 J | 1300 | 5200 | 990 J | 1600 J | 5500 | 2700 | 1300 | 1500 | 1100 | 120 J | 450 | 570 J | 1200 | 890 | 4900 |
| BNASIM | NAPHTHALENE | uglkg | 5.6 U | 92 | 150 | 70 J | 100 J | 920 | 160 | 56 J | 65 J | 14 J | 5.5 U | 250 | 220 J | 58 | 49 | 130 |
| BNASIM | PENTACHLOROPHENOL | ugkg | ${ }^{110} \mathrm{~J}$ | 210 J | ${ }^{8.80 \mathrm{UJ}}$ | 51 J | 54 J | 430 J | 560 J | 480 J | 650 J | 190 J | 200 J | 36 J | 32 J | 690 | 510 | 260 J |
| ENASIM | PHENANTHRENE | uglkg | 36 U | 190 | 830 | 170 J | 260 J | 2800 | 870 | 140 J | 180 | 71J | 40 J | 580 | 680 | 160 | 310 | 360 |
| ENASIM | PYRENE | ugkg | 56 | 1400 | 7100 | 1100 J | 1600 J | 12000 | 2100 | 1100 | 1300 | 2500 | 200 J | 650 | ${ }^{820}$ | 1700 | 2200 | 1600 |
| E160.3 | RESIDUE, TOTAL | percent | 93 | 92 | 80 | 79 | 76 | 90 | 95 | 80 | 77 | 95 | 93 | 94 | 83 | 82 | 86 | 93 |
| E1613/E1668 | 1,2,3,4,6,7,8,-HEPTACHLORODIBENZOFURAN | ngkg | 17.532 | 251.552 | 674 |  |  | 3110 J | 4100 | 1898.063 | 2704.312 |  |  |  |  |  |  |  |
| E1613\|E1668 | 1,2,3,4,6,7,8,-HEPTACHLORODIBENZO-P-DIOXIN | nglkg | 192.404 | 2877.368 J | 5580 |  |  | 42500 | 34500 | 14276.192 | 16845.941 |  |  |  |  |  |  |  |
| E1613/E1668 | 1, 1,2,3,4,7, ,9,-HEPTACHLORODIBENZOFURAN | nglkg | 1.28 J | 18.079 | 54 |  |  | 225 | 251 | 115.07 | 176.2 |  |  |  |  |  |  |  |
| E1613/E1668 | 1, 2, 3,4,7,8-HEXACHLORODIBENZOFURAN | nglkg | 1.434 J | 5.384 J | 18.5 |  |  | 65.2 | 89.2 | ${ }^{93.009}$ | 139.068 |  |  |  |  |  |  |  |
| E1613/E1668 | 1,2,3,4,7,8,-HEXACHLORODIBENZO-P-DIOXIN | nglkg | 1.058 J | 10.005 | 26.3 |  |  | 181 | 242 | 108.69 | 121.148 |  |  |  |  |  |  |  |
| E1613/E1668 | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | nglkg | 0.75 J | 2.665 J | 10 |  |  | 34.7 | 70.7 | 46.081 | 77.311 |  |  |  |  |  |  |  |
| E1613/E1668 | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | nglkg | 4.784 J | 51.217 | 118 |  |  | 756 | 722 | 336.563 | 462.902 |  |  |  |  |  |  |  |
| E1613/E1668 | 1, 1, ,3,7,7,9.-HEXACHLORODIBENZOFURAN | nglkg | 0.19 U | 0.321 U | 3.56 |  |  | 11.7 | 21.2 | ${ }^{1.726 ~ J}$ | 2.206 U |  |  |  |  |  |  |  |
| E1613/E1668 | 1, 1,2,7,7,8-PENTACHLORODIBENZOFURAN | ngkg | ${ }_{0}^{3.758 \mathrm{~J}}$ | $\frac{12.274}{0.545}$ | ${ }^{43.65}$ |  |  | 4401 | 440 | 53.253 J | ${ }^{356215}$ |  |  |  |  |  |  |  |
| E1613/E1668 | 1, 1, 2, 7, \%,-PENTACHLORODIBENZO-P-DIOXIN | nglkg | 0.548 J | 4.292 J | $\frac{2.25}{}$ |  |  | 48.3 | 72.4 | 3, 39.592 | 40.54 |  |  |  |  |  |  |  |
| E1613/E1668 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | ngkg | 0.754 J | 2.355 J | 20.3 |  |  | 64.3 | 140 | 27.582 | ${ }^{71.626}$ |  |  |  |  |  |  |  |
| E1613/E1668 | 2,3,4,7,8.PENTACHLORODIBENZOFURAN | nglkg | $0.71{ }^{\text {J }}$ | 0.812 J | 6.08 |  |  | 14.3 | 28.5 | 10.16 | 14.765 |  |  |  |  |  |  |  |
| E1613\|E1668 | 2,3,7,8-TETRACHLORODIBENZOFURAN | ngkg | 1.188 U | 1.07 U | 1.65 |  |  | 1.86 | 1.5 | 1.079 J | 1.615 J |  |  |  |  |  |  |  |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | nglkg | 0.068 U | $0.64{ }^{0}$ | OU |  |  | 5.84 | 3.4 | 2.61 | 2.263 J |  |  |  |  |  |  |  |
| E1613/E1668 | OCTACHLORODIBENZOFURAN | nglkg | 82.162 | 1968.873 | 3730 |  |  | 17500 | 18200 | 9426.466 | 11901.892 |  |  |  |  |  |  |  |
| E1613/E1668 | OCTACHLORODIBENZO-P-DIOXIN | nglkg | 1730.716 | 28365.185 J | 56400 |  |  | 412000 | 323000 | 114044.047 J | 144856.584 |  |  |  |  |  |  |  |
| E1613/E1668 | TOTAL HEPPACHLORINATED DIBENZOFURANS | nglkg | 69.294 | ${ }^{1297.652}$ | 3110 |  |  | 15700 J | ${ }^{17200}$ | ${ }^{7652.562}$ | ${ }^{114966.572}$ |  |  |  |  |  |  |  |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | nglkg | 705.172 | 17099.905 | 20000 |  |  | 248000 | 189000 | 49924.614 | ${ }^{62918.051}$ |  |  |  |  |  |  |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | nglkg | 22.872 | 219.932 | 575 J |  |  | 2510 J | 3750 J | 2487.422 | 3251.605 |  |  |  |  |  |  |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | nglkg | 54.614 | 1271.878 | 1600 |  |  | 19200 | ${ }_{1}^{13600}$ | ${ }_{5}^{5155.31}$ | 6758.84 |  |  |  |  |  |  |  |
| E1613/E1668 E1613/E1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ | $\frac{11.86}{3.812}$ | $\stackrel{26.7}{52.805}$ | $\frac{101 \mathrm{~J}}{76.7}$ |  |  | $\frac{304 \mathrm{~J}}{813}$ | $\frac{6311}{575}$ | $\frac{321.067}{292.321}$ | $\frac{444.56}{274.798}$ |  |  |  |  |  |  |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ng/kg | $\frac{3.981}{}$ | $\frac{52.85}{8.85}$ | 54.4 J |  |  | 76.9 J | 79.3 J | $\stackrel{31.283}{ }$ | $\stackrel{34.843}{ }$ |  |  |  |  |  |  |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | nglkg | 1.849 | 5.631 | 22.9 |  |  | 179 | 45.6 | 11.331 | 7.293 |  |  |  |  |  |  |  |
| SW6020 | ANTIMONY | mg/kg | ${ }^{0.37 \mathrm{~J}}$ | 0.37 J | 0.41 UJ | 0.43 UJ | 0.43 UJ | ${ }^{0.37 \mathrm{U}}$ | 0.34 UJ | 0.42 UJ | 0.43 UJ | 0.35 UJ | 0.34 UJ | 1.7 | ${ }^{0.96 \mathrm{~J}}$ | ${ }^{0.86 \mathrm{~J}}$ | ${ }^{0.76 \mathrm{~J}^{\text {J }} \text {, }}$ | $0.77{ }^{\text {J }}$ |
| SW6020 | ARSENIC | mq/kg | 99 | 6.9 | 22 J | 4.8 | 5.1 | 12 J | 18 | 4.3 | 5.5 | 4.7 | 1.00 | 5.3 | 8.0 | 33 J | 56 J | 140 J |
| SW6020 | BARIUM | mq/kg | 5.6 | 16 | 51 | 33 | 31 | 32 | 22 | $8.1 \mathrm{E}^{\text {8 }}$ | 10 E | 5.7 | 13 | 21 | 180 | 34 | 26 | 65 |
| SW6020 | CADMIUM | mq/kg | ${ }^{0.300}$ | 0.30 U | ${ }^{0.35 \mathrm{U}}$ | 0.36 U | $0.37{ }^{15}$ | 0.32 U | 0.29 U | ${ }^{0.36 \mathrm{U}}$ | ${ }^{0.374}$ | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.290}$ | ${ }^{0.30} 5$ | ${ }^{0.344}$ | ${ }^{0.33 \mathrm{U}}$ | 0.32 | 0.29 U |
| SW6020 | CHROMIUM | mg/kg | 2.8 | 6.4 | 10 J | 14 | 15 | 12 J | 11 | 6.5 | 7.1 | 3.8 | 5.4 | 5.6 | 14 | 23 J | 74 J | 45 J |
| SW6020 | COPPER | mq/kg | 1.6 | 7.6 | 13 J | 9.1 | 9.8 | 14 J | 12 | 4.7 | 6.1 | 3.4 | 2.3 | 21 | 25 | 24 | 66 | 52 |
| SW6020 | LEAD | $\mathrm{mg} / \mathrm{kg}$ | ${ }^{12 \mathrm{~J}} 0$ | $\frac{27}{0.85}$ | $\frac{13 \mathrm{~J}}{1.0 \mathrm{u}}$ | 13 | 14 | $\frac{37 \mathrm{~J}}{091 \mathrm{U}}$ | -17 | 5.4 | 6.2 | 5.5 | 12 | 73 | 54 | 30 | 19 | 45 |
| SW6020 | SELENIUM | mq/kg | 0.87 U | 0.85 U | 1.00 | 1.10 | 1.10 | 0.91 U | 0.85 U | 1.0 U | 1.10 | ${ }^{0.86 \mathrm{U}}$ | 0.84 U | 0.87 U | ${ }^{1.05}$ | $0.95{ }^{0.43}$ | 0.944 | 0.850 |
| SW6020 | SILVER ${ }^{\text {VANADIUM (FUME OR DUST) }}$ | $\frac{\mathrm{mg} / \mathrm{kg}}{\mathrm{mg} / \mathrm{kg}}$ | $\frac{0.39 \mathrm{U}}{1.7}$ | $\frac{0.39 \mathrm{U}}{2.5}$ | ${ }^{0.460}$ | $\stackrel{0}{0.48 \mathrm{U}}$ | $\stackrel{0}{0.48 \mathrm{U}}$ | ${ }^{0.41 \mathrm{U}}$ | 0.39 4 | $\frac{0.47 \mathrm{U}}{1.1 \mathrm{UJ}}$ | ${ }^{0.48 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{1.2}$ | ${ }_{0}^{0.38 \mathrm{U}}$ | $\frac{0.39}{} 3$ | ${ }_{0}^{0.45}$ | 0.43 4 | 0.430 | 0.38 ${ }^{5}$ |
| SW7471 | MERCURY | mg/kg | 0.029 | 0.46 | 0.25 J | 0.20 | 0.27 | 0.32 J | 0.12 | 0.072 | 0.080 | 0.065 | 0.067 | 0.12 | 0.16 | 0.10 | 0.20 | 0.11 |
| SW8260 | 1,1,1-TRICHLOROETHANE | ugkg | 0.14 U | 0.14 U | 0.20 U | 0.17 U | 0.20 U | 0.14 U | 0.14 U | 0.24 U | 0.24 U | 0.13 U | 0.13 U | 0.13 U | 0.19 U | 0.054 U | 0.18 U | 0.14 U |
| SW8260 | 1,1,2,2,2-TETRACHLOROETHANE | uglkg | 0.077 U | 0.077 U | 0.11 U | 0.094 U | 0.11 U | 0.074 U | 0.074 U | 0.13 U | 0.13 U | 0.070 U | 0.071 U | 0.071 U | 0.10 U | 0.054 U | 0.096 U | 0.074 U |
| SW8260 | 1,1,2-TRICHLOROETHANE | ugkg | 0.16 U | ${ }^{0.16 \mathrm{U}}$ | 0.22 U | 0.19 U | 0.22 U | 0.15 U | 0.15 U | 0.26 U | 0.25 U | 0.14 U | 0.14 U | 0.14 U | 0.20 U | 0.040 U | 0.19 U | 0.15 U |
| SW8260 | 1,1-DICHLOROETHANE | uglkg | 0.073 U | 0.073 U | $0.11{ }^{\text {O }}$ | 0.089 U | $0.11 \mathrm{U}^{0.21}$ | 0.071 U | 0.071 U | $0.13{ }^{0}$ | ${ }^{0.133}$ | 0.067 U | 0 | -0.068 ${ }^{019}$ | $\frac{0.096 \mathrm{U}}{0.26 \mathrm{u}}$ | 0.0056 U | $\frac{0.092 \mathrm{U}}{0.25 \mathrm{U}}$ | 0.071 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugikg | $\stackrel{0.18}{0}$ | $\stackrel{0.18 \mathrm{U}}{0}$ | $\stackrel{0.25}{0}$ | 0.22 u | $\xrightarrow[0.250]{0.20}$ | $\stackrel{0.17}{0}$ | $\stackrel{0.17}{0}$ | 0.30 U | $\stackrel{.390}{ }$ | 0.160 | $0.17{ }^{0.19}$ | $\frac{0.19 \mathrm{U}}{0.16 \mathrm{~J}}$ | $\frac{0.26 U}{0.23 U}$ | 0.053 ${ }^{0.094}$ | 0.25 ${ }_{0}^{0.22 \mathrm{UJ}}$ | 0.20 U <br> 0.17 UJ |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | ugkg | 0.57 U | 0.57 U | 0.82 U | 0.70 U | 0.80 U | 0.55 U | 0.55 U | 0.97 U | 0.95 U | 0.52 U | 0.53 U | 0.53 UJ | 0.75 U | 0.081 U | 0.71 UJ | 0.55 UJ |
| SW8260 | 1,2-DIBROMOETHANE | uglkg | 0.065 U | 0.065 U | 0.094 U | 0.080 U | 0.092 U | 0.063 U | 0.063 U | 0.11 U | 0.11 U | 0.059 U | 0.061 U | 0.060 U | 0.085 U | 0.049 U | 0.081 U | 0.063 U |
| SW8260 | 1,2-DICHLOROBENZENE | uglkg | 0.091 U | 0.091 U | 0.13 U | 0.12 U | 0.13 U | 0.087 U | 0.088 U | 0.16 U | 0.15 U | 0.082 U | 0.084 U | 0.084 UJ | 0.12 U | 0.038 U | 0.12 UJ | 0.088 UJ |
| SW8260 | 1,2-DICHLOROETHANE | ugkg | 0.12 U | 0.12 U | $0.17{ }^{\text {U }}$ | $0.15{ }^{0}$ | 0.17 U | 0.12 U | 0.12 U | 0.20 U | 0.20 U |  |  |  |  |  |  | 0.12 U |
| SW8260 | 1,2-IICHLOROPROPANE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \mathrm{lkg}}$ | $\frac{0.063 \mathrm{U}}{0.11 \mathrm{U}}$ | $\frac{0.063 U}{0.11 \mathrm{U}}$ | $\frac{0.090 \cup}{0.15 U}$ | $\frac{0.077 \cup}{0.13 U}$ | $\frac{0.088 \mathrm{U}}{0.15 \mathrm{U}}$ | 0 | 0.061 U | $\frac{0.11 \mathrm{U}}{0.18 \mathrm{U}}$ | $\frac{0.11 \mathrm{U}}{0.17 \mathrm{U}}$ | 0.057U | ${ }_{0}^{0.058 \mathrm{U}} 0$ | $\frac{0.058 \cup}{0.093 ~ U J ~}$ | $\frac{0.082 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.023 U}{0.038 \mathrm{U}}$ | $\frac{0.079 \mathrm{U}}{0.13 \mathrm{UJ}}$ | $\frac{0.061 \mathrm{U}}{0.098 \mathrm{UJ}}$ |
| SW8260 | ACETONE | uglkg | 2.90 | 40 J | 4.2 U | 3.6 U | 4.10 | 2.8 U | 310 | 59 J | 34 J | 2.7 U | 2.70 | 2.7 U | 46 J | 0.26 U | 3.74 | 4.2 J |
| SW8260 | BENZENE | ugkg | 0.46 U | ${ }^{0.46 \mathrm{U}}$ | 0.65 U | 0.56 U | 0.64 U | 0.44 U | 0.44 U | 0.77 U | 0.75 U | 0.41 U | 0.42 U | 0.42 U | 0.59 U | 0.040 U | 0.57 U | 0.44 U |
| SW8260 | BROMODICHLOROMETHANE | uglkg | 0.34 U | 0.34 U | 0.49 U | 0.41 U | 0.48 U | 0.33 U | 0.33 U | $0.57{ }^{\text {U }}$ | 0.56 U | 0.31 U | 0.32 U | 0.31 U | 0.44 U | 0.038 U | 0.42 U | 0.33 U |
| SW8260 | BROMOMETHANE | uglkg | 0.37 U | 0.38 UJ | 0.54 UJ | 0.46 UJ | 0.53 UJ | 0.36 UJ | 0.36 UJ | 0.63 UJ | 0.62 UJ | 0.34 UJ | 0.35 UJ | 0.35 UJ | 0.49 UJ | 0.074 U | 0.47 U | 0.36 UJ |
| SW8260 | CARBON DISULFIDE | uglkg | 1.90 | 1.90 | 2.7 U | 2.30 | 2.7 U | $\underline{1.8 U}$ | 1.80 |  |  |  | $\underline{1.8 U}$ | $\underline{1.8 U}$ | 2.50 | 0.43U | 2.4 U |  |
| SW8260 | CARBON TETRACHLORIDE |  | $\frac{0.41 \cup}{0.31 \mathrm{U}}$ | 0.41U | 0.59 0 | $\frac{0.50 \mathrm{U}}{0.37 \mathrm{U}}$ | $\frac{0.57 U}{0.43 U}$ | $\frac{0.39 \mathrm{U}}{0.29 \mathrm{U}}$ | $\frac{0.40 \mathrm{U}}{0.30 \mathrm{U}}$ | $\frac{0.69 \mathrm{U}}{0.51 \mathrm{U}}$ | 0.68 0 | $\frac{0.37 \mathrm{U}}{0.28 \mathrm{u}}$ | 0.38U | 0.38U | $\frac{0.53 \mathrm{U}}{0.40 \mathrm{U}}$ | $\frac{0.065 \mathrm{U}}{0.065 \mathrm{U}}$ | 0.51U | 0.40 0 |
| SW8260 | CFC-12 | uglkg | 0.37 UJ | 0.38 UJ | 0.54 U | 0.46 U | 0.53 UJ | 0.36 U | 0.36 U | 0.63 U | 0.62 U | 0.34 U | 0.35 U | 0.35 U | 0.49 UJ | 0.080 U | 0.47 U | 0.36 U |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | ugkg | 0.42 U | 0.42 U | 0.60 U | 0.51 U | 0.59 U | 0.41 U | 0.41 U | 0.71 U | $0.70{ }^{\text {O }}$ | 0.38 U | 0.39 U | 0.39 U | 0.55 U | 0.087 U | 0.53 U | 0.41 U |
| SW8260 | CHLOROBENZENE | ugkg | 0.47 U | 0.47 U | 0.67 U | 0.57 U | 0.66 U | 0.45 U | 0.45 U | 0.79 U | 0.77 U | 0.42 U | 0.43 U | 0.43 U | 0.61 U | 0.024 U | ${ }^{0.588}$ | 0.45 U |
| SW8260 | CHLOROETHANE | ugkg | $\xrightarrow{0.42 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{ }$ | $\stackrel{0.60}{ }$ | $\stackrel{0.51 \mathrm{U}}{0}$ | $\stackrel{0.59}{0}$ | 0.41 u | $\xrightarrow[0.41 \cup]{0.280}$ | $\stackrel{0.710}{0.710}$ | 0.700 | 0.38 U | 0.390 | 0.39 u | 0.55 | 0.0319 | $\stackrel{.353}{0.33}$ | 0.41 U |
| SW8260 | CHLOROFORM | ug lkg | 0.40 U | 0.40 U | 0.57 U | 0.49 U | 0.56 U | 0.38 U | 0.39 U | 0.67 U | 0.66 U | 0.36 U | 0.57 J | 0.37 U | 0.52 U | 0.048 U | 0.50 U | 0.39 U |
| SW8260 | CHLOROMETHANE | uglkg | 0.52 U | 0.53 U | 0.75 U | 0.64 U | 0.74 U | 0.51 U | ${ }^{0.510}$ | 0.89 U | 0.87 U | 0.48 U | 0.49 U | 0.48 U | 0.69 U | 0.076 U | ${ }^{0.666}$ | ${ }^{0.510}$ |
| SW8260 | CIIS-1,-2IICHLOROETHYLENE | ugkg | 0.31 U | 0.31 U | 0.44 U | 0.37 U | 0.43 U | 0.29 U | 0.30 U | 0.51 U | 0.50 U | 0.28 U | 0.28 U | 0.28 U | 0.40 U | 0.047 U | 0.38 U | 0.30 U |


|  |  | $\begin{gathered} \text { Location } \\ \text { Sample II } \\ \text { Depth } \\ \text { Sample Date } \end{gathered}$ |  |  | $\begin{array}{c\|c} \hline \hline \text { SSOO3 } \\ \text { SSOO3BA } \\ 0.25-0.5 \text { feet } \\ 12 / 08 / 2006 \end{array}$ | $\begin{gathered} \hline \hline \text { SSS004 } \\ \text { ssousk } \\ 0.25-5.5 \text { feet } \\ 12105 / 2006 \\ \hline \end{gathered}$ |  |  | SSOO6 <br> Ssoobs <br> $0.25-0.5$ feet <br> $12105 / 2006$ | SSO077 <br> SSOO7BA <br> $0.25-0.5$ feet <br> $12 / 04 / 2006$ | $\begin{array}{c\|c} \hline \hline \text { SS5007 } \\ \text { ssoncc } \\ 0.25-5.5 \text { feet } \\ 1210412006 \\ \hline \end{array}$ | SSO088 <br> Ssoo8BA <br> $0.25-0.5$ feet <br> $12 / 05 / 2006$ | SSOO9 <br> SsoogBA <br> $0.25-0.5$ feet <br> $12 / 05 / 2006$ | SSO10 <br> SSOOBA <br> $0.25-0.5$ feet <br> $12 / 05 / 2006$ | SSO11 <br> sSon11BA <br> $0.25-0.5$ feet <br> $12 / 05 / 2006$ | SSO12 <br> SSO12BA <br> $0.25-0.5$ feet <br> $12 / 104 / 2006$ | $\begin{gathered} \text { SSO13 } \\ \text { SSOPI3BA } \\ 0.25-0.5 \text { feet } \\ 121042006 \end{gathered}$ | $\begin{array}{c\|} \hline \hline \text { SSO14 } \\ \text { SS014BA } \\ 0.25-0.5 \text { feet } \\ 12 / 04 / 2006 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIS-1,3-DICHLOROPROPENE | ugkg | 0.34 U | 0.34 U | 0.49 U | 0.41 U | 0.48 U | 0.33 U | 0.33 U | 0.57 U | 0.56 U | 0.31 U | 0.32 U | 0.31 U | 0.44 U | 0.022 U | 0.42 U | 0.33 U |
| SW8260 | CYCLOHEXANE | ugkg | 0.44 U | 0.44 U | 0.69 J | 0.54 U | 0.62 U | 0.43 U | 0.43 U | 0.75 U | 0.74 U | 0.40 U | 0.41 U | 0.41 U | 0.58 U | 0.054 U | 0.55 U | 0.43 U |
| SW8260 | DICHLOROMETHANE | uglkg | 0.46 U | 0.46 U | 0.65 U | 0.56 U | 0.64 U | 0.44 U | 0.44 U | 0.77 U | 0.75 U | 0.41 U | 0.42 U | 0.42 U | 0.59 U | 0.060 U | 0.57 U | 0.44 U |
| SW8260 | ETHYLBENZENE | ugkg | 0.49 U | 0.49 U | 0.70 U | 0.60 U | 0.69 U | 0.47 U | 0.47 U | 0.83 U | 0.81 U | 0.45 U | 0.46 U | 0.45 U | 0.64 U | 0.030 U | 0.61 U | 0.47 U |
| SW8260 | ISOPROPYLBENZENE | uglkg | 0.54 U | 0.54 U | 0.77 U | 0.65 U | 0.75 U | 0.52 U | 0.52 U | 0.91 U | 0.89 U | 0.49 U | 0.50 U | 0.50 UJ | 0.70 U | 0.030 U | 0.67 UJ | 0.52 UJ |
| SW8260 | m,p-xylenes | uglkg | 1.10 | 1.10 | 1.5 U | 1.3 U | 1.5 U | 0.97 U | 0.98 U | 1.8 U | 1.70 | 0.92 U | 0.94 U | 0.93 U | 1.4 U | 0.074 U | 1.30 | 0.98 U |
| SW8260 | M-DICHLOROBENZENE | uglkg | 0.058 U | 0.058 U | 0.084 U | 0.071 U | 0.082 U | 0.056 U | 0.056 U | 0.098 U | 0.097 U | 0.053 U | 0.054 U | 0.054 UJ | 0.076 U | 0.032 U | 0.073 UJ | 0.056 UJ |
| SW8260 | METHYL ACETATE | uglkg | 0.22 U | 0.22 U | 0.32 U | 0.27 U | 0.31 U | 0.22 U | 0.22 U | 0.38 U | 0.37 U | 0.20 U | 0.21 U | 0.21 U | 0.29 U | 0.11 U | 0.28 U | 0.22 U |
| SW8260 | METHYL ETHYL KETONE | uglkg | 1.30 | 2.2 J | $2.4{ }^{\text {J }}$ | 1.6 U | 1.8 U | 1.30 | 1.30 | 2.20 | 2.2 U | 1.2 U | 1.2 U | 1.2 U | 1.70 | 0.31 U | 1.6 U | 1.3 U |
| SW8260 | METHYL ISOBUTYL KETONE | ugkg | 0.83 U | 0.83 U | 1.20 | 1.10 | 1.2 U | 0.80 U | 0.80 U | 1.40 | 1.40 | 0.75 U | 0.77 U | 0.76 U | 1.10 | 0.40 U | 1.10 | 0.80 U |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.2 U | 1.2 U | $1.7 \mathrm{UJ}^{\text {J }}$ | 1.5 U | 1.7 U | 1.2 UJ | 1.2 U | 2.00 | 2.00 | 1.14 | 1.10 | 1.14 | 1.6 U | 0.49 U | 1.5 U | 1.2 U |
| SW8260 | METHYLBENZENE | uglkg | 0.49 U | 0.62 J | 2.9 J | 0.60 U | 0.69 U | 0.47 U | 0.47 U | 0.83 U | ${ }^{0.81 \mathrm{U}}$ | 0.45 U | 0.46 U | 0.45 U | 0.64 U | 0.031 U | 0.61 U | 0.47 U |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.51 U | 0.51 UJ | 1.5 | 0.63 U | 0.72 UJ | 0.49 U | 0.50 U | 0.87 U | 0.85 U | 0.47 U | 0.48 U | 0.47 U | 0.67 UJ | 0.085 J | 0.64 U | 0.50 U |
| SW8260 | O-XYLENE | ugkg | 0.47 U | 0.47 U | 0.67 U | 0.57 U | 0.66 U | 0.45 U | 0.45 U | 0.79 U | 0.77 U | 0.42 U | 0.43 U | 0.43 U | 0.61 U | 0.029 U | 0.58 U | 0.45 U |
| SW8260 | STYRENE (MONOMER) | uglkg | 0.50 U | 0.50 U | 0.72 U | 0.61 U | 0.71 U | 0.48 U | 0.49 U | 0.85 U | 0.83 U | 0.46 U | 0.47 U | 0.46 U | 0.65 U | 0.027 U | 0.63 U | 0.49 U |
| SW8260 | TERT-BUTYL METHYL ETHER | uglkg | 0.37 U | 0.38 U | 0.54 U | 0.46 U | 0.53 U | 0.36 U | 0.36 U | 0.63 U | 0.62 U | 0.34 U | 0.35 U | 0.35 U | 0.49 U | 0.043 U | 0.47 U | 0.36 U |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.47 U | 0.47 U | 0.67 U | 0.57 U | 0.66 U | 0.45 U | 0.45 U | 0.79 U | 0.77 U | 0.42 U | 0.43 U | 0.43 U | 0.61 U | 0.040 U | 0.58 U | 0.45 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | ugkg | 0.44 U | 0.44 U | 0.64 U | 0.54 U | 0.62 U | 0.43 U | 0.43 U | 0.75 U | 0.74 U | 0.40 U | 0.41 U | 0.41 U | 0.58 U | 0.058 U | 0.55 U | 0.43 U |
| SW8260 | TRANS-1,2-DICHLOROPROPENE | ugkg | 0.35 U | 0.35 U | 0.50 U | 0.43 U | 0.49 U | 0.34 U | 0.34 U | 0.59 U | 0.58 U | 0.32 U | 0.33 U | 0.32 U | 0.46 U | 0.028 U | 0.44 U | 0.34 U |
| SW8260 | TRIBOMOMETHANE | ugkg | 0.46 U | 0.46 U | 0.65 U | 0.56 U | 0.64 U | 0.44 U | 0.44 U | 0.77 U | 0.75 U | 0.41 U | 0.42 U | 0.42 U | 0.59 U | 0.044 U | 0.57 U | 0.44 U |
| SW8260 | TRICHLOROETHYLENE | ugkg | 0.47 U | 0.47 U | 0.67 U | 0.57 U | 0.66 U | 0.45 U | 0.45 U | 0.79 U | 0.77 U | 0.42 U | 0.43 U | 0.43 U | 0.61 U | 0.052 U | 0.58 U | 0.45 U |
| SW8260 | VINYL CHLORIDE | uglkg | 0.28 U | 0.28 U | 0.40 U | 0.34 U | 0.40 U | 0.27 U | 0.27 U | 0.48 U | 0.47 U | ${ }^{0.26 U}$ | 0.26 U | 0.26 U | 0.37 U | 0.070 U | 0.35 U | 0.27 U |
| SW8270 | 2,4,5-TRICHLOROPHENOL | uglkg | 14 U | 15 U | 17 U | 17 U | 18 U | 15 U | 14 U | 17 U | 17 U | 14 U | 14 U | 14 U | 16 U | 16 U | 16 U | 14 U |
| SW8270 | 2,4,6-TRICHLOROPHENOL | ugkg | 39 U | 40 U | 45 U | 46 U | 48 U | 40 U | 39 U | 45 U | 47 U | 38 U | 39 U | 39 U | 44 U | 45 U | 43 U | 39 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 19 U | 19 U | 22 U | 22 U | 23 U | 19 U | 18 U | 22 U | 23 U | 18 U | 19 U | 19 U | 21 U | 210 | 20 U | 19 U |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | 210 | 210 | 24 U | 25 U | 25 U | 32 J | 210 | 24 U | 25 U | 20 U | 210 | 210 | 23 U | 24 U | 23 U | 210 |
| SW8270 | 2,4-DIIIITROPHENOL | ugkg | 13 U | 14 U | 15 U | 16 U | 16 U | 14 U | 13 U | 15 U | 16 U | 13 V | 13 V | 13 V | 15 U | 15 U | 15 U | 13 U |
| SW8270 | 2,4-DINITROTOLUENE | ugkg | 110 | 110 | 13 U | 13 U | 13 U | 11 U | 11 U | 13 U | 13 U | 11 U | 11 U | 11 U | 12 U | 13 U | 12 U | 11 U |
| SW8270 | 2,6-DINITROTOLUENE | uglkg | 39 U | 40 U | 45 U | 46 U | 48 U | 40 U | 39 U | 45 U | 47 U | 38 U | 39 U | 39 U | 44 U | 45 U | 43 U | 39 U |
| SW8270 | 2.CHLORONAPHTHALENE | ugkg | 18 U | 18 U | 20 U | 21 U | 21 U | 18 U | 17 U | 20 U | 21 U | 17 U | 18 U | 18 U | 20 U | 20 U | 19 U | 18 U |
| SW8270 | 2-CHLOROPHENOL | ugkg | 20 U | 20 U | 23 U | 23 U | 24 U | 20 U | 20 U | 23 U | 24 U | 19 U | 20 U | 20 U | 22 U | 23 U | 22 U | 20 U |
| SW8270 | 2-METHYLPHENOL (0-CRESOL) | ugkg | 13 U | 14 U | 15 U | 16 U | 16 U | 14 U | 13 U | 15 U | 16 U | 13 U | 13 U | 13 U | 15 U | 15 U | 15 U | 13 U |
| SW8270 | 2-NITROANLINE | ugkg | 24 UJ | 24 U | 28 U | 28 UJ | 29 UJ | 25 U | 24 UJ | 28 UJ | 29 UJ | 24 UJ | 24 UJ | 24 U | 27 U | 27 UJ | 26 UJ | 24 UJ |
| SW8270 | 2-NITROPHENOL | ugkg | 16 U | 16 U | 18 U | 18 U | 19 U | 16 U | 15 U | 18 U | 19 U | 15 U | 16 U | 15 U | 17 U | 18 U | 17 U | 16 U |
| SW8270 | 3,3'-ICHLOROBENZIIINE | ugkg | 37 U | 38 U | 43 U | 44 UJ | 45 UJ | 38 V | 36 UJ | 43 U | 45 U | 36 UJ | 37 UJ | 37 U | 42 U | 42 U | 40 U | 37 U |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | ugkg | 14 U | 15 U | 17 U | 17 UJ | 18 UJ | 15 U | 14 UJ | 17 U | 17 U | 14 UJ | 14 UJ | 14 U | 16 U | 16 U | 16 U | 14 U |
| SW8270 | 3-NITROANILINE | ugkg | 19 U | 19 U | 22 U | 22 U | 23 U | 19 U | 18 U | 22 U | 23 U | 18 U | 19 U | 19 U | 210 | 210 | 20 U | 19 U |
| SW8270 | 4,6-DINITRO-2-METHYLPHENOL | ugkg | 11 U | 11 U | 12 U | 12 U | 13 U | 11 U | 10 U | 12 U | 13 U | 9.90 | 11 U | 11 U | 12 U | 12 U | 11 U | 11 U |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 11 U | 11 U | 13 U | 13 U | 13 U | 11 U | 11 U | 13 U | 13 U | 11 U | 11 U | 11 U | 12 U | 13 U | 12 U | 11 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | uglkg | 18 U | 18 U | 20 U | 21 U | 21 U | 18 U | 17 U | 20 U | 21 U | 17 U | 18 U | 18 U | 20 U | 20 U | 19 U | 18 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | ugkg | 24 U | 24 U | 28 U | 28 U | 29 U | 25 U | 24 U | 28 U | 29 U | 24 U | 24 U | 24 U | 27 U | 27 U | 26 U | 24 U |
| SW8270 | 4-METHYLPHENOL (MP-CRESOL) | ugkg | 28 U | 29 U | 33 U | 34 U | 35 U | 29 U | 28 U | 33 U | 34 U | 28 U | 28 U | 28 U | 32 U | 32 U | 31 U | 28 U |
| SW8270 | 4-NITROPHENOL | ugkg | 19 UJ | 19 UJ | 22 U | 22 UJ | 23 UJ | 19 U | 18 UJ | 22 UJ | 23 UJ | 18 UJ | 19 UJ | 19 UJ | 21 UJ | 21 UJ | 20 UJ | 19 UJ |
| SW8270 | BENZYL BUTYL PHTHALATE | ugkg | 20 U | 20 U | 23 U | 23 U | 24 U | 20 U | 20 U | 23 U | 24 U | 19 U | 20 U | 20 U | 22 U | 23 U | 22 U | 20 U |
| SW8270 | BIPHENYL | ugkg | 170 U | $170 \cup$ | 190 U | 200 U | 200 U | $170 \cup$ | 160 U | 190 U | 200 U | 160 U | $170 \cup$ | 160 U | 190 U | 190 U | 180 U | $170 \cup$ |
| SW8270 | BIS(2-CHLORETHOXY)METHANE | ugkg | 19 U | 19 U | 22 U | 22 U | 23 U | 19 U | 18 U | 22 U | 23 U | 18 U | 19 U | 19 U | 21 U | 21 U | 20 U | 19 U |
| SW8270 | BIS(2-CHLOROETHYL)ETHER | ugkg | 17 U | 17 U | 19 U | 20 U | 20 U | 17 UJ | 16 U | 19 UJ | 20 UJ | 16 U | 17 U | 16 U | 19 U | 19 U | 18 U | 17 U |
| SW8270 | $\frac{\text { BIS (2-CHLOROISOPROPYL ETHER }}{}$ | uglkg | $\frac{23 \mathrm{UJ}}{18}$ | 23 UJ | 27 U | 27 UJ | 28 UJ | 24 U | 23 UJ | 27 U | 28 U | 23 UJ | 23 UJ | 23 UJ | 26 UJ | 26 U | 25 U | 23 U |
| SW8270 | BIS2-ETHYLHEXYL)PHTHALATE | ugkg | 18 U | 29 J | 30 J | 210 | 210 | 94 J | 17 U | 20 U | 210 | 17 U | 18 U | 18 U | 20 U | 20 U | 30 J | 22 J |
| SW8270 | CARBAZOLE | ugkg | 18 U | 130 J | 540 | 43 J | 50 J | 570 | 280 | 120 J | 140 J | 82 J | 18 U | 40 J | 120 J | 210 | 280 | 260 |
| SW8270 | DIBENZOFURAN | ugkg | 14 U | 30 J | 210 J | 53 J | 89 J | 880 | 220 | 19 J | 20 J | 20 J | 14 U | 43 J | 120 J | 50 J | 49 J | 120 J |
| SW8270 | DIETHYL PHTHALATE | ugkg | 13 U | 14 U | 15 U | 16 U | 16 U | 14 U | 13 U | 15 U | 16 U | 13 U | 13 U | 13 U | 15 U | 15 U | 15 U | 13 U |
| SW8270 | DIMETHYL PHTHALATE | ugkg | 110 | 110 | 13 U | 13 U | 13 U | 110 | 110 | 13 U | 13 U | 110 | 110 | 110 | 12 U | 13 U | 12 U | 11 U |
| SW8270 | DI-N-BUTYL-PHTHALATE | ugkg | 66 U | 67 U | 77 U | 78 U | 80 U | 68 U | 65 U | 77 U | 80 U | 65 U | 66 U | 66 U | 74 U | 75 U | 72 U | 66 U |
| SW8270 | DI-N-OCTYL-PHTHALATE | ugkg | 17 U | 17 U | 19 U | 20 U | 20 U | 17 U | 16 U | 19 U | 20 U | 16 U | 17 U | 16 U | 19 U | 19 U | 18 U | 17 U |
| SW8270 | HEXACHLORO-1,3-BUTADIENE | ugkg | 19 U | 19 U | 22 U | 22 U | 23 U | 19 U | 18 U | 22 U | 23 U | 18 U | 19 U | 19 U | 21 U | 210 | 20 U | 19 U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 9.00 | 9.14 | 114 | 114 | 11 U | $\stackrel{9.3 U}{ }$ | 8.80 | 11 U | 11 U | 8.80 | 9.00 | 8.9 U | 11 U | 11 U | 9.7U |  |
| $\frac{\text { SW8270 }}{\text { SW8270 }}$ | HEXACHLOROCYCLOPENTADIENE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \text { ga }}$ | $\frac{12 \mathrm{U}}{19 \mathrm{U}}$ | $\frac{12 \mathrm{U}}{19}$ | $\frac{14 U}{22 U}$ | $\frac{14 U}{22 U}$ | $\frac{15}{23 U}$ | $\frac{13 \mathrm{UJ}}{19 \mathrm{U}}$ | $\frac{12 \mathrm{U}}{18}$ | $\frac{14 \mathrm{U}}{22 \mathrm{U}}$ | $\frac{15 \mathrm{U}}{23 \mathrm{U}}$ | $\frac{12 \mathrm{U}}{18}$ | $\frac{12 U}{19 U}$ | $\frac{12 U}{19 U}$ | $\frac{14 U}{21 U}$ | $\frac{14 \mathrm{U}}{21 \mathrm{u}}$ | $\frac{13 U}{20 u}$ | $\frac{12 \mathrm{U}}{19 \mathrm{U}}$ |
| SW8270 | NITROBENZENE | uglkg | $\underline{22 \mathrm{UJ}}$ | 22 U | 25 U | 26 U | 27 U | 23 U | 22 U | 25 U | 26 U | 21 u | 122 | 22 U | 25 U | 25 U | 24 U | 12 U |
| SW8270 | N-NITROSO-DI-N.PROPYLAMINE | uglkg | 20 U | 20 U | 23 U | 23 UJ | 24 UJ | 20 U | 20 UJ | 23 U | 24 U | 19 UJ | 20 UJ | 20 U | 22 U | 23 U | 22 U | 20 U |
| SW8270 | N-NITROSODIPHENYLAMINE | ugkg | 12 U | 12 U | 14 U | 14 U | 15 U | 13 U | 12 U | 14 U | 15 U | 12 U | 12 U | 12 U | 14 U | 14 U | 13 U | 12 U |
| SW8270 | P.CHLOROANILINE | ugkg | 28 U | 29 U | 33 U | 34 U | 35 U | 29 U | 28 U | 33 U | 34 U | 28 U | 28 U | 28 U | 32 U | 32 U | 31 U | 28 U |
| SW8270 | PHENOL | uglkg | 18 U | 18 U | 20 U | 21 U | 210 | 18 U | 17 U | 20 U | 21 U | 17 U | 18 U | 18 U | 20 U | 20 U | 19 U | 18 U |
| SW8270 | P-NITROANILINE | ugakg | 13 U | 14 U | 15 UJ | 16 U | 16 U | 14 U | 13 U | 15 U | 16 U | 13 U | 13 U | 13 U | 15 U | 15 U | 15 U | 13 U |
| Notes: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathrm{mg} / \mathrm{kg}:$ miligrams per kilogram |  | $\mathrm{U}=$ non-de | detect |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathrm{ng} / \mathrm{kg}$ : nanograms per kilogram ug/kg: micrograms per kilogram |  | $\mathrm{J}=$ estimated detect |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample ID } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO15 } \\ \text { SSO15BA } \\ 0.25-0.5 \text { feet } \\ 12204 / 2006 \\ \hline \end{array}$ | $\begin{array}{c\|} \hline \hline \text { SSO16 } \\ \text { SSO16BA } \\ 0.25-0.5 \text { feet } \\ 12 / 104 / 2006 \\ \hline \end{array}$ |  |  | SSO19 <br> SSO19BA <br> $0.25-0.5$ feet <br> $12 / 101 / 2006$ |  | SSO20 <br> Ssozoci <br> o.25-.5 feet <br> 22112/2006 | $\begin{array}{\|c\|} \hline \hline \text { SSO21 } \\ \text { SSO21BA } \\ 0.25-0.5 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO22 } \\ \text { SSO22BA } \\ 0.25-0.5 \text { feet } \\ 12121 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO23 } \\ \text { SSO23BA } \\ 0.25-0.5 \text { feet } \\ 12201 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO23 } \\ \text { SSO23BB } \\ 0.25-0.5 \text { feet } \\ 12 / 01 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO224 } \\ \text { SSO24BA } \\ 0.25-0.5 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO25 } \\ \text { SSO25BA } \\ 0.25-0.5 \text { feet } \\ 12 / 04 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO26 } \\ \text { SSO26BA } \\ 0.25-0.5 \text { feet } \\ 12 / 12 / 20066 \\ \hline \end{array}$ |  | $\begin{array}{\|c\|} \hline \text { SSO28 } \\ \text { SSo28BA } \\ 0.25-0.5 \text { feet } \end{array}$ $12 / 07 / 2006$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ENASIM | 2-METHYLNAPHTHALENE | uglkg | 130 | 22 J | 44 J | 16 U | 19 J | 17 U | 1.80 | 500 | 1.6 U | 17 U | 17 U | 27 | 28 J | 27 J | 23 U | 31 U |
|  | ACENAPHTHENE |  |  |  |  |  |  |  | 3.2 U | 330 J | 2.90 | 30 UJ |  | 10 |  | 41 J | 40 U |  |
| ENASIM | ACENAPHTHYLENE | uglkg | 450 | 440 | 780 | 590 | 59 J | 52 J | 66 | 4300 | 6.6 J | 87 J | 69 J | 79 | 740 | 120 | 920 | 410 |
|  | ANTHRACENE | uglkg | 710 | 550 | 1700 | 2100 | 160 J | 99 J | 110 | 7800 | 18 | 140 J | 100 J | 150 | 1100 | 240 | 2000 | 610 |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 640 | 940 | 1500 | 1300 | 540 J | 220 J | 97 | 8700 | 8.4 | 150 J | 140 J | 200 | 1200 | 250 | 1300 | 1900 |
| ENASIM | BENZO(A)PYRENE | uglkg | 620 | 1100 | 1800 | 1400 | 580 J | 270 J | 140 | 10000 | 10 | 140 J | 120 J | 190 | 1900 | 480 | 1800 | 1900 |
| BNASIM | BENZO(B)FLUORANTHENE | ugikg | 1200 | 1800 | 3200 | 2400 | 730 J | 400 J | 330 | 18000 | 29 | 3700 | 310 J | 610 J | 3000 | 860 | 3200 | 2800 |
| BNASIM | BENZO(G,H,I)PERYLENE | uglkg | 720 | 820 | 1500 | 780 | 460 J | 260 J | 98 | 8700 | 9.8 | ${ }^{120} \mathrm{~J}$ | 120 J | 150 | 1100 | 410 | 1400 | 760 |
| ENASIM | BENZO(K)FLUORANTHENE | uglkg | 860 | 1500 | 2600 | 2000 | 550 J | 290 J | 150 | 12000 | 12 | 260 J | 240 J | 220 | 2300 | 450 | 2300 | 2300 |
| ENASIM | CHRYSENE | uglkg | 820 | 1300 | 2000 | 2000 | 670 J | 320 J | 140 | 11000 | 16 | 340 J | 290 J | 330 | 1900 | 340 | 1900 | 2400 |
| BNASIM | DIBENZO(A,H)ANTHRACENE | ugkg | 200 | 260 | 550 | 310 | 130 J | 66 J | 38 | 3000 | ${ }^{3.3 \mathrm{~J}}$ | 33 J | 33 J | 57 J | 410 | 130 | 530 | 300 |
| SNASIM | FLUORANTHENE | uglkg | 1000 | 980 | 1700 | 1900 | 980 J | 460 J | 130 | 12000 | 15 | 460 J | 420 J | 610 | 1600 | 230 | 1600 | 2000 |
| ENASIM | INDENO(1,2,3-CD) PYRENE | ugkg | 349 | 100 | 190 | 100 | ${ }_{5}^{230} 1$ | 3001 | 100 | 3000 | 10 | $\underline{1701}$ | 150 | 160 | 1300 | 360 | 1800 | 110 |
| BNASIM | NAPHTHALENE | uglkg | 160 | 28 J | 58 J | 29 J | 23 J | 20 J | 0.60 U | 770 | ${ }_{0}^{1053}$ | 22 J | 16 J | 27 | 39 | 25 J | 34 J | 110 |
| BNASIM | PENTACHLOROPHENOL | ugkg | 150 J | 420 J | 820 J | 420 | 85 J | 67 J | 200 | 7900 J | 4.2 J | 130 J | 140 J | ${ }^{0.75 U}$ | 8400 | 150 J | 1200 | 570 J |
| ENASIM | PHENANTHRENE | uglkg | 310 | 120 | 230 | 170 | 410 J | 150 J | 3.90 | 2400 | 3.5 U | 74 J | 61 J | 79 | 220 | 43 J | 220 | 120 J |
| BNASIM | PYRENE | ugkg | 980 | 2000 | 2300 | 3100 | 830 J | 390 J | 190 | 13000 | 18 | 410 J | 360 J | 690 | 5300 | 450 | 1900 | 3400 |
| E160.3 | RESIDUE, TOTAL | percent | 89 | 94 | 93 | 95 | 92 | 92 | 86 | 85 | 96 | 93 | 93 | 94 | 90 | 95 | 68 | 98 |
| E1613/E1668 | 1,2,3,4,6,6,7,-HEPTACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  | 1095.083 |  | 52.891 |  |  | 1047.361 |  | 479 |  |  |
| E1613/E1668 | 1,2,3,4,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | ngkg |  |  |  |  |  |  | 10099.39 |  | 404.592 |  |  | 8072.642 |  | 3850 |  |  |
| E1613/E1668 | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | ${ }^{71.883}$ |  | 2.746 J |  |  | 58.357 |  | 30.8 |  |  |
| E1613/E1668 | 1, 2, 3,4,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | ${ }^{23.138}$ |  | 1.715 U |  |  | 34.53 |  | 14.6 |  |  |
| E1613/E1668 | 1,2,3,4,7,8,HEXACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  |  |  |  | 48.701 |  | 2.958 J |  |  | 110.813 |  | 10.9 |  |  |
| E1613\|E1668 | 1, 2, 3,6,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | ${ }^{10.258}$ |  | 0.998 J |  |  | 46.407 |  | 5.02 |  |  |
| E1613/E1668 | 1, $1,2,3,6,7,8$-HEXACHLORODIBENZO-P-DIOXIN | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ |  |  |  |  |  |  | $\frac{226.532}{0.0810}$ |  | 9.174 |  |  | 212.945 0.759 u |  | 67.2 3.23 |  |  |
| E1613/E1668 | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  |  |  |  | 105.751 |  | ${ }_{9} 9.478$ |  |  | $\stackrel{\text { 254.423 }}{ }$ |  | ${ }_{\text {3,23 }}$ |  |  |
| E1613/E1668 | 1,2,3,7,8-PENTACHLORODIBENZOFURAN | ng/kg |  |  |  |  |  |  | 1.351 J |  | 0.232 J |  |  | 3.212 J |  | ${ }_{4}^{457}$ J |  |  |
| E1613/E1668 | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  |  |  |  | 11.932 |  | 0.986 J |  |  | 42.361 |  | 2.28 J |  |  |
| E1613/E1668 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | ${ }_{9}^{1.646}$ |  | 1.85 J |  |  | 68.376 |  | 12 |  |  |
| E1613)E1668 | 2,3,4,7,8.PENTACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | ${ }^{1.3083}$ |  | 0.436 J |  |  | 4.576 J |  | 4.23 |  |  |
| E1613\|E1668 | 2,3,7,8.-TETRACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | 0.328 U |  | 0.069 U |  |  | ${ }^{0.925 \mathrm{~J}}$ |  | OU |  |  |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  |  |  |  | 0.476 U |  | 0.055 U |  |  | 3.537 |  | OU |  |  |
|  | OCTACHLORODIENZOFURAN | ngkg |  |  |  |  |  |  | ${ }_{7988383.5164}$ |  | ${ }^{261.121} 3$ |  |  | ${ }_{\text {956494.838 }}$ |  | $\stackrel{2830}{5800}$ |  |  |
| E1613/E1668 | TOTAL LEPTACHLORINATED DIBENZOFURANS | ngkg |  |  |  |  |  |  | ${ }_{5} 5204.385$ |  | ${ }^{202.557}$ |  |  | 3599.45 |  | 2330 |  |  |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  |  |  |  |  | 19169.224 |  | 1838.906 |  |  | 25744.054 |  | 18400 |  |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | nglkg |  |  |  |  |  |  | 851.324 |  | 49.005 |  |  | 1272.932 |  | 451 J |  |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  |  |  |  |  | 1176.598 |  | 159.006 |  |  | 3287.016 |  | 911 |  |  |
| E1613/E1668 | TOTAL PENTACHLLORINATED DIBENZOFURANS | nglkg |  |  |  |  |  |  | ${ }^{61.501}$ |  | ${ }^{9.676}$ |  |  | 271.991 |  | 56.5J |  |  |
|  | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  |  |  |  |  | ${ }_{\text {51.643 }}$ |  | $\frac{12.582}{30.2}$ |  |  | $\frac{291.791}{29.555}$ |  | 22.6 5.71 |  |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  |  |  |  |  | $\stackrel{9.034}{9.084}$ |  | 7.119 |  |  | ${ }_{2}^{21.076}$ |  | ${ }^{\text {. } 873}$ |  |  |
| SW6020 | ANTIMONY | mg/kg | 0.46 J | 0.36 UJ | 0.35 UJ | 0.35 UJ | 0.35 U | 0.37 U | 0.78 J | 11 | 0.35 UJ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.36 U}$ | 0.36 UJ | 0.36 UJ | 0.36 UJ | 0.49 UJ | 0.34 U |
| SW6020 | ARSENIC | mg/kg | 51 | 13 | 6.4 | 2.35 | 3.93 | 4.4 J | 85 | 600 | 1.2 | 13 J | 18 J | 23 | 59 J | 180 | 10 J | 1.1 |
| SW6020 | BARIUM | mg/kg | 40 E | 8.3 E | 13 E | 15 | 6.2 | 7.0 | 12 | 57 | 2.9 | 7.6 | 9.9 | 8.5 | 16 | 16 | 15 | 1.6 |
| SW6020 | CADMIUM | mg/kg | 0.33 J | ${ }^{0.31 \mathrm{U}}$ | 0.30 U | 0.30 U | 0.29 U | 0.31 U | 0.33 U | 0.52 J | ${ }^{0.30 \mathrm{U}}$ | 0.30 U | ${ }^{0.31 \mathrm{U}}$ | ${ }^{0.32 \mathrm{~J}}$ | 0.31 U | ${ }^{0.30 \mathrm{U}}$ | 0.42 U | 0.29 U |
| SW6020 | CHROMIUM | mq/kg | 64 | 13 | 4.3 | 4.8 J | 6.9 J | 8.3 J | 62 | 1000 | 2.5 | 9.6 J | 14 J | 31 | 44 J | 4.0 | 17 J | 1.7 |
| SW6020 | COPPER | mg/kg | 40 | 11 | 5.5 | 4.4 | 5.0 | 5.5 | 11 | 440 | 1.1 | 12 | 14 | 17 | 36 | 2.1 | 21 | 0.90 J |
| SW6020 | LEAD | mg/kg | 56 | 4.4 | 5.8 | 8.0 | 33 | 40 | 10 | 52 | 5.0 | 7.5 | 9.1 | 5.4 | 12 | 5.4 | 9.2 | 1.9 |
| SW6020 | SELENIUM | mg/kg | 0.91 U | 0.89 U | 0.86 U | 0.86 U | 0.85 U | 0.91 U | 0.96 U | 0.92 U | 0.87 U | 0.86 U | 0.90 U | 0.89 UJ | 0.89 U | 0.88 U | 1.2 U | 0.85 U |
| SW6020 | SILVER | mglkg | 0.41 U | 0.40 U | 0.39 U | 0.39 U | 0.39 U | 0.41 U | 0.43 U | 0.45 U | 0.39 U | 0.39 U | 0.41 U | 0.40 U | 0.40 U | 0.40 U | 0.55 U | 0.39 U |
| SW6020 | VANADIUM (FUME OR DUST) | mg/kg | 3.2 | 1.8 | 1.3 | 2.6 | 1.6 | 1.8 | 3.6 | 1.14 | 0.93 U | 1.3 J | 1.5 J | 6.4 J | 2.4 | 2.0 | 2.2 | 0.91 U |
| SW7471 | MERCURY | mg/kg | 0.20 | 0.15 | 0.35 | 0.22 | 0.047 J | 0.045 | 0.042 | 2.1 | 0.016 J | 0.020 J | 0.020 J | 0.029 | 0.32 | 0.022 J | 0.38 | 0.026 |
| SW8260 | 1,1,1-1-TRICHLOROETHANE | ugkg | 0.15 U | 0.13 U | 0.13 U | 0.13 U | 0.14 U | 0.14 U | 0.16 U | 0.16 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.14 U | 0.13 U | 0.20 U | 0.13 U |
| SW8260 | 1,1,1,2,2-TETRACHLOROETHANE | uglkg | 0.081 U | 0.071 U | 0.072 U | 0.070 U | 0.075 U | 0.076 U | 0.086 U | 0.083 U | 0.069 U | 0.071 U | 0.072 U | 0.071 U | 0.074 U | 0.070 U | 0.11 U | 0.068 U |
| SW8260 | 1,1,2-TRICHLOROETHANE | ugkg | 0.16 U | 0.14 U | 0.15 U | 0.14 U | 0.15 U | 0.15 U | 0.17 U | $0.17{ }^{\text {U }}$ | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.15 U | 0.14 U | 0.22 U | 0.14 U |
| SW8260 | 1,1-1.ICHLOROETHANE | uglkg | 0.078 U | 0.068 U | 0.068 U | 0.067 U | 0.071 U | 0.072 U | 0.083 U | 0.079 U | 0.066 U | 0.068 U | 0.068 U | 0.068 U | 0.070 U | 0.067 U | 0.11 U | 0.065 U |
| $\frac{\text { SW8260 }}{\text { SW8260 }}$ | 1,1.-DICHLOROETHYLENE | ug/kg | $\frac{0.21 \mathrm{U}}{0.19 \mathrm{UJ}}$ | $\frac{0.19 \mathrm{U}}{0.16 \mathrm{U}}$ | $\frac{0.19 \mathrm{U}}{0.17 \mathrm{U}}$ | $\frac{0.18 \mathrm{U}}{0.16 \mathrm{UJ}}$ | 0.20 U <br> 0.17 U | $\frac{0.20 \mathrm{U}}{0.18 \mathrm{U}}$ | $\frac{0.23 \mathrm{U}}{0.20 \mathrm{u}}$ | 0.22U | $\frac{0.18 \mathrm{U}}{0.16 \mathrm{U}}$ | $\frac{0.19 \mathrm{U}}{0.17 \mathrm{U}}$ | 0.19 U | $0.19{ }^{0}$ | 0.19U | 0.18 U | 0.29 U | 0.18 U |
| SW8260 | 1,2-2IIROMO-3-CHLOROPROPANE (DBCP) | ugkg | 0.61 UJ | $\stackrel{0.53 \mathrm{U}}{0}$ | 0.53 | 0.520 J | ${ }_{0}^{0.56 \mathrm{U}}$ | $\stackrel{0.56 \mathrm{U}}{0}$ | ${ }_{0}^{0.64 \mathrm{UJ}}$ | 0.62 UJ | ${ }^{0.510 \mathrm{U}^{0}}$ | 0.53 0 | ${ }_{0}^{0.153}$ | 0.530 | 0.55 | ${ }^{0.52 \mathrm{UJ}}$ | 0. 0.82 UJ | 0.510 |
| SW8260 | 1,2-DIBROMOETHANE | ugkg | 0.069 U | 0.060 U | 0.061 U | 0.060 U | 0.063 U | 0.064 U | 0.073 U | 0.071 U | 0.059 U | 0.061 U | 0.061 U | 0.060 U | 0.063 U | 0.060 U | 0.093 U | 0.058 U |
| SW8260 | 1,2-DICHLOROBENZENE | uglkg | 0.096 UJ | 0.083 U | 0.085 U | 0.083 UJ | 0.088 U | 0.089 U | 0.11 U | 0.098 UJ | 0.081 U | 0.084 U | 0.084 U | 0.084 U | 0.087 UJ | 0.083 U | 0.13 UJ | 0.081 U |
| SW8260 | 1,2-DICHLOROETHANE | uglkg | 0.13 U | 0.11 U | 0.11 U | 0.11 U | 0.12 U | 0.12 U | 0.14 U | 0.13 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.12 U | 0.11 U | $0.17{ }^{\text {U }}$ | 0.11 U |
| SW8260 | 1,2-IICHLOROPROPANE | ugkg | 0.067 U | 0.058 U | 0.059 U | 0.058 U | 0.061 U | 0.062 U | 0.071 U | 0.068 U | 0.057 U | 0.059 U | 0.059 U | 0.058 U | 0.060 U | 0.058 U | 0.090 U | 0.056 U |
| SW8260 | 1,4-DICHLOROBENZENE | uglkg | 0.11 UJ | 0.093 U | 0.094 U | 0.092 UJ | 0.098 U | 0.10 U | 0.12 U | 0.11 UJ | 0.091 U | 0.094 U | 0.094 U | 0.094 U | 0.097 UJ | 0.092 U | 0.15 UJ | 0.090 U |
| SW8260 | ACETONE | ugkg | 3.10 | 2.70 | 2.7 U | 5.2 J | 2.9 U | 2.9 U | 300 | 3.2 U | 29 J | 2.7 U | 2.74 | 660 | 2.80 | 7.7 J | 4.2 U | 2.6 U |
| SW8260 | BENZENE | ugkg | 0.48 U | ${ }^{0.421}$ | 0.43 U | ${ }^{0.421 ~}$ | 0.44 U | 0.45 U | $0.51{ }^{0.3}$ | 0.49 U | $0.41{ }^{\text {O }}$ | ${ }^{0.42 \mathrm{U}}$ | 0.42 U | 0.42 U | 0.44 U | 0.42 U | 0.65 U | 0.41 U |
| SW8260 | BROMODICHLOROMETHANE | uglkg | 0.36 U | 0.31 U | 0.32 U | 0.31 U | 0.33 U | 0.34 U | 0.38 U | 0.37 U | 0.31 U | 0.32 U | 0.32 U | 0.32 U | 0.33 U | 0.31 U | 0.48 U | 0.30 U |
| SW8260 | BROMOMETHANE | ugkg | 0.40 UJ | 0.35 UJ | 0.35 UJ | 0.34 UJ | 0.36 U | 0.37 U | 0.42 UJ | 0.41 UJ | 0.34 UJ | 0.35 U | 0.35 U | 0.35 UJ | 0.36 U | 0.34 UJ | 0.53 U | 0.33 U |
| SW8260 | CARBON DISULFIDE | $\frac{\text { uglkg }}{\text { ugakg }}$ | $\frac{2.00}{0.43 \mathrm{u}}$ | $\frac{1.8 \mathrm{U}}{0.38 \mathrm{U}}$ | $\frac{1.8 \mathrm{U}}{0.38 \mathrm{u}}$ | 1.70 | 1.80 | 1.90 | 2.14 | 2.14 | 1.7U | 1.8 U | 1.8 U | $\frac{1.8 U}{}$ | 1.8 U | 1.7 U | 2.7 U | 1.7 U |
| SW8260 | CARBON TETRACHLORIDE | ugkg | 0.43 U | 0.38 U | 0.38 U | 0.37 U | 0.40 U | 0.40 U | 0.46 U | 0.44 U | 0.37 U | 0.38 U | 0.38 U | 0.38 U | 0.39 U | 0.37 U | 0.58 U | 0.37 U |
| SW8260 | CFC-11 | uglkg | 0.32 U | 0.28 U | 0.29 U | 0.28 U | 0.30 U | 0.30 U | 0.34 U | 0.33 U | 0.27 U | 0.28 U | 0.28 U | 0.28 U | 0.29 U | 0.28 U | 0.44 U | 0.27 U |
| SW8260 | CFC-12 | ugikg | 0.40 U | $\stackrel{0.35 \mathrm{U}}{ }$ | 0.350 | 0.34U | $0.36 \mathrm{U}^{0.3}$ | 0.37 U | 0.42 U | $0.41{ }^{\text {U }}$ | 0.34 | 0.35 | 0.35U | 0.35U | 0.36 | 0.34U | 0.53 u | +0.33 U |
| SW8260 | CHLLRINATED FLUOROCARBON (FREON 113) | ugkg | $\xrightarrow{0.450}$ | 0.39 U <br> 0.43 | $\xrightarrow{0.394}$ | $\stackrel{0.39 \mathrm{U}}{0}$ | $\xrightarrow{0.41 \mathrm{U}}$ | 0.42 U 0.46 U | 0.470 <br> 0.53 | $\stackrel{0.460}{0.510}$ | $\stackrel{0.38}{0}$ | 0.394 <br> 0.44 | 0.344 | 0.393 0.430 | 0.45U | $\stackrel{.0 .43 \cup}{ }$ | 0.67 U | 0.320 |
| SW8260 | CHLORODIBROMOMETHANE | ugkg | 0.31 U | 0.27 U | 0.27 U | 0.27 U | 0.29 U | 0.29 U | 0.33 U | 0.32 U | 0.26 U | 0.27 U | 0.27 U | 0.27 U | 0.28 U | 0.27 U | 0.42 U | 0.26 U |
| SW8260 | CHLOROETHANE | ugkg | 0.45 U | 0.39 U | 0.39 U | 0.39 U | 0.41 U | 0.42 U | 0.47 UJ | 0.46 U | 0.38 UJ | 0.39 U | 0.39 U | 0.39 U | 0.40U | 0.39 UJ | 0.60 U | 0.38 U |
| SW8260 | CHLOROFORM | $\frac{\mathrm{ug} \text { gg }}{\text { ug }}$ | $\frac{0.42 \mathrm{U}}{0.56 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.51 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.52 \mathrm{u}}$ | $\frac{0.45 \mathrm{U}}{0.59 \mathrm{u}}$ | $\frac{0.43 \mathrm{U}}{0.57 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.47 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{u}}$ | 0.37 U 0.49 u | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{u}}$ | $\frac{0.38 \mathrm{U}}{0.50 \mathrm{u}}$ | 0.36 U | 0.57 U | $\frac{0.36 \mathrm{U}}{0.47 \mathrm{U}}$ |
| SW8260 | ICIS-1,2-ICHLOROETHYLENE | ugkg | 0.32 U | 0.28 U | 0.29 U | 0.28 U | 0.30 U | 0.30 U | 0.34 U | 0.33 U | 0.27 U | 0.28 U | 0.28 U | 0.28 U | 0.29 U | 0.28 U | 0.44 U | 0.27 U |


|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample ID } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ |  | SS016 0.25-0.5 feet 12/04/2006 |  |  | SSO19 <br> SSO19BA <br> $0.25-0.5$ feet <br> $12 / 1012006$ | SSO19 <br> SSO19BB <br> $0.25-0.5$ feet <br> $12101 / 2006$ |  | $\begin{array}{\|c\|} \hline \hline \text { SSO21 } \\ \text { SSo21BA } \\ 0.25-0.5 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO22 } \\ \text { SSO22BA } \\ 0.25-0.5 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \hline \text { SSSO23 } \\ \text { SSO23BA } \\ 0.25-5 \text { feet } \\ 1210112006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO223 } \\ \text { SSO23BB } \\ 0.25-0.5 \text { feet } \\ 12101 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO224 } \\ \text { SSO24BA } \\ 0.25-0.5 \text { feet } \\ 12 / 11 / 20006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO25 } \\ \text { SSO25BA } \\ 0.25-5.5 \text { feet } \\ 1212420006 \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO26 } \\ \text { SSO26BA } \\ 0.25-0.5 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c} \hline \hline \text { SSO27 } \\ \text { SSO278A } \\ 0.25-5.5 \text { feet } \\ 1212042006 \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| sw8260 | CIS-1,3-DICHLOROPROPENE | ug/kg | 0.36 U | 0.31 U | 0.32 U | 0.31 U | 0.33 U | 0.34 U | 0.38 U | 0.37 U | 0.31 U | 0.32 U | 0.32 U | 0.32 U | 0.33 U | 0.31 U | 0.48 U | 0.30 U |
| SW8260 | CYCLOHEXANE | ug lkg | 0.47 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U | 0.44 U | 0.50 U | 0.48 U | 0.40 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U | 0.41 U | 0.63 U | 0.40 U |
| SW8260 | DICHLOROMETHANE | ugikg | 0.48 U | 0.42 U | 0.43 U | 0.42 U | 0.44 U | 0.45 U | 8.55 | 0.49 U | 0.41 U | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | $0.42 \mathrm{U}^{0}$ | 0.444 | ${ }^{0.425}$ | $0.65{ }^{0}$ | $0.41{ }^{\text {U }}$ |
| SW8260 | ETHYLBENZENE | ug lkg | 0.52 U | 0.45 U | 0.46 U | 0.45 U | 0.48 U | 0.48 U | 0.55 U | 0.53 U | 0.44 U | 0.46 U | 0.46 U | 0.45 U | 0.47 U | 0.45 U | 0.70 U | 0.44 U |
| SW8260 | ISOPROPYLBENZENE | ugkg | $0.57{ }^{\text {UJ }}$ | 0.49 U | 0.50 U | 0.49 UJ | 0.52 U | 0.53 U | 0.60 U | 0.58 UJ | 0.48 U | 0.50 U | 0.50 U | 0.50 U | 0.52 UJ | 0.49 U | 0.77 UJ | 0.48 U |
| SW8260 | m,p-xylenes | uglkg | 1.10 | 0.93 U | 0.94 U | 0.92 U | 0.98 U | 1.00 | 1.2 U | 1.10 | 0.91 U | 0.94 U | 0.94 U | 0.94 U | 0.97 U | 0.92 U | 1.5 U | 0.90 U |
| sW8260 | M-DICHLOROBENZENE | ugkg | 0.062 UJ | 0.054 U | 0.054 U | 0.053 UJ | 0.057 U | 0.058 U | 0.066 U | 0.063 UJ | 0.052 U | 0.054 U | 0.054 U | 0.054 U | 0.056 UJ | 0.053 U | 0.083 UJ | 0.052 U |
| SW8260 | METHYL ACETATE | uglkg | 0.24 U | 0.21 U | 0.21 U | 0.21 U | 0.22 U | 0.22 U | 0.25 U | 0.24 U | 0.20 U | 0.21 U | 0.21 U | 0.21 U | 0.22 U | 0.21 U | 0.32 U | 0.20 U |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.4 U | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.3 U | 1.5 U | 1.4 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.2 U | 1.9 U | 1.2 U |
| SW8260 | METHYL ISOBUTYL KETONE | ug/kg | 0.87 U | 0.76 U | 0.77 U | 0.76 U | 0.80 U | 0.81 U | 0.93 U | 0.89 U | 0.74 U | 0.77 U | 0.77 U | 0.76 U | $0.79{ }^{\text {u }}$ | 0.76 U | 1.2 U | $0.74{ }^{1}$ |
| SW8260 | METHYL N-BUTYL KETONE | ug lkg | 1.3 U | 1.10 | 1.10 | 1.14 | 1.2 U | 1.2 U | $1.4 \mathrm{UJ}^{\text {d }}$ | 1.3 U | 1.10 U | 1.10 | 1.10 | 1.10 | 1.2 U | 1.10 U | 1.7 U | 1.10 |
| SW8260 | METHYLBENZENE | ug kg | 0.52 U | 0.45 U | 0.46 U | 0.45 U | 0.48 U | 0.48 U | 0.55 U | 0.53 U | 0.44 U | ${ }^{0.46 \mathrm{U}}$ | 0.46 U | 0.45 U | 0.47 U | 0.56 J | 0.70 U | 0.44 U |
| SW8260 | METHYLCYLOHEXANE | uglkg | 0.54 U | 0.47 U | 0.48 U | 0.47 U | 0.50 U | 0.51 U | 0.58 U | 0.56 U | 0.46 U | 0.48 U | 0.48 U | 0.48 U | 0.49 U | 0.47 U | 0.73 U | 0.46 U |
| SW8260 | O-XYLENE | ugkg | 0.50 U | 0.43 U | 0.44 U | 0.43 U | 0.45 U | 0.46 U | 0.53 U | 0.51 U | 0.42 U | 0.44 U | 0.44 U | 0.43 U | 0.45 U | 0.43 U | 0.67 U | 0.42 U |
| SW8260 | STYRENE (MONOMER) | uglkg | 0.53 U | 0.46 U | 0.47 U | 0.46 U | 0.49 U | 0.50 U | 0.56 U | 0.54 U | 0.45 U | 0.47 U | 0.47 U | 0.46 U | 0.48 U | 0.46 U | 0.72 U | 0.45 U |
| SW8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.40 U | 0.35 U | 0.35 U | 0.34 U | 0.36 U | 0.37 U | 0.42 U | 0.41 U | 0.34 U | 0.35 U | 0.35 U | 0.35 U | 0.36 U | 0.34 U | 0.53 U | 0.33 U |
| SW8260 | TETRACHLOROETHYLENE | uglkg | $\stackrel{0.50 \mathrm{U}}{ }$ | ${ }^{0.43 U}$ | $0.44{ }^{\text {U }}$ | ${ }^{0.43 ~}{ }^{\text {U }}$ | 0.45 U | ${ }^{0.46 \mathrm{U}}$ | $\stackrel{0.53 \mathrm{U}}{ }$ | $0.51{ }^{0}$ | 0.42 U | $0.44{ }^{\text {U }}$ | $0.44{ }^{\text {O }}$ | 0.43 U | 0.45 U | 0.43 U | 0.67 U | 0.42 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | uglkg | 0.47 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U | 0.44 U | 0.50 U | 0.48 U | 0.40 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U | 0.41 U | 0.63 U | 0.40 U |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ug/kg | 0.37 U | 0.32 U | 0.33 U | 0.32 U | 0.34 U | 0.35 U | 0.40 U | 0.38 U | 0.32 U | 0.33 U | 0.33 U | 0.33 U | 0.34 U | 0.32 U | 0.50 U | 0.31 U |
| SW8260 | TRIBOMOMETHANE | ug lkg | 0.48 U | 0.42 U | 0.43 U | 0.42 U | 0.44 U | 0.45 U | 0.51 U | 0.49 U | 0.41 U | 0.42 U | 0.42 U | 0.42 U | 0.44 U | 0.42 U | 0.65 U | 0.41 U |
| SW8260 | TRICHLOROETHYLENE | ugkg | 0.50 U | 0.43 U | 0.44 U | 0.43 U | 0.45 U | 0.46 U | 0.53 U | 0.51 U | 0.42 U | 0.44 U | 0.44 U | 0.43 U | 0.45 U | 0.43 U | 0.67 U | 0.42 U |
| SW8260 | VINYL CHLORIDE | uglkg | 0.30 U | 0.26 U | 0.26 U | 0.26 U | 0.27 U | 0.28 U | 0.32 U | 0.31 U | ${ }^{0.25 U}$ | ${ }^{0.26 U}$ | 0.26 U | 0.26 U | 0.27 U | 0.26 U | 0.40 U | 0.25 U |
| SW8270 | 2,4,5-TRICHLOROPHENOL | uglkg | 15 U | 14 U | 15 U | 14 U | 15 U | 15 U | 16 U | 16 U | 14 U | 14 U | 14 U | 14 U | 15 U | 14 U | 20 U | 14 U |
| SW8270 | 2,4,6-TRICHLOROPHENOL | uglkg | 41 U | 39 U | 39 U | 39 U | 40 U | 40 U | 42 U | 43 U | 38 U | 39 U | 39 U | 39 U | 40 U | 38 U | 54 U | 37 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 20 U | 19 U | 19 U | 18 U | 19 U | 19 U | 20 U | 210 | 18 U | 19 U | 19 U | 19 U | 19 U | 18 U | 26 U | 18 U |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | 22 U | 210 | 210 | 210 | 210 | 210 | 23 U | 23 U | 20 U | 21 U | 210 | 210 | 22 U | 20 U | 28 U | 20 U |
| SW8270 | 2,4-DIIIITROPHENOL | uglkg | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 14 U | 15 U | 13 U | 13 UJ | ${ }_{13} 12 \mathrm{~J}$ | 13 U | 14 U | 13 U | 18 U | 13 U |
| SW8270 | 2,4-DINITROTOLUENE | ugkg | 110 | 11 U | 110 | 110 | 110 | 110 | 12 U | 12 U | 110 | 110 | 110 | 11 U | 11 U | 11 U | 15 U | 10 U |
| SW8270 | 2,6-DIIITROTOLUENE | uglkg | 41 U | 39 U | 39 U | 39 U | 40 U | 40 U | 42 U | 43 U | 38 U | 39 U | 39 U | 39 U | 40 U | 38 U | 54 U | 37 U |
| SW8270 | 2.CHLORONAPHTHALENE | uglkg | 18 U | 18 U | 18 U | 17 U | 18 U | 18 U | 19 U | 19 U | 17 U | 18 U | 18 U | 18 U | 18 U | 17 U | 24 U | 17 U |
| SW8270 | 2-CHLOROPHENOL | uglkg | 21 U | 20 U | 20 U | 20 U | 20 U | 20 U | 21 U | 22 U | 19 U | 20 U | 20 U | 20 U | 20 U | 19 U | 27 U | 19 U |
| SW8270 | 2-METHYLPHENOL (0-CRESOL) | ugkg | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 14 U | 15 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 18 U | 13 U |
| SW8270 | 2-NITROANLINE | ugkg | 25 UJ | 24 UJ | 24 UJ | 24 UJ | 25 UJ | 25 UJ | 26 U | 26 U | 23 U | 24 UJ | 24 UJ | 24 U | 25 UJ | 24 U | 33 UJ | 23 U |
| SW8270 | 2-NITROPHENOL | uglkg | 16 U | 15 U | 16 U | 15 U | 16 U | 16 U | 17 U | 17 U | 15 U | 16 U | 16 U | 15 U | 16 U | 15 U | 210 | 15 U |
| SW8270 | 3,3'-DICHLOROBENZIDINE | ugikg | 39 U | 37 U | 37 U | 36 U | 38 U | 38 U | 40 U | 41 U | 36 U | 37 U | 37 U | 37 U | 38 U | 36 U | 51 U | 35 U |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | uglkg | 15 U | 14 U | 15 U | 14 U | 15 UJ | 15 UJ | 16 U | 16 U | 14 U | 14 U | 14 U | 14 U | 15 UJ | 14 U | 20 U | 14 U |
| SW8270 | 3-NITROANILINE | ugkg | 20 U | 19 U | 19 U | 18 U | 19 U | 19 U | 20 U | 21 U | 18 U | 19 U | 19 U | 19 U | 19 U | 18 U | 26 U | 18 U |
| SW8270 | 4,6-DINITRO-2-METHYLPHENOL | uglkg | 11 U | 10 U | 11 U | 10 U | 11 U | 11 U | 11 U | 12 U | 9.8 U | 11 U | 11 U | 10 U | 11 U | 9.9 U | 14 U | 9.6 U |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | 12 U | 110 | 11 U | 110 | 110 | 11 U | 11 U | 15 U | 10 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | uglkg | 18 U | 18 U | 18 U | 17 U | 18 U | 18 U | 19 U | 19 U | 17 U | 18 U | 18 U | 18 U | 18 U | 17 U | 24 U | 17 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | ugkg | 25 U | 24 U | 24 U | 24 U | 25 U | 25 U | 26 U | 26 U | 23 U | 24 U | 24 U | 24 U | 25 U | 24 U | 33 U | 23 U |
| SW8270 | 4-METHYLPHENOL (MPP-CRESOL) | ug/kg | 30 U | 28 U | 29 U | 28 U | 29 U | 29 U | 31 U | 310 | 28 U | 28 U | 28 U | 28 U | 29 U | 28 U | 39 U | 27 U |
| SW8270 | 4-NITROPHENOL | uglkg | 20 UJ | 19 UJ | 19 UJ | 18 UJ | 19 UJ | 19 UJ | 20 U | 21 UJ | 18 U | 19 UJ | 19 UJ | 19 U | 19 UJ | 18 U | 26 UJ | 18 UJ |
| SW8270 | BENZYL LUTYL PHTHALATE | ugkg | 21 U | 20 U | 20 U | 20 U | 23 J | 28 J | 21 U | 22 U | 19 U | 20 U | 20 U | 20 U | 20 U | 19 U | 27 U | 19 U |
| SW8270 | BIPHENYL | uglkg | 170 U | 160 U | 170 U | 160 U | 170 U | 170 U | 180 U | 180 U | 160 U | 170 U | 1700 | 160 UJ | 1700 | 160 UJ | 230 U | 160 U |
| SW8270 | BIS(2-CHLORETHOXYMETHANE | uglkg | ${ }^{20 \mathrm{U}}$ | 19 U | 19 U | 18 U | 19 U | 19 U | 20 U | 210 | 18 U | 19 U | 19 U | 19 U | 19 U | 18 U | 26 U | 18 U |
| SW8270 | BIIS(2-CHLOROETHYL)ETHER | ugkg | 17 UJ | 16 U | 17 UJ | 16 U | 17 U | 17 U | 18 U | 18 U | 16 U | 17 U | 17 U | 16 U | 17 U | 16 U | 23 U | 16 U |
| SW8270 | BIIS(2-CHLOROISOPROPYL) ETHER | uglkg | 24 U | 23 U | 23 U | 23 U | ${ }^{23} \mathbf{U J}$ | 23 UJ | 25 U | 25 UJ | 22 U | 23 UJ | 23 UJ | 23 U | 24 UJ | 23 U | 31 U | 22 UJ |
| SW8270 | BIS(2-ETHYLHEXYL)PHTHALATE | ugkg | 18 U | 18 U | 18 U | 17 U | 32 J | 27 J | 19 U | 33 J | 17 U | 18 U | 18 U | 18 U | 18 U | 26 J | 24 U | 17 U |
| SW8270 | $\xrightarrow{\text { CARBAZOLE }}$ DIBENZOFURAN | $\frac{\mathrm{ug} \text { 矿 }}{\text { ugkg }}$ | $\frac{150 \mathrm{~J}}{90}$ | $\frac{110 \mathrm{~J}}{25}$ | $\frac{180 \mathrm{~J}}{15}$ | $\frac{220}{26}$ | $\frac{29 \mathrm{~J}}{16}$ | 24 J <br> 15 <br> 15 | $\underline{19 \mathrm{~J}}$ | 810 480 | $\frac{17 \mathrm{U}}{17}$ | $\frac{38}{14}$ | $\frac{23 \mathrm{~J}}{14}$ | $\frac{34 \mathrm{~J}}{16 \mathrm{~J}}$ | $\frac{150 \mathrm{~J}}{30}$ | 14 14 | $\frac{860}{61 \mathrm{~J}}$ | $\frac{110 \mathrm{~J}}{14}$ |
| SW8270 | DIETHYL PHTHALATE | uglkg | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 14 U | 150 | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 18 U | 13 U |
| SW8270 | DIMETHYL PHTHALATE | ugkg | 110 | 110 | 110 | 11 U | 110 | 110 | 12 U | 12 U | 110 | 11 U | 110 | 110 | 11 U | 110 | 15 U | 10 U |
| SW8270 | DI-N-BUTYL-PHTHALATE | ugkg | 69 U | 65 U | 66 U | 65 U | 67 U | 67 U | 710 | 72 U | 64 U | 66 U | 66 U | 65 U | 68 U | 65 U | 90 U | 63 U |
| SW8270 | DI-N-OCTYL-PHTHALATE | uglkg | 17 U | 16 U | 17 U | 16 U | 17 U | 17 U | 18 U | 18 U | 16 U | 17 U | 17 U | 16 U | 17 U | 16 U | 23 U | 16 U |
| SW8270 | HEXACHLORO-1,3-BUTADIENE | ugkg | 20 U | 19 U | 19 U | 18 U | 19 U | 19 U | 20 U | 210 | 18 U | 19 U | 19 U | 19 U | 19 U | 18 U | 26 U | 18 U |
| SW8270 | HEXACHLOROBENZENE |  | 9.4U 13 | $\frac{8.9 \mathrm{U}}{12 \mathrm{U}}$ | $\frac{9.0 U}{12 U}$ | $\frac{8.8 U}{12 \mathrm{U}}$ | $\frac{9.10}{130}$ | $\frac{9.10}{13 U}$ | $\frac{9.7 U}{13 U}$ | $\frac{9.8 U}{13 U}$ | $\frac{8.7 \mathrm{U}}{12 \mathrm{U}}$ | $\frac{9.0 \mathrm{U}}{12 \mathrm{UJ}}$ | $\frac{9.0 U}{12 \mathrm{UJ}}$ | $\frac{8.9 \mathrm{UJ}}{12 \mathrm{U}}$ | $\frac{9.3 U}{13 U}$ | $\frac{8.8 \mathrm{UJ}}{12 \mathrm{U}}$ | $\frac{13 U}{170}$ | $\frac{8.50}{12 U}$ |
| SW8270 | HEXACHLOROETHANE | uglkg | 200 | 19 U | 19 U | 18 U | 190 | 190 | 20 U | 210 | 18 U | 19 U | 19 U | 19 U | 19 U | 18 U | 26 U | 18 U |
| SW8270 | NITROBENZENE | ug/kg | 23 U | 22 U | 22 U | 22 U | 22 U | 22 U | 24 U | 24 U | 210 | 22 U | 22 U | 22 U | 23 U | 22 U | 30 U | 21 U |
| SW8270 | N-NITROSO-DI-N-PROPYLAMINE | uglkg | 21 U | 20 U | 20 U | 20 U | 20 UJ | 20 UJ | 21 U | 22 U | 19 U | 20 U | 20 U | 20 U | 20 UJ | 19 U | 27 U | 19 U |
| SW8270 | N-NITROSOODIPHENYLAMINE | ugkg | 13 U | 12 U | 12 U | 12 U | 13 U | 13 U | 13 U | 13 U | 12 U | 12 U | 12 U | 12 U | 13 U | 12 U | 17 U | 12 U |
| SW8270 | P-CHLOROANILINE | ugkg | 30 U | 28 U | 29 U | 28 U | 29 U | 29 U | 31 U | 31 U | 28 U | 28 U | 28 U | 28 U | 29 U | 28 U | 39 U | 27 U |
| SW8270 | PHENOL | ugikg | 18 U | 18 U | 18 U | 17 U | 18 U | 18 U | 19 U | 19 U | 17 U | 18 U | 18 U | 18 U | 18 U | 17 U | 24 U | 17 U |
| SW8270 | P-NITROANLINE | uglkg | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 14 UJ | 15 U | 13 UJ | 13 U | 13 U | 13 U | 14 U | 13 UJ | 18 U | 13 U |

Notes:
mqkg:

gikg: micrograms per kilogram
Dioxin values in italics are new results from Vista laboratory

|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample il } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{array}{\|c\|\|} \hline \hline \text { SSO29 } \\ \text { SSO29BA } \\ 0.25-0.5 \text { feet } \\ 121 / 107 / 2006 \\ \hline \end{array}$ |  | $\begin{array}{\|c\|} \hline \hline \text { SSO31 } \\ \text { SSo31BA } \\ 0.25-0.5 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO32 } \\ \text { Sso32BA } \\ 0.25-0.5 \text { feet } \\ 12 / 06 / 2006 \end{array}$ 12/06/2006 |  | $\begin{array}{\|c\|} \hline \hline \text { SSO334 } \\ \text { SSO304BA } \\ 0.25-0.5 \text { feet } \\ 12204 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSOO35 } \\ \text { SSO35BA } \\ 0.25-0.5 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO36 } \\ \text { SSO36BA } \\ 0.25-0.5 \text { feet } \\ 12 / 06 / 2006 \end{array}$ $12 / 06 / 2006$ |  | $\begin{array}{\|c\|} \hline \hline \text { SSO338 } \\ \text { SSO38BA } \\ 0.25-0.5 \text { feet } \\ 1220712006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO39 } \\ \text { SSO39BA } \\ 0.25-0.5 \text { feet } \\ 12 / 107 / 2006 \\ \hline \end{array}$ | $\begin{array}{c\|} \hline \hline \text { SSO39 } \\ \text { SSo3sBB } \\ 0.25-0.5 \text { feet } \\ 12 / 07 / 2006 \end{array}$ | $\begin{gathered} \text { SSO40 } \\ \text { SSO40BA } \\ 0.25-0.5 \text { feet } \\ 12 / 101 / 2006 \end{gathered}$ 12/01/2006 | $\begin{array}{\|c\|} \hline \hline \text { SSO41 } \\ \text { SSO41BA } \\ 0.25-0.5 \text { feet } \\ 12 / 11 / 20066 \\ \hline \end{array}$ |  | $\begin{array}{\|c\|} \hline \hline \text { SSO42 } \\ \text { SSO42BB } \\ 0.25-0.5 \text { feet } \\ 121 / 1 / 12006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SNASIM | 2-METHYLNAPHTHALENE | uglkg | 1.7 U | 57 | 2.7 J | 81 U | 1.6 U | 17 U | 16 U | 52 | 430 | 33 U | 1.6 U | 1.9 U | 390 | 140 | 92 J | 82 U |
|  | ACENAPHTHENE | ugkg | 3.00 | 43 J | 2.90 J |  | 2.90 | 29 U | 29 U | 31 U | 160 | 59 U | 2.90 | 3.4 U | 180 U | 110 | 150 U | 150 U |
| SNASIM | ACENAPHTHYLENE | uglkg | 2.80 | 510 | 8.3 | 960 | 2.8 U | 410 | 180 | 210 | 1800 | 420 | 3.75 | 3.30 | 1200 | 480 | 2300 | 1800 |
| SNASIM | ANTHRACENE | uglkg | 6.2 | 750 | 19 | 2300 | 1.15 | 1000 | 86 | 270 | 8300 | 690 | 6.7 | 3.9 ) | 2600 | 890 | 3400 | 2900 |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 4.8 | 2300 | 11 | 2000 | 0.54 U | 640 | 200 | 370 | 4400 | 1300 | 3.4 J | 2.6 J | 1400 | 490 | 3900 J | 2300 J |
| BNASIM | BENZO(A)PYRENE | ugkg | 5.0 | 3000 | 15 | 2100 | 1.2 U | 680 | 290 | 400 | 4300 | 1000 | 4.2 | 2.85 | 1600 | 690 | 4500 | 3400 |
| BNASIM | BENZO(B) FLUORANTHENE | uglkg | 11 | 5600 J | 32 | 3500 | 0.85 U | 1200 | 280 | 750 | 9700 | 1800 | 9.4 | 6.0 | 3400 | 1600 J | 6600 | 5100 |
| BNASIM | BENZO(G,H,1)PERYLENE | ugkg | 5.3 | 1700 | 17 | 2500 | 0.70 U | 600 | 190 | 470 | 3900 | 930 | 7.0 | 3.65 | 2900 | 910 | 3300 | 2600 |
| BNASIM | BENZO(K)FLUORANTHENE | uglkg | 8.2 | 2300 | 17 | 3000 | 0.70 U | 1100 | 290 | 580 | 5500 | 1500 | 7.1 | 4.7 | 2600 | 730 | 5400 J | 3900 J |
| SNASIM | CHRYSENE | uglkg | 8.5 | 2500 | 14 | 2500 | 0.51 U | 1200 | 240 | 550 | 6000 | 1700 | 5.0 | 3.6 J | 2200 | 690 | 5400 J | 3500 J |
| BNASIM | DIBENZO(A,H)ANTHRACENE | uglkg | 1.5 J | 780 J | 5.2 | 620 | 0.55 U | 200 | 60 | 130 | 1500 | 280 | 1.5 J | 0.64 U | 630 | 260 J | 1200 J | 810 J |
| SNASIM | FLUORANTHENE | uglkg | 12 | 2600 | 18 | 2800 | ${ }^{0.63 U}$ | 2200 | 180 | 700 | 8300 | 2100 | 5.6 | 0.74 U | 2800 | 660 | 7500 J | 4100 J |
| BNASIM | FLUORENE | ugkg | 1.7 U | 44 | 1.6 UJ | 81 U | 1.6 U | 27 J | 16 U | , | 600 | 33 U | 1.6 U | 1.90 | 100 J | 80 | 110 J | 91 J |
| BNASIM | INDENO(1,2,3-CD) PYRENE | uglkg | 6.1 | 1800 | 15 | 2400 | 0.93 U | 690 | 230 | 500 | 4900 | 1100 | 7.2 | 3.9 J | 2800 | 790 | 3900 | 3000 |
| SNASIM | NAPHTHALENE | uglkg | 0.55 U | 92 | 8.6 J | 65 J | 0.55 U | 22 J | 18 J | 50 | 640 | 12 U | ${ }^{0.54 U}$ | 0.64 U | 470 | 200 | 130 J | 100 J |
| SNASIM | PENTACHLOROPHENOL | uglkg | 0.76 U | 7.4 U | 5.7 J | 1800 J | 0.75 U | 720 | 7.5 U | 210 J | 940 J | 330 J | 15 J | 14 J | 3200 | 300 J | 450 J | 370 J |
| SNASIM | PHENANTHRENE | uglkg | 5.5 J | 390 | 5.7 J | 530 | 3.6 U | 420 | 45 J | 210 | 2500 | 360 | 3.5 U | 4.10 | 1100 | 210 | 610 | 470 |
| SNASIM | PYRENE | ugkg | 11 | 3100 | 20 | 3300 | 0.57 J | 1900 | 230 | 700 | 8600 | 1900 | 6.1 | 4.8 | 2600 | 870 | 8400 J | 5500 J |
| E160.3 | RESIDUE, TOTAL | percent | 93 | 95 | 95 | 93 | 94 | 94 | 94 | 90 | 92 | 93 | 95 | 81 | 78 | 90 | 91 | 92 |
| E1613/E1668 | 1,2,3,4,6,7,8,-HEPTACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  | 38.195 |  | 3150 | 259.986 |  |  |  | 3620 |  |  |
| E1613/1668 | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  |  |  |  | 219.2 |  | 25500 | 3050.144 |  |  |  | 33400 |  |  |
| E16131/1668 | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | ng lkg |  |  |  |  |  |  | 1.744 J |  | 205 | 18.54 |  |  |  | 243 |  |  |
| E16131/1668 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | 2.624 J |  | 71.2 | 9.319 |  |  |  | 105 |  |  |
| E1613/16688 | 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  |  |  |  | 1.492 J |  | 156 | 16.605 |  |  |  | 247 |  |  |
| E1613116688 | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | 1.478 J |  | ${ }^{43.8 \mathrm{~J}}$ | 4.457 J |  |  |  | 78.2 |  |  |
| E1613/11668 | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | ng lkg |  |  |  |  |  |  | ${ }_{1.964 \mathrm{~J}^{\text {J }}}$ |  | ${ }_{\text {1936 }}^{69}$ | 54.161 0.473 U |  |  |  | 720 30.1 |  |  |
| E1613/161668 | 1,2,3,7, | nglkg |  |  |  |  |  |  | ${ }_{4}^{1.8555}{ }^{\text {J }}$ |  | 284 | ${ }^{50.82}$ |  |  |  | 445 |  |  |
| E1613/161688 | 1,2,3,7,8-PENTACHLORODIBENZOFURAN | ngkg |  |  |  |  |  |  | 0.335 J |  | 7.58 J | 0.926 J |  |  |  | 9.79 |  |  |
| E1613/1668 | 1,2,3,7,8.PENTACHLORODIBENZO-P-DIOXIN | ngkg |  |  |  |  |  |  | 0.581 J |  | 45.7 J | 5.709 |  |  |  | 58.8 |  |  |
| E1613/16688 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | 1.407 J |  | 96.8 | 7.493 |  |  |  | 160 |  |  |
| E1613/16688 | 2,3,4,7,8-PENTACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | 0.705 U |  | 21.7 J | 0.921 J |  |  |  | 36.8 |  |  |
| E1613116688 | 2,3,7,8-TETRACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | 0.427 J |  | ${ }^{6.02 \mathrm{~J}}$ | 0.68 J |  |  |  | 3.34 |  |  |
| E1613/1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  |  |  |  | 0.019 U |  | 4.08 J | 0.581 U |  |  |  | 1.86 |  |  |
| E1613/1668 | OCTACHLORODIBENZOFURAN | nglkg |  |  |  |  |  |  | 118.7 |  | 17100 | 1273.719 |  |  |  | 14200 |  |  |
| E163121668 | OCTACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  |  |  |  | 1785.304 |  | 304000 | ${ }^{26714.5888}$ |  |  |  | 346000 |  |  |
|  | TOTAL HEPTACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ |  |  |  |  |  |  | $\frac{118.6}{1043.374}$ |  | 14300 75500 | ${ }_{\text {1139,784 }}^{12301.16}$ |  |  |  | $\frac{14000}{143000}$ |  |  |
| E1613/16688 | TOTAL LEXACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng}}{\text { nglkg }}$ |  |  |  |  |  |  | ${ }^{\frac{1045.354}{}}$ |  | 2800 | ${ }_{361.553}$ |  |  |  | $\stackrel{143000}{ }$ |  |  |
| E1613/1668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  |  |  |  |  | 82.252 |  | 5530 | 761.389 |  |  |  | 13000 |  |  |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | nglkg |  |  |  |  |  |  | 10.958 |  | 247 | 41.978 |  |  |  | 678 J |  |  |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  |  |  |  |  | 7.176 |  | 295 | 58.876 |  |  |  | 469 |  |  |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | nglkg |  |  |  |  |  |  | 5.809 |  | 68.8 | 10.667 |  |  |  | 77.8 |  |  |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  |  |  |  |  | 1.938 |  | 23.9 | 29.286 |  |  |  | 34.6 |  |  |
| SW6020 | ANTIMONY | mg/kg | 0.36 U | 0.59 J | 0.35 UJ | 12 | 0.36 UJ | 0.34 UJ | 1.3 | 3.6 | 1.8 J | 2.6 | 0.34 U | 0.38 U | 5.2 | 0.49 J | ${ }^{0.36 \mathrm{U}}$ | 0.35 U |
| SW6020 | ARSENIC | mg/kg | 2.0 | 16 | 7.2 | 45 | 60 | 6.6 J | 3.5 | 120 | 160 | 150 | 14 | 12 | 240 | 26 | 15 | 14 |
| SW6020 | BARIUM | mg/kg | 6.0 | 23 | 9.2 | 37 | 9.5 | 7.4 | 52 | 23 | 30 | 38 | 3.6 | 3.3 | 100 | 20 | 17 | 16 |
| SW6020 | CADMIUM | mg/kg | 0.31 U | 0.30 U | 0.30 U | 0.30 U | 0.30 U | 0.29 U | 0.30 U | 0.39 J | ${ }^{0.31 \mathrm{U}}$ | 0.31 U | 0.29 U | 0.33 U | 1.3 | 0.32 U | ${ }^{0.31 \mathrm{U}}$ | ${ }^{0.30 \mathrm{U}}$ |
| SW6020 | CHROMIUM | mg/kg | 6.5 J | 13 | 8.5 | 42 | 4.0 | 7.1. ${ }^{\text {J }}$ | 9.4 | 120 | 90 | 290 J | 20 J | 18 J | 380 | 36 | 23 | 22 |
| SW6020 | COPPER | mgkg | 1.3 J | 16 | 1.3 | 72 J | 1.0 J | 7.4 | 24 J | 61 | 160 | 62 J | 1.4 J | 1.05 | 190 | 19 | 15 | 15 |
| SW6020 | $\frac{\text { LEAD }}{\text { SELENIUM }}$ | $\mathrm{mq} / \mathrm{kg}$ | $\stackrel{6.9}{0.89 \mathrm{u}}$ | $\frac{27}{0.86 \mathrm{UJ}}$ | $\stackrel{4.5}{0.87}$ | $\stackrel{180}{0.87 \mathrm{U}}$ | $\frac{3.2}{0.88 \mathrm{U}}$ | $\stackrel{5.0}{0.85 \mathrm{U}}$ | ${ }^{160}$ | $\frac{17}{0.87}$ | $\stackrel{24}{0.89 \mathrm{U}}$ | $\frac{18}{0.89 \mathrm{U}}$ | $\stackrel{2.0}{0.850}$ | $\frac{1.7}{0.95}$ | $\frac{230}{1.14}$ | $\stackrel{19}{0.93 \mathrm{UJ}}$ | $\frac{13}{0.89 \mathrm{u}}$ | $\frac{13}{0.86 \mathrm{U}}$ |
| SW6020 | SILVER | mg/kg | 0.40 U | 0.390 | 0.39 U | 0.40 U | 0.40 U | 0.390 | 0.390 | 0.390 | ${ }_{0}^{0.40}$ | 0.40 U | 0.390 | 0.43 | 0.48 u | 0.42 | 0.40 | 0.890 0 |
| SW6020 | VANADIUM (FUME OR DUST) | mglkg | 2.3 | 3.9 J | 0.93 U | 8.8 | 3.2 | 1.3 | 4.6 | 3.4 | 5.2 | 0.96 UJ | 0.91 UJ | 1.0 UJ | 4.3 J | 5.2 J | 3.5 J | 3.0 J |
| SW7471 | MERCURY | mgkg | 0.032 J | 0.18 | 0.027 | 1.2 | 0.028 | 0.55 | 0.23 | 0.047 | 0.080 | 0.20 J | 0.021 J | 0.022 J | 1.1 | 0.20 | 0.12 | 0.12 |
| SW8260 | 1,1,1-TRICHLOROETHANE | ugkg | 0.13 U | 0.13 U | 0.13 U | ${ }_{0}^{1.13 \mathrm{U}}$ | 0.13 U | 0.15 U | 0.13 U | 0.14 U | 0.14 U | 0.13 U | 0.13 U | 0.15 U | 0.19 U | 0.14 U | 0.15 U | 0.15 U |
| SW8260 | 1,1,1,2,2-TETRACHLOROETHANE | ugkg | 0.071 U | 0.070 U | 0.070 U | 0.072 U | 0.071 U | 0.078 U | 0.071 U | 0.074 U | 0.072 U | 0.072 U | 0.070 U | 0.082 U | 0.11 U | 0.075 U | 0.083 U | 0.080 U |
| SW8260 | 1,1,2-TRICHLOROETHANE | uglkg | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.16 U | 0.14 U | 0.15 U | 0.15 U | 0.15 U | 0.14 U | 0.17 U | 0.21 U | 0.15 U | 0.17 U | 0.16 U |
| SW8260 | 1,1-DICHLOROETHANE | uglkg | 0.068 U | 0.067 U | 0.067 U | 0.068 U | 0.067 U | 0.074 U | 0.067 U | 0.071 U | 0.069 U | 0.069 U | 0.067 U | 0.078 U | 0.10 U | 0.072 U | 0.079 U | 0.077 U |
| SW8260 | 1,1-DICHLOROETHYLENE | uglkg | 0.19 U | 0.18 U | 0.18 U | 0.19 U | 0.19 U | 0.20 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.18 U | 0.22 U | 0.27 U | 0.20 U | 0.22 U | 0.21 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugkg | 0.17 U | 0.16 U | 0.16 U | 0.17 U | 0.16 U | 0.18 U | 0.16 U | 0.17 U | 0.17 U | 0.17 U | 0.16 U | 0.19 U | 0.24 UJ | $0.17{ }^{0}$ | 0.19 U | 0.19 U |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | $\frac{\mathrm{ug} \text { 伯g }}{\text { ugkg }}$ | ${ }_{0}^{0.53 \mathrm{U}}$ | ${ }_{0}^{0.52 \mathrm{U}} 0$ | $\frac{0.52 \mathrm{U}}{0.060 \mathrm{U}}$ | $\stackrel{0.53 \mathrm{U}}{0.061 \mathrm{U}}$ | $\frac{0.53 \mathrm{U}}{0.060 \mathrm{U}}$ | $\frac{0.58 \mathrm{U}}{0.066 \mathrm{U}}$ | $\frac{0.53 \mathrm{U}}{0.060 \mathrm{U}}$ | ${ }_{0}^{0.55 \mathrm{U}}$ | 0.54 U 0.062 U | $\frac{0.53 \mathrm{U}}{0.061 \mathrm{U}}$ | $\frac{0.52 \mathrm{U}}{0.060 \mathrm{U}}$ | $\frac{0.61 \mathrm{U}}{0.070 \mathrm{U}}$ | 0.78 U J | 0.56 U 0.064 U | 0.62 U | 0.60 U 0.068 U |
| SW8260 | 1,2-DICHLOROBENZENE | uglkg | 0.084 U | 0.52 J | 0.083 U | 0.084 U | 0.083 U | 0.092 U | 0.083 U | 0.087 U | 0.085 U | 0.085 U | 0.083 U | 0.097 U | 0.013 UJ | 0.088 U | 0.0908 | 0.0095 |
| SW8260 | 1,2-DICHLOROETHANE | uglkg | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.12 U | 0.11 U | 0.12 U | 0.11 U | 0.11 U | 0.11 U | 0.13 U | 0.16 U | 0.12 U | 0.13 U | 0.13 U |
| SW8260 | 1,2-DICHLOROPROPANE | uglkg | 0.058 U | 0.057 U | 0.058 U | 0.059 U | 0.058 U | 0.064 U | 0.058 U | 0.061 U | 0.059 U | 0.059 U | 0.058 U | 0.067 U | 0.086 U | 0.061 U | 0.068 U | 0.066 U |
| SW8260 | 1,4-DICHLOROBENZENE | uglkg | 0.094 U | 0.092 U | 0.092 U | 0.094 U | 0.093 U | 0.11 U | 0.093 U | 0.097 U | 0.095 U | 0.094 U | 0.092 U | 0.11 U | 0.14 UJ | 0.099 U | 0.11 U | 0.11 U |
| SW8260 | ACETONE | ugikg | 2.7 U | 4.4 J | 48 J | 2.7 U | 2.7 U | 3.00 | 2.7 U | 2.8 U | 2.8 U | 2.7 U | 2.7 U | 3.10 | 4.0 U | 6.1 J | 3.2 U | 3.10 |
| SW8260 | BENZENE | uglkg | $\frac{0.42 \mathrm{U}}{032 \mathrm{U}}$ | $\frac{0.41 \mathrm{U}}{031 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{031 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{0}$ | $\frac{0.42 \mathrm{U}}{0}$ | 0.46U | $\frac{0.42 \mathrm{U}}{0}$ | 0 | $\xrightarrow{0.43 \mathrm{U}}$ | $\xrightarrow{0.43 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{031 \mathrm{U}}$ | $\stackrel{0.49 \mathrm{U}}{0.36 \mathrm{U}}$ | $\frac{0.62 \mathrm{U}}{0.46 \mathrm{u}}$ | 0.44U | 0.49 U 0 | 0.48 U 0.36 U |
| SW8260 | BROMOMETHANE | ugkg | $\stackrel{0.35 \mathrm{U}}{ }$ | 0.34 UJ | 0.34 UJ | ${ }_{0}^{0.35 \mathrm{UJ}}$ | 0.34 UJ | $\stackrel{0.38 \mathrm{U}}{ }$ | 0.34 UJ | ${ }_{0}^{0.36 \mathrm{UJ}}$ | 0.35 UJ | $\stackrel{0.35 \mathrm{U}}{0}$ | O.314 | ${ }_{0}^{0.300 ~}$ | ${ }_{0}^{0.510}$ | $\stackrel{0.37 \mathrm{UJ}}{0.3}$ | 0.40 U | 0.39 u |
| SW8260 | CARBON DISULFIDE | uglkg | 1.8 U | 1.70 | 1.7 U | 1.8 U | 1.70 | 1.90 | 1.7 U | 1.8 U | 1.8 U | 1.8 U | 1.70 | 2.00 | 2.6 U | 1.9 U | 2.00 | 2.00 |
| SW8260 | CARBON TETRACHLORIDE | uglkg | 0.38 U | 0.37 U | 0.37 U | 0.38 U | 0.38 U | 0.41 U | 0.38 U | 0.39 U | 0.39 U | 0.38 U | 0.37 U | 0.44 U | 0.56 U | 0.40 U | 0.44 U | 0.43 U |
| sW8260 | CFC-11 | ugkg | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.31 U | 0.28 U | 0.29 U | 0.29 U | 0.29 U | 0.28 U | 0.33 U | 0.42 U | 0.30 U | 0.33 U | 0.32 U |
| SW8260 | CFC-12 | uglkg | $\stackrel{0.35 \mathrm{U}}{ }$ | 0.34U | 0.34U | 0.35 U | $\stackrel{0.34 \mathrm{U}}{0}$ | $\frac{0.38 \mathrm{U}}{}$ | 0.34 U | ${ }_{0}^{0.360}$ | $\xrightarrow{0.350}$ | $\frac{0.35 \mathrm{UJ}}{0.0}$ |  | 0.40 UJ | 0.51 U | 0.37 U | 0.40 | 0.39 U |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \mathrm{lkg}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.42 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | 0.43U | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.41 \mathrm{U}}{0.45 \mathrm{U}}$ | $\frac{0.40 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.45 \mathrm{U}}{0.50 \mathrm{U}}$ | $\frac{0.57 \mathrm{U}}{0.64 \mathrm{U}}$ | 0.41U | $\frac{0.45 \mathrm{U}}{0.50 \mathrm{U}}$ | 0.44U |
| SW8260 | CHLORODIBROMOMETHANE | uglkg | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.30 U | 0.27 U | 0.28 U | 0.28 U | 0.27 U | 0.27 U | 0.31 U | 0.40 U | 0.29 U | 0.32 U | 0.31 U |
| SW8260 | CHLOROETHANE | ugikg | 0.39 U | 0.38 U | 0.39 UJ | $\stackrel{0.39 \mathrm{U}}{ }$ | 0.39 U | 0.43 U | 0.39 U | 0.41 U | 0.40 U | 0.39 U | 0.39 U | 0.45 U | 0.57 U | 0.41 U | 0.45 U | 0.44 U |
| SW8260 | CHLOROFORM |  | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.40 \mathrm{U}}{0.53 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.51 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.50 \mathrm{U}}$ | $\xrightarrow{0.37 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.43 \mathrm{U}}{0.56 \mathrm{U}}$ | $\frac{0.54 \mathrm{U}}{0.72 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.51 \mathrm{u}}$ | 0.43 U 0.57 U | $\frac{0.42 \mathrm{U}}{0.55 \mathrm{u}}$ |
| SW8260 | CIIS-1,2-ICHLOROETHYLENE | uglkg | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.31 U | 0.28 U | 0.29 U | 0.29 U | 0.29 U | 0.28 U | 0.33 U | 0.42 U | 0.30 U | 0.33 U | 0.32 U |


|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample ID } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{array}{c\|} \hline \text { SSO29 } \\ \text { sso2ga } \\ \text { s.25-5.5 feet } \\ 12107 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \hline \hline \text { SSO30 } \\ \text { SSOO3BA } \\ 0.25-0.5 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|l\|l\|} \hline \hline \text { SSO31 } \\ \text { SSO31BA } \\ 0.25-.5 \text { feet } \\ 1212122006 \end{array}$ |  | SSO33 <br> SSO33BA <br> $0.25-0.5$ feet <br> $12 / 106 / 2006$ | $\begin{array}{\|c\|} \hline \hline \text { SSO334 } \\ \text { SSO34BA } \\ 0.25-0.5 \text { feet } \\ 12104 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \hline \hline \text { SSO35 } \\ \text { SSO35BA } \\ 0.25-0.5 \text { feet } \\ 12 / 06 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO36 } \\ \text { sso36BA } \\ 0.25-0.5 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \hline \hline \text { SSO37 } \\ \text { SSO37BA } \\ 0.25-0.5 \text { feet } \\ 12 / 05 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \hline \hline \text { SSO38 } \\ \text { SSO38BA } \\ 0.25-0.5 \text { feet } \\ 12 / 07 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c} \hline \hline \text { SSO39 } \\ \text { SSO39BA } \\ 0.25-0.5 \text { feet } \\ 12 / 07 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO393 } \\ \text { SSo39BB } \\ 0.25-0.5 \text { feet } \\ 12 / 107 / 20006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO40 } \\ \text { SSOOPBA } \\ 0.25-0.5 \text { feet } \\ 1212012006 \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO41 } \\ \text { SSo41BA } \\ 0.25-0.5 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c} \hline \text { SSO42 } \\ \text { SSO24BA } \\ 0.25-5.5 \text { feet } \\ 121012006 \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| sw8260 | CIS-1,3-DICHLOROPROPENE | ug/kg | 0.32 U | 0.31 U | 0.31 U | 0.32 U | 0.31 U | 0.34 U | 0.31 U | 0.33 U | 0.32 U | 0.32 U | 0.31 U | 0.36 U | 0.46 U | 0.33 U | 0.37 U | 0.36 U |
| SW8260 | CYCLOHEXANE | ug lkg | 0.41 U | 0.40 U | 0.41 U | 0.41 U | 0.41 U | 0.45 U | 0.41 U | 0.43 U | 0.42 U | 0.42 U | 0.41 U | 0.48 U | 0.61 U | 0.43 U | 0.48 U | 0.46 U |
| SW8260 | DICHLOROMETHANE | ugikg | 0.42 U | 0.41 U | 0.42 U | 0.42 U | 0.42 U | ${ }^{0.460}$ | $0.42 \mathrm{U}^{0}$ | $0.44{ }^{0}$ | ${ }^{0.43 U^{4}}$ | ${ }^{0.43 U^{4}}$ | ${ }^{0.425}$ | 0.49 U | $0.62{ }^{\text {O }}$ | 0.444 | 0.49 U | ${ }^{0.4814}$ |
| SW8260 | ETHYLBENZENE | ug lkg | 0.45 U | 0.45 U | 0.45 U | 0.46 U | 0.45 U | 0.50 U | 0.45 U | 0.47 U | 0.46 U | 0.46 U | 0.45 U | 0.52 U | 0.67 U | 0.48 U | 0.53 U | 0.51 U |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.50 U | 0.49 U | 0.49 U | 0.50 U | 0.49 U | 0.54 U | 0.49 U | 0.52 U | 0.51 U | 0.50 U | 0.49 U | 0.57 U | 0.73 UJ | 0.52 U | 0.58 U | 0.56 U |
| SW8260 | m, p -xylenes | uglkg | 0.94 U | 0.92 U | 0.92 U | 0.94 U | 0.93 U | 1.10 | 0.93 U | 0.974 | $0.95{ }^{0}$ | 0.94 U | 0.92 U | 1.10 | 1.4 U | 0.997 | 1.10 | 1.10 |
| SW8260 | M-DICHLOROBENZENE | ugkg | 0.054 U | 0.053 U | 0.053 U | 0.054 U | 0.054 U | 0.059 U | 0.054 U | 0.056 U | 0.055 U | 0.054 U | 0.053 U | 0.062 U | 0.080 UJ | 0.057 U | 0.063 U | 0.061 U |
| SW8260 | METHYL ACETATE | uglkg | 0.21 U | 0.20 U | 0.21 U | 0.21 U | 0.21 U | 0.23 U | 0.21 U | 0.22 U | 0.21 U | 0.21 U | 0.21 U | 0.24 U | 0.31 U | 0.22 U | 0.24 U | 0.23 U |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.2 U | 1.3 U | 1.2 U | 1.2 U | 1.2 U | 1.4 U | 1.8 U | 1.3 U | 1.4 U | 1.4 U |
| SW8260 | METHYL LSOBUTYL KETONE | ugikg | 0.77 U | 0.75 U | 0.75 U | $0.77{ }^{11}$ | $0.76 \mathrm{U}^{11}$ | ${ }^{1.84 U}$ | $0.76 \mathrm{U}^{11}$ | $0.79{ }^{124}$ | 0.78 U | $0.77{ }^{12}$ | 0.75 U | 0.88 U | 1.2 U | ${ }^{0.814}$ | 0.89 U | ${ }^{0.864}$ |
| SW8260 | METHYL N-BUTYL KETONE | uglkg | 1.10 | 1.10 | 1.10 | 1.14 | 1.10 | 1.2 U | 1.10 | 1.2 U | 1.10 | 1.10 | 1.10 | 1.3 U | 1.6 U | 1.2 U | 1.3 U | 1.3 U |
| SW8260 | METHYLBENZENE | ug kg | 0.45 U | 0.45 U | 0.45 U | 0.46 U | 0.45 U | 0.50 U | 0.45 U | 0.47 U | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.46 \mathrm{U}}$ | 0.45 U | 0.52 U | 0.67 U | 0.48 U | 0.53 U | 0.51 U |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.48 U | 0.47 U | 0.47 U | 0.48 U | 0.47 U | 0.52 U | 0.47 U | 0.49 UJ | 0.48 U | 0.48 U | 0.47 U | 0.55 U | 0.70 U | 0.50 U | 0.55 U | 0.54 U |
| SW8260 | O-XYLENE | ugkg | 0.43 U | 0.42 U | 0.43 U | 0.44 U | 0.43 U | 0.47 U | 0.43 U | 0.45 U | 0.44 U | 0.44 U | 0.43 U | 0.50 U | 0.64 U | 0.46 U | 0.50 U | 0.49 U |
| SW8260 | STYRENE (MONOMER) | uglkg | 0.47 U | 0.46 U | 0.46 U | 0.47 U | 0.46 U | 0.51 U | 0.46 U | 0.48 U | 0.47 U | 0.47 U | 0.46 U | 0.54 U | 0.68 U | 0.49 U | 0.54 U | 0.53 U |
| SW8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.35 U | 0.34 U | 0.34 U | 0.35 U | 0.34 U | 0.38 U | 0.34 U | 0.36 U | 0.35 U | 0.35 U | 0.34 U | 0.40 U | 0.51 U | 0.37 U | 0.40 U | 0.39 U |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.43 U | 0.42 U | 0.43 U | 0.44 U | 0.43 U | 0.47 U | 0.43 U | 0.45 U | 0.44 U | 0.44 U | 0.43 U | 0.50 U | 0.64 U | 0.46 U | 0.50 U | 0.49 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | uglkg | 0.41 U | 0.40 U | 0.41 U | 0.41 U | 0.41 U | 0.45 U | 0.41 U | 0.43 U | 0.42 U | 0.42 U | 0.41 U | 0.48 U | 0.61 U | 0.43 U | 0.48 U | 0.46 U |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ugkg | 0.33 U | 0.32 U | 0.32 U | 0.33 U | 0.32 U | 0.36 U | 0.32 U | 0.34 U | 0.33 U | 0.33 U | 0.32 U | 0.38 U | 0.48 U | 0.34 U | 0.38 U | 0.37 U |
| SW8260 | TRIBOMOMETHANE | uglkg | 0.42 U | 0.41 U | 0.42 U | 0.42 U | 0.42 U | 0.46 U | 0.42 U | 0.44 U | 0.43 U | 0.43 U | 0.42 U | 0.49 U | 0.62 U | 0.44 U | 0.49 U | 0.48 U |
| SW8260 | TRICHLOROETHYLENE | ugkg | 0.43 U | 0.42 U | 0.43 U | 0.44 U | 0.43 U | 0.47 U | 0.43 U | 0.45 U | 0.44 U | 0.44 U | 0.43 U | 0.50 U | 0.64 U | 0.46 U | 0.50 U | 0.49 U |
| SW8260 | VINYL CHLORIDE | uglkg | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.29 U | 0.26 U | 0.27 U | ${ }^{0.27 U}$ | ${ }^{0.26 U}$ | 0.26 U | 0.30 U | 0.38 U | 0.28 U | 0.30 U | 0.30 U |
| SW8270 | 2,4,5-TRICHLOROPHENOL | ugkg | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 15 U | 15 U | 14 U | 14 U | 17 U | 17 U | 15 U | 15 U | 15 U |
| SW8270 | 2,4,6-TRICHLOROPHENOL | uglkg | 39 U | 38 U | 38 U | 39 U | 39 U | 39 U | 39 U | 40 U | 40 U | 39 U | 38 U | 45 U | 47 U | 40 U | 40 U | 40 U |
| SW8270 | 2,4-DICHLOROPHENOL | ug/kg | 19 U | 18 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 18 U | 210 | 22 U | 19 U | 19 U | 19 U |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | 210 | 20 U | 20 U | 210 | 210 | 210 | 210 | 22 U | 35 J | 21 U | 20 U | 24 U | 25 U | 22 U | 36 J | 36 J |
| SW8270 | 2,4-IIIITROPHENOL | uglkg | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 14 U | 13 U | 13 U | 15 U | 16 UJ | 14 U | 14 UJ | 14 UJ |
| SW8270 | 2,4-DINITROTOLUENE | ugikg | 110 | 11 U | 110 | 11 U | 11 U | 110 | 110 | 110 | 11 U | 110 | 110 | $\frac{13}{45}$ | 13 U | 110 | 110 | 110 |
| SW8270 | 2,6-DIIITROTOLUENE | uglkg | 39 U | 38 U | 38 U | 39 U | 39 U | 39 U | 39 U | 40 U | 40 U | 39 U | 38 U | 45 U | 47 U | 40 U | 40 U | 40 U |
| SW8270 | 2.CHLORONAPHTHALENE | ugkg | 18 U | 17 U | 17 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 17 U | 20 U | 210 | 18 U | 18 U | 18 U |
| SW8270 | 2-CHLOROPHENOL | uglkg | 20 U | 19 U | 19 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 19 U | 23 U | 24 U | 20 U | 20 U | 20 U |
| SW8270 | 2-METHYLPHENOL (0-CRESOL) | ugkg | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 14 U | 13 U | 13 U | 15 U | 16 U | 14 U | 14 U | 14 U |
| SW8270 | 2-NITROANLINE | ugkg | 24 U | 24 U | 24 U | 24 U | 24 U | 24 UJ | 24 U | 25 U | 24 U | 24 UJ | 24 U | 28 U | 29 UJ | 25 U | 25 UJ | 25 UJ |
| SW8270 | 2-NITROPHENOL | uglkg | 16 U | 15 U | 15 U | 16 U | 15 U | 15 U | 15 U | 16 U | 16 U | 16 U | 15 U | 18 U | 19 U | 16 U | 16 U | 16 U |
| SW8270 | 3,3'-DICHLOROBENZIDINE | ugkg | 37 U | 36 U | 36 U | 37 U | 37 U | 37 U | 37 U | 38 U | 38 U | 37 U | 36 U | 42 U | 44 U | 38 U | 38 U | 38 U |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | ugikg | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 15 U | 15 U | 14 U | 14 U | 17 U | 17 U | 15 U | 15 U | 15 U |
| SW8270 | 3-NITROANILINE | ugkg | 19 U | 18 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 18 U | 21 U | 22 U | 19 U | 19 U | 19 U |
| SW8270 | 4,6-DINITRO-2-METHYLPHENOL | uglkg | 11 U | 9.9 U | 9.90 | 11 U | 10 U | 11 U | 10 U | 11 U | 11 U | 11 U | 9.90 | 12 U | 13 U | 11 U | 11 U | 11 U |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 110 | 11 U | 11 U | 110 | 13 U | 13 U | 11 U | 11 U | 11 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | uglkg | 18 U | 17 U | 17 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 17 U | 20 U | 21 U | 18 U | 18 U | 18 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | ugkg | 24 U | 24 U | 24 U | 24 U | 24 U | 24 U | 24 U | 25 U | 24 U | 24 U | 24 U | 28 U | 29 U | 25 U | 25 U | 25 U |
| SW8270 | 4-METHYLPHENOL (MPP-CRESOL) | ugkg | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 29 U | 29 U | 28 U | 28 U | 33 U | 34 U | 29 U | 29 U | 29 U |
| SW8270 | 4-NITROPHENOL | uglkg | 19 U | 18 U | 18 U | 19 UJ | 19 U | 19 UJ | 19 UJ | 19 U | 19 UJ | 19 UJ | 18 U | 21 U | 22 UJ | 19 U | 19 UJ | 19 UJ |
| SW8270 | BENZYL LUTYL PHTHALATE | ugkg | 20 U | 19 U | 19 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 19 U | 23 U | 49 J | 20 U | 20 U | 20 U |
| SW8270 | BIPHENYL | uglkg | 170 U | 160 UJ | 160 U | $170 \cup$ | 160 U | 170 U | 160 U | 1700 | 170 U | 170 U | 160 U | 190 U | 200 U | 170 U | 170 U | 170 U |
| SW8270 | BIS(2-CHLORETHOXY)METHANE | ugkg | 19 U | 18 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 18 U | 210 | 22 U | 19 U | 19 U | 19 U |
| SW8270 | BIIS(2-CHLOROETHYL)ETHER | ugkg | 17 U | 16 U | 16 U | 17 UJ | 16 U | 17 U | 16 U | 17 U | 17 U | 17 U | 16 U | 19 U | 20 U | 17 U | 17 U | 17 U |
| SW8270 | BIS (2-CHLOROISOPROPYL) ETHER | ugkg | 23 U | 23 U | 23 U | 23 U | 23 UJ | 23 U | 23 UJ | 24 U | ${ }^{23 \mathrm{UJ}}$ | 23 UJ | 23 UJ | 26 U | 28 UJ | 24 U | 24 UJ | 23 UJ |
| SW8270 | BIS(2-ETHYLHEXYL)PHTHALATE | ugkg | 18 U | 17 U | 17 U | 18 U | 18 U | 18 U | 18 U | 33 J | 24 J | 18 U | 17 U | 20 U | 69 J | 18 U | 30 J | 18 U |
| SW8270 | CARBAZOLE | ugkg | 18 U | 110 J | 17 U | 390 | 18 U | 150 J | 18 U | 60 J | 1900 | 1700 | 17 U | 20 U | 400 | 160 J | 370 | 410 |
| SW8270 | DIBENZOFURAN | uglkg | 14 U | 38 J | 14 U | 78 J | 14 U | 22 J | 14 U | 40 J | 460 | 230 | 14 U | 17 U | 200 J | 51 J | 72 J | 62 J |
| SW8270 | DIETHYL PHTHALATE | ugkg | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 14 U | 13 U | 13 U | 15 U | 16 U | 14 U | 14 U | 14 U |
| SW8270 | DIMETHYL PHTHALATE | uglkg | 110 | 11 U | 110 | 110 | 11 U | 110 | 11 U | 110 | 110 | 110 | 110 | 130 | 13 U | 110 | 110 | 110 |
| SW8270 | DI-N-BUTYL-PHTHALATE | uglkg | 66 U | 65 U | 65 U | 66 U | 65 U | 66 U | 65 U | 68 U | 67 U | 66 U | 65 U | 76 U | 790 | ${ }_{17}^{68 \mathrm{U}}$ | $\frac{68 \mathrm{U}}{17 \mathrm{u}}$ | 67 U |
| SW8270 | HEXACHLORO-1,3-BUTADIIENE | uglkg | 19 U | 18 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 18 U | 210 | 22 U | 19 U | 19 U | 19 U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 9.00 | 8.8 UJ | 8.80 | 9.00 | 8.9 U | 8.90 | 8.9 U | 9.3 U | 9.10 | 9.00 | 8.8 U | 11 U | 11 U | 9.3 U | 9.2 U | 9.10 |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | uglkg | 12 U | 12 U | 12 U | 12 U | 12 U | 12 U | 12 U | 13 U | 12 U | 12 U | 12 U | 14 U | 15 UJ | 13 UJ | 13 UJ | 13 UJ |
| SW8270 | HEXACHLOROETHANE | ugkg | 19 U | 18 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U | 18 U | 21 U | 22 U | 19 UJ | 19 U | 19 U |
| SW8270 | NITROBENZENE | uglkg | 22 U | 22 U | 22 U | 22 U | 22 U | 22 U | 22 U | 230 | 22 U | 22 UJ | 22 U | 25 U | 26 U | 230 |  |  |
| SW8270 | $\frac{\text { N-NITROSO-DI-N.PROPYLAMINE }}{\text { N-NTTROSOOIPHENYLAMINE }}$ | $\frac{\mathrm{ug} \text { 伯g }}{\text { ugkg }}$ | $\frac{20 U}{12 \mathrm{U}}$ | 19 U | 19 U | 20 U | 20 U | $\frac{20 U}{12 \mathrm{U}}$ | $\frac{20 U}{12 \mathrm{U}}$ | 20 U | $\frac{20 U}{12 \mathrm{U}}$ | 20 U | 19 U | 23 U | $\frac{24 U}{150}$ | $\frac{20 U}{13 \mathrm{U}}$ | $\frac{20 U}{13}$ | 20 U |
| SW8270 | P.CHLOROANILINE | ugkg | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 29 U | 29 U | 28 U | 28 U | 33 U | 34 U | 29 U | 29 U | 29 U |
| SW8270 | PHENOL | ugkg | 18 U | 17 U | 17 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 17 U | 20 U | 21 U | 18 U | 18 U | 18 U |
| SW8270 | P-NITROANLINE | ugkg | 13 U | 13 U | 13 UJ | 13 U | 13 U | 13 U | 13 U | 14 U | 14 U | 13 U | 13 U | 15 U | 16 U | 14 U | 14 U | 14 U |

Notes:
mgkg:

iigkg: micrograms per kilogram
Dioxin values in italics are new results from Vista laboratory

|  |  |  | $\begin{array}{\|c\|} \hline \hline \text { SSO43 } \\ \text { SSO4BBA } \\ 0.25-0.5 \text { feet } \\ 12 / 105 / 2006 \\ \hline \end{array}$ | SSO43BB 0.25-0.5 fee 12/05/2006 |  |  | $\begin{array}{\|c\|} \hline \hline \text { SSO046 } \\ \text { SSOO46BA } \\ 0.25-0.5 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO47 } \\ \text { SSO47BA } \\ 0.25-0.5 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO48 } \\ \text { SSOO8BBA } \\ 0.25-0.5 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO48 } \\ \text { SSOU8BB } \\ 0.25-0.5 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSOO4 } \\ \text { SSO99BA } \\ 0.25-5.5 \text { feet } \\ 1 / 1 / 9092006 \end{gathered}$ 1209/200 | $\begin{array}{\|c\|} \hline \hline \text { SSO50 } \\ \text { SSO00BA } \\ 0.25-0.5 \text { feet } \\ 12 / 04 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO51 } \\ \text { SSo51BA } \\ 0.25-0.5 \text { feet } \\ \hline 12 / 04 / 2006 \\ \hline \end{array}$ |  | $\begin{gathered} \hline \hline \text { SSO54 } \\ \text { SSo5sBA } \\ 0.25-0.5 \text { feet } \\ 12 / 101 / 2006 \\ \hline \end{gathered}$ |  | $\begin{gathered} \hline \hline \text { SS058 } \\ \text { SSo58BA } \\ 0.25-0.5 \text { feet } \\ 12105 / 2006 \\ \hline \end{gathered}$ | SSO59 <br> SSo59BA <br> $0.25-0.5$ feet <br> $11 / 30 / 2006$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ENASIM | 2-METHYLNAPHTHALENE | ug/kg | 63 J | 69 J | 440 | 17 U | 16 U | 7.5 | 24 J | ${ }^{23 \mathrm{~J}}$ | 36 J | 19 J | 42 | 110 J | 340 J | 3.4 J | 2800 | 580 |
| ENASIM | ACENAPHTHENE | ugkg | 61 J | 79 J | 790 | 29 U | 29 UJ | 6.6 J | 30 U | 30 U | 31 U | 30 UJ | 60 J | 410 J | 31 U | 3.0 J | 1200 J | 330 J |
| BNASIM | ACENAPHTHYLENE | ug/kg | 720 | 730 | 10000 | 290 | 550 | 71 | 150 | 140 | 380 | 350 J | 1200 | 1100 | 720 J | 2.70 | 18000 | 3900 |
| BNASIM | ANTHRACENE | ugkg | 2000 | 1900 | 24000 | 610 | 1100 | 220 | 170 | 160 | 790 | 630 | 2300 | 4500 | 1300 J | 0.64 U | 49000 | 7700 |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 960 | 1100 | 16000 | 730 | 1400 | 95 | 240 | 230 | 660 | 750 J | 4800 | 1900 | 1600 J | 0.52 U | 120000 | 5700 |
| BNASIM | BENZO(A)PYRENE | ugkg | 1100 | 1200 |  | 840 | 1600 | 130 | 290 | 270 | 920 | 780 J | 4800 | 1800 | 1700 J | 1.2 U | 61000 | 5600 |
| ENASIM | BENZO(B)FLUORANTHENE | ugkg | 2300 | 2500 | 45000 | 1900 J | 4600 | 260 J | 480 | 460 | 1800 | 1300 J | 7700 | ${ }^{7400} \mathrm{~J}$ | 2800 J | 0.84 U | 260000 | 10000 |
| BNASIM | BENZO(G, H, JPERYLENE | ugkg | 1200 | 1200 | 22000 | 560 | 1300 | 100 | 280 | 270 | 900 | 740 J | 4200 | 2200 | 1300 J | 0.68 U | 63000 | 5800 |
| ENASIM | BENZO(k)FLUORANTHENE | ugkg | 1700 | 2000 | 36000 | 910 | 1900 | 120 | 390 | 360 | 860 | 1100 J | 7400 | 3900 | 1800 J | 0.68 U | 190000 | 7400 |
| ENASIM | CHRYSENE | uglkg | 1300 | 1500 | 19000 | 1000 | 1900 | 110 | 330 | 320 | 890 | 1100 J | 8100 | 4400 | 2300 J | ${ }^{0.50 U}$ | 200000 | 7200 |
| ENASIM | DIBENZO(A,H)ANTHRACENE | uglkg | 380 | 380 | 8300 | 220 J | 490 | 37 J | 95 | 91 | 270 | 240 J | 1000 | 560 J | 540 J | 1.0 J | 26000 | 2000 |
| BNASIM | FLUORANTHENE | uglkg | 1900 | 2100 | 19000 | 790 | 1800 | 99 | 340 | 300 | 870 | 1200 | 10000 | 3900 | 2400 J | 8.5 | 360000 | 10000 |
| BNASIM | FLUORENE | ugkg | 92 | 110 | 890 | 22 J | 16 U | 5.9 | 17 U | 17 U | 24 J | 17 UJ | 65 | 160 | 53 J | 1.6 U | 900 | 280 |
| ENASIM | INDENO(1,2,3-CD) PYRENE | uglkg | 1500 | 1600 | 35000 | 560 | 1300 | 100 | 320 | 300 | 820 | 830 J | 4500 | 2100 | 1700 J | 0.91 U | 110000 | 7100 |
| BNASIM | NAPHTHALENE | uglkg | 77 | 80 | 870 | 18 J | 5.50 | 27 | 43 | 41 | 50 | 25 J | 58 | 65 | 550 J | 0.53 U | 3400 | 970 |
| ENASIM | PENTACHLOROPHENOL | ugkg | 580 J | 520 J | ${ }^{5000}{ }^{200}$ | 160 J | 1800 | 200 | 110 J | 120 J | 220 J | 320 J | 1400 | 1300 J | 96 J | 11 J | 630000 J | 2600 |
| ENASIM | PHENANTHRENE |  | 320 | 340 | 2500 | 71 J | 250 J | 17 | 80 | 80 | 170 | 120 | 840 | 420 | 1100 J | 4.3 J | 15000 | 2900 |
| ENASIM | PYRENE | ugkg | 1600 | 1800 | 21000 | 1300 | 2300 | 140 | 370 | 330 | 1100 | 1300 J | 10000 | 4400 | 2200 J | 7.1 | 410000 | 8700 |
| E160.3 | RESIDUE, TOTAL | percent | 92 | 92 | 69 | 93 | 94 | 92 | 92 | 91 | 89 | 91 | 89 | 97 | 90 | 96 | 90 | 94 |
| E1613/E1668 | 1, 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | ngkg | 818.601 | 1069.459 | 29200 |  | 7480 |  |  |  |  |  |  |  |  | 23.086 | 215000 J |  |
| E1613/1668 | 1,2,3,4,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | ng/kg | 9279.743 | 12879.186 | 260000 |  | 76800 |  |  |  |  |  |  |  |  | 138.065 | 1390000 |  |
| E1613121668 | 1, 1, 2, 4, , , , , ,9-HEPTACHLORODIBENZOFURAN | nglkg | ${ }^{58.812}$ | ${ }^{68.771}$ | 1980 |  | 421 |  |  |  |  |  |  |  |  | 1.022 J | 15000 |  |
| E16131E1668 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | ng kg | $\stackrel{26.054}{ }$ | ${ }^{33.594}$ | 763 |  | 184 |  |  |  |  |  |  |  |  | 0.475 J | 5180 |  |
| E1613/1668 | 1,2,3,4,7,8,-HEXACHLORODIBENZO-P-DIOXIN | nglkg | 58.828 | 76.558 | 1630 |  | 485 |  |  |  |  |  |  |  |  | 0.905 J | 5920 |  |
| E1613/1668 | 1, 2, 3, ,6,7,8-HEXACHLORODIBENZOFURAN | nglkg | 17.262 | 22.947 | 515 |  | 77.7 |  |  |  |  |  |  |  |  | 0.407 J | 2880 J |  |
| E16131/1668 | 1,2,3,6,7,8,HEXACHLORODIBENZO-P-DIOXIN | nglkg | 185.074 | 231.765 | 5220 |  | 1480 |  |  |  |  |  |  |  |  | 3.253 J | 38500 |  |
|  |  | nglkg | 0.479 J | 0.884 J | 178 |  | 63.9 |  |  |  |  |  |  |  |  | 0.08U | 1350 |  |
|  | 1, $1,2,3,7,8,9$-HEXACHLORODIBENZO-P-DIOXIN |  | $\frac{159.246}{2.115 ~}$ | $\frac{196.349}{2.755 ~}$ | $\frac{2670}{58.9}$ |  | $\frac{523}{00}$ |  |  |  |  |  |  |  |  | $\frac{2.491 \mathrm{~J}}{0.037 \mathrm{~J}}$ | $\frac{12200}{358}$ |  |
| E1613/16668 | 1, 1, 2, 7, \%-PPENTACHLORODIBENZO-P-DIOXIN | ng lkg | ${ }^{218.879}$ | ${ }_{2}^{25.371}$ | ${ }_{4} 4.95$ |  | 83.4 |  |  |  |  |  |  |  |  | 0.392 J | 1420 |  |
| E1613/1668 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | ngkg | 12.587 | 17.33 | 965 |  | 174 |  |  |  |  |  |  |  |  | 0.479 J | 5990 |  |
| E1613/1668 | 2,3,4,7,8.PENTACHLORODIBENZOFURAN | nglkg | 2.871 J | 3.718 J | 154 |  | ${ }^{40.5 \mathrm{~J}}$ |  |  |  |  |  |  |  |  | 0.036 U | 982 |  |
| E16131/1668 | 2,3,7,8-TETRACHLORODIBENZOFURAN | ngkg | 0.659 | 1.082 J | ${ }^{14.5 \mathrm{~J}}$ |  | 0 O |  |  |  |  |  |  |  |  | 0.061 U | 64 |  |
| E16131/1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | nglkg | 1.588 | 1.768 | 34.4 |  | ${ }^{7} .12 \mathrm{~J}$ |  |  |  |  |  |  |  |  | 0.025 U | ${ }^{74.6}$ |  |
| E16131/1668 | OCTACHLORODIBENZOFURAN | ngkg | 5508.105 | 8340.791 | 148000 |  | 40000 |  |  |  |  |  |  |  |  | ${ }^{655.397}$ | 1220000 |  |
| E1631/1668 | OCTACHLORODIBENZO-P-DIOXIN | ng kg | 106045.5999 | 163147.2983 | 2740000 |  | 779000 |  |  |  |  |  |  |  |  | 1247.434 | 14660000 J |  |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng} \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ | 3358.559 35730.728 | ${ }_{344776.173}$ | $\frac{118000}{153000}$ |  | 35500 310000 |  |  |  |  |  |  |  |  | $\frac{72.254}{426.342}$ | $\frac{1090000 \mathrm{~J}}{361000}$ |  |
| E1613/1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | nglkg | 923.95 | 1272.962 | $\frac{25400 ~ J ~}{\text { J }}$ |  | $\underline{6920}{ }^{\text {J }}$ |  |  |  |  |  |  |  |  | +12.927 | ${ }^{2180000} \mathrm{~J}$ |  |
| E1613/1668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | ngkg | 3030.16 | 3782.508 | 106000 |  | 25100 |  |  |  |  |  |  |  |  | 37.557 | 224000 |  |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | nglkg | 146.698 | 193.265 | 3330 |  | 419 J |  |  |  |  |  |  |  |  | 1.787 | 13300 J |  |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | ng/kg | 174.981 | 226.359 | 4190 |  | 1310 |  |  |  |  |  |  |  |  | 3.456 | 6700 |  |
| E1613/1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | nglkg | 15.627 | 27.775 | 423 |  | 45.7 |  |  |  |  |  |  |  |  | 0.768 | 1830 J |  |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | ngkg | 8.27 | 14.68 | 355 |  | 37.1 |  |  |  |  |  |  |  |  | 0.742 | 1130 |  |
| SW6020 | ANTIMONY | mg/kg | 0.37 UJ | ${ }^{0.58 \mathrm{~J}}$ | ${ }^{0.81 \mathrm{~J}}$ | 1.6 J | 0.34 UJ | 0.36 UJ | ${ }^{0.35 \mathrm{U}}$ | ${ }^{0.36 \mathrm{U}}$ | 0.90 J | 0.96 J | 0.69 J | 0.34 UJ | 1.5 | 0.33 U | 1.0 J | 3.2 |
| SW6020 | ARSENIC | mg/kg | 20 | 16 | 79 | 73 | 16 | 7.4 | 15 J | 5.9 J | 49 | 90 J | 63 J | 25 | 20 | 0.60 | 78 | 200 J |
| SW6020 | BARIUM | mglkg | 7.9 | 7.7 | 30 | 87 | 13 | 9.3 | 9.8 | 9.2 | 13 | 17 | 19 | 12 | 120 | 9.8 | 160 | 47 |
| SW6020 | CADMIUM | mglkg | ${ }^{0.31 \mathrm{U}}$ | ${ }^{0.314}$ | 0.42 U | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.290}$ | 0.31 U | 0.30 U | ${ }^{0.310}$ | ${ }^{0.41 \mathrm{~J}}$ | 0.31 U | 0.32 U | ${ }^{0.29 \mathrm{U}}$ | ${ }^{0.31 \mathrm{U}}$ | 0.28 U | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.36 \mathrm{~J}^{20}}$ |
| SW6020 | CHROMUM | mq/kg | 28 | 23 | 140 | 8.8 | 7.0 | 5.0 | 19 J | 10 J | 87 J | 120 J | 77 J | 40 J | 26 | 5.0 | 89 | 200 J |
| SW6020 | COPPER | mg/kg | 16 | 15 | 96 | 57 | 9.8 | 1.6 | 12 J | 4.9 J | 39 | 60 | 60 | 26 | 51 | ${ }^{0.87 \mathrm{~J}}$ | 190 | 160 |
| SW6020 | LEAD | mglkg | 6.1 | 4.7 | 23 | 21 | 5.5 | 5.4 | 6.7 J | 4.4 J | 11 | 20 | 26 | 14 | 160 | 13 | 37 | 40 |
| SW6020 | SELENIUM | mq/kg | $0.91{ }^{011}$ | 0.890 | 1.2U | 0.87 UJ | 0.84 U | 0.89 OJ | 0.86 U | 0.89 U | 0.93 U | 0.900 | $0.93{ }^{0.20}$ | ${ }^{0.85 \cup}$ | 1.00 | ${ }_{0}^{0.82 \mathrm{U}}$ | $0.87{ }^{0}$ | 0.88 U |
| SW6020 | SILVER | mq/kg | $0.41{ }^{27}$ | 0.40 U | 0.55 U | $0.39{ }^{\text {U }}$ | 0.40 U | 0.40 U | 0.39 U | $0.40{ }^{2}$ | 0.42 UJ | 0.41 U | 0.42 U | 0.38 UJ | 0.40 U | 0.37 U | 0.39 U | 0.40 U |
| SW6020 | VANADIUM (FUME OR DUST) | mgkg | 2.7 | 3.0 | 2.3 | 3.7 J | 2.2 | 2.80 | 2.1 | 2.7 | 6.9 | 2.8 | 3.2 | 1.1 | 18 J | 3.2 | 17 | 4.0 |
| SW7471 | MERCURY | $\frac{\mathrm{mg} / \mathrm{kg}}{\mathrm{ug} \mathrm{kg}}$ | $\stackrel{0.095}{0.14 \mathrm{U}}$ | $\stackrel{0.081}{0.14 \cup}$ | ${ }_{0}^{1.5}$ | $\stackrel{0.069}{0.130}$ | $\stackrel{0.39}{0.13 \mathrm{U}}$ | $\frac{0.077}{0.14 U}$ | $\frac{0.031 \mathrm{~J}}{0.14 \mathrm{U}}$ | 0.047 J | 0.093 0.14 U | 0.23 | 0.20 0.14 U | 0.19 $0.13 \cup$ | $\frac{0.27}{0.20}$ | 0.044 $0.13 \cup$ | ${ }_{0}^{0.57}$ | $\stackrel{3.1}{0.13}$ |
| SW8260 | 1,1,1,2,2-TETRACHLOROETHANE | ugkg | 0.072 U | 0.072 U | 0.11 U | 0.071 U | 0.070 U | 0.072 U | 0.072 U | 0.080 U | 0.074 U | 0.081 U | 0 | 0 | $\stackrel{0.210}{0.110}$ | $\stackrel{0}{0.069}$ | 0.086 U | $\frac{0.13}{0.0710}$ |
| SW8260 | 1,1,2-TRICHLOROETHANE | ugkg | 0.15 U | 0.15 U | 0.21 U | 0.14 U | 0.14 U | 0.15 U | 0.15 U | 0.16 U | 0.15 U | 0.16 U | 0.15 U | 0.14 U | 0.21 U | 0.14 U | 0.17 U | 0.14 U |
| SW8260 | 1,1-DICHLOROETHANE | uglkg | 0.069 U | 0.069 U | 0.098 U | 0.068 U | 0.067 U | 0.069 U | 0.069 U | 0.076 U | 0.071 U | 0.077 U | 0.071 U | 0.066 U | 0.11 U | 0.066 U | 0.082 U | 0.068 U |
| SW8260 | 1,1-DICHLOROETHYLENE | ugkg | 0.19 U | 0.19 U | 0.27 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.21 U | 0.20 U | 0.21 U | 0.20 U | 0.18 U | 0.28 U | 0.18 U | 0.23 U | 0.19 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | uglkg | 0.17 UJ | 0.17 UJ | 0.24 UJ | 0.17 U | 0.16 U | 0.17 U | 0.17 U | 0.19 U | 0.17 U | 0.19 U | 0.17 UJ | 0.16 U | 0.25 UJ | 0.16 U | 0.20 UJ | 0.16 UJ |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | uglkg | 0.54 UJ | 0.54 UJ | 0.76 UJ | 0.53 U | 0.52 U | 0.54 U | 0.54 U | 0.60 U | 0.55 U | 0.60 U | 0.55 UJ | 0.52 U | 0.79 UJ | 0.51 U | 0.64 UJ | 0.53 UJ |
| SW8260 | 1,2-DIBROMOETHANE | uglkg | 0.061 U | 0.061 U | 0.087 U | 0.060 U | 0.060 U | 0.062 U | 0.061 U | 0.068 U | 0.063 U | 0.069 U | 0.063 U | 0.059 U | 0.091 U | 0.059 U | 0.073 U | 0.060 U |
| SW8260 | 1,2-IICHLOROBENZENE | uglkg | 0.085 UJ | 0.085 UJ | 0.13 UJ | 0.084 U | 0.083 U | 0.085 U | 0.085 U | 0.094 U | 0.088 U | 0.095 U | 0.088 UJ | 0.082 U | 0.13 UJ | 0.081 U | 0.11 UJ | 0.083 UJ |
| SW8260 | 1,2-DICHLOROETHANE | ugkg | 0.11 U | $0.11 \mathrm{U}^{\text {U }}$ | $0.16 \mathrm{U}^{\text {e }}$ | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.13 U | 0.12 U |  |  |  |  |  |  | 0.11 U |
| SW8260 | 1, 1,-2IICHLOROPROPANE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \mathrm{kg}}$ | ${ }^{0.059 ~ U ~} 0$ | $\frac{0.059 \mathrm{U}}{0.095 \mathrm{UJ}}$ | ${ }_{0}^{0.084 \mathrm{U}} 0$ | ${ }^{0.058 \mathrm{U}} 0$ | ${ }^{0.058 \mathrm{U}} 0$ | 0.059 U | 0.059 U | $\frac{0.066 \mathrm{U}}{0.11 \mathrm{U}}$ | ${ }^{0.061 \mathrm{U}} 0$ | $\frac{0.066 \mathrm{U}}{0.11 \mathrm{U}}$ | ${ }^{0.061 \mathrm{U}} 0$ | $\frac{0.057 \mathrm{U}}{0.091 \mathrm{U}}$ | 0.087U | $\frac{0.057 \mathrm{U}}{0.091 \mathrm{U}}$ | ${ }_{0}^{0.071 \mathrm{U}} 0$ | ${ }_{0}^{0.058 \mathrm{U}} 0$ |
| SW8260 | ACETONE | uglkg | 2.8 U | 2.8 U | 3.9 U | 14 J | 20 J | 14 J | 64 J | 110 J | 2.8 U | 3.10 | $\underline{2.84}$ | $\frac{.70}{}$ | 44 J | $\underline{2.6 U}$ | $\frac{1230}{3.30}$ | $\frac{2.70 J}{}$ |
| SW8260 | BENZENE | uglkg | 0.43 U | 0.43 U | 0.61 U | ${ }^{0.42 \mathrm{U}}$ | 0.42 U | 0.43 U | 0.43 U | 0.47 U | 0.44 U | 0.48 U | 0.44 U | 0.41 U | 0.63 U | 0.41 U | 0.51 U | 0.42 U |
| SW8260 | BROMODICHLOROMETHANE | uglkg | 0.32 U | 0.32 U | 0.45 U | 0.32 U | 0.31 U | 0.32 U | 0.32 U | 0.35 U | 0.33 U | 0.36 U | 0.33 U | 0.31 U | 0.47 U | 0.31 U | 0.38 U | 0.31 U |
| SW8260 | BROMOMETHANE | uglkg | 0.35 UJ | 0.35 UJ | 0.50 UJ | 0.35 UJ | 0.34 UJ | 0.35 UJ | 0.35 UJ | 0.39 uJ | ${ }^{0.36 \mathrm{U}}$ | 0.39 U | 0.36 U | 0.34 U | 0.52 U | 0.34 UJ | 0.42 UJ | 0.35 U |
| SW8260 | CARBON DISULFIIDE | ugkg | 1.8 U | 1.84 | 2.54 | 1.84 | 1.70 | 1.8 U | 1.8 U | 2.0 U | 1.8 U | 2.0 U | 1.8 U | 1.74 | 2.64 | 1.7 U |  |  |
| SW8260 | CARBON TETRACHLORIDE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \text { gag }}$ | $\frac{0.38 \mathrm{U}}{0.29 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.29 \mathrm{U}}$ | $\frac{0.55 ~ U ~}{0.41 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.28 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.28 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.29 \mathrm{u}}$ | $\frac{0.39 \mathrm{U}}{0.29 \mathrm{u}}$ | 0.43 U 0.32 U | 0.40 U 0.30 U | $\stackrel{0.43 \mathrm{U}}{0.32 \mathrm{U}}$ | 0.40U | 0.37 U 0.28 U | $\frac{0.57 \mathrm{U}}{0.42 \mathrm{U}}$ | 0.37 U 0.27 U | 0.46U | $\frac{0.38 \mathrm{U}}{0.28 \mathrm{U}}$ |
| SW8260 | CFC-12 | ug/kg | 0.35 U | 0.35 U | 0.50 U | 0.35 U | 0.34 U | 0.35 U | 0.35 U | 0.39 U | 0.36 U | 0.39 U | 0.36 U | 0.34 U | 0.52 U | 0.34 U | 0.42 U | 0.35 U |
| SW8260 | CHLORINATED FLUOROCARBON(FREON 113) | ugkg | 0.40 U | 0.40 U | 0.56 U | 0.39 U | 0.39 U | 0.40 U | 0.40 U | 0.44 U | 0.41 U | 0.44 U | 0.41 U | 0.38 U | 0.58 U | 0.38 U | 0.47 U | 0.39 U |
| SW8260 | CHLOROBENZENE | uglkg | 0.44 U | 0.44 U | 0.62 U | 0.43 U | 0.43 U | 0.44 U | 0.44 U | 0.49 U | 0.45 U | 0.49 U | 0.45 U | 0.42 U | 0.65 U | 0.42 U | 0.52 U | 0.43 U |
| SW8260 | CHLORODIBROMOMETHANE | ug lkg | 0.28 U | 0.28 U | 0.39 U | 0.27 U | 0.27 U | 0.28 U | 0.28 U | 0.31 U | 0.28 U | 0.31 U | 0.28 U | 0.27 U | 0.41 U | 0.26 U | 0.33 U | 0.27 U |
| SW8260 | CHLOROETHANE | ugkg | 0.40 U | 0.40 U | 0.56 U | 0.39 U | 0.39 U J | 0.40 U | 0.40 U | 0.44 U | 0.41 U | 0.44 U | 0.41 U | 0.38 U | 0.58 U | 0.38 U | 0.47 U | 0.39 U |
| SW8260 | CHLOROROMETHANE | $\frac{\mathrm{ugkg}}{\mathrm{ug} \mathrm{kg}}$ | $\stackrel{0.370}{0.49}$ | $\stackrel{0.390}{0.49}$ | $\xrightarrow{0.530}$ | $\stackrel{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\stackrel{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\stackrel{0.380}{0.0}$ | $\stackrel{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\xrightarrow{0.41 \mathrm{U}}$ | $\stackrel{0.39 \mathrm{U}}{0.51 \mathrm{U}}$ | $\xrightarrow{0.425}$ | $\xrightarrow{0.591 \mathrm{U}}$ | $\stackrel{0.36 \mathrm{U}}{0.47 \mathrm{U}}$ | $\xrightarrow{0.550}$ | $\stackrel{0.36 \mathrm{U}}{0.47}$ | $\stackrel{0.59}{0}$ | 0.37 U 0.48 U |
| SW8260 | CII-1,2-DICHLOROETHYLENE | ugkg | 0.29 U | 0.29 U | 0.41 U | 0.28 U | 0.28 U | 0.29 U | 0.29 U | 0.32 U | 0.30 U | 0.32 U | 0.30 U | 0.28 U | 0.42 U | 0.27 U | 0.34 U | 0.28 U |


|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample ID } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{array}{c\|} \hline \text { SSO43 } \\ \text { Ssoun3a } \\ \text { S.25-5 feet } \\ 12105 / 2006 \\ \hline \end{array}$ | SSO43 SSO43B 0.25-0.5 feet 12/05/2006 | $\begin{array}{\|l\|l\|} \hline \hline \text { SSO44 } \\ \text { SSO44BA } \\ 0.25-.5 \text { fet } \\ 12055 / 2006 \end{array}$ | $\begin{array}{\|c} \hline \hline \text { SSO45 } \\ \text { SSO545BA } \\ 0.25-5.5 \text { fet } \\ 12111 / 2006 \\ \hline \end{array}$ | SSO46 <br> SSO46BA <br> $0.25-. .5$ feet <br> $12 / 122 / 2006$ | $\begin{array}{\|c\|} \hline \hline \text { SSO477 } \\ \text { SSO47BA } \\ 0.25-0.5 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \hline \hline \text { SSO48 } \\ \text { SSOO8BA } \\ 0.25-0.5 \text { feet } \\ 12 / 06 / 2006 \\ \hline \end{gathered}$ | SSO48 SSO48BB 0.25-0.5 feet 12/06/2006 | $\begin{array}{\|c} \hline \hline \text { SSO49 } \\ \text { SSOO4BA } \\ 0.25-0.5 \text { feet } \\ 12 / 09 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c} \hline \hline \text { SSO50 } \\ \text { SSO50BA } \\ 0.25-0.5 \text { feet } \\ 12 / 104 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c} \hline \hline \text { SSO51 } \\ \text { SSo51BA } \\ 0.25-0.5 \text { feet } \\ 12 / 04 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO52 } \\ \text { SSo52BA } \\ 0.25-0.5 \text { feet } \\ 12 / 09 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO54 } \\ \text { SSO54BA } \\ 0.25-5.5 \text { feet } \\ 12101 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO557 } \\ \text { SSo57BA } \\ 0.25-0.5 \text { feet } \\ 12 / 06 / 2006 \\ \hline \end{array}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| sw8260 | CIS-1,3-DICHLOROPROPENE | ug/kg | 0.32 U | 0.32 U | 0.45 U | 0.32 U | 0.31 U | 0.32 U | 0.32 U | 0.35 U | 0.33 U | 0.36 U | 0.33 U | 0.31 U | 0.47 U | 0.31 U | 0.38 U | 0.31 U |
| SW8260 | CYCLOHEXANE | ug lkg | 0.42 U | 0.42 U | 0.59 U | 0.41 U | 0.41 U | 0.42 U | 0.42 U | 0.46 U | 0.43 U | 0.47 U | 0.43 U | 0.40 U | 0.62 U | 0.40 U | 0.63 J | 0.41 U |
| SW8260 | DICHLOROMETHANE | ugikg | 0.43 U | 0.43 U | 0.61 U | 0.42 U | 0.42 U | 0.43 U | 0.43 U | 0.47 U | 0.44 U | 0.48 U | 0.44 U | 0.41 U | 0.63 U | 0.41 U | $0.51{ }^{\text {O }}$ | 0.42 U |
| SW8260 | ETHYLBENZENE | ug lkg | 0.46 U | 0.46 U | 0.65 U | 0.45 U | 0.45 U | 0.46 U | 0.46 U | 0.51 U | 0.47 U | 0.52 U | 0.48 U | 0.44 U | 0.68 U | 0.44 U | 0.55 U | 0.45 U |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.50 UJ | 0.50 UJ | 0.72 UJ | 0.50 U | 0.49 U | 0.51 U | 0.51 U | 0.56 U | 0.52 U | 0.56 U | 0.52 UJ | 0.48 U | 0.74 UJ | 0.48 U | 0.60 UJ | 0.49 UJ |
| SW8260 | m, p -Xylenes | uglkg | 0.95 U | 0.95 U | 1.40 | 0.94 U | 0.93 U | 0.95 U | 0.95 U | 1.10 | 0.98 U | 1.14 | 0.98 U | 0.91 U | 1.4 U | 0.91 U | 1.2 U | 0.93 U |
| sW8260 | M-DICHLOROBENZENE | ugkg | 0.055 UJ | 0.055 UJ | 0.078 UJ | 0.054 U | 0.053 U | 0.055 U | 0.055 U | 0.061 U | 0.056 U | 0.061 U | 0.056 UJ | 0.053 U | 0.081 UJ | 0.052 U | 0.065 UJ | 0.054 UJ |
| SW8260 | METHYL ACETATE | uglkg | 0.21 U | 0.21 U | 0.30 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.23 U | 0.22 U | 0.24 U | 0.22 U | 0.20 U | 0.31 U | ${ }^{0.20 U}$ | 0.25 U | 0.21 U |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.2 U | 1.2 U | 1.7 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.4 U | 1.3 U | 1.4 U | 1.3 U | 1.2 U | 1.8 U | 1.2 U | 1.5 U | 1.2 U |
| SW8260 | METHYL LSOBUTYL KETONE | ugikg | 0.77 U | $0.77{ }^{114}$ | 1.14 | $0.77{ }^{11}$ | $0.76 \mathrm{U}^{11}$ | 0.78 U | 0.78 U | ${ }^{1.86 U}$ | ${ }^{0.800}$ | ${ }^{1.87 \mathrm{U}^{1}}$ | ${ }^{1.80 \mathrm{U}}$ | $0.74{ }^{1}$ | 1.2 U | $0.74{ }^{11}$ | 0.93 U | $0.76{ }^{11}$ |
| SW8260 | METHYL N-BUTYL KETONE | uglkg | 1.10 | 1.10 | 1.6 U | 1.14 | 1.10 | 1.10 | 1.10 | 1.30 | 1.2 U | 1.3 U | 1.2 U | 1.14 | 1.70 | 1.14 | 1.30 | 1.10 |
| SW8260 | METHYLBENZENE | ug kg | 0.46 U | ${ }^{0.46 \mathrm{U}}$ | 0.65 U | 0.45 U | 0.88 J | 0.46 U | 0.46 U | 0.51 U | 0.47 U | 0.52 U | 0.48 U | 0.44 U | 0.68 U | 0.44 U | 1.9 J | 0.45 U |
| SW8260 | METHYLCYLOHEXANE | uglkg | 0.48 U | 0.48 U | 0.68 U | 0.48 U | 0.47 U | 0.48 U | 0.48 U | 0.54 U | 0.50 U | 0.54 U | 0.50 U | 0.46 U | 0.71 U | 0.46 U | 1.4 J | 0.57 J |
| SW8260 | O-XYLENE | ug lkg | 0.44 U | 0.44 U | 0.62 U | 0.43 U | 0.43 U | 0.44 U | 0.44 U | 0.49 U | 0.45 U | 0.49 U | $0.45{ }^{\text {U }}$ | 0.42 U | $0.65{ }^{0}$ | 0.42 U | ${ }_{0}^{0.52 U}$ | ${ }_{0}^{0.43 ~}{ }^{0}$ |
| SW8260 | STYRENE (MONOMER) | uglkg | 0.47 U | 0.47 U | 0.67 U | 0.47 U | 0.46 U | 0.47 U | 0.47 U | 0.52 U | 0.49 U | 0.53 U | 0.49 U | 0.45 U | 0.70 U | 0.45 U | 0.56 U | 0.46 U |
| SW8260 | TERT-BUTYL METHYL ETHER | ugikg | 0.35 U | 0.35 U | 0.50 U | 0.35 U | 0.34 U | 0.35 U | 0.35 U | 0.39 U | 0.36 U | 0.39 U | 0.36 U | 0.34 U | 0.52 U | 0.34 U | 0.42 U | 0.35 U |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.44 U | 0.44 U | 0.62 U | 0.43 U | 0.43 U | 0.44 U | 0.44 U | 0.49 U | 0.45 U | 0.49 U | 0.45 U | 0.42 U | 0.65 U | 0.42 U | 0.52 U | 0.43 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | uglkg | 0.42 U | 0.42 U | 0.59 U | 0.41 U | 0.41 U | 0.42 U | 0.42 U | 0.46 U | 0.43 U | 0.47 U | 0.43 U | 0.40 U | 0.62 U | 0.40 U | 0.50 U | 0.41 U |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ugkg | 0.33 U | 0.33 U | 0.47 U | 0.33 U | 0.32 U | 0.33 U | 0.33 U | 0.37 U | 0.34 U | 0.37 U | 0.34 U | 0.32 U | 0.49 U | 0.32 U | 0.39 U | 0.32 U |
| SW8260 | TRIBOMOMETHANE | ug lkg | 0.43 U | 0.43 U | 0.61 U | 0.42 U | 0.42 U | 0.43 U | 0.43 U | 0.47 U | 0.44 U | 0.48 U | 0.44 U | 0.41 U | 0.63 U | 0.41 U | 0.51 U | 0.42 U |
| SW8260 | TRICHLOROETHYLENE | ugkg | 0.44 U | 0.44 U | 0.62 | ${ }_{0}^{0.43 U}$ | ${ }_{0}^{0.43 \mathrm{U}}$ | 0.44 U | 0.44 U | 0.49 U | 0.45 U | 0.49 U | 0.45 U | 0.42U | 0.65 U | 0.42 U | 0.52 U | 0.43 U |
| SW8260 | VINYL CHLORIDE | uglkg | 0.27 U | 0.27 U | 0.38 U | 0.26 U | 0.26 U | 0.27 U | 0.27 U | 0.29 U | 0.27 U | ${ }^{0.30 \mathrm{U}}$ | 0.27 U | 0.25 U | 0.39 U | 0.25 U | 0.32 U | 0.26 U |
| SW8270 | 2,4,5-TRICHLOROPHENOL | ugkg | 15 U | 15 U | 19 U | 14 U | 14 U | 15 U | 15 U | 15 U | 15 U | 15 U | 15 U | 14 UJ | 15 U | 14 U | 150 U | 14 U |
| SW8270 | 2,4,6-TRICHLOROPHENOL | uglkg | 40 U | 40 U | 52 U | 39 U | 39 U | 40 U | 40 U | 40 U | 41 U | 40 U | 41 U | 38 UJ | 41 U | 38 U | 410 U | 39 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 19 U | 19 U | 25 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 19 U | 20 U | 18 U | 19 U | 18 U | 190 U | 19 U |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | 210 | 210 | 75 J | 210 | 210 | 210 | 210 | 210 | 22 U | 21 U | 22 U | 20 U | 22 U | 20 U | 220 U | 35 J |
| SW8270 | 2,4-IIIITROPHENOL | uglkg | 14 U | 14 U | 18 U | 13 U | 13 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 13 UJ | 14 UJ | 13 U | 140 U | 13 UJ |
| SW8270 | 2,4-DINITROTOLUENE | ugkg | 11 U | 11 U | 15 U | 11 U | 11 U | 110 | 110 | 110 | 12 U | 110 | 11 U | $\xrightarrow{11 \mathrm{UJ}}$ | 11 U | 110 | 110 U | 110 |
| SW8270 | 2,6-DIIITROTOLUENE | uglkg | 40 U | 40 U | 52 U | 39 U | 39 U | 40 U | 40 U | 40 U | 41 U | 40 U | 41 U | 38 UJ | 41 U | 38 U | 410 U | 39 U |
| SW8270 | 2.CHLORONAPHTHALENE | ugkg | 18 U | 18 U | 24 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 17 UJ | 18 U | 17 U | 180 U | 18 U |
| SW8270 | 2-CHLOROPHENOL | uglkg | 20 U | 20 U | 26 U | 20 U | 20 U | 20 U | 20 U | 20 U | 21 U | 20 U | 21 U | 19 U | 21 U | 19 U | 210 U | 20 U |
| SW8270 | 2-METHYLPHENOL (0-CRESOL) | ugkg | 14 U | 14 U | 18 U | 13 U | 13 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 13 U | 14 U | 13 U | 140 U | 13 U |
| SW8270 | 2-NITROANLINE | ugkg | 24 U | 24 UJ | 32 UJ | 24 U | 24 U | 24 U | 24 U | 25 U | 25 U | 25 UJ | 25 UJ | 23 UJ | 25 UJ | 23 U | 250 U | 24 U |
| SW8270 | 2-NITROPHENOL | uglkg | 16 U | 16 U | 210 | 16 U | 15 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 15 U | 16 U | 15 U | 160 U | 15 U |
| SW8270 | 3,3'-DICHLOROBENZIDINE | uglkg | 37 UJ | 37 UJ | 50 UJ | 37 U | 37 U | 37 U | 37 U | 38 U | 39 U | 38 U | 39 U | 36 U | 38 U | 36 U | 380 U | 37 U |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | $\frac{\mathrm{ug} \text { 伯g }}{\text { ugkg }}$ | 15 U | 15 U | $\frac{19 \mathrm{UJ}}{25}$ | 14 U | 14 U | $\frac{150}{190}$ | 15 U | 15 U | $\frac{150}{20}$ | $\frac{15 \mathrm{UJ}}{19 \mathrm{U}}$ | $\frac{15 \mathrm{UJ}}{20 \mathrm{U}}$ | 14 U | 15 U | 14 U | $\frac{150 \mathrm{U}}{190 \mathrm{U}}$ | 14 U |
| SW8270 | 4.6-DIINTRO-2-METHYLPHENOL | uglkg | 11 U | 11 U | 14 U | 11 U | 10 U | 110 | 11 U | 110 | 11 UJ | 110 | 110 | ${ }_{9} 9.7 \mathrm{U}$ | 110 | 9.8 U | 110 U | 10 UJ |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 11 U | 110 | 15 U | 110 | 110 | 110 | 110 | 110 | 12 UJ | 11 U | 11 U | 110 | 110 | 110 | 110 U | 110 |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | uglkg | 18 U | 18 U | 24 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 17 U | 18 U | 17 U | 180 U | 18 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | ugikg | 24 U | 24 U | 32 U | 24 U | 24 U | 24 U | 24 U | 25 U | 25 U | 25 U | 25 U | 23 UJ | 25 U | 23 U | 250 U | 24 U |
| SW8270 | 4-METHYLPHENOL (MP-CRESOL) | uglkg | 29 U | 29 U | 49 J | 28 U | 28 U | 29 U | 29 U | 29 U | 30 U | 29 U | 30 U | 27 U | 29 U | 28 U | 290 U | 29 J |
| SW8270 | 4-NITROPHENOL | uglkg | 19 U | 19 UJ | 25 UJ | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 19 UJ | 20 UJ | 18 UJ | 19 UJ | 18 U | 190 UJ | 19 U |
| SW8270 | BENZYL BUTYL PHTHALATE | uglkg | 20 UJ | 20 UJ | 26 U | 20 U | 20 U | 20 U | 20 U | 20 U | 210 | 20 U | 210 | 19 U | 28 J | 19 U | 210 U | 20 U |
| SW8270 | BIPHENYL | uglkg | 170 U | $170 \cup$ | 220 U | 170 UJ | 160 U | 170 UJ | 170 U | 1700 | 170 U | 170 U | 170 U | 160 UJ | 170 U | 160 U | 1700 U | 160 U |
| SW8270 | BIS(2-CHLORETHOXYMETHANE | uglkg | 19 U | 19 U | 25 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 19 U | 20 U | 18 U | 19 U | 18 U | 190 U | 19 U |
| SW8270 | BIIS(2-CHLOROETHYLETHER | ugkg | 17 U | 17 UJ | 22 U | 17 U | 16 U | 17 U | 17 U | 17 U | 17 UJ | 17 U | 17 U | 16 UJ | 17 U | 16 U | 170 U | 16 U |
| $\frac{\text { SW8270 }}{\text { SW8270 }}$ | BIS (2-CHLOROISOPROPYL ETHER | ugkg | $\frac{23 U}{280}$ | $\frac{23 U}{3301}$ | $\frac{310 J}{24 U}$ | 23 U | $\underline{23 U}$ | $\frac{23 U}{184}$ | $\frac{23}{18 \mathrm{U}}$ | 24 U | 24 U | $\frac{24 \mathrm{UJ}}{27}$ | ${ }_{24}^{24 \mathrm{JJ}}$ | $\frac{22 U}{174}$ | $\frac{24 \mathrm{UJ}}{18 \mathrm{U}}$ | $\frac{22 U}{17 \mathrm{U}}$ | $\frac{240 \mathrm{UJ}}{180 \mathrm{UJ}}$ | $\frac{23}{711}$ |
| SW8270 | CARBAZOLE | ug/kg | 97J | 110 J | 1600 | 110 J | 270 | 31 J | 18 U | 27 J | 120 J | 210 | 340 | 690 | 320 | 17 U | 4400 | 770 |
| SW8270 | DIBENZOFURAN | uglkg | 37 J | 36 J | 310 | 14 U | 41 J | 15 U | 15 U | 15 U | 35 J | 34 J | 45 J | 87 J | 230 | 14 U | 4000 | 520 |
| SW8270 | DIETHYL PHTHALATE | uglkg | 14 U | 14 U | 18 U | 13 U | 13 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 13 UJ | 14 U | 13 U | 140 U | 13 U |
| SW8270 | DIMETHYL PHTHALATE | uglkg | 11 U | 11 U | 15 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | 11 U | 11 U | 11 UJ | 11 U | 11 U | 110 U | 11 U |
| SW8270 | DI-N-BUTYL-PHTHALATE | ugkg | 67 U | ${ }^{67 \mathrm{U}}$ | 89 U | 66 U | 65 U | 67 U | 67 U | 68 U | 69 UJ | 68 U | 69 U | 63 U | 68 U | 64 U | 680 U | 65 U |
| SW8270 | HEXACHLORO-1,-3BUTADIENE | uglkg | 19 U | 19 U | 25 U | 19 U | 19 U | 19 U | 19 u | 19 U | 20 U | 19 U | 20 U | 18 U | 19 u | 18 U | 190 U | 19 U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 9.00 | 9.00 | 12 U | 9.0 UJ | 8.9 U | 9.10 J | 9.10 | 9.2 U | 9.4 UJ | 9.2 U | 9.3 U | 8.6 U | 9.3 U | 8.7 U | 93 U | 8.9 U |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | uglkg | 12 U | 12 U | 16 U | 12 U | 12 U | 12 U | 12 U | 13 U | 13 UJ | 13 U | 13 U | 12 UJ | 13 UJ | 12 U | 130 U | 12 UJ |
| SW8270 | HEXACHLOROETHANE | ugkg | 19 U | 19 U | 25 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 19 U | 20 U | 18 U | 19 U | 18 U | 190 U | 19 U |
| SW8270 | NITROBENZENE | uglkg | 22 U | 22 U | 29 U | 22 U | 22 U | 22 U | 22 U | 22 U | 23 U | 22 U | 23 U | 210 | 23 U | 210 | 230 U |  |
| SW8270 | $\frac{\text { N-NITROSO-DI-N.PROPYLAMINE }}{\text { N-NTTROSOOIPHENYLAMINE }}$ | $\frac{\mathrm{ug} \text { 伯g }}{\text { ugkg }}$ | $\frac{20 U}{12 \mathrm{U}}$ | $\frac{20 U}{12 \mathrm{U}}$ | $\frac{26 \mathrm{UJ}}{16 \mathrm{U}}$ | 20 U | 20 U | 20 U | 20 U | $\frac{20 U}{13 \mathrm{U}}$ | $\frac{21 \mathrm{U}}{13 \mathrm{UJ}}$ | $\frac{20 \mathrm{UJ}}{13 \mathrm{U}}$ | $\stackrel{210 J}{134}$ | 19 U | 21 U | 19 U | $\frac{210 \mathrm{U}}{130 \mathrm{U}}$ | 20 U |
| SW8270 | P.CHLOROANILINE | uglkg | 29 U | 29 U | 38 U | 28 U | 28 U | 29 U | 29 U | 29 U | 30 U | 29 U | 30 U | 27 U | 29 U | 28 U | 290 U | 28 U |
| SW8270 | PHENOL | ugkg | 18 U | 18 U | 24 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U | 17 U | 18 U | 17 U | 180 U | 18 U |
| SW8270 | P-NITROANLINE | ugkg | 14 U | 14 U | 18 U | 13 U | 13 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | $\stackrel{13 \mathrm{UJ}}{ }$ | 14 U | 13 U | 140 U | 13 U |

Notes:
mgkg:
$\begin{array}{ll}\text { gikg: miligrams per kilogram } & U=\text { non-d } \\ J=\text { estime }\end{array}$
tugkg: micrograms per kilogram
Dioxin values in italics are new results from Vista laboratory

|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample il } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO60 } \\ \text { SSo60BA } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{c\|} \hline \hline \text { SS062 } \\ \text { SSO62BA } \\ 0.25-0.5 \text { feet } \\ 12108 / 2006 \\ \hline \end{array}$ | $\begin{array}{c\|} \hline \hline \text { SSO64 } \\ \text { SSO64BA } \\ 0.25-0.5 \text { feet } \end{array}$ $12 / 08 / 2006$ | $\begin{array}{c\|} \hline \text { SSO66 } \\ \text { SSo66BA } \\ 0.25-0.5 \text { feet } \\ 11 / 200000 \end{array}$ 12/08/2006 | $\begin{array}{\|c\|} \hline \hline \text { SSO607 } \\ \text { SSo67BA } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO607 } \\ \text { SSo67BB } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \hline \text { SSO668 } \\ \text { SSO68BA } \\ 0.25-0.5 \text { feet } \\ 12 / 09 / 20066 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \hline \text { SSO669 } \\ \text { SSo698A } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|\|} \hline \hline \text { SSO70 } \\ \text { SSO70BA } \\ 0.25-0.5 \text { feet } \\ 122112 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO71 } \\ \text { sso7118 } \\ \text { o.25-5 feet } \\ 12101 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO72 } \\ \text { SSo72BA } \\ 0.25-0.5 \text { feet } \\ 12107 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSOT3 } \\ \text { SSO73BA } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \text { SSOT74 } \\ \text { SSO74BA } \\ 0.25-0.5 \text { feet } \\ 12 / 104 / 2006 \\ \hline \end{array}$ | $\begin{array}{c\|} \hline \hline \text { SSO75 } \\ \text { SS075BA } \\ 0.25-0.5 \text { feet } \\ 12 / 09 / 2006 \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO076 } \\ \text { SSO76BA } \\ 0.25-0.5 \text { feet } \\ 12 / 105 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSOO77 } \\ \text { SSO77BA } \\ 0.25-0.5 \text { feet } \\ 12109 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SNASIM | 2-METHYLNAPHTHALENE | ugkg | 140 J | 18 U | 33 J | 7.1 | 220 J | 130 J | 86 | 33 J | 250 J | 28 J | 170 U | 480 | 530 | 660 | 240 | 16 UJ |
|  | ACENAPHTHENE | ugkg |  |  |  | 5.3 J | 290 U | 150 U | 140 | 58 U | 320 UJ | 30 U |  | 230 J | 470 | 150 U | 85 J | 29 UJ |
| SNASIM | ACENAPHTHYLENE | uglkg | 690 | 320 | 320 | 16 | 2200 J | 1300 J | 1100 | 640 | 4300 | 35 J | 1700 | 4900 | 3500 | 4700 | 2200 | 220 J |
| SNASIM | ANTHRACENE | uglkg | 1400 | 520 | 490 | 26 | 3700 J | 2700 J | 2000 | 480 | 11000 | 62 | 3900 | 9600 | 18000 | 5200 | 3700 | 180 |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 1300 | 890 | 970 | 28 | 3700 J | 5500 J | 1900 | 1200 | 9400 | 180 | 2700 | 7800 | 5800 | 13000 | 5600 | 430 |
| BNASIM | BENZO(A)PYRENE | ugkg | 1200 | 930 | 940 | 30 | 4300 | 3500 | 2100 | 1400 | 13000 | 210 | 2600 | 11000 | 9800 | 15000 | 6500 | 510 J |
| BNASIM | BENZO(B)FLUORANTHENE | uglkg | 2700 | 1600 | 1700 | 60 | 8300 | 7600 | 7600 J | 1600 | 25000 | 280 | 5600 | 21000 | 19000 | 30000 J | 13000 | 620 |
| SNASIM | BENZO(G, H, I, PERYLENE | uglkg | 1300 | 710 | 730 | 40 | 5200 J | 3500 J | 1900 | 1000 | 11000 | 160 | 3900 | 9800 | 12000 | 12000 | 4900 | 370 |
| BNASIM | BENZO(K)FLUORANTHENE | uglkg | 1900 | 1400 | 1300 | 47 | 6700 | 6200 | 3500 | 1400 | 11000 | 220 | 4200 | 12000 | 12000 | 13000 | 9100 | 580 |
| SNASIM | CHRYSENE | uglkg | 1800 | 1300 | 1200 | 42 | 5600 | 7500 | 3800 | 1400 | 12000 | 250 | 3600 | 10000 | 9400 | 16000 | 8600 | 550 |
| BNASIM | DIBENZO(A,H)ANTHRACENE | uglkg | 420 | 250 | 270 | 11 | 1500 | 1200 | 600 | 370 | 3800 | 46 | 930 | 3900 | 3100 | 5000 | 1900 | 130 J |
| SNASIM | FLUORANTHENE | uglkg | 2700 | 1200 | 1600 | 54 | 5900 J | 12000 J | 3700 | 1600 | 12000 | 340 | 5300 | 9700 | 10000 | 17000 | 7000 | 1000 |
| BNASIM | FLUORENE | ugkg | 160 J | 20 J | 17 J | 7.9 | 160 U | 790 | 92 | 32 U | 290 J | 17 U | 170 U | 380 | 410 | 140 J | 150 | 18 J |
| BNASIM | INDENO(1,2,3-CD) PYRENE | ugkg | 1600 | 840 | 880 | 41 | 5900 J | 4300 J | 2100 | 1300 | 10000 | 200 | 3800 | 12000 | 13000 | 12000 | 6400 | 400 |
| BNASIM | NAPHTHALENE | ugkg | 160 J | 5.9 u | 5.50 | 21 | 290 J | 180 J | 95 | 58 J | 390 J | 29 J | 57 U | 930 | 900 | 1100 | 360 | 20 J |
| SNASIM | PENTACHLOROPHENOL | uglkg | ${ }^{710} \mathrm{~J}$ | 8.10 | 260 J | 20 J | 2900 J | 2100 J | 3400 | 15 U | 7500 | 25 J | 9200 | 6700 | 4500 J | 900 J | 1100 J | 7.4 UJ |
| SNASIM | PHENANTHRENE | uglkg | 670 | 140 | 260 | 33 | 1000 | 1200 | 440 | 220 | 1700 | 110 | 1600 | 2500 | 2300 | 2900 | 1700 | 160 J |
| SNASIM | PYRENE | ugkg | 2200 | 1400 | 1500 | 56 | 6600 J | 12000 J | 4500 | 1700 | 18000 | 290 | 5500 | 9400 | 12000 | 25000 | 11000 | 1200 |
| E160.3 | RESIDUE, TOTAL | percent | 92 | 87 | 94 | 96 | 94 | 95 | 95 | 94 | 85 | 91 | 91 | 94 | 89 | 92 | 94 | 96 |
| E1613/E1668 | 1,2,3,4,6,7,8,-HEPTACHLORODIBENZOFURAN | ngkg |  | 1458.313 J |  | 204.18 |  |  | 42900 |  | 67400 | 156.282 |  |  |  |  | 5370 |  |
| E1613/1668 | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | nglkg |  | 11445.337 J |  | 1408.029 |  |  | 302000 |  | 419000 | 1202.926 |  |  |  |  | 35700 |  |
| E16131/1668 | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | ng lkg |  | 97.005 |  | 11.835 |  |  | 2590 |  | 5430 | 8.104 |  |  |  |  | 489 |  |
| E16131/1668 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | nglkg |  | 46.016 |  | 4.515 J |  |  | 1210 |  | 1880 | 4.117 J |  |  |  |  | 193 |  |
| E1613/16688 | 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | nglkg |  | 52.445 |  | 10.643 |  |  | 1970 |  | 2590 | 9.096 |  |  |  |  | 463 |  |
| E16131/1668 | 1, 2,3,6,7,8.-HEXACHLORODIBENZOFURAN | nglkg |  | 41.823 |  | $\frac{3.7593}{325}$ |  |  | $\stackrel{838}{1040}$ |  | 706 J | $\frac{3.178 \mathrm{~J}}{}$ |  |  |  |  | 165 |  |
| E1613/1668 | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ |  | $\frac{499.76}{8.759}$ |  | 34.255 0.163 U |  |  | $\frac{10400}{494}$ |  | $\frac{11200}{362}$ | 27.318 0.089 U |  |  |  |  | $\frac{885}{57.25}$ |  |
| E1613/161668 | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | nglkg |  | ${ }^{267.756}$ |  | ${ }^{25.218}$ |  |  | 3830 |  | 4250 | $\stackrel{27.003}{ }$ |  |  |  |  | ${ }^{56.25}$ |  |
| E1613/161688 | 1,2,3,7,8-PENTACHLORODIBENZOFURAN | ng/kg |  | 8.509 |  | 0.635 J |  |  | 158 |  | 54.2 J | 0.429 J |  |  |  |  | 17.6 J |  |
| E1613/1668 | 1,2,3,7,8.PENTACHLORODIBENZO-P-DIOXIN | ngkg |  | 43.017 |  | 3.414 J |  |  | 597 |  | 509 | 3.29 J |  |  |  |  | 129 |  |
| E1613/16688 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | nglkg |  | 40.485 |  | 3.016 J |  |  | 1910 |  | 1670 | 2.887 J |  |  |  |  | 257 |  |
| E1613/16688 | 2,3,4,7,8-PENTACHLORODIBENZOFURAN | nglkg |  | 10.156 |  | 0.39 J |  |  | 503 |  | 220 | 0.779 J |  |  |  |  | 44.6 J |  |
| E1613116688 | 2,3,7,8-TETRACHLORODIBENZOFURAN | nglkg |  | ${ }^{3.835}$ |  | 0.232 U |  |  | 22.5 |  | ${ }^{7.81 \mathrm{~J}}$ | 0.379 U |  |  |  |  | OU |  |
| E1613/1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | nglkg |  | 6.274 |  | 0.17 U |  |  | 31.6 |  | OU | 0.254 U |  |  |  |  | 12.7 |  |
| E1613/1668 | OCTACHLORODIBENZOFURAN | nglkg |  | 5591.954 J |  | 1171.538 |  |  | 178000 |  | 361000 | 774.548 |  |  |  |  | 22600 |  |
| E163121668 | OCTACHLORODIBENZO-P-DIOXIN | nglkg |  | 93149.542 J |  | 14403.737 J |  |  | 3740000 |  | 3940000 | 10958.784J |  |  |  |  | 344000 |  |
|  | TOTAL HEPTACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ |  | ${ }_{358775.98} 5$ |  | $\frac{796.183}{5162.217}$ |  |  | $\frac{178000}{65000}$ |  | 319000 145000 | 535.261 <br> 4303.934 |  |  |  |  | 19700 |  |
| E1613/16688 | TOTAL LEXACHLORINATED DIBENZOFURANS | $\frac{\mathrm{ng}}{\text { nglkg }}$ |  | 1793.312 |  | ${ }^{\frac{5}{2192.322}}$ |  |  | 492000 J |  | $\frac{1459000}{}$ |  |  |  |  |  | ${ }_{137900}$ |  |
| E1613/161668 | TOTAL HEXACHLORINATED DIBENZO-P.-DIOXINS | nglkg |  | 4241.841 |  | ${ }_{2} 299.316$ |  |  | 52600 |  | 112000 | 394.646 |  |  |  |  | 12300 |  |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | nglkg |  | 450.147 |  | 30.536 |  |  | 5250 J |  | 3020 J | 25.257 |  |  |  |  | 869 J |  |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | nglkg |  | 534.738 |  | 18.725 |  |  | 2820 |  | 4140 | 42.775 |  |  |  |  | 707 |  |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | nglkg |  | 85.027 |  | 7.042 |  |  | 525 |  | 363 J | 8.504 |  |  |  |  | 52.1 |  |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | nglkg |  | ${ }^{136.661}$ |  | 0.525 |  |  | 271 |  | 170 | ${ }^{6.626}$ |  |  |  |  | 55.6 |  |
| SW6020 | ANTIMONY | mg/kg | 1.7 | 0.39 UJ | 0.39 J | 0.35 U | 3.5 J | 2.2 J | 2.15 | 0.79 J | 0.40 UJ | 0.37 U | 0.56 J | 3.0 | 0.61 J | 4.5 J | 1.1 | 0.35 UJ |
| SW6020 | ARSENIC | mg/kg | 160 J | 12 | 110 | 54 J | 220 J | 120 J | 190 | 14 J | 61 | 4.6 | 59 | 150 J | 55 | 120 | 130 | 1.3 |
| SW6020 | BARIUM | mg/kg | 13 | 73 | 17 | 9.2 | 25 | 19 | 20 | 16 | 30 | 24 | 36 | 85 | 63 E | 72 | 20 | 14 |
| SW6020 | CADMIUM | mq/kg | ${ }^{0.340}$ | 0.80 | 0.300 | 0.30 U | $\frac{0.30 \mathrm{U}}{35}$ | ${ }^{0.300}$ | 0.29 U | 0.30 U | 0.34 U | 0.316 | 0.37 J | 0.92 | 0.57 | 0.310 | ${ }^{0.300}$ | 0.30 U |
| SW6020 | CHROMIUM | mglkg | $\frac{200 \mathrm{~J}}{100}$ | 60 | 190 | $\frac{19 \mathrm{~J}}{46}$ | $\frac{350 \mathrm{~J}}{100}$ | $\frac{180 \mathrm{~J}}{85}$ | $\frac{230 \mathrm{~J}}{120}$ | $\frac{6.45}{8 .}$ | 26 | 8.8 | 59 | $\frac{140 \mathrm{~J}}{240}$ | 60 | 150 J | 230 | 4.9 J |
| SW6020 | LEAD | mglkg | 9.2 | 9.4 | 8.4 | ${ }^{4.95}$ | 28J | 19 J | 37 | ${ }^{82}$ | 24 | 57 | 53 | 220 | $\frac{62}{52}$ | 120 | $\frac{140}{29}$ | $\frac{1.3}{5.1}$ |
| SW6020 | SELENIUM | mg/kg | 0.87 U | 0.96 U | 0.86 U | 0.87 U | 0.88 U | 0.88 U | 0.85 U | 0.88 U | 0.98 U | 0.91 U | 0.89 U | 0.89 U | 0.89 U | 0.93 J | 0.88 U | 0.86 U |
| SW6020 | SILVER | mg/kg | 0.39 U | 0.43 U | 0.39 U | 0.39 U | 0.40 U | 0.40 U | 0.39 UJ | 0.40 U | 0.44 U | 0.41 U | 0.40 U | 0.40 U | 0.40 U | 0.41 UJ | 0.40 U | 0.39 uJ |
| SW6020 | VANADIUM (FUME OR DUST) | mgkg | 0.93 UJ | 34 | 2.2 | 1.9 | 0.94 U | 0.94 U | 0.91 U | 3.9 | 7.2 | 7.8 J | 7.1 | 5.9 | 4.6 | 5.3 | 0.94 U | 4.3 |
| SW7471 | MERCURY | mg/kg | 0.22 | 0.087 J | 0.21 J | 0.031 J | 0.38 J | 0.32 J | 0.20 | 0.074 J | 2.9 | 0.063 | 1.9 | 1.8 | 1.7 | 0.42 | 0.15 | 0.022 J |
| SW8260 | 1,1,1-TRICHLOROETHANE | ugkg | 0.14 U | 0.15 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.16 U | 0.14 U | 0.14 U | 0.13 R | 0.14 U | 0.13 U | 0.13 U | 0.13 U |
| SW8260 | 1,1,1,2,2-TETRACHLOROETHANE | ugkg | 0.072 U | 0.081 U | 0.072 U | 0.069 U | 0.071 U | 0.070 U | 0.070 U | 0.071 U | 0.084 U | 0.073 U | 0.077 U | 0.070 R | 0.075 U | 0.072 U | 0.071 U | 0.069 U |
| SW8260 | 1,1,2-TRICHLOROETHANE | uglkg | 0.15 U | 0.16 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.17 U | 0.15 U | 0.16 U | 0.14 R | 0.15 U | 0.15 U | 0.14 U | 0.14 U |
| SW8260 | 1,1-DICHLOROETHANE | uglkg | 0.069 U | 0.077 U | 0.068 U | 0.066 U | 0.067 U | 0.067 U | 0.067 U | 0.068 U | 0.080 U | 0.069 U | 0.073 U | 0.067 R | 0.071 U | 0.069 U | 0.067 U | 0.066 U |
| SW8260 | 1,1-DICHLOROETHYLENE | uglkg | 0.19 U | 0.21 U | 0.19 U | 0.18 U | 0.19 U | 0.18 U | 0.18 U | 0.19 U | 0.22 U | 0.19 U | 0.20 U | 0.19 R | 0.20 U | 0.19 U | 0.19 U | 0.18 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugkg | 0.17 UJ | 0.19 U | 0.17 U | 0.16 U | 0.16 UJ | 0.16 UJ | 0.16 UJ | 0.16 U | 0.19 U | 0.17 UJ | 0.18 U | 0.16 R | 0.17 UJ | 0.17 UJ |  | 0.16 U |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | $\frac{\mathrm{ug} \text { 伯g }}{\text { ugkg }}$ | 0.54 UJ | ${ }_{0}^{0.6008}$ | ${ }_{0}^{0.53 \mathrm{U}}$ | $\frac{0.51 \mathrm{U}}{0.059 \mathrm{U}}$ | 0.53 U 0 | 0.52 U | 0.52 U | ${ }_{0}^{0.53 \mathrm{U}} 0$ | $\frac{0.62 \mathrm{U}}{0.071 \mathrm{U}}$ | ${ }_{0}^{0.544 \mathrm{U}} 0$ | $\frac{0.57 \mathrm{U}}{0.065 \mathrm{U}}$ | 0.52 ${ }^{0.060 \mathrm{R}}$ | 0.55 UJ | ${ }_{0}^{0.54 \mathrm{UJ}} 0$ | 0.53 U J | $\frac{0.52 \mathrm{U}}{0.059}$ |
| SW8260 | 1,2-DICHLOROBENZENE | uglkg | 0.085 U | 0.095 U | 0.084 U | 0.081 U | 0.083 UJ | 0.083 UJ | 0.083 UJ | 0.084 U | 0.099 U | 0.086 UJ | 0.091 U | ${ }_{0}^{0.083 \mathrm{R}}$ | 0.088 UJ | 0.085 JJ | 0.083 JJ | 0.082 U |
| SW8260 | 1,2-DICHLOROETHANE | uglkg | 0.11 U | 0.13 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.13 U | 0.11 U | 0.12 U | 0.11 R | 0.12 U | 0.11 U | 0.11 U | 0.11 U |
| sW8260 | 1,2-DICHLOROPROPANE | ugkg | 0.059 U | 0.066 U | 0.059 U | 0.057 U | 0.058 U | 0.057 U | 0.058 U | 0.058 U | 0.068 U | 0.060 U | 0.063 U | 0.058 R | 0.061 U | 0.059 U | 0.058 U | 0.057 U |
| SW8260 | 1,4-DICHLOROBENZENE | uglkg | 0.095 U | 0.11 U | 0.094 U | 0.091 U | 0.093 UJ | 0.092 UJ | 0.092 UJ | 0.093 U | 0.11 U | 0.096 UJ | 0.11 U | 0.093 R | 0.098 UJ | 0.095 UJ | 0.093 UJ | 0.091 U |
| SW8260 | ACETONE | ugikg | 2.8 UJ | 120 J | 2.7 U | 2.6 U | 2.7 U | 2.7 U | 2.7 U | 2.7 U | 11 J | 2.8 U | 2.9 U | 2.7 R | 4.3 J | 2.8 U | 2.7 U | 48 J |
| SW8260 | BENZENE | uglkg | $\stackrel{0.43 \mathrm{U}}{0}$ | $\stackrel{0.48 \mathrm{U}}{0.36 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{0}$ | $\frac{0.41 \mathrm{U}}{031 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{0.31 \mathrm{U}}$ | $\xrightarrow{0.42 \mathrm{U}}$ | $\xrightarrow{0.42 \mathrm{U}}$ | $\xrightarrow{0.42 \mathrm{U}}$ | $\stackrel{0.50 \mathrm{U}}{037 \mathrm{U}}$ | $\xrightarrow{0.43 \mathrm{U}}$ | $\frac{0.46 \mathrm{U}}{034 \mathrm{U}}$ | $\frac{0.42 \mathrm{R}}{0}$ | 0 | 0.43 U | 0.42 U | 0.41 U 0.31 U |
| SW8260 | BROMOMETHANE | ugkg | $\stackrel{0.35 \mathrm{U}}{ }$ | 0.39 U | 0.35 | 0.34 UJ | ${ }_{0}^{0.344}$ | $\stackrel{0.34 \cup}{0}$ | 0.34 U | $\stackrel{0.35 \mathrm{U}}{0}$ | 0.41 UJ | $\stackrel{0.36 \mathrm{U}}{0}$ | 0.37 U | ${ }_{0}^{0.34 \mathrm{R}}$ | ${ }_{0}^{0.36 \mathrm{UJ}}$ | 0.35 | ${ }_{0}^{0.34 \mathrm{UJ}}$ | 0 |
| SW8260 | CARBON DISULFIDE | uglkg | 1.8 U | 2.00 | 1.8 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.8 U | 2.10 | 1.8 U | 1.90 | 1.7 R | 1.8 U | 1.8 U | 1.70 | 1.70 |
| SW8260 | CARBON TETRACHLORIDE | uglkg | 0.38 U | 0.43 U | 0.38 U | 0.37 U | 0.38 U | 0.37 U | 0.37 U | 0.38 U | 0.45 U | 0.39 U | 0.41 U | 0.38 R | 0.40 U | 0.38 U | 0.38 U | 0.37 U |
| sW8260 | CFC-11 | ugkg | 0.29 U | 0.32 U | 0.28 U | 0.27 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.33 U | 0.29 U | 0.31 U | 0.28 R | 0.30 U | 0.29 U | 0.28 U | 0.28 U |
| SW8260 | CFC-12 | uglkg | $\xrightarrow{0.350}$ | 0.394 | 0.35 U | 0.34U | $\stackrel{0.34 \mathrm{U}}{0}$ | 0.34U | 0.34U | 0.35 U | 0.41 U | $\frac{0.36 \mathrm{U}}{0}$ | $\frac{0.37 \mathrm{UJ}}{0.42 \mathrm{~J}}$ | ${ }_{0}^{0.34 \mathrm{R}}$ | ${ }_{0}^{0.36 \mathrm{U}}$ | 0.35 | 0.34 U | 0.34U |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \mathrm{lkg}}$ | $\frac{0.40 \mathrm{U}}{0.44 \mathrm{U}}$ | 0.44U | $\frac{0.39 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.42 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | 0.38U | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.46 \mathrm{U}}{0.51 \mathrm{U}}$ | $\frac{0.40 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{0.47 \mathrm{U}}$ | 0.39R | $\frac{0.41 \mathrm{U}}{0.45 \mathrm{U}}$ | 0.39 0 | 0.39 U 0.43 U | $\frac{0.38 \mathrm{U}}{0.42 \mathrm{U}}$ |
| SW8260 | CHLORODIBROMOMETHANE | uglkg | 0.28 U | 0.31 U | 0.27 U | 0.26 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.32 U | 0.28 U | 0.29 U | 0.27 R | 0.29 U | 0.28 U | 0.27 U | 0.27 U |
| SW8260 | CHLOROETHANE | ugikg | 0.40 U | 0.44 U | $0.39{ }^{\text {U }}$ | 0.38 U | 0.39 U | 0.38 U | 0.39 U | 0.394 | 0.46 UJ | 0.40 U | 0.42 U | 0.39 R | 0.41 U | 0.39 U | $0.39{ }^{\text {U }}$ | 0.38 U |
| SW8260 | CHLOROFORM |  | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{0.55}$ | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.47 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.43 \mathrm{U}}{0.57 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.50 \mathrm{U}}$ | $\frac{0.40 \mathrm{U}}{0.52 \mathrm{U}}$ | $\frac{0.37 \mathrm{R}}{0.48 \mathrm{R}}$ | $\frac{0.39 \mathrm{U}}{0.51 \mathrm{u}}$ | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{u}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ |
| SW8260 | CIIS-1,2-ICHLOROETHYLENE | uglkg | 0.29 U | 0.32 U | 0.28 U | 0.27 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.33 U | 0.29 U | 0.31 U | 0.28 R | 0.30 U | 0.29 U | 0.28 U | 0.28 U |


|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample ID } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{gathered} \text { SSO60 } \\ \text { SSOO6BA } \\ 0.25-5.5 \text { fet } \\ 1130 / 20006 \\ \hline \end{gathered}$ |  |  | $\begin{array}{\|c\|} \hline \hline \text { SSO666 } \\ \text { SSo66BA } \\ 0.25-0.5 \text { feet } \\ 12108 / 20006 \\ \hline \end{array}$ |  | $\begin{gathered} \hline \hline \text { SSO667 } \\ \text { SS067BB } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{gathered}$ |  | SSO699 <br> SSO698A <br> 0.05-.5 feet <br> 11/30/2006$\|$ | SSO70 <br> SSO70BA <br> $0.25-0.5$ feet <br> $12 / 12 / 2006$ | SSO71 <br> Sso711A <br> o.05-.5feet <br> 12/01/2006$\|$ |  | SSO73 <br> SSO73BA <br> $0.25-0.5$ feet <br> $11 / 30 / 2006$ | SSO74 <br> SS074BA <br> $0.25-0.5$ feet <br> 12/04/2006 | $\begin{array}{\|c\|} \hline \hline \text { SSO75 } \\ \text { SSO75BA } \\ 0.25-0.5 \text { feet } \\ 12109 / 2006 \\ \hline \end{array}$ | SSO76 SSO76BA 0.25-0.5 feet 12/05/2006 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| sw8260 | CIS-1,3-DICHLOROPROPENE | ugkg | 0.32 U | 0.36 U | 0.32 U | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 0.37 U | 0.32 U | 0.34 U | 0.31 R | 0.33 U | 0.32 U | 0.31 U | 0.31 U |
| SW8260 | CYCLOHEXANE | uglkg | 0.42 U | 0.47 U | 0.41 U | 0.40 U | 0.41 U | 0.40 U | 0.41 U | 0.41 U | 0.48 U | 0.42 U | 0.44 U | 0.41 R | 0.43 U | 0.42 U | 0.41 U | 0.40 U |
| SW8260 | DICHLOROMETHANE | uglkg | ${ }^{0.43 \mathrm{U}}$ | 0.48 U | 0.42 U | 0.41 U | 0.42 U | 0.42 U | ${ }^{0.42 \mathrm{U}}$ | 0.42 U | 0.50 U | 0.43 U | 0.46 U | 0.42 R | 0.44 U | 0.43 U | 0.42 U | 0.41 U |
| SW8260 | ETHYLBENZENE | uglkg | 0.46 U | 0.51 U | 0.46 U | 0.44 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.53 U | 0.46 U | 0.49 U | 0.45 R | 0.48 U | 0.46 U | 0.45 U | 0.44 U |
| SW8260 | ISOPROPYLBENZENE | uglkg | 0.50 U | 0.56 U | 0.50 U | 0.48 U | 0.49 UJ | 0.49 UJ | 0.49 UJ | 0.50 U | 0.58 U | 0.51 UJ | 0.54 U | 0.49 R | 0.52 UJ | 0.50 UJ | 0.49 UJ | 0.49 U |
| SW8260 | m,p-xylenes | uglkg | 0.95 U | 1.10 | 0.94 U | 0.91 U | 0.93 U | 0.92 U | 0.92 U | 0.93 U | 1.10 | 0.96 U | 1.10 | 0.93 R | 0.98 U | 0.95 U | 0.93 U | 0.91 U |
| SW8260 | M-DICHLOROBENZENE | ugkg | 0.055 U | 0.061 U | 0.054 U | 0.052 U | 0.054 UJ | 0.053 UJ | 0.053 UJ | 0.054 U | 0.063 U | 0.055 UJ | 0.058 U | 0.053 R | 0.057 UJ | 0.055 UJ | 0.054 UJ | 0.053 U |
| SW8260 | METHYL ACETATE | uglkg | 0.21 U | 0.24 U | 0.21 U | 0.20 U | 0.21 UJ | 0.20 UJ | 0.21 U | 0.21 UJ | 0.24 U | 0.21 U | 0.22 U | 0.21 R | 0.22 U | 0.21 U | 0.21 U | 0.20 U |
| SW8260 | METHYL ETHYL KETONE | uglkg | 1.2 U | 1.4 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.4 U | 1.30 | 1.3 U | 1.2 R | 1.30 | 1.2 U | 1.2 U | 1.2 U |
| SW8260 | METHYL ISOBUTYL KETONE | ugkg | 0.78 U | 0.87 U | 0.77 U | 0.74 U | 0.76 U | 0.75 U | 0.75 U | 0.76 U | 0.90 U | 0.78 U | 0.82 U | 0.76 R | 0.80 U | 0.77 U | 0.76 U | 0.75 U |
| SW8260 | METHYL N-BUTYL KETONE | uglkg | 1.10 | 1.3 U | 1.10 | 1.10 J | 1.10 | 1.10 | 1.10 | 1.10 | 1.30 | 1.10 | 1.2 U | 1.12 | 1.2 U | 1.10 | 1.10 | 1.10 |
| SW8260 | METHYLBENZENE | ugkg | 0.46 U | 0.51 U | 0.46 U | 0.44 U | 0.45 U | 0.45 U | 0.45 U | 0.45 U | 0.72 J | 0.46 U | 0.49 U | 0.45 R | 0.48 U | 0.46 U | 0.45 U | 0.44 U |
| SW8260 | METHYLCYLOHEXANE | uglkg | 0.48 U | 0.54 U | 0.48 U | 0.46 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.56 U | 0.49 U | 0.51 U | 0.47 R | 0.50 U | 0.83 J | 0.47 U | 0.46 U |
| SW8260 | O-XYLENE | ugkg | 0.44 U | 0.49 U | 0.44 U | 0.42 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.51 U | 0.44 U | 0.47 U | 0.43 R | 0.45 U | 0.44 U | 0.43 U | 0.42 U |
| SW8260 | STYRENE (MONOMER) | ugkg | 0.47 U | 0.53 U | 0.47 U | 0.45 U | 0.46 U | 0.46 U | 0.46 U | 0.46 U | 0.55 U | 0.48 U | 0.50 U | 0.46 R | 0.49 U | 0.47 U | 0.46 U | 0.45 U |
| SW8260 | TERT-BUTYL METHYL ETHER | uglkg | 0.35 U | 0.39 U | 0.35 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.35 U | 0.41 U | 0.36 U | 0.37 U | 0.34 R | 0.36 U | 0.35 U | 0.34 U | 0.34 U |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.44 U | 0.49 U | 0.44 U | 0.42 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.51 U | 0.44 U | 0.47 U | 0.43 R | 0.45 U | 0.44 U | 0.43 U | 0.42 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | uglkg | 0.42 U | 0.47 U | 0.41 U | 0.40 U | 0.41 U | 0.40 U | 0.41 U | 0.41 U | 0.48 U | 0.42 U | 0.44 U | 0.41 R | 0.43 U | 0.42 U | 0.41 U | 0.40 U |
| SW8260 | TRANS-1,2-DICHLOROPROPENE | ugkg | 0.33 U | 0.37 U | 0.33 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.38 U | 0.33 U | 0.35 U | 0.32 R | 0.34 U | 0.33 U | 0.32 U | 0.32 U |
| SW8260 | TRIBOMOMETHANE | ugkg | 0.43 U | 0.48 U | 0.42 U | 0.41 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.50 U | 0.43 U | 0.46 U | 0.42 R | 0.44 U | 0.43 U | 0.42 U | 0.41 U |
| SW8260 | TRICHLOROETHYLENE | uglkg | 0.44 U | 0.49 U | 0.44 U | 0.42 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.51 U | 0.44 U | 0.47 U | 0.43 R | 0.45 U | 0.44 U | 0.43 U | 0.42 U |
| SW8260 | VIINYL CHLORIDE | ugkg | 0.27 U | 0.30 U | 0.26 U | 0.25 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | ${ }^{0.31 \mathrm{U}}$ | 0.27 U | 0.28 U | 0.26 R | 0.27 U | 0.26 U | 0.26 U | 0.26 U |
| SW8270 | 2,4,5-TRICHLOROPHENOL | uglkg | 15 U | 15 U | 14 U | 14 U | 45 J | 14 U | 14 U | 14 U | 160 U | 15 U | 15 U | 14 U | 15 U | 150 U | 14 U | 14 U |
| SW8270 | 2,4,6-TRICHLOROPHENOL | ugkg | 40 U | 42 U | 39 U | 38 U | 39 U | 38 U | 38 U | 39 U | 430 U | 40 U | 40 U | 39 U | 41 U | 400 U | 39 U | 38 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 19 U | 20 U | 19 U | 18 U | 19 U | 18 U | 18 U | 19 U | 200 U | 19 U | 19 U | 19 U | 20 U | 190 U | 19 U | 18 U |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | 21 U | 22 U | 210 | 20 U | 30 J | 20 U | 20 U | 210 | 230 U | 21 U | 24 J | 48 J | 61 J | 210 U | 21 U | 20 U |
| SW8270 | 2,4-DIIITROPHENOL | ugkg | 14 UJ | 14 U | 13 U | 13 U | 13 U | 13 UJ | 13 U | 13 UJ | 150 U | 14 UJ | 14 U | 13 UJ | 14 U | 140 U | 13 U | 13 U |
| SW8270 | 2,4-DINITROTOLUENE | uglkg | 11 U | 12 U | 11 U | 11 U | 82 J | 11 U | 11 U | 11 U | 120 U | 11 U | 11 U | 11 U | 11 U | 110 U | 11 U | 11 U |
| SW8270 | 2,6-DINITROTOLUENE | ugkg | 40 U | 42 U | 39 U | 38 U | 39 U | 38 U | 38 U | 39 U | ${ }_{4}^{430 \mathrm{U}}$ | 40 U | 40 U | 39 U | 41 U | 400 U | 39 U | 38 U |
| SW8270 | 2-CHLORONAPHTHALENE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\mathrm{ug} k \mathrm{~kg}}$ | $\frac{18}{20}$ | 19 U | $\underline{180}$ | 17 U | 17 U | 17 U | 17 U | 18 U | ${ }_{200}^{190}$ | $\frac{18}{20}$ | $\frac{18}{20}$ | $\underline{170}$ | $\frac{18}{210}$ | ${ }^{1800 \mathrm{U}}$ | ${ }_{2} 17 \mathrm{U}$ | 17 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | ugkg | 14 U | 14 U | 13 U | 13 U | 13 U | 130 | 13 U | 13 U | 150 U | 14 U | 14 U | 13 U | 14 U | 140 U | 13 U | 13 U |
| SW8270 | 2-NITROANILINE | ugkg | 24 UJ | 26 U | 24 U | 23 U | 30 J | 24 UJ | 24 U | 24 UJ | 260 U | 25 UJ | 25 U | 24 U | 25 UJ | 240 U | 24 UJ | 23 U |
| SW8270 | 2-NITROPHENOL | ugkg | 16 U | 17 U | 15 U | 15 U | 15 U | 15 U | 15 U | 15 U | $170 \cup$ | 16 U | 16 U | 15 U | 16 U | 160 U | 15 U | 15 U |
| SW8270 | 3,3-DICHLOROBENZIIINE | ugkg | 37 U | 40 U | 37 U | 36 U | 37 U | 36 U | 36 U | 37 U | 400 U | 38 U | 38 U | 37 U | 39 U | 370 U | 37 UJ | 36 U |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | uglkg | 15 U | 15 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 160 U | 15 U | 15 U | 14 U | 15 U | 150 U | 14 UJ | 14 U |
| SW8270 | 3-NITROANILINE | uglkg | 19 U | 20 U | 19 U | 18 U | 37 J | 18 U | 18 U | 19 U | 200 U | 19 U | 19 U | 19 U | 20 U | 190 U | 19 U | 18 U |
| SW8270 | 4,6-DINITRO-2-METHYLPHENOL | uglkg | 11 UJ | 11 U | 10 U | 9.8 U | 60 J | 9.9 UJ | 9.90 | 11 UJ | 120 U | 11 U | 11 U | 10 UJ | 11 U | 110 U | 10 U | 9.8 U |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ug/kg | 11 U | 12 U | 11 U | 11 U | 53 J | 11 U | 11 U | 11 U | 120 U | 11 U | 11 U | 110 | 110 | 1100 | 11 U | 11 U |
| $\frac{5}{\text { SW8270 }}$ | $\frac{\text { 4-CHLORO-3-METHYLPHENOL }}{\text { 4-CHLOROPHENYL }}$ | ugkg | $\frac{18 \mathrm{U}}{24 \mathrm{U}}$ | $\frac{190}{26 U}$ | $\frac{18 \mathrm{U}}{24}$ | $\frac{17}{23}$ | $\frac{34 \mathrm{~J}}{35}$ | $\frac{174}{24}$ | $\frac{17}{24 U}$ | $\frac{18 \mathrm{U}}{24}$ | $\underline{190 U}$ | $\frac{18 \mathrm{U}}{25}$ | $\frac{18 \mathrm{U}}{25}$ | $\frac{17 \mathrm{U}}{24 \mathrm{U}}$ | $\frac{18 \mathrm{U}}{25}$ | $\frac{180 \mathrm{U}}{240 \mathrm{U}}$ | $\frac{17 \mathrm{U}}{24}$ | $\frac{17 U}{23 U}$ |
| SW8270 | 4-METHYLPHENOL (MPP-CRESOL) | ugkg | 29 U | 30 U | 28 U | 28 U | $\underline{280}$ | 28 U | 28 U | 28 U | 310 U | 29 U | 290 | 29 J | 30 U | 290 U | 28 U | 28 U |
| SW8270 | 4-NITROPHENOL | uglkg | 19 UJ | 20 UJ | 19 UJ | 18 U | 190 | 18 U | 18 U | 19 U | 200 U | 19 UJ | 19 UJ | 19 U | 20 UJ | 190 U | 19 UJ | 18 U |
| SW8270 | BENZYL BUTYL PHTHALATE | ugkg | 20 U | 21 U | 20 U | 19 U | 180 J | 25 J | 19 U | 20 U | 220 U | 20 U | 20 U | 20 U | 21 U | 200 U | 20 U | 19 U |
| SW8270 | BIPHENYL | ugkg | $170 \cup$ | 180 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 1800 U | $170 \cup$ | $170 \cup$ | 160 U | 170 U | 1700 U | 160 U | 160 U |
| SW8270 | BIS(2-CHLORETHOXY)METHANE | uglkg | 19 U | 20 U | 19 U | 18 U | 19 U | 18 U | 18 U | 19 U | 200 U | 19 U | 19 U | 19 U | 20 U | 190 U | 19 U | 18 U |
| SW8270 | BIS(2-CHLOROETHYL) ETHER | uglkg | 17 U | 18 U | 16 U | 16 U | 16 UJ | 16 UJ | 16 U | 16 UJ | 180 U | 17 U | 17 U | 16 U | 17 UJ | 170 UJ | 16 U | 16 UJ |
| SW8270 | BIIS(2-CHLOROISOPROPYL) ETHER | ugkg | 23 U | 25 UJ | 23 UJ | 22 U | 23 U | 23 U | 23 U | 23 U | 250 U | 23 UJ | 24 UJ | 23 U | 24 U | 230 U | 23 UJ | 22 U |
| SW8270 | BiS(2-ETHYLHEXYL)PHTHALATE | ugkg | 83 J | 19 U | 18 U | 17 U | 190 J | $\frac{29 \mathrm{~J}}{310 \mathrm{~J}}$ | $\frac{17 \mathrm{U}}{600}$ | $\frac{18 \mathrm{U}}{180}$ | $\stackrel{190 \mathrm{U}}{2000 \mathrm{~J}}$ | $\frac{18 \mathrm{U}}{18 \mathrm{U}}$ | $\frac{160 \mathrm{~J}}{510}$ | $\frac{170 \mathrm{~J}}{950}$ | 75 J | $\frac{180 \mathrm{U}}{1500 \mathrm{~J}}$ | $\frac{21 \mathrm{~J}}{550}$ | $\frac{17 \mathrm{U}}{62 \mathrm{~J}}$ |
| SW8270 | CARBAZOLE ${ }_{\text {IIBENZFURAN }}$ | $\frac{\mathrm{ug} k \mathrm{~kg}}{\mathrm{ug} k g}$ | $\stackrel{98}{110}$ | 750 J | 82 J | 17 U | $\frac{880 \mathrm{~J}}{140}$ | $\frac{310 \mathrm{~J}}{63 \mathrm{~J}}$ | 600 140 | ${ }^{180 \mathrm{~J}}$ | ${ }_{2}^{2000 \mathrm{~J}}$ | 18 U | 510 | 950 350 | 1300 340 | ${ }_{500 \mathrm{~J}}^{10}$ | ${ }_{130}$ | 14 U |
| SW8270 | DIETHYL PHTHALATE | ugkg | 14 U | 14 U | 13 U | 13 U | 64 J | 13 U | 13 U | 13 U | 150 U | 14 U | 14 U | 13 U | 14 U | 140 U | 13 U | 13 U |
| SW8270 | DIMETHYL PHTHALATE | uglkg | 11 U | 12 U | 11 U | 11 U | 36 J | 11 U | 11 U | 11 U | 120 U | 11 U | 11 U | 11 U | 11 U | 110 U | 11 U | 11 U |
| SW8270 | D-N-BUTYL-PHTHALATE | uglkg | 67 U | 710 | 65 U | 64 U | 190 J | 65 U | 65 U | 66 U | ${ }^{720 \mathrm{O}}$ | 67 U | 68 U | 65 U | 69 U | 670 U | 65 U | 64 U |
| SW8270 | DI-N-OCTYL-PHTHALATE | uglkg | 17 U | 18 U | 16 U | 16 U | 180 J | 21 J | 16 U | 16 U | 180 U | 17 U | 17 U | 16 U | 17 U | 170 U | 16 U | 16 U |
| SW8270 | HEXACHLORO-1,3-BUTADIENE | ugkg | 19 U | 20 U | 19 U | 18 U | 19 U | 18 U | 18 U | 19 U | 200 U | 19 U | 19 U | 19 U | 20 U | 190 U | 19 U | 18 U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 9.1U | 9.6U | 8.90 | 8.70 | 78 J | 8.8 U | 8.8 U | 8.9 U | 98 U | $\underline{9.14}$ | 9.2U | ${ }^{8.8 \mathrm{U}}$ | 9.4 U | 91 U | 8.94 | 8.70 |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | ugkg | 12 U | 13 U | 12 U | 12 U | 12 UJ | $\frac{12 \mathrm{UJ}}{18 \mathrm{U}}$ | $\frac{12 \mathrm{UJ}}{18}$ | $\frac{12 \mathrm{UJ}}{10 \mathrm{u}}$ | ${ }^{1300}$ | 13UJ | 13 U | 12UJ | 13 U | 120 UJ | 12 U | $\frac{12 \mathrm{UJ}}{18}$ |
| SW8270 | HEXACHLOROETHANE | ugkg | 19 U | 20 U | 19 U | 18 U | 19 U | 18 U | 18 UJ | 19 U | 200 U | 19 U | 19 U | 19 U | 20 U | 190 U | 19 U | 18 U |
| SW8270 | NTROBENZENE | ugkg | 22 U | 23 U | 22 U | 21 U | 22 U | 22 U | 22 U | 22 U | 240 U | 22 U | 22 U | 22 U | 23 U | 220 U |  | 21 U |
| SW8270 SW8270 | $\frac{\text { N-NTROSO-DI-N.PROPYLAMINE }}{\text { N-NITROSOOIPHENYLAMINE }}$ |  | $\frac{20 U}{12 \mathrm{U}}$ | $\frac{210}{130}$ | 20 U | 19 U | $\frac{20 \mathrm{U}}{86}$ | $\frac{190}{12 U}$ | $\frac{19 \mathrm{U}}{12 \mathrm{U}}$ | $\frac{20 U}{120}$ | $\frac{220 U}{130 \mathrm{U}}$ | $\frac{20 U}{130}$ | $\frac{20 U}{130}$ | $\frac{20 U}{120}$ | $\frac{21 U}{13 U}$ | $\frac{200 \mathrm{U}}{120 \mathrm{U}}$ | $\frac{20 \mathrm{UJ}}{12 \mathrm{u}}$ | 19 U |
| SW8270 | P.CHLOROANILINE | ug/kg | 29 U | 30 U | 28 U | 28 UJ | 28 U | 28 U | 28 U | 28 U | 310 U | 29 U | 29 U | 28 U | 30 U | 290 U | 28 U | 28 U |
| SW8270 | PHENOL | ugkg | 18 U | 19 U | 18 U | 17 U | 17 U | 17 U | 17 U | 18 U | 190 U | 18 U | 18 U | 17 U | 18 U | 180 U | 17 U | 17 U |
| SW8270 | P-NITROANILINE | ugkg | 14 U | 14 U | 13 U | 13 U | 70 J | 13 U | 13 U | 13 U | 150 U | 14 U | 14 U | 13 U | 14 U | 140 U | 13 U | 13 U |

Notes:
mgkg: miligrams per kilogram
nglkg: nanograms per kilogram
igikg: micrograms per kilogram
tilics are new results from Vista laboratory

|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample il } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{array}{c\|} \hline \hline \text { SSO78 } \\ \text { SSo78B } \\ 0.25-0.5 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | SS079BA 0.25-0.5 feet 11/30/2006 | $\begin{array}{\|c\|} \hline \hline \text { SSO80 } \\ \text { SSo80BA } \\ 0.25-0.5 \text { feet } \end{array}$ 12/06/2006 | $\begin{array}{\|c\|} \hline \hline \text { SSO8080 } \\ 0.25-0.5 \mathrm{BE} \text { feet } \\ 121 / 06 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \hline \text { SSO81 } \\ \text { SSo81BA } \\ 0.25-0.5 \text { feet } \\ 12 / 01 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \hline \text { SSO822 } \\ \text { SSo82BA } \\ 0.25-0.5 \text { feet } \\ 12 / 07 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|c\|} \hline \text { SSO833 } \\ \text { SSo83BA } \\ 0.25-0.5 \text { feet } \\ 12 / 101 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO84 } \\ \text { SS084BA } \\ 0.25-0.5 \text { feet } \\ 12 / 08 / 2006 \end{array}$ $12 / 08 / 2006$ | $\begin{array}{\|c\|\|} \hline \hline \text { SSO855 } \\ \text { SSO85BA } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO866 } \\ \text { SSO86BA } \\ 0.25-0.5 \text { feet } \\ 12109 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|\|} \hline \hline \text { SSO866 } \\ \text { SSO86BB } \\ 0.25-0.5 \text { feet } \\ 12 / 09 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO87 } \\ \text { SSo87BA } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS088 } \\ \text { SSO8BA } \\ 0.25-0.5 \text { feet } \\ 12 / 09 / 2006 \end{gathered}$ 12/09/2006 | $\begin{array}{c\|} \hline \hline \text { SSO89 } \\ \text { Sso8gBA } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO909 } \\ \text { SSo900BA } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO900 } \\ \text { Sso90BC } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SNASIM | 2-METHYLNAPHTHALENE | ugkg | 1.6 U | 79 U | 16 U | 16 U | 110 J | 11000 | 220 | 120 | 300 J | 110 | 100 | 43 J | 35 J | 230 J | 160 U | 160 U |
|  | ACENAPHTHENE | ugkg | 2.90 | 150 U |  | 29 U | 40 J | 190000 | 68 J | 110 | 300 U | 96 | 110 | 29 UJ | 30 U | 2900 | 290 U | 290 U |
| SNASIM | ACENAPHTHYLENE | uglkg | 9.3 | 1300 | 180 | 28 U | 680 J | 7000 | 680 | 610 | 5600 | 950 | 990 | 370 J | 370 | 4400 | 2500 | 2200 |
| SNASIM | ANTHRACENE | uglkg | 18 | 1800 | 86 | 140 J | 1100 J | 240000 | 1300 | 1100 | 13000 | 1900 | 1800 | 630 | 520 | 10000 | 13000 | 12000 |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 23 | 2800 | 200 J | 67 J | 950 J | 120000 | 1600 | 920 | 10000 | 1800 | 2100 | 980 J | 660 | 9700 | 2700 | 2100 |
| BNASIM | BENZO(A)PYRENE | ugkg | 27 | 3100 | 290 J | 84 J | 1500 J | 43000 | 1300 | 1100 | 12000 | 2200 | 2500 | 870 J | 890 | 8100 | 2900 | 2400 |
| BNASIM | BENZO(B)FLUORANTHENE | uglkg | 71 J | 5900 | 310 J | 140 J | 2600 J | 63000 | 2900 | 1800 | 25000 | 7600 | 8200 | 1900 J | 1700 | 16000 | 5400 | 4400 |
| BNASIM | BENZO(G,H,U)PERYLENE | ugkg | 28 | 3500 | 190 J | 59 J | 1500 J | 8900 | 1500 | 960 | 11000 | 1800 | 1800 | 1000 J | 760 | 7100 | 3400 | 2900 |
| BNASIM | BENZO(K)FLIUORANTHENE | uglkg | 35 | 4300 | 270 J | 120 J | 1700 J | 58000 | 2000 | 1500 | 15000 | 3500 | 4300 | 1400 J | 1300 | 11000 | 4400 | 3500 |
| SNASIM | CHRYSENE | uglkg | 38 | 4000 | 240 J | 120 J | 1500 J | 110000 | 2200 | 1200 | 16000 | 2600 J | 4600 J | 1400 J | 960 | 13000 | 3900 | 2900 |
| BNASIM | DIBENZO(A,H)ANTHRACENE | ugkg | 9.2 | 1000 | 64 J | 17 J | 500 J | 4400 | 480 | 320 | 4000 | 620 | 600 | 310 J | 230 | 2400 | 790 | 690 |
| SNASIM | FLUORANTHENE | uglkg | 38 | 4400 | 190 J | 120 J | 1700 J | 600000 | 2800 | 1000 | 14000 | 4000 | 4000 | 1900 | 1000 | 17000 | 4400 | 3300 |
| BNASIM | FLUORENE | ugkg | 1.6 U | 790 | 16 U | 16 U | 55 J | 170000 | 68 J | 78 | 510 | 81 | 100 | 16 UJ | 22 J | 340 J | 200 J | 210 J |
| BNASIM | INDENO(1,2,3,-CD)PYRENE | ugkg | 27 | 3700 | 240 J | 69 J | 1600 J | 13000 | 1800 | 1100 | 14000 | 2000 | 2100 | 1200 J | 870 | 8400 | 3700 | 3100 |
| SNASIM | NAPHTHALENE | uglkg | 0.54 U | 130 J | 18 J | 5.4 U | 160 J | 5500 | 380 | 210 | 450 | 140 | 130 | 71 J | 51 | 300 J | 230 J | 190 J |
| SNASIM | PENTACHLOROPHENOL | uglkg | 5.8 J | 1800 J | 7.5 U | 98 J | 120 J | 3300 J | 990 | 910 | 13000 | 3100 J | 2800 J | 530 | 580 J | 12000 | 1900 J | 1500 J |
| SNASIM | PHENANTHRENE | uglkg | 3.5 U | 760 | 45 J | 35 U | 550 J | 460000 | 780 | 180 | 1800 | 610 | 620 | 340 | 230 | 2300 | 650 J | 550 J |
| SNASIM | PYRENE | ugkg | 45 | 4900 | 230 J | 140 J | 1700 J | 430000 | 2500 | 1200 | 15000 | 4600 | 4900 | 1900 J | 1100 | 16000 | 4500 | 3400 |
| E160.3 | RESIDUE, TOTAL | percent | 96 | 96 | 94 | 95 | 93 | 90 | 87 | 95 | 92 | 95 | 94 | 96 | 92 | 96 | 95 | 96 |
| E1613/E1668 | 1,2,2,4,4,6,7,8-HEPTACHLORODIBENZOFURAN | ngkg |  |  | ${ }^{35.543}$ | 27.847 | 606 | 14100 |  | 2920 |  | 15200 | 12186.386 J |  | 2618.801 |  |  |  |
| E1613/1668 | 1,2,3,4,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | nglkg |  |  | 296.827 | 223.555 | 9050 | 168000 |  | 28000 |  | 145000 | 112843.563 |  | 15559.273 J |  |  |  |
| E16131/1668 | 1, 1,2,4,4,7,8,9-HEPTACHLORODIBENZOFURAN | ng lkg |  |  | 1.7 J | 1.233 J | 42.1 J | 1050 |  | 233 |  | 1090 | 1324.952 |  | 217.296 |  |  |  |
| E1613/16688 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  | 0.826 J | 0.657 J | 27.95 | 491 |  | 97.6 |  | 559 | 625.519 |  | 95.335 |  |  |  |
| E1613/1668 | $1,2,3,4,7,8$-HEXACHLORODIBENZO-P-DIOXIN | ng $/ \mathrm{kg}$ |  |  | 1.958 J | 1.595 J | 97.5 | 341 |  | 119 |  | 872 | 724.692 |  | 209.825 |  |  |  |
| E1613116688 | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  | 0.605 J | 0.442 J | 13.8 J | 105 |  | 38.9 J |  | 263 | ${ }^{268.967}$ |  | 77.32 |  |  |  |
| E16131/1668 | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | nglkg |  |  | 5.401 | 3.843 J | 224 | 2100 |  | 483 |  | 3240 | 3070.395 J |  | 582.23 |  |  |  |
| E1613/1668 | 1,2,3,7,8,9,-HEXACHLORODIBENZOFURAN | nglkg |  |  | 0.123 U | 0.122 U | ${ }^{9.21 \mathrm{~J}}$ | 118 |  | 26.6 J |  | 106 | 8.584 |  | 2.841 J |  |  |  |
| E1613/1668 | 1, 2, 3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | nglkg |  |  | 3.731 J | 2.713 U | 179 | 507 |  | 190 |  | 1420 | 1421.01 |  | 512.51 |  |  |  |
| E16131/1668 | 1,2,3,7,8-PENTACHLORODIBENZOFURAN | ngkg |  |  | 0.095 J | 0.035 U | 0 O | ${ }^{27.3 \mathrm{~J}}$ |  | 5.92 J |  | 25.7 J | 25.016 |  | 8.834 J |  |  |  |
| E16131/1668 | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | nglkg |  |  | 0.639 J | 0.481 J | 36.8 J | 39.4 J |  | 26.5 J |  | 296 | 260.647 |  | 74.529 |  |  |  |
| E1613/16688 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  | 0.614 J | 0.534 J | 26.5 J | 193 |  | 84.8 |  | 529 | 180.515 |  | 119.488 |  |  |  |
| E1613/16688 | 2,3,4,7,8-PENTACHLORODIBENZOFURAN | nglkg |  |  | 0.151 J | 0.138 U | 9.86 J | 90 |  | 26 J |  | 91.9 | 41.783 |  | 13.323 |  |  |  |
| E1613116688 | 2,3,7,8-TETRACHLORODIBENZOFURAN | nglkg |  |  | 0.042 U | 0.026 U | OU | 5.34 J |  | 3.92 J |  | ${ }^{13.15}$ | ${ }^{11.757}$ |  | ${ }^{3.135}$ |  |  |  |
| E1613/1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | nglkg |  |  | 0.023 U | 0.021 U | OU | OU |  | OU |  | 28.2 | 21.32 |  | 5.864 |  |  |  |
| E1613/1668 | OCTACHLORODIBENZOFURAN | nglkg |  |  | 160.471 | 114.554 | 2770 | 81000 |  | 16500 |  | 63200 | 46049.543 J |  | 9810.755 J |  |  |  |
| E163121668 | OCTACHLORODIBENZO-P-DIOXIN | nglkg |  |  | 2519.65 | 1886.565 | -69000 | 1940000 |  | 332000 |  | 1970000 | 760786.871 J |  | 184492.67 |  |  |  |
|  | TOTAL HEPTACHLLORINATED DIBENZOFURANS | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ |  |  | ${ }_{1}^{129.216}$ | ${ }_{10} 97.751$ | $\frac{2500}{37300}$ | $\frac{74200 ~}{119000}$ |  | $\frac{14500}{157000}$ |  | $\frac{70300}{517000}$ | 16141.056  <br> 134136.907  |  | 10215.001 60105.004 |  |  |  |
| E1613/16688 | TOTAL HEXACHLORINATED DIBENZOFURANS | ng kg |  |  | ${ }^{1529.944}$ | $\frac{102.419}{}$ | 702 | 141400 |  | $\underline{2920}$ |  | 17200 | ${ }^{134136.997}$ |  | ${ }^{601054.004}$ |  |  |  |
| E1613/161668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  | 116.282 | 83.335 | 4890 | $\frac{140300}{}$ |  | ${ }_{9240}$ |  | 36900 | 26425.781 |  | 6574.772 |  |  |  |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | ngkg |  |  | 6.614 | 5.044 | 84.5 | 547 |  | 280 |  | 1660 J | 1399.558 |  | 510.838 |  |  |  |
| E1613/1668 | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  | 9.914 | 7.077 | 620 | 1330 |  | 282 |  | 1960 | 1660.777 |  | 437.467 |  |  |  |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | nglkg |  |  | 3.858 | 2.439 | 19.5 | 57.6 |  | 32.5 |  | 199 J | ${ }^{196.136}$ |  | 68.061 |  |  |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  | 1.636 | 1.764 | 115 | 219 |  | 6.27 |  | 238 | 177.619 |  | 35.828 |  |  |  |
| SW6020 | ANTIMONY | mg/kg | 0.35 uJ | 0.90 J | 0.36 UJ | 0.35 UJ | 0.35 U | 0.71 J | 1.15 | 0.35 UJ | 1.7 | $0_{0.43 \mathrm{~J}}$ | 0.57 J | 0.33 U | 0.73 J | 1.3 | 0.69 J | ${ }^{0.51 \mathrm{~J}}$ |
| SW6020 | ARSENIC | mg/kg | 0.86 J | 86 J | 0.95 | 1.0 | 5.85 | 39 | 45 J | 13 | 69 J | 42 | 41 | 18 J | 50 | 86 J | 41 J | 35 J |
| SW6020 | BARIUM | mg/kg | 8.6 J | 12 | 10 | 13 | 23 | 59 | 13 | 16 | 55 | 21 J | 14 J | 12 | 26 | 24 | 13 |  |
| SW6020 | CADMIUM | mglkg | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.30 \mathrm{U}}$ | 0.314 | 0.30 U | 0.30 U | ${ }^{0.321}$ | ${ }^{0.32 \mathrm{U}}$ | 0.30 U | 0.31 U | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.31 \mathrm{U}}$ | $0.28{ }^{32}$ | $\frac{0.31 \mathrm{U}}{45}$ | 0.28 U | ${ }_{0}^{0.30 \mathrm{U}}$ | 0.28 U |
| SW6020 | CHROMUM | mglkg | 7.2 | $\frac{130 \mathrm{~J}}{80}$ | 3.5 | ${ }^{4.3}$ | $\frac{20 \mathrm{~J}}{82}$ | 11 | $\frac{57 \mathrm{~J}}{43}$ | $\frac{13}{6}$ | ${ }_{4} 36$ | 69 J | $\frac{75 \mathrm{~J}}{50}$ | 32 J | 45 J | 110 J | 43 J | 38 J |
| SW6020 | LEAD | mglkg | 2.65 | 11 | 18 | 19 | 15 | 39 | 14 | 9.1 | 69 | 18 | 19 | 5.0 | 25 | 27 | 13 | 11 |
| SW6020 | SELENIUM | mg/kg | 0.86 U | 0.87 U | 0.88 U | 0.88 U | 0.88 U | 0.93 U | 0.92 U | 0.87 U | 0.89 U | 0.86 U | 0.89 U | 0.81 U | 0.91 U | ${ }^{0.81 U}$ | 0.88 U | ${ }^{0.82 \mathrm{U}}$ |
| SW6020 | SILVER | mg/kg | 0.39 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.42 U | 0.41 U | 0.39 U | 0.40 U | 0.39 UJ | 0.40 UJ | 0.37 U | 0.41 UJ | 0.37 U | 0.40 U | 0.37 U |
| SW6020 | VANADIUM (FUME OR DUST) | mgkg | 2.6 J | 0.94 U | 3.1 | 3.3 | 13 | 9.3 | 2.9 | 5.5 | 7.9 | 2.3 J | 1.6 J | 2.0 | 2.9 | 0.87 UJ | 1.9 J | 1.3 J |
| SW7471 | MERCURY | mg/kg | 0.029 | 0.099 J | 0.043 | 0.042 | 0.66 | 0.83 | 0.23 J | 0.13 J | 0.35 | 0.69 | 0.57 | 0.17 | 0.14 | 0.42 | 0.27 | 0.26 |
| SW8260 | 1,1,1-TRICHLOROETHANE | ugkg | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.15 U | 0.17 U | 0.13 U | 0.14 U | 0.14 U | 0.13 U | 0.13 U | 0.14 U | 0.13 U | 0.14 UJ | $0.14 \mathrm{UJ}^{\text {a }}$ |
| SW8260 | 1,1,1,2,-TETRACHLOROETHANE | ugkg | 0.070 U | 0.070 U | 0.071 U | 0.070 U | 0.071 U | 0.083 U | 0.094 U | 0.070 U | 0.073 U | 0.073 U | 0.071 U | 0.070 U | 0.073 U | 0.069 UJ | 0.072 UJ | 0.077 UJ |
| SW8260 | 1,1,2-TRICHLOROETHANE | uglkg | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.17 U | 0.19 U | 0.14 U | 0.15 U | 0.15 U | 0.14 U | 0.14 U | 0.15 U | 0.14 UJ | 0.15 UJ | 0.16 UJ |
| SW8260 | 1,1-DICHLOROETHANE | uglkg | 0.066 U | 0.066 U | 0.067 U | 0.067 U | 0.068 U | 0.079 U | 0.089 U | 0.067 U | 0.070 U | 0.070 U | 0.068 U | 0.067 U | 0.069 U | 0.066 U | 0.069 UJ | 0.073 UJ |
| SW8260 | 1,1-DICHLOROETHYLENE | uglkg | 0.18 U | 0.18 U | 0.19 U | 0.18 U | 0.19 U | 0.22 U | 0.25 U | 0.18 U | 0.19 U | 0.19 U | 0.19 U | 0.18 U | 0.19 U | 0.18 U | 0.19 UJ | 0.20 UJ |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugkg | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U | 0.19 U | 0.22 U | 0.16 U | 0.17 UJ | $0.17{ }^{\text {U }}$ | 0.16 U | 0.16 U | 0.17 UJ | 0.16 UJ |  |  |
| SW8260 | $\frac{1,2-\text {-DIBROMO-3-CHLOROPROPANE (DBCP) }}{\text { 1,2-DIBROMOETHANE }}$ | $\frac{\mathrm{ug} \text { 伯g }}{\text { ugkg }}$ | 0.52 U | $\frac{0.52 \mathrm{U}}{0.059}$ | ${ }_{0}^{0.53 \mathrm{U}}$ | 0.52 ${ }_{0}^{0.060}$ | $\stackrel{0.53 \mathrm{U}}{0.061 \mathrm{U}}$ | $\frac{0.62 \mathrm{U}}{0.070 \mathrm{U}}$ | $\frac{0.70 \mathrm{U}}{0.080 \mathrm{U}}$ | 0.52 U | $\frac{0.54 \mathrm{UJ}}{0.062 \mathrm{U}}$ | 0.54 U 0.062 U | $\frac{0.53 \mathrm{U}}{0.060 \mathrm{U}}$ | $\frac{0.52 \mathrm{U}}{0.060 \mathrm{U}}$ | 0.54 0 | 0.051 UJ | $\frac{0.54 \mathrm{UJ}}{0.061 \mathrm{UJ}}$ | ${ }_{0}^{0.57 \mathrm{UJ}} 0$ |
| SW8260 | 1,2-IICHLOROBENZENE | ugkg | 0.082 U | 0.082 U | 0.083 U | 0.083 U | 0.084 U | 0.098 U | 0.12 U | 0.083 U | 0.086 UJ | 0.086 U | 0.084 U | 0.083 U | 0.086 UJ | 0.082 JJ | $0.085 \mathrm{UJ}^{0}$ | 0.0991 JJ |
| SW8260 | 1,2-DICHLOROETHANE | uglkg | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.13 U | 0.15 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | $0.11 \mathrm{O}^{0}$ | 0.11 UJ | 0.12 UJ |
| SW8260 | 1,2-IICHLOROPROPANE | uglkg | 0.057 U | 0.057 U | 0.058 U | 0.057 U | 0.059 U | 0.068 U | 0.077 U | 0.058 U | 0.060 U | 0.060 U | 0.058 U | 0.057 U | 0.060 U | 0.057 U | 0.059 UJ | 0.063 UJ |
| SW8260 | 1,4-DICHLOROBENZENE | uglkg | 0.092 U | 0.092 U | 0.093 U | 0.092 U | 0.094 U | 0.11 U | 0.13 U | 0.093 U | 0.096 UJ | 0.096 U | 0.093 U | 0.51 J | 0.096 UJ | 0.091 UJ | 0.095 UJ | 0.11 UJ |
| SW8260 | ACETONE | ugkg | 14 J | 14J | 2.7 U | 2.7 U | 57 J | 3.2 U | 3.6 U | 18 J | 2.8 UJ | 160 J | 63 J | 150 | 47 J | 2.7 UJ |  |  |
| SW8260 | BENZENE ${ }^{\text {BROMODICHHOROMETHANE }}$ | uglkg | $\frac{0.41 \mathrm{U}}{031 \mathrm{U}}$ | $\frac{0.41 \mathrm{U}}{031 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{031 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{031 \mathrm{U}}$ | 0.42 U | $\frac{2.93}{0.37 \mathrm{U}}$ | 0.56 U 0.41 U | $\frac{0.42 \mathrm{U}}{0}$ | $\stackrel{0.43 \mathrm{U}}{0}$ | $\frac{0.43 \mathrm{U}}{0}$ | $\frac{0.42 \mathrm{U}}{031 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{031 \mathrm{U}}$ | 0.43U | 0 | $\frac{0.43 \mathrm{UJ}}{0.32 \mathrm{UJ}}$ | $\frac{0.46 \mathrm{UJ}}{0.34 \mathrm{UJ}}$ |
| SW8260 | BROMOMETHANE | ugkg | 0.34 UJ | 0 | 0.35 UJ | 0.34 UJ | ${ }_{0}^{0.350}$ | 0.40 U | 0.46 U | $\stackrel{0.34 \mathrm{U}}{0}$ | ${ }_{0}^{0.360 ~}$ | ${ }_{0}^{0.366}$ | O.31 0 | 0.34 - | $\stackrel{0.35}{0}$ | 0 | 0.32 UJ | -0.34 0 |
| SW8260 | CARBON DISULFIDE | uglkg | 1.7 U | 1.70 | 1.8 U | 1.7 U | 1.8 U | 2.00 | 2.30 | 1.7 U | 1.8 U | 1.8 U | 1.8 U | 1.7 U | 1.8 U | 1.70 | 1.8 UJ | 1.9 UJ |
| SW8260 | CARBON TETRACHLORIDE | ugkg | 0.37 U | 0.37 U | 0.38 U | 0.37 U | 0.38 U | 0.44 U | 0.50 U | 0.38 U | 0.39 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.37 U | 0.38 UJ | 0.41 UJ |
| SW8260 | CFC-11 | uglkg | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.33 U | 0.37 U | 0.28 U | 0.29 U | 0.29 U | 0.28 U | 0.28 U | 0.29 U | 0.28 U | 0.29 uJ | 0.31 UJ |
| SW8260 | CFC-12 | uglkg | 0.34U | 0.34U | 0.35 U | 0.34U | $\frac{0.35 \mathrm{U}}{0}$ | 0.40 UJ | 0.46 U | 0.34U | ${ }_{0}^{0.360}$ | $\frac{0.36 \mathrm{U}}{0}$ | 0.35 U | 0.34U | $\stackrel{0.350}{ }$ | 0.34U | 0.350 JJ | 0.380 UJ |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) CHLOROBENZNE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \mathrm{lkg}}$ | $\frac{0.38 \mathrm{U}}{0.42 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.42 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.45 \mathrm{U}}{0.50 \mathrm{U}}$ | $\frac{0.51 \mathrm{U}}{0.57 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.40 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.40 \mathrm{U}}{0.44 \mathrm{U}}$ | $\frac{0.39 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.43 \mathrm{U}}$ | $\frac{0.40 \mathrm{U}}{0.44 \mathrm{U}}$ | 0.38 U 0.42 UJ | $\frac{0.40 \mathrm{UJ}}{0.44 \mathrm{UJ}}$ | $\frac{0.42 \mathrm{UJ}}{0.47 \mathrm{UJ}}$ |
| SW8260 | CHLORODIBROMOMETHANE | uglkg | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.32 U | 0.36 U | 0.27 U | 0.28 U | 0.28 U | 0.27 U | 0.27 U | 0.28 U | 0.27 UJ | 0.28 UJ | 0.29 UJ |
| SW8260 | CHLOROETHANE | ugikg | 0.38 U | 0.38 U | 0.39 U | 0.38 U | 0.39 U | 0.45 U | 0.51 U | 0.39 U | 0.40 U | 0.40 U | $0.39{ }^{\text {U }}$ | 0.38 U | 0.40 U | 0.38 U | 0.40 UJ | 0.42 UJ |
| SW8260 | CHLOROFORM |  | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ | $\frac{0.43 \mathrm{U}}{0.57 \mathrm{U}}$ | $\frac{0.49 \mathrm{U}}{0.64 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.50 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.50 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | $\frac{0.38 \mathrm{U}}{0.50 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.47 \mathrm{U}}$ | $\frac{0.37 \mathrm{UJ}}{0.49 \mathrm{UJ}}$ | $\frac{0.40 \mathrm{UJ}}{0.53 \cup \mathrm{~J}}$ |
| SW8260 | CII-1,1,-DICHLOROETHYLENE | uglkg | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.33 U | 0.37 U | 0.28 U | 0.29 U | 0.29 U | 0.28 U | 0.28 U | 0.29 U | 0.28 U | 0.29 uJ | 0.31 UJ |


|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample II } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{gathered} \hline \text { SSO78 } \\ \text { Ssor8Ba } \\ 0.25-.5 \text { feet } \\ 1211120066 \\ \hline \end{gathered}$ |  |  | $\begin{array}{\|c} \hline \hline \text { SSOOB } \\ \text { SSO808B } \\ 0.25-5.5 \mathrm{fet} \\ 12066 / 2006 \\ \hline \end{array}$ | SSO81 <br> SS081BA <br> $0.25-0.5$ feet <br> $12 / 01 / 2006$ | $\begin{array}{\|c\|} \hline \hline \text { SSO82 } \\ \text { SSO82BA } \\ 0.25-0.5 \text { feet } \\ 12107 / 20066 \\ \hline \end{array}$ | $\begin{gathered} \hline \text { SSO83 } \\ \text { Ssoz3BA } \\ 0.25-5.5 \text { feet } \\ 1201212006 \end{gathered}$ | $\begin{array}{\|c\|} \hline \hline \text { SSO84 } \\ \text { SSO84BA } \\ 0.25-0.5 \text { feet } \\ 122108 / 2006 \\ \hline \end{array}$ |  |  | $\begin{array}{\|c\|} \hline \hline \text { SSO86 } \\ \text { SSo86BB } \\ 0.25-0.5 \text { feet } \\ 12209 / 2006 \\ \hline \end{array}$ |  | $\begin{array}{\|c\|} \hline \hline \text { SSO888 } \\ \text { SSo88BA } \\ 0.25-0.5 \text { feet } \\ 12109 / 2006 \\ \hline \end{array}$ |  |  | $\begin{array}{c\|} \hline \hline \text { SSO900 } \\ \text { SSO90BC } \\ 0.25-0.5 \text { feet } \\ 11 / 30 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIS-1,3-DICHLOROPROPENE | ugkg | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 0.32 U | 0.37 U | 0.41 U | 0.31 U | ${ }^{0.32 \mathrm{U}}$ | 0.32 U | 0.31 U | 0.31 U | 0.32 U | 0.31 UJ | 0.32 UJ | 0.34 UJ |
| SW8260 | CYCLOHEXANE | ug lkg | 0.40 U | 0.40 U | 0.41 U | 0.41 U | 0.41 U | 0.48 U | 0.54 U | 0.41 U | ${ }^{0.42 \mathrm{U}}$ | 0.42 U | 0.41 U | 0.41 U | 0.42 U | 0.40 U | 0.42 UJ | 0.45 UJ |
| SW8260 | DICHLOROMETHANE | ugkg | 0.41 U | 0.41 U | 0.42 U | 0.42 U | 0.42 U | 0.49 U | 0.56 U | 0.42 U | 0.43 U | 0.43 U | 0.42 U | 0.42 U | 0.43 U | 0.41 U | 0.43 UJ | 0.46 UJ |
| SW8260 | ETHYLBENZENE | ug lkg | 0.44 U | 0.44 U | 0.45 U | 0.45 U | 0.46 U | 20 J | 0.60 U | 0.45 U | 0.47 U | 0.47 U | 0.45 U | 0.45 U | 0.46 U | 0.44 UJ | 0.46 UJ | 0.49 UJ |
| SW8260 | ISOPROPYLBENZENE | ugikg | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.50 U | 0.58 U | 0.65 U | 0.49 U | 0.51 UJ | 0.51 U | 0.49 U | 0.49 U | 0.51 UJ | 0.48 UJ | 0.50 UJ | 0.54 UJ |
| SW8260 | m,p-xylenes | ug lkg | 0.92 U | 0.92 U | 0.93 U | 0.92 U | 0.94 U | 26 J | 1.30 | 0.93 U | 0.96 U | 0.96 U | 0.93 U | 0.92 U | 0.96 U | 0.91 UJ | 0.95 UJ | 1.10 UJ |
| SW8260 | M-DICHLOROBENZENE | uglkg | 0.053 U | 0.053 U | 0.054 U | 0.053 U | 0.054 U | 0.063 U | 0.071 U | 0.053 U | 0.055 UJ | 0.055 U | 0.054 U | 0.053 U | 0.055 UJ | 0.053 UJ | 0.055 UJ | 0.058 UJ |
| SW8260 | METHYL ACETATE | uglkg | 0.20 U | 0.20 UJ | 0.21 U | 0.21 U | 0.21 U | 0.24 U | 0.27 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 UJ | 0.21 U | 0.20 U | 0.21 UJ | 0.23 UJ |
| SW8260 | METHYL ETHYL KETONE | uglkg | 1.2 U | 1.24 | 1.2 U | 1.2 U | 1.2 U | 22 | 1.6 U | 1.2 U | 1.3 U | 1.3 U | 1.2 U | 1.2 U | 1.30 | 1.2 U | $\frac{1.2 \mathrm{UJ}}{}$ | $1.3 \mathrm{UJ}^{1}$ |
| SW8260 | METHYL ISOBUTYL KETONE | uglkg | 0.75 U | 0.75 U | 0.76 U | 0.75 U | 0.77 U | 0.89 U | 1.10 | 0.76 U | 0.79 U | 0.79 U | 0.76 U | 0.75 U | 0.78 U | 0.74 UJ | 0.77 UJ | 0.83 UJ |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.10 | 1.14 | 1.10 | 1.14 | 1.10 | 1.30 | 1.5 U | 1.10 | 1.14 | 1.14 | 1.14 | 1.10 | 1.10 | 1.1 UJ | 1.10 UJ | 1.2 UJ |
| SW8260 | METHYLBENZENE | ugkg | 0.44 U | 0.44 U | 0.45 U | 0.45 U | 0.46 U | 13 J | 0.60 U | 0.45 U | 0.47 U | 0.47 U | 0.45 U | 0.58 J | 0.46 U | 0.44 UJ | 0.46 UJ | 0.49 UJ |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.48 U | 3.0 J | 0.63 U | 0.47 U | 0.49 U | 0.49 U | 0.47 U | 0.47 U | 0.49 U | 0.46 UJ | 0.48 UJ | 0.51 UJ |
| SW8260 | O-XYLENE | ugkg | 0.42 U | 0.42 U | 0.43 U | 0.43 U | 0.44 U | 14 J | 0.57 U | 0.43 U | 0.44 U | 0.44 U | 0.43 U | 0.43 U | 0.44 U | 0.42 UJ | 0.44 UJ | 0.47 UJ |
| SW8260 | STYRENE (MONOMER) | uglkg | 0.46 U | 0.45 U | 0.46 U | 0.46 U | 0.47 U | 4.4 J | 0.61 U | 0.46 U | 0.48 U | 0.48 U | 0.46 U | 0.46 U | 0.47 U | 0.45 UJ | 0.47 UJ | 0.50 UJ |
| SW8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.34 U | 0.34 U | 0.35 U | 0.34 U | 0.35 U | 0.40 U | 0.46 U | 0.34 U | 0.36 U | 0.36 U | 0.35 U | 0.34 U | 0.35 U | 0.34 U | 0.35 UJ | 0.38 UJ |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.42 U | 0.42 U | 0.43 U | 0.43 U | 0.44 U | 0.50 U | 0.57 U | 0.43 U | 0.44 U | 0.44 U | 0.43 U | 0.43 U | 0.44 U | 0.42 UJ | 0.44 UJ | 0.47 UJ |
| SW8260 | TRANS-1,2-DICHLOROETHENE | uglkg | 0.40 U | 0.40 U | 0.41 U | 0.41 U | 0.41 U | 0.48 U | 0.54 U | 0.41 U | 0.42 U | 0.42 U | 0.41 U | 0.41 U | 0.42 U | 0.40 U | 0.42 UJ | 0.45 UJ |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ugkg | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.33 U | 0.38 U | 0.43 U | 0.32 U | 0.33 U | 0.33 U | 0.32 U | 0.32 U | 0.33 U | 0.32 UJ | 0.33 UJ | 0.35 UJ |
| SW8260 | TRIBOMOMETHANE | ugkg | 0.41 U | 0.41 U | 0.42 U | 0.42 U | 0.42 U | 0.49 U | $0.56{ }^{\text {U }}$ | 0.42 U | 0.43 U | 0.43 U | 0.42 U | 0.42 U | 0.43 U | 0.41 UJ | 0.43 UJ | 0.46 UJ |
| SW8260 | TRICHLOROETHYLENE | ugkg | 0.42 U | 0.42 U | 0.43 U | 0.43 U | 0.44 U | 0.50 U | 0.57 U | 0.43 U | 0.44 U | 0.44 U | 0.43 U | 0.43 U | 0.44 U | 0.42 U | 0.44 UJ | 0.47 UJ |
| SW8260 | VINYL CHLORIDE | uglkg | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.30 U | 0.34 U | 0.26 U | 0.27 U | 0.27 U | 0.26 U | 0.26 U | 0.27 U | 0.25 U | 0.27 UJ | 0.28 UJ |
| SW8270 | 2,4,5-TRICHLOROPHENOL | ugkg | 14 U | 14 U | 14 U | 14 U | 14 U | 290 J | 15 U | 14 U | 15 U | 14 U | 14 U | 14 U | 15 U | 14 U | 14 U | 14 U |
| SW8270 | 2,4,6-TRRCHLOROPHENOL | ugkg | 38 U | 38 U | 39 U | 38 U | 39 U | 410 U | $\frac{42 \mathrm{U}}{20 \mathrm{U}}$ | 38 U | 40 U | 38 U | 39 U | 38 U | 40 U | 38 U | 39 U | 38 U |
| SW8270 | 2,4-DIMETHYLPHENOL | uglkg | 20 U | 20 U | 21 U | 20 U | 21 u | 1200 | 22 U | 20 U | 48 J | 20 U | 19 U | 18 U | 19 U | 18 U | $\frac{18 \mathrm{U}}{21 \mathrm{u}}$ | 18 U |
| SW8270 | 2,4-DINITROPHENOL | ug/kg | 13 U | 13 UJ | 13 U | 13 U | 13 U | 140 U | 14 UJ | 130 | 14 UJ | 13 U | 130 | 13 UJ | 14 U | 13 UJ | 13 UJ | 13 UJ |
| SW8270 | 2,4-DINITROTOLUENE | ugkg | 11 U | 11 U | 11 U | 11 U | 11 U | 110 U | 12 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U |
| SW8270 | 2,6-DINITROTOLUENE | ugkg | 38 U | 38 U | 39 U | 38 U | 39 U | 410 U | 42 U | 38 U | 40 U | 38 U | 39 U | 38 U | 40 U | 38 U | 39 U | 38 U |
| SW8270 | 2-CHLORONAPHTHALENE | ug/kg | 17 U | 17 U | 18 U | 17 U | 18 U | 180 U | 19 U | 17 U | 18 U | 17 U | 18 U | 17 U | 18 U | 17 U | 17 U | 17 U |
| SW8270 | 2-CHLOROPHENOL | ugkg | 19 U | 19 U | 20 U | 19 U | 20 U | 210 U | 21 U | 19 U | 20 U | 19 U | 20 U | 19 U | 20 U | 19 U | 20 U | 19 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | uglkg | 13 U | 13 U | 13 U | 13 U | 13 U | 140 U | 14 U | 13 U | 14 U | 13 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U |
| SW8270 | 2-NITROANILINE | uglkg | 24 U | 24 UJ | 24 U | 24 U | 24 UJ | 250 U | 26 UJ | 24 U | 24 U | 24 U | 24 U | 23 U | 24 U | 23 U | 24 U | 24 U |
| SW8270 | 2-NITROPHENOL | uglkg | 15 U | 15 U | 15 U | 15 U | 16 U | 160 U | 17 U | 15 U | 16 U | 15 U | 15 U | 15 U | 16 U | 15 U | 15 U | 15 U |
| SW8270 | 3,3-DICHLOROBENZIDINE | ugkg | 36 U | 36 U | 37 U | 36 U | 37 U | 380 U | 40 U | 36 U | 37 U | 36 U | 37 U | 36 U | 37 U | 36 U | 36 U | 36 U |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | ugkg | 14 U | 14 U | 14 U | 14 U | $\frac{14 \mathrm{UJ}}{19}$ | 150 U | 15 U | 14 U | 15 U | 14 U | 14 U | 14 U | 15 U | 14 U | 14 U | 14 U |
| SW8270 | 3-NTTROANILINE | ugkg | 18 U | 18 U | 19 U | 18 U | 19 U | 190 U | 20 U | 18 U | 19 U | 18 U | 19 U | 18 U | 19 U | 18 U | 18 U | 18 U |
| SW8270 | 4,6-DINITRO-2-METHYLPHENOL | uglkg | 9.9 U | 9.9 UJ | 10 U | 9.9 U | 11 U | 110 U | 11 UJ | 9.9 U | 11 UJ | 9.9 UJ | 10 UJ | 9.8 UJ | 11 U | 9.8 UJ | 10 UJ | 9.9 UJ |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | uglkg | 11 U | 11 U | 11 U | 11 U | 11 U | 110 U | 12 U | 11 U | 11 U | 11 UJ | 11 UJ | 11 U | 11 U | 11 U | 11 U | 11 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | uglkg | 17 U | 17 U | 18 U | 17 U | 18 U | 180 U | 19 U | 17 U | 18 U | 17 U | 18 U | 17 U | 18 U | 17 U | 17 U | 17 U |
| SW8270 | 4.CHLOROPHENYL PHENYL ETHER | uglkg | 24 U | 24 U | 24 U | 24 U | 24 U | 2500 | 26 U | 24 U | 24 U | 24 U | 24 U | 23 U | 24 U | $\frac{23 U}{280}$ | $\frac{24 U}{280}$ |  |
| SW8270 | 4-METHYLPHENOL (MP-CRESOL) | uglkg | 28 U | 28 U | 28 U | 28 U | 28 U | 290 U | 30 U | 28 U | 29 U | 28 U | 28 U | 27 U | 29 U | 28 U | $\frac{28 \mathrm{U}}{18 \mathrm{U}}$ | 28 U |
| SW8270 | BENZYL BUTYL PHTHALATE | ugkg | 19 U | 26 J | 20 U | 19 U | 20 U | 210 U | 21 U | 19 U | 20 U | 19 U | 20 U | 19 U | 20 U | 19 U | 23 J | 19 U |
| SW8270 | BIPHENYL | ugkg | 160 U | 160 U | 160 U | 160 U | $170 \cup$ | 3000 J | 180 U | 160 U | 170 U | 160 U | 160 U | 160 U | 1700 | 160 U | 160 U | 160 U |
| SW8270 | BIS(2-CHLORETHOXY)METHANE | uglkg | 18 U | 18 U | 19 U | 18 U | 19 U | 190 U | 20 U | 18 U | 19 U | 18 U | 19 U | 18 U | 19 U | 18 U | 18 U | 18 U |
| SW8270 | BIS(2-CHLOROETHYL)ETHER | uglkg | 16 U | 16 UJ | 16 U | 16 U | 17 U | 1700 | 18 UJ | 16 U | 17 U | 16 UJ | 16 UJ | 16 U | 17 UJ | 16 U | 16 U | 16 U |
| SW8270 | BIS(2-CHLOROISOPROPYL ETHER | ugkg | 23 U | 22 U | 23 UJ | 23 UJ | 23 UJ | 240 UJ | 25 U | 23 UJ | 23 U | 23 U | 23 U | 22 U | 23 U | 22 U | 23 U | 22 U |
| SW8270 | BIS(2-ETHYLHEXYL)PHTHALATE | ugkg | 17 U | 31 J | 18 U | 17 U | 18 U | 180 U | 26 J | 17 U | 48 J | 17 U | 18 U | 37 J | 18 U | 35 J | 26 J | 27 J |
| SW8270 | CARBAZOLE | uglkg | 17 U | 370 | 18 U | 17 U | 180 J | 24000 | 140 J | 65 J | 1500 | 320 J | 380 J | 99 J | 200 | 730 | 430 | 340 |
| SW8270 | DIBENZOFURAN | uglkg | 14 U | 80 J | 14 U | 14 U | 72 J | 46000 | 150 J | 17 J | 180 J | 190 | 250 | 25 J | 42 J | 140 J | 76 J | 61 J |
| SW8270 | DIETHYL PHTHALATE | ugkg | 13 U | 13 U | 13 U | 13 U | 13 U | 140 U | 14 U | 13 U | 14 U | 13 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U |
| SW8270 | DIMETHYL PHTHALATE | uglkg | 11 U | 11 U | 11 U | 11 U | 11 U | 110 U | 12 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U |
| SW8270 | D-N-BUTYL-PHTHALATE | uglkg | 65 U | 64 U | 65 U | 65 U | 66 U | 680 U | 710 | 65 U | 67 U | 65 UJ | 65 UJ | 64 U | 67 U | 64 U | 65 U | 64 U |
| SW8270 | D-N-OCTYL-PHTHALATE | ugkg | 16 U | 25 J | 16 U | 16 U | 17 U | $170{ }^{100}$ | 18 U | 16 U | 17 U | 16 U | 16 U | 16 U | 17 U | 16 U |  |  |
| SW8270 | HEXACHLORO-1,3-BUTADIENE HEXACHLOROBENZENE |  | $\frac{18 \mathrm{U}}{8.8}$ | $\stackrel{18 \mathrm{U}}{8.7 \mathrm{U}}$ | $\frac{190}{8.90}$ | $\frac{18 \mathrm{U}}{8.8}$ | $\stackrel{190}{9.0 U}$ | $\frac{190 U}{93 U}$ | $\stackrel{20 U}{9.6 U}$ | $\frac{18 \mathrm{U}}{8.8 \mathrm{U}}$ | $\stackrel{19 \mathrm{U}}{9.1 \mathrm{u}}$ | $\frac{18 \mathrm{U}}{8.8 \mathrm{UJ}}$ | $\frac{190}{8.9 \mathrm{UJ}}$ | $\frac{18 \mathrm{U}}{8.7}$ | $\stackrel{19 \mathrm{U}}{9.1 \mathrm{u}}$ | $\frac{18 \mathrm{U}}{8.7 \mathrm{U}}$ | $\frac{18 \mathrm{U}}{8.8 \mathrm{U}}$ | $\frac{184}{8.70}$ |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | uglkg | 12 U | 12 UJ | 12 U | 12 U | 12 U | 130 U | 13 UJ | 12 U | 12 UJ | 12 UJ | 12 UJ | 12 UJ | 12 UJ | 12 UJ | 12 U | 12 UJ |
| SW8270 | HEXACHLOROETHANE | ugkg | 18 U | 18 U | 19 U | 18 U | 19 U | 190 U | 20 U | 18 U | 19 U | 18 U | 19 U | 18 U | 19 U | 18 U | 18 U | 18 U |
| SW8270 | NITROBENZENE | ugkg | 22 U | 21 U | 22 U | 22 U | 22 U | 230 U | 24 U | 22 U | 22 U | 22 U | 22 U | 21 U | 22 U | 210 | 22 U | 21 U |
| SW8270 | N-NITROSO-DI-N-PROPYYAMINE | ugkg | 19 U | 19 U | 20 U | 19 U | 20 UJ | 210 U | 21 U | 19 U | 20 U | 19 U | 20 U | 19 U | 20 U | 19 U | 20 U | 19 U |
| SW8270 | N-NTROSODIPHENYLAMINE | ugkg | 12 U | 12 U | 12 U | 12 U | $\frac{12 U}{28}$ | 130 U | 13 U | 12 U | 12 U | $\frac{12 \mathrm{UJ}}{284}$ | $\frac{12 \mathrm{UJ}}{28 \mathrm{U}}$ | 12 U | 12 U | 12 U | 12 U | 12 U |
| SW8270 | P-CHLOROANILINE | $\frac{\mathrm{ug} \text { 伯g }}{\text { ugkg }}$ | 28 U | 28 U | $\frac{28 \mathrm{U}}{18}$ | 28 U | $\frac{28 \mathrm{U}}{18 \mathrm{U}}$ | $\frac{290 \mathrm{U}}{180 \mathrm{U}}$ | $\frac{30 \mathrm{U}}{19}$ | 28 U | $\frac{29 U}{18 \mathrm{U}}$ | 28 U | $\frac{28 U}{18 \mathrm{U}}$ | ${ }_{17}^{27}$ | $\underline{29 U}$ | 28 U | $\underline{28 U}$ | $\frac{28 U}{17}$ |
| SW8270 | P-NITROANILINE | ug/kg | 13 U | 13 U | 13 U | 13 U | 13 U | 140 U | 14 U | 13 U | 14 U | 13 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U |

Notes:
mgkg:
$\begin{array}{ll}\text { gikg: miligrams per kilogram } & U=\text { non-d } \\ J=\text { estime }\end{array}$
Dioxin values in italicis are new results from Vista laboratory

|  |  |  |  | $\begin{array}{\|c\|} \text { SD006 } \\ \text { SDOOBBA.55 } \\ \text { 2 feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { Ssoo1 } \\ \text { ssonca.5- } \\ 2 \text { feet } \\ 12 / 07 / 2006 \\ \hline \end{gathered}$ | $\left\|\begin{array}{c\|} \text { SSOO3 } \\ \text { Sso3CA } 0.5- \\ \text { 2feet } \\ 12108120006 \end{array}\right\|$ | $\begin{gathered} \text { Ssoo3 } \\ \text { ssocicB.5- } \\ 2 \text { feet } \\ 12 / 08 / 2006 \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { SS007 } \\ \text { SSOO7CA.5-5 } \\ 2 \text { feet } \\ 12 / 1212006 \end{gathered}$ | $\begin{gathered} \text { SSO20 } \\ \text { SSO20CA 0.5- } \\ 2 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { SSO22 } \\ \text { SSO22CA. } 0.5 \\ 2 \text { feet } \\ 12 / 12 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO24 } \\ \text { SSO24CA. } 5-5 \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO26 } \\ \text { SSO26CA. } 05 \\ 2 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{c\|} \text { SSO26 } \\ \text { SSO26CC } 0.5-5 \\ 2 \text { feet } \\ 12 / 12 / 2006 \end{array}$ | $\begin{array}{c\|} \text { SSO28 } \\ \text { S-SSO28CA.55 } \\ 2 \text { feet } \\ 12 / 07 / 2006 \\ \hline \end{array}$ | $\begin{array}{c\|} \hline \text { SSO29 } \\ \text { SSOO29A } 0.5- \\ 2 / \text { feet } \\ 1210712006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSOOBO } \\ \text { SSO30CA 0.5- } \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO31 } \\ \text { Sso31CA 0.5- } \\ \text { 2 feet } \\ 12 / 12 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO35 } \\ \text { SSO35CA 0.5- } \\ \text { 2feet } \\ \text { f2/106/2006 } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BNASIM | 2-METHYLNAPHTHALENE | ugkg | 240 U | 17 U | 1.9 U | 38 | 49 | 110 | 1.60 | 3.7 J | 3.4 J | 1.6 U | 1.6 UJ | 1.6 U | ${ }^{1.6 \mathrm{U}}$ | 32 U | 1.6 U | 4.9 J | ${ }^{2.4 \mathrm{~J}}$ | ${ }^{1.6 \mathrm{U}}$ | 170 J |
| BNASIM | ACENAPHTHENE | ugkg | ${ }^{420 \mathrm{UJ}}$ | 30 U | 3.44 | 30 U | 30 U | 140 | 5.73 | ${ }^{3.0 \mathrm{UJ}}$ | ${ }^{3.14 \mathrm{UJ}}$ | 2.84 | 2.8 UJ | 2.90 | 2.90 | 58 U | 2.90 | 2.8 R | 2.9 UJ | 2.90 | ${ }^{840} \mathrm{~J}$ |
| BNASIM | ACENAPHTHYLENE | ugkg | 1600 | 250 | 3.30 | 75 J | 51 J | 340 | 22 | 19 | 18 | 2.70 | 7.5 | 7.6 | 8.8 | 140 J | 2.80 | 32 | 6.2 J | 6.0 J | 160 J |
| BNASIM | ANTHRACENE | uglkg | 2200 | 470 | 1.15 | 200 J | 110 J | 340 | 33 | 32 | 28 | 2.9 J | 9.2 J | 16 | 18 | 220 | 0.96 J | 62 | 10 | 4.2 | 730 J |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 2900 | 410 | 3.1) | ${ }^{410} \mathrm{~J}$ | 150 J | 570 | 45 | 24 | 25 | 0.52U | 28 | 14 | 17 | 680 | 0.54 U | 170 | 9.0 | 9.2 | 1200 J |
| BNASIM | BENZO(A)PYRENE | ugkg | 5200 | 600 | 3.3 J | 360 J | 200 J | 660 | 59 | 32 | 33 | 1.2 U | 20 | 21 | 27 | 680 | 1.2 U | 150 | 11 | 11 | 430 J |
| BNASIM | BENZO(B)FLUORANTHENE | ugkg | 9700 | 1200 J | 5.5 | 630 J | 360 J | 840 | 110 | 70 | 79 | 0.83 U | 44 | 46 | 53 | 1000 | 1.0 J | 320 | 23 | 14 | 630 J |
| BNASIM | BENZO(G, H,I)PERYLENE | ugkg | 5700 | 680 | 3.0 J | 210 | 160 | 390 | 43 | 26 | 26 | 0.68 U | 16 | 26 | 32 | 260 | 0.70 U | 120 | 13 | 9.0 | 260 J |
| BNASIM | BENZO(K)FLUORANTHENE | ugkg | 5700 | 670 | 4.7 | 520 J | 250 J | 680 | 52 | 34 | 35 | 0.68 U | 24 | 23 | 29 | 870 | 0.78 J | 150 | 14 | 13 | 620 J |
| BNASIM | CHRYSENE | ugkg | 5000 | 580 | 4.5 | 590 J | 250 J | 700 | 59 | 35 | 37 | 0.50 U | 31 | 20 | 23 | 950 | 0.82 J | 220 | 12 | 12 | 1200 J |
| BNASIM | DIBENZO(A,H)ANTHRACENE | ugkg | 1600 | 200 | ${ }^{0.64 U}$ | 74 J | 43 J | 240 | 16 | 9.7 | 9.8 | ${ }^{0.53 U}$ | 5.1 | 7.0 | 8.7 | 98 | ${ }^{0.55 U}$ | 48 | ${ }^{3.0 \mathrm{~J}}$ | 2.6 J | 90 J |
| BNASIM | FLUORANTHENE | ugkg | 6200 | 580 | 5.9 | 940 J | 340 | 1100 | 51 | 35 | 36 | 2.15 | 24 | 18 | 20 | 830 | 1.6 J | 470 J | 13 | 13 | 6000 J |
| ENASIM | Fluorene | ugkg | 240 U | 17 U | 1.9 U | 23 J | 17 U | 170 | 3.3 J | $1.7 \mathrm{UJ}^{\text {d }}$ | 1.7 UJ | 1.6 U | ${ }^{1.64 \mathrm{JJ}}$ | 1.6 U | 1.6 U | 32 U | 1.6 U | 1.6 U | 1.6 UJ | 1.6 U | ${ }^{870 \mathrm{~J}}$ |
| BNASIM | INDENO(1,2,3,CD)PYRENE | uglkg | 5400 | 620 | 3.4 J | 250 J | 180 J | 490 | 46 | 29 | 29 | 0.91 U | 17 | 21 | 25 | 370 | 0.93 U | 120 | 11 | 10 | 320 J |
| BNASIM | NAPHTHALENE | ugkg | 790 | 5.6 U | 0.64 U | 38 | 42 | 110 | 0.54 U | 9.45 | 8.7 J | 0.53 U | 2.0 J | ${ }^{0.54 U}$ | 0.54 U | 110 | 0.55 U | ${ }^{0.53 U}$ | ${ }^{0.54 U}$ | 0.54 U | ${ }^{110 \mathrm{~J}}$ |
| BNASIM | PENTACHLOROPHENOL | ugkg | 1800 J | 200 J | 0.87 U | 7.7 UJ | 7.6 UJ | 280 J | 9.8 J | 46 | 46 | ${ }^{0.73 U}$ | 2.23 | 13 J | 14 J | 66000 | 0.75 U | 0.73 U | 3.9 J | 0.73 U | 100 J |
| BNASIM | PHENANTHRENE | ugkg | 1800 | 120 | 4.10 | 200 J | 95 J | 300 | 3.50 | 10 J | 8.93 | $3.5 \cup$ | 25 | 3.5 U | 3.50 | 710 | 3.6 U | 28 J | 4.2 J | 3.9 J | 5200 J |
| BNASIM | PYRENE | ugkg | 6800 | 750 | 5.4 | 1100 J | 370 J | 1300 | 82 | 49 | 52 | 1.7 J | 48 | 27 | 30 | 1900 | ${ }^{0.56 U}$ | 440 J | 15 | 14 | 3800 J |
| E160.3 | RESIDUE, TOTAL | percent | 65 | 92 | 81 | 92 | 93 | 93 | 96 | 91 | 90 | 97 | 97 | 96 | 96 | 94 | 94 | 97 | 95 | 96 | 95 |
| E1613/E1668 | 1,2,3,4,4,6,7,-HEPTACHLORODIBENZOFURAN | ngkg | 29000 | 2644.506 | 3.269 J | 22.71 | 0.285 U | ${ }^{615.288}$ | 53.51 | 405.048 | 344.523 | 8.979 | 22.8 | 31.17 | 36.05 |  |  |  |  | ${ }^{4.467 ~ J}$ |  |
| E1613/E1668 | 1, , , ,3,4,6,7,7,8HEPTACHLORODIBENZO-P-DIOXIN | nglkg | 191000 | 15302.864 | ${ }^{26.107}$ | ${ }^{223.149}$ | 147.144 | 5481.337 | ${ }^{453.533}$ | 3906.032 | 3491.427 | ${ }^{97.435}$ | 185 | ${ }^{240.29}$ | 317.504 |  |  |  |  | 28.907 |  |
| E1613/E1668 | $1,2,2,4,7,8,9$, -HEPTACHLORODIBENZOFURAN | ngkg | 1790 | 159.856 | ${ }^{2.2055}$ | ${ }^{2.917 \mathrm{~J}}$ | 1.223 J | 43.36 | ${ }^{3.0533}$ | 26.449 | ${ }^{21.923}$ | 0.519 J | ${ }^{1.38 \mathrm{~J}}$ | 1.679 J | 1.113 U |  |  |  |  | ${ }_{0} 0.452 \mathrm{U}$ |  |
| E1613/E1668 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | ngkg | ${ }^{732}$ | 57.445 | 0.116 U | ${ }^{0.538 \mathrm{~J}}$ | 1.434 J | 16.659 | 1.336 U | 7.44 | ${ }_{6}^{6.369}$ | 0.429 U | .764 J | 0.946 J | 0.247 U |  |  |  |  | 0.172 J |  |
| E1613\|E1668 | 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | ngkg | 1790 | 142.34 | 0.202 J | 1.074 J | 0.659 J | 42.411 | 1.124 J | 17.747 | ${ }^{15.235}$ | 0.538 U | $1.57{ }^{\text {J }}$ | 0.674 J | 1.345 J |  |  |  |  | 0.221 J |  |
| E1613/E1668 | 1,2,2,6,7,8-HEXACHLORODIBENZOFURAN | ngkg | 580 | 50.702 | 0.066 U | 0.324 U | 0.743 J | 12.897 | 0.198 U | ${ }^{3.547 \mathrm{~J}}$ | ${ }^{3.206 ~ J}$ | $0.271 \mathrm{U}^{0}$ | . 539 J | 0.279 J | 0.286 U |  |  |  |  | 0.117 J |  |
| E1613/E1668 | 1,2,3,6,7,8.-HEXACHLOROOIBENZO-P-DIOXIN | nglkg | 5360 | 387.719 | 0.684 J | $4.099{ }^{\text {J }}$ | ${ }^{2.875 \mathrm{~J}^{\text {J }}}$ | 119.628 | ${ }^{6.507}$ | ${ }^{82.991}$ | ${ }^{72.038}$ | ${ }^{5.017 \mathrm{~J}}$ | 4.17 | 4.369 J | ${ }^{6.899}$ |  |  |  |  | $0.771{ }^{0.710}$ |  |
| E1613/E1668 | 1,2,2,7,7,8,9-HEXACHLORODIBENZOFURAN | ngkg | 174 | 1.544 U | 0.085 U | 0.347 U | 0.749 J | $0.271 \mathrm{U}^{\text {a }}$ | 0.212 U | 0.332 J | 0.049 U | 0.269 U | OU | 0.019 U | 0.328 U |  |  |  |  | 0.048 U |  |
| E1613/16688 | 1,2,3,7,8,9,-HEXACHLORODIBENZO-P-DIOXIN | ngkg | 3060 | 357.74 | 0.648 J | 4.312 J | 1.831 J | 81.824 J | 7.151 | 40.162 | 32.112 | 2.459 U | 2.88 | 2.006 J | 2.253 U |  |  |  |  | 0.619 J |  |
| E1613\|E1668 | 1,2,3,7,8.PENTACHLORODIBENZOFURAN | ngkg | 68.1 | ${ }^{4.441 \mathrm{~J}^{3}}$ | 0.035 U | 0.051 U | 0.598 J | 1.309 J | 0.144 U | 0.528 J | 0.418 J | 0.119 J | ou | 0.015 U | 0.079 U |  |  |  |  | 0.029 U |  |
| E1613/E1668 | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | ngkg | 491 | ${ }^{35.823}$ | 0.04 U | 0.304 U | $0.09{ }^{0}$ | 11.592 | 0.124 U | ${ }^{4.604 \mathrm{~J}}$ | ${ }^{3.618 \mathrm{~J}}$ | ${ }_{0}^{0.437 \mathrm{~J}}$ | . 452 J | 0.177 J | $0.178 \mathrm{U}^{0}$ |  |  |  |  | ${ }^{0.134 \mathrm{~J}}$ |  |
| E1613/E1668 | 2, 2, ,4,6,7,8,-HEXACHLORODIBENZOFURAN | ngkg | 1150 | 100.672 | ${ }^{0.0655}$ | 0.134 U | $0.571 \mathrm{U}^{0}$ | ${ }^{9.601 \mathrm{~J}}$ | 0.19 U | ${ }^{3.58 \mathrm{~J}^{\text {J }}}$ | ${ }^{2.794 \mathrm{~J}}$ | 0.413 U | ${ }^{.907}{ }^{230}$ | 0.674 J | 0.284 U |  |  |  |  | 0.039 U |  |
| E1613/E1668 | 2,3,4,7,8.PENTACHLORODIBENZOFURAN | nglkg | 208 | ${ }^{7.016 \mathrm{~J}}$ | 0.037 U | ${ }^{0.16 \mathrm{~J}}$ | ${ }^{0.466 \mathrm{~J}}$ | ${ }^{1.773 \mathrm{~J}^{\text {J }}}$ | 0.056 U | ${ }^{0.411 \mathrm{~J}}$ | 0.405 J | 0.167 J | . 239 J | 0.019 U | 0.089 U |  |  |  |  | 0.033 U |  |
| E1613\|E1668 | 2,3,7,8-TETRACHLORODIBENZOFURAN | ngkg | 44.3 | 3.819 | 0.038 U | 0.044 U | 0.509 J | 0.558 U | 0.085 U | 0.052 U | 0.04 U | 0.067 U | OU | 0.012 U | 0.085 U |  |  |  |  | 0.034 U |  |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | ngkg | 32.8 | 2.104 J | 0.023 U | 0.044 U | 0.045 U | 0.599 J | 0.065 U | 0.045 U | 0.028 U | 0.064 U | ou | 0.009 U | 0.14 |  |  |  |  | 0.015 U |  |
| E1613/E1668 | OCTACHLORODIBENZOFURAN | ngkg | 108000 | 11474.712 | 14.049 | ${ }^{119.868}$ | ${ }^{79.273}$ | 3389.941 | 397.625 | 2801.76 | 2387.342 | 35.444 | 90.2 | 188.931 | 231.698 |  |  |  |  | 14.778 |  |
| E1613/E1668 | OCTACHLORODIBENZO-P-DIOXIN | ngkg | 1580000 | 147043.842 J | 240.163 | 2061.955 | 1403.442 | 47246.051 J | ${ }^{4573.662 ~ J}$ | 27080.157 | 31249.589 | ${ }^{733.328}$ | 1820 | 3535.861 | ${ }^{4691.993 \mathrm{~J}}$ |  |  |  |  | 243.969 |  |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZOFURANS | nglkg | 115000 | 9142.612 | ${ }^{12.073}$ | ${ }^{94.906}$ | ${ }^{56.04}$ | 2543.505 | ${ }^{313.53}$ | 1901.222 | 1666.031 | ${ }^{34.607}$ | 81.6 | ${ }^{153.16}$ | 184.764 |  |  |  |  | 14.204 |  |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | ngkg | 598000 | 53619.728 | 103.956 | 1123.599 | ${ }^{768.936}$ | 21113.42 | 3200.596 | ${ }^{7029.33}$ | 6067.376 | 339.239 | 929 | 915.285 | 1218.773 |  |  |  |  | 118.262 |  |
| E113131668 | TTTAL HEXACHLORINATED DIBENZOFURANS | nglkg | 28700 J | ${ }^{2430.126}$ | 2.954 | 20.905 | ${ }^{19.229}$ | 645.003 | ${ }^{49.412}$ | 306.056 | 259.458 | 12.318 | 22.7 | ${ }^{30.925}$ | ${ }^{33.207}$ |  |  |  |  | 3.466 |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | ng/kg | 57400 | 4539.607 | 8.411 | 79.429 | ${ }^{54.351}$ | 1882.393 | 169.564 | ${ }^{434.257}$ | 375.972 | 42.182 | 75 | 46.052 | 56.995 |  |  |  |  | 10.556 |  |
| E1613/E1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | ngkg | 4880 J | 334.253 | 0.79 | 8.731 | 11.677 | 108.984 | 4.44 | 20.924 | 17.518 | 7 | 3.1 | 1.594 | 2.094 |  |  |  |  | 0.179 |  |
| E1613/E1668 | TTTAL PENTACHLORINATED DIBENZO-P-DIOXINS | ngkg | 4100 | 266.092 | ${ }^{0.295}$ | ${ }^{3.685}$ | 1.549 | 122.601 | 3.29 | 21.498 | ${ }^{16.206}$ | ${ }^{0.724}$ | 3.29 | 0.96 | $0.178 \mathrm{U}^{0}$ |  |  |  |  | 0.63 |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg | 681 | ${ }^{33.916}$ | 0.413 | 3.32 | 5.54 | 13.867 | 0.384 | 2.128 | 1.537 | 3.757 | . 209 | 0.012 U | 0.085 U |  |  |  |  | 0.14 |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | ngkg | 346 | 15.612 | 0.199 | 0.044 U | 0.389 | ${ }^{9.467}$ | 0.065 U | 2.674 | ${ }^{2} .752$ | ${ }^{0.541}$ | 0 O | 0.009 U | 0.14 |  |  |  |  | 0.103 |  |
| SW6020 | Antimony | mglkg | 7.73 | 0.49 J | 0.39 U | 0.34 UJ | 0.36 UJ | 0.35 UJ | 0.35 UJ | 0.56 J | 0.36 UJ | 0.34 UJ | 0.35 UJ | 0.33 UJ | 0.35 UJ | 0.36 U | ${ }^{0.35 U}$ | 0.34 UJ | 0.34 UJ | 0.33 UJ | ${ }^{0.36 \mathrm{U}}$ |
| SW6020 | ARSENIC | mg/kg | 270 | 52 | 100 | 19 J | 14 J | 4.3 J | 1.4 | 9.2 | 9.9 | 0.96 | 0.42 UJ | 26 | 35 | 0.66 | 0.53 | 1.15 | 0.41 UJ | ${ }^{0.47)}$ | 0.53 |
| SW6020 | BARIUM | mglkg | 86 | 22 | 5.7 | 12 | 11 | ${ }^{23}$ | 11 | 12 | 12 | 2.9 | 5.3 | 8.9 | 10 | 2.6 | 12 | ${ }^{9.75}$ | 9.0 | 9.4 | 9.7 |
| SW6020 | CADMIUM | mglkg | 1.9 | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.34 U}$ | 0.29 U | 0.30 U | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.314}$ | ${ }^{0.30 \mathrm{U}}$ | 0.29 U | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.29 \mathrm{U}}$ | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.314}$ | ${ }^{0.300}$ | 0.29 U | ${ }^{0.29 U}$ | ${ }^{0.28 U}$ | ${ }^{0.30 \mathrm{U}}$ |
| SW6020 | CHROMIUM | mgkg | 710 | 76 J | 2.5 | 3.4 J | 3.6 J | 9.8 J | 3.2 | 15 | 34 | 0.96 J | 1.9 | 3.1 | 3.4 | 2.9 | 7.73 | 3.4 | 4.8 | 4.7 | 6.0 |
| SW6020 | COPPER | ngkg | 320 | 41 | ${ }^{0.35 \mathrm{U}}$ | 2.15 | 2.15 | 5.8 J | ${ }_{0}^{0.81 \mathrm{~J}}$ | 1.7 | 5.6 | ${ }^{0.300}$ | ${ }^{1.80 J}$ | ${ }_{0.49}$ | ${ }_{0}^{0.52 \mathrm{~J}}$ | ${ }^{0.33 \mathrm{~J}}$ | 0.31 UJ | 2.5 J | 0.84 J | ${ }^{0.93 \mathrm{~J}}$ | ${ }^{0.58 \mathrm{~J}}$ |
| SW6020 | ${ }_{\text {LAAD }}$ | mg/kg | 450 | 19 | 2.67 | 6.3 J | 5.11 | ${ }^{13 \mathrm{~J}}$ | 5.4 | 4.8 J | 6.6 | 1.1 | 2.0 | 4.3 | 5.0 | 2.7 | 5.0 | 7.35 | 4.4 | 5.9 | 3.8 |
| ( SW6020 | ${ }^{\text {SELENIUM }}$ | $\frac{\mathrm{mg} / \mathrm{kg}}{\mathrm{mgkg}}$ | $\stackrel{1.5}{0.56}$ | ${ }_{0}^{0.86 \mathrm{U}} 0$ | 0.97U | 0.84 U 0.38 U | $\stackrel{0.88 \mathrm{U}}{0.40 \mathrm{U}}$ | ${ }_{0}^{0.88 \mathrm{U}} 0$ | ${ }_{0}^{0.86 \mathrm{U}} 0$ | ${ }_{0}^{0.96 \mathrm{~J}} 0$ | $\stackrel{0.88 \mathrm{U}}{0.40 \mathrm{u}}$ | 0.84u | 0.86 U 0.39 u | $\stackrel{0.83 \mathrm{U}}{0.37 \mathrm{u}}$ | 0.86 U 0.39 u | 0.89 U 0.40 u | 0.87U | 0.85 u 0.38 u | ${ }^{0.83 \mathrm{u}}$ | ${ }_{0}^{0.82 \mathrm{U}} 0$ | 0.88 U 0.40 u |
| SW6020 | VANADIUM (FUME OR DUST) | mgkg | 12 | 3.5 J | 1.0 UJ | 2.4 J | 3.3 J | 6.2 | 2.1 | 4.1. ${ }^{\text {J }}$ | 3.4 | 0.90 U | 0.93 U | 1.7 | 2.0 | ${ }_{0}^{0.950}$ | 5.3 | ${ }_{2} 2.2 \mathrm{~J}$ | ${ }_{0}^{0.900}$ | 1.6 | 3.9 |
| SW7471 | MERCURY | mgkg | ${ }_{2.05}^{12}$ | 0.22 | 0.026 J | 0.024 J | 0.022 J | 0.069 J | 0.026 | 0.042 | 0.028 | 0.0072 J | 0.012 J | 0.030 | 0.038 | 0.035 | 0.026 J | 0.032 | 0.026 | 0.025 | 0.027 |
| SW8260 | 1,1,1,-TRICHLOROEETHANE | uglkg | ${ }_{0}^{0.314}$ | 0.20 U | 0.15 U | 0.14 U | 0.14 U | 0.16 U | ${ }^{0.13 U}$ | 0.14 U | 0.14 U | 0.13 U | 0.13 U | ${ }^{0.13 U}$ | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |
| SW8260 | 1,1,2,2,-TETRACHLOROETHANE | ugkg | 0.17 U | 0.11 U | 0.082 U | 0.072 U | 0.076 U | 0.087 U | 0.069 U | 0.073 U | 0.074 U | 0.069 U | 0.068 U | 0.070 U | 0.070 U | 0.071 U | 0.071 U | 0.069 U | 0.070 U | 0.069 U | 0.070 U |
| SW8260 | 1,1,2-TRICHLOROETHANE | ugkg | 0.34U | 0.22 U | 0.17 U | 0.15 U | $0.15{ }^{0}$ | 0.18 U | 0.14 U | 0.15 U | 0.15 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | ${ }^{0.14 U}$ | 0.14 U | 0.14 U | ${ }^{0.144}$ | 0.14 U | 0.14 U |
| SW8260 | 1,1-1-DICHLOROETHANE | ugkg | 0.17 U | 0.11 U | 0.078 U | 0.069 U | 0.072 U | 0.083 U | 0.066 U | 0.070 U | $0.071 u^{0}$ | 0.066 U | 0.065 U | 0.066 U | 0.066 U | 0.067 U | 0.068 U | 0.066 U | 0.067 U | 0.066 U | 0.067 U |
| SW8260 SW8260 | 1,1--ICHLOROETHYLENE | ugkg | 0.44 U | 0.28 U | 0.22 U | 0.19 U | 0.20 U | 0.23 U | 0.18 U | 0.19 U | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| SW8260 | 1, 12,4-TR1CHLOROBENZENE | ugkg | ${ }^{0.390 J}$ | ${ }_{0}^{0.2514}$ | 0.19 U | 0.17U | $0.18 \mathrm{U}^{0.564}$ | 0.20 | $0.16{ }^{0.5141}$ | ${ }_{0}^{0.174}$ | 0.17 U | ${ }_{0}^{0.1614}$ | $0.16{ }^{0.16}$ | 0.16 U | 0.16U | ${ }_{0}^{0.163 ~}$ | ${ }_{0}^{0.163}$ | 0 | ${ }_{0}^{0.15 \mathrm{U}}$ | $0.16{ }^{0.14}$ | ${ }_{0}^{0.164}$ |
| SW8260 | ${ }_{\text {1,2-DIBROMOETHANE }}$ | ugkg | ${ }_{0}^{1.35 \mathrm{U}}$ | 0.802 U | ${ }_{0}^{0.610}$ | 0.540 | 0.5664 | 0.074 | 0.059 u | 0.5402 U | 0.053U | 0.050 | ${ }_{0}^{0.5158}$ | 0.059 | 0.52 U | 0.53 U 0.060 U | ${ }_{0}^{0.530 \mathrm{U}} 0$ | ${ }_{0}^{0.510}{ }_{0}^{0.584}$ | ${ }_{0}^{0.552}$ 0.059 | ${ }_{0}^{0.515} 0$ | 0.52U |
| SW8260 | 1,2-2IICHLOROBENZENE | uglkg | ${ }^{0.200 J}$ | ${ }^{0.13 U}$ | 0.097 U | 0.085 U | 0.089 U | 0.11 U | 0.082 U | 0.086 U | 0.087 U | 0.081 U | 0.081 U | 0.082 U | 0.082 U | 0.083 U | 0.084 U | 0.081 U | 0.082 U | 0.082 U | 0.082 U |
| SW8260 | 1,2-DICHLOROETHANE | ugkg | 0.26 U | 0.17 U | 0.13 U | 0.11 U | 0.12 U | 0.14 U | 0.11 U | 0.11 U | 0.12 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U | ${ }_{0}^{0.11 U}$ | 0.11 U | 0.11 U | ${ }_{0}^{0.11}$ | ${ }_{0}^{0.11 \mathrm{U}}$ | 0.11 U |
| SW8260 | 1,2-DIICHLOROPROPANE | ug/kg | 0.14 U | 0.089 U | 0.067 U | 0.059 U | 0.062 U | 0.071 U | 0.057 U | 0.060 U | 0.061 U | 0.056 U | ${ }^{0.056 U}$ | 0.057 U | 0.057 U | 0.058 U | 0.058 U | 0.056 U | 0.057 U | 0.057 U | 0.057 U |
| SW8260 | 1,4-DICHLOROBENZENE | ugkg | 0.23 UJ | 0.15 U | 0.11 U | 0.095 U | 0.099 U | 0.12 U | 0.091 U | 0.096 U | 0.097 U | 0.091 U | 0.090 U | 0.092 U | 0.092 U | 0.093 U | 0.093 U | 0.091 U | 0.092 U | 0.091 U | 0.092 U |
| SW8260 | ACETONE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\mathrm{ug} k g}$ | 14 J 1.0 U | 10 J 0.64 U | $\stackrel{3.10}{0.49}$ | 2.80 $0.43 U$ | $\stackrel{2.9 U}{0.45}$ | 3.3 U 0.52 U | 7.6 J 0.41 U | 17 J 0.43 U | 24 J 0.44 U | 9.1] 0.41 U | 5.0J 0.41 U | 11 J 0.41 U | 6.0 J 0.41 U | 2.7 U 0.42 U | $2.7 \cup$ $0.42 U$ | 59 J 0.41 U | 11J 0.41 U | $\frac{2.7 U}{0.41 U}$ | $\frac{2.7 U}{0.41 \cup}$ |
| SW8260 | BROMODICHLOROMETHANE | ugkg | 0.74 U | 0.48 U | 0.36 U | 0.32 U | 0.33 U | 0.38 U | 0.31 U | 0.32 U | 0.33 U | 0.31 U | 0.30 U | ${ }_{0}^{0.314}$ | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| Sw8260 | BROMOMETHANE | ugkg | 0.82 UJ | 0.53 UJ | 0.40 U | $0.35 \mathrm{UJ}^{\text {d }}$ | 0.37 UJ | 0.42 UJ | 0.34 UJ | 0.36 UJ | 0.36 UJ | 0.34 UJ | 0.33 UJ | 0.34 UJ | $0.34{ }^{\text {UJ }}$ | ${ }^{0.35 U}$ | 0.35 U | 0.34 UJ | 0.34 UJ | 0.34 UJ | 0.34 UJ |
| SW8260 | CARBON DISULFIDE | ${ }_{\text {ug }}^{\substack{\text { ugkg } \\ \text { ugkg }}}$ | 4.1U | 2.7U | 2.04 | 1.8U | 1.90 | 2.14 | $\stackrel{1.7 U}{037}$ | 1.8U | 1.84 0.391 | $\underline{1.7 U}$ | $\stackrel{1.7 U}{064}$ | 1.74 | 1.74 0.374 | 1.8 U | 1.84 | 1.74 | $\stackrel{1.7 U}{074}$ | $\underline{1.7 U}$ | $\stackrel{1.7 U}{074}$ |
| SW8260 | ${ }_{\text {CARBON }}$ CFETETRACHLORIDE | $\mathrm{ug}_{\text {ugkg }}^{\text {ug }}$ | 0.90 U 0.67 U | $\stackrel{0.58 \mathrm{UJ}}{0.43 \mathrm{U}}$ | $\stackrel{0.44 \mathrm{U}}{0.33 \mathrm{U}}$ | 0.39 U 0.29 u | $\stackrel{0.40 \mathrm{U}}{0.30 \mathrm{U}}$ | $\stackrel{0.46 \mathrm{U}}{0.35 \mathrm{U}}$ | 0.37 U 0.28 U | 0.39 U 0.29 u | 0.39 U 0.29 u | $\stackrel{0.37 \mathrm{U}}{0.27 \mathrm{U}}$ | 0.36 U 0.27 U | 0.37 U 0.28 U | 0.37 U 0.28 u | $\stackrel{0.38 \mathrm{U}}{0.28 \mathrm{U}}$ | 0.38 U 0.28 U | 0.37 U 0.27 U | $\stackrel{0.37 \mathrm{U}}{0.28 \mathrm{U}}$ | 0.37 U 0.28 U | 0.37 U 0.28 U |
| SW8260 | CFC-12 | ugkg | 0.82 U | 0.53 U | 0.40 UJ | 0.35 U | 0.37 U | 0.42 U | 0.34 U | ${ }_{0}^{0.360}$ | ${ }_{0}^{0.36 \mathrm{U}}$ | 0.34 U | 0.33 U | 0.34 U | 0.344 | 0.35 UJ | 0.35 U | ${ }_{0}^{0.34 U}$ | 0.34 U | ${ }_{0}^{0.34 U}$ | 0.34 U |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | jgikg | 0.92 U | 0.60 U | 0.45 U | 0.40 U | 0.41 U | 0.48 U | 0.38 U | 0.40 U | 0.41 U | 0.38 U | 0.37 U | 0.38 U | 0.38 U | 0.39 U | 0.39 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| ( SW8260 | CHLOROBENZENE | ugkg | 1.14 | ${ }^{0.666}$ | ${ }^{0.50 \mathrm{U}}$ | 0.44U | ${ }^{0.460}$ | $\stackrel{0.53}{ }{ }^{\text {a }}$ | ${ }^{0.420 ~}$ | 0.44U | 0.45 U | ${ }^{0.420 ~}$ | 0.42 U | ${ }^{0.422 ~}$ | 0.42U | ${ }^{0.43 U^{27}}$ | 0.43U | 0.42U | ${ }^{0.43 U^{2}}$ | 0.42 | ${ }^{0.420}$ |
| SW8260 | CHLORODIBROMOMETHANE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\mathrm{ug} \mathrm{kg}}$ | 0.64U | $\stackrel{0.42 \mathrm{U}}{0.60 \mathrm{U}}$ | $\stackrel{0.31 \mathrm{U}}{0.45 \mathrm{U}}$ | $\stackrel{0.28 \mathrm{U}}{0.40 \mathrm{U}}$ | $\frac{0.29 \mathrm{U}}{0.41 \mathrm{U}}$ | $\stackrel{0.33 \mathrm{U}}{0.48 \mathrm{U}}$ | ${ }_{0}^{0.26 \mathrm{U}} 0$ | $\frac{0.28 \mathrm{U}}{0.40 \mathrm{UJ}}$ | $\frac{0.28 \mathrm{U}}{0.41 \mathrm{UJ}}$ | 0.26 U 0.38 UJ | 0.26 U 0.37 UJ | 0.27 U 0.38 UJ | 0.27 U 0.38 UJ | 0.27 U 0.39 u | 0.27 U 0.39 u | 0.26 U 0.38 U | ${ }_{\text {0, }}^{0.27 \mathrm{U}} 0$ | 0.27 U 0.38 U | 0.27 U 0.38 U |
| SW8260 | CHLOROFORM | ugkg | 0.87 U | 0.56 U | 0.43 U | 0.37 U | 0.39 U | 0.45 U | 0.36 U | 0.38 U | 0.38 U | 0.36 U | 0.35 U | 0.36 U | ${ }^{0.36 U}$ | 0.37 U | 0.37 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| 18260 | CHLOROMETHANE | ıgkg | 1.2 U | 0.74 U | 0.56 U | 0.49 U | 0.52 U | 0.59 U | 0.47 U | 0.50 U | 0.51 U | 0.47 U | 0.47 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.47 U | 0.48 U | 0.47 U | 0.48 U |


|  |  |  | SDOO4 <br> SDOCABA. $5-$ <br> 2 feet <br> 12/12/2006 | $\begin{gathered} \text { SD006 } \\ - \text { SDOO6BA } 0.5 \\ 2 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { SSO01 } \\ \text { SsoonCA.5-5 } \\ 2 \text { feet } \\ 12 / 07 / 2006 \\ \hline \end{array}$ | Ss003 <br> SSo 03 CA. 05 <br> 2 feet <br> $12 / 08 / 2006$ | $\begin{array}{\|c\|} \text { SS003 } \\ \text { Ssoo3CB } 0.5- \\ \text { 2 feet } \\ 12 / 108 / 2006 \end{array}$ | $\begin{gathered} \text { Ssoos } \\ \text { SsocoscA.5- } \\ 2 \text { feet } \\ 12 / 08 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{c\|} \text { SS007 } \\ \text { SSOOTCA } 0.5 \\ \text { 2feet } \\ 12 / 1212006 \end{array}$ | $\begin{array}{c\|} \text { SSO20 } \\ \text { SSO20CA.5- } \\ \text { 2feet } \\ 12 / 1212006 \\ \hline \end{array}$ | $\begin{array}{c\|} \text { ssooz } \\ \text { ssorocc } 0.5 \\ 2 \text { feet. } \\ 12 / 12 / 2006 \end{array}$ | $\left.\begin{array}{\|c\|} \hline \text { SSO22 } \\ 5 \text { SSO2CA. } \\ \text { 2feet } \\ 1212120006 \end{array} \right\rvert\,$ | $\begin{array}{c\|} \text { SSO24 } \\ \text { SSO24CA } 0.5- \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{c\|} \text { sso26 } \\ \text { s-026CA.5- } \\ 2 \text { feet } \\ 12 / 122 / 2006 \end{array}$ | $\begin{gathered} \text { Sson6 } \\ - \text { Ssococcc } 0.5-s \\ 2 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS028 } \\ \text { SSO28CA.5-5 } \\ 2 \text { feet } \\ 12 / 107 / 2006 \end{gathered}$ | SSO29 <br> SSO29CA.5- <br> 2 feet <br> 12/07/2006 | $\begin{array}{\|c\|} \text { SSO30 } \\ - \text { Sso30CA } 0.5- \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS031 } \\ \text { Sso31CA.5-5 } \\ 2 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { SSO35 } \\ \hline \text { SSO35CA } 0.5- \\ \text { 2 feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SSO36 } \\ \text { sso36CA } 0.5- \\ \text { 2 feet } \\ 12106 / 2006 \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIS-1,-IICHLOROETHYLENE | ${ }_{\text {ug }}^{\text {ugkg }}$ | $\stackrel{0.67 \mathrm{U}}{0.74 \mathrm{u}}$ | 0.43 U 0.48 u | 0.33 U 0.36 u | ${ }_{0}^{0.29 \mathrm{U}} 0$ | 0.30 U 0.33 u | 0.35 U 0.38 u | ${ }_{0}^{0.28 \mathrm{U}} 0$ | $\frac{0.29 \mathrm{U}}{0.32 \mathrm{u}}$ | 0.29 U 0.33 u | $\frac{0.27 \mathrm{U}}{0.31 \mathrm{u}}$ | $\frac{0.27 \mathrm{U}}{0.30 \mathrm{u}}$ | $\frac{0.28 \mathrm{U}}{0.31 \mathrm{U}}$ | 0.28 U 0.31 u | $\frac{0.28 \mathrm{U}}{0.31 \mathrm{u}}$ | ${ }_{0}^{0.28 \mathrm{U}}$ | ${ }_{0}^{0.27 \mathrm{U}} 0$ | ${ }_{0}^{0.28 \mathrm{U}} 0$ | 0.28 U 0.31 u | $\frac{0.28 \mathrm{U}}{0.31 \mathrm{u}}$ |
| SW8260 | CYCLOHEXANE | ugkg | 0.97 U | 0.63 UJ | 0.47 U | 0.42 U | 0.44 U | 0.50 U | 0.40 U | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.43 U}$ | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.41 U | 0.41 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| SW8260 | DICHLOROMETHANE | ugkg | 1.00 | 0.64 U | 0.49 U | 0.43 U | 0.45 U | 0.52 U | 0.41 U | 6.2 J | 7.7 J | 0.41 U | 7.9 J | 0.41 U | 0.41 U | 0.42 U | 0.42 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| SW8260 | ETHYLBENZENE | ugkg | 1.10 | 0.69 U | 0.52 U | 0.46 U | 0.48 U | 0.56 U | 0.44 U | 0.47 U | 0.47 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.45 U | 0.45 U | 0.44 U | 0.45 U | 0.44 U | 0.45 U |
| SW8260 | ISOPROPYLBENZE | ugkg | 1.2 UJ | 0.76 U | 0.57 U | 0.51 U | 0.53 U | 0.61 U | 0.48 U | 0.51 U | 0.52 U | 0.48 U | 0.48 U | 0.49 U | 0.49 U | 0.49 U | 0.50 U | 0.48 U | 0.49 U | 0.48 U | 0.49 U |
| SW8260 | m,p-xylenes | L91kg | 2.34 | 1.50 | 1.14 | 0.95 U | 0.99 U | 1.2 U | 0.91 U | 0.96 U | 0.97 U | 0.91 U | 0.90 U | 0.92 U | 0.92 U | 0.93 U | 0.93 U | 0.91 U | 0.92 U | 0.91 U | 0.92 U |
| SW8260 | M-DICHLOROBENZENE | ugkg | 0.13 UJ | 0.083 U | 0.062 U | 0.055 U | 0.057 U | ${ }^{0.066 U}$ | 0.052 U | 0.055 U | 0.056 U | 0.052 U | 0.052 U | 0.053 U | 0.053 U | 0.054 U | 0.054 U | 0.052 U | 0.053 U | 0.053 U | 0.053 U |
| SW8260 | METHYL ACETATE | ugkg | 0.49 U | 0.32 U | ${ }^{0.24 U}$ | 0.21U | ${ }^{0.22 U}$ | ${ }^{0.25 U}$ | 0.20 | 0.21U | 0.22U | 0.20 | 0.20 | 0.20 | 0.20 | ${ }^{0.214}$ | 0.21U | ${ }_{0}^{0.200}$ | 0.20 | ${ }^{0.200}$ | 0.20 |
| SW8260 | METHYL ETHYL KETONE | ugkg | 2.9 U | 1.9 U | 1.4 U | 1.24 | 1.3 U | 1.5 U | 1.24 | 1.30 | 1.3 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| SW8260 | METHYL ISOBUTYL KETONE | ugkg | 1.90 | 1.24 | 0.88 U | 0.78 U | 0.81 U | 0.94 U | 0.74 U | 0.78 U | 0.80 U | 0.74 U | 0.73 U | 0.75 U | 0.75 U | $0.76{ }^{\text {U }}$ | $0.76{ }^{\text {U }}$ | $0.74{ }^{\text {U }}$ | 0.75 U | 0.74 U | 0.75 U |
| SW8260 | METHYL NBUTYL KETONE | ugkg | 2.60 | 1.70 | 1.3 U | 1.1 UJ | 1.2 UJ | 1.4 UJ | 1.1 UJ | $1.10{ }^{\text {1 }}$ | 1.2 UJ | 1.1 UJ | 1.10 | 1.14 UJ | 1.10 u | 1.14 | 1.14 | 1.14 | 1.10 | 1.14 | 1.10 |
| SW8260 | METHYLBENZENE | ugkg | 2.2 J | 0.69 U | 0.52 U | 0.46 U | 0.48 U | 0.56 U | 0.44 U | 0.47 U | 0.47 U | 0.44 U | 0.72 J | 0.44 U | 0.52 J | 0.45 U | 0.45 U | 0.44 U | 0.49 J | 0.44 U | 0.45 U |
| SW8260 | METHYLCYLOHEXANE | ugkg | 1.20 | 0.73 UJ | 0.55 U | 0.48 U | 0.51 U | 0.58 U | 0.46 U | 0.49 U | 0.49 U | 0.46 U | 0.46 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | ${ }^{0.464}$ | 0.47 U | 0.46 U | 0.47 U |
| SW8260 | O-XYLENE | ugkg | 1.14 | ${ }^{0.666}$ | $0.50{ }^{0.50}$ | ${ }^{0.444}$ | ${ }^{0.46 \mathrm{U}}$ | 0.53 U | ${ }^{0.420}$ | 0.44 U | 0.45 U | ${ }^{0.424}$ | ${ }^{0.420}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.425}$ | ${ }^{0.43 U}$ | ${ }^{0.43 U}$ | ${ }^{0.424}$ | ${ }^{0.43 U}$ | ${ }^{0.424}$ | ${ }^{0.42 \mathrm{U}}$ |
| SW8260 | STYRENE (MONOMER) | ugkg | 1.10 | 0.71 U | 0.54 U | 0.47 U | 0.49 U | 0.57 U | 0.45 U | 0.48 U | ${ }^{0.48 \mathrm{U}}$ | 0.45 U | 0.45 U | 0.46 U | 0.45 U | 0.46 U | ${ }^{0.46 \mathrm{U}}$ | 0.45 U | 0.46 U | 0.45 U | 0.46 U |
| SW8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.82 U | 0.53 U | 0.40 U | 0.35 U | 0.37 U | ${ }^{0.42 U}$ | 0.34 U | 0.36 U | ${ }^{0.36 \mathrm{U}}$ | 0.34 U | 0.33 U | 0.34 U | 0.34 U | 0.35 U | 0.35 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| SW8260 | TETRACHLOROETHYLENE | Lgkg | 1.10 | 0.66 U | 0.50 U | 0.44 U | 0.46 U | 0.53 U | 0.42 U | 0.44 U | 0.45 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.43 U | 0.43 U | 0.42 U | 0.43 U | 0.42 U | 0.42 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | ugkg | 0.97 U | 0.63 U | 0.47 U | 0.42 U | 0.44 U | 0.50 U | 0.40 U | 0.42 U | 0.43 U | ${ }^{0.40} \mathrm{U}^{\text {a }}$ | 0.40 U | 0.40 U | 0.40 U | ${ }^{0.414}$ | 0.41 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| SW8260 | TRANS-1,2-DICHLOROPROPENE | ugkg | $0.77{ }^{\text {U }}$ | ${ }^{0.500}$ | 0.38 U | ${ }^{0.334}$ | ${ }^{0.355}$ | ${ }^{0.400}$ | ${ }^{0.324}$ | ${ }_{0}^{0.334}$ | ${ }^{0.34 U}$ | ${ }^{0.324}$ | 0.31 U | ${ }^{0.3214}$ | ${ }_{0}^{0.324}$ | ${ }^{0.322}$ | ${ }^{0.322}$ | ${ }^{0.321}$ | ${ }^{0.321}$ | ${ }^{0.321}$ | ${ }^{0.3214}$ |
| SW8260 | TRIBOMOMETHANE | ugkg | 1.00 | 0.64 U | 0.49 U | ${ }^{0.43 U}$ | 0.45 U | 0.52 U | 0.41 U | 0.43 U | 0.44 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.42 U | 0.42 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| SW8260 | TRICHLOROETHYLENE | ugkg | 1.14 | ${ }^{0.666}$ | 0.50 ${ }^{\text {U }}$ | ${ }^{0.44 U}$ | ${ }^{0.46 U^{4}}$ | 0.53 U | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.44 U}$ | ${ }^{0.45 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.43 U}$ | ${ }^{0.43 U}$ | ${ }^{0.42 \mathrm{U}}$ | 0.43 U | ${ }^{0.42 \mathrm{U}}$ | ${ }^{0.42 \mathrm{U}}$ |
| SW8260 | VINYL CHLORIDE | ugkg | 0.62 U | 0.40 U | 0.30 U | 0.27 U | 0.28 U | ${ }^{0.32 U}$ | 0.25 U | 0.27 U | 0.27 U | 0.25 U | 0.25 U | 0.26 U | 0.26 U | 0.26 U | ${ }^{0.26 U}$ | 0.25 U | 0.26 U | 0.25 U | 0.26 U |
| SW8270 | 2,4,5-TRRICHLOROPHENOL | ugkg | 200 u | 15 U | 17 U | 15 U | 14 U | 14 U | 14 U 38 | 150 | 15 U | 14 U 38 U | 14 U 38 | 14 U 38 U | $\frac{14}{38}$ | 14 U | $\frac{14 U}{39}$ | $\frac{14 U}{38 \mathrm{U}}$ | 14 U 38 U | 14 U 38 u | 14 U 38 U |
| SW8270 | ${ }_{\text {2, }}^{\text {2,4,-TRRICHLOROPHENOL }}$ | $\underline{\text { ugkg }}$ | 560 U 270 U | 40U | 45U | 40 U | 39U | 39 U | 38 U <br> 18 u | 19 U | 19 U | 38 U 18 U | 38 U 18 U | 38 U 18 U | 38 U 18 U | 39 U 19 U | 39 U | 38 U 18 | 38 U <br> 18 | 38 U 18 U | 38 U 18 u |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | 300 U | 210 | 24 U | 210 | 210 | 210 | 20 U | 210 | 22 U | 20 U | 20 U | 20 U | 20 U | 210 | 21 U | 20 U | 20 U | 20 U | 20 U |
| SW8270 | 2,4-IINITROPHENOL | ugkg | 190 U | 14 U | 15 U | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U |
| Sw8270 | 2,4-DIIITROTOLUENE | ugkg | 160 U | 11 U | 13 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U |
| SW8270 | 2,6-DINITROTOLUENE | ugkg | 560 U | 40 U | 45 U | 40 U | 39 U | 39 U | 38 U | 40 U | 40 U | 38 U | 38 U | 38 U | 38 U | 39 U | 39 U | 38 U | 38 U | 38 U | 38 U |
| SW8270 | 2-CHLORONAPHTHALENE | ugkg | 250 U | 18 U | 20 U | 18 U | 18 U | 18 U | 17 U | 18 U | 18 U | 17 U | 17 U | 17 U | 17 U | 18 U | 18 U | 17 U | 17 U | 17 U | 17 U |
| SW8270 | 2 2-CHLOROPHENOL | ugkg | 280 U | 20 U | 23 U | 20 U | 20 U | 20 U | 19 U | 20 U | 20 U | 19 U | 19 U | 19 U | 19 U | 20 U | 20 U | 19 U | 19 U | 19 | 19 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | ugkg | 190 U | 14 U | 15 U | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U |
| Sw8270 | 2-NITROANLINE | ugkg | 340 U | 24 U | 28 U | 24 U | 24 U | 24 U | 23 U | 25 U | 25 U | 23 U | 23 U | 23 U | 23 U | 24 U | 24 U | 24 U | 24 U | 23 U | 24 U |
| SW8270 | 2-NITROPHENOL | ugkg | 220 U | 16 U | 18 U | 16 U | 16 U | 16 U | 15 U | 16 U | 16 U | 15 U | 15 U | 15 U | 15 U | 15 U | 15 U | 15 U | 15 U | 15 U | 15 U |
| SW8270 | 3,3'-DICHLLOROBENZIDINE | ugkg | 530 U | 37 U | 42 U | 37 U | 374 | 374 | 36 U | 38 U | 38 U | 36 U | 36 U | 36 U | 36 U | 37 U | 374 | 36 U | 36 U | 36 U | 36 U |
| SW8270 | ${ }^{\text {3,5,5-TRRMMETHYL-2-CYCLOHEXENE--ONE }}$ | ugkg | 200 U | 15 U | 17 U | 15 U | 14 U | 14 U | 14 U | 15 U | 15 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U |
| SW8270 | 4,6-DINTITRO-2-METHYLPHENOL | $\frac{\mathrm{ug} \text { kg }}{\text { ugkg }}$ | $\frac{270 \cup}{150}$ | 19 U 11 U | ${ }_{12} 210$ | 19U | 19 l | 19 U | $\stackrel{18}{9.8}$ | 19 l | 19 U | 18 U <br> 9.7 | 18 U 9.7 U | 18 U 9.8 u | $\stackrel{18 \mathrm{U}}{ }$ | 19 UJ | 19 U | 18.9 U | 18.9 | ${ }_{9}^{18.8}$ | $\underline{9.9 \mathrm{U}}$ |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 160 U | 11 U | 13 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 UJ | 11 U | 11 U | 11 U | 11 U | 11 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | ugkg | 250 U | 18 U | 20 U | 18 U | 18 U | 18 U | 17 U | 18 U | 18 U | 17 U | 17 U | 17 U | 17 U | 18 U | 18 U | 17 U | 17 U | 17 U | 17 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | ugkg | 340 U | 24 U | 28 U | 24 U | 24 U | 24 U | 23 U | 25 U | 25 U | 23 U | 23 U | 23 U | 23 U | 24 U | 24 U | 24 U | 24 U | 23 U | 24 U |
| SW8270 | 4-METHYLPHENOL (M/P-CRESOL) | ugkg | 400 U | 29 U | 33 U | 29 U | 28 U | 28 U | 28 U | 29 U | 29 U | 27 U | 27 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U |
| SW8270 | 4-NITROPHENOL | ugkg | 270 U | 19 U | 214 | 19 U | 19 U | 19 U | 18 U | 19 U | 19 U | 18 U | 18 U | 18 U | 18 U | 19 uJ | 19 U | 18 U | 18 U | 18 UJ | 18 U |
| SW8270 | BENZYL BUTYL PHTHALATE | ugkg | 300 J | 20 U | ${ }_{23} 23$ | 20 U | 20 U | 20 U | 19 U | 20 U | 20 U | 19 U | 19 U | 19 U | 19 U | 20 U | 20 U | 19 U | 19 U | 19 U | 19 U |
| SW8270 | BIPHENYL | ugkg | 2200 U | 1700 | 190 U | 1700 | $170 \cup$ | 170 U | 160 UJ | 1700 | 1700 | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U |
| SW8270 | BIIS(2-CHLORETHOXY)METHANE | ugkg | 270 U | 19 U | 21 U | 19 U | 19 U | 19 U | 18 U | 19 U | 19 U | 18 U | 18 U | 18 U | 18 U | 19 U | 19 U | 18 U | 18 U | 18 U | 18 U |
| SW8270 | BIS(2-CHLOROETHYL ETHER | uglkg | 240 U | 17 U | 19 U | 17 U | 17 U | 17 U | 16 U | 17 U | 17 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U |
| SW8270 | BIS(2-CHLOROISOPROPYL) ETHER | ugkg | 330 U | 23 U | 26 UJ | 23 U | 23 U | 23 U | 22 U | 24 U | 24 U | 22 U | 22 U | 22 U | 22 U | 23 UJ | 23 uJ | 230 | 23 U | 22 UJ | 23 U |
| SW8270 | BIS(2-ETHYLHEXYL)PHTHALATE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\text { ugkg }}$ | 670 J 730 J | ${ }_{48}^{18 \mathrm{~J}}$ | 20 U | $\frac{18 \mathrm{U}}{42 \mathrm{~J}}$ | 18 U 34 | 50J | 17 U | 18 U | 18 U 18 U | 17 U | 17 U 17 U | $\begin{array}{r}17 \mathrm{U} \\ 17 \\ \hline 1\end{array}$ | 17 U 17 | 18 U 18 UJ | $\frac{18}{18 \mathrm{U}}$ | 17 U 17 U | 17 U | 174 174 | ${ }_{48} 17 \mathrm{~J}$ |
| SW8270 | DIBENZOFURAN | ugkg | 280 J | 16 J | 17 U | 22 J | 24 J | 29 J | 14 U | 66 J | 15 U | 59 J | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 240 |
| Sw8270 | DIETHYL PHTHALATE | ugkg | 190 U | 14 U | 15 U | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U |
| SW8270 | DIMETHYL PHTHALATE | ugkg | 160 U | 11 U | 13 U | 110 | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U |
| Sw8270 | DI-N-BUTYL-PHTHALATE | ugkg | 940 U | 67 U | 76 U | 67 U | 66 U | 66 U | 64 U | 68 U | 68 U | 63 U | 63 U | 64 U | 64 U | 65 UJ | 65 U | 65 U | 65 U | 64 U | 65 U |
| SW8270 | DI-N-OCTYL-PHTHALATE | ugkg | 240 U | 17 U | 19 U | 17 U | 17 U | 17 U | 16 U | 17 U | 17 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U |
| SW8270 | HEXACHLORO-1,3-3UTADIENE | ugkg | 270 U | 19 U | 210 | 194 | 19 U | 19 U | 18 U | 19 U | 19 U | 18 U | 18 U | 18 U | 18 U | 19 U | 19 U | 18 U | 18 U | 18 U | 18 U |
| SW8270 | HEXACHLLOROBENZENE | ugkg | 130 U 170 O | 9.14 120 | 11 U | 9.14 | 9.00 | 9.0U | $\stackrel{8.7 \mathrm{UJ}}{12 \mathrm{U}}$ | ${ }^{9.24}$ | 9.3U | 8.6U | 8.6U | $\stackrel{8.74}{124}$ | 8.74 <br> 124 | $\stackrel{8.9 \mathrm{UJ}}{12 \mathrm{u}}$ | ${ }_{8}^{8.9 \mathrm{U}}$ | $\stackrel{8.8 U}{124}$ | $\stackrel{8.8 U}{12 \mathrm{U}}$ | ${ }^{8.74}$ | ${ }_{8}^{8.8 U}$ |
| SW8270 | HEXACHLOROETHANE | ugkg | 270 | 19 U | 21 U | 19 U | 19 U | 19 U | 18 U | 19 U | 19 U | 18 U | 18 U | 18 U | 12 U | 12 U | 12 U | 18 U | 18 U | 18 U | 18 U |
| SW8270 | Nitrobenzene | ugkg | 310 U | 22 U | 25 U | 22 U | 22 U | 22 U | 210 | 22 U | 23 U | 21 U | 210 | 21 u | 214 | 22 U | 22 U | 22 U | 22 U | 21 V | 22 U |
| SW8270 | N-NITROSO-DI-N-PROPYLAMINE | ugkg | 280 U | 20 U | 23 U | 20 U | 20 U | 20 U | 19 U | 20 U | 20 U | 19 U | 19 U | 19 U | 19 U | 20 U | 20 U | 19 U | 19 U | 19 U | 19 U |
| SW8270 | N-NITROSODIPHENYLAMINE | ugkg | 170 U | 12 U | 14 U | 12 U | 12 U | 12 U | 12 U | 13 U | 13 U | 12 U | 12 U | 12 U | 12 U | 12 UJ | 12 U | 12 U | 12 U | 12 U | 12 U |
| SW8270 | P-CHLOROANLINE | uglkg | 400 U | 29 U | 33 U | 29 UJ | 28 UJ | 28 UJ | 28 U | 29 U | 29 U | 27 U | 27 U | 28 UJ | 28 UJ | 28 U | 28 U | 28 U | 28 UJ | 28 U | 28 U |
| SW8270 | ${ }^{\text {Prenenol }}$ |  | 250 U 190 U | 18 U 14 U | 20 U 150 | 18 U | 18 U 13 | 18 U 13 U | $\stackrel{17 \mathrm{U}}{13 \mathrm{UJ}}$ | 18 U 14 UJ | 18 U | 17 U 13 UJ | ${ }_{13}^{170}$ | ${ }_{13}^{17 \mathrm{U}}$ | ${ }_{13}^{17 \mathrm{U}}$ | 18 U 13 U | 18 l | ${ }_{13}^{17 U}$ | ${ }_{17}^{13 \mathrm{UJ}}$ | ${ }_{13}^{17 U}$ | ${ }_{13}^{17 U}$ |
| sw9060 | TOTAL ORGANIC CARBON | mg/kg | 5900 | 2900 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  |  | $\begin{array}{r} \text { Location } \\ \text { Sample } \\ \text { Depth } \\ \text { Sample Date } \end{array}$ | $\begin{gathered} \text { SSO38 } \\ \text { SSO38AC 0.5- } \\ 2 \text { feet } \\ 12 / 07 / 2006 \end{gathered}$ | $\begin{gathered} \text { Sso39 } \\ \text { Sso39CA } 0.5 \\ \text { 2 feet } \\ 12 / 07 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { SS041 } \\ \text { SSO41CA.55 } \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\left.\begin{array}{\|c\|} \text { SSO45 } \\ \text { SSO5CC } 0.5- \\ \text { ffet } \\ 12 / 11120006 \end{array} \right\rvert\,$ | $\begin{gathered} \text { sso46 } \\ \text { SSOCCA. } 0.5 \\ 2 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\left.\begin{array}{\|c\|} \text { SSO47 } \\ \text { SSOTCO.5 } \\ \text { 2feet } \\ 1211120006 \end{array} \right\rvert\,$ | $\begin{array}{c\|} \text { Ss048 } \\ \text { SSO48CA.5-5 } \\ 2 \text { feet } \\ 12 / 06 / 2006 \\ \hline \end{array}$ | $\left.\begin{array}{\|c\|} \text { SSO49 } \\ \text { SSO9CO } 0.5 \\ \text { 2fee } \\ 12 / 11120006 \end{array} \right\rvert\,$ | $\begin{gathered} \text { SS052 } \\ \text { SSO52CA 0.5- } \\ 2 \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO57 } \\ \text { SSO5CA. } \\ 2 / \text { feet } \\ 12 / 0612006 \end{gathered}$ | $\begin{gathered} \text { SSO57 } \\ \text { SSO57CC 0.5- } \\ 2 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{c\|} \text { SSO62 } \\ \text { SSO62CA } 0.5- \\ 2 \text { feet } \\ 12 / 08 / 2006 \end{array}$ | $\begin{gathered} \text { SSO62 } \\ \text { Sso62CC } 0.5 \\ 2 \text { feet } \\ 12 / 108 / 2006 \end{gathered}$ | $\begin{array}{c\|} \text { SSO64 } \\ \text { SSO64A } 0.5-5 \\ 2 \text { feet } \\ 12 / 08 / 2006 \end{array}$ | $\begin{gathered} \text { SSO66 } \\ \text { SSO66C 0.5- } \\ \text { 2 feet } \\ 121 / 08 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO68 } \\ \text { SSO68CA } 0.5- \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO70 } \\ \text { SSOT0CA. } 05 \\ 2 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO72 } \\ \text { SSO72CA } 0.5- \\ 2 \text { feet } \\ 12107 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { SSO72 } \\ \text { Ssor2co } 0.5 \\ \text { 2fet } \\ 1210712006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SNASIM | 2-METHYLNAPHTHALENE | ugkg | 1.70 | 1.6 U | 1.6 U | 1.6 UJ | 2.4 J | 62 J | 5.4 | 16 U | 16 UJ | 2.5 J | 2.0 J | 17 U | 120 | ${ }_{1}^{1.7 \mathrm{~J}}$ | ${ }^{3.2} \mathrm{~J}$ | 6.9 J | 19 J | 330 | 330 |
| SNASIM | ACENAPHTHENE | ugkg | 2.90 | 2.90 | 2.90 | 2.9 UJ | 2.9 JJ | 370 | 4.15 | 29 U | 29 UJ | 2.90 | 2.90 | 29 U | 36 J | 2.90 | 2.8 U | ${ }^{3.15}$ | 30 UJ | 78 J | 150 U |
| SNASIM | ACENAPHTHYLENE | ${ }_{\text {uglkg }}^{\text {uglkg }}$ | 10 24 | 2.8 U <br> 6.6 | 46 88 | 9.2 <br> 8.8 | 25 5 | 750 2000 | 11 20 | 440 930 | 200 550 | 2.8 U 0.64 u | 2.8 U 0.65 u | 370 930 | 530 1400 | 14 <br> 1 | 3.8 J 8.0 | 16 22 | 270 680 | 640 1600 | 1200 3000 |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 10 | 4.4 | 48 | 7.4 | 56 | 2200 | 20 | 1300 | 470 | ${ }_{0}^{0.53 U}$ | ${ }_{0}^{0.53 U}$ | 2100 | 4300 | 44 | 9.5 | 25 | 620 | 1000 | 2500 |
| ENASIM | BENZO(A)PYRENE | ugkg | 10 | 5.2 | 68 | 7.8 | 57 | 3400 | 23 | 1600 | 480 | 1.20 | 1.20 | 3800 | 6700 | 29 | 7.6 | 24 | 790 | 1000 | 2500 |
| BNASIM | BENZO(B)FLUORANTHENE | ugkg | 23 | 12 | 1603 | 20 | 140 | 7000 | 44 | 2800 J | 1200 | ${ }_{0}^{1.84 U}$ | ${ }_{0}^{1.85 U}$ | 6300 | 11000 | 59 | 16 | 58 J | 1600 | 2200 | 4700 |
| ENASIM | BENZO(G,H,H)PERYLENE | ugkg | 34 | 8.2 | 110 | 6.3 | 50 | 1800 | 29 | 1600 | 530 | 0.68 U | 0.69 U | 1500 | 2000 | 33 | 9.8 | 29 | 630 | 1500 |  |
| SNASIM | BENZO(k)FLLORANTHENE | ugkg | 14 | 9.3 | 79 | 9.7 | 75 | 2100 | 41 | 1600 | 570 | 0.68 U | 0.69 U | 3500 | 6300 | 54 | 14 | 31 | 840 | 1400 | 3800 |
| ENASIM | CHRYSENE | ugkg | 12 | 6.8 | 66 | 12 | 80 | 2500 | 41 | 1700 | 750 | 6.9 | ${ }^{0.51 \mathrm{U}}$ | 2800 | 5500 | 57 | 14 | 39 | 880 | 1200 | 3000 |
| SNASIM | DIBENZO(A,H)ANTHRACENE | ugkg | 5.9 | 1.90 | 29 | 2.23 | 17 | 820 | 8.1 | 530 | 150 | ${ }^{1.15}$ | 1.31 | 660 | 950 | 10 | 2.45 | 9.3 | 210 | 450 | 900 |
| ENASIM | FLUORANTHENE | ugkg | 15 | 7.9 | 66 | 9.1 | 92 | 2100 | 32 | 1600 | 1100 | 10 | 8.1 | 2100 | 4500 | 94 | 25 | 49 | 800 | 2400 | 5200 |
| SNASIM | FLUORENE | ugkg | 1.70 | 1.6 U | 1.6 U | 1.6 UJ | 1.6 UJ | 520 J | 1.9 J | 16 U | 16 UJ | 1.60 | 1.6 U | 28 J | 41 | 1.60 | 4.1 | 1.6 R | 22 J | 55 J | 100 J |
| SNASIM | INDENO(1,2,3-CD) PYRENE | ugkg | 26 | 8.5 | 91 | 6.0 | 51 | 2000 | 31 | 1500 | 450 | 0.91 U | 0.92 U | 1900 | 2600 | 38 | 10 | 26 | 610 | 1700 | 3400 |
| BNASIM | NAPHTHALENE | ugkg | ${ }_{0}^{0.55 U}$ | $\stackrel{.54 U}{ }$ | ${ }^{0.53 \mathrm{U}}$ | 4.0 J | 9.15 | 83 J | 11 | 5.40 | 9.8 J | ${ }^{0.54 U}$ | ${ }^{0.54 U}$ | 5.5 u | 360 | ${ }_{0} 0.54 \mathrm{U}$ | 11 | ${ }^{0.54 U}$ | 34 J | 320 | 550 |
| ENASIM | PENTACHLOROPHENOL | ugkg | 17 J | 13 J | 29 J | 1.15 | 47 | 600 | 18 J | 130 J | 110 J | 11 J | 11 J | 7.50 | 7.90 | 44 | 16 J | 8.8 J | 440 | 1600 | 3300 |
| ENASIM | PHENANTHRENE | ugkg | 3.6 J | 3.5 U | 3.5 U | 3.5 UJ | 11 J | 1700 | 9.5 | 350 | 88 J | 4.0 J | 3.5 U | 270 | 440 | 10 | 21 | 3.6 J | 120 | 650 | 1200 |
| ENASIM | PYRENE | ugkg | 15 | 8.5 | 91 | 15 | 110 | 6400 | 32 | 2000 | 1100 | 8.5 | 6.9 | 4000 | 6700 | 84 | 23 | 48 | 1300 | 1900 | 4500 |
| E160.3 | RESIDUE, TOTAL | percent | 93 | 96 | 96 | 96 | 95 | 91 | 94 | 96 | 95 | 96 | 95 | 94 | 89 | 96 | 97 | 95 | 92 | 92 | 90 |
| E1613/11668 | 1,2,3,4,4,7,8,-HEPTACHLORODIBENZOFURAN | ngkg | 13.792 |  | 325.736 |  | 242.142 |  |  |  |  | 33.134 | 18.315 | 38.542 J | 52.045 J |  |  | 58.028 |  |  |  |
| E16131/1668 | 1, 2, 3,4,6,7,8,-HEPTACHLORODIBENZO-P-DIOXIN | ngkg | 102.582 |  | 3062.676 |  | 2729.809 |  |  |  |  | 181.875 | 104.332 | 253.772 | 388.59 J |  |  | 416.238 |  |  |  |
| E1613/E1668 | 1,2,3,4, , , ,9,-HEPTACHLORODIBENZOFURAN | nglkg | ${ }^{1.601 \mathrm{~J}}$ |  | 19.87 |  | 17.108 |  |  |  |  | ${ }^{1.302 \mathrm{~J}}$ | ${ }^{0.762 \mathrm{~J}}$ | ${ }^{2.215}$ | ${ }^{2.962 ~ J}$ |  |  | ${ }^{3.209 ~ J}$ |  |  |  |
| E1613/16668 | $1,1,2,4,7,8$-HEXACHLORODIBENZOFURAN | ngkg | ${ }_{0} .601 \mathrm{~J}$ |  | ${ }_{9} 9.755$ |  | ${ }^{1.553}$ |  |  |  |  | ${ }_{0}^{1.604 \mathrm{~J}}$ | 0.331 J | ${ }_{1}^{2.465 \mathrm{~J}}$ | 1.834 J |  |  | ${ }^{1.823 \mathrm{~J}}$ |  |  |  |
| E1613/E1668 | 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | ngkg | 0.828 J |  | 20.604 |  | ${ }^{17.245}$ |  |  |  |  | ${ }^{1.204 \mathrm{~J}}$ | 0.669 J | ${ }^{1.001 \mathrm{~J}}$ | 1.845 J |  |  | ${ }^{3.921 \mathrm{~J}}$ |  |  |  |
| E1613/16168 | $1,1,2,3,6,7,8$-HEXACHLORODIBENZOFURAN | ngkg | 0.209 U |  | 6.97 |  | 2.82 J |  |  |  |  | 0.517 J | 0.289 J | 1.832 J | 2.343 J |  |  | 3.48 J |  |  |  |
| E1613/16688 | 1, 2, ,3,6,7,8.-HEXACHLORODIBENZO-P-DIOXIN | ngkg | ${ }^{2.814 \mathrm{~J}}$ |  | ${ }^{65.196}$ |  | 48.572 |  |  |  |  | ${ }_{4}^{4.2015}$ | ${ }^{2.476 \mathrm{~J}^{2}}$ | ${ }^{13.364 \mathrm{~J}}$ | ${ }^{19.6433}$ |  |  | 14.649 |  |  |  |
| E1613/E1668 | 1, 1,2,7,7,9,9-HEXACHLORODIBENZOFURAN | ngkg | 0.232 U |  | 0.4210 |  | 0.122 U |  |  |  |  | 0.152 U | ${ }_{0}^{0.063 \mathrm{U}}$ | ${ }^{0.2727}$ | ${ }^{0.2093}$ |  |  | $0.19{ }^{\text {U }}$ |  |  |  |
| E1613/16168 | 1,2,3,7,8,9,-HEXACHLORODIBENZO-P-DIOXIN | ngkg | 2.002 J |  | 60.991 |  | 48.077 |  |  |  |  | 3.345 J | 1.851 J | 2.942 J | 3.038 J |  |  | 9.35 |  |  |  |
| E1613/E1668 | 1,2,3,7,8.PENTACHLORODIBENZOFURAN | ngkg | 0.153 U |  | 0.829 J |  | 0.397 J |  |  |  |  | 0.032 U | 0.017 U | 0.465 J | 0.483 J |  |  | 0.294 U |  |  |  |
| E16131/1668 | 1,2,3,7,8.-PENTACHLORODIBENZO-P-DIOXIN | ngkg | 0.5 J |  | 5.381 |  | ${ }^{3.207 \mathrm{~J}}$ |  |  |  |  | 0.464 J | 0.256 J | ${ }^{1.042 \mathrm{~J}}$ | 1.28 J |  |  | 1.454 J |  |  |  |
| E1613]E1668 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | ngkg | 0.2 U |  | ${ }^{16.563}$ |  | 9.02 |  |  |  |  | 0.596 J | 0.251 U | 1.572 J | 2.2 J |  |  | 3.255 U |  |  |  |
| E1613/1668 | 2,3,4, ,8-PENTACHLORODIBENZOFURAN | ngkg | 0.194 U |  | ${ }^{1.0653}$ |  | $0.465 \mathrm{U}^{0}$ |  |  |  |  | ${ }^{0.038 ~ U ~}$ | $0.021{ }^{0}$ | $0.067{ }^{\text {O }}$ | ${ }^{0.7083}$ |  |  | ${ }_{0}^{0.324 U}$ |  |  |  |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZOFURAN | ngkg | 0.033 U |  | 0.431 U |  | 0.465 U |  |  |  |  | 0.035 U | 0.04 U | 0.357 U | 0.324 U |  |  | 0.281 U |  |  |  |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | ng/kg | 0.094 U |  | 0.046 U |  | 0.056 U |  |  |  |  | 0.024 U | 0.021 U | 0.069 U | ${ }^{0.084 \mathrm{U}}$ |  |  | $0.13{ }^{0}$ |  |  |  |
| E1613/E1668 | OCTACHLORODIBENZOFURAN | ngkg | ${ }^{59.536}$ |  | 1785.744 |  | 1596.339 |  |  |  |  | 85.021 | 51.537 | 184.811 | 272.801 |  |  | 263.162 |  |  |  |
|  | OCTACHLORODIBENZO-P-DIIXIN | ${ }_{\text {ng }}^{\text {ngkg }}$ | ${ }^{9972.283} 70.088$ |  | 35328.152 J <br> 1308916 <br> 1 |  | ${ }_{2}^{25130.316} 1183936$ |  |  |  |  | 1694.104 <br> 98929 | 982.549 55887 | 2568.471 <br> 129.756 | - 3947.587 J |  |  | ${ }^{4663.337 \mathrm{~J}} \mathbf{2 2 6 3 9 8}$ |  |  |  |
| E1613/E1668 | TOTAL HEPTACHLLORINATED Dibenzorurans | ${ }_{\text {ng }}^{\text {ngkg }}$ ng | 70.088 294.776 |  | ${ }_{1}^{13088946} \mathbf{1 3 9 2}$ |  | ${ }^{11838.936}{ }^{11923.002}$ |  |  |  |  | 98.592 <br> 545.016 | ${ }_{325.887}^{557}$ | 129.756 <br> 788.18 | ${ }^{180.148} 1113.461$ |  |  | 226.398 |  |  |  |
| E1613/16668 | TOTAL HEXACHLORINATED DIBENZOFURANS | ngkg | 10.999 |  | ${ }^{1337.953}$ |  | ${ }_{2} 42.066$ |  |  |  |  | 24.075 | 13.347 | 59.264 | 79.081 |  |  | 61.338 |  |  |  |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | ngkg | 23.761 |  | 995.378 |  | ${ }^{776.63}$ |  |  |  |  | 50.809 | ${ }^{28.892}$ | 141.939 | ${ }^{131.874}$ |  |  | 103.262 |  |  |  |
| E1613/E1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | ngkg | 1.637 |  | 49.992 |  | 18.378 |  |  |  |  | 2.758 | 1.343 | 19.592 | 25.875 |  |  | 6.508 |  |  |  |
| E1613/E1668 | TOTAL PENTACHLORINATED DIBENZO.-P.DIOXINS | ngkg | 0.977 |  | ${ }^{36.153}$ |  | ${ }^{43.595}$ |  |  |  |  | 4.077 | 1.799 | 4.815 | 5.038 |  |  | 4.438 |  |  |  |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg | ${ }^{0.033 ~ U ~}$ |  | ${ }^{4.498}$ |  | 2.114 |  |  |  |  | ${ }^{0.446}$ | ${ }^{0.187}$ | ${ }^{4.924}$ | 4.015 |  |  | ${ }^{0.2814}$ |  |  |  |
| (1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | ${ }_{\text {nglkg }}^{\text {mgkg }}$ | ${ }^{0.039 \mathrm{U}}$ |  | 1.186 0.33 UJ |  | 1.347 0.33 UJ |  |  |  |  | 0.126 0.35 u | 0.021 U 0.34 u | 0.769 0.36 UJ | 1.062 |  |  | 0.13 U 0.34 UJ |  |  |  |
| SW6020 | ${ }^{\text {ARSENIC }}$ |  | 0.61) | ${ }_{3.7}^{0.330}$ | ${ }_{\text {en }}^{0.330 \mathrm{~J}}$ | ${ }_{6}^{0.3505}$ | ${ }_{0}^{0.3378}$ | ( 0.360 J | $\stackrel{0.36 \mathrm{U}}{0.43 \mathrm{U}}$ | ${ }_{2}^{0.340 J}$ | ${ }^{0.3505}$ | ${ }_{0}^{0.3560}$ | $\stackrel{0.340}{0.410}$ | ${ }_{9.6}^{0.360 J}$ | ${ }_{\text {O }}^{13}$ | ${ }_{1}^{0.350 J}$ | $\stackrel{0}{0.350}$ | ${ }_{31 \mathrm{~J}}^{0.340 \mathrm{~J}}$ | ${ }_{8}^{0.36 \mathrm{~J}}$ | ${ }^{0.360}$ | 16 |
| SW6020 | BARIUM | mgkg | 3.6 | 6.3 | 12 J | 4.5 | 8.7 | 10 | 13 | 12 J | 13 | 13 | 16 | 20 | 38 | 24 | 6.8 | 8.8 J | 11 | 24 | 23 |
| SW6020 | CADMIUM | mgkg | 0.30 ${ }^{10}$ | 0.28U | 0.28U | 0.30 | 0.28 U | 0.30 U | ${ }^{0.31 \mathrm{U}}$ | 0.29 U | 0.30 U | ${ }^{0.30 \mathrm{U}}$ | 0.29 U | ${ }^{0.31 U}$ | ${ }^{0.32 \mathrm{U}}$ | 0.30 | 0.30 | 0.29 U | ${ }^{0.310}$ | ${ }^{0.30 \mathrm{O}}$ | 0.31U |
| SW6020 | CHROMUM | mgkg | 67 J | 6.9 J | 8.8 | 2.0 | 3.7 | 5.7 | 7.1 | 10 | 5.6 | 6.3 | 7.2 | 6.5 | 8.2 | 12 | 14 J | 9.2 | 9.2 | 19 | 21 |
| SW6020 | COPPER | mgkg | 1.9 J | 1.15 | 2.4 J | ${ }^{0.753}$ | 1.1 | 2.2 | 0.78 J | 4.2 J | 3.2 | 1.1 | 1.1 | 2.6 | 4.5 | 1.6 | 1.6 J | 1.4 J | 7.0 | 20 | 21 |
| SW6020 | LEAD | mgkg | 1.9 | 1.8 | 4.7 J | 1.3 | 3.5 | 5.1 | 3.6 | ${ }^{11 J}$ | 7.5 | 7.2 | 8.4 | 9.0 | 12 | 5.6 | 1.7 J | 4.8 J | 6.8 | 24 | 27 |
| SW6020 | SELENIUM | mgkg | ${ }_{0}^{0.86 \mathrm{U}}$ | 0.82 U | 0.80 U | ${ }^{0.87 U}$ | 0.81 U | 0.88 U | 0.89 U | 0.84 U | 0.88 U | 0.87 U | 0.84 U | 0.89 U | 0.93 U | 0.87 U | ${ }^{0.86 \mathrm{U}}$ | ${ }^{0.83 U}$ | 0.88 U | 0.88 U | 0.89 U |
| SW6020 | SILVER | mgkg | 0.39 U | 0.37 U | 0.36 U | 0.39 U | ${ }^{0.38 \mathrm{U}}$ | 0.40 U | 0.40 U | ${ }^{0.38 \mathrm{U}}$ | 0.40 U | 0.39 U | 0.38 U | 0.40 U | ${ }^{0.42 \mathrm{U}}$ | 0.39 U | 0.39 U | 0.38 U | 0.40 U | 0.40 U | 0.40 U |
| SW6020 | VANADIUM (FUME OR DUST) | mgkg | 0.92 UJ | 2.0 | 4.43 | ${ }^{0.93 U}$ | 1.6 | 0.94U | 4.7 | 2.75 | 0.94 U | 3.9 | 4.3 | 3.4 | 4.6 | 1.5 | 1.4 | $\underline{1.85}$ | 0.950 | 5.2 | 3.2 |
| SW7471 | MERCURY $1,1,1$ TRICHLOROETHANE | $\mathrm{mg}_{\mathrm{mg} \text { kg }}^{\text {ugk }}$ | ${ }_{0}^{0.015 \mathrm{~J}}$ | ${ }_{0.022 \mathrm{~J}}^{0.13 \mathrm{u}}$ | $\stackrel{0.037}{0.13 U}$ | ${ }_{0}^{0.013 \mathrm{~J}}$ | ${ }_{0}^{0.053}$ | 0.30 J 0.14 u | ${ }_{0}^{0.016 \mathrm{~J}}$ | $\stackrel{0.059}{0.13 \mathrm{U}}$ | 0.041 J | $\frac{0.012 \mathrm{~J}}{0.13 \mathrm{u}}$ | ${ }_{0}^{0.012 \mathrm{~J}}$ | ${ }_{0}^{0.048 \mathrm{~J}}$ | $\frac{0.061 \mathrm{~J}}{0.14 \mathrm{u}}$ | ${ }_{0}^{0.021 \mathrm{~J}} 0$ | ${ }_{0}^{0.014 \mathrm{~J}}$ | ${ }_{0}^{0.026 \mathrm{~J}}$ | 0.11 0.14 U | 1.5 0.14 U | 1.6 0.14 U |
| SW8260 | 1,1,2,2-TETRACHLOROETHANE | ugkg | 0.071 U | 0.069 U | 0.069 U | 0.069 U | 0.070 U | 0.073 U | 0.071 U | 0.069 U | ${ }_{0}^{0.070 U}$ | 0.069 U | 0.072 U | 0.081 U | ${ }_{0}^{0.075 \mathrm{U}}$ | 0.069 U | ${ }_{0}^{0.069 ~ U ~}$ | ${ }_{0.070 \mathrm{U}}^{0}$ | 0.072 U | $\stackrel{0}{0.072 \mathrm{U}}$ | $\stackrel{0}{0.074 \mathrm{U}}$ |
| SW8260 | 1,1,2-TRICHLOROETHANE | ugkg | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.15 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.15 U | ${ }_{0}^{0.16 U}$ | 0.15 U | 0.14 U | 0.14 U | 0.14 U | 0.15 U | 0.15 U | 0.15 U |
| SW8260 | 1,1-DICHLOROETHANE | ugkg | 0.068 U | 0.066 U | 0.066 U | 0.066 U | 0.067 U | $0.070{ }^{0}$ | 0.068 U | 0.066 U | 0.067 U | 0.066 U | 0.069 U | 0.077 U | 0.072 U | 0.066 U | 0.065 U | 0.067 U | 0.069 U | 0.069 U | 0.070 U |
| SW8260 | 1,1-1-ICHLOROETHYLENE | ugkg | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U | 0.21 U | 0.20 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U | 0.19 U | 0.19 U |
| SW8260 | 1,2,4-4TRICHLOROBENZENE | ugkg | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U | 0.19 U | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U | $0.17{ }^{\text {U }}$ | 0.17 U |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | ugkg | 0.53 U | 0.52 U | 0.51 U | 0.51 U | 0.52 U | 0.55 U | 0.53 U | 0.51 U | 0.52 U | 0.51 U | 0.53 U | 0.60 U | 0.56 U | 0.52 U | 0.51 U | 0.52 U | 0.54 U | 0.54 U | 0.55 U |
| SW8260 | 1,2-DIBROMOETHANE | ugkg | 0.061 U | 0.059 U | 0.059 U | 0.059 U | 0.060 U | 0.062 U | 0.060 U | 0.059 U | 0.060 U | 0.059 U | 0.061 U | 0.069 U | 0.064 U | 0.059 U | 0.058 U | 0.059 U | 0.061 U | 0.061 U | 0.062 U |
| SW8260 | 1.2-DICHLOROBENZENE |  | ${ }_{0}^{0.084 \mathrm{U}}$ | 0.082 U | 0 | 0 | 0.083 U | ${ }^{0.086 \mathrm{U}}$ | ${ }^{0.084 \mathrm{U}}$ | ${ }_{0}^{0.082 \mathrm{U}}$ | $0.083{ }^{0.0114}$ | 0 | ${ }^{0.085}$ | 0.096 U |  | 0.082 U | ${ }_{0}^{0.081 \mathrm{U}}$ | 0 | 0.085 U | 0.085 U | 0.087 U |
| SW8260 | 1, 12-IICHLOROETHANE | $\frac{\mathrm{ug} k \mathrm{~kg}}{\mathrm{ug} k g}$ | 0.11U | 0.11U | 0.11 U 0.057 U | 0.11U | $\stackrel{0.11 \mathrm{U}}{0.058 \mathrm{U}}$ | $\frac{0.12 \mathrm{U}}{0.060 \mathrm{U}}$ | 0.11 U 0.058 U | $\frac{0.11 \mathrm{U}}{0.057 \mathrm{U}}$ | $\stackrel{0.11 \mathrm{U}}{0.057 \mathrm{U}}$ | 0.11U | 0.11U | $\stackrel{0.13 U}{0.066 U}$ | $\frac{0.12 U}{0.061 U}$ | 0.11U | 0.11U | $\frac{0.11 \mathrm{U}}{0.057 \mathrm{U}}$ | 0.11U | $\frac{0.11 \mathrm{U}}{0.059 \mathrm{U}}$ | 0.12 U <br> 0.060 U |
| SW8260 | 1,4-DICHLOROBENZENE | ugkg | 0.094 U | 0.091 U | 0.091 U | 0.091 U | 0.092 U | 0.096 U | 0.093 U | 0.091 U | 0.092 U | 0.091 U | 0.095 U | 0.11 U | 0.099 U | 0.091 U | 0.090 U | 0.092 U | 0.095 U | 0.095 U | 0.097 U |
| SW8260 | ACETONE | ugkg | 2.70 | 2.7 U | 10 J | 5.15 | 14 J | 7.15 | 150 | 39 J | 10 J | 2.7 U | 2.8 U | 3.10 | 2.90 | 2.70 | 2.6 U | 4.2 J | 7.0 J | 2.8 U | 2.8 U |
| SW8260 | BENZENE | ugkg | ${ }^{0.42 U}$ | ${ }^{0.414}$ | ${ }^{0.410}$ | ${ }^{0.41 U}$ | ${ }^{0.42 U}$ | ${ }^{0.43 U}$ | ${ }^{0.42 U}$ | ${ }^{0.41 U}$ | ${ }^{0.42 U}$ | ${ }^{0.414}$ | ${ }^{0.43 U}$ | ${ }^{0.48 \mathrm{U}}$ | ${ }^{0.44 U}$ | ${ }^{0.414}$ | ${ }^{0.414}$ | ${ }^{0.414}$ | 0.43 U | ${ }^{0.43 U}$ | 0.44 U |
| SW8260 | BROMODICHLOROMETHANE | uglkg | 0.32 | 0.314 | ${ }_{0}^{0.31 \mathrm{U}}$ | 0.314 | 0.314 | 0.32 | 0.31U | 0.31 u | 0.314 | 0.314 | 0.32U | -0.36 | 0.33U | 0.314 | 0.30U | 0.31U | 0.32U | 0.32U | -0.33 |
| SW8260 | BROMOMETHANE CARBON DISULIIE | ${ }_{\text {ug }}^{\text {ugkg }}$ | 0.35 U <br> 1.8 u | 0.34U | 0.34 UJ 1.7 U | 0.34 UJ <br> 1.7 U <br> 0.0 | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | 0.36 UJ 1.8 u | $\frac{0.35 \mathrm{uJ}}{1.8 \mathrm{u}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{u}}$ | 0.40 U 2.0 U | $\frac{0.37 \mathrm{U}}{1.9 \mathrm{u}}$ | 0.34 U <br> 17 <br> 17 U | $\frac{0.33 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{U}}$ | 0.35 U 1.8 U | 0.36 U 1.8 U |
| SW8260 | CARBON TETRACHLORIDE | ugkg | ${ }_{0}^{0.38 \mathrm{U}}$ | 0.37 U | ${ }_{0}^{1.37 \mathrm{U}}$ | 0.37 U | ${ }_{0}^{1.37 \mathrm{U}}$ | 0.39 U | ${ }_{0}^{1.38 \mathrm{U}}$ | 0.37 U | 0.37 U | 0.37 U | 0.38 U | ${ }_{0}^{2.43 U}$ | 0.40 U | 0.37 U | ${ }_{0}^{0.37 \mathrm{U}}$ | ${ }_{0}^{0.37 \mathrm{U}}$ | ${ }_{0.38 \mathrm{U}}$ | ${ }_{0}^{0.39 \mathrm{U}}$ | ${ }_{0}^{1.39 \mathrm{U}}$ |
| SW8260 | CFC-11 | ugkg | ${ }^{0.28 U}$ | 0.28 U | 0.27 U | 0.28 U | 0.28 U | 0.29 U | ${ }^{0.28 \mathrm{U}}$ | 0.28 U | 0.28 U | 0.28 U | 0.29 U | 0.32 U | ${ }_{0} 0.30 \mathrm{U}$ | 0.28 U | 0.27 U | 0.28 U | 0.29 U | 0.29 U | 0.29 U |
| SW8260 | CFC-12 | ugkg | 0.35 UJ | 0.34 UJ | 0.34 U | 0.34 U | 0.34 U | 0.36 U | 0.35 U | 0.34 U | 0.34 U | 0.34 U | 0.35 U | 0.40 U | 0.37 U | 0.34 U | 0.33 U | 0.34 U | 0.35 U | 0.35 UJ | 0.36 UJ |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | ugkg | 0.39 U | 0.38U | 0.38 U | 0.38 U | 0.39 U | 0.40 U | 0.39 U | 0.38 U | 0.38 ${ }^{0.30}$ | ${ }^{0.384}$ | 0.39 U | ${ }^{0.44 U}$ | 0.41 U | ${ }^{0.38 \mathrm{U}}$ | ${ }^{0.384}$ | ${ }^{0.38 \mathrm{U}}$ | 0.40 U | ${ }^{0.40 \mathrm{U}}$ | 0.40 U |
| SW8260 | CHLOROBENZENE | ugkg | ${ }^{0.43 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{ }$ | ${ }^{0.426}$ | ${ }^{0.42 U^{4}}$ | $\stackrel{0.43 \mathrm{U}}{0}$ | - 0.45 U | ${ }^{0.43 U^{2}}$ | $\stackrel{0.42 \mathrm{U}}{0}$ | $\stackrel{0.43 \mathrm{U}}{ }$ | $\stackrel{0.424}{027}$ | 0.44U | $\stackrel{0.49 \mathrm{U}}{0}$ | 0.46 U 0.29 U | ${ }_{0}^{0.42 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{ }$ | $\stackrel{0.42 \mathrm{U}}{\substack{074 \\ \hline}}$ | ${ }^{0.444}$ | 0.44U | ${ }^{0.455}$ |
| SW8260 | CHLORODIEROMOMETHANE | ugkg | $\stackrel{0.27 \mathrm{U}}{0.39 \mathrm{U}}$ | $\stackrel{0.27 \mathrm{U}}{0.38 \mathrm{U}}$ | $\stackrel{0.26 \mathrm{U}}{0.38 \mathrm{U}}$ | 0.27 U 0.38 UJ | 0.27 0 | 0.28 U 0.40 UJ | $\stackrel{0.27 \mathrm{U}}{0.39 \mathrm{u}}$ | $\stackrel{0.27 \mathrm{U}}{0.38 \mathrm{U}}$ | - 0.278 UJ | $\stackrel{0.27 \mathrm{U}}{0.38 \mathrm{U}}$ | 0.288 0.390 | -0.310 | -0.290 | 0.274 0.38 U | $\stackrel{0.260}{0.38 \mathrm{u}}$ | 0.27 U 0.38 U | 0.28 ${ }_{0}^{0.40 \mathrm{UJ}}$ | 0.280 | 0.280 0.40 U |
| SW8260 | CHLOROFORM | ugkg | 0.37 U | ${ }_{0}^{0.36 \mathrm{U}}$ | ${ }_{0}^{0.36 U}$ | ${ }_{0} 0.36 \mathrm{U}$ | 0.36 U | 0.38 U | 0.37 U | ${ }_{0}^{0.36 U}$ | ${ }_{0}^{0.36 \mathrm{U}}$ | 0.36 U | 0.37 U | 0.42 U | 0.39 U | 0.36 U | 0.36 U | 0.36 U | 0.37 U | 0.37 U | 0.38 U |
| SW8260 | CHLOROMETHANE | ugkg | 0.49 U | 0.48 U | 0.47 U | 0.47 U | 0.48 U | 0.50 U | 0.48 U | 0.47 U | 0.48 U | 0.47 U | 0.49 U | 0.55 U | 0.51 U | 0.47 U | 0.47 U | 0.48 U | 0.49 U | 0.49 U | 0.50 U |


|  |  |  | $\begin{gathered} \text { SSO38 } \\ \text { SSO38CA } 0.5- \\ 2 \text { feet } \\ 12 / 107 / 2006 \end{gathered}$ | SSO39 <br> SSO39CA 0.5- <br> 2 feet <br> $12 / 107 / 2006$ | SSO41 SSO41CA $0-$ 2 feet $12 / 11 / 2006$ | $\begin{gathered} \text { SSOO5 } \\ \text { SSO45CA. } 5- \\ \text { 2 feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO46 } \\ \text { SSOCCA.5-5 } \\ 2 \text { feet } \\ 12 / 12 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO47 } \\ \text { SSO4CA } 0.5- \\ 2 \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { sso48 } \\ \text { SSO48CA } 0.5-\mathrm{s} \\ 2 \text { feet } \\ 12 / 106 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS049 } \\ \text { SSO49CA. } 0.5 \\ 2 \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO52 } \\ \text { SSO52CA. } 5- \\ 2 \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS057 } \\ \text { SSO57CA.5- } \\ 2 \text { feet } \\ 12 / 06 / 2006 \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { SSO62 } \\ \text { SSO62CA. } \\ \text { 2feet } \\ 12 / 108 / 2006 \\ \hline \end{gathered}$ | SS062 sso62cc 0.5 2feet $12 / 108 / 2006$ | SSO64 <br> SSO64CA 0. <br> 2feet <br> $12 / 08 / 2006$ | $\begin{array}{c\|} \text { SSO66 } \\ \text { SSO66CA 0.5- } \\ 2 \text { feet } \\ 121 / 08 / 2006 \end{array}$ | $\begin{array}{c\|} \text { SSO68 } \\ \text { SSO68CA } 0.5- \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | SS070 <br> SS070CA 0.5- <br> 2 feet <br> $12 / 12 / 2006$ | $\begin{gathered} \text { SSO72 } \\ \text { SSOT2CA } 0.5- \\ 2 \text { feet } \\ 121 / 07 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SSO72 } \\ \text { Ssor2co. } \\ \text { 2fet } \\ 1207 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIS-1,-2ICHLOROETHY | ugkg | ${ }_{0}^{0.28 \mathrm{U}}$ | $\stackrel{0.28 \mathrm{U}}{0.314}$ | $\stackrel{0.27 U}{0314}$ | $\stackrel{0.28 \mathrm{U}}{0}$ | $\stackrel{0.28 \mathrm{U}}{0.31 \mathrm{u}}$ | $\frac{0.29 \mathrm{U}}{0.32 \mathrm{u}}$ | ${ }_{0}^{0.28 \mathrm{U}}$ | 0.28U | $\stackrel{0.28 \mathrm{U}}{0.31 \mathrm{u}}$ | $\frac{0.28 \mathrm{U}}{0.31 \mathrm{u}}$ | ${ }_{0}^{0.29 \mathrm{U}}$ | ${ }_{0}^{0.32 \mathrm{U}} 0$ | ${ }_{0}^{0.30 \mathrm{U}} 0$ | ${ }_{0}^{0.28 \mathrm{U}} 0$ | 0.27 U 0.30 u | $\frac{0.28 \mathrm{U}}{0.31 \mathrm{U}}$ | ${ }_{0}^{0.29 \mathrm{U}} 0$ | $0.29 \cup$ | 0.29 U 0.33 u |
| SW8260 | CIS-1,3-ICHLOROPROPENE | $\underline{\mathrm{ug} k g}$ | 0.32 U 0.41 U | $\stackrel{0.31 \mathrm{U}}{0.40 \mathrm{U}}$ | ${ }_{0}^{0.310}$ | 0.31 U 0.40 | $\stackrel{0.31 \mathrm{U}}{0.41 \mathrm{U}}$ | $\stackrel{0.32 \mathrm{U}}{0.42 \mathrm{U}}$ | ${ }_{0}^{0.410}$ | ${ }_{0}^{0.3100}$ | ${ }_{0}^{0.311}$ | ${ }_{0}^{0.310}$ | $\stackrel{0.32 \mathrm{U}}{0}$ | $\stackrel{0.37 \mathrm{U}}{0.4}$ | 0.33 U 0.43 u | ${ }_{0}^{0.310} 0$ | $\stackrel{.0 .400}{ }$ | ${ }_{0}^{0.40 \mathrm{U}}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.433}$ |
| SW8260 | DICHLOROMETHANE | ugkg | 0.42 U | 0.41 U | 0.41 U | 0.41 U | 0.42 U | 0.43 U | 0.42 U | 0.41 U | 0.42 U | 0.41 U | 0.43 U | 0.48 U | 0.44 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U | 0.43 U | 0.44 U |
| sw8260 | EthYLBENZENE | ugkg | 0.46 U | 0.44 U | 0.44 U | 0.44 U | 0.45 U | 0.47 U | 0.45 U | 0.44 U | 0.45 U | 0.44 U | 0.46 U | 0.52 U | 0.48 U | 0.44 U | 0.44 U | 0.45 U | 0.46 U | 0.46 U | 0.47 U |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.50 U | 0.49 U | 0.48 U | 0.48 U | 0.49 U | 0.51 U | ${ }^{0.49}$ | 0.48 U | ${ }^{0.49 U^{4}}$ | 0.48 U | $0.50{ }^{0}$ | 0.57 U | 0.52 U | 0.49 U | 0.48 U | 0.49 U | ${ }^{0.500}$ | ${ }^{0.514}$ | $0.51{ }^{0}$ |
| SW8260 | m,p-Xylenes | ugkg | 0.94 U | 0.91 U | 0.91 U | 0.91 U | 0.92 U | 0.96 U | 0.93 U | 0.91 U | 0.92 U | 0.91 U | 0.95 U | 1.14 | 0.99 U | 0.91 U | 0.90 U | 0.92 U | 0.95 U | 0.95 U | 0.97 U |
| SW8260 | M-DICHLOROBENZ | ugkg | 0.054 U | 0.053 U | 0.052 U | 0.053 U | 0.053 U | 0.056 U | 0.054 U | 0.053 U | 0.053 U | 0.053 U | 0.055 U | 0.062 U | 0.057 U | 0.053 U | 0.052 U | 0.053 U | 0.055 U | 0.055 U | 0.056 U |
| SW8260 | METHYL ACETATE | ugkg | 0.21 U | 0.20 U | 0.20 U | 0.20 U | 0.21 U | 0.21 U | 0.21 U | 0.20 U | 0.21 U | 0.20 U | 0.21 U | 0.24 U | 0.22 U | 0.20 U | 0.20 U | 0.20 U | 0.21 U | 0.21 U | 0.22 U |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.24 | 1.2 U | 1.2 U | 1.24 | 1.2 U | 1.3 U | 1.20 | 1.24 | 1.24 | 1.20 | 1.20 | 1.4 U | 1.34 | 1.2 U | 1.2 U | 1.24 | 1.24 | 1.24 | 1.34 |
| SW8260 | METHYL LSOBUTYL KETONE | ugkg | 0.77 U | ${ }^{0.75 U}$ | $0.74{ }^{1}$ | $0.74{ }^{1}$ | $0.76{ }^{1.16}$ | 0.79 U | ${ }^{0.764}$ | $0.74{ }^{1.14}$ | $0.75{ }^{1.7}$ | $0.74{ }^{1 .}$ | $0.77{ }^{1.16}$ | ${ }^{0.874}$ | ${ }^{0.814}$ | 0.754 | ${ }^{0.744}$ | 0.754 | $0.77{ }^{1.7}$ | $0.78{ }^{1.16}$ | $0.79{ }^{1}$ |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.14 | 1.10 | 1.14 | 1.10 | 1.10 | 1.24 | 1.14 | 1.14 | 1.10 | 1.14 | 1.14 | 1.34 | 1.24 | 1.14 | ${ }^{1.1 .10 J}$ | 1.14 | 1.14 | 1.14 | 1.24 |
| SW88260 | M METHLBENLENE | ugkg | $\stackrel{0.46 \mathrm{U}}{0.48}$ | 0.446 <br> 0.46 | 0.446 <br> 0.46 | $\stackrel{0.56 \mathrm{U}^{0}}{0.46}$ | 0.89 <br> 0.47 | 1.29 0.49 | 0.457 <br> 0.47 | $0.44 \mathrm{U}^{0}$ 0.46 U | $\stackrel{0.89 \mathrm{U}}{0}$ | $0.44 \mathrm{U}^{0}$ 0.46 U | 0.460 0.48 U | $\stackrel{0.544}{ }$ | $\stackrel{0.50 \mathrm{U}}{ }$ | 0.464 <br> 0.46 | $0.44 \mathrm{U}^{0}$ 0.46 U | $0.45)$ <br> 0.47 | 0.480 U 0 | $0.46 \mathrm{U}^{0}$ 0.48 U | 0.49 <br> 0.49 |
| SW8260 | O-XYLENE | ugkg | 0.43 U | 0.42 U | 0.42 U | 0.42 U | 0.43 U | 0.45 U | 0.43 U | 0.42 U | 0.43 U | 0.42 U | 0.44 U | 0.49 U | ${ }^{0.46 U}$ | 0.42 U | 0.42 U | 0.42 U | 0.44 U | 0.44 U | 0.45 U |
| SW8260 | STYRENE (MONOMER) | ugkg | 0.47 U | 0.45 U | 0.45 U | 0.45 U | 0.46 U | 0.48 U | ${ }^{0.46 U}$ | 0.45 U | 0.46 U | 0.45 U | 0.47 U | ${ }^{0.53 U}$ | 0.49 U | 0.45 U | 0.45 U | ${ }^{0.464}$ | 0.47 U | 0.47 U | 0.48 U |
| sw8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.35 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.36 U | ${ }^{0.35 U}$ | 0.34 U | 0.34 U | 0.34 U | 0.35 U | 0.40 U | 0.37 U | 0.34 U | 0.33 U | 0.34 U | 0.35 U | 0.35 U | 0.36 U |
| sw8260 | TETRACHLOROETHYLENE | ugkg | 0.43 U | 0.42 U | 0.42 U | 0.42 U | 0.43 U | 0.45 U | 0.43 U | 0.42 U | 0.43 U | 0.42 U | 0.44 U | 0.49 U | 0.46 U | 0.42 U | 0.42 U | 0.42 U | 0.44 U | 0.44 U | 0.45 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | ugkg | 0.41U | 0.40 | 0.40 | 0.40 | 0.41 U | 0.42 U | ${ }^{0.410}$ | 0.40 | 0.41U | 0.40 | 0.42 | 0.47 ${ }^{\text {U }}$ | 0.43U | 0.40 | 0.40 | 0.40 | 0.42 ${ }^{033}$ | 0.42 U | 0.43U |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | $\underline{\text { ugkg }}$ | 0.33 U 0.42 u | 0.32U | 0.32U | $\stackrel{0.32 \mathrm{U}}{0.41 \mathrm{U}}$ | 0.32 U 0.42 U | $\stackrel{0.34 \mathrm{U}}{0.43 \mathrm{U}}$ | $\stackrel{0.32 \mathrm{U}}{0.42 \mathrm{u}}$ | -0.32 | $\stackrel{0.32 \mathrm{U}}{0.42 \mathrm{u}}$ | -0.32 | $\stackrel{0.33 \mathrm{U}}{0.43 \mathrm{U}}$ | 0.37 U 0.48 U | $\stackrel{0.34 \mathrm{U}}{0.44 \mathrm{U}}$ | 0.32 U $0.41 \mathrm{O}^{\prime}$ | -0.310 | 0.32 U 0.41 u | $\stackrel{0.33 \mathrm{u}}{0.43 \mathrm{u}}$ | 0.33 U 0.43 u | 0.344 0.44 u |
| SW8260 | TRICHLOROETHYLENE | ugkg | ${ }^{0.43 U}$ | 0.42 U | 0.42 U | 0.42 U | 0.43 U | ${ }^{0.45 U}$ | ${ }^{0.43 U}$ | 0.42 U | ${ }^{0.43 U}$ | 0.42 U | 0.44 U | 0.49 U | 0.46 U | 0.42 U | 0.42 U | 0.42 U | 0.44 U | 0.44 U | 0.45 U |
| SW8260 | VINYL CHLORIDE | ugkg | 0.26 U | 0.26 U | 0.25 U | 0.25 U | 0.26 U | 0.27 U | 0.26 U | 0.25 U | 0.26 U | 0.25 U | 0.26 U | 0.30 U | 0.28 U | 0.26 U | 0.25 U | 0.26 U | 0.27 U | 0.27 U | 0.27 U |
| SW8270 | 2.,4,-TRICHLOROPHENOL | ugkg | 14 U | 14 U | 14 U | 14 U | 14 U | 15 U | 14 U | 15 U | 14 U | 14 U | 14 U | 14 U | 15 U | 14 U | 14 U | 14 U | 15 U | 15 U | 15 |
| SW8270 | 2,4,6-TRICHLOROPHENOL | ugkg | 39 U | 38 U | 38 U | 38 U | $38 \cup$ | 40 U | 39 U | 40 U | 38 U | 38 U | 38 U | 39 U | 410 | 38 U | 38 U | 38 U | 40 U | 40 U | 40 U |
| SW8270 | 2.4-DICHLOROPHENOL | ${ }_{\text {uglkg }}$ | 19 U | 18 U | 18 U | 18 U | 18 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 19 U | 20 U | 18 U | 18 U | 18 U | 19 U | 19 U | 190 |
| sw8270 | 2,4-DIMETHYLPHENOL | ugkg | 214 | 20 U | 20 U | 20 U | 20 U | 214 | 214 | 214 | 20 U | 20 U | 20 U | 214 | 24 J | 20 U | 20 U | ${ }^{20 U}$ | 214 | 210 | 22 U |
| SW8270 | 2,4-DIINTROTOLUENE | ugkg | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U |
| SW8270 | 2,6-DINITROTOLUENE | ugkg | 39 U | 38 U | 38 U | 38 U | 38 U | 40 U | 39 U | 40 U | 38 U | 38 U | 38 U | 39 U | 41 U | 38 U | 38 U | 38 U | 40 U | 40 U | 40 U |
| sw8270 | 2.CHLORONAPHTHALENE | ugkg | 18 U | 17 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U |
| SW8270 | 2-CHLOROPHENOL | ugkg | 20 U | 19 U | 19 U | 19 U | 19 U | 20 U | 20 U | 20 U | 19 U | 19 U | 19 U | 20 U | 210 | 19 U | 19 U | 19 U | 20 U | 20 U | 20 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | ugkg | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 14 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 14 U |
| SW8270 | 2-NITROANLINE | ugkg | 24 U | 23 U | 23 U | 23 U | 24 U | 25 U | 24 U | 24 U | 24 U | 23 U | 24 U | 24 U | 25 U | 23 U | 23 U | 24 U | 24 U | 24 U | 25 U |
| SW8270 | 2-NITROPHENOL | ugkg | 16 U | 15 U | 15 U | 15 U | 15 U | 16 U | 15 U | 16 U | 15 U | 15 U | 15 U | 15 U | 16 U | 15 U | 15 U | 15 U | 16 U | 16 U | 16 U |
| SW8270 | 3,3'-IICHLOROBENZIDINE | ugkg | 37 U | 36 U | 36 U | 36 U | 36 U | 38 U | 37 U | 374 | 36 U | 36 U | 36 U | 37 U | 39 U | 36 U | 36 U | 36 U | 37 U | 37 U | 38 U |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | ugkg | 14 U | 14 U | 14 U | 14 U | 14 U | 15 U | 14 U | 15 U | 14 U | 14 U | 14 U | 14 U | 15 U | 14 U | 14 U | 14 U | 15 U | 15 U | 15 U |
| SW8270 SW8270 | 3-NITROANLINE 4 - 6 -DINTRO-2-METHYLPHENOL | ugkg | 19 U | 18 U | 18 U | 18 U | 18 U | 19 U | 19 U | 194 | 18 U | 18 U | 18 U | 19 U | 20 U | 18 U | 18 U | 18 U | 19 U | 19 U | 190 |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 11 U | 11 U | ${ }_{11 \mathrm{U}}$ | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | ${ }_{11 \mathrm{U}}$ | 11 U | 11 U | 11 U | 11 U | 11 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | ugkg | 18 U | 17 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | ugkg | 24 U | 23 U | 23 U | 23 U | 24 U | 25 U | 24 U | 24 U | 24 U | 23 U | 24 U | 24 U | 25 U | 23 U | 23 U | 24 U | 24 U | 24 U | 25 U |
| SW8270 | 4-METHYLPHENOL (MP-CRESOL) | ugkg | 28 U | 28 U | 28 U | 28 U | 28 U | 29 U | 28 U | 29 U | 28 U | 28 U | 28 U | 28 U | 30 U | 28 U | 27 U | 28 U | 29 U | 29 U | 29 U |
| SW8270 | 4-NITROPHENOL | uglkg | 19 U | 18 U | 18 U | 18 U | 18 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 19 UJ | 20 UJ | 18 U | 18 U | 18 U | 19 U | 19 UJ | 19 UJ |
| SW8270 | BENZYL BUTYL PHTHALATE | ugkg | 20 U | 19 U | 19 U | 19 U | 19 U | 20 U | 20 U | 20 U | 19 U | 19 U | 19 U | 20 U | 210 | 19 U | 19 U | 19 U | 20 U | 20 U | 20 U |
| SW8270 | BIPHENYL | ugkg | $170 \cup$ | 160 U | 160 U | 160 U | 160 U | $170 \cup$ | 160 U | 170 U | 160 U | 160 U | 160 U | 160 U | 170 U | 160 U | 160 U | 160 U | 170 | 170 U | 170 U |
| SW8270 | BIS(2-CHLORETHOXY)METHANE | ugkg | 19 U | 18 U | 18 U | 18 U | 18 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 19 U | 20 U | 18 U | 18 U | 18 U | 19 U | 19 U | 19 U |
| SW8270 | BIS(2-CHLOROETHYLETYER | ugkg | $\frac{17 \mathrm{U}}{23}$ | ${ }_{16}^{16 \mathrm{U}} 2$ | 16 U | $\frac{16 \mathrm{U}}{22 \mathrm{U}}$ | 16 U | 17 U | $\frac{16 \mathrm{U}}{23}$ | 17 U 230 | $\frac{16 \mathrm{U}}{23 \mathrm{U}}$ | 16 U 22 UJ | ${ }_{16}^{16 \mathrm{U}}$ | ${ }_{26}^{16 \mathrm{U}}$ | ${ }_{27}^{17 \mathrm{U}}$ | $\frac{16 \mathrm{U}}{22 \mathrm{U}}$ | $\frac{16 \mathrm{UJ}}{22 \mathrm{U}}$ | $\stackrel{16 \mathrm{U}}{23 \mathrm{U}}$ | 17 U | $\stackrel{174}{2341}$ | $\stackrel{17}{24} \mathrm{U}$ |
| SW8270 | BIS(2-ETHYLHEXYL)PHTHALATE | ugkg | 18 U | 17 U | $17 \cup$ | 17 U | 17 U | 18 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 48 J | 45 J |
| SW8270 | CARBAZOLE | ugkg | 18 U | 17 U | 17 U | 17 U | 17 U | 300 | 18 U | 140 J | 130 J | 17 U | 17 U | 470 | 930 | 17 U | 17 U | 17 U | 160 J | 360 | 380 |
| SW8270 | dibenzofuran | ugkg | 14 U | 14 U | 17 J | 14 U | 54 J | 170 J | 14 U | 43 J | 130 J | 14 U | 14 U | 97 J | 180 J | 14 U | 14 U | 29 J | 17 J | 350 | 420 |
| SW8270 | DIETHYL PHTHALATE | ugkg | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 14 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 14 U |
| SW8270 | DIMETHY P PHTHALATE | ugkg | 110 | 110 | 11 U | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 11 U | 11 U | 12 U | 110 | 11 U | 110 | 110 | 110 | 110 |
| SW8270 | Di-N-BUTYL-PHTHALATE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \mathrm{kg}}$ | ${ }_{17}^{66 U}$ | ${ }_{164} 16$ | ${ }^{646}$ | ${ }_{164} 16$ | $\underline{650}$ | $68 \cup$ <br> 17 | 65 U 16 U | ${ }_{17} 67$ | 65 U 16 U | 64 U 16 U | 65 U 16 U | 65 U 16 U | $\underline{170}$ | ${ }^{646}$ | 163 | ${ }_{165} 16$ | 67 U 17 | ${ }_{17} 6$ | 680 170 |
| SW8270 | HEXACHLORO-1,3-BUTADIENE | ugkg | 19 U | 18 U | 18 U | 18 U | 18 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 19 U | 20 U | 18 U | 18 U | 18 U | 19 U | 19 U | 19 U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 9.0 U | 8.74 | 8.74 | 8.74 | 8.80 | 9.2 U | 8.90 | 9.10 | 8.8 U | 8.74 | 8.8 U | 8.9 U | 9.4 U | 8.74 | 8.6 U | 8.8 U | 9.14 | 9.14 | 9.3 U |
| Sw8270 | HEXACHLOROCYCLOPENTADIENE | ugkg | 12 U | 12 U | 12 U | 12 U | 12 U | 13 U | 12 U | 12 U | 12 U | 12 U | 12 U | 12 U | 13 U | 12 U | 12 U | 12 U | 12 U | 12 U | 13 U |
| SW8270 | HEXACHLOROETHANE | ugkg | 19 U | 18 U | 18 U | 18 U | 18 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 19 U | 20 U | 18 U | 18 U | 18 U | 19 U | 19 U | 19 U |
| SW8270 | NTTROBENZENE | ugkg | 22 U | 21 U | 210 | 210 | 22 U | 22 U | 22 U | 22 U | 22 U | 21 U | 22 U | 22 U | 23 U | 21 u | 210 | 22 U | 22 U | 22 U | 230 |
| SW8270 | N-NITROSO-D-N-N-PROPYLAMINE | $\underline{u g k g}$ | 12 U | 19 U | 19 U | 19 U | 19 U | 13 U | 12 U | $\underline{12 U}$ | 19 l | 19 U | 19 U | $\underline{120}$ | ${ }_{13} 21$ | 19 U | 19 U | 19 U | $\underline{20 U}$ | $\frac{20 U}{12 \mathrm{U}}$ |  |
| SW8270 | P.CHLOROANILINE | ugkg | 28 U | 28 U | 28 U | 28 U | 28 U | 29 U | 28 U | 29 U | 28 U | 28 U | 28 U | 28 U | 30 U | 28 U | 27 U | 28 U | 29 U | 29 U | 29 U |
| SW8270 | PHENOL | ugkg | 18 U | 17 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 18 U |
| SW8270 | P-NITROANLINE | ugkg | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 14 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U | 14 U | 14 U | 14 U |
|  |  | mgkg |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  |  | Location Sample ID Depth Sample Date |  |  |  | $\begin{gathered} \text { SSO80 } \\ \text { SSOBOCA. } 5- \\ 2 \text { feet } \\ 12 / 06 / 2006 \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { SSO84 } \\ \text { SSO84CA0.5. } \\ 2 \text { feet. } \\ 12108120006 \end{gathered}$ | SSO86 <br> SSO86CA $0.5-$ <br> 2 feet <br> $12 / 11 / 2006$ | $\begin{gathered} \text { SSO88 } \\ \text { SSO88CA. } 0.5- \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | SS091 <br> Ss091CA $0.5-$ <br> 2 feet <br> $12 / 11 / 2006$ | SSO94 <br> SS094CA $0.5-$ <br> 2 feet <br> $12 / 11 / 2006$ | $\begin{gathered} \text { SS095 } \\ \text { SSO95CA. } 5 \text { 2 feet } \\ 2 \text { feet } \\ 12 / 06 / 2006 \end{gathered}$ |  | $\begin{gathered} \text { SS097 } \\ \text { SS097CA } .55 \\ 2 \text { feet } \\ 12 / 07 / 2006 \end{gathered}$ | $\begin{array}{c\|} \text { SSO98 } \\ -9 \text { SSogcta.5 } \\ \text { 2feet } \\ 12 / 10812006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SS099 } \\ \text { SS099CA 0.5- } \\ 2 \text { feet } \\ 12 / 08 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SS100 } \\ \text { SS100CA 0.5- } \\ 2 \text { feet } \\ 12 / 08 / 2006 \\ \hline \end{array}$ | SS101 <br> SS101CA. $5-$ <br> 2 feet <br> $12 / 11 / 2006$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ENASIM | 2-METHYLNAPHTHALENE | ugkg | 130 J | 15000 J | 1.6 U | 1.6 U | 5100 | 11 | 7100 J | 16 J | 1.70 | 13000 J | 2.3 J | 32 U | 1.9 U | 1.70 | 19 U | 150000 | 590000 J |
| BNASIM | ACENAPHTHENE | uglkg | 30 R | 46000 | 2.90 | 15 | 53000 | 11 | 27000 | 32 J | 3.00 | 350000 J | 3.15 | 57 U | 3.30 | 7.6 | 97 | 200000 | 810000 J |
| SNASIM | ACENAPHTHYLENE | ugkg | 430 | 7200 | 4.3 J | 2.8 J | 3500 J | 23 | 700 | 35 | 30 | 1700 | 14 | 680 | 3.2 U | 57 | 1000 | 11000 | 6500 |
| BNASIM | ANTHRACENE | ugkg | 300 | 28000 | 8.7 | 35 | 26000 | 46 | 39000 | 52 | 100 | 370000 | 43 | 1200 | 1.7 J | 710 J | 2300 | 230000 | 1400000 |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 730 | 28000 | 17 | 8.6 | 39000 | 22 | 13000 | 54 | 90 | 15000 | 6.3 | 1700 | 0.73 J | 82 | 930 | 87000 | 910000 |
| SNASIM | BENZO(A)PYRENE | ugkg | 930 | 36000 | 12 | 8.8 | 19000 | 27 | 4600 | 54 | 89 | 6300 | 14 | 1800 | 1.4 U | 28 | 2600 | 44000 | 370000 |
| SNASIM | BENZO(B)FLUORANTHENE | ugkg | 1300 J | 55000 J | 33 J | 15 | 22000 | 46 | 6700 J | 150 J | 190 J | 12000 | 20 | 2400 | 0.97 U | 45 | 5000 | 55000 | 560000 |
| SNASIM | BENZO(G, H, ) PERYLENE | ugkg | 660 | 27000 | 11 | 7.5 | 6700 | 23 | 1400 | 60 | 74 | 3500 | 19 | 1400 | 0.79 U | 27 | 2600 | 14000 | 13000 |
| BNASIM | BENZO(K)FLUORANTHENE | uglkg | 700 | 23000 | 18 | 13 | 23000 | 45 | 2900 | 71 | 97 | 5800 | ${ }^{0.714}$ | 2100 | $0.79{ }^{0}$ | 35 | 2200 | 36000 | 17000 |
| BNASIM | CHRYSENE | ugkg | 850 | 33000 | 22 | 13 | 37000 | 29 | 12000 | 74 | 130 | 14000 | 7.4 | 1600 | 0.97 J | 22 | 1100 | 84000 | 780000 |
| SNASIM | DIBENZO(A,H)ANTHRACENE | ugkg | 230 | 10000 | 3.6 J | 2.03 | 510 | 7.5 | 630 | 19 | 27 | 1400 | 6.6 | 450 | 0.62 U | 7.3 | 920 | 6400 | 6700 |
| ENASIM | FLUORANTHENE | ugkg | 940 | 100000 | 28 | 42 | 230000 | 0.63 U | 66000 | 84 | 130 | 790000 | 6.7 | 1400 | 0.72 U | 42 | 2200 | 330000 | 1000000 |
| SNASIM | FLUORENE | ugkg | 17 R | 51000 | 1.6 U | 29 | 35000 | 8.7 | 32000 | 43 J | 1.70 | 330000 | 3.2 J | 32 U | 1.9 U | 8.0 | 91 | 230000 | 810000 |
| BNASIM | INDENO(1,2,3-CD)PYRENE | ugkg | 660 | 24000 | 11 | 8.7 | 8800 | 25 | 1500 | 56 | 71 | 3700 | 24 | 1600 | 1.10 | 29 | 3800 | 15000 | 15000 |
| SNASIM | NAPHTHALENE | ugkg | 200 J | 17000 J | 0.54 U | ${ }^{0.53 U}$ | 300 U | 0.54 U | 1400 J | 22 J | 0.57U | 14000 J | ${ }^{0.56 U}$ | 11 U | 0.62 U | 0.55 U | 6.3 U | 260000 | 930000 J |
| SNASIM | PENTACHLOROPHENOL | ugkg | 39 J | 310 J | 2.75 | 0.73 U | 770 | 0.74 U | 1700 | 26 J | 51 | 2900 | 26 J | 580 J | 0.85 U | 0.76 U | 15000 | 930 J | 160000 J |
| BNASIM | PHENANTHRENE | ugkg | 260 | 140000 | 3.5 U | 110 | 74000 | 9.0 | 110000 | 150 J | 3.70 | 1300000 | 5.0 J | 71 J | 4.2 J | 15 | 410 | 1300000 | 2100000 |
| SNASIM | PYRENE | ugkg | 1100 | 74000 | 30 | 33 | 140000 | 0.55 U | 49000 | 92 | 190 | 620000 | 6.1 | 2200 | 2.15 | 40 | 2000 | 260000 | 730000 |
| E160.3 | RESIDUE, TOTAL | percent | 92 | 91 | 95 | 97 | 87 | 95 | 96 | 94 | 90 | 96 | 93 | 95 | 83 | 93 | 81 | 93 | 94 |
| E1613/E1668 | 1, 2, 2, 4, ,6,7,8,-HEPTACHLORODIBENZOFURAN | ngkg |  |  |  | 10.159 | 2280 |  | 533 | 186.77 |  | 3580 | 48.413 | 1310 J | 1.482 J | 60.902 | 31700 | 769 | 5590 |
| E1613/1668 | 1,2,3,4,4,7,8,-HEPTACHLORODIBENZO-P-DIOXIN | ngkg |  |  |  | ${ }^{72.795}$ | 119000 |  | 6970 | 1540.857 |  | 35500 | 355.88 | 10200 | 12.833 J | 671.486 | 295000 | 6250 | 50100 |
| E1613/1668 | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | ngkg |  |  |  | 0.487 J | 161 |  | 41.4 | 12.593 |  | 231 | 6.659 U | 83.4 | 0.161 U | 3.091 J | 1550 | 43.3 | 330 |
| E1613/1668 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | ngkg |  |  |  | 0.212 J | 49.6 J |  | 14.5 | 3.957 J |  | 100 | 2.256 J | 31.7 | 0.157 U | 3.335 J | 459 | 19.8 | 150 |
| E1613/1668 | 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | ngkg |  |  |  | 0.524 J | 281 |  | 26.7 | 15.614 |  | 134 | $3.376{ }^{3}$ | 82.3 | 0.074 U | 5.154 J | 631 | 30.5 | 108 |
| E1613/11668 | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | nglkg |  |  |  | 0.158 J | 13.9 J |  | 6.4 | 3.474 J |  | 40.8 J | 0.775 J | 23.7 | 0.098 U | 1.427 J | 110 | 11.4 | 34.6 |
| E1613/E1668 | 1, 1,2,3,7,8,-HEXACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  | 1.461 J | 1640 |  | 89 | ${ }^{37.444}$ |  | 587 | 10.56 | 303 | 0.454 J | ${ }^{11.626}$ | 5740 | 194 | 780 |
| E1613/E1668 | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | ngkg |  |  |  | 0.06 U | 13.2 J |  | 2.67 | $0.174 \mathrm{U}^{\text {a }}$ |  | 21.8 | 0.248 U | 8.11 | 0.12 U | 0.274 U | 87.5 | 7.57 | 30.8 |
| E1613/1668 | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | ngkg |  |  |  | 1.752 J | 596 |  | 42.1 | 36.053 |  | 209 | 8.662 | 151 | 0.242 J | 20.693 | 926 | 62.3 | 145 |
| E1613/1668 | 1,2,3,7,8-PENTACHLORODIBENZOFURAN | nglkg |  |  |  | 0.023 U | ou |  | . 919 J | 0.493 J |  | 5.04 | 0.04 U | 2.85 | 0.024 U | 0.306 J | 9.91 J | 3.65 | 5.23 |
| E1613/1668 | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | ng/kg |  |  |  | 0.037 U | 10.8 J |  | 7.62 | 4.882 J |  | 26 | 1.252 U | 25.3 | 0.037 U | 1.202 J | 103 | 8.76 | 9.72 |
| E1613/1668 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | ngkg |  |  |  | 0.133 J | 25.5 J |  | 11.7 | 8.82 |  | 80.4 | 0.802 J | 49.1 | 0.098 U | 1.231 J | 275 | 30 | 73.2 |
| E1613/11668 | 2,3,4,7,8-PENTACHLORODIBENZOFURAN | ngkg |  |  |  | 0.026 U | 7.04 J |  | ${ }^{2.24 J}$ | 0.716 J |  | 17.2 | 0.284 U | 9.57 | 0.024 U | 0.564 J | 35.2 J | 8.36 | 20.1 |
| E1613/1668 | 2,3,7,8-TETRACHLORODIBENZOFURAN | ngkg |  |  |  | 0.021 U | ou |  | . 825 J | 0.091 U |  | 1.13 | 0.041 U | 1.08 | 0.044 U | 0.319 U | OU | .92 J | . 93 |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | nglkg |  |  |  | 0.015 U | OU |  | . 854 | 0.397 U |  | 2.22 | 0.034 U | 1.61 | 0.029 U | 0.101 U | 16.2 | . 809 | 1.9 |
| E1613/E1668 | OCTACHLORODIBENZOFURAN | ngkg |  |  |  | 36.069 | 15600 |  | 3410 | 961.228 J |  | 18600 | 173.37 | 5960 | 5.873 J | 200.713 | 209000 | 4070 | 34200 |
| E1613/11668 | OCTACHLORODIBENZO-P.DIOXIN | nglkg |  |  |  | 622.734 | 440000 |  | 70600 | 17446.92 J |  | 463000 | 2961.454 | 101000 | 147.748 | 5262.498 J | 5620000 | 71000 | 648000 |
| E1613/E1668 | TOTAL LEPTACHLORINATED DIBENZOFURANS | nglkg |  |  |  | ${ }^{33.383}$ | 12300 J |  | 2970 | 734.414 |  | 17300 | 173.182 | ${ }_{5110 \mathrm{~J}}$ | ${ }^{4.621}$ | 196.985 | 176000 | ${ }^{3420}$ | 29900 |
| E1613/11668 | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | ng/kg |  |  |  | 352.493 | 423000 |  | 49800 | 5707.211 |  | 301000 | 933.302 | 22400 | 42.255 | 4759.597 | 959000 | 20000 | 373000 |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | nglkg |  |  |  | 8.059 | 2010 |  | 477 | 184.934 |  | 3170 J | 67.385 | 1300 J | 1.018 | 57.472 | 26600 J | 771J | 4400 J |
| E1613/11668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | ngkg |  |  |  | 29.634 | 44200 |  | 3140 | 427.789 |  | 14400 | 81.458 | 2070 | 3.804 | 308.913 | 86200 | 1300 | 20600 |
| E16131/1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | nglkg |  |  |  | 1.121 | 59.9 |  | 45.6 J | ${ }^{27.074}$ |  | ${ }^{316 \mathrm{~J}}$ | 4.329 | 181 J | ${ }^{0.174}$ | ${ }^{9.412}$ | 822 J | 107 J | 220 J |
| E1613/11668 | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | nglkg |  |  |  | 1.831 | 505 |  | 77.1 | 24.257 |  | 307 | 5.436 | 113 | 0.037 U | 13.868 | 8140 | 58.4 | 302 |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg |  |  |  | 0.163 | 15.2 |  | 12.1 | 1.632 |  | 28.5 J | 0.788 | 23.8 | 0.044 U | 0.689 | 79.5 J | 8.45 | 23.9 |
| E1613/11668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | ngkg |  |  |  | 0.015 U | 46.4 |  | 8.6 | 1.425 |  | 18.9 | 0.034 U | 9.01 | 0.029 U | 0.372 | 744 | 4.11 | 11.4 |
| SW6020 | ANTIMONY | mgkg | 15 J | 0.37 UJ | 0.34 UJ | 0.34 UJ | 1.3 | 0.35 UJ | 0.34 UJ | ${ }^{0.38 \mathrm{~J}}$ | 0.37 UJ | 0.34 UJ | 42 | ${ }^{0.35 U}$ | 0.40 U | 0.34 U | 0.40 U | 0.36 U | 0.34 UJ |
| SW6020 | ARSENIC | mg/kg | ${ }^{23 J}$ | 14 J | 0.99 J | ${ }^{0.48 \mathrm{~J}}$ | 91 | 22 | 7.6 | 2.5 | 58 J | 6.5 | 430 | 31 | 0.48 U | 2.1 | 3.1 | 3.6 J | 1.5 |
| SW6020 | BARIUM | mg1kg | 32 J | 24 J | 12 J | 12 | 21 | 4.7 | 3.5 | 15 | 43 J | 13 | 5.7 | 8.8 | 5.9 | 13 | 18 | 11 | 8.9 |
| SW6020 | CADMIUM | mg/kg | 0.31 U | 0.32 U | 0.29 U | 0.29 U | ${ }^{0.32 \mathrm{U}}$ | 0.30 U | 0.29 U | 0.30 U | 0.32 U | 0.29 U | 0.31 U | 0.30 U | 0.34 U | 0.29 U | 0.34 U | 0.31 U | 0.29 U |
| SW6020 | CHROMIUM | mg/kg | 14 | 16 | 8.5 | 5.7 | 5.4 | 3.7 | 3.9 | 6.0 | 7.4 | 11 | 420 | 32 J | 3.1 | 4.3 | 6.7 | 7.9 J | 4.8 |
| SW6020 | COPPER | mg/kg | 51 J | 27 J | 0.98 J | 0.86 J | 11 | 0.68 J | 3.7 | 2.0 | 4.9 J | 7.1 | 94 | 13 J | 0.59 J | 1.4 | 13 | 5.6 J | 1.9 |
| SW6020 | LEAD | mg/kg | 280 J | 24 J | ${ }^{3.65}$ | 8.1 | 36 | 2.0 | 62 | 5.9 | 5.2 J | 6.0 | 4.5 | 4.4 | 3.0 J | 3.7 | 9.3 | 4.8 J | 5.2 |
| ( $\begin{aligned} & \text { SW6020 } \\ & \text { SW6020 }\end{aligned}$ | SELENUM SIVER | $\frac{\mathrm{mg} \text { kg }}{\text { mglkg }}$ | 0.90 U 0.41 U | 0.92 U 0.42 u | ${ }_{0}^{0.84 \mathrm{U}}$ | ${ }_{0}^{0.85 \mathrm{U}}$ | 0.94 U 0.42 U | ${ }_{0}^{0.86 \mathrm{U}}$ | 0.84 UJ 0.38 U | 0.85 UJ | 0.92 U 0.42 u | 0.85 u 0.38 u | ${ }_{0}^{0.90 \mathrm{U}}$ | ${ }^{0.86 \mathrm{U}}$ | 0.0 .99 u | 0.844 0 | 0.98 U | 0.89 u 0.40 u | 0.84 U 038 u |
| SW6020 | VANADIUM (FUME OR DUST) | mglkg | ${ }^{0.4 .05}$ | 4.8.8 | ${ }_{5} 5.15$ | 3.2 | 5.0 | ${ }_{3} .8$ | ${ }_{1}^{0.000 ~}$ | ${ }^{3.05}$ | 4.03 | ${ }_{0}^{0.910}$ | 0.96 UJ | 2.5 | 1.2 | 2.3 | 2.9 | 1.7 | 0.900 |
| SW7471 | MERCURY | mg/kg | 0.051 | 0.068 | ${ }_{0.010 \mathrm{~J}}$ | 0.019 J | 0.40 | 0.027 J | 0.081 | 0.036 | 0.059 | 0.18 J | ${ }_{0}^{0.031}$ | 0 | ${ }_{0}^{0.021 \mathrm{~J}}$ | 0.056 | 0.87 J | ${ }_{0}^{0.052 \mathrm{~J}}$ | 0.099 J |
| SW8260 | 1,1,1,-TRICHLOROETHANE | ugkg | 0.13 U | 0.14 U | 0.13 U | 0.13 U | 0.14 U | 0.13 U | 0.13 U | 0.13 U | 0.14 U | 0.13 U | 0.13 U | 0.13 U | 0.15 U | 0.13 U | 0.15 U | 0.13 U | 0.13 U |
| SW8260 | 1,1,2,2,-TETRACHLOROETHANE | ugkg | 0.072 U | 0.073 U | 0.070 U | 0.069 U | 0.076 U | 0.072 U | 0.069 U | 0.071 U | 0.074 U | 0.070 U | 0.072 U | $0.070 \mathrm{U}^{0}$ | 0.080 U | 0.071 U | 0.082 U | 0.071 UJ | 0.071 UJ |
| SW8260 | 1,1,2-TRICHLOROETHANE | ugkg | 0.15 U | 0.15 U | 0.14 U | 0.14 U | 0.15 U | 0.15 U | 0.14 U | 0.14 U | 0.15 U | 0.14 U | 0.15 U | 0.14 U | 0.16 U | 0.14 U | $0.17{ }^{\text {U }}$ | 0.14 UJ | 0.14 UJ |
| SW8260 | 1,1-DICHLOROETHANE | ugkg | 0.069 U | 0.070 U | 0.067 U | 0.066 U | 0.073 U | 0.069 U | 0.066 U | 0.068 U | 0.070 U | 0.066 U | 0.069 U | 0.067 U | 0.077 U | 0.068 U | 0.078 U | 0.068 U | 0.067 U |
| SW8260 | 1,1-DICHLOROETHYLENE | ugkg | 0.19 U | 0.19 U | 0.18 U | 0.18 U | 0.20 U | 0.19 U | 0.18 U | 0.19 U | 0.19 U | 0.18 U | 0.19 U | 0.18 U | 0.21 U | 0.19 U | 0.21 U | 0.19 U | 0.19 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugkg | 0.17 U | 0.17 R | 0.16 U | 0.16 U | 0.18 U | 0.17 U | 0.16 U | 0.16 U | 0.17 U | 0.16 U | 0.17 U | 0.16 U | 0.19 U | 0.17 U | 0.19 U | 0.17 R | 0.16 UJ |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | ugkg | 0.54 U | 0.54 R | 0.52 U | 0.51 U | 0.57 U | 0.54 U | $0.51 \mathrm{U}^{\text {u }}$ | 0.53 U | 0.55 U | 0.52 U | 0.53 U | 0.52 U | 0.60 U | 0.53 U | 0.61 U | 0.53 R | 0.53 UJ |
| SW8260 SW8260 | $\frac{1,2 \text {-IIRROMOETHANE }}{\text { 12-ICHLOROBENZENE }}$ | ugkg | 0.061 U | 0.062 U | 0.060 U | 0.058 U | 0.065 U | 0.061 U | 0.059 U | 0.0080 U | 0.062 U | 0.059 U | 0.061 U | 0.060 U 0.083 U | ${ }^{0.068 \mathrm{U}}$ | ${ }^{0.061 U}$ | 0.069 U | 0.060 UJ | $\stackrel{0.060 \mathrm{UJ}}{0.083 \mathrm{JJ}}$ |
| SW8260 | 1,2-DICHLOROETHANE | ugkg | 0.0 .11 U | ${ }_{0}^{0.111 \mathrm{U}}$ | 0.0 | 0.0 | 0.12 U | 0.0011 U | 0.11 U | ${ }_{0}^{0.11 U}$ | ${ }_{0}^{0.12 \mathrm{U}}$ | ${ }_{0}^{0.11 \mathrm{U}}$ | 0.11 U | 0.11 u | 0.13 U | 0.11 U | 0.13 U | 0.081 U | 0.11 U |
| SW8260 | 1,2-DICHLOROPROPANE | ugkg | 0.059 U | 0.060 U | 0.058 U | 0.056 U | 0.062 U | 0.059 U | 0.057 U | 0.058 U | 0.060 U | 0.057 U | 0.059 U | 0.057 U | 0.066 U | 0.059 U | 0.067 U | 0.058 U | 0.058 U |
| SW8260 | 1,4-4ICHLOROBENZENE | ugkg | 0.095 U | 0.096 R | 0.092 U | 0.091 U | 0.10 U | 0.095 U | 0.091 U | 0.093 U | 0.097 U | 0.092 U | 0.095 U | 0.092 U | 0.11 U | 0.094 U | 0.11 U | 0.094 R | 0.093 UJ |
| SW8260 | ACETONE | ugkg | 14 J | 48 J | 19 J | 2.6 U | 78 J | 2.8 U | 17 J | 100 J | 4.15 | 20 J | 2.8 U | 2.7 U | 3.14 | 2.7 U | 35 J | 62 J | 89 J |
| SW8260 | BENZENE | uglkg | ${ }^{0.43 U}$ | 0.43 U | ${ }^{0.42 U}$ | 0.41 U | 0.53 J | 0.43 U | 0.41 U | 0.42 U | 0.44 U | 2.6 J | 0.43 U | 0.42 U | 0.48 U | 0.42 U | 0.49 U | 0.42 U | 110 |
| SW8260 | BROMODICHLOROMETHANE BROMOMETHANE | uglkg | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}} 0$ | 0.34 U 0.37 U | ${ }_{0}^{0.32 \mathrm{U}}$ | $\frac{0.31 \mathrm{U}}{0.34 \mathrm{UJ}}$ | ${ }_{0}^{0.31 \mathrm{U}} 0$ | ${ }_{0}^{0.33 \mathrm{U}} 0$ | ${ }_{0}^{0.31 \mathrm{U}}$ | $\frac{0.32 \mathrm{U}}{0.35 \mathrm{uj}}$ | 0.314 | 0.36U | 0.3 .32 U | 0.36 U | ${ }^{0.32 \mathrm{U}}$ | 0.0 .31 U |
| SW8260 | CARBON DISULFIDE | ugkg | $\stackrel{\text { 1.8U }}{ }$ | 1.8 U | 1.7 U | 1.7 U | 1.9 U | 1.8 U | 1.70 | 1.8 U | 1.8 U | 1.70 | 1.8 U | 1.7 U | 2.00 | 1.8 U | 2.0 U | 1.8 U | ${ }_{1}^{1.7} \mathbf{0}$ UJ |
| SW8260 | CARBON TETRACHLORIDE | ugkg | 0.38 U | 0.39 U | 0.37 U | 0.37 U | ${ }^{0.41 \mathrm{U}}$ | 0.38 U | 0.37 U | 0.38 U | 0.39 U | 0.37 U | 0.38 U | 0.37 U | 0.43 U | 0.38 U | 0.44 U | 0.38 U | 0.38 U |
| SW8260 | CFC-11 | ug/kg | 0.29 U | 0.29 U | 0.28 U | 0.27 U | 0.30 U | 0.29 U | 0.28 U | 0.28 U | 0.29 U | 0.28 U | 0.29 U | 0.28 U | 0.32 U | 0.28 U | 0.33 U | 0.28 U | 0.28 U |
| SW8260 | CFC-12 | ugkg | 0.35 U | 0.36 U | 0.34 U | 0.34 U | 0.37 UJ | 0.35 uJ | 0.34 U | 0.35 U | 0.36 U | 0.34 U | 0.35 U | 0.34 UJ | 0.39 UJ | 0.35 UJ | 0.40 UJ | 0.35 U | 0.34 UJ |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | ugkg | 0.39 U | 0.40 U | 0.39 U | $0.38{ }^{0}$ | ${ }^{0.420}$ | ${ }^{0.394}$ | ${ }^{0.384}$ | 0.39 U | 0.40 U | 0.38 U | 0.39 U | 0.38 U | 0.44 U | ${ }^{0.390}$ | ${ }^{0.455}$ | ${ }^{0.390}$ | 0.39 U |
| ( $\begin{aligned} & \text { SW8260 } \\ & \text { SW8260 }\end{aligned}$ | CHLOROBENZENE |  | 0.44U | 0.44 u 0.28 u | 0.43 U 0.27 U | 0.42U | 0.46 U 0.29 u | 0.44U | $\stackrel{0.42 \mathrm{U}}{0.26 \mathrm{U}}$ | 0.43 U 0.27 U | 0.45 U 0.28 u | 0.42 U 0.27 U | 0.44U | 0.43 U 0.27 U | $\frac{0.49 \mathrm{U}}{0.31 \mathrm{u}}$ | 0.43 U 0.27 U | $\frac{0.50 \mathrm{U}}{0.31 \mathrm{u}}$ | (e.43 UJ | 0.43 UJ 0.27 UJ |
| SW8260 | CHLOROETHANE | ugkg | ${ }_{0}^{0.390}$ | ${ }_{0}^{0.40 \mathrm{U}}$ | ${ }_{0}^{0.390}$ | ${ }_{0}^{0.38 \mathrm{U}}$ | ${ }_{0}^{0.42 U}$ | 0.39 U | ${ }^{0.38 \mathrm{U}}$ | 0.39 U | 0.40 U | 0.38 UJ | 0.39 U | 0.38 U | 0.44 U | 0.39 U | 0.45 U | 0.39 U | ${ }_{0}^{0.39 \mathrm{UJ}}$ |
| SW8260 | CHLOROOORM | uglkg | 0.37 U | ${ }^{0.380}$ | ${ }^{0.360}$ | ${ }^{0.36 \mathrm{U}}$ | ${ }^{0.390}$ | 0.37 U | ${ }^{0.366}$ | 0.37 U | ${ }^{0.380}$ | $0.36{ }^{0}$ | 0.37 U | ${ }^{0.366}$ | 0.42 U | ${ }^{0.37 \mathrm{U}}$ | ${ }^{0.420 ~}$ | 0.37 U | ${ }^{0.374}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  |  |  | $\begin{gathered} \text { SSO75 } \\ \text { Sso75CA } 0 . \\ \text { 2feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS077 } \\ \text { Sso7ch } 0.5-s \\ 2 / \text { feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SSO78 } \\ \text { SSo78CA.5- } \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{c\|} \text { SSO80 } \\ \text { SSO80CA } 0.5- \\ 2 \text { feet } \\ \text { 12/106/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SS082 } \\ \text { Sso82CA.55 } \\ \text { 2 feet } \\ 12 / 107 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS084 } \\ \text { Sso84CA.5- } \\ \text { 2 feet } \\ 12 / 108 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS086 } \\ \text { SSO86CA } 0.5- \\ 2 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS088 } \\ \text { SSO88CA.5- } \\ \text { 2 feet } \\ 12 / 11 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS001 } \\ \text { SSo91CA } 0.5- \\ \text { 2 feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS094 } \\ \text { SSO94CA } 0.5- \\ \text { 2 feet } \\ 12 / 11 / 2006 \end{gathered}$ | $\begin{gathered} \text { Sso95 } \\ \text { ssog5CA. } 05 \\ \text { 2 feet } \\ 12 / 06 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO96 } \\ \text { SSo96cA 0.5- } \\ 2 \text { feet } \\ 12 / 107 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS007 } \\ \text { SSo97cA 0.5- } \\ \text { 2 feet } \\ \text { 12/107/2006 } \end{gathered}$ | $\begin{gathered} \text { SSO98 } \\ \text { SSO98CA } 0.5- \\ \text { 2feet } \\ 12 / 108 / 2006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SSO99 } \\ \text { SSo99cA 0.5- } \\ \text { 2feet } \\ 12 / 108 / 2006 \end{gathered}$ | $\begin{gathered} \text { SS100 } \\ - \text { SSI00CA } 0.5- \\ 2 \text { feet } \\ 12 / 108 / 2006 \end{gathered}$ | $\begin{array}{\|c\|\|} \text { SS101 } \\ \text { SS101CA.5. } \\ \text { 2 feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SW8260 | CIS-1,2-DICHLOROETHYLENE | ugkg | 0.29 U | 0.29 U | 0.28 U | 0.27 U | 0.30 U | 0.29 U | 0.28 U | 0.28 U | 0.29 U | 0.28 U | 0.29 U | 0.28 U | 0.32 U | 0.28 U | 0.33 U | 0.28 U | 0.28 U |
| SW8260 | CIS-1,1,-DICHLOROPROPENE | ugkg | 0.32 U | 0.32 U | 0.31 U | 0.31 U | 0.34 U | 0.32 U | 0.31 U | 0.31 U | 0.33 U | 0.31 U | 0.32 U | 0.31 U | 0.36 U | 0.32 U | 0.36 U | 0.32 UJ | 0.31 UJ |
| SW8260 | CYCLOHEXANE | ugkg | 0.42 U | 0.42 U | 0.41 U | 0.40 U | 0.44 U | 0.42 U | 0.40 U | 0.41 U | 0.43 U | 0.40 U | 0.42 U | 0.41 U | 0.47 U | 0.41 U | 0.47 U | 0.41 U | 0.86 J |
| sw8260 | DICHLOROMETHANE | ugkg | 0.43 U | 0.43 U | 0.42 U | 0.41 U | 0.45 U | 0.43 U | 0.41 U | 0.42 U | 0.44 U | 0.41 U | 0.43 U | 0.42 U | 0.48 U | 0.42 U | 0.49 U | 0.42 U | 0.42 U |
| SW8260 | ETHYLBENZENE | ugkg | 0.46 U | 0.47 U | 0.45 U | 0.44 U | 5.0 J | 0.46 U | 0.44 U | 0.45 U | 0.47 U | 33 | 0.46 U | 0.45 U | 0.51 U | 0.46 U | 0.52 U | 83 J | 1.4 |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.50 U | 0.51 R | 0.49 U | 0.48 U | 0.53 U | 0.50 U | 0.48 U | 0.50 U | 0.51 U | 0.49 U | 0.50 U | 0.49 U | 0.56 U | 0.50 U | 0.57 U | 0.50 R | 0.49 UJ |
| SW8260 | m,p-xylenes | ugkg | 0.95 U | 0.96 U | 0.92 U | 0.91 U | 4.6 J | 0.95 U | 0.91 U | 0.93 U | 0.97 U | 82 | 0.95 U | 0.92 U | 1.10 | 0.94 U | 1.14 | 210 J | 3.6 |
| SW8260 | M-DICHLOROBENZENE | ugkg | 0.055 U | 0.055 R | 0.053 U | 0.052 U | 0.058 U | 0.055 U | 0.052 U | 0.054 U | 0.056 U | 0.053 U | 0.055 U | 0.053 U | 0.061 U | 0.054 U | 0.062 U | 0.054 R | 0.054 UJ |
| SW8260 | METHYL ACETATE | ugkg | 0.21 U | 0.21 U | 0.21 U | 0.20 U | 0.22 U | 0.21 U | 0.20 U | 0.21 U | 0.22 U | 0.20 U | 0.21 U | 0.21 U | 0.24 U | 0.21 U | 0.24 U | 0.21 U | 0.21 U |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.2 U | 1.30 | 1.20 | 1.20 | 12 | 1.2 U | 1.2 U | 1.20 | 1.30 | 1.20 | 1.20 | 1.24 | 1.40 | 1.2 U | 1.40 | 1.2 U | 16 |
| SW8260 | METHYL ISOBUTYL KETONE | ugkg | 0.77 U | 0.78 U | 0.75 U | 0.74 U | ${ }^{0.82 \mathrm{U}}$ | 0.77 U | 0.74 U | 0.76 U | 0.79 U | 0.75 | 0.77 U | 0.75 | ${ }^{0.86 U}$ | 0.77 U | 0.88 U | 0.77 UJ | 22 J |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.10 | 1.14 | 1.14 | 1.10 | 1.2 U | 1.10 | 1.14 | 1.14 | 1.2 U | 1.14 | 1.10 | 1.14 | 1.30 | 1.14 | 1.3 U | 1.12 UJ | ${ }^{1.1} \mathrm{UJJ}^{\text {a }}$ |
| SW8260 | METHYLBENZENE | uglkg | ${ }^{0.46 \mathrm{U}}$ | 0.47 U | ${ }^{0.454}$ | 0.44 U | 1.3 J | ${ }^{0.46 \mathrm{U}}$ | ${ }^{0.44 U}$ | ${ }^{0.454}$ | 0.47 U | 35 | 0.46 U | ${ }^{0.455}$ | 0.51 U | ${ }^{0.460}$ | 0.52 ${ }^{0.514}$ | $\stackrel{23 J}{0481}$ | ${ }^{0.85}$ |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.48 U | 0.49 U | 0.47 U | 0.46 UJ | ${ }^{0.51 \mathrm{U}}$ | 0.48 U | 0.46 U | 0.47 U | 0.49 U | ${ }^{0.47 U}$ | 0.48 U | 0.47 U | 0.54 U | ${ }^{0.48 \mathrm{U}}$ | 0.55 U | 0.48 UJ | 6.5 J |
| SW8260 | O-XYLENE | ugkg | 0.44 U | 6.5 | 0.43 U | 0.42 U | 2.15 | 0.44 U | 0.42 U | 0.43 U | 0.45 U | 38 | 0.44 U | 0.43 U | 0.49 U | 0.43 U | 0.50 U | 130 J | 1.9 |
| SW8260 | STYRENE (MONOMER) | ugkg | 0.47 U | 2.85 | 0.46 U | 0.45 U | 0.50 U | 0.47 U | 0.45 U | 0.46 U | 0.48 U | 9.7 | 0.47 U | 0.46 U | 0.53 U | 0.47 U | 0.53 U | 50 J | 56 J |
| SW8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.35 U | 0.36 U | 0.34 U | 0.34 U | 0.37 U | 0.35 U | 0.34 U | 0.35 U | 0.36 U | 0.34 U | 0.35 U | 0.34 U | 0.39 U | 0.35 U | 0.40 U | ${ }^{0.35 U}$ | 0.34 U |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.44 U | 0.44 U | 0.43 U | 0.42 U | 0.46 U | 0.44 U | 0.42 U | 0.43 U | 0.45 U | 0.42 U | 0.44 U | 0.43 U | 0.49 U | ${ }^{0.43 U}$ | 0.50 U | 0.43 UJ | 0.43 UJ |
| SW8260 | TRANS-1,2-DICHLOROETHENE | ugkg | 0.42 U | 0.42 U | 0.41 U | 0.40 U | 0.44 U | 0.42 U | 0.40 U | 0.41 U | 0.43 U | 0.40 U | 0.42 U | 0.41 U | 0.47 U | 0.41 U | 0.47 U | 0.41 U | 0.41 U |
| SW8260 | TRANS-1,1-DICHLOROPROPENE | ugkg | 0.33 U | ${ }^{0.33 U}$ | 0.32 U | 0.32 U | 0.35 U | 0.33 U | 0.32 U | 0.32 U | 0.34 U | 0.32 U | 0.33 U | ${ }^{0.322}$ | 0.37 U | ${ }^{0.334}$ | $0.37{ }^{0}$ | 0.33 UJ | -0.32 UJ |
| SW8260 | TRRBOMOMETHANE | ugkg | 0.43 U | ${ }^{0.43 U}$ | 0.42 U | $0.41{ }^{\text {U }}$ | 0.45 U | 0.43 U | 0.41 U 0.42 u | ${ }^{0.42 U}$ | 0.44 U | 0.410 | 0.43 U 0.44 u | 0.42 U 0.43 u | 0.48U | 0.42U | 0.49U | $\frac{0.42 \mathrm{UJ}}{0.43 \mathrm{U}}$ | $\frac{0.42 \mathrm{UJ}}{0.43 \mathrm{U}}$ |
| sw8260 | VINYL CHLORIDE | ugkg | $0.26{ }^{0}$ | ${ }_{0}^{0.27 \mathrm{U}}$ | ${ }_{0}^{0.264}$ | $0.25{ }^{0}$ | 0.28 U | ${ }_{0}^{0.260}$ | 0.25 U | ${ }_{0}^{0.264}$ | 0.27 U | ${ }_{0}^{0.264}$ | 0.26 U | ${ }_{0}^{0.26 U}$ | ${ }_{0}^{0.30 \mathrm{U}}$ | ${ }_{0}^{0.26 ~ U ~}$ | ${ }_{0}^{0.30 \mathrm{U}}$ | ${ }_{0}^{0.26 \mathrm{U}}$ | 0.26 U |
| sw8270 | 2,4,5-TRICHLOROPHENOL | ug/kg | 14 U | 140 U | 14 U | 14 U | 150 UJ | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 16 U | 14 U | 17 U | 140 U | 140 U |
| SW8270 | 2,4,6-TRICHLOROPHENOL | ugkg | 39 U | 380 U | 38 U | 38 U | 420 UJ | 38 V | 38 U | 38 U | 38 U | 38 U | 39 U | 38 U | 44 U | 39 U | 45 U | 390 U | 390 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 19 U | 180 U | 18 U | 18 U | 200 UJ | 18 U | 18 U | 18 U | 18 U | 18 U | 19 U | 18 U | 21 U | 19 U | 21 U | 190 U | 190 U |
| SW8270 | 2,4-DIMETHYLPHENOL | ugkg | 21 U | 200 U | 20 U | 20 U | 220 UJ | 20 U | 20 U | 20 U | 20 U | 20 U | 21 U | 20 U | 23 U | 21 U | 24 U | 210 U | 210 U |
| SW8270 | 2,4-DINITROPHENOL | ugkg | 13 U | 130 U | 13 U | 13 U | 140 UJ | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 15 U | 13 U | 15 U | 130 U | 130 U |
| SW8270 | 2,4-DIIITROTOLUENE | ugkg | 11 U | 110 U | 11 U | 11 U | 120 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | 11 U | 13 U | 110 U | 110 U |
| SW8270 | 2,6-DIIITROTOLUENE | ugkg | 39 U | 380 U | 38 U | 38 U | 420 U | 38 U | 38 U | 38 U | 38 U | 38 U | 39 U | 38 U | 44 U | 39 U | 45 U | 390 U | 390 U |
| SW8270 | 2-CHLORONAPHTHALENE | ugkg | 18 U | 170 U | 17 U | 17 U | 190 U | 17 U | 17 U | 17 U | 17 U | 17 U | 18 U | 17 U | 20 U | 18 U | 20 U | 180 U | 180 U |
| SW8270 | 2-CHLOROPHENOL | ugkg | 20 U | 190 U | 19 U | 19 U | 210 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 19 U | 22 U | 20 U | 23 U | 200 U | 200 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | ugkg | 13 U | 130 U | 13 U | 13 U | 140 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 15 U | 13 U | 15 U | 130 U | 130 U |
| SW8270 | 2-NITROANILINE | ugkg | 24 U | 230 U | 23 U | 23 U | 260 U | 24 U | 23 U | 24 U | 24 U | 23 U | 24 U | 24 U | 27 U | 24 U | 28 U | 240 U | 240 U |
| SW8270 | 2-NITROPHENOL | ugkg | 15 U | 150 U | 15 U | 15 U | 170 UJ | 15 U | 15 U | 15 U | 15 U | 15 U | 16 U | 15 U | 17 U | 16 U | 18 U | 160 U | 150 U |
| SW8270 | 3,3-DICHLOROBENZIDINE | ugkg | 37 U | 360 U | 36 U | 36 U | 400 U | 36 U | 36 U | 36 U | 36 U | 36 U | 37 U | 36 U | 41 U | 37 U | 42 U | 370 U | 3700 |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | ugkg | 14 U | 140 U | 14 U | 14 U | 150 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U | 16 U | 14 U | 17 U | 140 U | 140 U |
| SW8270 | 3-NITROANILINE | ugkg | 19 U | 180 U | 18 U | 18 U | 200 U | 18 U | 18 U | 18 U | 18 U | 18 U | 19 U | 18 U | 210 | 19 U | 21 U | 190 U | 190 U |
| SW8270 | 4,6-DINTRO-2-METHYLPHENOL | ugkg | 10 U | 97 U | 9.8 U | 9.7 U | 110 UJ | 9.9 U | 9.8 UJ | 9.90 | 9.9 U | 9.8 UJ | 11 U | 9.90 | 12 U | 11 U | 12 U | 110 UJ | 110 UJ |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ug/kg | 11 U | 110 U | 11 U | 11 U | 120 U | 11 U | 11 UJ | 11 U | 11 U | 11 UJ | 11 U | 11 U | 12 U | 11 U | 13 U | 110 UJ | 110 UJ |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | ugkg | 18 U | 170 U | 17 U | 17 U | 190 UJ | 17 U | 17 U | 17 U | 17 U | 17 U | 18 U | 17 U | 20 U | 18 U | 20 U | 180 U | 180 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | ugkg | 24 U | ${ }^{2300}$ | 23 U | 23 U | 260 U | 24 U | ${ }^{23}{ }^{1}$ | 24 U | 24 U | 23 U | 24 U | 24 U | 27 U | 24 U | 28 U | ${ }^{240 \mathrm{U}}$ | 240 O |
| SW8270 | 4-METHYLPHENOL (M/P-CRESOL) | ugkg | 28 U | 270 U | 28 U | 27 U | 300 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 32 U | 28 U | 33 U | 280 U | 3300 |
| SW8270 | 4-NITROPHENOL | uglkg | 19 U | 180 U | 18 U | 18 U | 200 UJ | 18 UJ | 18 U | 18 U | 18 U | 18 U | 19 U | 18 UJ | 21 UJ | 19 UJ | 21 UJ | 190 U | 190 U |
| SW8270 | BENZYL BUTYL PHTHALATE | ugkg | 20 U | 1900 | 19 U | 19 U | 210 U | 19 U | 19 U | 19 U | 19 U | 190 | 20 U | 19 U | 22 U | 20 U |  | 200 U |  |
| SW8270 SW8270 | BIPHENYL | ${ }_{\text {ug }}^{\mathrm{ug} k g}$ | $\frac{160 U}{190}$ | 5700 180 U | $\frac{160 U}{18 \mathrm{U}}$ | $\frac{160 U}{18 \mathrm{U}}$ | $\frac{1800 \mathrm{U}}{200 \mathrm{U}}$ | $\frac{160 U}{18 \mathrm{U}}$ | $\frac{2400}{18}$ | $\frac{160 U}{18 \mathrm{U}}$ | $\frac{160 U}{18 \mathrm{U}}$ | 4800 18 U | $\frac{170 U}{19 U}$ | $\frac{160 U}{18 \mathrm{U}}$ | $\frac{190 U}{210}$ | $\frac{170 U}{19 \mathrm{U}}$ | $\frac{190 \mathrm{U}}{21 \mathrm{U}}$ | 38000 190 U | $\frac{110000}{190}$ |
| sw8270 | BIS(2-CHLOROETHYL)ETHER | ugkg | 16 U | 160 U | 16 U | 16 U | 180 U | 16 U | 16 U | 16 U | 16 U | 16 U | 17 U | 16 U | 19 U | 17 U | 19 U | 1700 | 160 U |
| sw8270 | BIS(2-CHLOROISOPROPYL) ETHER | ugkg | ${ }^{23} \mathrm{UJ}$ | 220 UJ | 22 UJ | 22 UJ | 250 UJ | 23 UJ | 22 U | 230 | 23 U | 22 U | 23 U | 23 UJ | 26 UJ | ${ }^{23 \mathrm{UJ}}$ | 26 UJ | 230 U | 230 U |
| SW8270 | BIS(2-ETHYLHEXYL)PHTHALATE | ugkg | 18 U | 170 U | 17 U | 17 U | 190 U | 17 U | 17 U | 17 U | 17 U | 17 U | 18 U | 17 U | 20 U | 18 U | 120 J | 180 U | 180 U |
| SW8270 | CARBAZOLE | ugkg | 62 J | 14000 | 17 U | 17 U | 4100 | 73 J | 12000 | 17 U | 17 U | 19000 | 18 U | 110 J | 20 U | 18 U | 260 | 120000 | 130000 |
| SW8270 | Dibenzofuran | ugkg | 38 J | 33000 | 14 U | 14 U | 17000 | 17 J | 37000 | 14 U | 14 U | 29000 | 14 U | 18 J | 16 U | 14 U | 130 J | 220000 | 350000 |
| SW8270 | DIETHYL PHTHALATE | ugkg | 13 U | 130 U | 13 U | 13 U | 140 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 15 U | 13 U | 15 U | 130 U | 130 U |
| SW8270 | DIMETHYL PHTHALATE | ugkg | 11 U | 110 U | 11 U | 11 U | 120 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | 11 U | 13 U | 110 U | 110 U |
| SW8270 | D-N-BUTYL-PHTHALATE | ugkg | 65 U | 630 U | 64 U | 63 U | 710 U | 65 U | 64 UJ | 65 U | 65 U | 64 UJ | 66 U | 65 U | 74 U | 66 U | 76 U | 660 UJ | 650 UJ |
| SW8270 | DI-N-OCTYL-PHTHALATE | ugkg | 16 U | 160 U | 16 U | 16 U | 180 U | 16 U | 16 U | 16 U | 16 U | 16 U | 17 U | 16 U | 19 U | 17 U |  |  | 160 U |
| SW8270 | HEXACHLORO-1,3-BUTADIENE HEXACHIOROBENZENE | ugkg | 190 | $\frac{180 \mathrm{U}}{86 \mathrm{U}}$ | 18 U 8.7 u | 18 U 8.6 u | $\underline{200 U}$ | 18 U | 18 U 8.7 UJ | 18 U | 18 U 88 | $\frac{18 \mathrm{U}}{8.7 \mathrm{UJ}}$ | $\underline{190}$ | 18 U 8.8 u | ${ }_{10} 10$ | $\underline{190}$ | 210 | ${ }^{190 \mathrm{U}}$ | $\frac{190 U}{89 \mathrm{UJ}}$ |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | ugkg | 12 U | 120 U | 12 U | 12 U | 130 U | 12 U | ${ }^{12 \mathrm{UJJ}}$ | 12 U | 12 U | ${ }_{12 \mathrm{U}}$ | 12 U | ${ }_{12} \mathrm{U}$ | 14 U | 12 U | 14 U | 120 U | 120 U |
| SW8270 | HEXACHLOROETHANE | ugkg | 19 U | 180 U | 18 U | 18 U | 200 U | 18 U | 18 UJ | 18 U | 18 U | 18 U | 19 U | 18 U | 210 | 19 U | 210 | 190 U | 190 U |
| sw8270 | NITROBENZENE | ugkg | 22 U | 210 U | 210 | 210 | 230 U | 22 U | 210 | 22 U | 22 U | 210 | 22 U | 22 U | 25 U | 22 U | 25 U | 220 U | 220 U |
| sw8270 | N-NITROSO-DI-N-PROPYLAMINE | ugkg | 20 U | 190 U | 19 U | 19 U | 210 U | 19 U | 19 U | 19 U | 19 U | 19 U | 20 U | 19 U | 22 U | 20 U | 23 U | 200 U | 200 U |
| SW8270 | N-NITROSODIPHENYLAMINE | ugkg | 12 U | 120 U | 12 U | 12 U | 130 U | 12 U | 12 U | 12 U | 12 U | 12 UJ | 12 U | 12 U | 14 U | 12 U | 14 U | 120 U | 120 U |
| SW8270 | P.CHLOROANILINE | ugkg | 28 U | 270 U | 28 U | 27 U | 300 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U | 32 U | 28 U | 33 U | 280 UJ | 280 U |
| SW8270 | PHENOL | uglkg | 18 U | 170 U | 17 U | 17 U | 190 UJ | 17 U | 17 U | 17 U | 17 U | 17 U | 18 U | 17 U | 20 U | 18 U | 20 U | 180 U | 180 U |
| SW8270 | P-NITROANLINE | ug/kg | 13 U | 130 U | 13 U | 13 U | 140 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 13 U | 15 U | 13 U | 15 U | 130 U | 130 U |

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \& \&  \& \[
\begin{array}{|c|}
\hline \text { Sso01 } \\
\text { Sso01DA } \\
2-6 \text { feet } \\
12 / 07 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\hline \text { Sso03 } \\
\text { ssoo3DA } \\
2-6 \text { feet } \\
12 / 08 / 2006 \\
\hline
\end{array}
\] \&  \& \[
\begin{array}{|c|}
\hline \text { Ssoon } \\
\text { Sso07DA } \\
2-6 \text { feet } \\
12 / 12 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\text { SS007 } \\
\text { Sso07DB } \\
\text { 2-6 feet } \\
12 / 12 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\hline \text { SSO20 } \\
\text { SsonoDA } \\
2-6 \text { feet } \\
12 / 12 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\hline \text { SSO22 } \\
\text { Sson2DA } \\
2-6 \text { feet } \\
12 / 12 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{c|}
\hline \text { SS024 } \\
\text { SSO24DA } \\
2-6 \text { feet } \\
12 / 11 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\hline \text { ss026 } \\
\text { SSo26DA } \\
2-6 \text { feet } \\
12 / 12212006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\hline \text { SS028 } \\
\text { SSo28DA } \\
\text { 2-6 feet } \\
12107 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\hline \text { SSO28 } \\
\text { Ssone } \\
2-6 \text { feet } \\
12107 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\text { SSO29 } \\
\text { SSo29DA } \\
2-6 \text { feet } \\
12 / 107 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{c|}
\text { Sso30 } \\
\text { sso3oDA } \\
2-6 \text { feet } \\
12 / 11 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\text { Ss031 } \\
\text { sso31DA } \\
2-6 \text { feet } \\
12 / 12 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\text { Sso31 } \\
\text { Sso31DB } \\
2-6 \text { feet } \\
12 / 12 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\hline \text { SSO35 } \\
\text { Sso35DA } \\
2-6 \text { feet } \\
12106 / 2006
\end{array}
\] \& \[
\begin{array}{|c|}
\text { SSO36 } \\
\text { Ssosiba } \\
2-6 \text { feet } \\
12 / 06 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\hline \text { SSO38 } \\
\text { Sso38DA } \\
\text { 2-6 feet } \\
12107 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{array}{|c|}
\text { SSO38 } \\
\text { SSo38DB } \\
2-6 \text { feet } \\
12107 / 2006 \\
\hline
\end{array}
\] \& \[
\begin{gathered}
\text { Sso39 } \\
\text { Sso39DA } \\
2-6 \text { feet } \\
1207 / 2006
\end{gathered}
\] \\
\hline Leab Method \&  \& \({ }^{\text {Units }}\) \& 1.6 U \& 4.5 \& 13 \& 1.6 U \& 1.6 U \& 3.0 J \& 3.6 J \& 36 J \& 1.7 U \& 16 U \& 17 U \& 1.7 U \& 1.6 R \& 2.3 J \& 1.6 U \& 1.74 \& 13 \& 1.8 U \& 1.8 U \& 1.7 U \\
\hline ENASIM \& (2-METHPLNAPHTHALENE \& ugkg \& \({ }^{1.90}\) \& \({ }^{4.15}\) \& 10 \& \({ }_{2} .8 .8\) \& 2.8 U \& \(\stackrel{3.10 \mathrm{JJ}}{3.1}\) \& 2.9 UJ \& 30 uJ \& 2.90 \& 29 U \& 30 U \& 3.14 \& 2.8 R \& \({ }^{2.9 \mathrm{uJ}}\) \& 2.9 U \& 2.90 \& 45 \& 3.30 \& \({ }_{3.10}^{1.10}\) \& \({ }_{3}^{1.00}\) \\
\hline ENASIM \& ACENAPHTHYLENE \& ugkg \& 2.8 U \& 16 \& 60 \& 3.2 J \& 4.5 J \& 19 \& 2.8 U \& 220 \& 8.0 \& 28 U \& 28 U \& 2.90 \& 2.7 U \& 7.2 J \& 4.45 \& 5.3 J \& 20 \& 3.14 \& 6.0 J \& 2.90 \\
\hline Evasim \& ANTHRACENE \& ugkg \& 0.65 U \& 23 \& 130 \& 6.2 J \& 7.4 J \& 24 \& 3.8 \& 410 \& 17 \& 6.6 U \& 6.6 U \& 0.74 J \& 0.63 U \& 16 J \& 9.9 J \& 4.3 \& 53 \& 2.6 J \& 11 J \& 1.8 J \\
\hline ENASIM \& BENZO(A)ANTHRACENE \& ugkg \& 0.85 J \& 20 \& 88 \& 5.8 \& 7.1 \& 23 \& 1.4 J \& 400 \& 15 \& 190 \& 150 \& \({ }^{0.56 U}\) \& 14 \& 13 J \& 6.1 J \& 8.3 \& 100 \& 3.0 J \& 5.6 \& 1.15 \\
\hline Evasim \& BENZO(A)PYRENE \& ugkg \& 1.2 U \& 37 \& 130 \& 7.1 J \& 10 J \& 31 \& 1.2 U \& 560 \& 23 \& 69 \& 25 J \& 1.3 U \& 16 \& 14 J \& 8.0 J \& 9.5 \& 44 \& 2.0 J \& 8.5 J \& 1.3 U \\
\hline SNASIM \& BENZO(B)FLUORANTHENE \& ugkg \& 1.8 J \& 75 \& 260 \& 14 \& 19 \& 71 \& \({ }^{3.15}\) \& 1200 \& 48 \& 170 \& 98 \& 0.90 U \& 32 J \& 36 J \& 19 J \& 13 \& 78 \& 5.7 J \& 21 J \& 3.0 J \\
\hline SNASIM \& BENZO(G,H,I)PERYLENE \& uglkg \& \({ }_{0}^{0.99 \mathrm{~J}}\) \& 49 \& 110 \& \({ }^{6.5} 5\) \& 8.90 \& 24 \& 0.99 J \& 560 \& 29 \& 47 \& 31 J \& \(0.73{ }^{0.734}\) \& 14 \& 16 J \& 9.75 \& 8.3 \& 33 \& 3.45 \& 15 J \& 1.8 J \\
\hline BNASIM \& BENZO(K)FLUORANTHENE \& ugkg \& 1.45 \& 33 \& 120 \& 8.6 \& 10 \& 34 \& 1.43 \& 590 \& 25 \& 130 \& 67 \& \(0.73 \mathrm{U}^{0}\) \& 17 \& 18 J \& 9.81 \& 12 \& 66 \& 4.5 J \& 14 J \& 2.4 J \\
\hline ENASIM \& CHRYSENE \& ug/kg \& 1.5 J \& 30 \& 110 \& 7.8 \& 9.7 \& 33 \& 1.93 \& 540 \& 21 \& 310 \& 260 \& 0.74 J \& 18 \& 16 J \& 8.15 \& 10 \& 120 \& 4.6 J \& 9.4 J \& 1.9 J \\
\hline ENASIM \& DIBENZO(A,H)ANTHRACENE \& ugkg \& 0.55 U \& 13 \& 37 \& 2.15 \& 2.8 J \& 9.1 \& 0.54 U \& 180 \& 7.6 \& 15 J \& 7.2 J \& 0.57 U \& 5.1 \& 5.2 \& 2.8 J \& 2.4 J \& 11 \& 0.91 J \& 4.0 \& 0.56 U \\
\hline SNASIM \& FLUORANTHENE \& ugkg \& \({ }_{0}^{0.63 ~}{ }^{1.615}\) \& 36 \& 150 \& 9.2 \& 9.1 \& 34 \& 4.4 \& \({ }_{280}\) \& 18 \& 53 \& 480 \& 1.5 J \& \({ }^{25}\) \& 15 J \& \({ }^{11 \mathrm{~J}}\) \& 10 \& 640 \& 7.2 J \& 12 J \& \({ }^{0.654}\) \\
\hline ENASIM \& FLuorene \& ugkg \& \(1.6{ }^{\text {U }}\) \& 6.5 \& 10 \& 1.6 U \& 1.6 U \& 1.8 UJ \& \({ }^{1.6 \mathrm{UJ}}\) \& 21 J \& 1.70 \& 164 \& 17 U \& \({ }^{1.77}\) \& 1.6 R \& \(\stackrel{1.6 \mathrm{UJ}}{15 \mathrm{~J}}\) \& 1.60 \& 1.70 \& 40 \& \({ }^{1.80}\) \& \({ }^{1.80}\) \& 1.70 \\
\hline ENASIM \& INDENO(1,2,3.CD) PYRENE \& ug/kg \& 1.15 \& 39 \& 110 \& 6.5 J \& 8.93 \& 26 \& 1.0 J \& 540 \& 23 \& 51 \& 27 J \& 0.97 U \& 14 \& 15 J \& 8.8 J \& 9.4 \& 40 \& 3.6 J \& 17 J \& 1.9 J \\
\hline BNASIM \& NAPHTHALENE \& ugkg \& 0.55 U \& 6.1 \& 20 \& 0.53 U \& \({ }^{0.53 U}\) \& 6.6 J \& 8.3 J \& 47 J \& \({ }^{0.55 U}\) \& 5.5 U \& 5.5 U \& 0.57 U \& \({ }^{3.15}\) \& 0.54 U \& 0.54 U \& 0.55 U \& 12 \& 0.61 U \& \({ }^{0.59 U}\) \& 0.56 U \\
\hline BNASIM \& PENTACHLOROPHENOL \& uglkg \& 0.75 U \& 2.5 J \& 12 J \& 0.72 U \& 0.72 U \& 36 J \& 0.75 U \& 100 J \& 8.75 \& 360000 \& 180000 \& 0.79 U \& 0.73 U \& 4.6 J \& 3.6 J \& 0.75 U \& 13 J \& 12 J \& 13 J \& 10 J \\
\hline ENASIM \& PHENANTHRENE \& ugkg \& 3.6 U \& 28 \& 51 \& 3.4 U \& 3.4 U \& 9.8 J \& 6.6 J \& 96 \& 3.6 U \& 36 U \& 36 U \& 3.7 U \& 4.8 J \& 3.5 UJ \& 3.50 \& 3.6 U \& 460 \& 4.00 \& 4.0 J \& 3.70 \\
\hline BNASIM \& PYRENE \& ug/kg \& 2.15 \& 40 \& 170 \& 12 \& 13 \& 48 \& 3.8 \& 770 \& 28 \& 1500 \& 1500 \& 0.58 U \& 27 \& 18 J \& 12 J \& 12 \& 420 \& 5.7 J \& 12 J \& 2.6 J \\
\hline E160.3 \& RESIDUE, TOTAL \& percent \& 94 \& 94 \& 85 \& 97 \& 98 \& 88 \& 95 \& 93 \& 94 \& 94 \& 93 \& 90 \& 97 \& 95 \& 95 \& 94 \& 92 \& 84 \& 87 \& 92 \\
\hline E1613/1668 \& 1,2,3,4,6,7,8,-HEPTACHLORODIBENZOFURAN \& ngkg \& 4.166 J \& 29.113 \& 124.468 \& 10.368 \& 9.013 \& 576.3 \& 5.156 J \& \({ }^{56.537}\) \& 72.425 \& \& \& \& \& \& \& 5.909 \& \& 44.263 \& 14.703 \& \\
\hline E1631E1668 \& 1,2,3,4,6,7,8,-HEPTACHLORODIBENZO-P-DIOXIN \& ngkg \& \({ }^{28.925}\) \& \({ }^{213.096}\) \& \({ }^{1228.708}\) \& \({ }^{83.183}\) \& \({ }^{66.393}\) \& 5138.25 \& \({ }^{59.804}\) \& \({ }^{431.35}\) \& 596.269 \& \& \& \& \& \& \& \({ }^{37.338}\) \& \& \({ }^{412.753}\) \& 171.062 \& \\
\hline E161311668 \& 1, 1, ,3,4,7,8,9.4HEPTACHLLROODIBENZOFURAN \& nglkg \& \({ }_{0}^{0.2453}\) \& \({ }^{1.0541 \mathrm{~J}}\) \& \(\frac{13.238 \mathrm{U}}{131261}\) \& 0.523 U \& \({ }_{0}^{0.5580}\) U \& \({ }^{37.668}\) \& \({ }_{0}^{0.412 \mathrm{~J}}\) \& \({ }^{3.4193} \mathrm{~J}\) \& \({ }^{2.662 \mathrm{~J}}\) \& \& \& \& \& \& \& \({ }_{0}^{0.31515}\) \& \& \begin{tabular}{l} 
3.981 \\
\hline 1555 \\
\hline
\end{tabular} \& \({ }_{\text {li.381 }}\) \& \\
\hline E161311668 \& 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN \& ng/kg \& 0.063 U \& 0.541 J \& 3.126 J \& 0.52 J \& 0.509 J \& 12.517 \& 0.529 J \& 1.534 J \& 0.956 U \& \& \& \& \& \& \& 0.171 J \& \& 1.565 J \& 3.38 J \& \\
\hline E161311668 \& 1,2,3,4,7,8,-HEXACHLORODIBENZO-P-DIOXIN \& nglkg \& 0.102 U \& 1.014 J \& 7.061 \& 0.397 J \& 0.47 J \& 26.555 \& 0.585 J \& 3.33 J \& 0.602 U \& \& \& \& \& \& \& 0.277 J \& \& 2.507 J \& 0.781 J \& \\
\hline E163151668 \& 1, 2, ,3,6,7,8-HEXACHLORODIBENZOFURAN \& ngkg \& 0.072 U \& \({ }_{0}^{0.377 \mathrm{~J}^{3}}\) \& \({ }^{2.282 \mathrm{~J}}\) \& \({ }^{0.18815}\) \& \({ }_{0}^{0.24313}\) \& \({ }^{5.689}\) \& 0.383 U \& 0.821 U \& 0.3999 \& \& \& \& \& \& \& 0.094 U \& \& 1.1117 J \& \({ }^{1.185513}\) \& \\
\hline E1613/11668 \& 1 1, \(1.2,3,6,7,8\)-HEXACHLORODIBENZO-P-DIOXIN \& ngkg \& \({ }^{1.058 \mathrm{~J}}\) \& \({ }^{3.748 \mathrm{~J}}\) \& \({ }^{24.077}\) \& \({ }^{1.561 \mathrm{~J}}\) \& \({ }^{1.234 J}\) \& \({ }^{110.3837}\) \& \({ }^{1.4855} \mathrm{~J}\) \& \({ }^{9.7337}\) \& \(0.696 \mathrm{U}^{0.433}\) \& \& \& \& \& \& \& \({ }^{0.851 ~ J}\) \& \& \({ }^{14.606}\) \& \({ }^{2.761 \mathrm{~J}}\) \& \\
\hline E16131E1668 \& 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN \& ngkg \& \(0.091{ }^{0}\) \& 0.137 U \& 0.234 U \& 0.135 U \& 0.096 J \& 0.473 U \& 0.045 U \& 0.096 U \& 0.433 U \& \& \& \& \& \& \& 0.067 U \& \& 0.063 U \& 0.106 U \& \\
\hline E161311668 \& 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN \& nglkg \& \({ }^{0.517 ~ J}\) \& \({ }^{2.2955}\) \& 13.317 J \& \({ }^{1.451 ~ J}\) \& 1.357 J \& \({ }^{55.248}\) \& 1.159 J \& 10.429 \& 0.652 U \& \& \& \& \& \& \& 0.857 J \& \& 6.944 \& 2.067 J \& \\
\hline E161311668 \& 1, 1,2,3,7,-PENTACHLORODIBENZOFURAN \& nglkg \& 0.025 U \& 0.24 J \& \({ }^{0.324 \mathrm{~J}}\) \& 0.039 U \& 0.069 U \& 0.807 J \& 0.275 J \& 0.038 U \& 0.178 J \& \& \& \& \& \& \& 0.02 U \& \& 0.243 U \& 2.318 J \& \\
\hline E1613111668 \& 1,2,3,7,7.-PENTACHLORODIBENZO-P-DIOXIN \& ngkg \& 0.044 U \& 0.331 J \& 2.151 J \& 0.157 J \& 0.168 J \& 6.296 \& 0.388 J \& 1.08 J \& 0.81 J \& \& \& \& \& \& \& 0.026 U \& \& \({ }^{1.228 ~ J}\) \& \({ }_{0} 0.334 \mathrm{~J}\) \& \\
\hline E1613116688 \& 2, 3,4,6,7,8.8-HEXACHLORODIBENZOFURAN \& nglkg \& \({ }^{0.073 \mathrm{U}^{0}}\) \& \({ }_{0}^{0.422 ~ J}\) \& \({ }^{1.915 \mathrm{~J}}\) \& \({ }_{0}^{0.2955}\) \& 0.337 J \& \({ }^{4.8885}{ }^{\text {J }}\) \& 0.432 J \& \({ }_{2}^{2.371 \mathrm{~J}}\) \& 0.406 U \& \& \& \& \& \& \& \({ }^{0.1293}\) \& \& \(\stackrel{2.36 \mathrm{~J}}{\substack{\text { 209 }}}\) \& \({ }^{0.867 \mathrm{~J}}\) \& \\
\hline E1613/1668 \& 2,3,4,7,8.PENTACHLORODIBENZOFURAN \& ng/kg \& 0.028 U \& 0.229 J \& 0.299 J \& 0.044 U \& 0.135 J \& 0.805 J \& 0.457 J \& 0.174 U \& 0.102 U \& \& \& \& \& \& \& 0.022 U \& \& 0.309 J \& 0.997 J \& \\
\hline E1613/1668 \& 2,3,7,8-TETRACHLORODIBENZOFURAN \& ng/kg \& 0.053 U \& 0.03 U \& 0.352 U \& 0.071 U \& 0.012 U \& 0.361 U \& 0.289 U \& 0.046 U \& 0.107 U \& \& \& \& \& \& \& 0.023 U \& \& 0.49 U \& 1.823 \& \\
\hline E161311668 \& 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN \& ngkg \& 0.026 U \& 0.028 U \& 0.024 U \& 0.063 U \& 0.009 U \& 0.037 U \& 0.018 U \& 0.052 U \& 0.085 U \& \& \& \& \& \& \& 0.024 U \& \& 0.029 U \& 0.058 U \& \\
\hline E1631E1668 \& OCTACHLORODIBENZOFURAN \& ngkg \& 23.2 \& \({ }^{112.89}\) \& \({ }^{7} 704.675\) \& \({ }^{56.2711}\) \& \({ }^{44.452}\) \& \({ }^{3940.326}\) \& \({ }^{22.721}\) \& 261.395 \& 480.263 \& \& \& \& \& \& \& \({ }^{18.864}\) \& \& 146.644 \& \({ }^{60.223}\) \& \\
\hline E161311668 \& OCTACHLORODIBENZO-P-DIOXIN \& ng/kg \& 316.932 \& 1930.378 J \& 11326.673 J \& 803.722 \& 656.796 \& 45545.233 J \& 449.098 \& 4159.596 J \& 8236.203 J \& \& \& \& \& \& \& 331.024 \& \& 3387.12 \& 976.933 \& \\
\hline E16131E1668 \& TOTAL HEPTACHLORINATED DIBENZOFURANS \& ngkg \& \({ }^{20.849}\) \& 102.01 \& 515.244 \& \({ }^{45.899}\) \& \({ }^{34.568}\) \& \({ }^{2633.753}\) \& 18.879 \& \({ }^{216.278}\) \& 353.712 \& \& \& \& \& \& \& \({ }^{18.576}\) \& \& 183.428 \& 54.601 \& \\
\hline E1613116688 \& TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS \& ngkg \& \({ }^{65.667}\) \& 1048.549 \& 5598.262 \& 525.557 \& 393.112 \& \({ }^{9928.494}\) \& 243.621 \& \({ }_{2}^{2185.399}\) \& \({ }^{2390.283}\) \& \& \& \& \& \& \& 164.019 \& \& \({ }_{9}^{941.09}\) \& \({ }^{357.26}\) \& \\
\hline E1613111668 \& ToTAL HEXACHLORINATED DIBENZOFURANS \& \({ }_{\text {ngikg }}^{\text {ngkg }}\) \& \({ }_{4}^{4.353}\) \& \({ }_{74.791}^{15.791}\) \& \({ }_{\text {120.151 }}^{175461}\) \& \({ }^{11.278}\) \& 9.489

23594 \& ${ }_{4}^{425.359} 6$ \& 5.429 \& | 55.934 |
| :--- |
| 165514 | \& ${ }_{\text {cken }}^{65.616}$ \& \& \& \& \& \& \& ${ }_{4}^{4.316}$ \& \& ${ }^{51.521}$ \& ${ }_{\text {210.688 }}^{1295}$ \& <br>

\hline E1613|11668 \& TTOTAL HEXACHLORINATED DIBENZO-P.DIOXINS \& $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ \& 6.027
0.308 \& 74.312
0.99 \& 375.461

17.99 \& \begin{tabular}{l}
28.491 <br>
\hline 0.952 <br>
\hline

 \& ${ }_{\text {23, }}^{23.594}$ \& 

602.872 <br>
\hline 29.089

 \& $\xrightarrow{16.784} 1.733$ \& 

165.514 <br>
\hline 7.319

 \& 

30.967 <br>
\hline 5.601

 \& \& \& \& \& \& \& 

13.902 <br>
0.388 <br>
\hline

\end{tabular} \& \& \[

$$
\begin{aligned}
& \hline 83.766 \\
& 9.64 \\
& \hline
\end{aligned}
$$

\] \& | 22.952 |
| :--- |
| 7.101 | \& <br>

\hline E1613/1668 \& TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS \& ng/kg \& 0.044 U \& 1.874 \& 22.574 \& 0.671 \& 0.676 \& 27.682 \& 0.908 \& 3.658 \& 3.811 \& \& \& \& \& \& \& 0.549 \& \& ${ }^{3.347}$ \& 1.107 \& <br>
\hline E1613/1668 \& TOTAL TETRACHLORINATED DIBENZOFURANS \& ngkg \& 0.053 U \& 0.03 U \& 1.758 \& 0.071 U \& 0.012 U \& 3.852 \& 1.783 \& 0.455 \& 0.107 U \& \& \& \& \& \& \& 0.023 U \& \& 1.157 \& 3.238 \& <br>
\hline E161311668 \& TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS \& ngkg \& 0.026 U \& 0.028 U \& 1.415 \& 0.063 U \& 0.009 U \& 4.12 \& 0.404 \& 0.052 U \& 0.085 U \& \& \& \& \& \& \& 0.024 U \& \& 0.029 U \& 0.032 U \& <br>
\hline SW6020 \& Antimony \& mgkg \& 0.36 U \& 0.34 UJ \& 0.37 UJ \& 0.34 UJ \& 0.34 UJ \& 0.38 UJ \& 0.34 UJ \& 0.35 UJ \& 0.35 UJ \& ${ }^{0.340}$ \& ${ }^{0.36 \mathrm{U}}$ \& ${ }^{0.36 \mathrm{U}}$ \& 0.35 JJ \& ${ }^{0.35 \mathrm{UJ}}$ \& 0.34 J \& 0.35 UJ \& ${ }^{0.36 \mathrm{U}}$ \& 0.40 U \& 0.38 ${ }^{10}$ \& 0.36 U <br>
\hline SW6020 \& ARSENIC \& mg/kg \& 8.6 \& 5.4 J \& 14 J \& 0.42 U \& 0.44 J \& 3.8 \& 0.41 U \& 18 \& 0.44 J \& 0.97 \& 0.68 \& 0.73 \& 0.42 U \& 1.2 \& 0.41 U \& 0.45 J \& 0.43 U \& 19 J \& 120 J \& 1.4 <br>
\hline SW6020 \& BARIUM \& mgkg \& 12 \& 8.1 \& 12 \& 8.0 \& 8.9 \& 12 \& 3.3 \& 14 \& 9.8 \& 19 \& 19 \& 16 \& 5.3 J \& 6.3 J \& 8.0 \& 9.1 \& 8.4 \& 16 J \& 30 J \& 20 <br>
\hline SW6020 \& CADMIUM \& mg/kg \& ${ }^{0.31 \mathrm{U}}$ \& ${ }_{0}^{0.290}$ \& ${ }_{0}^{0.31 \mathrm{U}}$ \& ${ }^{0.291}$ \& 0.29 ${ }^{\text {U }}$ \& ${ }^{0.33 \mathrm{U}}$ \& ${ }_{0}^{0.29 u^{0 .}}$ \& ${ }^{0.300}$ \& 0.30 \& 0.290 \& 0.310 \& ${ }^{0.31 \mathrm{U}}$ \& 0.30 ${ }^{\text {a }}$ \& ${ }_{0}^{0.30 \mathrm{U}}$ \& ${ }^{0.290}$ \& 0.30 0 \& ${ }_{0}^{0.310}$ \& $\stackrel{0.344}{ }$ \& ${ }^{0.320}$ \& ${ }^{0.314}$ <br>
\hline SW6020 \& CHROMUM
COPPER \& $\mathrm{mg}_{\mathrm{g} / \mathrm{kg}}^{\mathrm{mg}}$ \& 7.3

0.38 J \& ${ }^{3.9 \mathrm{~J}}$ \& ${ }_{1.6 \mathrm{~J}}$ \& \[
\frac{3.1}{0.39 \mathrm{~J}}

\] \& \[

\frac{3.4}{0.47 \mathrm{~J}}

\] \& ${ }_{3.3}^{23}$ \& ${ }_{0}^{0.955}$ \& \[

\frac{14}{6.1}

\] \& \[

\frac{7.0}{0.58 \mathrm{~J}}

\] \& \[

\frac{8.0}{0.41 \mathrm{~J}}

\] \& ${ }^{7.9} 0$ \& \[

\frac{17 \mathrm{~J}}{0.47 \mathrm{~J}}

\] \& \[

\frac{2.4}{0.67 \mathrm{~J}}

\] \& ${ }^{4.4 .15}$ \& \[

$$
\begin{aligned}
& \hline 3.0 \mathrm{~J} \\
& \hline 0.62 \mathrm{~J}
\end{aligned}
$$

\] \& \[

\frac{7.8}{0.88 \mathrm{~J}}

\] \& \[

$$
\begin{gathered}
8.0 \\
0.49 \mathrm{~J}
\end{gathered}
$$

\] \& \[

\frac{33 \mathrm{~J}}{1.2 \mathrm{~J}}

\] \& \[

\frac{59 \mathrm{~J}}{1.6 \mathrm{~J}}
\] \& $\frac{14 \mathrm{~J}}{0.60 \mathrm{~J}}$ <br>

\hline SW6020 \& LEAD \& mgkg \& 6.8 J \& 3.15 \& 5.5 J \& 4.0 \& 4.0 \& 5.3 \& 0.88 \& 6.6 \& 15 \& 4.9 \& 5.0 \& 9.9 \& 2.3 J \& 5.6 J \& 5.1 \& 6.9 \& 5.9 \& 14 \& 11 \& 7.8 <br>
\hline SW6020 \& SELENIUM \& mgkg \& 0.89 U \& 0.83 U \& 0.91 U \& 0.85 U \& 0.85 U \& 0.94 U \& 0.85 U \& 0.87 U \& 0.88 U \& 0.85 U \& 0.90 U \& 0.89 U \& 0.86 U \& 0.86 U \& 0.85 U \& 0.88 U \& 0.89 U \& 0.99 U \& 0.93 U \& 0.88 U <br>
\hline SW6020 \& SILVER \& mgkg \& 0.40 U \& 0.38 U \& 0.41 U \& 0.39 U \& 0.38U \& ${ }^{0.42 \mathrm{U}}$ \& 0.38 U \& 0.39 U \& 0.40 U \& 0.38 U \& 0.41 U \& 0.40 U \& 0.39 U \& 0.39 U \& 0.38 U \& 0.40 U \& 0.40 U \& 0.45 U \& 0.42 U \& 0.40 U <br>
\hline SW6020 \& VANADIUM (FUME OR DUST) \& mgkg \& 4.0 \& 1.7 \& 2.6 \& 1.3 \& 2.2 \& 5.6 \& 0.91 U \& 7.4 \& 2.3 \& 6.5 \& 6.0 \& 10 \& 1.2 J \& 1.4 \& 1.2 \& 4.9 \& 3.0 \& 30 J \& 22 J \& 12 <br>
\hline SW7471 \& MERCURY \& mg/kg \& 0.027 \& 0.015 J \& 0.049 J \& 0.016 J \& ${ }^{0.018 \mathrm{~J}}$ \& 0.033 \& 0.0046 J \& 0.11 \& 0.042 \& 0.036 \& 0.038 \& 0.042 J \& 0.0099 J \& 0.024 J \& 0.020 J \& 0.041 \& 0.053 \& 0.062 J \& 0.060 J \& 0.073 J <br>
\hline SW8260 \& 1,1,1,-TRICHLOROETHANE \& ugkg \& ${ }^{0.13 U^{0}}$ \& ${ }^{0.134}$ \& $0.15 \mathrm{U}^{0}$ \& ${ }_{0}^{0.134}$ \& ${ }_{0}^{0.130}$ \& $0.15{ }^{0}$ \& $0.19{ }^{0}$ \& ${ }^{0.13 U}$ \& $0.13{ }^{0}$ \& ${ }^{0.134}$ \& ${ }^{0.13 U^{6}}$ \& ${ }^{0.14 U^{0}}$ \& ${ }^{0.13 U^{4}}$ \& ${ }^{0.13 U^{0}}$ \& ${ }^{0.133}$ \& ${ }_{0}^{0.134}$ \& 0.13 U \& $0.15{ }^{0}$ \& $0.14{ }^{0}$ \& $0.17{ }^{0.15}$ <br>
\hline SW8260 \& 1,1,2,2-TETRACHLOROETHANE \& ugkg \& 0.0714 \& 0.070 U \& 0.078 U \& 0.068 U \& 0.068 U \& $0.081{ }^{0}$ \& 0.11 U \& 0.0714 \& $0.071{ }^{0}$ \& 0.0714 \& 0.071 U \& 0.074 U \& \& 0.070 U \& \& 0.071 U \& \& \& \& <br>
\hline SW8260 \& $\frac{1,1,2 \text {-TRICHLOROETHANE }}{\text { 1,1-DCLLOROETHANE }}$ \& $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} k g}$ \& 0.14 U
0.067 U \& 0.14 U
0.067 U \& 0.16 U
0.075 U \& $\frac{0.14 \mathrm{U}}{0.065 \mathrm{U}}$ \& 0.14 U
0.065 U \& $\frac{0.16 \mathrm{U}}{0.078 \mathrm{U}}$ \& $\frac{0.210}{0.098 U}$ \& 0.14 U
0.068 U \& 0.14 U
0.068 U \& 0.14 U
0.068 U \& 0.14 U
0.068 U \& $\frac{0.15 \mathrm{U}}{0.071 \mathrm{U}}$ \& 0.14 U
0.065 U \& $\frac{0.14 \mathrm{U}}{0.067 \mathrm{U}}$ \& 0.14 U
0.067 U \& $\frac{0.14 U}{0.068 \mathrm{U}}$ \& 0.15 U
0.069 U \& $\stackrel{0.16 \mathrm{U}}{0.075 \mathrm{U}}$ \& 0.15 U

0.073 U \& $$
0.15 \mathrm{U}
$$ <br>

\hline SW8260 \& 1,1-DICHLOROETHYLENE \& ug/kg \& 0.19 U \& 0.19 U \& 0.21 U \& 0.18 U \& 0.18 U \& 0.21 U \& 0.27 U \& 0.19 U \& 0.19 U \& 0.19 U \& 0.19 U \& 0.19 U \& 0.18 U \& 0.18 U \& 0.18 U \& 0.19 U \& 0.19 U \& 0.21 U \& 0.20 U \& 0.19 U <br>
\hline SW8260 \& 1,2,4-TRICHLOROBENZENE \& ugkg \& ${ }^{0.16 U}$ \& 0.16 U \& 0.18 U \& 0.16 U \& 0.16 U \& 0.19 U \& 0.24 U \& 0.17 U \& $0.17{ }^{\text {U }}$ \& 0.16 U \& 0.17 U \& 0.17 U \& $0.16 \mathrm{U}^{\text {U }}$ \& 0.16 U \& $0.16 \mathrm{U}^{\text {U }}$ \& 0.17 U \& $0.17 \mathrm{U}^{\text {U }}$ \& 0.18 U \& 0.18 U \& 0.17 U <br>
\hline SW8260 \& 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) \& ug/kg \& 0.53 U \& 0.52 U \& 0.58 U \& 0.51 UJ \& 0.51 UJ \& 0.61 UJ \& 0.76 UJ \& 0.53 U \& 0.53 UJ \& 0.53 U \& 0.53 U \& 0.55 U \& 0.51 U \& 0.52 UJ \& 0.52 UJ \& 0.53 U \& 0.54 U \& 0.59 U \& 0.57 U \& 0.54 U <br>
\hline SW8260 \& 1,2-DIBROMOETHANE \& uggk \& 0.060 U \& 0.060 U \& 0.066 U \& 0.058 U \& 0.058 U \& 0.069 U \& 0.087 U \& 0.061 U \& 0.060 U \& 0.060 U \& 0.061 U \& 0.063 U \& 0.058 U \& 0.059 U \& 0.059 U \& 0.060 U \& 0.061 U \& 0.067 U \& 0.065 U \& 0.062 U <br>
\hline SW8260 \& 1,2-DICHLOROBENZENE \& ug/kg \& 0.083 U \& 0.083 U \& 0.092 U \& 0.081 U \& 0.080 U \& 0.096 U \& 0.13 U \& 0.084 U \& 0.084 U \& 0.084 U \& 0.084 U \& 0.087 U \& 0.081 U \& 0.083 U \& 0.083 U \& 0.084 U \& 0.085 U \& 0.093 U \& 0.090 U \& 0.086 U <br>
\hline SW8260 \& 1,2-DICHLOROETHANE \& ugkg \& 0.11 U \& 0.11 U \& 0.12 U \& 0.11 U \& 0.11 U \& 0.13 U \& 0.16 U \& 0.11 U \& 0.11 U \& 0.11 U \& 0.11 U \& 0.12 U \& 0.11 U \& 0.11 U \& 0.11 U \& 0.11 U \& 0.11 U \& 0.12 U \& 0.12 U \& 0.11 U <br>
\hline SW8260 \& 1,2-DICHLOROPROPANE \& ugkg \& 0.058 U \& 0.058 U \& 0.064 U \& 0.056 U \& 0.056 U \& 0.067 U \& 0.084 U \& 0.059 U \& 0.058 U \& 0.058 U \& 0.059 U \& 0.061 U \& 0.056 U \& 0.057 U \& 0.057 U \& 0.058 U \& 0.059 U \& 0.065 U \& 0.062 U \& 0.060 U <br>
\hline SW8260 \& 1,4-IICHLOROBENZENE \& ugkg \& 0.093 U \& 0.093 U \& 0.11 U \& 0.090 U \& 0.090 U \& 0.11 U \& 0.14 U \& 0.094 U \& 0.093 U \& 0.093 U \& 0.094 U \& 0.097 U \& 0.090 U \& 0.092 U \& 0.092 U \& 0.093 U \& 0.095 U \& 0.11 U \& 0.10 U \& 0.096 U <br>
\hline SW8260 \& ACETONE \& ugkg \& 2.70 \& 2.70 \& 3.00 \& 7.5 J \& 4.0 J \& 48 J \& 30 J \& 10 J \& 17 J \& 2.7 U \& 2.7 U \& 2.8 U \& 18 J \& 4.5 J \& 14J \& 2.7 U \& 2.8 U \& 3.0 U \& 2.9 U \& 10 J <br>
\hline SW8260 \& BENZENE \& ugkg \& 0.42U \& ${ }^{0.421}$ \& ${ }^{0.464}$ \& ${ }^{0.410}$ \& ${ }^{0.400}$ \& ${ }^{0.48 \mathrm{U}}$ \& ${ }^{0.610}$ \& ${ }^{0.42 U}$ \& ${ }^{0.42 U}$ \& ${ }^{0.42 \mathrm{U}}$ \& ${ }^{0.42 \mathrm{U}}$ \& ${ }^{0.44 U}$ \& ${ }^{0.410}$ \& ${ }^{0.42 U}$ \& ${ }^{0.42 U}$ \& ${ }^{0.42 U}$ \& 0.43U \& $0.47{ }^{\text {U }}$ \& ${ }^{0.454}$ \& 0.43 U <br>
\hline SW8260 \& BROMODICHLOROMETHANE \& ugkg \& ${ }_{0}^{0.31 \mathrm{U}}$ \& ${ }^{0.314}$ \& $\stackrel{0.35 \mathrm{U}}{\substack{\text { O }}}$ \& $\stackrel{0.30 \mathrm{U}}{\substack{\text { O }}}$ \& ${ }_{0}^{0.30 \mathrm{U}}$ \& $\stackrel{0.36 \mathrm{U}}{0.30 \mathrm{U}}$ \& ${ }_{0}^{0.455}$ \& $\stackrel{0.32 \mathrm{U}}{\substack{\text { O }}}$ \& ${ }_{0}^{0.31 \mathrm{U}}$ \& ${ }^{0.31 \mathrm{U}}$ \& ${ }_{0}^{0.32 \mathrm{U}}$ \& ${ }^{0.336}$ \& $\stackrel{0.30 \mathrm{U}}{ }$ \& $\stackrel{0.31 \mathrm{U}}{0.3141}$ \& ${ }_{0}^{0.31 \mathrm{U}}$ \& ${ }_{0}^{0.31 \mathrm{U}}$ \& $\stackrel{0.32 \mathrm{U}}{0}$ \& ${ }^{0.355}$ \& ${ }_{0}^{0.344}$ \& 0.32U <br>
\hline SW8260 \& BROMOMETHANE
CARBON DISULILIE \& $\mathrm{ug}_{\mathrm{ug} / \mathrm{kg}}$ \& $\frac{0.34 \mathrm{U}}{1.7 \mathrm{U}}$ \& $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ \& $\frac{0.38 \mathrm{UJ}}{1.9 \mathrm{U}}$ \& $\frac{0.33 \mathrm{UJ}}{1.7 \mathrm{U}}$ \& $\frac{0.33 \mathrm{UJ}}{1.7 \mathrm{U}}$ \& $\frac{0.40 \mathrm{UJ}}{2.0 \mathrm{U}}$ \& $\frac{0.50 \mathrm{UJ}}{2.5 \mathrm{u}}$ \& $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{u}}$ \& $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{U}}$ \& $\frac{0.35 \mathrm{U}}{1.8 \mathrm{U}}$ \& $\frac{0.35 \mathrm{U}}{1.8 \mathrm{U}}$ \& $\frac{0.36 \mathrm{U}}{1.8 \mathrm{U}}$ \& $\frac{0.33 \mathrm{UJ}}{1.7 \mathrm{U}}$ \& $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ \& $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ \& $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{u}}$ \& $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{U}}$ \& $\frac{0.39 \mathrm{U}}{2.0 \mathrm{U}}$ \& $\frac{0.37 \mathrm{U}}{1.9 \mathrm{U}}$ \& $\stackrel{0.35 \mathrm{U}}{1.8 \mathrm{U}}$ <br>
\hline SW8260 \& CARBON TETRACHLORIDE \& uglkg \& 0.38 U \& 0.38 U \& 0.42 U \& 0.36 U \& 0.36 U \& 0.43 U \& 0.55 U \& 0.38 U \& 0.38 U \& 0.38 U \& 0.38 U \& 0.40 U \& 0.37 U \& 0.37 U \& 0.37 U \& 0.38 U \& 0.38 U \& 0.42 U \& 0.41 U \& 0.39 U <br>
\hline SW8260 \& CFC-11 \& uglkg \& 0.28 U \& 0.28 U \& 0.31U \& 0.27U \& 0.27U \& 0.32 U \& 0.41 U \& 0.28 U \& 0.28 U \& 0.28 U \& 0.28 U \& 0.29 U \& 0.27 U \& 0.28 U \& 0.28 U \& 0.28 U \& 0.29 U \& 0.31 U \& 0.30 U \& 0.29 U <br>
\hline SW8260 \& CFC-12 \& ugkg \& 0.34 UJ \& 0.34 U \& 0.38 U \& 0.33 U \& 0.33 U \& 0.40 U \& 0.50 U \& 0.35 U \& 0.35 U \& 0.35 UJ \& 0.35 UJ \& 0.36 U \& 0.33 U \& 0.34 U \& 0.34 U \& 0.35 U \& 0.35 U \& 0.39 UJ \& 0.37 UJ \& 0.35 UJ <br>
\hline SW8260 \& CHLLRINATED FLUOROCARBON (FREON 113) \& ugkg \& ${ }^{0.393}$ \& ${ }^{0.394}$ \& ${ }^{0.430}$ \& 0.37 U \& $0.37{ }^{0}$ \& 0.45 U \& ${ }^{0.563}$ \& 0.39 U \& 0.39 U \& 0.39 U \& 0.39 U \& ${ }^{0.41 \mathrm{U}}$ \& 0.38 U \& ${ }^{0.38 \mathrm{U}}$ \& 0.38 U \& 0.39 U \& 0.39 U \& 0.43 U \& 0.42 U \& 0.40 U <br>
\hline SW8260 \& CHLOROBENZENE \& ugkg \& 0.43 U \& ${ }^{0.433}$ \& ${ }^{0.48 \mathrm{U}}$ \& ${ }^{0.42 \mathrm{U}}$ \& 0.42 U \& 0.50 U \& 0.63 U \& 0.44 U \& 0.43 U \& 0.43 U \& 0.44 U \& 0.45 U \& 0.42 U \& 0.43 U \& 0.43 U \& 0.43 U \& 0.44 U \& 0.48 U \& 0.46 U \& 0.44 U <br>
\hline SW8260 \& CHLORODIBROMOMETHANE \& ugkg \& 0.27 U \& 0.27 U \& 0.30 U \& $0.26 \mathrm{U}^{\text {a }}$ \& 0.26 U \& 0.31 U \& 0.39 U \& 0.27 U \& 0.27 U \& 0.27 U \& 0.27 U \& 0.28 U \& 0.26 U \& 0.27 U \& 0.27 U \& 0.27 U \& 0.28 U \& 0.30 U \& 0.29 U \& 0.28 U <br>
\hline SW8260 \& CHLOROETHANE \& ugikg \& ${ }^{0.394}$ \& ${ }_{0}^{0.394}$ \& 0.43 U \& ${ }_{0}^{0.37 \mathrm{UJ}}$ \& $\frac{0.37 \mathrm{UJ}}{0351}$ \& ${ }_{0}^{0.450 J}$ \& $\frac{0.560 \mathrm{U}}{}$ \& ${ }_{0}^{0.39 \mathrm{UJ}}$ \& ${ }_{0}^{0.3930}$ \& ${ }_{0}^{0.390}$ \& ${ }_{0}^{0.39 \mathrm{U}}$ \& 0.41 U \& $\frac{0.38 \mathrm{U}}{0.354}$ \& $\frac{0.38 \mathrm{UJ}}{}$ \& $\frac{0.38 \mathrm{UJ}}{0.364}$ \& ${ }_{0}^{0.394}$ \& ${ }^{0.39 \mathrm{U}}$ \& 0.43 ${ }^{\text {a }}$ \& 0.42 U \& 0.40 U <br>
\hline SW8260 \& CHLLROFORM \& $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} k g}$ \& $\stackrel{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ \& $\frac{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ \& $\stackrel{0.41 \mathrm{U}}{0.54 \mathrm{U}}$ \& 0.35 U
0.47 U \& $\stackrel{0.35 \mathrm{U}}{0.47 \mathrm{U}}$ \& $\stackrel{0.42 \mathrm{U}}{0.56 \mathrm{U}}$ \& $\stackrel{0.53 \mathrm{U}}{0.70 \mathrm{U}}$ \& $\stackrel{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ \& 0 \& $\stackrel{0.37 \mathrm{U}}{0.48 \mathrm{U}}$ \& 0 \& $\stackrel{0.38 \mathrm{U}}{0.51 \mathrm{U}}$ \& 0.35 U \& 0.36 U
0.48 U \& ${ }_{0}^{0.36 \mathrm{U}} 0$ \& $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ \& $\frac{0.37 \mathrm{U}}{0.49 \mathrm{U}}$ \& 0.41 U
0.54 U \& $\stackrel{0.39 \mathrm{U}}{0.52 \mathrm{U}}$ \& 0.38 0 <br>
\hline \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& <br>
\hline
\end{tabular}

|  |  |  | $\begin{gathered} \text { SS001 } \\ \text { SSo01DA } \\ \text { 2-6 feet } \\ 12 / 1 / 2072006 \\ \hline \end{gathered}$ | $\begin{gathered} \text { SS003 } \\ \text { SSo03DA } \\ \text { 2-6 feet } \\ 12 / 108 / 2000 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { Ssoo5 } \\ \text { Ssoo5DA } \\ \text { 2-6 feet } \\ 12 / 08 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { Ssoon } \\ \text { Ssoo7DA } \\ 2-6 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { Ss007 } \\ \text { ssoo7DB } \\ \text { 2-6 feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO20 } \\ \text { SsơoDA } \\ \text { 2-6 feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { Sson2 } \\ \text { Ssoz20. } \\ 2-6 \text { feet } \\ 1212120006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO24 } \\ \text { SSơ2LDA } \\ \text { 2-6 feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS026 } \\ \text { SSo26DA } \\ 2-6 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { SS028 } \\ \text { ssone8DA } \\ \text { 2-6 feet } \\ 12 / 1 / 7 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO28 } \\ \text { Ssone } \\ 2-6 \text { feet } \\ 12107 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO29 } \\ \text { SsongDA } \\ 2-6 \text { feet } \\ 12107 / 2006 \\ \hline \end{array}$ | $\begin{array}{c\|} \text { sso30 } \\ \text { sso30DA } \\ 2-6 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { Sso31 } \\ \text { Sso31DA } \\ 2-6 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { Sso31 } \\ \text { Sso31DB } \\ 2-6 \text { feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO35 } \\ \text { sso35DA } \\ \text { 2-6 feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO36 } \\ \text { SSO36DA } \\ 2-6 \text { feet } \\ 12 / 06 / 2006 \end{array}$ | $\begin{array}{c\|} \text { SSO38 } \\ \text { SSO38DA } \\ 2-6 \text { feet } \\ 12107 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO38 } \\ \text { sso38DB } \\ \text { 2-6 feet } \\ 12 / 07 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO39 } \\ \text { Sso39DA } \\ \text { 2-6 feet } \\ 12107 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW8260 | \|CIS-1,2-DICHLOROETHYLENE | ug/kg | 0.28 U | 0.28 U | 0.31 U | 0.27 U | 0.27 U | 0.32 U | 0.41 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.29 U | 0.27 U | 0.28 U | 0.28 U | 0.28 U | 0.29 U | 0.31 U | 0.30 U | 0.29 U |
| SW8260 | CIS-1,3-DICYLOROPROPENE | ugkg | ${ }^{0.31 \mathrm{U}}$ | 0.31 U | ${ }^{0.35 U^{4}}$ | 0.30 U | 0.30 U | ${ }^{0.36 \mathrm{U}}$ | ${ }^{0.45 \mathrm{U}}$ | 0.32 U | 0.31 U | 0.31 U | 0.32 U | 0.33 U | 0.30 U | 0.31 U | 0.31 U | 0.31 U | 0.32 U | ${ }^{0.35 \mathrm{U}}$ | 0.34 U | 0.32 U |
| SW8260 | CYCLOHEXANE | ugkg | 0.41 U | 0.41 U | 0.45 U | 0.40 U | 0.39 U | 0.47 U | 0.59 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U | 0.40 U | 0.40 U | 0.40 U | 0.41 U | 0.42 U | 0.46 U | 0.44 U | 0.42 U |
| SW8260 | DICHLOROMETHANE | ugkg | 0.42 U | 0.42 U | 0.46 U | 0.41 U | 0.40 U | 0.48 U | 0.61 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.44 U | 0.41 U | 6.9 J | 0.42 U | 0.42 U | 0.43 U | 0.47 U | 0.45 U | 0.43 U |
| SW8260 | ETHYLBENZENE | ugkg | 0.45 U | 0.45 U | 0.50 U | 0.44 U | 0.44 U | 0.52 U | 0.66 U | 0.46 U | 0.45 U | 0.45 U | 0.46 U | 0.47 U | 0.44 U | 0.45 U | 0.45 U | 0.45 U | 0.46 U | 0.50 U | 0.49 U | 0.46 U |
| SW8260 | ISOPROPYLBENZENE | ugkg | 0.49 U | 0.49 U | 0.55 U | 0.48 U | 0.48 U | 0.57 U | 0.72 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.52 U | 0.48 U | 0.49 U | 0.49 U | 0.50 U | 0.50 U | 0.55 U | 0.53 U | 0.51 U |
| SW8260 | m,p-x-ylenes | ugkg | 0.93 U | 0.93 U | 1.10 | 0.90 U | 0.90 U | 1.14 | 1.40 | 0.94 U | 0.93 U | 0.93 U | 0.94 U | 0.97 U | 0.90 U | 0.92 U | 0.92 U | 0.93 U | 0.95 U | 1.10 | 1.0 U | 0.96 U |
| SW8260 | M-DICHLOROBENZENE | ugkg | 0.054 U | 0.053 U | 0.059 U | 0.052 U | 0.052 U | 0.062 U | 0.078 U | 0.054 U | 0.054 U | 0.054 U | 0.054 U | 0.056 U | 0.052 U | 0.053 U | 0.053 U | 0.054 U | 0.055 U | 0.060 U | 0.058 U | 0.055 U |
| SW8260 | METHYL ACETATE | ugkg | 0.21 U | 0.21 U | 0.23 U | 0.20 U | 0.20 U | 0.24 U | 0.30 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.22 U | 0.20 U | 0.20 U | 0.20 U | 0.21 U | 0.21 U | 0.23 U | 0.22 U | 0.21 U |
| SW8260 | METHYL ETHYL KETONE | ugkg | 1.2 U | 1.2 U | 1.3 U | 1.2 U | 1.2 U | 1.4 U | 1.8 U | 1.27 | 1.2 U | 1.2 U | 1.27 | 1.3 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2U | 1.4 U | 1.3 U | 1.30 |
| SW8260 | METHYL LSOBUTYL KETONE | ugkg | 0.76 U | 0.76 U | 0.84 U | 0.73 U | 0.73 U | 0.88 U | 1.20 | 0.77 U | 0.76 U | 0.76 U | 0.77 U | 0.80 U | 0.74 U | 0.75 U | 0.75 U | 0.76 U | 0.77 U | 0.85 U | 0.82 U | 0.78 U |
| SW8260 | METHYL N-BUTYL KETONE | ugkg | 1.10 | 1.10 JJ | 1.2 UJ | 1.1 UJ | 1.1 UJ | 1.3 UJ | 1.6 UJ | 1.10 | 1.1 UJ | 1.10 | 1.10 | 1.2 U | 1.10 | 1.1 UJ | 1.1 UJ | 1.10 | 1.10 | 1.2 U | 1.2 U | 1.10 |
| SW8260 | METHYLBENZENE | ugkg | 0.45 U | 0.45 U | 0.50 U | 0.44 U | 0.44 U | 0.56 J | ${ }^{0.66 U}$ | 0.97 J | 0.45 U | 0.45 U | 0.46 U | 0.47 U | 0.44 U | 0.48 J | 0.95 J | 0.45 U | ${ }_{0}^{0.46 \mathrm{U}}$ | 0.50 U | 0.49 U | 0.46 U |
| SW8260 | METHYLCYLOHEXANE | ugkg | 0.47 U | 0.47 U | 0.52 U | 0.46 U | 0.46 U | 0.54 U | 0.69 U | 0.48 U | 0.48 U | 0.47 U | 0.48 U | 0.50 U | 0.46 U | 0.47 U | 0.47 U | 0.48 U | 0.48 U | 0.53 U | 0.51 U | 0.49 U |
| SW8260 | O-XYLENE | ugkg | 0.43U | 0.43 U | 0.48 U | 0.42 U | 0.42 U | 0.50 U | 0.63 U | 0.44 U | 0.43 U | 0.43 U | 0.44 U | 0.45 U | 0.42 U | 0.43 U | 0.43 U | 0.43 U | 0.44 U | 0.48 U | 0.46 U | 0.44 U |
| SW8260 | STYRENE (MONOMER) | ugkg | 0.46 U | 0.46 U | 0.51 U | 0.45 U | 0.45 U | 0.53 U | 0.67 U | 0.47 U | 0.46 U | 0.46 U | 0.47 U | 0.48 U | 0.45 U | 0.46 U | 0.46 U | 0.46 U | 0.47 U | 0.52 U | 0.50 U | 0.47 U |
| SW8260 | TERT-BUTYL METHYL ETHER | ugkg | 0.34 U | 0.34 U | 0.38 U | 0.33 U | 0.33 U | 0.40 U | 0.50 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.36 U | 0.33 U | 0.34 U | 0.34 U | 0.35 U | 0.35 U | 0.39 U | 0.37 U | 0.35 U |
| SW8260 | TETRACHLOROETHYLENE | ugkg | 0.43 U | 0.43 U | 0.48 U | 0.42 U | 0.42 U | 0.50 U | 0.63 U | 0.44 U | 0.43 U | 0.43 U | 0.44 U | 0.45 U | 0.42 U | 0.43 U | 0.43 U | 0.43 U | 0.44 U | 0.48 U | 0.46 U | 0.44 U |
| SW8260 | TRANS-1,2-DICHLOROETHENE | uglkg | 0.41 U | 0.41 U | 0.45 U | 0.40 U | 0.39 U | 0.47U | 0.59 U | 0.41 U | 0.41U | 0.41 U | ${ }^{0.41 \mathrm{U}}$ | 0.43 U | 0.40 U | 0.40 U | 0.40 U | ${ }^{0.414}$ | 0.42 U | ${ }^{0.464}$ | 0.44 U | 0.42 U |
| SW8260 | TRANS-1,2-IICHLOROPROPENE | ugkg | 0.32 U | 0.32 U | 0.36 U | 0.31 U | 0.31U | 0.37 U | 0.47 U | 0.33 U | 0.33 U | 0.32 U | 0.33 | 0.34 U | 0.31 U | 0.32U | 0.32 U | 0.33 U | 0.33 U | ${ }^{0.36 \mathrm{U}}$ | 0.35 U | 0.33 U |
| SW8260 |  | ${ }_{\text {ug }}^{\text {ugkg }}$ | $\stackrel{0.42 \mathrm{U}}{0.43 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{0.43 \mathrm{U}}$ | ${ }_{0}^{0.460}$ | ${ }_{0}^{0.410}$ | $\stackrel{0.40 \mathrm{U}}{0.42 \mathrm{U}}$ | ${ }_{0}^{0.480}$ | 0.61 U 0.63 U | $\stackrel{0.42 \mathrm{U}}{0.44 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{0.43 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{0.43 \mathrm{U}}$ | 0.42 U 0.44 u | 0.44 U 0.450 | $\stackrel{0.41 \mathrm{U}}{0.42 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{0.43 \mathrm{U}}$ | $\stackrel{0.42 \mathrm{U}}{0.43 \mathrm{U}}$ | 0.42 U 0.43 U | 0.43 U 0.44 u | ${ }_{0}^{0.47 \mathrm{U}}$ | 0.45 0 | 0.43U |
| SW8260 | VINYL CHLORIDE | ugkg | 0.26 U | 0.26 U | 0.29 U | 0.25 U | 0.25 U | 0.30 U | 0.38 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.27 U | 0.25 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.29 U | 0.28 U | 0.27 U |
| SW8270 | 2.4,5-TRICHLOROPHENOL | ugkg | 14 U | 14 U | 16 U | 14 U | 14 U | 15 U | 14 U | 14 U | 14 U | 14 UJ | 14 UJ | 15 U | 14 U | 14 U | 14 U | 14 U | 15 U | 16 U | 15 U | 15 U |
| SW8270 | 2.4,6-TRICHLOROPHENOL | ugkg | 39 U | 39 U | 43 U | 38 U | 37 U | 41 U | 38 U | 39 U | 39 U | 39 UJ | 39 UJ | 40 U | 38 U | 38 U | 38 U | 39 U | 40 U | 43 U | 42 U | 40 U |
| SW8270 | 2,4-DICHLOROPHENOL | ugkg | 19 U | 19 U | 20 U | 18 U | 18 U | 20 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 19 U | 19 U | 210 | 20 U | 19 U |
| SW8270 | 2.4-DIMETHYLPHENOL | ugkg | 21 U | 21 U | 23 V | 20 U | 20 U | 22 U | 20 U | 21 U | 21 U | 21 U | 21 U | 22 U | 20 U | 20 U | 20 U | 21 U | 21 U | 23 U | 22 U | 210 |
| SW8270 | 2.4-IIIITROPHENOL | ugkg | 13 U | 13 U | 15 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 V | 13 UJ | 13 UJ | 14 U | 13 U | 13 U | 13 U | 13 U | 14 U | 15 U | 14 U | 14 U |
| SW8270 | 2,4-DINITROTOLUENE | uglkg | 11 U | 11 U | 12 U | 11 U | 10 U | 12 U | 11 U | 11 U | 11 U | 11 UJ | 11 UJ | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | 12 U | 110 |
| SW8270 | 2,6-DINITROTOLUENE | ugkg | 39 U | 39 U | 43 U | 38 U | 37 U | 41 U | 38 U | 39 U | 39 U | 39 UJ | 39 UJ | 40 U | 38 U | 38 U | 38 U | 39 U | 40 U | 43 U | 42 U | 40 U |
| SW8270 | 2-CHLORONAPHTHALENE | ugkg | 18 U | 18 U | 19 U | 17 U | 17 U | 19 U | 17 U | 18 U | 18 U | 18 UJ | 18 UJ | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 20 U | 19 U | 18 U |
| SW8270 | 2-CHLOROPHENOL | ugkg | 20 U | 20 U | 22 U | 19 U | 19 U | 21 U | 19 U | 20 U | 20 U | 20 U | 20 U | 20 U | 19 U | 19 U | 19 U | 20 U | 20 U | 22 U | 21 U | 20 U |
| SW8270 | 2-METHYLPHENOL (O-CRESOL) | ugkg | 13 U | 13 U | 15 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U | 13 U | 14 U | 15 U | 14 U | 14 U |
| SW8270 | 2-NITROANILINE | ugkg | 24 U | 24 U | 26 U | 23 U | 23 U | 25 U | 24 U | 24 U | 24 U | 24 UJ | 24 UJ | 25 U | 23 U | 24 U | 24 U | 24 U | 24 U | 27 U | 26 U | 24 U |
| SW8270 | 2-NITROPHENOL | ugkg | 15 U | 15 U | 17 U | 15 U | 15 U | 16 U | 15 U | 16 U | 15 U | 15 U | 16 U | 16 U | 15 U | 15 U | 15 U | 15 U | 16 U | 17 U | 17 U | 16 U |
| SW8270 | 3,3'-DICHLOROBENZIDINE | ugkg | 37 U | 37 U | 40 U | 36 U | 35 U | 39 U | 36 U | 37 U | 37 U | 37 U | 37 U | 38 U | 36 U | 36 U | 36 U | 37 U | 37 U | 41 U | 40 U | 37 U |
| SW8270 | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | ugkg | 14 U | 14 U | 16 U | 14 U | 14 U | 15 U | 14 U | 14 U | 14 U | 14 U | 14 U | 15 U | 14 U | 14 U | 14 U | 14 U | 15 U | 16 U | 15 U | 15 U |
| SW8270 | 3-NITROANILINE | ugkg | 19 U | 19 U | 20 U | 18 U | 18 U | 20 U | 18 U | 19 U | 19 U | 19 UJ | 19 UJ | 19 U | 18 U | 18 U | 18 U | 19 U | 19 U | ${ }^{210}$ | 20 U | 19 U |
| SW8270 | 4,6-DIINTRO-2-METHYLPHENOL | ugkg | 10 U | 10 U | 12 U | 9.7 U | 9.6 U | 11 U | 9.9 U | 11 U | 10 U | 10 UJ | 11 UJ | 11 U | 9.7 U | 9.9 U | 9.90 | 10 U | 11 U | 12 U | 11 U | 11 U |
| SW8270 | 4-BROMOPHENYL PHENYL ETHER | ugkg | 11 U | 11 U | 12 U | 11 U | 10 U | 12 U | 11 U | 11 U | 11 U | 11 UJ | 11 UJ | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U | 12 U | 12 U | 11 U |
| SW8270 | 4-CHLORO-3-METHYLPHENOL | ugkg | 18 U | 18 U | 19 U | ${ }_{2} 17 \mathrm{U}$ | 17 U | 19 U | $\stackrel{17}{24}$ | $\frac{18}{24}$ | $\frac{18}{24}$ | $\stackrel{18 \mathrm{U}}{24 \mathrm{UJ}}$ | $\stackrel{18 \mathrm{U}}{24 \mathrm{ul}}$ | 18 U 25 | $\frac{17}{23}$ | $\frac{17}{24}$ | $\frac{174}{24}$ | $\frac{18}{24}$ | 18 U 24 | 20 U | 19 U | 18 U |
| SW8270 | 4-CHLOROPHENYL PHENYL ETHER | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} k g}$ | 24 U | 24 U | 26 U 31 U | $\stackrel{230}{27}$ | $\underline{23 U}$ | 250 30 U | 24 U | 24 U | 24 U | $\frac{24 \mathrm{UJ}}{28 \mathrm{U}}$ | $\frac{24 \mathrm{UJ}}{28 \mathrm{U}}$ | 250 290 | 27 U | 24 U 28 | 24 U 28 | $\frac{24 U}{28}$ | 24 U | 27 U 31 U | $\frac{26 \mathrm{U}}{30 \mathrm{U}}$ | 24 U |
| SW8270 | 4-NITROPHENOL | ugkg | 19 U | 19 U | 20 U | 18 U | 18 U | 20 U | 18 U | 19 U | 19 U | 19 UJ | 19 UJ | 19 U | 18 U | 18 U | 18 U | 19 U | 19 U | 210 | 20 U | 19 U |
| SW8270 | BENZYL BUTYL PHTHALATE | ug/kg | 20 U | 20 U | 22 U | 19 U | 19 U | 21 U | 19 U | 20 U | 20 U | 20 U | 20 U | 20 U | 19 U | 19 U | 19 U | 20 U | 20 U | 22 U | 21 U | 20 U |
| SW8270 | BIPHENYL | ugkg | 160 U | 160 U | 180 U | 160 U | 160 U | 180 U | 160 U | $170 \cup$ | 160 UJ | 160 UJ | 170 U | 1700 | 160 U | 160 U | 160 U | 160 U | 1700 | 180 U | 180 U | 1700 |
| SW8270 | BIS(2-CHLORETHOXY)METHANE | ugkg | 19 U | 19 U | 20 U | 18 U | 18 U | 20 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 19 U | 19 U | 210 | 20 U | 19 U |
| SW8270 | BIIS(2-CHLOROETHYL)ETHER | ugkg | 16 U | 16 U | 18 U | 16 U | 16 U | 18 U | 16 U | 17 U | 16 U | 16 U | 17 U | 17 U | 16 UJ | 16 U | 16 U | 16 U | 17 U | 18 U | 18 U | ${ }^{17 \mathrm{U}}$ |
| SW8270 SW8270 | - BIS(2-CHLOROISOPROPYL ETHER | ugkg | $\frac{23 \mathrm{UJ}}{18 \mathrm{U}}$ | 23 U <br> 18 u | 25U | $\begin{array}{r}22 \mathrm{U} \\ 17 \\ \hline\end{array}$ | $\begin{array}{r}22 U \\ 17 \\ \hline\end{array}$ | 24 U | 23 U 17 U | 23 U 18 U | 23 U 18 | $\frac{23 \mathrm{UJ}}{18 \mathrm{U}}$ | $\frac{23 \mathrm{UJ}}{18 \mathrm{U}}$ | $\frac{24 \mathrm{UJ}}{18 \mathrm{U}}$ | $\begin{array}{r}22 U \\ 17 \\ \hline\end{array}$ | $23 U$ 170 | $23 U$ <br> 170 | $\frac{23 \mathrm{UJ}}{18 \mathrm{u}}$ | 23 U 18 | $\frac{25 \mathrm{UJ}}{20 \mathrm{U}}$ | $\frac{25 \mathrm{UJ}}{19 \mathrm{U}}$ | $\frac{23 \mathrm{UJ}}{18 \mathrm{U}}$ |
| SW8270 | CARBAZOLE | ugkg | 18 U | 18 U | 19 U | 17 U | 17 U | 19 U | 17 U | 61 J | 18 U | 18 UJ | 18 UJ | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 20 U | 19 U | 18 U |
| SW8270 | DIBENZOFURAN | ugkg | 14 U | 14 U | 16 U | 14 U | 14 U | 15 U | 14 U | ${ }^{17}$ J | 14 U | 14 UJ | 14 UJ | 15 U | 14 U | 14 U | 14 U | 14 U | 54 J | 16 U | 15 U | 15 U |
| SW8270 | DIETHYL PHTHALATE | ugkg | 13 U | 13 U | 15 U | 13 U | 13 U | 14 U | 13 U | 13 U | 13 U | 13 UJ | 13 UJ | 14 U | 13 U | 13 U | 13 U | 13 U | 14 U | 15 U | 14 U | 14 U |
| SW8270 | DIMETHYL PHTHALATE | ugkg | 11 U | 110 | 12 U | 11 U | 10 U | 12 U | 11 U | 110 | 11 U | 11UJ | 11 UJ | 11 U | 11 U | 11 U | 110 | 11 U | 11 U | 12 U | 12 U | 110 |
| SW8270 | DI-N-BUTYL-PHTHALATE | ugkg | 65 U | 65 U | 72 U | 63 U | 63 U | 70 U | 65 U | 66 U | 65 U | 65 UJ | 66 UJ | 68 U | 63 U | 65 U | 65 U | 65 U | 67 U | 730 | 710 | 67 U |
| SW8270 | DI-N-OCTYL-PHTHALATE | ugkg | 16 U | 16 U | 18 U | 16 U | 16 U | 18 U | 16 U | 17 U | 16 U | 16 U | 17 U | 17 U | 16 U | 16 U | 16 U | 16 U | 17 U | 18 U | 18 U | 17 U |
| SW8270 | HEXACHLORO-1,3-BUTADIENE | uglkg | 19 U | 19 U | 20 U | 18 U | 18 U | 20 U | 18 U | 19 U | 19 U | 19 U | 19 U | 19 U | 18 U | 18 U | 18 U | 19 U | 19 U | 21 U | 20 U | 19 U |
| SW8270 | HEXACHLOROBENZENE | ugkg | 8.9 U | 8.90 | 9.80 | 8.60 | 8.50 | 9.54 | 8.80 | 9.00 | 8.9 UJ | 8.9 UJ | 9.0 UJ | 9.30 | 8.6 U | 8.8 U | 8.80 | 8.9 U | 9.10 | 9.90 | 9.6 U | 9.14 |
| SW8270 | HEXACHLOROCYCLOPENTADIENE | ugkg | 12 U | 12 U | 13 U | 12 U | 12 U | 13 U | 12 U | 12 U | 12 U | 12 UJ | 12 UJ | 13 U | 12 U |  | 12 U | 12 U | 12 U |  |  |  |
| SW8270 | HEXACHLOROETHANE NITROBENZENE | ${ }_{\text {uglkg }}^{\text {ugkg }}$ | $\underline{190}$ | $\underline{19 U}$ | 20 U | $\stackrel{18}{210}$ | $\frac{18}{210}$ | 20 U | $\frac{18}{22 U}$ | 19 U | 19 U | $\frac{190}{22 U}$ | $\frac{19 \mathrm{U}}{22 \mathrm{UJ}}$ | $\stackrel{190}{230}$ | $\frac{18}{210}$ | $\underline{18 \mathrm{U}}$ | $\frac{18}{22 U}$ | $\underline{19 U}$ | $\underline{190}$ |  | 20 U | 19 U |
| SW8270 | N-NITROSO-D-N-PROPYLAMINE | ugkg | 20 U | 20 U | 22 U | 19 U | 19 U | 210 | 19 U | 20 U | 20 U | 20 U | 20 U | 20 U | 19 U | 19 U | 19 U | 20 U | 20 U | 22 U | 21 u | 20 U |
| SW8270 | N-NITROSODIPHENYLAMINE | ugkg | 12 U | 12 U | 13 U | 12 U | 12 U | 13 U | 12 U | 12 U | 12 U | 12 UJ | 12 UJ | 13 U | 12 U | 12 U | 12 U | 12 U | 12 U | 14 U | 13 U | 12 U |
| SW8270 | P.CHLOROANLINE | ugkg | 28 U | 28 UJ | 31 UJ | 27 UJ | 27 UJ | 30 U | 28 U | 28 U | 28 U | 28 U | 28 U | 29 U | 27 U | 28 UJ | 28 UJ | 28 U | 29 U | 310 | 30 U | 294 |
| SW8270 | PHENOL | ugkg | 18 U | 18 U | 19 U | ${ }^{17 \mathrm{U}}$ | 17 U | 19 U | 17 U | 18 U | 18 U | 18 U | 18 U | 18 U | 17 U | 17 U | 17 U | 18 U | 18 U | 20 U | 19 U | 18 U |
| SW8270 | P-NITROANILINE | ugkg | 13 U | 13 U | 15 U | 13 UJ | 13 UJ | 14 U | 13 UJ | 13 U | 13 UJ | 13 UJ | 13 UJ | 14 U | 13 U | 13 UJ | 13 UJ | 13 U | 14 U | 15 U | 14 U | 14 U |
| Notes: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathrm{mg} / \mathrm{kg}$ : miligrams per kilogram <br> ng/kg: nanograms per kilogram |  | $J=\text { estimated detect }$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ugikg: micrograms per kliogram |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  |  |  | $\begin{array}{\|c\|} \hline \text { SSo41 } \\ \text { Ssoun1DA } \\ 2-6 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSOO45 } \\ \text { SSơ5DA } \\ \text { 2-6 feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO46 } \\ \text { SSOP66D } \\ 2-6 \text { feet } \\ 12112120006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO47 } \\ \text { SSO47DA } \\ \text { 2-6 feet } \\ \text { 12/11/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO48 } \\ \text { SSou88DA } \\ 2-6 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO49 } \\ \text { SSO49DA } \\ \text { 2-6 feet } \\ \text { 12/11/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO52 } \\ \text { SSo52DA } \\ \text { 2-6 feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{gathered} \text { SS057 } \\ \text { SSO57DA } \\ \text { 2-6 feet } \\ \text { 12/106/2006 } \\ \hline \end{gathered}$ | $\begin{array}{\|c\|} \text { SS062 } \\ \text { SSo62DA } \\ \text { 2-6 feet } \\ 12208 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO64 } \\ \text { SSo64DA } \\ 2-6 \text { feet } \\ 12208 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c} \text { Sso66 } \\ \text { SS066DA } \\ \text { 2-6 feet } \\ 12 / 108 / 2000 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO66 } \\ \text { SSo660c } \\ 2-6 \text { feet } \\ 12 / 108 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SS068 } \\ \text { SS068DA } \\ 2-6 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO70 } \\ \text { SSo70DA } \\ \text { 2-6 feet } \\ 12 / 12 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSO72 } \\ \text { SSO72DA } \\ \text { 2-6 feet } \\ 12 / 1 / 7 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO75 } \\ \text { SSO75DA } \\ 2-6 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { Sso77 } \\ \text { Sso77DA } \\ 2-6 \text { feet } \\ \text { 12/11/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO77 } \\ \text { SSO77DB } \\ 2-6 \text { feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO78 } \\ \text { SSO78DA } \\ \text { 2-6 feet } \\ \text { 12/11/2006 } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { Ssoso } \\ \text { SSo800DA } \\ 2-6 \text { feet } \\ 12 / 106 / 2006 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ENASIM | 2-METHYLNAPHTHALENE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \text { ga }}$ | ${ }_{3.4 \mathrm{~J}}$ | $\frac{1.6 \mathrm{UJ}}{2.8 \mathrm{JJ}}$ | $\stackrel{1.6 \mathrm{UJ}}{2.9 \mathrm{JJ}}$ | ${ }_{2}^{17 \mathrm{UJ}}$ | ${ }_{3.1}^{3.9}$ | $\frac{15 \mathrm{~J}}{26 \mathrm{~J}}$ | ${ }^{4.2 \mathrm{~J}} 6$ | ${ }^{1.8 \mathrm{~J}} \mathbf{}$ | $\frac{1.6 \mathrm{U}}{2.9 \mathrm{u}}$ | 2.9 J 2.90 | 1.60 2.80 | $\frac{1.6 U}{2.8 U}$ | $\frac{1.6 \mathrm{U}}{2.9 \mathrm{u}}$ | $\frac{3.5 \mathrm{~J}}{4 . \mathrm{J}}$ | $\frac{1.6 \mathrm{U}}{8.8}$ | $\frac{15 \mathrm{~J}}{721}$ | ${ }^{1850000}$ | ${ }_{200000 \mathrm{~J}}^{20000}$ | ${ }_{1.6 \mathrm{U}}^{1.6}$ | ${ }^{1.60}$ |
| ENASIM | ACENAPHTHYLENE | ugkg | 6.3 J | 8.6 | 13 | 190 | 6.8 J | 24 | 84 | 2.8 U | 2.8 U | 8.3 | 2.7 U | 2.70 | 7.3 | 29 | 23 | 40 | 9900 | 10000 | 2.8 U | 2.8 U |
| ENASIM | ANTHRACENE | ugkg | 11 | 22 | 30 | 450 | 0.67 U | 81 | 190 | 0.65 U | 4.2 | 11 | ${ }^{3.15}$ | 6.7 J | 16 | 75 | 66 | 39 | 140000 | 120000 | 0.65 U | 36 |
| ENASIM | BENZO(A)ANTHRACENE | ugkg | 4.8 | 28 | 27 | 530 | 14 | 61 | 180 | 0.54 U | 18 | 20 | 4.3 J | 7.0 J | 10 | 64 | 84 | 63 | 100000 | 87000 | 7.7 | 3.9 |
| ENASIM | BENZO(A)PYRENE | ugkg | 4.0 | 34 | 34 | 930 | 13 | 50 | 200 | 1.2 U | 13 | 24 | 2.9 J | 3.9 | 16 | 80 | 35 | 74 | 49000 | 42000 | 6.1 | 2.8 J |
| ENASIM | BENZO(B)FLUORANTHENE | ugkg | 10 J | 84 | 74 | 1500 | 28 | 98 J | 530 | ${ }^{0.86 U}$ | 22 | 42 | 6.6 | 8.4 | 37 J | 190 | 100 | 140 J | 68000 J | 55000 J | 19 J | 5.3 |
| SNASIM | BENZO(G, H, IJPERYLENE | ug/kg | 6.0 | 22 | 27 | 430 | 17 | 48 | 240 | 0.70 U | 9.1 | 25 | 4.0 | 4.9 | 22 | 72 | 48 | 69 | 16000 | 13000 | 7.4 | 2.5 J |
| ENASIM | BENZO(k)FLLUORANTHENE | ugkg | 5.5 | 38 | 40 | 690 | 23 | 53 | 270 | 0.70 U | 20 | 35 | 6.2 | 8.0 | 16 | 90 | 91 | 68 | 29000 | 26000 | 10 | 4.4 |
| ENASIM | CHRYSENE | ugkg | 5.8 | 43 | 37 | 570 | 19 | 67 | 320 | 0.52 U | 21 | 29 | 5.7 J | 8.4 J | 14 | 97 | 120 | 77 | 90000 | 75000 | 12 | 5.4 |
| SNASIM | DIBENZOOA,H)ANTHRACENE | uglkg | 1.55 | ${ }^{8.3}$ | 9.6 | 200 | 4.7 | 15 | ${ }^{63}$ | ${ }^{0.577^{\text {J }}}$ | 3.01 | 7.1 | ${ }^{0.96 \mathrm{~J}}$ | 1.25 | 6.2 | ${ }^{24}$ | 16 | 24 | 7600 | ${ }^{68000}$ | 2.35 | $0.70{ }^{5}$ |
| SNASIM | Fluoranthene | ugkg | 14 | 22 | 40 | 340 | 23 | 160 | 360 | ${ }^{0.63 U}$ | 21 | 32 | ${ }^{135}$ | 25 J | 15 | 86 | 450 | 75 | ${ }^{400000}$ | ${ }^{350000}$ | 14 | 45 |
| SNASIM | FLUORENE | ugkg | 2.3 J | 1.6 UJ | 1.6 UJ | 17 UJ | 1.70 | ${ }^{31 \mathrm{~J}}$ | 7.6 J | 1.6 U | 1.6 U | ${ }^{2.87}$ | 2.5 | 4.4 J | 1.6 U | ${ }^{3.15}$ | ${ }^{3.3 \mathrm{~J}}$ | 4.7 J | 300000 | 270000 | 2.3 J | 48 |
| ENASIM | INDENO(1,2,3-CD) PYRENE | ugkg | 4.9 | 22 | 27 | 480 | 18 | 44 | 190 | 0.93 U | 11 | 27 | 4.2 | 5.2 | 20 | 68 | 59 | 67 | 16000 | 14000 | 7.1 | 2.8 J |
| ENASIM | NAPHTHALENE | ugkg | 15 J | 1.15 | 15 J | ${ }^{5.5 \mathrm{UJ}}$ | ${ }^{0.56 U}$ | 21 J | 5.3 J | 0.55 U | ${ }^{0.54 U}$ | 0.54 U | 0.53 U | ${ }^{0.53 U}$ | 0.54 U | 6.6 J | ${ }^{0.54 U}$ | 46 J | 290000 J | 400000 J | 0.55 U | 0.54 |
| ENASIM | PENTACHLOROPHENOL | ugkg | 1.5 J | 2.5 J | 23 J | 94 J | 13 J | 5.6 J | 48 J | 11 J | 0.74 U | 14 J | 0.73 UJ | 0.73 UJ | 13 J | 41 | 43 | 5.1 J | 89 J | 76 U | 1.15 | 0.74 U |
| ENASIM | PHENANTHRENE | ugkg | 5.73 | 4.0 J | 5.8 J | 36 UJ | ${ }^{6.5}$ | 86 J | 49 J | ${ }^{3.64}$ | 3.54 | 12 | 15 J | ${ }^{27 \mathrm{~J}}$ | 3.50 | 14 | 59 | 13 J | ${ }^{850000}$ | 688000 | 3.6R | 190 J |
| ENASIM | PYRENE | ug/kg | 12 | 50 | 54 | 1300 | 23 | 130 | 390 | 0.56 U | 24 | 36 | 11 J | 21 J | 17 | 150 | 220 | 88 | 290000 | 250000 | 15 | 32 |
| E160.3 | RESIDUE, TTTAL | percent | 91 | 97 | 94 | 94 | 92 | 97 | 95 | 94 | 95 | 96 | 97 | 97 | 95 | 95 | 95 | 93 | 94 | 93 | 94 | 95 |
| E1613/E1668 | 1,2,2,4,6, , , , 8-HEPTACHLORODIBENZOFURAN | ngkg | 48.24 |  | 366.624 |  |  |  |  | 14.6 | 3.254 J |  |  |  | ${ }^{46.447}$ |  |  |  |  |  |  | 2.304 J |
| E1613/E1668 | 1,2,3,4,6,7,8,-HEPTACHLORODIBENZO-P-DIOXIN | ngkg | 435.492 |  | 4339.879 |  |  |  |  | ${ }_{122}^{122}$ | ${ }^{25.459}$ |  |  |  | ${ }^{359.43}$ |  |  |  |  |  |  | ${ }^{18.868}$ |
| E1613/E1668 | 1, 1,2, $, 4,7,8,9$, HEPTACHLORODIBENZOFURAN | nglkg | 3.182 J |  | 21.18 |  |  |  |  | 1.09 J | 0.274 J |  |  |  | 2.583 J |  |  |  |  |  |  | 0.179 J |
| E1613/E1668 | 1,2,3,4,7,8,-HEXACHLORODIBENZOFURAN | ngkg | 1.531 J |  | 7.909 |  |  |  |  | . 452 J | 0.361 U |  |  |  | 1.381 J |  |  |  |  |  |  | 0.09 U |
| E1613/E1668 | 1,2,3,4, ,8-HEXACHLORODIBENZO-P-DIOXIN | ngkg | ${ }^{3.046 ~ J}$ |  | 11.75 |  |  |  |  | . 699 J | ${ }^{0.417 ~ J}$ |  |  |  | ${ }^{2.393 \mathrm{~J}}$ |  |  |  |  |  |  | 0.143 J |
| E161311668 | 1,2,3,6,7,8-HEXACHLLORODIBENZOFURAN | ngkg | ${ }^{1.087 \mathrm{~J}^{\text {J }}}$ |  | ${ }^{3.287 \mathrm{~J}}$ |  |  |  |  | . 326 J | 0.279 J |  |  |  | ${ }_{1}^{1.064}$ |  |  |  |  |  |  | ${ }_{0}^{0.063 \mathrm{U}}$ |
| E1613/E1668 | 1,2,3,6,7, -HEXACHLORODIBENZO-P-DIOXIN $1,2,3,7,9, H$ HACHLORODIBENZOFURAN | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ |  |  | 65.009 0.276 U |  |  |  |  | $\frac{2.67}{00}$ | 0.854 J |  |  |  | - 11.415 |  |  |  |  |  |  | ${ }^{0.385 \mathrm{~J}} 0$ |
| E1613/E1668 | 1,2,3,7,8,9,-HEXACHLORODIBENZO-P-DIOXIN | ng/kg | ${ }^{9.043}$ |  | 35.754 |  |  |  |  | 1.34 | 0.804 J |  |  |  | 6.286 |  |  |  |  |  |  | 0.475 J |
| E1613/E1668 | 1,2,3,7,8.PENTACHLORODIBENZOFURAN | ngkg | 0.155 U |  | 0.969 J |  |  |  |  | $0 \cup$ | 0.171 J |  |  |  | 0.218 J |  |  |  |  |  |  | 0.016 U |
| E1613/E1668 | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | ngkg | 0.864 J |  | 2.237 J |  |  |  |  | . 305 J | 0.313 J |  |  |  | 0.973 J |  |  |  |  |  |  | 0.019 U |
| E1613/E1668 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | ngkg | 2.328 J |  | 8.061 J |  |  |  |  | . 591 J | 0.382 J |  |  |  | 2.465 J |  |  |  |  |  |  | 0.065 U |
| E1613/E1668 | 2,3,4,7,8.PENTACHLORODIBENZOFURAN | nglkg | 0.22 J |  | 0.39 J |  |  |  |  | ou | 0.266 J |  |  |  | 0.245 J |  |  |  |  |  |  | 0.018 U |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZOFURAN | ngkg | 0.055 U |  | 0.051 U |  |  |  |  | OU | 0.06 U |  |  |  | 0.05 U |  |  |  |  |  |  | 0.02 U |
|  | 2,3,7,8.TETRACHLLORODIBENZO-P-DIOXIN | ${ }_{\text {ng }}^{\text {ngg }}$ g | ${ }_{20.051 \mathrm{U}}^{231376}$ |  | ${ }^{0.1774} \mathbf{2 6 7 2 1 4 2}$ |  |  |  |  | $0{ }^{623}$ | ${ }_{0}^{0.048 \mathrm{U}}$ |  |  |  | ${ }_{0}^{0.055 ~ U ~}$ |  |  |  |  |  |  | ${ }^{0.012 \mathrm{U}}$ |
| E16131E1668 | OCTACHLLRODIBENZOFURAN | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{ng} \mathrm{kg}}$ | ${ }_{4357.768}^{231.36}$ |  | ${ }_{\text {2672.142 }}{ }^{\text {36369.006 }}$ |  |  |  |  | 62.3 <br> 1250 | $\frac{13.596}{}$ |  |  |  | ${ }_{\text {2230.05 }}{ }^{293}$ |  |  |  |  |  |  | 8.708 <br> 148.115 |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZOFURANS | ngkg | ${ }_{1} 94.538$ |  | 1847.441 |  |  |  |  | 55.2 | 11.802 |  |  |  | 187.34 |  |  |  |  |  |  | ${ }_{7.853}$ |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | nglkg | 2023.41 |  | 12849.526 |  |  |  |  | 429 | 86.38 |  |  |  | 888.706 |  |  |  |  |  |  | 90.966 |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | ng/kg | 47.841 |  | 296.223 |  |  |  |  | 12.8 | 4.224 |  |  |  | 54.735 |  |  |  |  |  |  | 1.992 |
| E1613\|E1668 | TOTAL HEXACHLORINATED DIBENZO-P.DIOXINS | nglkg | 150.2 |  | 730.196 |  |  |  |  | 37 | 8.388 |  |  |  | 66.12 |  |  |  |  |  |  | 7.384 |
| E1613\|E1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | ngkg | ${ }_{6}^{6.313}$ |  | 17.151 |  |  |  |  | 1.39 | 1.07 |  |  |  | 6.381 |  |  |  |  |  |  | 0.349 |
| E16131E1668 | TOTAL PENTACHLLORINATTED DIBENZO-P-DIOXINS | nglkg | 4.795 |  | ${ }^{30.586}$ |  |  |  |  | . 782 | ${ }^{0.313}$ |  |  |  | 2.305 |  |  |  |  |  |  | 0.338 |
| E1613/E1668 | TOTAL TETRACHLLORINATED DIBENZOFURANS | ng g kg | ${ }^{0.0555}$ |  | ${ }_{2}^{2.063}$ |  |  |  |  | . 207 | ${ }^{0.064}$ |  |  |  | 0.129 |  |  |  |  |  |  | 0.02 U |
| E16131/1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | $\frac{\mathrm{ng} / \mathrm{kg}}{\mathrm{mg} k \mathrm{k}}$ | 0.267 0.36 UJ | 0.34 UJ | 0.886 0.35 UJ | ${ }^{0.36 ~ U J}$ | ${ }^{0.36 \mathrm{U}}$ | 0.34 UJ | 0.34 UJ | ${ }_{0}^{0.350}$ | 0.048 U | 0.34 UJ | 0.35 U | 0.34 U | 0.055 U | 0.35 UJ | 0.35 U | ${ }^{0.36 ~ U J}$ | 0.34 UJ | 0.36 UJ | 0.36 UJ | - |
| sw6020 | ARSENIC | mgkg | ${ }^{0.43 U}$ | 1.0 | ${ }^{0.43 U}$ | 1.4 | 0.44 U | 1.75 | 11 | 0.56 | 0.77 | 0.75 | 0.68 J | ${ }^{0.83 \mathrm{~J}}$ | 0.77 J | 1.1 | 0.89 | 2.15 | ${ }^{0.94 \mathrm{~J}}$ | ${ }^{0.70 \mathrm{~J}}$ | ${ }^{0.97 \mathrm{~J}}$ | 0.39 U |
| sw6020 | BARIUM | mg/kg | 10 J | 4.4 | 7.0 | 6.7 | 7.1 | 6.5 J | 12 | 17 | 11 | 4.3 | 2.45 | ${ }_{3.3}{ }^{3}$ | 6.8 J | 8.5 | 14 | 18 J | 7.0 J | 4.7 J | 7.8 J | 8.0 |
| SW6020 | CADMIUM | mg/kg | ${ }^{0.31 \mathrm{U}}$ | ${ }^{0.29 U}$ | 0.30 U | ${ }^{0.30 \mathrm{U}}$ | ${ }^{0.31 \mathrm{U}}$ | 0.29 U | 0.29 U | ${ }^{0.30 \mathrm{U}}$ | 0.29 U | 0.29 U | 0.30 U | 0.29 U | 0.28 U | 0.30 U | 0.30 U | 0.31 U | 0.29 U | 0.31 U | 0.30 U | 0.28 U |
| SW6020 | CHROMIUM | mg/kg | 7.3 | 2.2 | 6.0 | 5.3 | 9.8 | 3.8 | 6.2 | 9.4 | 6.6 | 2.5 | 4.9 J | 5.15 | 3.5 | 5.3 | 7.8 | 10 | 7.1 | 6.3 | 6.3 | 4.4 |
| SW6020 | COPPER | mgkg | 0.44 J | 0.67 J | 0.68 J | 0.77 J | 0.42 J | 0.74 J | 3.1 | 0.86 J | 0.69 J | 0.85 J | 0.66 J | 0.55 J | 0.66 J | 1.8 | 0.70 J | 1.8 J | 1.3 J | 0.73 J | 0.70 J | 0.34 J |
| SW6020 | LEAD | mg/kg | 3.9 J | 1.4 | 6.4 | 5.9 | 5.5 | 2.15 | 7.1 | 10 | 3.6 | 1.1 | 0.88 J | 1.15 | 6.15 | 4.2 | 4.7 | 6.4 J | 5.5 J | 5.5 | 3.5 J | 4.4 |
| SW6020 | SELENIUM | mgkg | 0.89 U | 0.85 U | 0.88 U | ${ }^{0.88 \mathrm{U}}$ | 0.90 U | 0.84 U | 0.83 U | ${ }^{0.86 U}$ | 0.85 U | 0.84 U | 0.86 U | 0.84 U | 0.81U | 0.88 U | 0.86 U | 0.90 U | 0.83 U | 0.89 U | 0.88 U | 0.81 U |
| SW6020 | SILVER | mg/kg | 0.40 U | 0.38 U | 0.39 U | 0.40 U | 0.41 U | 0.38 U | 0.38 U | 0.39 U | 0.39 U | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.40 U | 0.39 U | ${ }^{0.410}$ | 0.38 U | 0.40U | 0.40 U | 0.37 U |
| SW6020 | VANADIUM (FUME OR DUST) | mglkg | ${ }^{3.25}$ | 0.91 U | 1.3 | 0.94 U | 4.5 | 2.65 | 0.89 U | 3.9 | 3.8 | 1.5 | 0.92 U | 1.5 | 1.6 J | 0.94 U | 3.9 | 4.2 J | 2.4 J | 1.7 J | ${ }^{3.3 \mathrm{~J}}$ | 2.5 |
| SW7471 | MERCURY | mgkg | 0.025 J | 0.0064 J | 0.025 | 0.040 J | 0.035 | 0.0071 J | 0.044 J | 0.040 | 0.012 J | 0.0093 J | 0.0045 U | 0.0046 J | 0.025 | 0.029 | 0.026 | 0.026 | 0.018 J | ${ }^{0.111 \mathrm{~J}}$ | ${ }^{0.010 \mathrm{~J}}$ | 0.027 |
| SW8260 | 1,1,1,-TRICHLOROETHANE | uglkg | $0.14{ }^{0}$ | 0.13 U | 0.13 U | 0.13 U | 0.14 U | ${ }_{0}^{0.13 \mathrm{U}}$ | ${ }_{0}^{0.13 U^{0}}$ | 0.14 U | ${ }_{0}^{0.13 U^{0}}$ | ${ }_{0}^{0.13 U^{0}}$ | ${ }_{0}^{0.13 U^{0}}$ | $0.13 \mathrm{U}^{0.090}$ | ${ }^{0.13 U^{\prime}}$ | $\stackrel{0.13 U}{ }$ | ${ }_{0}^{0.13 U^{0}}$ | ${ }_{0}^{0.13 \mathrm{U}^{\text {a }} \text {-12 }}$ | ${ }_{0}^{0.13 \mathrm{U}^{\text {a }} \text {-11 }}$ | $0.15{ }^{0}$ | ${ }_{0}^{0.1331}$ | ${ }^{0.133}$ |
| SW8260 | 1,1,2,2-TETRACHLOROETHANE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} k g}$ | $\frac{0.074 \mathrm{U}}{0.15 \mathrm{U}}$ | $\frac{0.069 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.071 \mathrm{U}}{0.14 \mathrm{U}}$ | 0.071U | 0.072U | $\frac{0.069 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.071 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.074 \mathrm{U}}{0.15 \mathrm{U}}$ | 0.070 0 | $\frac{0.069 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.068 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.069 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.070 \cup}{0.14 U}$ | $\frac{0.070 \mathrm{U}}{0.14 \mathrm{U}}$ | 0.070 0 | $\frac{0.072 \mathrm{U}}{0.15 \mathrm{U}}$ | $\frac{0.071 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.078 \mathrm{U}}{0.16 \mathrm{U}}$ | $\frac{0.071 \mathrm{U}}{0.14 \mathrm{U}}$ | $\frac{0.070 \mathrm{U}}{0.14 \mathrm{U}}$ |
| sw8260 | 1,1-DICHLOROETHANE | ugkg | 0.071 U | 0.066 U | 0.068 U | 0.068 U | 0.069 U | 0.066 U | 0.068 U | 0.070 U | 0.067 U | 0.066 U | 0.065 U | 0.066 U | 0.067 U | 0.067 U | 0.067 U | 0.069 U | 0.068 U | 0.075 U | 0.067 U | 0.067 U |
| sw8260 | 1,1-DICHLOROETHYLENE | ugkg | 0.20 U | 0.18 U | 0.19 U | 0.19 U | 0.19 U | 0.18 U | 0.19 U | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U | 0.19 U | 0.21 U | 0.19 U | 0.18 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugkg | $0.17{ }^{\text {U }}$ | 0.16 U | 0.16 U | 0.17 U | 0.17 U | 0.16 U | 0.16 U | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | $0.17{ }^{\text {U }}$ | $0.17{ }^{\text {U }}$ | 0.18 UJ | 0.16 U | 0.16 U |
| SW8260 | 1,2--IIBROMO-3-CHLOROPROPANE (DBCP) | ugkg | 0.55 U | 0.51 U | 0.53 U | 0.53 U | 0.54U | ${ }^{0.51 U}$ | 0.53 U | 0.55 U | 0.52 U | 0.52 U | 0.51 U | 0.51 U | 0.52 U | 0.52 U | 0.52 U | 0.54 U | 0.53 U | 0.58 uJ | 0.53 U | 0.52 U |
| SW8260 | 1,2-DIBROMOETHANE | ugkg | 0.063 U | 0.059 U | 0.060 U | 0.060 U | 0.061 U | 0.058 U | 0.060 U | 0.062 U | 0.059 U | 0.059 U | 0.058 U | 0.058 U | 0.060 U | 0.059 U | 0.060 U | 0.061 U | 0.060 U | 0.067 U | 0.060 U | 0.059 U |
| SW8260 | 1,2-DICHLOROBENZENE | ugkg | 0.088 U | 0.081 U | 0.084 U | 0.084 U | 0.085 U | 0.081 U | 0.084 U | 0.087 U | 0.083 U | 0.082 U | 0.081 U | 0.081 U | 0.083 U | 0.082 U | 0.083 U | 0.085 U | 0.084 U | ${ }^{0.0922 ~ J ~}$ | 0.083 U | 0.082 U |
| SW8260 | 1,2-IICHLOROETHANE | $\stackrel{\mathrm{ug} \text { kg }}{\text { ugkg }}$ | 0.12U | 0.11U | ${ }^{0.11 \mathrm{U}}$ | 0.11U | ${ }_{0}^{0.11 \mathrm{U}}$ | 0.11U | 0.11U | ${ }^{0.120}$ | ${ }_{0}^{0.11 U^{0}}$ | ${ }^{0.115}$ |  |  | ${ }^{0.11 U^{0}}$ | 0.11 U |  |  |  |  | ${ }_{0}^{0.114}$ | ${ }_{0}^{0.11 U^{0}}$ |
| SW8260 | 1, 1,-2-DICHLICHLOROPROPENZAENE | $\frac{\mathrm{ug} / \mathrm{kg}}{\mathrm{ug} \mathrm{kg}}$ | ${ }^{0.061 U} 0$ | ${ }^{0.0 .056 \mathrm{U}} 0$ | ${ }^{0.058}{ }^{0.093}$ U | ${ }^{0.058}{ }^{0.093} \mathrm{U}$ | ${ }_{0}^{0.059 ~ U ~} 0$ | 0.056 U | ${ }_{0}^{0.058 \mathrm{U}} 0$ | ${ }_{0}^{0.060 \mathrm{U}} 0$ | ${ }_{0}^{0.057 U} 0$ | ${ }^{0.057 \mathrm{U}} 0$ | ${ }^{0.056 \mathrm{U}} 0$ | ${ }^{0.056 \mathrm{U}} 0$ | ${ }^{0.058 \mathrm{U}} 0$ | ${ }_{0}^{0.057 \mathrm{U}} 0$ | ${ }_{0}^{0.057 U} 0$ | ${ }^{0.059 ~ U ~} 0.095 \mathrm{U}$ | ${ }_{0}^{0.058 \mathrm{U}} 0$ | ${ }_{0}^{0.064 \mathrm{U}} 0$ | ${ }_{0}^{0.058 \mathrm{U}} 0$ | 0.057U |
| SW8260 | ACETONE | ugkg | 12 J | 16 J | 7.5 J | 8.2 J | 2.8 U | 5.8 J | 18 J | 2.8 U | 2.7 U | 2.7 U | 2.6 U | 2.6 U | 5.2 J | 10 J | 2.7 U | 22 J | 42 J | 39 J | 13 J | 2.7 U |
| SW8260 | BENZENE | ugkg | 0.44 U | 0.41 U | 0.42 U | 0.42 U | 0.43 U | 0.41 U | 0.42 U | 0.44 U | 0.42 U | 0.41 U | 0.41 U | ${ }^{0.414}$ | 0.42 U | 0.41 U | 0.42 U | 0.43 U | 0.42 U | 0.46 U | 0.42 U | 0.41 U |
| SW8260 | BROMODICHLOROMETHANE | ugkg | ${ }_{0}^{0.334}$ | ${ }^{0.31 \mathrm{U}}$ | ${ }^{0.314}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | $\stackrel{0.32 \mathrm{U}}{ }$ | $\stackrel{0.30 \mathrm{U}}{ }$ | ${ }_{0}^{0.31 \mathrm{U}}$ | $\stackrel{0.33 \mathrm{U}}{0}$ | 0.314 | ${ }^{0.314}$ | $\stackrel{0.30 \mathrm{U}}{ }$ | ${ }^{0.300}$ | 0.314 | ${ }^{0.314}$ | ${ }_{0}^{0.314}$ | ${ }_{0}^{0.32 \mathrm{U}}$ | ${ }_{0}^{0.314}$ | ${ }^{0.35 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ | ${ }_{0}^{0.31 \mathrm{U}}$ |
| SW8260 | BROMOMETHANE CARBON DISULIIE | $\mathrm{ug}_{\text {ugg }}^{\text {ugg }}$ | $\frac{0.36 \mathrm{UJ}}{1.8 \mathrm{U}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{u}}$ | 0.35 UJ | $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{u}}$ | $\frac{0.34 \mathrm{UJ}}{17 \mathrm{U}}$ | $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{u}}$ | $\frac{0.36 \mathrm{UJ}}{1.8 \mathrm{U}}$ | $\frac{0.34 \mathrm{U}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{U}}{1.7 \mathrm{U}}$ | $\frac{0.33 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{U}}{1.7 \mathrm{U}}$ | $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{u}}$ | $\frac{0.35 \mathrm{UJ}}{1.8 \mathrm{U}}$ | $\frac{0.38 \mathrm{UJ}}{1.9 \mathrm{u}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ | $\frac{0.34 \mathrm{UJ}}{1.7 \mathrm{U}}$ |
| SW8260 | CARBON TETRACHLORIDE | ugkg | 0.40 U | 0.37 U | 0.38 U | 0.38 U | 0.39 U | 0.37 U | 0.38 U | 0.39 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.38 U | 0.37 U | 0.37 U | 0.38 U | 0.38 U | 0.42 U | 0.38 U | 0.37 U |
| SW8260 | CFC-11 | ugkg | 0.30 U | 0.27 U | 0.28 U | 0.28 U | 0.29 U | 0.27 U | 0.28 U | 0.29 U | 0.28 U | 0.28 U | 0.27 U | 0.27 U | 0.28 U | 0.28 U | 0.28 U | 0.29 U | 0.28 U | 0.31 U | 0.28 U | 0.28 U |
| SW8260 | CFC-12 | ugkg | 0.36 U | 0.34 U | 0.35 U | 0.35 U | 0.35 U | 0.34 U | 0.35 U | $\stackrel{0.36 \mathrm{U}}{0}$ | ${ }_{0}^{0.340}$ | ${ }_{0}^{0.340}$ | ${ }_{0}^{0.330}$ | ${ }_{0}^{0.34 u^{030}}$ | ${ }_{0}^{0.340}$ | ${ }_{0}^{0.344}$ | 0.34 UJ | ${ }_{0}^{0.35 \mathrm{U}}$ | ${ }_{0}^{0.35 \mathrm{U}}$ | ${ }^{0.38 \mathrm{U}}$ | ${ }_{0}^{0.340}$ | ${ }_{0}^{0.344}$ |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | uglkg | 0.41 U | 0.38 U | 0.39 U | 0.39 U | 0.40 U | 0.38U | 0.39 U | 0.40 U | 0.38 U | 0.38U | 0.38U | 0.38 ${ }^{0}$ | 0.39 U | 0.38 ${ }^{0.20}$ | 0.38 U | 0.39 U | 0.39 U | 0.43 U | 0.39 U | 0.38 U |
| SW8260 | CHLOROBENZENE | ugkg | 0.45 | 0.42 U 0.26 U | 0.43 U 0.27 U | 0.43 U 0.27 U | 0.44U | 0.42 U 0.26 U | 0.43 U 0.27 U | 0.45 U | 0.43 U 0.27 U | 0.42 U 0.27 U | 0.42 U 0.26 U | 0.42 U 0.26 U | 0.43 U 0.27 U | 0.42 U 0.27 U | 0.43 U 0.27 U | 0.44U | 0.43U | 0.48 U 0.30 u | 0.43 U 0.27 U | 0.43 U <br> 0.27 U |
| SW8260 | CHLOROETHANE | ugkg | $\xrightarrow[0.410]{0.45}$ | 0.38 UJ | 0.39 UJ | 0.39 UJ | 0 | 0.38 U | 0.39 UJ | 0.40 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.39 U | 0.38 UJ | 0.38 U | 0.39 U | 0.39 U | 0 | 0.39 U | 0.38 U |
| W8260 | CHLOROFORM | ug/kg | 0.39 U | 0.36 U | 0.37 U | 0.37 U | 0.37 U | 0.36 U | 0.37 U | 0.38 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.37 U | 0.37 U | 0.41 U | 0.37 U | 0.36 U |
| W8260 | CHLOROMETHANE | ugkg | 0.51 U | 0.47 U | 0.48 U | 0.49 U | 0.49 U | 0.47 U | 0.48 U | 0.50 U | 0.48 U | 0.48 U | 0.47 U | 0.47 U | 0.48 U | 0.48 U | 0.48 U | 0.49 U | 0.49 U | 0.54 U | 0.48 U | 0.48 U |



## Appendix A. Revised Soil Results 2-6 Feet

Koppers Inc. Site, Gainesville, FL

|  |  | Location <br> Depth Sample Date | $\begin{gathered} \text { SS082 } \\ \text { SSo82DA } \\ 2-6 \text { feet } \\ 12 / 107 / 2006 \end{gathered}$ | $\begin{array}{c\|} \text { SSO84 } \\ \text { SSO84DA } \\ 2.6 \text { feet } \\ 12 / 08 / 2006 \end{array}$ | $\begin{array}{\|c\|} \hline \text { SS086 } \\ \text { SSO86DA } \\ \text { 2-6 feet } \\ 12 / 11 / 2006 \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO88 } \\ \text { SSo88DA } \\ \text { 2-6feet } \\ 12 / 11 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SS091 } \\ \text { SSo91DA } \\ \text { 2-6 feet } \\ 12 / 11 / 2006 \end{array}$ | $\begin{array}{\|c} \text { SSO94 } \\ \text { SSO94DA } \\ \text { 2-6 feet } \\ 12 / 11 / 2000 \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSO95 } \\ \text { SSO95DA } \\ \text { 2-6 feet } \\ 12 / 06 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SSo96 } \\ \text { SSO96DA } \\ 2-6 \text { feet } \\ 12107 / 2006 \end{array}$ | $\begin{array}{\|c\|} \text { SS097 } \\ \text { SSo97DA } \\ \text { 26 feet } \\ 12 / 1 / 207206 \\ \hline \end{array}$ | $\begin{array}{c\|} \text { SSO98 } \\ \text { SSogDA } \\ 2-68 \text { feet } \\ 12108 / 2006 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \text { SSo99 } \\ \text { SSO99DA } \\ 2-6 \text { feet } \\ 12 / 08 / 2006 \end{array}$ | $\begin{gathered} \text { SS100 } \\ \text { SS100DA } \\ 2-6 \text { feet } \\ 12 / 108 / 2006 \end{gathered}$ | $\begin{array}{\|c\|} \text { SS100 } \\ \text { SS1000B } \\ \text { 2-6 feet } \\ 12 / 08 / 2006 \end{array}$ | SS101 SS101DA $2-6$ feet $12 \cdot 112006$ $\qquad$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lab Method | Analyte | Units |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BNASIM | 2-METHYLNAPHTHALENE | ug/kg | 54 | 1.80 | 1.7 U | 18 J | 2.0 J | 610000 J | 4.8 | 16 U | 1.6 U | 17 U | 4.8 | 250000 | 230000 | 700000 J |
| BNASIM | ACENAPHTHENE | ugkg | 200 | 14 | 1600 | 33 J | 2.9 R | 610000 J | 20 | 29 U | 2.9 U | 65 J | 42 | 310000 | 280000 | 910000 J |
| BNASIM | ACENAPHTHYLENE | ugkg | 8.5 | 3.10 | 63 | 15 | 5.8 J | 5900 | 10 | 220 | 2.8 U | 1100 | 35 | 17000 | 16000 | 6800 |
| BNASIM | ANTHRACENE | ugkg | 140 | 4.8 | 1800 | 26 | ${ }^{0.65 U}$ | 1300000 | 40 | 330 | 1.2 J | 2500 | 76 | 190000 | 170000 | 1100000 |
| BNASIM | BENZO(A)ANTHRACENE | ugkg | 73 | 0.90 J | 780 | 32 | 9.6 | 610000 | 9.6 | 700 | 0.54 U | 240 | 71 | 120000 | 110000 | 930000 |
| BNASIM | BENZO(A)PYRENE | ugkg | 33 | 1.30 | 260 | 36 | 11 | 210000 | 30 | 650 | 1.2 U | 310 | 60 | 54000 | 46000 | 400000 |
| BNASIM | BENZO(B)FLUORANTHENE | ugkg | 44 | 2.0 J | 480 J | 79 J | 28 J | 350000 | 37 | 910 | 0.86 U | 380 | 110 | 68000 | 62000 | 650000 |
| BNASIM | BENZO(G, ,H,I)PERYLENE | ugkg | 9.9 | 0.77 U | 100 | 37 | 13 | 9000 | 26 | 470 | 0.70 U | 410 | 45 | 16000 | 14000 | 17000 |
| BNASIM | BENZO(K) FLUORANTHENE | ugkg | 44 | 1.7 J | 220 | 45 | 15 | 13000 | 23 | 780 | 0.70 U | 230 | 95 | 47000 | 40000 | 17000 |
| BNASIM | CHRYSENE | ugkg | 73 | 1.2 J | 730 | 39 | 16 | 520000 | 15 | 660 | 0.52 U | 73 | 94 | 100000 | 93000 | 790000 |
| BNASIM | DIBENZO(A,H)ANTHRACENE | ugkg | 3.9 | 0.60 U | 47 | 12 | 3.5 J | 3700 | 8.1 | 150 | 0.55 U | 81 | 14 | 6800 | 5600 | 8300 |
| BNASIM | FLUORANTHENE | ugkg | 420 | 0.70 U | 3500 | 40 | 19 | 790000 | 32 | 510 | 0.63 U | 110 | 180 | 700000 J | 400000 J | 1200000 |
| BNASIM | FLUORENE | ugkg | 110 | 11 | 1800 | 24 J | 1.6 R | 520000 | 48 | 16 U | 1.6 U | 41 | 57 | 340000 | 300000 | 900000 |
| BNASIM | INDENO(1,2,3,-CD)PYRENE | ugkg | 14 | 1.10 | 110 | 35 | 12 | 10000 | 30 | 520 | 0.93 U | 420 | 53 | 17000 | 15000 | 220000 |
| BNASIM | NAPHTHALENE | ugkg | 97 | 0.60 U | 0.55 U | 14 J | 3.8 J | 1100000 J | 10 | 5.5 U | 0.55 U | 5.6 U | 0.63 U | 770000 | 570000 | 1200000 J |
| BNASIM | PENTACHLOROPHENOL | ugkg | 0.76 U | 0.83 U | 120 | 15 J | 9.15 | 120000 J | 42 | 7.5 U | 0.75 U | 7.70 | 68 | 890 U | 860 U | 150000 J |
| BNASIM | PHENANTHRENE | ugkg | 220 | 8.6 | 6700 | 23 J | 3.5R | 1800000 | 45 | 36 U | 4.3 J | 80 | 25 | 1300000 | 960000 | 2500000 |
| BNASIM | PYRENE | ugkg | 240 | 0.62 U | 2700 | 49 | 22 | 550000 | 26 | 850 | 1.5 J | 97 | 140 | 350000 | 310000 | 810000 |
| E160.3 | RESIDUE, TOTAL | percent | 93 | 85 | 93 | 92 | 95 | 96 | 90 | 94 | 94 | 91 | 82 | 79 | 82 | 93 |
| E1613/1668 | 1,2,3,4,6,7,8,-HEPTACHLORODIBENZOFURAN | ngkg | 7.678 |  | 158.57 | 82.194 |  | 2980 | 62.115 | 508.949 | 0.898 J | 19.052 | 79.443 | 98.1 | 216 | 1937.824 J |
| E1613\|E1668 | 1,2,3,4,4,7,8,-HEPTACHLORODIBENZO-P-DIOXIN | ngkg | 77.732 |  | 1633.515 | 659.179 |  | 32800 | 438.305 | 3203.149 J | 4.732 U | 268.877 | 1124.784 | 1150 | 2140 | 17358.29 J |
| E1613/E1668 | 1,2,3,4,7,8,9,-HEPTACHLORODIBENZOFURAN | ngkg | 0.858 J |  | 10.003 | 5.139 |  | 185 | 3.314 J | 31.747 | 0.174 U | 1.234 J | 5.852 | 6.49 | 14.9 | 220.449 J |
| E1613/E1668 | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | ngkg | 0.249 U |  | 4.517 J | 1.89 J |  | 87.6 | 1.983 J | ${ }^{13.035}$ | 0.693 J | 0.955 J | 2.226 J | 2.77 J | 5.94 | 85.513 |
| E1613/E1668 | 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | ng/kg | 0.258 U |  | ${ }^{13.557}$ | 6.14 |  | 56.8 | 3.95 J | ${ }^{33.118}$ | 0.064 U | 1.307 J | 5.655 | 10.3 | 20.8 | ${ }^{65.106}$ |
| E1613/E1668 | 1,2,3,6,7,8,-HEXACHLORODIBENZOFURAN | nglkg | 0.058 U |  | 3.186 U | 1.529 J |  | 18.6 | 1.237 J | 9.73 | 0.259 J | 0.457 J | 0.467 U | 2.22 J | 5.42 | 19.481 |
| E1613/E1668 | 1,2,3,6,7,8,-HEXACHLORODIBENZO-P-DIOXIN | ng/kg | 1.125 J |  | 36.613 | 15.387 |  | 455 | 12.593 | 128.609 | 0.209 U | 4.554 | 22.797 | 24.3 | 53.2 | 594.585 |
| E1613/E1668 | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | ngkg | 0.056 U |  | 0.681 U | 0.093 U |  | 17.7 | 0.131 U | 0.492 J | 0.061 U | 0.087 U | 0.395 U | 1.11 J | 2.16 J | 1.16 U |
| E1613/E1668 | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | nglkg | 1.02 J |  | 37.482 | 14.855 |  | 65.7 | ${ }^{10.145}$ | 64.199 | 0.07 U | 5.588 | 16.407 | 14.9 | 28.5 | 367.25 |
| E1613/E1668 | 1,2,3,7,8-PENTACHLORODIBENZOFURAN | ngkg | 0.14 J |  | 0.411 J | 0.197 J |  | 3.13 | 0.142 J | 1.289 J | 0.325 J | 0.178 J | ${ }_{0}^{1.421 ~ J}$ | ${ }^{4} 477 \mathrm{~J}$ | ou | 4.687 J |
| E1613/E1668 | 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | nglkg | 0.183 J |  | 5.723 | 1.85 J |  | 4.79 | 1.744 J | 11.231 | 0.041 U | 0.454 J | 1.609 J | 2.58 J | 5.9 | 9.287 |
| E1613/E1668 | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | nglkg | 0.058 U |  | 6.925 | 3.556 J |  | 37.8 | 0.928 J | 8.632 | 0.049 U | 0.677 J | 2.149 J | 4.89 | 10.8 | 10.764 |
| E1613/E1668 | 2,3,4,7,8-PENTACHLORODIBENZOFURAN | ng/kg | 0.118 U |  | 0.805 J | 0.297 J |  | 11.3 | 0.262 J | 1.688 J | 0.145 J | 0.238 J | 0.373 J | 1.04 J | 2.24J | 7.814 |
| E1613/E1668 | 2,3,7,-TETRACHLORODIBENZOFURAN | ngkg | 0.023 U |  | 0.33 U | 0.048 U |  | .537J | 0.206 U | 0.556 J | 0.579 U | 0.243 U | 0.521 U | 0 O | $0 \cup$ | 0.106 R |
| E1613/E1668 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | ngkg | 0.062 U |  | 0.654 J | 0.156 U |  | 1.18 | 0.094 U | 0.703 J | 0.025 U | 0.146 U | 0.291 J | ou | 546 J | 1.817 R |
| E1613\|E1668 | OCTACHLORODIBENZOFURAN | nglkg | 50.971 |  | 923.579 J | 387.65 |  | 18500 | 261.115 | 3138.652 J | 2.716 J | 105.786 | 645.561 | 447 | 963 | 137714.563 |
| E1613/E1668 | OCTACHLORODIBENZO-P-DIOXIN | ngkg | 913.279 |  | 17748.2 J | 7624.98 J |  | 398000 J | 3851.933 | 33059.935 J | 43.117 J | 2295.588 | 15412.68 J | 12000 | 21400 | 169191.01 J |
| E1613\|E1668 | TOTAL HEPTACHLORINATED DIBENZOFURANS | nglkg | 39.367 |  | 674.261 | 311.669 |  | 16100 | 234.229 | 2249.64 | 0.898 | 76.104 | 394.451 | 380 | 812 | 21263.732 |
| E1613/E1668 | TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | nglkg | 548.367 |  | 7833.519 | 2432.136 |  | 304000 | 1070.561 | 9949.335 | 16.054 | 2011.998 | 4246.728 | 5100 | 8750 | 245943.186 |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZOFURANS | ng/kg | 6.098 |  | 165.147 | 83.164 |  | 2430 J | 60.111 | 592.818 | 1.226 | 16.999 | 73.184 | 97.4 | 229 | 4025.607 |
| E1613/E1668 | TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | ngkg | 26.413 |  | 578.215 | 196.064 |  | 13100 | 96.128 | 775.283 | 0.741 | 104.99 | 281.255 | 416 | 943 | 13857.306 |
| E1613/E1668 | TOTAL PENTACHLORINATED DIBENZOFURANS | nglkg | 0.593 |  | 23.207 | 11.029 |  | 118 J | 8.179 | 61.256 | 0.604 | 2.616 | 8.215 | 18 | 43.3 | 140.893 |
| E1613/E1668 | TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | ngkg | 0.354 |  | 36.772 | 11.196 |  | 178 | 8.804 | 49.056 | 0.041 U | 2.864 | 21.11 | 28.4 | 63.9 | 229.614 |
| E1613/1668 | TOTAL TETRACHLORINATED DIBENZOFURANS | ngkg | 0.117 |  | 2.421 | 0.31 |  | 10.8 J | 0.753 | 6.386 | 0.041 U | 0.252 | 0.213 | 3.32 | 4.71 | 11.017 |
| E1613/E1668 | TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | ng/kg | 0.078 |  | 2.647 | 0.379 |  | 7.4 | 0.347 | 3.288 | 0.025 U | 0.162 | 2.107 | 3.63 | 5.11 | 2.6 |
| SW6020 | ANTIMONY | mgkg | 0.35 U | 0.40 UJ | 0.36 UJ | 0.35 UJ | 3.5 UJ | 0.32 UJ | 4.3 | ${ }^{0.36 \mathrm{U}}$ | 0.33 U | 0.34 U | 0.41 UJ | 0.40 U | 0.41 U | 0.34 UJ |
| SW6020 | ARSENIC | mgkg | 7.9 | 0.62 | 57 | 0.79 | 5.2 J | 1.3 | 280 | 16 | 0.40 U | 0.66 | 0.50 U | 0.83 J | 3.2 J | 1.1 |
| SW6020 | BARIUM | mglkg | 13 | 12 | 11 | 14 | 47 J | 8.8 | 15 | 17 | 9.0 | 4.9 | 8.0 | 4.9 | 5.2 | 7.8 |
| SW6020 | CADMIUM | mgkg | ${ }^{0.30 \mathrm{U}}$ | 0.34 U | ${ }^{0.31 \mathrm{U}}$ | 0.30 U | 3.00 | 0.28 U | 0.32 U | ${ }^{0.30 \mathrm{U}}$ | 0.29 U | 0.29 U | 0.35 U | 0.34 U | 0.35 U | 0.29 U |
| SW6020 | CHROMIUM | mg/kg | 7.7 | 8.8 | 8.9 | 7.3 | 27 | 7.4 | 190 | 33 J | 6.2 | 5.2 | 2.2 | 2.2 J | 5.9 J | 6.4 |
| SW6020 | COPPER | mgkg | 0.31 U | 0.35 U | 1.4 | 1.6 | 5.2 J | 1.2 | 2.2 | 5.5 J | ${ }^{0.62 J}$ | 1.0 J | 0.98 J | 1.0 J | 3.0 J | 1.2 |
| SW6020 | LEAD | mgkg | 3.8 | 3.7 | 6.2 | 13 | 22 J | 4.9 | 13 | 6.5 | 7.33 | 3.3 | 1.5 | 2.15 | 2.23 | 8.9 |
| SW6020 | SELENIUM | mg/kg | ${ }^{0.86 U}$ | 0.98 U | 0.90 UJ | 0.88 UJ | 8.70 | 0.80 U | 0.92 U | 0.88 U | 0.83 U | 0.85 U | 1.0U | 0.98 U | 1.0U | 0.85 U |
| SW6020 | SILVER | mg/kg | 0.39 U | 0.45 U | ${ }^{0.41 \mathrm{U}}$ | 0.40 U | 3.9 U | 0.36 U | 0.42 U | 0.40 U | 0.37 U | 0.38 U | 0.46 U | 0.44 U | 0.46 U | 0.38 U |
| SW6020 | VANADIUM (FUME OR DUST) | mgkg | 5.8 | 9.0 | 6.3 J | 2.7 J | 11 J | 0.86 U | 8.6 | 7.0 | 2.7 | 2.7 | 1.3 | 1.14 | 1.10 | 0.91 U |
| SW7471 | MERCURY | mg/kg | 0.021 J | 0.011 J | 0.044 | 0.069 | 0.015 J | 0.068 J | 0.12 | 0.045 J | 0.042 | 0.034 | 0.029 J | 0.022 J | 0.018 J | 0.068 J |
| SW8260 | 1,1,1-TRICHLOROETHANE | ugkg | 0.13 U | 0.15 U | 0.13 U | 0.14 U | 0.13 U | 0.13 U | 0.14 U | 0.13 U | 0.13 U | 0.14 U | 0.15 U | 0.16 U | 0.15 U | 0.17 U |
| SW8260 | 1,1,2,2,2-TETRACHLOROETHANE | ug/kg | 0.072 U | 0.078 U | 0.071 U | 0.072 U | 0.070 U | 0.070 U | 0.074 U | 0.071 U | 0.071 U | 0.073 U | 0.081 U | 0.084 UJ | 0.081 UJ | 0.092 UJ |
| SW8260 | 1,1,2-TTICHLOROETHANE | ugkg | 0.15 U | 0.16 U | 0.14 U | 0.15 U | 0.14 U | 0.14 U | 0.15 U | 0.14 U | 0.14 U | 0.15 U | 0.16 U | 0.17 UJ | 0.16 UJ | 0.19 UJ |
| SW8260 | 1,1-DICHLOROETHANE | ugkg | 0.068 U | 0.074 U | 0.068 U | 0.069 U | 0.067 U | 0.066 U | 0.071 U | 0.068 U | 0.068 U | 0.070 U | 0.077 U | 0.080 U | 0.078 U | 0.088 U |
| SW8260 | 1,1-DICHLOROETHYLENE | ugkg | 0.19 U | 0.20 U | 0.19 U | 0.19 U | 0.18 U | 0.18 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.21 U | 0.22 U | 0.21 U | 0.24 U |
| SW8260 | 1,2,4-TRICHLOROBENZENE | ugkg | 0.17 U | 0.18 U | 0.17 U | 0.17 U | 0.16 U | 0.16 UJ | 0.17 U | 0.16 U | 0.16 U | 0.17 U | 0.19 U | 0.19 R | 0.19 R | 0.21 UJ |
| SW8260 | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | ugkg | 0.53 U | 0.58 U | 0.53 U | 0.54 U | 0.52 U | 0.52 UJ | 0.55 U | 0.53 U | 0.53 U | $0.54{ }^{0}$ | 0.60 U | 0.62 R | ${ }^{0.61 \mathrm{R}}$ | 0.69 UJ |
| SW8260 | 1,2-DIBROMOETHANE | ugkg | 0.061 U | 0.066 U | 0.061 U | 0.062 U | 0.059 U | 0.059 U | 0.063 U | 0.060 U | 0.060 U | 0.062 U | 0.069 U | 0.071 UJ | 0.069 UJ | 0.078 UJ |
| SW8260 | 1,2-DICHLOROBENZENE | ugkg | 0.085 U | 0.092 U | 0.084 U | 0.086 U | 0.083 U | 0.082 UJ | 0.087 U | 0.084 U | 0.084 U | 0.086 U | 0.096 U | 0.099 R | 0.096 R | 0.11 UJ |
| SW8260 | 1,2-DICHLOROETHANE | ugkg | 0.11 U | 0.12 U | 0.11 U | $0.11{ }^{0}$ | 0.11 U | 0.11 U | 0.12 U | 0.11 U | $0.11{ }^{0}$ | $0.11 \mathrm{U}^{0}$ | $0.13{ }^{0}$ | 0.13 U | $0.13 \mathrm{U}^{0}$ | $0.14 \mathrm{U}^{0}$ |
| SW8260 | 1,2-ICHLOROPROPANE | ugkg | 0.059 U | 0.064 U | 0.058 U | 0.059 U | 0.057 U | 0.057 U | 0.061 U | 0.058 U | 0.058 U | 0.060 U | 0.066 U | 0.069 U | 0.067 U | 0.076 U |
| SW8260 | ACETONE | ugkg | ${ }_{34} 0.04 \mathrm{~J}$ | 3.00 | 120 J | 41 J | ${ }_{3.05}$ | ${ }_{55}$ | ${ }^{130} \mathrm{~J}$ | ${ }^{2.70}$ | $\underline{2.7 \mathrm{U}}$ | $\underline{2.8 \mathrm{u}}$ | ${ }_{3.1}$ | ${ }_{10.10 \mathrm{~J}}$ | ${ }_{8} 8.19$ | ${ }_{1}^{130 \mathrm{~J}}$ |
| SW8260 | BENZENE | ugkg | ${ }^{0.43 U}$ | 0.46 U | ${ }^{0.42 \mathrm{U}}$ | 0.43 U | ${ }^{0.42 \mathrm{U}}$ | 19 | ${ }^{0.44 U}$ | 0.42 U | 0.42 U | 0.43 U | 0.48 U | 1.9 J | 1.75 | 130 |
| SW8260 | BROMODICHLOROMETHANE | ugkg | 0.32 U | 0.35 U | 0.32 U | 0.32 U | 0.31 U | ${ }^{0.31 \mathrm{U}}$ | 0.33 U | 0.31 U | 0.31 U | 0.32 U | 0.36 U | 0.37 U | 0.36 U | 0.41 U |
| SW8260 | BROMOMETHANE | ugkg | 0.35 U | 0.38 U | 0.35 UJ | 0.35 UJ | 0.34 UJ | 0.34 UJ | 0.36 UJ | 0.35 U | 0.35 U | ${ }^{0.36 \mathrm{U}}$ | 0.40 U | 0.41 UJ | 0.40 UJ | 0.45 UJ |
| SW8260 | CARBON DISULFIDE | ugkg | 1.8 U | 1.9 U | 1.8 U | 1.8 U | 1.7 U | 1.7 UJ | 1.8 U | 1.8 U | ${ }^{1.8 U}$ | 1.8 U | 2.0 U | 2.14 | 2.0 U | 2.3 UJ |
| SW8260 | CARBON TETRACHLORIDE | ug/kg | ${ }^{0.38 \mathrm{U}}$ | 0.42 U 0.31 u | 0.38 U 0.28 u | 0.39 u 0.29 u | 0.37 U | 0.37 U | 0.39 U | 0.38 U | 0.38 U | 0.39 u 0.29 u | 0.43 U 0.32 u | 0.45 U | 0.43 U 0.32 u | 0.49 U 0 037 U |
| SW8260 | CFC-12 | ugkg | 0.35 UJ | 0.38 UJ | ${ }_{0}^{0.35 \mathrm{U}}$ | ${ }_{0}^{0.35 \mathrm{U}}$ | $\stackrel{0.34 \mathrm{U}}{0}$ | 0.34 UJ | ${ }_{0}^{0.366}$ | 0.35 uJ | $\stackrel{0}{0.35 \mathrm{UJ}}$ | 0.36 uJ | $\stackrel{0}{0.40 \mathrm{UJ}}$ | ${ }_{0}^{0.411}$ | ${ }_{0}^{0.40 \mathrm{U}}$ | 0.45 uJ |
| SW8260 | CHLORINATED FLUOROCARBON (FREON 113) | ugkg | 0.39 U | 0.43 U | 0.39 U | 0.40 U | 0.38 U | 0.38 U | 0.41 U | 0.39 U | 0.39 U | 0.40 U | 0.44 U | 0.46 U | 0.45 U | 0.51 U |
| SW8260 | CHLOROBENZENE | ugkg | 0.44 U | 0.47 U | 0.43 U | 0.44 U | 0.43 U | 0.42 U | 0.45 U | 0.43 U | 0.43 U | 0.44 U | 0.49 U | 0.51 UJ | 0.50 UJ | 0.56 UJ |
| SW8260 | CHLORODIBROMOMETHANE | uglkg | 0.27 U | 0.30 U | 0.27 U | 0.28 U | 0.27 U | 0.27 U | 0.28 U | 0.27 U | 0.27 U | 0.28 U | 0.31 U | 0.32 UJ | 0.31 UJ | 0.35 UJ |
| SW8260 | CHLOROETHANE | ugkg | 0.39 U | 0.43 U | 0.39 U | 0.40 U | $\frac{0.38 \mathrm{U}}{036}$ | $\frac{0.38 \mathrm{UJ}}{036}$ | 0.41 U | 0.39 U | ${ }_{0}^{0.39 \mathrm{U}}$ | 0.40 U | 0.44 U | 0.46 U | 0.45 U | 0.510 J |
| SW8260 | CHLOROFORM | ${ }_{\text {ug }} \mathrm{ug} \mathrm{kg}$ | ${ }_{0}^{0.37 \mathrm{U}} 0$ | ${ }_{0}^{0.40 \mathrm{U}}$ | $\stackrel{0.37 \mathrm{U}}{0.49 \mathrm{u}}$ | ${ }_{0}^{0.38 \mathrm{U}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{u}}$ | $\frac{0.36 \mathrm{U}}{0.48 \mathrm{U}}$ | ${ }_{0}^{0.38 \mathrm{U}}$ | $\frac{0.37 \mathrm{U}}{0.48 \mathrm{u}}$ | $\frac{0.37 \mathrm{u}}{0.48 \mathrm{u}}$ | $\frac{0.38 \mathrm{U}}{0.50 \mathrm{u}}$ | ${ }_{0}^{0.42 \mathrm{U}}$ | $\stackrel{0.43 \mathrm{U}}{0.57 \mathrm{U}}$ | $\frac{0.42 \mathrm{U}}{0.56 \mathrm{u}}$ | $\stackrel{0.48 \mathrm{U}}{0.63 \mathrm{U}}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



## Appendix B

## Data Validation Report for Organic and Inorganic Analysis Samples

# DATA REVIEW and VALIDATION REPORT FOR 

Beazer East, Inc. Koppers Inc. Site

Organic and Inorganic Analysis Data
Soil and Sediment Samples
Collected from November 29, 2006 through December 12, 2006
Sample Delivery Group Numbers: J0605714, J0605735, J0605780, J0605810, J0605839, J0605876, J0605879, J0605890, J0605919, J0605944

Submitted to:
U.S. Environmental Protection Agency, Region 4

Atlanta, Georgia

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

472008401

March 2007

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Beazer East, Inc
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Data Review / Validation Report

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## ACRONYMS

| \%D | percent deviation or percent drift in relative response |
| :---: | :---: |
| BS | blank spike |
| BSD | blank spike duplicate |
| CAR | certified analytical report |
| CCAL | continuing calibration |
| CCB | continuing calibration blank |
| CCC | calibration check compound |
| CCV | continuing calibration verification |
| CLP | USEPA Contract Laboratory Program |
| COC | chain of custody |
| ICAL | initial calibration |
| ICP | inductively coupled plasma |
| ICS | interference check sample |
| ICV | initial calibration verification |
| ID | site identification |
| IDL | instrument detection limit |
| IS | internal standard |
| LCS | laboratory control sample |
| LCSD | laboratory control sample duplicate |
| MRL | method reporting limit |
| MS | matrix spike |
| MSD | matrix spike duplicate |
| OSWER | USEPA Office of Solid Waste and Emergency Response |
| PAH | polycyclic aromatic hydrocarbons |
| PQL | practical quantitation limit |
| QAPP | quality assurance project plan |
| QC | quality control |

Beazer East, Inc Koppers Inc. Site Data Review / Validation Report

| RF | response factor |
| :--- | :--- |
| RPD | relative percent difference |
| SDG | sample delivery group |
| SOP | standard operating procedure |
| SPCC | system performance check compound |
| SVOC | semivolatile organic compound |
| TOC | total organic carbon |
| VOC | volatile organic compound |

## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be non-detected at the concentration listed. $U$ qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.
UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.
$\mathrm{R} \quad$ The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

This data validation report covers 334 soil and sediment samples from the Beazer East, Inc. Koppers Inc. Site collected from November 29, 2006 through December 12, 2006. The sampling was conducted following the Supplemental Soil and Sediment Sampling Plan. These samples were collected to provide additional data to support the risk assessment that will be conducted for the site. The samples were submitted to Columbia Analytical Services, Inc. in Jacksonville, Florida (CAS).

Analyses performed on these samples are listed below. A list of these samples by field sample identifications (ID) and (CAS) sample IDs are presented in Table 1.

- Volatile organic compounds (VOCs) by USEPA Method 8260B
- Semivolatile organic compounds (SVOCs) by USEPA Method 8270C
- Polycyclic aromatic hydrocarbons (PAHs)and pentachlorophenol by USEPA method 8270C SIM
- Total metals by United States Environmental Protection Agency (USEPA) Method 6020
- Total mercury by USEPA Method 7471A
- Total organic carbon by USEPA Method 9060
- Grain size analysis by ASTM D422-63


### 2.0 EXECUTIVE SUMMARY

The data for the analyses of VOCs, SVOCs, PAHs, Metals and TOC are generally usable and of good quality, with the exceptions and limitations listed below.

The majority of data qualifications for samples covered in this report were made for trace level blank contamination, minor calibration deviations, matrix interferences and duplicate imprecision.

There were a small number of samples that showed severe matrix interference for the analysis of VOCs. There was laboratory blank and LCS contamination for a number of the PAH compounds causing the laboratory to re-extract past the technical holding times.

### 3.0 DATA VALIDATION AND REVIEW METHODOLOGY

This data validation has been performed with reference to the USEPA Office of Solid Waste and Emergency Response (OSWER) National Functional Guidelines for Organic Data Review (USEPA, 1999a), National Functional Guidelines for Inorganic Data Review (USEPA, 2004) and US EPA, Region IV, Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services (USEPA, 1999b).

These USEPA guidelines were written specifically for the Contract Laboratory Program (CLP), and have been modified for the purposes of this data validation where they differ from USEPA Method SW-846 quality control requirements.

AMEC's data validation and review methodology complied with the validation procedures specified in the Quality Assurance Project Plan (QAPP), dated September 2006 (AMEC, 2006). The laboratory's raw analytical data packages were reviewed to assess the criteria outlined in Section 9.2.2 of the QAPP, summarized as follows: chain of custody (COC) compliance; holding time compliance; sensitivity; presence or absence of laboratory contamination as demonstrated by method and field blanks; accuracy and bias as demonstrated by recovery of surrogate spikes, internal standards, blank spikes (BS), matrix spikes (MS); analytical precision as relative percent difference (RPD) of analyte concentration between replicate samples (i.e., laboratory duplicates) or MS and matrix spike duplicates (MSD); sampling precision as RPD of analyte concentration between field duplicates; calibration and instrument performance; and insofar as possible, the degree of conformance to method requirements and good laboratory practices.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all quality control (QC) audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

In accordance with the specifications of Section 9.2.2 of the QAPP, the data review and validation process comprised $10 \%$ full validation of the raw analytical data and $90 \%$ data review based on information provided by the laboratory as summary reporting forms.

### 4.0 EXPLANATION OF DATA QUALITY INDICATORS

Data quality indicators of the review and validation process are defined below. Quality control objectives for these indictors are given in Tables 3-2 through 3-5 and Tables 7-2 through 7-7 of the QAPP.

## Initial and Continuing Calibration

Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing acceptable quantitative data. Continuing calibration ensures accuracy during the course of each analytical run. Compliance requirements have been established for each analytical method and are described below.

## Volatile Organic Compounds

The QAPP-specified average $\mathrm{RF} \geq 0.30$ for SPCCs (chloromethane, 1,1-dichloroethane, 1,1,1,2-tetrachloroethane, chlorobenzene, and bromoform), $\%$ RSD $\leq 30 \%$ for CCCs (vinyl chloride, 1,1-dichloroethene, chloroform, 1,2 dichloropropane, toluene and ethylbenzene). The second source calibration verification should be within the QAPP requirement of $\pm 25 \%$ of the expected value of the associated calibration.

The continuing calibration SPCCs average RF should be $\geq 0.30$ and CCCs $\leq 20 \%$ difference of the expected value.

## Semivolatile Organic Compounds

The QAPP-specified criteria of SPCCs average $\mathrm{RF} \geq 0.050$ and $\% \mathrm{RSD} \leq 30 \%$ for CCCs. The second-source calibration verification should be within the QAPP requirement of $\pm$ $25 \%$ of expected value of the associated calibration.

The continuing calibration SPCCs average RF should be $\geq 0.050$ and CCCs $\leq 20 \%$ difference of the expected value.

## Metals

The correlation coefficient must be $\geq 0.995$. All analytes in the initial calibration verification must be within $10 \%$ of expected value. All analytes in the calibration verification (instrument check standard) should be within $\pm 10 \%$ of expected value.

## TOC

The linear mean RSD must be $\leq 20 \%$ for each analyte. The continuing calibration verification must be within $\pm 10$ of the expected value.

## Blank Samples

Blank samples are aliquots of Ottawa sand that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive
results. One of three types of blanks is employed for this project. Target analytes should not be found in blank samples.

When the concentration detected in the blank is between the method detection limit (MDL) and the method reporting limit (MRL), concentrations in associated samples less than 5 times the concentration detected in the blank and less than the MRL are U qualified at the MRL concentration by AMEC. Sample concentrations above MRL and less than 5 times the concentration detected in the blank are U qualified. Common contaminants such as acetone, methylene chloride and phthalates are $U$ qualified if the concentrations in the associated samples are less than 10 times the concentration detected in the blank. Because negative results for a blank may indicate instrument suppression, if the absolute concentration detected in the blank is greater than the MRL, concentrations in associated samples greater than the MRL but less than 10 times the absolute concentration detected in the blank are J qualified by AMEC.

- Laboratory blanks are aliquots of Ottawa sand that are processed by the laboratory using exactly the same procedures as the field samples. Laboratory blanks are used to monitor for contamination introduced by the laboratory during sample preparation and analysis.
- Rinsate blanks are prepared by passing analyte-free water through or over sample collection equipment and collecting the water in sample containers. Rinsate blanks are analyzed for the analytical suite required for the project. Rinsate blanks are used to monitor for possible sample contamination during the sample collection process and serve as a check on the effectiveness of field decontamination procedures.
- Trip blanks are aliquots of analyte free water that are placed in sample containers at the analytical laboratory and are then sent into the field with the sample containers that are used to collect field samples. Trip blanks are not opened in the field, but accompany the field samples back to the laboratory where they are analyzed as samples. Trip blanks are used to monitor for contamination that result from sample shipping and storage. For the purpose of this project, trip blanks are prepared and analyzed for VOCs only.


## LCS Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), also known as blank spike (BS) and blank spike duplicates (BSD), are aliquots of Ottawa sand that are spiked with the analytes of interest for an analytical method or a representative subset of those analytes. The spiked sand is then processed through the same extraction, concentration, cleanup, and analytical procedures as the samples they accompany. LCS recovery and precision are an indication of the ability of a laboratory to successfully perform an analytical method in an interference-free matrix. The laboratory's LCS control criteria were utilized to assess data quality for this data set.

## MS Recoveries

Matrix spikes (MS) and matrix spike duplicates (MSD) are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are an indication of the ability of a laboratory to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related. The laboratory's MS/MSD control criteria were utilized to assess data quality for this data set.

The chain of custodies followed the QAPP-specified sample id nomenclature; however there was no other indication on the chain as to which sample to use, so the laboratory was unaware. The laboratory picked random samples and performed the MS/MSD analysis, with the exception of 8260. Due to insufficient sample volume an LCS/LCSD was performed in lieu of an MS/MSD for 8260 in order to show laboratory precision.

## Duplicates (Laboratory or Field)

Laboratory duplicates are replicate portions of a single field sample prepared and analyzed by the laboratory. This is used to demonstrate acceptable method precision by the Laboratory at the time or analysis. Field duplicates provide an indication of the reproducibility of the sampling and analysis procedures for a given sample matrix. Field duplicate samples were labeled blindly, so that the laboratory was not aware which sample was submitted in duplicate. Precision of less than $30 \%$ RPD were utilized to assess data quality.

Table 2 is provided with a list of all RPDs.

## Internal Standard Recoveries

Internal standards (IS) are compounds that are added to a sample extract after all preparatory steps are completed and before instrumental analysis. These compounds serve as standards for qualitative analysis using relative retention time and quantitative analysis using relative response factors (RFs). Methods that use IS calibration include requirements for changes in response to the IS relative to the initial calibration.

For USEPA Methods 8260B and 8270C, the IS compounds serve as standards for qualitative analysis using relative retention time and quantitative analysis using relative response factors
(RFs). Methods that use IS calibration include requirements for changes in response to the IS relative to the initial calibration.

IS response must fall between $50 \%$ and $200 \%$ of the response in the initial calibration. Because the area of the IS is used in the denominator of the equation for calculation of results using internal standardization, a response below $50 \%$ may indicate a possible positive bias, and a response above $200 \%$ may indicate a possible negative bias.

For USEPA Method 6020, the IS determines the existence and magnitude of instrument drift and physical interferences. The intensity of the internal standard response is monitored and compared to the intensity of the response for that internal standard in the calibration blank. The percent relative intensity ( $\% \mathrm{RI}$ ) in the sample shall fall within $60-125 \%$ of the response in the calibration blank.

## Surrogate Spike Recoveries

Surrogate spikes are used to evaluate accuracy, method performance, and extraction efficiency in each individual sample. Surrogate compounds are compounds not normally found in environmental samples, but which are similar to target analytes in chemical composition and behavior in the analytical process. The laboratory's surrogate control criteria were utilized to assess data quality for this data set.

## Data Reporting

The laboratory I qualified detected results with concentrations between MRL and MDL. AMEC agrees with the laboratory that these results are quantitative estimates and have therefore qualified these results as J on the data tables.

### 5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

## SDG J0605714

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition or chain of custody (COC) documentation.

## SDG J0605735

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition or chain of custody (COC) documentation.

## SDG J0605780

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition or chain of custody (COC) documentation with the following exception.

- Samples SS007BC, SS074AA, SS074BA, SS015AA and SS015BA were not included on the COC by the field staff but added by the laboratory and appropriately analyzed.


## SDG J0605810

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition but a few COC documentation issues.

- The COC indicated that some of the samples were collected on $11 / 05 / 06$ however that was incorrect because samples were collected 12/05/06. The laboratory reported the appropriate sampling dates.


## SDG J0605839

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition but a number of COC documentation issues.

- The COC indicated that some of the samples were collected on $11 / 06 / 06$; however that is incorrect because samples were collected 12/06/06. The laboratory reported the appropriate sampling dates.
- Sample SS033AA was listed on the COC twice but Sample SS033BA was not listed on the COC. The laboratory updated the COC such that sample SS033BA was sampled at 16:25.


## SDG J0605876

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition or COC documentation except that the sample containers for sample SS0039BB were incorrectly labeled SS0039BD. Seven Trip Blanks were sent to the laboratory but not included on the COC; the lab appropriately analyzed for 8260 analysis.

## SDG J0605879

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition or COC documentation with the following exception.

- Five Trip Blanks were received by the laboratory but were not listed on the COC. The laboratory added them to the COC and analyzed them appropriately.


## SDG J0605890

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition or COC documentation with the following exception.

- Sample SS077DB was received by the laboratory but not on the COC. The laboratory added the sample to the COC and appropriately analyzed the sample.


## SDG J0605919

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition or COC documentation.

## SDG J0605944

The samples were received at the laboratory in good condition and within $4^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ temperature range. There were no anomalies associated with sample receipt condition or COC documentation.

### 6.0 SPECIFIC DATA VALIDATION FINDINGS FOR EACH ANALYTICAL METHOD

Sections 6.1 through 6.5 of this Data Validation Report contain narrative descriptions of data validation findings and data quality limitations.

### 6.1 Volatile Organic Compounds by USEPA Method 8260B

### 6.1.1 Sample Delivery Group (SDG) J0605714

### 6.1.1.1 Holding Times

The samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis for preserved soil samples.

### 6.1.1.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method- and QAPP-specified criteria for ion percent relative abundance.

### 6.1.1.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.1.4 Continuing Calibration

CCV recoveries were within acceptance limits except for acetone (37\%), 1,2,4trichlorobenzene (36\%), 1,2-dibromo-3-chloropropane ( $21 \%$ ) and methyl acetate ( $-22 \%$ ), which all had a $\%$ D greater than the QAPP requirement of $20 \%$.

- AMEC J qualified the acetone results for samples SS087AA and UJ qualified SS059AA, SS059BA, SS060AA, SS060BA, SS073AA, SS073BA, SS085BA, SS085AA, SS089AA, SS089BA, SS090AA, SS090BA and SS090BC.
- AMEC UJ qualified samples SS059AA, SS059BA, SS060AA, SS060BA, SS073AA, SS073BA, SS085BA, SS085AA, SS087AA, SS089AA, SS089BA, SS090AA, SS090BA and SS090BC for 1,2,4-trichlorobenzene and 1,2-dibromo-3-chloropropane.
- AMEC UJ qualified sample SS087BA for methyl acetate.


### 6.1.1.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered within this SDG except as described below:

Methylene chloride and toluene were detected below the MRL at a concentration of $1.2 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.97 \mu \mathrm{~g} / \mathrm{Kg}$, respectively; in the method blank JWG0603830-3.

- AMEC U qualified the detected methylene chloride in samples SS059AA, SS059BA, SS060BA and SS085BA.
- AMEC U qualified the detected toluene in samples SS059BA, SS060AA, SS073BA and SS085BA.

Methylene chloride was detected below the MRL at a concentration of $0.80 \mu \mathrm{~g} / \mathrm{L}$ in method blank JWG0603839-3.

- AMEC U qualified the detected result of $1.5 \mu \mathrm{~g} / \mathrm{L}$ in this sample.


## Trip Blank

A Trip Blank was not supplied to the laboratory with this sample delivery group.

### 6.1.1.6 LCS Recovery

Recoveries were within the laboratory-specified acceptance limits for the LCS with the following exceptions.

The LCS (JWG0603830-1) \% recovery for 1,3-dicholorobenzene was high at $114 \%$, no qualifications were necessary, as all associated samples were non-detect.

The LCSD (JWG0603830-2) \% recovery for acetone was high at 172\%, sample SS087AA has been J qualified due to the potential high bias.

### 6.1.1.7 Field Duplicates

Sample SS090BC was a field duplicate for SS090BA. All analytes were non-detect so data quality could not be assessed.

### 6.1.1.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Affected Samples | IS | Analytes Affected | Notes |
| :--- | :---: | :---: | :--- |
| SS059BA,SS073AA, | 1,4-Dichlorobenzene-d4 | Isopropylbenzene, 1,3- <br> Dichlorobenzene, 1,4- | AMEC UJ qualified the <br> non-detected results for <br> SS073BA,SS085BA, |
|  | Dichlorobenzene, 1,2- <br> Dichlorobenzene, 1,2- <br> possible low bias. |  |  |
| SS085AA,SS089AAS |  | Dibromo-3-chloropropane, <br> 1,2,4-Trichlorobenzene |  |
| S089BA,SS090AASS |  |  |  |
| 090BA, SS090BC |  |  |  |

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| SS073BA SS090BA SS090BC | 1,4-Dichlorobenzene-d4 <br> Chlorobenzene-d5 <br> Fluorobenzene | All in this fraction <br> All in this fraction <br> All in this fraction | AMEC R qualified the nondetected results for SS073BA due to extreme low bias. <br> AMEC UJ qualified the non-detected results |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { SS089AA } \\ & \text { SS089BA } \\ & \text { SS090AA } \end{aligned}$ | 1,4-Dichlorobenzene-d4 <br> Chlorobenzene-d5 | Isopropylbenzene, 1,3- <br> Dichlorobenzene, 1,4- <br> Dichlorobenzene, 1,2- <br> Dichlorobenzene, 1,2- <br> Dibromo-3-chloropropane, <br> 1,2,4-Trichlorobenzene, <br> Methylcyclohexane, cis-1,3- <br> Dichloropropene, MIBK, trans-1,3-Dichloropropene, <br> 1,1,2-Trichloroethane, <br> Toluene, <br> Dibromochloromethane, 2- <br> Hexanone, EDB, PCE, <br> Chlorobenzene, <br> Ethylbenzene, m,p-Xylenes, <br> Bromoform, Styrene, <br> 1,1,2,2-Tetrachloroethane, oXylene | AMEC UJ qualified the non-detected results for these analytes due to possible low bias. |

### 6.1.1.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified limits for VOC analysis with the following exceptions.

4-Bromofluorobenzene was high in the following samples: SS059AA (132\%), SS059BA (144\%), SS060AA (130\%), SS073AA (143\%), SS085BA (150\%), SS085AA (144\%), SS087BA (133\%), SS089AA (142\%), SS089BA (130\%) and SS090AA (135\%).

- AMEC J qualified the $0.71 \mu \mathrm{~g} / \mathrm{L}$ result of tetrachloroethene in sample SS073AA. AMEC J qualified the $0.58 \mu \mathrm{~g} / \mathrm{L}$ result of toluene and the $0.51 \mu \mathrm{~g} / \mathrm{L}$ result of $1,4-$ dichlorobenzene in SS087BA due to the high surrogate recovery.

Toluene-d ${ }_{8}$ was also high in the following samples: SS059BA (140\%), SS073AA (147\%), SS085BA (147\%), SS085AA (139\%), SS087BA (140\%) and SS089AA (140\%). All the associated compounds for these samples were non-detect, so no qualifications were made.

### 6.1.2 SDG J0605735

### 6.1.2.1 Holding Times

The samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis for preserved soil samples.

### 6.1.2.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.1.2.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.2.4 Continuing Calibration

CCV recoveries were within acceptance limits except for methyl acetate ( $-22 \%$ ), which all had a $\%$ D greater than the QAPP requirement of $20 \%$.

- AMEC UJ qualified samples SS0079AA, SS079BA, SS067AA, SS067BA, SS067BB, SS069AA and SS069BA for methyl acetate.


### 6.1.2.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered in this report except as described below:

Methylene chloride was detected below the MRL at a concentration of $0.80 \mu \mathrm{~g} / \mathrm{Kg}$; in the method blank JWG0603839-3.

- AMEC U qualified the detected methylene chloride in samples SS079AA, SS079BA, SS067AA, SS067BA and SS067BB.

Acetone and methylene chloride were detected below the MRL at a concentration of $3.0 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.99 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in the method blank JWG0603887-3.

- AMEC U qualified the detected acetone and methylene chloride results of samples SS092AA, SS093AA, SS083BA, SS019AA, SS019BA, SS019BB, SS071AA, SS071BA, SS042BA, SS042BB and SS023AA.
- AMEC U qualified the detected methylene chloride results of samples SS083AA, SS081AA, SS081BA, SS054AA, SS054AB, SS054BA and SS042AA.

Acetone and methylene chloride were detected below the MRL at a concentration of $2.8 \mu \mathrm{~g} / \mathrm{Kg}$ and $1.0 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0603889-3.

- AMEC U qualified the detected acetone and methylene chloride results in sample SS040BA.
- AMEC U qualified the detected methylene chloride results of samples SS023BA, SS023BB and SS040AA.


## Trip Blank

A Trip Blank was not supplied to the laboratory with this sample delivery group.

### 6.1.2.6 LCS Recovery

Recoveries were within the laboratory-specified acceptance limits for the LCS.

### 6.1.2.7 Field Duplicates

Sample SS067BB was submitted as a field duplicate for SS067BA. All analytes were nondetect so data quality could not be assessed.

Sample SS019BB was submitted as a field duplicate for SS019BA. All analytes were nondetect so data quality could not be assessed.

Sample SS054AB was submitted as a field duplicate for SS054AA. Acetone was detected at low levels and had an elevated RDP at $80 \%$; AMEC J qualified the acetone result in both samples.

Sample SS042BB was submitted as a field duplicate for SS042BA. All analytes were nondetect so data quality could not be assessed.

Sample SS023BB was submitted as a field duplicate for SS023BA. All analytes were nondetect so data quality could not be assessed.

### 6.1.2.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Affected Samples | IS | Analytes Affected | Notes |
| :--- | :---: | :---: | :--- |
| SS040AA,SS040BA, | 1,4-Dichlorobenzene-d4 | Isopropylbenzene, 1,3- | AMEC UJ qualified the |
| SS092AA,SS092BA, |  | Dichlorobenzene, 1,4- | non-detected results for <br> these analytes due to <br> SS054AA,SS054AB |
| Dichlorobenzene, 1,2- |  |  |  |
| SS054BA,SS071AA |  | Dichlorobenzene, 1,2-Dibromo- | possible low bias. |
| SS071BA,SS042AA |  | Trichlorobene, 1,2,4- |  |
| SS067AA,SS067BA |  |  |  |
| SS067BB |  |  |  |

### 6.1.2.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified limits for VOC analysis with the following exceptions.

4-Bromofluorobenzene was high in the following samples: SS079AA (130\%), SS092AA (131\%), SS092BA (133\%), SS054AA (137\%), SS071AA (130\%), SS042AA (136\%), SS040AA (147\%), SS040BA (133\%), SS067AA (154\%), SS067BA (151\%), SS067BB (142\%) and $\operatorname{SS} 054 \mathrm{AB}(144 \%)$. All compounds associated with this surrogate were non-detect so no qualifications were made.

Toluene-d ${ }_{8}$ was also high in the following samples: SS067AA (147\%), SS067BA (151\%), SS067BB (141\%) and SS054A8 (139\%). Toluene was J qualified due to the high surrogate in sample SS067AA. All the other associated compounds for these samples were non-detect, so no qualifications were necessary.

### 6.1.3 SDG J0605780

### 6.1.3.1 Holding Times

The samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis for preserved soil samples.

### 6.1.3.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.1.3.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.3.4 Continuing Calibration

CCV recoveries were within acceptance limits except for bromomethane (30\%) which had a $\% \mathrm{D}$ greater than the QAPP requirement of $20 \%$.

- AMEC UJ qualified the non-detected results for samples SS014BA, SS018AA, SS018BA, SS017AA, SS017BA, SS016AA, SS016BA, SS007AA, SS007BA, SS007BC, SS074AA, SS074BA, SS015AA and SS015BA.


### 6.1.3.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered in this report except as described below:

Acetone and methylene chloride were detected below the MRL at a concentration of $2.8 \mu \mathrm{~g} / \mathrm{Kg}$ and $1.0 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in the method blank JWG0603889-3.

- AMEC U qualified the detected acetone results of samples SS050AA, SS050BA, SS025AA, SS034AA, SS034BA, SS013BA and SS012AC.
- AMEC U qualified the detected methylene chloride results of samples SS050AA, SS050BA, SS051AA, SS051BA, SS025AA, SS025BA, SS027AA, SS027BA, SS034AA, SS034BA, SS013AA, SS012AC and SS014AA.

Methylene chloride was detected below the MRL at a concentration of $2.0 \mu \mathrm{~g} / \mathrm{Kg}$ in the method blank JWG0603891-3.

- AMEC U qualified the detected methylene chloride results of samples SS014BC, SS018AA, SS018BA, SS017AA, SS017BA, SS016AA, SS016BA, SS007AA, SS007BA, SS007BC, SS074AA, SS074BA, SS015AA and SS015BA.

Methylene chloride and 1,2,4-trichlorobenzene were detected below the MRL at a concentration of $0.098 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.14 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0603968-2.

- AMEC U qualified the detected methylene chloride result of sample SS012BA.


## Trip Blank

A Trip Blank was not supplied to the laboratory with this sample delivery group.

### 6.1.3.6 LCS Recovery

Recoveries were within the laboratory-specified acceptance limits for the LCS with the following exceptions.

The LCS (JWG0603830-1) \% recovery for 1,3-dicholorobenzene was high at $114 \%$, no qualifications were necessary, as all associated samples were non-detect.

The LCSD (JWG0603830-2) \% recovery for acetone was high at $172 \%$, sample SS087AA has been J qualified due to the potential high bias.

### 6.1.3.7 Field Duplicates

Sample SS090BC was a field duplicate for SS090BA. All analytes were non-detect so data quality could not be assessed.

### 6.1.3.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Affected Samples | IS | Analytes Affected | Notes |
| :---: | :---: | :---: | :---: |

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| $\begin{aligned} & \text { SS059BA,SS073AA,SS073BA, } \\ & \text { SS085BA,SS085AA,SS089AA } \\ & \text { SS089BA,SS090AA, SS090BA, } \\ & \text { SS090BC } \end{aligned}$ | 1,4-Dichlorobenzened4 | Isopropylbenzene, 1,3Dichlorobenzene, 1,4Dichlorobenzene, 1,2- <br> Dichlorobenzene, 1,2-Dibromo-3chloropropane, 1,2,4Trichlorobenzene | AMEC UJ qualified the nondetected results for these analytes due to possible low bias. |
| :---: | :---: | :---: | :---: |
| SS073BA <br> SS090BA <br> SS090BC | 1,4-Dichlorobenzened4 <br> Chlorobenzene-d5 <br> Fluorobenzene | All in this fraction <br> All in this fraction <br> All in this fraction | AMEC R qualified the nondetected results for SS073BA due to extreme low bias. <br> AMEC UJ qualified the nondetected results |
| $\begin{aligned} & \text { SS089AA } \\ & \text { SS089BA } \\ & \text { SS090AA } \end{aligned}$ | 1,4-Dichlorobenzene- <br> d4 <br> Chlorobenzene-d5 | Isopropylbenzene, 1,3- <br> Dichlorobenzene, 1,4- <br> Dichlorobenzene, 1,2- <br> Dichlorobenzene, 1,2-Dibromo-3- <br> chloropropane, 1,2,4- <br> Trichlorobenzene, <br> Methylcyclohexane, cis-1,3- <br> Dichloropropene, MIBK, trans- <br> 1,3-Dichloropropene, 1,1,2- <br> Trichloroethane, Toluene, <br> Dibromochloromethane, 2- <br> Hexanone, EDB, PCE, <br> Chlorobenzene, Ethylbenzene, m,p-Xylenes, Bromoform, Styrene, 1,1,2,2- <br> Tetrachloroethane, o-Xylene | AMEC UJ qualified the nondetected results for these analytes due to possible low bias. |

### 6.1.3.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified limits for VOC analysis with the following exceptions.

4-Bromofluorobenzene was high in the following samples: SS059AA (132\%), SS059BA (144\%), SS060AA (130\%), SS073AA (143\%), SS085BA (150\%), SS085AA (144\%), SS087BA ( $133 \%$ ), SS089AA (142\%), SS089BA (130\%) and SS090AA (135\%).

- AMEC J qualified the $0.71 \mu \mathrm{~g} / \mathrm{L}$ result of tetrachloroethene in sample SS073AA. AMEC J qualified the $0.58 \mu \mathrm{~g} / \mathrm{L}$ result of toluene and the $0.51 \mu \mathrm{~g} / \mathrm{L}$ result of $1,4-$ dichlorobenzene in SS087BA due to the high surrogate recovery.

Toluene-d ${ }_{8}$ was also high in the following samples: SS059BA (140\%), SS073AA (147\%), SS085BA (147\%), SS085AA (139\%), SS087BA (140\%) and SS089AA (140\%). All the associated compounds for these samples were non-detect, so no qualifications were necessary.

### 6.1.4 SDG J0605810

### 6.1.4.1 Holding Times

The samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis for preserved soil samples.

### 6.1.4.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.1.4.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.4.4 Continuing Calibration

CCV recoveries were within acceptance limits except for bromomethane ( $29 \%, 28 \%, 30 \%$, and $31 \%$ ), dichlorodifluoromethane ( $21 \%$ ) and methylcyclohexane ( $22 \%$ ) which all had a \%D greater than the QAPP requirement of $20 \%$.

- AMEC UJ qualified the non-detected bromomethane results for SS008AA, SS008BA, SS009AA, SS009BA, SS006AA, SS006BA, SS004AA, SS004BA, SS004BB, SS002AA, SS002AC, SS002BA, SS011AA, SS011BA, SS058AA, SS058BA, SS037AA, SS037BA, SS043AA, SS043BB, SS044AA, SS044BA, SS076AA, SS076BA, SS010AA, SS010AB, SS010BA, SS021AA and SS021BA.
- AMEC UJ qualified the non-detected results for dichlorodifluoromethane and methylcyclohexane in samples SS004BB, SS002BA, SS011AA and SS011BA.


### 6.1.4.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered in this report except as described below:

Methylene chloride and acetone were detected below the MRL at a concentration of $1.3 \mu \mathrm{~g} / \mathrm{Kg}$, and $2.6 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0603901-3.

- AMEC U qualified the detected methylene chloride concentration in samples SS008AA, SS008BA, SS009BA, SS006AA, SS006BA, SS004AA, SS002AA, SS002AC, SS058AA, SS058BA, SS037AA, SS037BA, SS043AA and SS043BA.
- AMEC U qualified the detected acetone concentration in samples SS008BA, SS009AA, SS009BA, SS006AA, SS004AA, SS002AA, SS002AC and SS058BA.

Acetone and methylene chloride were detected below the MRL at a concentration of $4.6 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.81 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0603903-3.

- AMEC U qualified the detected acetone result of sample SS076BA.
- AMEC U qualified the detected methylene chloride result of samples SS043BB, SS044AA, SS044BA and SS076BA.

Acetone, methylene chloride and 1,2,4-trichlorobenzene were detected below the MRL at a concentration of $4.7 \mu \mathrm{~g} / \mathrm{Kg}, 0.86 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.46 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0603926-8.

- AMEC U qualified the detected acetone result of samples SS010AB and SS021AA.
- AMEC U qualified the detected methylene chloride result of samples SS021AA and SS021BA.

Acetone and methylene chloride were detected below the MRL at a concentration of $3.2 \mu \mathrm{~g} / \mathrm{Kg}$ and $37 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in the method blank JWG0603952-3.

- AMEC U qualified the detected acetone result of samples SS004BB and SS011AA.
- AMEC U qualified the detected methylene chloride result of samples SS004BB, SS002BA, SS011AA and SS011BA.


## Trip Blank

A Trip Blank was not supplied to the laboratory with this sample delivery group.

### 6.1.4.6 LCS Recovery

Recoveries were within the laboratory-specified acceptance limits for the LCS with the following exceptions.

The LCSD (JWG0603926-7) \% recovery for methylcyclohexane was high at $133 \%$, no qualifications were necessary, as all associated samples were non-detect.

The LCS (JWG0603952-1) and LCSD (JWG0603952-2) \% recovery for methylene chloride was high at $171 \%$ and $447 \%$ respectively, no additional qualifications were necessary, as all associated samples were already $U$ qualified due to blank contamination.

The LCS (JWG0603952-1) \% recovery for methylcyclohexane was high at $133 \%$, no qualifications were necessary, as all associated samples were non-detect.

### 6.1.4.7 Field Duplicates

Sample SS004BB was submitted as a field duplicate for SS004BA. All analytes were nondetect so data quality could not be assessed.

Sample SS002AC was submitted as a field duplicate for SS002AA. All analytes were nondetect so data quality could not be assessed.

Sample SS010AB was submitted as a field duplicate for SS010AA. All analytes were nondetect so data quality could not be assessed.

### 6.1.4.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Affected Samples | IS | Analytes Affected | Notes |
| :---: | :---: | :---: | :---: |

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| SS043BB,SS044AA,SS044BA, SS076BA, SS010AA,SS010AB, SS010BA,SS021AA,SS021BA, SS002AA, SS067AC,SS058AA SS058BA,SS037AA, SS043BA | 1,4-Dichlorobenzene-d4 | Isopropylbenzene, 1,3Dichlorobenzene, 1,4Dichlorobenzene, 1,2Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene | AMEC UJ qualified the non-detected results for these analytes due to possible low bias. |
| :---: | :---: | :---: | :---: |
| SS010AA | 1,4-Dichlorobenzene-d4 Chlorobenzene-d5 | Isopropylbenzene, 1,3Dichlorobenzene, 1,4Dichlorobenzene, 1,2Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Methylcyclohexane, cis-1,3-Dichloropropene, MIBK, trans-1,3- <br> Dichloropropene, 1,1,2Trichloroethane, Toluene, Dibromochloromethane, 2Hexanone, EDB, PCE, Chlorobenzene, Ethylbenzene, m,pXylenes, Bromoform, Styrene, 1,1,2,2- <br> Tetrachloroethane, oXylene | AMEC UJ qualified the non-detected results for these analytes due to possible low bias. |

### 6.1.4.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified limits for VOC analysis with the following exceptions.

4-Bromofluorobenzene was high in the following samples: SS002AA (130\%), SS002AC (134\%), SS058AA (138\%), SS058BA (132\%), SS043BA (131\%), SS043BB (148\%), SS044AA (143\%), SS044BA (135\%), SS010AB (131\%), SS021AA (140\%) and SS010AA ( $137 \%$ ). All compounds associated with this surrogate were non-detect so no qualifications were necessary.

Toluene- $\mathrm{d}_{8}$ was high in SS010AA (137\%). All the associated compounds for this sample were non-detect, so no qualifications were necessary.

### 6.1.5 SDG J0605839

### 6.1.5.1 Holding Times

The samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis for preserved soil samples.

### 6.1.5.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.1.5.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.5.4 Continuing Calibration

CCV recoveries were within acceptance limits except for Bromomethane, which was high in all three CCVs and methylcyclohexane. Both analytes had a \%D greater than the QAPP requirement of $20 \%$.

- AMEC UJ qualified the non-detected results for bromomethane in samples SS036AA, SS036AC, SS036BA, SS036CA, SS036DA, SS048AA, SS048BA, SS048BB, SS048CA, SS048DA, SS095AA, SS095BA, SS095CA, SS095DA, SS057AA, SS057BA, SS057CA, SS057CB, SS057DA, SS080AA, SS080BA, SS080BB, SS080CA, SS080DA, SS035AA, SS035BA, SS035CA, SS035DA, SS033AA, SS033BA, SS032AA and SS032BA.
- AMEC UJ qualified methylcyclohexane results for SS036BA and SS080CA.


### 6.1.5.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered in this SDG except as described below:

Acetone, methylene chloride and 1,2,4-trichlorobenzene were detected below the MRL at a concentration of $4.7 \mu \mathrm{~g} / \mathrm{Kg}, 0.86 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.46 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0603926-8.

- AMEC U qualified the detected acetone in samples SS036AA, SS036AC, SS036CA, SS036DA, SS048AA, SS048DA, SS095AA and SS095CA.
- AMEC U qualified the detected methylene chloride in samples SS036AA, SS036CA, SS036DA, SS048BA, SS048BB and SS095BA.

Acetone and methylene chloride were detected below the MRL at a concentration of $5.4 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.80 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0603928-3.

- AMEC U qualified the detected acetone in samples SS057AA, SS057BA, SS057CA, SS057CB, SS057DA, SS080AA, SS080BB, SS080DA, SS035AA, SS035BA, SS035CA, SS035DA, SS033AA, SS033BA and SS032AA.
- AMEC U qualified the detected methylene chloride in samples SS057CB, SS080BA, SS080BB, SS080DA, SS035BA, SS035CA and SS032BA.

Acetone, methylene chloride and toluene were detected below the MRL at a concentration of $3.6 \mu \mathrm{~g} / \mathrm{Kg}, 0.77 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.52 \mu \mathrm{~g} / \mathrm{Kg}$, respectively in method blank JWG0603960-3.

- AMEC U qualified the detected methylene chloride in samples SS036BA and SS080CA
- AMEC U qualified the detected acetone in sample SS080CA.


## Trip Blank

A Trip Blank was not supplied to the laboratory with this sample delivery group.

### 6.1.5.6 LCS Recovery

Recoveries were within the laboratory-specified acceptance limits for the LCS with the following exceptions.

The LCSD (JWG0603926-7) \% recovery for methylcyclohexane was high at $133 \%$, no qualifications were necessary, as all associated samples were non-detect.

The LCS (JWG0603960-1) \% recovery for bromomethane and methylcyclohexane were high at $142 \%$ and $132 \%$ respectively, all associated samples were non-detect so no qualifications were made.

### 6.1.5.7 Field Duplicates

Sample SS036AC was submitted as a field duplicate for SS036AA. All analytes were nondetect so data quality could not be assessed.

Sample SS048BB was submitted as a field duplicate for SS048BA. All analytes were nondetect except for acetone which had an elevated RPD or $53 \%$. AMEC J qualified the acetone result in both samples.

Sample SS0057CB was submitted as a field duplicate for SS057CA. All analytes were nondetect so data quality could not be assessed.

Sample SS080BB was submitted as a field duplicate for SS080BA. All analytes were nondetect so data quality could not be assessed.

### 6.1.5.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Affected <br> Samples | IS | Analytes Affected | Notes |
| :--- | :---: | :---: | :--- |
| SS095AA, | 1,4-Dichlorobenzene-d4 | Isopropylbenzene, 1,3- <br> Dichlorobenzene, 1,4- <br> Dichlorobenzene, 1,2- <br> SS057AA, | AMEC UJ qualified the non- <br> detected results for all these <br> analytes due to possible low bias. <br> SS080AA, |
| SS035AA, |  | Dichlorobenzene, 1,2-Dibromo-3- <br> chloropropane, 1,2,4- <br> Trichlorobenzene |  |
| SS032AA |  |  |  |

### 6.1.5.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified limits for VOC analysis with the following exceptions.

4-Bromofluorobenzene was high in samples SS057AA (133\%) and SS032AA (130\%). All associated compounds were non-detect so no qualifications were necessary.

### 6.1.6 SDG J0605876

### 6.1.6.1 Holding Times

All samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis of preserved soil samples.

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### 6.1.6.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.1.6.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.6.4 Continuing Calibration

CCV recoveries for VOC analysis of the samples covered in this report were within acceptance limits, except as tabulated below:

| CCAL ID | Analytes with Recoveries Outside Acceptance Limits | Effects on Data Usability |
| :---: | :---: | :---: |
| JWG0063931-2 <br> analyzed on <br> December 12, 2006 | Dichlorodifluoromethane (74\%) Bromomethane (128\%) | AMEC UJ qualified the non-detected dichlorodifluoromethane results from samples SS097AA, SS097BA, SS097CA, SS097DA, SS001BA, SS001CA, SS001DA, SS038AA, SS038AC, SS038BA, SS038CA, SS038DA, SS038DB, SS039AA, SS039BA, SS039BB, SS039CA, SS039DA, and SS029AA because of possible low bias in the analytical results. |
|  |  | The bromomethane recovery was high but not detected in the associated samples. Data usability is not adversely affected by the high bias. |
| JWG0603933-2 <br> analyzed on <br> December 12, 2006 | Dichlorodifluoromethane (70\%) Bromomethane (124\%) Acetone (121\%) | AMEC UJ qualified the non-detected dichlorodifluoromethane results from samples SS029BA, SS029CA, SS029DA, SS096AA, SS096BA, SS096CA, SS096DA, SS028AA, SS028AB, SS028BA, SS028CA, SS028DA, SS028DC, SS072AA, SS072BA, SS072CA, SS072CC, SS072DA, SS082AA, and SS082BA because of possible low bias in the analytical results. |
|  |  | The bromomethane recovery was high but not detected in the associated samples. Data usability is not adversely affected by the high bias. |
|  |  | AMEC previously U qualified the detected acetone results from samples SS029BA, SS029CA, SS029DA, SS096AA, SS096BA, SS096CA, SS096DA, SS028AA, SS028AB, SS028BA, SS028CA, SS028DA, SS028DC, SS072BA, SS072CA, SS072CC, SS072DA, SS082AA, and SS082BA. Further qualification is not required. |
| JWG06063951-2 <br> analyzed on <br> December 11, 2006 | Dichlorodifluoromethane (72\%) | AMEC UJ qualified the non-detected dichlorodifluoromethane results from samples SS028BA, SS082CA, SS082DA, SS098AA, SS098BA, SS098CA, SS098DA, SS099AA, SS099BA, SS099CA, SS099DA, SS084AA, SS084CA, SS084DA and SS062AA because of possible low bias in the analytical results. |
|  |  |  |
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| CCAL ID | Analytes with Recoveries <br> Outside Acceptance Limits | Effects on Data Usability |
| :--- | :---: | :--- |
| JWG06063953-2 <br> analyzed on <br> December 11, 2006 | Dichlorodifluoromethane (122\%) <br> Bromomethane (132\%) <br> Methylcyclohexane (122\%) | The recoveries were high but these analytes were not <br> detected in the associated samples. Data usability is not <br> adversely affected by the high bias. |
| JWG06063961-2 <br> analyzed on <br> December 12, 2006 | Dichlorodifluoromethane (122\%) <br> Bromomethane (136\%) <br> Methylcyclohexane (126\%) | The recoveries were high but these analytes were not <br> detected in the associated samples. Data usability is not <br> adversely affected by the high bias. |

### 6.1.6.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples in this SDG except as described below.

| Blank ID | Analyte Concentrations ( $\mu \mathrm{g} / \mathrm{Kg}$ ) | Effects on Data Usability |
| :---: | :---: | :---: |
| JWG0603930-3 | Acetone (44)Methylene Chloride (1.5)1,2,4-Trichlorobenzene (0.38) | AMEC U qualified the detected acetone results from samples SS097AA, SS097BA, SS097CA, SS097DA, SS001BA, SS001CA, SS001DA, SS038AA, SS038AC, SS038BA, SS038CA, SS038DA, SS038DB, SS039AA, SS039BA, SS039BB, SS039CA, SS039DA and SS029AA. |
|  |  | AMEC U qualified the detected methylene chloride results from samples SS097AA, SS097BA, SS097DA, SS001BA, SS001CA, SS001DA, SS038AA, SS038AC, SS038CA, and SS038DB. |
| JWG0603932-3 | Acetone (33) <br> Methylene Chloride (1.1) | AMEC U qualified the detected acetone results from samples SS029BA, SS029CA, SS029DA, SS096BA, SS096CA, SS096DA, SS028AA, SS028AB, SS028CA, SS028DA, SS028DC, SS072BA, SS072CA, SS072CC, SS082AA, and SS082BA. |
|  |  | AMEC U qualified the detected methylene chloride results from samples SS096AA and SS072BA. |
| JWG0603950-3 | Acetone (4.5)Methylene Chloride (2.2)Toluene (0.66) | AMEC U qualified the detected acetone results from samples SS028BA, SS098AA, SS098BA, SS098CA, SS098DA, SS099AA, SS099BA, SS099DA, SS084CA and SS084DA. |
|  |  | AMEC U qualified the detected methylene chloride results from samples SS028BA, SS082DA, SS098BA, SS098CA, SS099AA, SS099BA, SS099CA, SS099DA, SS084AA, SS084CA, SS084DA and SS062AA. |
| JWG0603952-3 | Acetone (3.2) <br> Methylene Chloride (37) | AMEC U qualified the detected acetone results from samples SS062CA, SS062CC, SS062DA, and SS064CA. |
|  |  | AMEC U qualified the detected methylene chloride results from samples SS064AA and SS064CA. |
| JWG0603960-3 | Acetone (3.6) Methylene Chloride (0.77) | AMEC U qualified the detected acetone from samples SS001AA, SS072DA and SS064DA. |


| Blank ID | Analyte Concentrations ( $\boldsymbol{\mu g} / \mathbf{K g})$ | Effects on Data Usability |
| :---: | :---: | :--- |
|  | Toluene (0.52) | AMEC U qualified the detected methylene chloride results <br> from samples SS001AA, SS072DA, SS084BA, SS062BA <br> and SS064DA. |

## Trip Blanks

VOCs were not detected in the trip blanks associated with the samples covered in this SDG expect as tabulated below.

| Sample ID | Analyte Concentrations ( $\mu \mathbf{g} / \mathbf{L}$ ) | Effects on Data Usability |
| :---: | :---: | :---: |
| Trip Blank 1 | Acetone (4.2) <br> Methylene Chloride (0.65) | Similar or higher concentrations for acetone and <br> methylene chloride were observed in associated method <br> blanks. AMEC previously U qualified associated <br> samples based on method blank contamination. Further <br> qualification is not warranted. |
| Trip Blank 2 | Acetone (5.5) <br> Methylene Chloride (0.77) |  |
| Trip Blank 3 | Methylene Chloride (0.51) |  |

### 6.1.6.6 LCS/LCSD Recovery

Recoveries were within the laboratory-established acceptance limits for all LCSs associated with samples in this SGD, except as tabulated below.

| LCS ID | Analytes with recoveries outside acceptance limits (\%) | Effects on Data Usability |
| :---: | :---: | :---: |
| JWG0604079-1/2 | $\begin{aligned} & \text { 1,1,2-Trichloroethane }(116 \%) \\ & \text { 1,2-Dibromoethane }(119 \% / 118 \%) \end{aligned}$ | The recoveries were high and these analytes were not detected in the associated samples. Data usability is not adversely affected by the high biases. |
| JWG0603930-1/2 | Acetone (156\%) | AMEC previously U qualified the detected acetone results from samples SS097AA, SS097BA, SS097CA, SS097DA, SS001BA, SS001CA, SS001DA, SS038AA, SS038AC, SS038BA, SS038CA, SS038DA, SS038DB, SS039AA, SS039BA, SS039BB, SS039CA, SS039DA and SS029AA because of blank contamination. Further qualification is not required. |
| JWG0603932-1/2 | Acetone (149\%/154\%) | AMEC previously U qualified the detected acetone results from samples SS029BA, SS029CA, SS029DA, SS096BA, SS096CA, SS096DA, |

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| LCS ID | Analytes with recoveries outside <br> acceptance limits (\%) | Effects on Data Usability |
| :--- | :---: | :--- |
|  |  | SS028AA, SS028AB, SS028CA, SS028DA, <br> SS028DC, SS072BA, SS072CA, SS072CC, <br> SS072DA, SS082AA and SS082BA because of <br> blank contamination. Further qualification is not <br> required. |
| JWG0603950-1/2 | Methylene Chloride (135\%) | AMEC previously U qualified the detected <br> methylene chloride results from samples SS028BA, <br> SS082DA, SS098BA, SS098CA, SS099AA, <br> SS099BA, SS099CA, SS099DA, SS084AA, <br> SS084CA, SS084DA and SS062AA because of <br> blank contamination. Further qualification is not <br> required. |
| JWG0603951-1/2 | Methylene Chloride (171\%/447\%) | AMEC previously U qualified the detected <br> methylene chloride results from samples SS064AA <br> and SS064CA because of blank contamination. |
| Further qualification is not required. |  |  |, | The recovery was high but not detected in the |
| :--- |
| associated samples. Data usability is not adversely |
| affected by the high bias. |

### 6.1.6.7 Field Duplicates

Sample SS038DB was submitted as a field duplicate for SS038DA. Acetone was the only analyte detected in both samples and had an RPD $\leq 30 \%$.

Sample SS039BB was submitted as a field duplicate for SS039BA. AMEC has already U qualified the acetone result in both samples so no further qualifications are necessary.

Sample SS028AB was submitted as a field duplicate for SS028AA. AMEC has already U qualified the acetone result in both samples so no further qualifications are necessary.

### 6.1.6.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Sample ID | Internal Standard with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS097AA | 1,4-Dichlorobenzene-d ${ }_{4}$ | The recoveries were low and associated analytes were not <br> SS096AA <br> SS0cted in the sample. Because low internal standard |
| SS028DA |  | recoveries indicated a possible high bias on the analytical |


| Sample ID | Internal Standard with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :--- | :--- |
| SS028DC |  | results, data usability is not adversely affected by the low |
| SS072AA |  | internal standard recoveries. |
| SS082AA |  |  |
| SS082BA |  |  |
| SS062AA |  |  |

### 6.1.6.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-established limits for VOC analysis of the samples covered in this SDG, except as tabulated below.

| Sample ID | Surrogates with recoveries outside acceptance limits | Effects on Data Usability |
| :---: | :---: | :---: |
| Trip Blank 1 Trip Blank 2 | Tolune-d ${ }_{8}$ (124\%) | The recoveries were high and associated analytes were not detected in the sample. Data usability is not adversely affected by the high biases. |
| Trip Blank 3 Trip Blank 5 Trip Blank 7 | Tolune-d ${ }_{8}(122 \%)$ |  |
| Trip Blank 4 | Tolune- $\mathrm{d}_{8}(121 \%)$ |  |
| Trip Blank 6 | Tolune-d ${ }_{8}$ (123\%) |  |
| SS097AA | 4-Bromofluorobenzene (135\%) |  |
| SS096AA | 4-Bromofluorobenzene (136\%) |  |
| SS028DA | 4-Bromofluorobenzene (157\%) |  |
| SS028DC | 4-Bromofluorobenzene (138\%) |  |
| SS072AA | 4-Bromofluorobenzene (135\%) |  |
| SS082BA | 4-Bromofluorobenzene (132\%) | AMEC J qualified the detected ethylbenzene, styrene, o-xylene, and m\&p-xylenes results from this sample because of possible high bias in the analytical results. |

### 6.1.7 SDG J0605879

### 6.1.7.1 Holding Times

The samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis for preserved soil samples.

### 6.1.7.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.1.7.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.7.4 Continuing Calibration

CCV recoveries were within acceptance limits except for bromomethane (49\%), dibromochloromethane ( $24 \%$ ) and bromoform ( $31 \%$ ) which all had a \%D greater than the QAPP requirement of $20 \%$.

- AMEC UJ qualified the bromomethane results for samples SS100AA, SS100BA, SS100CA, SS100DA, SS100DB, SS066AA, SS066AB, SS066BA, SS066CA, SS066DC, SS005AA, SS005BA, SS005CA, SS005DA, SS003AA, SS003BA, SS003CA, SS003CB, SS003DA and SS066DA.
- AMEC UJ qualified the dibromochloromethane and bromoform in samples SS100DA and SS100DB.


### 6.1.7.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered in this report except as described below:
$1,2,4-$ Trichlorobenzene was detected below the MRL at a concentration of $0.88 \mu \mathrm{~g} / \mathrm{Kg}$ in method blank JWG0604019-4; all samples were non-detect so data usability was not affected.

Acetone, methylene chloride and $\mathrm{m}, \mathrm{p}$-xylenes were detected below the MRL at a concentration of $2.5 \mu \mathrm{~g} / \mathrm{Kg}, 1.8 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.87 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0604044-3.

- AMEC U qualified the detected methylene chloride for samples SS100AA, SS100BA, SS100CA, SS100DA, SS100DB, SS066AA, SS066AB, SS066BA, SS066CA, SS066DA, SS066DC, SS005AA, SS005BA, SS005CA, SS005DA, SS003AA, SS003BA, SS003CA, SS003CB and SS003DA.
- AMEC U qualified the detected acetone for samples SS066CA, SS066DA, SS066DC, SS005BA, SS005CA, SS005DA, SS003AA, SS003CA, SS003CB and SS003DA.

Acetone and methylene chloride were detected below the MRL at a concentration of $2.7 \mu \mathrm{~g} / \mathrm{Kg}$ and $2.4 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0604046-3.

- AMEC U qualified the detected methylene chloride for samples SS086BA, SS086BB, SS088AA, SS088BA, SS091AA, SS091BA, SS075AA, SS075BA, SS077AA, SS077BA, SS049AA, SS049BA, SS052AA, SS052BA, SS068AA and SS068BA.
- AMEC U qualified the detected acetone for samples SS091AA, SS075BA, SS077AA, SS049AA, SS049BA, SS052AA and SS068BA.

Methylene Chloride, ethylbenzene, m,p-xylenes and 1,2,4-trichlorobenzene were detected below the MRL at a concentration of $1.4 \mu \mathrm{~g} / \mathrm{Kg}, 0.48 \mu \mathrm{~g} / \mathrm{Kg}, 1.5 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.45 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0604058-3.

- AMEC U qualified the detected methylene chloride for sample SS086AA.


## Trip Blank

VOCs were not detected in the trip blanks associated with this SDG except as described below.

| Sample ID | Analyte Concentrations <br> $(\boldsymbol{\mu g} / \mathbf{L})$ | Effects on Data Usability |
| :---: | :---: | :--- |
| Trip Blank 1 | Acetone (3.3) | AMEC U qualified detected Acetone results in SS100AA, <br> SS100BA, SS066AA, SS066AB, SS066BA, SS066CA, |
| Trip Blank 2 | Acetone (4.3) | S066DA, SS066DC, SS005BA, SS003AA, SS003BA, |
| SS003CA, SS003DA, SS086AA, SS075BA, SS077AA, |  |  |
| Srip Blank 3 | SS049BA and SS068BA. |  |

### 6.1.7.6 LCS Recovery

Recoveries were within the laboratory-specified acceptance limits for the LCSs with the following exceptions.

The LCS (JWG0604019-3) \% recovery was low for dichlorodifluoromethane (59\%) and bromomethane (73\%). AMEC UJ qualified the non-detected results in Trip Blank 1, Trip Blank 2, Trip Blank 3, Trip Blank 4 and Trip Blank 5.

The LCS and LCSD (JWG0604044-1, -2) \% recoveries for bromomethane were high at $162 \%$ and $161 \%$ respectively. All the associated samples were non-detect so no qualifications were necessary.

The LCS (JWG0604044-1) \% recovery was low for 2-hexanone (77\%). AMEC UJ qualified the non-detected results in samples SS100AA, SS100BA, SS100CA, SS100DA, SS100DB, SS066AA, SS066AB, SS066BA, SS066CA, SS066DA, SS066DC, SS005AA, SS005BA, SS005CA, SS005DA, SS003AA, SS003BA, SS003CA, SS003CB and SS003DA.

The LCS and LCSD (JWG0604100-1, -2) \% recoveries were low for dichlorodifluoromethane ( $54 / 49 \%$ ). Carbon disulfide was low in the LCSD at $70 \%$. Cyclohexane was low in the LCSD at $65 \%$. No qualifications were necessary as these compounds were not reported from this analytical run.

### 6.1.7. $\quad$ Field Duplicates

Sample SS100DB was submitted as a field duplicate for SS100DA. The RPDs for acetone ( $45 \%$ ) and methyl ethyl ketone ( $70 \%$ ) were $\geq 30 \%$ and were J qualified by AMEC.

Sample SS066AB was submitted as a field duplicate for SS066AA. All analytes were nondetect so data quality could not be assessed.

Sample SS066DC was submitted as a field duplicate for SS066DA. All analytes were nondetect so data quality could not be assessed.

Sample SS003CB was submitted as a field duplicate for SS003CA. All analytes were nondetect so data quality could not be assessed.

Sample SS086BB was submitted as a field duplicate for SS086BA. Acetone was the only compound detected and the RPD was $87 \%$. AMEC J qualified the acetone result in both samples.

### 6.1.7.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Affected Samples | IS | Analytes Affected | Notes |
| :--- | :---: | :---: | :---: | | Project No.: 472008401 |
| :--- |
| Q:IProjects\Beazer Gainesvillel2007\Data Summary <br> ReportlDVR_1_BeazerGainesville-REV.doc |

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$\left.\begin{array}{|l|c|c|l|}\hline \begin{array}{l}\text { SS100BA, SS088AA } \\ \text { SS088BA,SS091AA, } \\ \text { SS075AA, SS075BA, } \\ \text { SS077AA, SS068BA }\end{array} & \begin{array}{c}\text { 1,4-Dichlorobenzene- } \\ \text { d4 }\end{array} & \begin{array}{c}\text { Isopropylbenzene, 1,3- } \\ \text { Dichlorobenzene, 1,4- } \\ \text { Dichlorobenzene, 1,2- } \\ \text { Dichlorobenzene, 1,2-Dibromo-3- } \\ \text { chloropropane, 1,2,4- } \\ \text { Trichlorobenzene }\end{array} & \begin{array}{l}\text { AMEC UJ qualified the } \\ \text { non-detected results for } \\ \text { these analytes due to } \\ \text { possible low bias. }\end{array} \\ \hline \begin{array}{ll}\text { SS100CA, } \\ \text { SS100DA,SS100DB }\end{array} & \begin{array}{c}\text { 1,4-Dichlorobenzene- } \\ \text { d4 }\end{array} & \begin{array}{c}\text { Isopropylbenzene, 1,3- } \\ \text { Dichlorobenzene, 1,4- } \\ \text { Dichlorobenzene, 1,2- }\end{array} & \begin{array}{l}\text { AMEC R qualified the non- } \\ \text { detected results for these } \\ \text { analytes due to extreme low } \\ \text { bias. }\end{array} \\ \hline \text { SS100CA,SS100DA } & \text { Chlorobenzene-d5 } & \begin{array}{c}\text { Dichlorobenzene, 1,2-Dibromo-3- } \\ \text { chloropropane, 1,2,4- } \\ \text { Trichlorobenzene }\end{array} & \begin{array}{l}\text { Methylcyclohexane, cis-1,3- } \\ \text { Dichloropropene, MIBK, trans- } \\ \text { 1,3-Dichloropropene, 1,1,2- } \\ \text { Trichloroethane, Toluene, }\end{array}\end{array} \begin{array}{l}\text { AMEC UJ qualified the } \\ \text { non-detected results for } \\ \text { these analytes due to } \\ \text { possible low bias. }\end{array}\right\}$

### 6.1.7.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified limits for VOC analysis with the following exceptions.

4-Bromofluorobenzene was high in the following samples: SS100BC (131\%), SS100CA (171\%), SS 100DA (217\%), SS100DB (191\%) and SS091AA (130\%). All associated compounds were non-detect, so no qualifications were necessary.

Toluene- $\mathrm{d}_{8}$ was also high in the following samples: SS100DA (137\%) and SS091AA (141\%). AMEC J qualified the toluene result in SS100DA. All other associated compounds were nondetect, so no additional qualifications were necessary.

### 6.1.8 SDG J0605890

### 6.1.8.1 Holding Times

The samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis for preserved soil samples.

### 6.1.8.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.1.8.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.8.4 Continuing Calibration

CCV recoveries were within acceptance limits except for bromomethane ( $24 \%$ and $36 \%$ ), which both had a $\%$ D greater than the QAPP requirement of $20 \%$.

- AMEC UJ qualified the bromomethane results for samples SS041AA, SS041BA, SS030AA, SS030BA, SS094AA, SS094AB, SS094BA, SS101AA, SS101BA, SS045AA, SS045BA, SS047AA, SS047AC, SS047BA, SS024AA, SS024BA, SS086CA, SS86DA, SS088CA, SS088DA, SS091CA, SS091DA, SS068CA, SS068DA, SS078AA, SS078BA, SS078CA, SS078DA, SS075CA, SS075DA, SS077CA, SS077DA, SS049CA, SS049DA, SS041CA, SS041DA, SS030CA, SS030DA and SS077DB.


### 6.1.8.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered in this report except as described below:

Methylene chloride, ethylbenzene, $m, p$-xylenes and 1,2,4-trichlorobenzene were detected below the MRL at a concentration of $1.4 \mu \mathrm{~g} / \mathrm{Kg}, 0.48 \mu \mathrm{~g} / \mathrm{Kg}, 1.5 \mu \mathrm{~g} / \mathrm{Kg}$, and $0.45 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0604058-3.

- AMEC U qualified the detected methylene chloride for samples SS041AA, SS041BA, SS030AA, SS030BA, SS094AA, SS094AB, SS094BA, SS101AA, SS101BA, SS045AA, SS045BA, SS047AA, SS047AC, SS047BA, SS024AA, SS024BA, SS086CA, SS086DA and SS088CA.

Methylene chloride, ethylbenzene and m,p-xylenes were detected below the MRL at a concentration of $1.7 \mu \mathrm{~g} / \mathrm{Kg}, 0.73 \mu \mathrm{~g} / \mathrm{Kg}$ and $2.3 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0604060-3.

- AMEC U qualified the detected methylene chloride for samples SS088DA, SS091CA, SS091DA, SS068CA, SS068DA, SS078AA, SS078BA, SS078DA, SS075CA, SS075DA, SS077CA, SS077DA, SS049CA, SS049DA, SS041CA, SS041DA, SS030CA, SS030DA and SS077DA.
- AMEC U qualified the detected m,p-xylenes for samples SS077CA and SS077DA.
- AMEC U qualified the detected ethylbenzene for samples SS077CA and SS077DA.


## Trip Blank

A Trip Blank was not supplied to the laboratory with this sample delivery group.

### 6.1.8.6 LCS Recovery

Recoveries were within the laboratory-specified acceptance limits for the LCS.

### 6.1.8.7 Field Duplicates

Sample SS094AB was submitted as a field duplicate for SS094AA. Acetone was the only analyte detected and the RPD was $\leq 30 \%$, so no qualifications were necessary.

Sample SS047AC was submitted as a field duplicate for SS047AA. Acetone was the only analyte detected and the RPD was $\leq 30 \%$, so no qualifications were necessary.

Sample SS077DB was submitted as a field duplicate for SS077DA. AMEC J qualified the results for 2-butanone (171\%), o-xylene ( $130 \%$ ) and styrene ( $120 \%$ ) due to elevated RPDs.

### 6.1.8.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists
the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Affected Samples | IS | Analytes Affected | Notes |
| :--- | :---: | :---: | :---: |
| SS041AA, SS101AA <br> SS101BA,SS077DB | 1,4-Dichlorobenzene- <br> d4 | Isopropylbenzene, 1,3- <br> Dichlorobenzene, 1,4- <br> Dichlorobenzene, 1,2- <br> Dichlorobenzene, 1,2-Dibromo-3- <br> chloropropane, 1,2,4- <br> Trichlorobenzene | AMEC UJ qualified the <br> non-detected results for <br> these analytes due to <br> possible low bias. |
| SS077CA | 1,4-Dichlorobenzene- <br> d4 | Isopropylbenzene, 1,3- <br> Dichlorobenzene, 1,4- <br> Dichlorobenzene, 1,2- | AMEC R qualified the <br> non-detected results for <br> these analytes due to <br> extremely low bias. |
| Dichlorobenzene, 1,2-Dibromo-3- |  |  |  |
| chloropropane, 1,2,4- |  |  |  |
| Trichlorobenzene |  |  |  |$\quad$|  |
| :--- |

### 6.1.8.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified limits for VOC analysis with the following exceptions.

4-Bromofluorobenzene was high in the following samples: SS101BA (140\%), SS077CA ( $146 \%$ ) and SS077DB ( $156 \%$ ). All associated compounds for these samples were non-detect, so no qualifications were necessary.

### 6.1.9 SDG J0605919

### 6.1.9.1 Holding Times

All samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis of preserved aqueous samples and soil samples.

### 6.1.9.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

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### 6.1.9.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG, except as described below.

| ICAL and instrument ID | Analytes with \%RSD>15\% | Effects on Data Usability |
| :---: | :---: | :---: |
| CAL1031 analyzed 12/12/2006 on instrument MS52.i | $\begin{gathered} \text { 1,1-Dichloroethene (16.4\%) } \\ \text { Bromoform }(19.1 \%) \end{gathered}$ | AMEC UJ qualified the non-detected 1,1-dichloroethene and bromoform results from samples EB-01 and EB-02 because of possible bias in the analytical results. |
| $\begin{aligned} & \text { CAL1037 analyzed } \\ & \text { 12/20/2006 on } \\ & \text { instrument MS52.i } \end{aligned}$ | Dichlorodifluoromethane (16\%) <br> Bromomethane (17.5\%) <br> Chloroethane (17.1\%) <br> Tetrachloroethene (28.1) <br> Bromoform (21.9\%) | AMEC UJ qualified the non-detected dichlorodifluoromethane, bromomethane, chloroethane, tetrachloroethene, and bromoform results from samples SS094DA, SS101CA and SS101DA because of possible bias in the analytical results. |
| $\begin{aligned} & \text { CAL1026 analyzed } \\ & \text { 12/06/2006 on } \\ & \text { instrument MS53.i } \end{aligned}$ | Bromomethane (24.2\%) <br> Chloroethane (19.3\%) | AMEC UJ qualified the non-detected bromomethane and chloroethane results from samples SS094CA, SS52CA, SS52DA, SS047CA, SS047DA, SS045CA, SS045DA, SS024CA, SS024DA, SS070AA, SS070AB, SS070BA, SS070CA, SS070DA, SS031AA, SS031BA, SS031CA, SS031DA, SS031DB, SS026AA, SS026BA, SS026CA, SS026CC, SS026DA, SS007CA, SS007DA, SS007DB, SS0022AA, SS0022AB, SS0022BA, SS0022CA, SS0022DA, SS020AA, SS020BA, SS020CA, SS020CC, SS020DA, SS046AA, SS046BA, SS046CA, SS046DA, SD001AA, SD001AB, SD002AA, SD003AA, SD004AA and SD004BA because of possible bias in the analytical results. |

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.9.4 Continuing Calibration

CCV recoveries for VOC analysis of the samples covered in this report were within acceptance limits, except as tabulated below:

| CCAL ID | Analytes with Recoveries <br> Outside Acceptance Limits | Effects on Data Usability |
| :--- | :---: | :--- |
| JWG0604088-2 <br> analyzed on <br> December 20, 2006 | Bromomethane (139\%) | The bromomethane recovery was high but this analyte was <br> not detected in the associated samples. Data usability is not <br> adversely affected by the high bias. |
| JWG0604090-2 <br> analyzed on <br> December 20, 2006 | Bromomethane (127\%) | The bromomethane recovery was high but this analyte was <br> not detected in the associated samples. Data usability is not <br> adversely affected by the high bias. |
| JWG060604101-2 <br> analyzed on <br> December 21, 2006 | Dibromochloromethane (124\%) <br> Bromoform (131\%) | The recoveries were high but these analytes were not <br> detected in the associated samples. Data usability is not <br> adversely affected by the high bias. |

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| CCAL ID | Analytes with Recoveries <br> Outside Acceptance Limits | Effects on Data Usability |
| :--- | :---: | :--- |
| JWG0604103-2 <br> analyzed on <br> December 21, 2006 | Bromomethane (134\%) | The bromomethane recovery was high but this analyte was <br> not detected in the associated samples. Data usability is not <br> adversely affected by the high bias. |

### 6.1.9.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered in this SDG, except as tabulated below.

| Blank ID | Analyte Concentrations ( $\mu \mathrm{g} / \mathrm{Kg}$ ) | Effects on Data Usability |
| :---: | :---: | :---: |
| JWG0604019-4 | 1,2,4-Trichlorobenzene (0.88) | AMEC U qualified the detected 1,2,4-trichlorobenzene result from sample EB-01. |
| JWG0604087-3 | Methylene Chloride (1.4)1,2,4-Trichlorobenzene (0.38) | AMEC U qualified the detected methylene chloride results from samples SS094CA, SS094DA, SS101CA, SS101DA, SS52CA, SS52DA, SS047CA, SS047DA, SS045CA, SS045DA, SS024DA, SS070AA, SS070AB, SS070BA, SS070CA, SS070DA, SS031AA, SS031BA and SS031CA. |
|  |  | 1,2,4-trichlorobenzene was not detected in the associated samples; therefore, data usability is not adversely affected. |
| JWG0604089-3 | Methylene Chloride (0.71) | AMEC U qualified the detected methylene chloride results from samples SS031DB, SS026BA, SS026CA, SS026CC, SS026DA, SS007CA, SS007DA, SS007DB, SS022AA, SS0022AB, SS0022BA, SS0022CA, SS0022DA, SS020AA and SS020DA. |
| JWG0604102-3 | Methylene Chloride (1.3) | AMEC U qualified the detected methylene chloride results from samples SS046AA, SS046BA, SS046CA, SS046DA, SD001AA, SD001AB, SD002AA, SD003AA, SD004AA and SD004BA. |

## Equipment Blanks

VOCs were not detected in the equipment blanks associated with the samples covered in this report, except as tabulated below.

| Sample ID | Analyte Concentrations ( $\boldsymbol{\mu} / \mathbf{L}$ ) | Effects on Data Usability |
| :---: | :---: | :--- |
| EB-01 | 1,2,4-Trichlorobenzene (0.53) | A similar concentration for 1,2,4-trichlorobenzene was <br> observed in associated method blank. This analyte was <br> not detected in the associated samples; therefore, data <br> usability is not adversely affected. |

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### 6.1.9.6 LCS/LCSD Recovery

Recoveries were within the laboratory-established acceptance limits for all LCSs associated the samples covered in this SDG, except as tabulated below.

| LCS ID | $\begin{array}{c}\text { Analytes with recoveries outside } \\ \text { acceptance limits (\%) }\end{array}$ | Effects on Data Usability |
| :--- | :---: | :--- |
| JWG0604019-3 | $\begin{array}{c}\text { Dichlorodifluoromethane (59\%) } \\ \text { Bromomethane (73\%) }\end{array}$ | $\begin{array}{l}\text { AMEC UJ qualified the non-detected } \\ \text { dichlorodifluoromethane and bromomethane results } \\ \text { from samples EB-01 and EB-02 because of possible } \\ \text { low bias in the results. }\end{array}$ |
| JWG0604089-2 | 2-Hexanone (77\%) | $\begin{array}{l}\text { AMEC UJ qualified the non-detected 2-hexanone } \\ \text { and 1,2-dibromo-3-chloropropane results from } \\ \text { samples SS031DA, SS031DB, SS026AA, }\end{array}$ |
|  | 1,2-Dibromo-3-chloropropane (72\%) |  |
|  |  | $\begin{array}{l}\text { SS026BA, SS026CA, SS026CC, SS026DA, } \\ \text { SS007CA, SS007DA, SS007DB, SS0022AA, }\end{array}$ |
|  |  | $\begin{array}{l}\text { SS0022AB, SS0022BA, SS0022CA, SS0022DA, } \\ \text { SS020AA, SS020BA, SS020CA, SS020CC and }\end{array}$ |
| SWO20DA because of possible low bias in the |  |  |$\}$

### 6.1.9.7 Field Duplicates

Sample SS070AB was submitted as a field duplicate for SS070AA. AMEC J qualified the detected acetone results from both samples due to the elevated RPD of $48 \%$.

Sample SS031DB was submitted as a field duplicate for SS031DA. AMEC J qualified the detected acetone results from both samples due to the elevated RPD of $103 \%$.

Sample SS007DB was submitted as a field duplicate for SS007DA. AMEC J qualified the detected acetone results from both samples due to the elevated RPD of $61 \%$.

Sample SS0022AB was submitted as a field duplicate for SS0022AA. AMEC J qualified the detected methylene chloride ( $60 \%$ ) and 2-butanone ( $37 \%$ ) results due to the elevated RPD.

Sample SD001AB was submitted as a field duplicate for SD001AA. AMEC J qualified the detected methylene chloride result due the elevated RPD of 123\%

### 6.1.9.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists
the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Sample ID | Internal Standard with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS094DA, SS070AA, <br> SS070AB, SS022AB, <br> SS046AA, SD001AB, <br> SD002AA, SD003AA, <br> SD004BA | 1,4-Dichlorobenzene-d ${ }_{4}$ | The recoveries were low and associated analytes <br> were not detected in the samples. Because low <br> internal standard recoveries indicate a possible <br> high bias in the analytical results, data usability is <br> not adversely affected by the low internal standard <br> recoveries. |
| SS101CA <br> SS101DA | The recoveries were low and AMEC J qualified <br> the detected 4-methyl-2-pentanone and styrene <br> results from the associated samples because of a |  |
| possible high bias in the analytical results. All |  |  |
| other associated analytes were not detected in the |  |  |
| Samples and data usability is not adversely |  |  |
| affected by the low internal standard recoveries. |  |  |

### 6.1.9.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-established limits for VOC analysis of the samples covered in this SDG, except as tabulated below.

| Sample ID | Surrogates with recoveries outside <br> acceptance limits | Effects on Data Usability |
| :--- | :---: | :---: |
| SS094DA | 4-Bromofluorobenzene (152\%) |  |
| SS101CA | 4-Bromofluorobenzene $(138 \%)$ |  |
| SS101DA | 4-Bromofluorobenzene $(187 \%)$ |  |
| SD002AA | 4-Bromofluorobenzene $(132 \%)$ |  |
| SD003AA | 4-Bromofluorobenzene $(134 \%)$ |  |

### 6.1.10 SDG J0605944

### 6.1.10.1 Holding Times

The samples were analyzed within the QAPP-recommended maximum holding time of 14 days for analysis for preserved soil samples.

### 6.1.10.2 Instrument Performance

Instrument performance checks using bromofluorobenzene performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.1.10.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.1.10.4 Continuing Calibration

CCV recoveries were within acceptance limits except for dichlorodifluoromethane ( $25 \%$ ), bromomethane ( $58 \%$ ), cyclohexane ( $26 \%$ ), carbon tetrachloride ( $22 \%$ ), methylcyclohexane ( $23 \%$ ) and toluene ( $57 \%$ ) which all had a $\%$ D greater than the QAPP requirement of $20 \%$.

- AMEC UJ qualified the dichlorodifluoromethane, bromomethane, cyclohexane, carbon tetrachloride and methylcyclohexane results for samples SD005AA, SD006AA, SD006BA, SD007AA, SD008AA, SD009AA and SD006AC.


### 6.1.10.5 Blanks

## Laboratory Blanks

VOCs were not detected in the laboratory blanks associated with the samples covered in this SDG except as described below:

Methylene chloride, toluene, ethylbenzene and m,p-xylenes were detected below the MRL at a concentration of $1.9 \mu \mathrm{~g} / \mathrm{Kg}, 19 \mu \mathrm{~g} / \mathrm{Kg}, 0.54 \mu \mathrm{~g} / \mathrm{Kg}$, and $1.8 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in method blank JWG0604156-2.

- AMEC U qualified the detected methylene chloride and toluene for samples SD005AA, SD006AA, SD006BA, SD007AA, SD008AA, SD009AA and SD006AC.


## Trip Blank

A Trip Blank was not supplied to the laboratory with this sample delivery group.

### 6.1.10.6 LCS Recovery

Recoveries were within the laboratory-specified acceptance limits for the LCSs with the following exceptions.

The LCS (JWG0604156-1) \% recovery was high for bromomethane (168\%), 1,1dichloroethane ( $128 \%$ ), methylene chloride ( $141 \%$ ) and toluene ( $235 \%$ ), no qualifications were necessary as all compounds were non-detect in the associated samples.

### 6.1.10.7 Field Duplicates

Sample SD006AC was submitted as a field duplicate for SD006AA. AMEC J qualified the results for Acetone (126\%) due to the elevated RPD.

### 6.1.10.8 Internal Standard Recoveries

A number of IS area counts were outside the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for VOC analysis of the samples covered in this SDG. The table below lists the qualifications that were required. All samples were reanalyzed by the laboratory and similar results were found, so only the initial set of data was reported.

| Affected Samples | IS | Analytes Affected | Notes |
| :--- | :---: | :---: | :---: |
| SD005AA, SD006AA, <br> SD007AA, SD008AA | 1,4-Dichlorobenzene-d4 | Isopropylbenzene, 1,3- <br> Dichlorobenzene, 1,4- <br> Dichlorobenzene, 1,2- <br> Dichlorobenzene, 1,2-Dibromo-3- <br> chloropropane, 1,2,4- <br> Trichlorobenzene | AMEC UJ qualified the <br> non-detected results for <br> these analytes due to <br> possible low bias. |
| SD006AC | 1,4-Dichlorobenzene-d4 | Isopropylbenzene, 1,3- <br> Dichlorobenzene, 1,4- <br> Dichlorobenzene, 1,2- | AMEC R qualified the <br> non-detected results for <br> these analytes due to <br> extremely low bias. |
| Dichlorobenzene, 1,2-Dibromo-3- |  |  |  |
| chloropropane, 1,2,4- |  |  |  |
| Trichlorobenzene |  |  |  |$\quad$|  |
| :--- |

### 6.1.10.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified limits for VOC analysis with the following exceptions.

4-Bromofluorobenzene was high in the following samples: SD005AA (161\%), SD006AA (154\%), SD007AA (139\%), SD008AA (137\%), SD009AA (141\%) and SD006AC (171\%). All associated compounds for these samples were non-detect, so no qualifications were necessary.

Toluene- $\mathrm{d}_{8}$ was high SD005AA (151\%) and SD006AC (148\%). All associated compounds were non-detect so no qualifications were necessary.

### 6.2 Semivolatile Organic Compounds by USEPA Method 8270C

SVOC results may be considered usable with the limitations described below. Samples were extracted by method 3550 and not the QAPP specified 3541 , however there is no impact to the data quality.

There were four compounds (acetophenone, atrazine, benzaldehyde and caprolactam) reported by the laboratory that were not included in the QAPP. Data quality has not been assessed for these compounds.

### 6.2.1 SDG J0605714

### 6.2.1.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.2.1.2 Instrument Performance

Instrument performance checks using decafluorotriphenylphosphine performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.2.1.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG except for the following. 2-Nitroaniline had a high \%D at $26 \%$. AMEC UJ qualified the $2-$ nitroaniline result for sample SS060BA.

### 6.2.1.4 Continuing Calibration

CCAL recoveries for SVOC analysis of the samples covered in this SDG were acceptable, except as described below.

The $\% \mathrm{D}$ was high for the following compounds; hexachlorocyclopentadiene (30\%), 2,4dinitrophenol (36\%) and 2-methyl-4,6-dinitrophenol (29\%). AMEC has UJ qualified the nondetected and J qualified the detected results for these compounds in SS059AA, SS060AA, SS073AA, SS085BA, SS085AA, SS087AA, SS087BA, SS089AA, SS089BA, SS090AA, SS090BA, SS090BC and SS059BA.

The $\% \mathrm{D}$ was high for 2-nitroaniline ( $36 \%$ ) and 4-nitrophenol ( $32 \%$ ). Both compounds were non-detect in sample SS060BA and were UJ qualified.

### 6.2.1.5 Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with the samples covered in this SDG.

### 6.2.1.6 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS associated with the samples covered in this SDG except isophorone and hexachlorocyclopentadiene, which were high at $125 \%$ and $115 \%$, respectively. Both compounds were non-detect in the associated samples, so no qualifications were necessary.

### 6.2.1.7 MS/MSD Recovery

An MS/MSD for SVOCs was picked by the laboratory and performed on sample SS059AA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except for isophorone and 3,3'-dichlorobenzidine in the MSD. Isophorone recovered high at $120 \%$, but it was not detected in the parent sample, so no qualifications were made.

AMEC UJ qualified 3,3'-dichlorobenzidine, in SS059AA, which recovered low in the MSD at 11\%.

### 6.2.1.8 Field Duplicates

Sample SS090BC was submitted as a field duplicate for sample SS090BA. All RPDs were $\leq$ $30 \%$.

### 6.2.1.9 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for SVOC analysis of the samples covered in this SDG, with the following exception.

Perylene- $\mathrm{d}_{12}$ was low in a number of samples; however no analytes were quantitated off this internal standard, so no qualifications are necessary.

### 6.2.1.10 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG.

### 6.2.2 SDG J0605735

### 6.2.2.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.2.2.2 Instrument Performance

Instrument performance checks using decafluorotriphenylphosphine performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.2.2.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG except as described below.

| ICAL | Analytes with Second Source $\% \mathrm{D}>25 \%$ | Effects on Data Usability |
| :---: | :---: | :---: |
| CAL1032 analyzed 12/08/2006 | 2-Nitroaniline (26\%) | AMEC UJ qualified the non-detected result from samples SS079AA, SS079BBA, SS067AA, SS067BB, SS069AA, SS069BA, SS092AA, SS092BA, SS093AA, SS093BA, SS083AA, SS083BA, SS081AA, SS054BA, SS071AA, SS071BA, SS042AA, SS042BA, SS042BB, SS023AA, SS023BA, SS023BB, SS040AA and SS040BA. AMEC J qualified the detected result from sample SS067BA because of possible bias in the analytical results. |

### 6.2.2.4 Continuing Calibration

CCAL recoveries for SVOC analysis of the samples covered in this SDG were acceptable, except as described below.

The $\% \mathrm{D}$ was high for the following compounds; hexachlorocyclopentadiene ( $30 \%$ ), 2,4dinitrophenol ( $36 \%$ ) and 2-methyl-4,6-dinitrophenol (29\%). AMEC has UJ qualified the nondetected and J qualified the detected results for these compounds in SS059AA, SS060AA, SS073AA, SS085BA, SS085AA, SS087AA, SS087BA, SS089AA, SS089BA, SS090AA, SS090BA, SS090BC and SS059BA.

The $\% \mathrm{D}$ was high for the following compounds; hexachlorocyclopentadiene (38\%), 2,4dinitrophenol (33\%), 2-methyl-4,6-dinitrophenol (27\%) and bis(2-chloroethyl)ether ( $26 \%$ ). AMEC has UJ qualified the non-detected results for these compounds in SS079AA, SS079BA, SS067AA, SS067BA, SS067BB, SS069AA, SS069BA, SS092AA, SS092BA, SS093AA, SS093BA, SS083AA, SS083BA and SS081AA. AMEC J qualified the detected 2-methyl-4,6dinitrophenol in sample SS067BA.

The \% D was high for the following compounds; bis(2-chloroisopropyl) ether ( $25 \%$ ), N-nitrosodi-n-propylamine ( $24 \%$ ), isophorone ( $23 \%$ ), 2-nitroaniline ( $36 \%$ ), and 4-nitrophenol ( $32 \%$ ). AMEC UJ qualified the non-detected results for these compounds in samples SS081BA, SS019AA, SS019BA, SS019BB, SS054AA and SS059AB.

### 6.2.2.5 Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with the samples covered in this SDG.

### 6.2.2.6 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS associated with the samples covered in this SDG except hexachlorocyclopentadiene, which recovered high at $142 \%$ and $138 \%$. All the associated samples were non-detect, so no qualifications were necessary.

### 6.2.2.7 MS/MSD Recovery

An MS/MSD for SVOCs was picked by the laboratory and performed on sample SS069BA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except for hexachlorocyclopentadiene in the MS (131\%) and MSD (134\%). This analyte was not detected in the parent sample, so no qualifications were necessary.

### 6.2.2.8 Field Duplicates

Sample SS067BB was submitted as a field duplicate for SS067BA. All RPDs were $\geq 30 \%$; dibenzofuran (76\%), carbazole (96\%), butyl benzyl phthalate (151\%), bis(2-ethylhexyl) phthalate ( $147 \%$ ) and di-n-octyl phthalate ( $158 \%$ ). All of these analytes were J qualified in both samples.

Sample SS019BB was submitted as a field duplicate for SS019BA. All RPDs were $\leq 30 \%$.
Sample SS054BB was submitted as a field duplicate for SS054AA. All RPDs were $\leq 30 \%$.

Sample SS042BB was submitted as a field duplicate for SS042BA. All RPDs were $\leq 30 \%$.
Sample SS023BB was submitted as a field duplicate for SS023BA. Carbazole had an elevated RPD of $49 \%$ and was $J$ qualified in both samples.

### 6.2.2.9 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for SVOC analysis of the samples covered in this SDG, with the following exception.

Perylene- $\mathrm{d}_{12}$ was low in SS040AA, SS040BA, SS067AA, SS067BA, SS092AA, SS092BA, SS054AA and SS054AB; however no analytes were quantitated off this internal standard, so no qualifications are necessary.

### 6.2.2.10 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG.

### 6.2.3 SDG J0605780

### 6.2.3.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.2.3.2 Instrument Performance

Instrument performance checks using decafluorotriphenylphosphine performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.2.3.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.2.3.4 Continuing Calibration

CCAL recoveries for SVOC analysis of the samples covered in this SDG were acceptable, except as described below.

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| CCAL | Analytes with \%D > 20\% | Effects on Data Usability |
| :--- | :---: | :--- |
| JWG0604006 | Bis(2-chloroisopropyl) Ether (25\%) <br> N-Nitrosodi-n-propylamine (24\%) <br> Isophorone (23\%) <br> 2-Nitroaniline (36\%) <br> 4-Nitrophenol (32\%) | AMEC UJ qualified the non-detected result from samples <br> SS050AA, SS079BA, SS051AA, SS051BA, SS025AA, <br> SS025BA and SS027AA, |
|  |  |  |
|  |  |  |
| JWG0604017 | 2-Nitroaniline (25\%) |  |
|  | 4-Nitrophenol (26\%) | AMEC UJ qualified the non-detected result from samples <br> SS034AA, SS034BA, SS013AA, SS027BA, SS013BA, <br> SS012AA, SS012AC, SS012BA, SS014AA, SS014BA, <br> SS018AA, SS018BA, SS017AA, SS016AA and SS16BA. |
| JWG0604024 | Bis(2-chloroethyl) Ether (29\%) |  |
|  | 2-Nitroaniline (24\%) | AMEC US qualified the non-detected result from samples <br> SS017BA, SS007AA, SS007BA, SS007BC, SS074AA, |
|  | 4-Nitrophenol (27\%) | SS074BA, SS015AA and SS015BA. |

### 6.2.3.5 Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with the samples covered in this SDG.

### 6.2.3.6 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS associated with the samples covered in this SDG except the following. Isophorone (134\%) and 2-Nitroaniline (106\%) recovered high. All the associated samples were non-detect, so no qualifications were necessary.

### 6.2.3.7 MS/MSD Recovery

An MS/MSD for SVOCs was picked by the laboratory and performed on samples SS050AA and SS017BA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except as bolded below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :--- | :---: | :---: | :--- |
|  | Bis(2-chloroisopropyl) Ether | $\mathbf{1 0 2 \% / 9 3 \%}$ | $10 \%$ | These analytes were not detected in the parent |
|  | Isophorone | $\mathbf{1 4 8 \% / \mathbf { 1 3 4 \% }}$ | $10 \%$ | sample. Data usability is not adversely affected |
|  | 2-Nitroaniline | $\mathbf{1 1 5 \% / \mathbf { 1 0 6 \% }}$ | $8 \%$ | by the analytical imprecision. |
| SS017BA | Bis(2-chloroisopropyl) Ether | $\mathbf{1 0 0 \% / 8 0 \%}$ | $22 \%$ | These analytes were not detected in the parent |
|  | Isophorone | $\mathbf{1 3 9 \% / \mathbf { 1 2 4 \% }}$ | $11 \%$ | sample. Data usability is not adversely affected |
|  | 2-Nitroaniline | $\mathbf{1 2 1 \% / \mathbf { 1 0 5 \% }}$ | $14 \%$ | by the analytical imprecision. |

### 6.2.3.8 Field Duplicates

Sample SS012AC was submitted as a field duplicate for SS012AA. All RPDs were $\leq 30 \%$. Sample SS007BC was submitted as a field duplicate for SS007BA. All RPDs were $\leq 30 \%$.

Sample SS004BB was submitted as a field duplicate for SS004BA. The RPD for Dibenzofuran was high at $51 \%$. AMEC J qualified this analyte in both samples.

Sample SS002AC was submitted as a field duplicate for SS002AA. All RPDs were $\leq 30 \%$.
Sample SS043BB was submitted as a field duplicate for SS043BA. All RPDs were $\leq 30 \%$.
Sample SS010AB was submitted as a field duplicate for SS010AA. All RPDs were $\leq 30 \%$.

### 6.2.3.9 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for SVOC analysis of the samples covered in this SDG, with the following exception.

Perylene- $\mathrm{d}_{12}$ was low in SS051BA, SS025AA, SS025BA, SS027AA, SS074AA and SS074BA; however no analytes were quantitated off this internal standard, so no qualifications were necessary.

### 6.2.3.10 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG, except terphenyl- $\mathrm{d}_{14}$ (166\%) was high in SS025AA. No qualifications were necessary since single surrogate high.

### 6.2.4 SDG J0605810

### 6.2.4.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.2.4.2 Instrument Performance

Instrument performance checks using decafluorotriphenylphosphine performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance with the following exception.

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Sample SS043AA was run past the 12 hour window but the laboratory reanalyzed the sample within criteria on $1 / 08 / 07$, so no qualifications were necessary.

### 6.2.4.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG with the following exception. The $\% \mathrm{D}$ for the second source verification was high for 2-nitroaniline at $26 \%$. AMEC UJ qualified the non-detected result for sample SS043BB due to analytical imprecision.

### 6.2.4.4 Continuing Calibration

CCAL recoveries for SVOC analysis of the samples covered in this SDG were acceptable, except as described below.

| CCAL | Analytes with \%D > 20\% | Effects on Data Usability |
| :--- | :---: | :--- |
| JWG0604024 | Bis(2-chloroethyl) Ether (29\%) <br> 2-Nitroaniline (24\%) <br> 4-Nitrophenol (27\%) | AMEC UJ qualified the non-detected results from sample <br> SS043BB. |
| JWG0604106 | Bis(2-chloroisopropyl)ether (-40\%) <br> N-nitrosodi-n-propylamine (-27\%) <br> Isophorone (-21\%) <br> 2-Nitroaniline (-21\%) <br> 4-Nitrophenol (-22\%) | AMEC UJ qualified the non-detected results for these <br> analytes from samples SS008AA, SS008BA, SS009AA, <br> SS009BA, SS006AA, SS006BA, SS004AA, SS004BA, <br> SS004BB, SS002AA, SS002AC, SS044AA, SS044BA, <br> SS076AA and SS076BA. |
| 3,3'-Dichlorobenzidine (21\%) |  |  |

### 6.2.4.5 Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with the samples covered in this SDG.

### 6.2.4.6 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS associated with the samples covered in this SDG.

### 6.2.4.7 MS/MSD Recovery

An MS/MSD for SVOCs was picked by the laboratory and performed on sample SS008AA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except as bolded below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :--- | :---: | :---: | :--- |
| SS008AA | Hexachlorocyclopentadiene <br> 3,3'-Dichlorobenzidine | $\mathbf{1 2 2 \%} / 101 \%$ <br> $\mathbf{9 \% / 1 2 \%}$ | 19 | AMEC UJ qualified the non-detected 3,3'- <br> dichlorobenzidine due to potential matrix <br> interference. |

### 6.2.4.8 Field Duplicates

Sample SS004BB was submitted as a field duplicate for SS004BA. All RPDs were $\leq 30 \%$ except dibenzofuran. AMEC J qualified the Dibenzofuran result in both samples due to the elevated RPD of 51\%.

Sample SS002AC was submitted as a field duplicate for SS002AA. All RPDs were $\leq 30 \%$.
Sample SS043BB was submitted as a field duplicate for SS043BA. All RPDs were $\leq 30 \%$.
Sample SS010AB was submitted as a field duplicate for SS010AA. All RPDs were $\leq 30 \%$.

### 6.2.4.9 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $-50 \%$ to $+100 \%$ of area from IS to ICAL standard for SVOC analysis of the samples covered in this SDG, with the following exception.

Chrysene- $\mathrm{d}_{12}$ was low in samples SS043BB, SS043BA and SS037AA. AMEC J qualified the bis(2-ethylhexyl)phthalate and UJ qualified butyl benzyl phthalate, 3,3'-dichlorobenzidine and di-n-octyl phthalate for these samples.

Perylene- $\mathrm{d}_{12}$ was low in SS008BA, SS006AA, SS006BA, SS004BA, SS004BB, SS002AA, SS002AC, SS043BB, SS044AA, SS044BA, SS076AA, SS076BA, SS010AB, SS021AA, SS021BA, SS002BA, SS011AA, SS011BA, SS058AA, SS058BA, SS037AA, SS037BA and

SS043BA; however no analytes were quantitated off this internal standard, so no qualifications were necessary.

### 6.2.4.10 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG, except terphenyl-d ${ }_{14}$ was high in samples SS058BA (193\%), SS037AA (154\%), SS043BA (139\%), SS043BB (157\%) and SS044BA (158\%). No qualifications were necessary since only a single surrogate was out of control.

### 6.2.5 SDG J0605839

### 6.2.5.1 Holding Times

The samples were extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.2.5.2 Instrument Performance

Instrument performance checks using decafluorotriphenylphosphine performed prior to calibration and sample analysis met method and QAPP-specified criteria for ion percent relative abundance.

### 6.2.5.3 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.2.5.4 Continuing Calibration

CCAL recoveries for SVOC analysis of the samples covered in this SDG were acceptable, except as described below.

The \% D in CCAL JWG0700163 was elevated for bis(chloroisopropyl)ether at (-34\%). AMEC has UJ qualified the non-detected result in samples SS057CA, SS057CB, SS036AA, SS080BA, SS080BB, SS08CA, SS080DA, SS035DA, SS033AA and SS033BA.

The \% D was elevated for bis(chloroisopropyl)ether (-37\%) and 4-nitrophenol (-27\%). Both compounds were non-detect in samples SS035CA, SS032BA, SS035AA, SS035BA and SS032AA and were UJ qualified.

### 6.2.5.5 Laboratory Blanks

No SVOCs were detected in the laboratory blank associated with this SDG.

### 6.2.5.6 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS associated with this SDG.

### 6.2.5.7 MS/MSD Recovery

The laboratory selected and performed an MS/MSD on samples SS080CA and SS036AA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD.

### 6.2.5.8 Field Duplicates

Sample SS036AC was submitted as a field duplicate for SS036AA. Only dibenzofuran, carbazole and bis(2-ethylhexyl)phthalate were detected and the RPDs were $\leq 30 \%$.

Sample SS048BB was submitted as a field duplicate for SS048BA. All analytes were nondetect so data quality could not be assessed.

Sample SS057CB was submitted as a field duplicate for SS057CA. All analytes were nondetect so data quality could not be assessed.

Sample SS080BB was submitted as a field duplicate for SS080BA. All analytes were nondetect so data quality could not be assessed.

### 6.2.5.9 Internal Standard Recoveries

IS recoveries were within the QAPP-specified acceptance limits for samples in this SDG, with the following exception. Perylene- $\mathrm{d}_{12}$ was low in a number of samples but no target analytes were quantitated off this internal standard, so no qualifications are necessary.

### 6.2.5.10 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG.

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### 6.2.6 SDG J0605876

### 6.2.6.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.2.6.2 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.2.6.3 Continuing Calibration

CCAL recoveries for SVOC analysis of the samples covered in this SDG were acceptable, except as described below.

| Affected Samples | Analyte | CCAL <br> Recovery | Notes |
| :---: | :---: | :---: | :---: |
| CCAL JWG0700169, analyzed January 8, 2007 |  |  |  |
| $\begin{aligned} & \hline \text { SS097CA } \\ & \text { SS097DA } \end{aligned}$ | Bis(2-chloroisopropyl)ether 4-Nitrophenol | $\begin{aligned} & 72 \% \\ & 76 \% \end{aligned}$ | AMEC UJ qualified the non-detected results for these analytes because of possible low bias in the analytical results. |
|  |  |  |  |
| $\begin{aligned} & \hline \text { SS097AA } \\ & \text { SS097BA } \\ & \text { SS001AA } \\ & \text { SS001BA } \\ & \text { SS038AA } \\ & \text { SS038AC } \\ & \text { SS038BA } \\ & \text { SS039AA } \\ & \text { SS029AA } \\ & \text { SS028DC } \end{aligned}$ | Bis(2-chloroisopropyl)ether Nitrobenzene 2-Nitroaniline 4-Nitrophenol | $\begin{aligned} & \hline 62 \% \\ & 79 \% \\ & 79 \% \\ & 74 \% \end{aligned}$ | AMEC UJ qualified the non-detected results for these analytes because of possible low bias in the analytical results. |
| CCAL JWG0700175, analyzed January 5, 2007 |  |  |  |
| SS001CA,SS001DA <br> SS038DA,SS038DB <br> SS039BA,SS039CA <br> SS039DA,SS029CA <br> SS029DA | Bis(2-chloroisopropyl)ether | 68\% | AMEC UJ qualified the non-detected results for these analytes because of possible low bias in the analytical results. |
| CCAL JWG0700184, analyzed January 9, 2007 |  |  |  |
| $\begin{aligned} & \hline \text { SS096AA,SS096BA } \\ & \text { SS096CA,SS096DA } \\ & \text { SS028AA,SS028AB } \\ & \text { SS028BA,SS028CA } \\ & \text { SS028DA,SS028DC } \end{aligned}$ | Bis(2-chloroisopropyl)ether 4-Nitrophenol | $\begin{aligned} & 70 \% \\ & 78 \% \end{aligned}$ | AMEC UJ qualified the non-detected results for these analytes because of possible low bias in the analytical results. |
| Project No.: 472008401 <br> Q:IProjectslBeazer Gainesvillel2007\Data Summary <br> ReportIDVR_1_BeazerGainesville-REV.doc |  | 03/29/2007 | Page 54 |

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| Affected Samples | Analyte | CCAL <br> Recovery | Notes |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { SS072AA,SS072BA } \\ & \text { SS072CA,SS072CC } \\ & \text { SS082AA,SS082BA } \\ & \text { SS064BA } \\ & \hline \end{aligned}$ |  |  |  |
| CCAL JWG0700194, analyzed January 10, 2007 |  |  |  |
| $\begin{aligned} & \hline \text { SS038CA,SS039BB } \\ & \text { SS029BA,SS072DA } \\ & \text { SS082DA,SS084DA } \\ & \text { SS064CA,SS064DA } \end{aligned}$ | Bis(2-chloroethyl)ether | 122\% | The recovery was high but this analyte was not detected in the associated samples. Data usability is not adversely affected by the high bias. |
| CCAL JWG0700207, analyzed January 10, 2007 |  |  |  |
| SS028DA, SS082CA SS098AA, SS098BA SS098CA, SS098DA SS099AA, SS099BA SS099CA, SS099DA SS084AA, SS084BA SS084CA, SS062AA SS062BA, SS062CA SS062CC, SS062DA SS064AA | Bis(2-chloroisopropyl)ether 4-Nitrophenol | $\begin{aligned} & \hline 78 \% \\ & 76 \% \end{aligned}$ | AMEC UJ qualified the non-detected results for these analytes because of possible low bias in the analytical results. |

### 6.2.6.4 Laboratory Blanks

No SVOCs were detected in the laboratory blank associated with this SDG.

### 6.2.6.5 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS associated with this SDG.

### 6.2.6.6 MS/MSD Recovery

The laboratory selected and performed an MS/MSD on samples SS97BA, SS029DA, SS082DA and SS064BA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except as bolded in the table below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :--- |
| SS064BA | 3,3 '-Dichlorobenzidine | $39 \% / 27 \%$ | $\mathbf{3 4 \%}$ | This analyte was not detected in the associate <br> sample. Data usability is not adversely affected <br> by the analytical imprecision. |

### 6.2.6.7 Field Duplicates

Sample SS038DB was submitted as a field duplicate for SS038DA. All analytes were nondetect so data quality could not be assessed.

Sample SS039BB was submitted as a field duplicate for SS039BA. All analytes were nondetect so data quality could not be assessed.

Sample SS057CB was submitted as a field duplicate for SS057CA. Only Carbazole was detected and RPD was $\leq 30 \%$.

### 6.2.6.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified acceptance limits for samples in this SDG, with the following exceptions.

| Sample ID | Internal Standard with recoveries outside <br> acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS028DC | Acenaphthene- $\mathrm{d}_{10}$ <br> Phenanthrene- $\mathrm{d}_{10}$ | The recoveries were low and associated analytes <br> were not detected in the sample. Because low <br> internal standard recoveries indicated a possible high <br> bS028DA |
| SS028CA on the analytical results, data usability is not |  |  |
| adversely affected by the low internal standard |  |  |
| recoveries. |  |  |

### 6.2.6.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG except as described below.

| Sample ID | Surrogates with recoveries outside <br> acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS028DA | 2-fluorobiphenyl (135\%) <br> 2-fluorobiphenyl (146\%) | The recoveries were high but target analytes were <br> not detected in the sample. Data usability is not <br> adversely affected by the high biases. |

### 6.2.7 SDG J0605879

### 6.2.7.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

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### 6.2.7.2 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.2.7.3 Continuing Calibration

CCAL recoveries for SVOC analysis of the samples covered in this SDG were acceptable, except as described below.

| Affected Samples | Analyte | \% D | Notes |
| :---: | :---: | :---: | :---: |
| CCAL JWG0700194, analyzed January 10, 2007 |  |  |  |
| SS066CA | Bis(2-chloroethyl)ether | 22\% | AMEC UJ qualified the non-detected result due to potential bias. |
| CCAL JWG0700213, analyzed January 10, 2007 |  |  |  |
| SS066DC, SS066DA, SS003DA, SS003CA, SS003CB, SS066BA, SS005DA, SS066AA, SS066AB, SS005AA, SS005CA, SS003AA, SS003BA, SS086AA, SS100AA, SS100BA, SS100CA, SS100DA | 4-Chloroaniline | -21\% | AMEC UJ qualified the non-detected results for these due to potential bias. |
| CCAL JWG0700246, analyzed January 12, 2007 |  |  |  |
| SS086BA, SS086BB, SS088AA, SS088BA, SS091AA, SS091BA, SS075AA, SS075BA, SS077AA, SS077BA, SS049AA, SS049BA, SS052AA, SS052BA, SS005BA | Bis(2-chloroethyl)ether Hexachlorocyclopentadiene | $\begin{gathered} 24 \% \\ -25 \% \end{gathered}$ | AMEC UJ qualified the non-detected results for these analytes due to potential bias. |
| CCAL JWG0700250, analyzed January 13, 2007 |  |  |  |
| SS068AA, SS068BA | Hexachloroethane Hexachlorocyclopentadiene | $\begin{gathered} \hline 26 \% \\ -27 \% \end{gathered}$ | AMEC UJ qualified the non-detected results for these analytes due to potential bias. |

### 6.2.7.4 Laboratory Blanks

No SVOCs were detected in the laboratory blank associated with this SDG with the following exception.

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| Blank ID | Analyte Concentrations ( $\boldsymbol{\mu g} / \mathbf{K g})$ | Effects on Data Usability |
| :---: | :---: | :--- |
| JWG0604126-4 | Bis(2-ethylhexyl)phthalate (32) | AMEC U qualified the detected result from samples <br> SS086AA, SS086BA, SS086BB, SS088AA, SS091AA, |
|  |  | SS091BA, SS075AA, SS049AA, SS052AA, SS052BA and <br> SS068AA. |

### 6.2.7.5 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS associated with this SDG.

### 6.2.7.6 MS/MSD Recovery

The laboratory selected and performed an MS/MSD on sample SS003DA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD.

### 6.2.7.7 Field Duplicates

Sample SS100DB was submitted as a field duplicate for SS100DA. The RPDs for dibenzofuran and carbazole were $\leq 30 \%$. The RPDs for 2,4-dimethylphenol ( $49 \%$ ) and biphenyl ( $48 \%$ ) were $\geq 30 \%$ and J qualified in both samples.

Sample SS066AB was submitted as a field duplicate for SS066AA. Only carbazole, dibenzofuran and bis(2-ethylhexyl)phthalate were detected and the RPDs were $\leq 30 \%$.

Sample SS066DC was submitted as a field duplicate for SS066DA. All analytes were nondetect so data quality could not be assessed.

Sample SS003CB was submitted as a field duplicate for SS003CA. Only carbazole and dibenzofuran were detected and the RPDs were $\leq 30 \%$.

Sample SS086BB was submitted as a field duplicate for SS086BA. Only carbazole and dibenzofuran were detected and the RPDs were $\leq 30 \%$.

### 6.2.7.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified acceptance limits for samples in this SDG, with the following exceptions.

| Sample ID | Internal Standard with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :---: | :---: | | Project No.: 472008401 |
| :--- |
| Q:IProjectsIBeazer Gainesville\20071Data Summary <br> ReportlDVR_1_BeazerGainesville-REV.doc |

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| Sample ID | Internal Standard with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :--- | :--- |
| SS100DA | Naphthalene-d ${ }_{8}$ | AMEC UJ qualified the non-detected nitrobenzene, <br> SS100DB |
|  |  | Isophorone, 2-nitrophenol, bis(2-chloroethoxy) <br> methane, 2,4-dichlorophenol, 4-chloroaniline, <br> hexachlorobutadiene and 4-chloro-3-methylphenol. <br> AMEC J qualified the detected 2,4-dimethylphenol <br> result in both samples. |
| SS100CA, SS100DA, |  |  |
| SS100DB, SS086BA, |  | AMEC UJ qualified the non-detected 2-methyl-4,6- <br> dinitrophenol, n-nitrosodiphenylamine, 4- <br> SS086BB, SS088AA, <br> SS091AA, SS091BA, <br> SS075AA, SS049AA, <br> SS049BA, SS052AA |
|  |  | Bromophenyl phenyl ether, Hexachlorobenzene and <br> di-n-butyl phthalate in all samples. AMEC J |
| qualified the detected Carbazole result in all |  |  |, | samples. |
| :--- |

### 6.2.7.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG except as described below.

| Sample ID | Surrogates with recoveries outside <br> acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS100DA | Nitrobenzene-d <br> 5$(185 \%)$ |  |
| SS100DB | Nitrobenzene- $d_{5}(159 \%)$ |  |$\quad$| Data usability could not be adequately assessed due |
| :--- |
| to matrix interference. |

### 6.2.8 SDG J0605890

### 6.2.8.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

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### 6.2.8.2 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.2.8.3 Continuing Calibration

CCAL recoveries for SVOC analysis of the samples covered in this SDG were acceptable, except as described below.

| Affected Samples | Analyte | \% D | Notes |
| :---: | :---: | :---: | :---: |
| CCAL JWG0700246, analyzed January 12, 2007 |  |  |  |
| SS041AA | Bis(2-chloroethyl)ether Hexachlorocyclopentadiene | $\begin{gathered} \hline 24 \% \\ -25 \% \end{gathered}$ | AMEC UJ qualified the non-detected results for these analytes. |
| CCAL JWG0700250, analyzed January 13, 2007 |  |  |  |
| SS041BA, SS030AA, SS086CA | Hexachloroethane Hexachlorocyclopentadiene | $\begin{gathered} \hline 26 \% \\ -27 \% \end{gathered}$ | AMEC UJ qualified the non-detected results for these analytes. |
| CCAL JWG0700260, analyzed January 16, 2007 |  |  |  |
| SS030BA, SS094AA, SS094AB, SS094BA, SS101AA, SS101BA, SS045AA, SS047AA, SS047AC, SS047BA, SS024AA, SS024BA, SS045BA | Hexachlorobenzene Biphenyl | $\begin{aligned} & \hline-27 \% \\ & -24 \% \end{aligned}$ | AMEC UJ qualified the non-detected results for these analytes. |
| CCAL JWG0700301, analyzed January 18, 2007 |  |  |  |
| $\begin{aligned} & \text { SS091DA, SS068CA, } \\ & \text { SS068DA, SS078CA, } \\ & \text { SS078DA, SS041DA, } \\ & \text { SS030DA } \end{aligned}$ | Bis(2-chloroisopropyl) Ether | -22\% | AMEC UJ qualified the non-detected results for this analyte. |
| CCAL JWG0700303, analyzed January 18, 2007 |  |  |  |
| SS075CA, SS077DB, SS077CA, SS077DA | Bis(2-chloroisopropyl) Ether | -22\% | AMEC UJ qualified the non-detected results for this analyte. |
| CCAL JWG0700324, analyzed January 19, 2007 |  |  |  |
| SS077DB, SS077DA | Bis(2-chloroethyl) Ether | 23\% | No qualifications were necessary since only Dibenzofuran reported from this analytical run. |

### 6.2.8.4 Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with this SDG.

### 6.2.8.5 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS associated with this SDG.

### 6.2.8.6 MS/MSD Recovery

The laboratory selected and performed an MS/MSD on samples SS094AA, SS086DA and SS030DA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD except as described below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :--- |
| SS086DA | Isophorone <br> 4-Chloroaniline | $\mathbf{1 1 3 \% / 1 1 8 \%}$ <br> $94 \% / \mathbf{9 6 \%}$ | $4 \%$ <br> $2 \%$ | These analytes were not detected in the parent <br> sample. Data usability is not adversely <br> affected by the analytical imprecision. |
|  | Dibenzofuran <br> Carbazole | $\mathbf{2 0 \% / \mathbf { 2 1 \% }} \mathbf{3 8 \% / \mathbf { 3 9 \% }}$ | $\mathbf{1 \%} 1 \%$ | AMEC J qualified both these analytes. |
|  | Isophorone | $\mathbf{1 1 6 \% / 1 1 0 \%}$ | $6 \%$ | This analyte were not detected in the parent <br> sample. Data usability is not adversely <br> affected by the analytical imprecision. |
| SS030DA |  |  |  |  |

### 6.2.8.7 Field Duplicates

Sample SS094AB was submitted as a field duplicate for SS094AA. Only Carbazole and Dibenzofuran were detected in both samples and the RPDs were $\leq 30 \%$.

Sample SS047AC was submitted as a field duplicate for SS047AA. Only Carbazole was detected and the RPD was $\leq 30 \%$.

Sample SS077DB was submitted as a field duplicate for SS077DA. All analytes were nondetect so data quality could not be assessed.

### 6.2.8.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified acceptance limits for samples in this SDG, with the following exceptions.

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| Sample ID | Internal Standard with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS086CA | Phenanthrene-d $d_{10}$ | AMEC UJ qualified the non-detected 2-methyl-4,6- <br> dinitrophenol, n-nitrosodiphenylamine, 4- <br> Bromophenyl phenyl ether, Hexachlorobenzene and <br> di-n-butyl phthalate in all samples. AMEC J <br> qualified the detected Carbazole result. |
| SS041AA, SS30AA, <br> SS086CA | Perylene-d ${ }_{12}$ | No qualifications necessary as no analytes were <br> quantitated off this internal standard. |

### 6.2.8.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG except as described below.

| Sample ID | Surrogates with recoveries outside <br> acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS086CA | $2,4,6$-Tribromophenol $(144 \%)$ | Data usability could not be adequately assessed due <br> to matrix interference. |

### 6.2.9 SDG J0605919

### 6.2.9.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of 7 days for aqueous extraction and 14 days for solid extraction and 40 days for analysis.

### 6.2.9.2 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.2.9.3 Continuing Calibration

CCV recoveries for SVOC analysis of the samples covered in this SDG were acceptable except as tabulated below.

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| Affected Samples | Analyte | CCAL <br> Recovery | Notes |
| :---: | :---: | :---: | :---: |
| CCAL JWG0700169, analyzed January 8, 2007 |  |  |  |
| $\begin{aligned} & \hline \text { EB-1 } \\ & \text { EB-2 } \end{aligned}$ | Bis(2-chloroisopropyl)ether 4-Nitrophenol | $\begin{aligned} & 72 \% \\ & 76 \% \end{aligned}$ | AMEC UJ qualified the non-detected results for these analytes because of possible low bias in the analytical results. |
| CCAL JWG0700213, analyzed January 11, 2007 |  |  |  |
| $\begin{aligned} & \hline \text { SS031CA, SS031DA } \\ & \text { SS031DB, SS026CC } \\ & \text { SS007DA, SS007DB } \\ & \text { SS026CA } \end{aligned}$ | 4-Chloroaniline | 79\% | AMEC UJ qualified the non-detected results for these analytes because of possible low bias in the analytical results. |
| CCAL JWG0700260, analyzed January 16, 2007 |  |  |  |
| $\begin{aligned} & \text { SS026BA, SS026DA } \\ & \text { SS007CA, SS022AA } \\ & \text { SS026AA } \end{aligned}$ | Hexachlorobenzene Biphenyl | $\begin{aligned} & 73 \% \\ & 76 \% \end{aligned}$ | AMEC UJ qualified the non-detected results for these analytes because of possible low bias in the analytical results. |
| CCAL JWG0700324, analyzed January 19, 2007 |  |  |  |
| SS045DA, SS020CA <br> SS070DA, SS052CA <br> SS052DA, SS024DA <br> SS070AA, SS070CA <br> SS094CA, SS094DA <br> SS047DA, SS101CA <br> SS101DA, SS047CA <br> SS031AA, SS070BA <br> SS070AB | Bis(2-chloroisopropyl)ether | 123\% | The recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected by the high bias. |
| CCAL JWG0700351, analyzed January 23, 2007 |  |  |  |
| $\begin{aligned} & \hline \text { SD001AB } \\ & \text { SD002AA } \end{aligned}$ | Bis(2-chloroethyl)ether | 121\% | The recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected by the high bias. |

### 6.2.9.4 Laboratory and Equipment Blanks

No SVOCs were detected in the laboratory and equipment blanks associated with the samples covered in this SDG.

### 6.2.9.5 LCS Recovery

All LCS recoveries associated with SVOC analysis of the samples covered in this SDG were within laboratory-established acceptance limits, except for 4-nitroaniline in LCS JWG0700106, which was high at $97 \%$. This analyte was not detected in the associated samples; therefore, data usability is not affected by the high LCS recovery.

### 6.2.9.6 MS/MSD Recovery

The laboratory selected and performed an MS/MSD on samples SS020BA and SS031BA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except as bolded in the table below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :--- |
| SS031BA | Isophorone | $\mathbf{1 1 2} \% / \mathbf{1 1 9} \%$ | $6 \%$ | This analyte was not detected in the parent <br> sample. Data usability is not adversely affected <br> by the high recoveries. |

### 6.2.9.7 Field Duplicates

Sample SS070AB was submitted as a field duplicate for SS070AA. Only carbazole and dibenzofuran were detected in both samples and the RPDs were $\leq 30 \%$.

Sample SS031DA was submitted as a field duplicate for SS031DA. All analytes were nondetect so data quality could not be assessed.

Sample SS007DB was submitted as a field duplicate for SS007DA. All analytes were nondetect so data quality could not be assessed.

Sample SS022AB was submitted as a field duplicate for SSOAA. Only dibenzofuran was detected and the RPD was $\leq 30 \%$.

Sample SD001AB was submitted as a field duplicate for SD001AA. Only carbazole was detected in both samples and the RPD was $\leq 30 \%$.

### 6.2.9.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified acceptance limits for samples in this SDG, with the following exceptions.

| Sample ID | Internal Standard with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS094CA, SS101CA | Phenanthrene-d <br> 10 | The recoveries were low and associated analytes <br> were not detected in the sample. Because low <br> SS101DA |
| Perylene- $\mathrm{d}_{12}$ | internal standard recoveries indicate a possible high <br> SS070AA, SS047CA <br> SS070AB, SD004AA <br> SD004BA, SD001AA analytical results, data usability is not <br> adversely affected by the low internal standard <br> SD002AA | Perylene-d $d_{12}$ |
| recoveries. |  |  |

### 6.2.9.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG, except as tabulated below.

| Sample ID | Surrogates with recoveries outside <br> acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS101CA | Nitrobenzene- $\mathrm{d}_{5}(110 \%)$ |  |
| SS101DA | Nitrobenzene- $\mathrm{d}_{5}(111 \%)$ | The recoveries were high and target analytes were <br> not detected in the associated samples. Data <br> usability is not adversely affected by the high biases. |

### 6.2.9.10 Data Reporting

The reporting limits are elevated for all analytes in samples SS094DA, SS101CA, SS101DA. According to the laboratory non-conformance report, these samples would not concentrate to the desired 1.0 mL final volume. The reporting limits were adjusted to reflect the final volume of 10.0 mL .

The reporting limits are elevated for all analytes in samples SS070BA, SS026AA, SD001AA, SD001AB, SD003AA, and SD004BA. According to the laboratory non-conformance report, the extracts were highly colored and viscous, which indicated the need to perform a dilution prior to injection into the instrument. The reporting limits were adjusted to reflect the dilutions.

### 6.2.10 SDG J0605944

### 6.2.10.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time 14 days for solid extraction and 40 days for analysis.

### 6.2.10.2 Initial Calibration

The QAPP-specified criteria for SPCCs, CCCs and target analytes were met for the initial calibrations for this SDG.

The second source calibration verification value was met for the calibrations for this SDG.

### 6.2.10.3 Continuing Calibration

CCV recoveries for SVOC analysis of the samples covered in this SDG were acceptable.

### 6.2.10.4 Laboratory and Equipment Blanks

No SVOCs were detected in the laboratory and equipment blanks associated with the samples covered in this SDG.

### 6.2.10.5 LCS Recovery

All LCS recoveries associated with SVOC analysis of the samples covered in this SDG were within laboratory-established acceptance limits.

### 6.2.10.6 MS/MSD Recovery

The MS/MSD for this SDG was not performed on a project sample.

### 6.2.10.7 Field Duplicates

Sample SD006AC was submitted as a field duplicate for SD006AA. Only carbazole, dibenzofuran and bis(2-ethylhexyl)phthalate were detected and the RPDs were $\leq 30 \%$.

### 6.2.10.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified acceptance limits for samples in this SDG, with the following exceptions.

Perylene- $d_{12}$ was low in SD005AA, SD006AA, SD006BA, SD007AA, SD008AA, SD009AA and SD006AC; however no analytes were quantitated off this standard so no qualifications were necessary.

### 6.2.10.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory specified limits for SVOC analysis of the samples covered in this SDG.

### 6.3 Semivolatile Organic Compounds (PAHs and Pentachlorophenol) by USEPA Method 8270C SIM

### 6.3.1 SDG J0605714

### 6.3.1.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.3.1.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.1.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria.

### 6.3.1.4 Laboratory Blanks

The following PAHs were detected in the laboratory blank associated with the samples covered in this SDG: Naphthalene ( $10 \mu \mathrm{~g} / \mathrm{Kg}$ ), 2-methylnaphthalene $(9.9 \mu \mathrm{~g} / \mathrm{Kg})$, acenaphthene (6.3 $\mu \mathrm{g} / \mathrm{Kg}$ ), phenanthrene ( $5.6 \mu \mathrm{~g} / \mathrm{Kg}$ ), anthracene ( $3.6 \mu \mathrm{~g} / \mathrm{Kg}$ ), indeno(1,2,3-cd)pyrene ( 1.1 $\mu \mathrm{g} / \mathrm{Kg}$ ) and benzo(g,h,i)perylene ( $1.0 \mu \mathrm{~g} / \mathrm{Kg}$ ). No qualifications were necessary as all sample results were greater than five times the blank concentration.

### 6.3.1.5 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS of the samples covered in this SDG.

### 6.3.1.6 MS/MSD Recovery

The MS/MSD was performed using samples from another SDG.

### 6.3.1.7 Field Duplicates

Sample SS090BC was submitted as a field duplicate for sample SS090BA. All the RPDs were $\leq 30 \%$.

### 6.3.1.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $-50 \%$ to $+100 \%$ acceptance limits for PAH analysis.

### 6.3.1.9 Surrogate Recoveries

SS059AA, SS059BA, SS060AA, SS060BA, SS073AA, SS073BA, SS085BA, SS085AA, SS089AA, SS089BA, SS090AA, SS090BC and SS090BA were diluted fifty to one hundred
times, thus surrogates were diluted below the range of calibration so no qualifications are not applicable.

2-Fluorobiphenyl and p-terphenyl-d14 were above the acceptance criteria for samples SS087AA and SS087BA due to matrix interference. Acenaphthene and fluorene were nondetect and therefore UJ qualified all other PAHs associated with these surrogates were J qualified.

### 6.3.2 SDG J0605735

### 6.3.2.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.3.2.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.2.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria except as described below.

The 2,4,6-tribromophenol $\% \mathrm{D}$ was high at $27 \%, 33 \%$ and $35 \%$ affecting all samples in this SDG but no qualifications made since RRFs $>0.05$ and surrogate within criteria in the LCS and blank.

### 6.3.2.4 Laboratory Blanks

The following PAHs were detected in the laboratory blanks associated with the samples covered in this SDG: 2-methylnaphthalene ( 2.5 and $1.9 \mu \mathrm{~g} / \mathrm{Kg}$ ), fluoranthene ( $3.1 \mu \mathrm{~g} / \mathrm{Kg}$ ) and pyrene ( $2.7 \mu \mathrm{~g} / \mathrm{Kg}$ ). No qualifications were necessary as all sample results were greater than five times the blank concentration.

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### 6.3.2.5 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS of the samples covered in this SDG.

### 6.3.2.6 MS/MSD Recovery

The laboratory selected and performed an MS/MSD on sample SS069AA and SS023BA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except as bolded in the table below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :---: |
| SS069AA | Naphthalene <br> 2-Methylnaphthalene <br> Acenaphthylene <br> Acenaphthene <br> Fluorene <br> Phenanthrene <br> Dibenz(a,h)anthracene | $\begin{gathered} \hline \mathbf{1 2 2 \% / 1 1 5 \%} \\ \mathbf{1 3 3 \% / 1 2 5 \%} \\ \mathbf{1 3 2 \% / 1 2 3 \%} \\ \mathbf{1 4 7 \% / 1 3 8 \%} \\ \mathbf{1 5 7 \% / 1 4 6 \%} \\ 131 \% / \mathbf{1 5 0 \%} \\ \text { 135\%/155\% } \end{gathered}$ | $\begin{aligned} & 5 \% \\ & 6 \% \\ & 3 \% \\ & 6 \% \\ & 7 \% \\ & 7 \% \\ & 6 \% \end{aligned}$ | AMEC J qualified the detected Naphthalene, 2Methylnaphthalene, Acenaphthylene, Fluorene, Phenanthrene and Dibenz( $\mathrm{a}, \mathrm{h}$ )anthracene. Concentrations for Anthracene, Fluoranthene, Pyrene, Chrysene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3cd)pyrene and Benzo(g,h,i)perylene were $>4 x$ the spike concentration so recoveries could not be adequately assessed. |
| SS023BA | Naphthalene <br> 2-Methylnaphthalene <br> Acenaphthene <br> Fluorene | $\begin{gathered} \hline \mathbf{1 1 1 \% / 1 0 9 \%} \\ \mathbf{1 2 7 \% / 1 2 6 \%} \\ 123 / 125 \% \\ 122 / \mathbf{1 3 2 \%} \end{gathered}$ | $\begin{aligned} & 1 \% \\ & 1 \% \\ & 2 \% \\ & 8 \% \end{aligned}$ | AMEC J qualified the detected Naphthalene result. All other compounds were non-detect so no qualifications necessary. |

### 6.3.2.7 Field Duplicates

Sample SS067BB was submitted as a field duplicate for sample SS067BA. All the RPDs were $\leq 30 \%$ except as tabulated below.

Sample SS019BB was submitted as a field duplicate for sample SS019BA. All the RPDs were $\leq 30 \%$ except as tabulated below.

Sample SS054BB was submitted as a field duplicate for sample SS054AA. All the RPDs were $\leq 30 \%$.

Sample SS042BB was submitted as a field duplicate for sample SS042BA. All the RPDs were $\leq 30 \%$ except as tabulated below.

Sample SS023BB was submitted as a field duplicate for sample SS023BA. All the RPDs were $\leq 30 \%$ except as tabulated below.

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| Sample ID | Analyte | RPD | Notes |
| :---: | :---: | :---: | :---: |
| SS067BA/SS067BB | Naphthalene <br> 2-Methylnaphthalene Acenaphthylene Pentachlorophenol Anthracene Fluoranthene Pyrene <br> Benz(a)anthracene Indeno(1,2,3-cd)pyrene Benzo(g,h,i)perylene | $\begin{aligned} & \hline 47 \% \\ & 51 \% \\ & 51 \% \\ & 32 \% \\ & 31 \% \\ & 68 \% \\ & 58 \% \\ & 39 \% \\ & 31 \% \\ & 39 \% \end{aligned}$ | AMEC J qualified these analytes in both samples. |
| SS042BA/SS042BB | Fluoranthene <br> Pyrene <br> Chrysene <br> Benz(a)anthracene <br> Benzo(k)fluoranthene <br> Dibenzo(a,h)anthracene | $\begin{aligned} & \hline 59 \% \\ & 42 \% \\ & 43 \% \\ & 52 \% \\ & 32 \% \\ & 39 \% \end{aligned}$ | AMEC J qualified these analytes in both samples. |
| SS023BA/SS023BB | Naphthalene <br> Anthracene | $\begin{aligned} & 32 \% \\ & 33 \% \end{aligned}$ | AMEC J qualified these analytes in both samples. |

### 6.3.2.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $-50 \%$ to $+100 \%$ acceptance limits for PAH analysis.

### 6.3.2.9 Surrogate Recoveries

All surrogates were within the laboratory acceptance criteria except as described below.


### 6.3.3 SDG J0605780

### 6.3.3.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.3.3.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.3.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria except as described below.

The pentachlorophenol $\%$ D was high at $24 \%$ in CCAL JWG0604002. AMEC J qualified pentachlorophenol in samples SS017BA, SS016AA, SS016BA, SS007AA, SS007BA, SS007BC, SS074AA, SS074AA, SS074BA, SS015AA and SS015BA.

### 6.3.3.4 Laboratory Blanks

The following PAHs were detected in the laboratory blanks associated with the samples covered in this SDG: naphthalene (4.3, 2.0 and $1.5 \mu \mathrm{~g} / \mathrm{Kg}), 2$-methylnaphthalene $(4.2 \mu \mathrm{~g} / \mathrm{Kg})$, acenaphthene $(4.2 \mu \mathrm{~g} / \mathrm{Kg})$, fluorene ( $2.9 \mu \mathrm{~g} / \mathrm{Kg}$ ), pentachlorophenol ( 1.3 and $11 \mu \mathrm{~g} / \mathrm{Kg}$ ), phenanthrene $(4.4 \mu \mathrm{~g} / \mathrm{Kg})$, anthracene $(0.77 \mu \mathrm{~g} / \mathrm{Kg})$, fluoranthene $(0.80 \mu \mathrm{~g} / \mathrm{Kg})$ and pyrene $(0.53 \mu \mathrm{~g} / \mathrm{Kg})$. No qualifications were necessary as all sample results were greater than five times the blank concentration.

### 6.3.3.5 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS of the samples covered in this SDG.

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### 6.3.3.6 MS/MSD Recovery

The laboratory selected and performed an MS/MSD on sample SS007AA and SS050AA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except as bolded in the table below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :---: |
| SS007AA | Naphthalene <br> 2-Methylnaphthalene <br> Acenaphthylene <br> Acenaphthene <br> Fluorene <br> Pentachlorophenol <br> Phenanthrene <br> Anthracene <br> Fluoranthene <br> Pyrene <br> Chrysene <br> Benz(a)anthracene <br> Benzo(b)fluoranthene <br> Benzo(k)fluoranthene <br> Benzo(a)pyrene <br> Indeno(1,2,3-cd)pyrene <br> Dibenz(a,h)anthracene <br> Benzo(g,h,i)perylene | $137 \% / 152 \%$ $161 \% / 176 \%$ $168 \% / 180 \%$ $159 \% / 183 \%$ $161 \% / 181 \%$ $174 \% / 195 \%$ $167 \% / 180 \%$ $211 \% / 212 \%$ $217 \% / 205 \%$ $213 \% / 209 \%$ $260 \% / 204 \%$ $231 \% / 196 \%$ $313 \% / 267 \%$ $271 \% / 206 \%$ $226 \% / 197 \%$ $251 \% / 242 \%$ $202 \% / 205 \%$ $215 \% / 220 \%$ | $9 \%$ $9 \%$ $6 \%$ $14 \%$ $12 \%$ $8 \%$ $7 \%$ $1 \%$ $5 \%$ $1 \%$ $19 \%$ $14 \%$ $12 \%$ $21 \%$ $11 \%$ $3 \%$ $1 \%$ $2 \%$ | AMEC J qualified the detected Naphthalene, Acenaphthylene, Pentachlorophenol, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Chrysene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene. |
| SS050AA | Naphthalene <br> 2-Methylnaphthalene <br> Acenaphthylene <br> Pentachlorophenol <br> Phenanthrene <br> Anthracene <br> Fluoranthene <br> Pyrene <br> Chrysene <br> Benz(a)anthracene <br> Benzo(b)fluoranthene <br> Benzo(k)fluoranthene <br> Benzo(a)pyrene <br> Indeno(1,2,3-cd)pyrene <br> Dibenz(a,h)anthracene <br> Benzo(g,h,i)perylene | $\begin{gathered} \hline 26 \% / 25 \% \\ 33 \% / 34 \% \\ -45 \% /-49 \% \\ 24 \% / 20 \% \\ -2 \% /-2 \% \\ -73 \% /-82 \% \\ -874 \% /-844 \% \\ -874 \% /-869 \% \\ -593 \% /-590 \% \\ -517 \% /-518 \% \\ -426 \% /-439 \% \\ -402 \% /-441 \% \\ -236 \% /-253 \% \\ -166 \% /-187 \% \\ -19 \% /-36 \% \\ -137 \% /-153 \% \end{gathered}$ | $\begin{gathered} \hline 2 \% \\ 2 \% \\ 3 \% \\ 2 \% \\ 0 \% \\ 5 \% \\ 9 \% \\ 1 \% \\ 1 \% \\ 0 \% \\ 3 \% \\ 10 \% \\ 7 \% \\ 7 \% \\ 15 \% \\ 6 \% \end{gathered}$ | AMEC J qualified the detected Naphthalene, 2Methylnaphthalene, Acenaphthylene, Pentachlorophenol, Phenanthrene and Anthracene. Concentrations for Fluoranthene, Pyrene, Chrysene, Benz(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene and Indeno(1,2,3-cd)pyrene were $>4 x$ the spike concentration so recoveries could not be adequately assessed. |

### 6.3.3.7 Field Duplicates

Sample SS012AC was submitted as a field duplicate for sample SS012AA. All the RPDs were $\leq 30 \%$.

Sample SS007BC was submitted as a field duplicate for sample SS007BA. All the RPDs were $\leq 30 \%$.

### 6.3.3.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified - $50 \%$ to $+100 \%$ acceptance limits for PAH analysis. Chrysene- $\mathrm{d}_{12}$ was initially high in sample SS025AA but was reanalyzed and within criteria, so no qualifications were necessary.

### 6.3.3.9 Surrogate Recoveries

All surrogates were within the laboratory acceptance criteria except as described below.

| Sample ID | Surrogates with recoveries outside acceptance limits | Effects on Data Usability |
| :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { SS050AA } \\ & \text { SS050BA } \end{aligned}$ | 2-Fluorobiphenyl (3\%) p-Terphenyl-d ${ }_{14}$ (34\%) | AMEC J qualified Naphthalene, 2- <br> Methylnaphthalene, Acenaphthylene, <br> Pentachlorophenol, Pyrene, Chrysene, <br> Benz(a)anthracene, Benzo(b)fluoranthene, <br> Benzo(k)fluoranthene, Benzo(a)pyrene, <br> Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene and UJ qualified Acenaphthene and Fluorene |
| SS025AA | p -Terphenyl-d ${ }_{14}(0 \%)$ | AMEC J qualified Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, $\operatorname{Dibenz}(\mathrm{a}, \mathrm{h})$ anthracene and Benzo(g,h,i)perylene. |
| SS017BA SS016AA SS007BA SS007BC SS074AA SS074BA | 2-Fluorobiphenyl 2,4,6-Tribromophenol p -Terphenyl-d ${ }_{14}$ | All three surrogate recoveries were high in all of these samples. They were all analyzed at dilutions. Surrogate recoveries could not be fully evaluated. Data usability is not adversely affected. |

### 6.3.4 SDG J0605810

### 6.3.4.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.3.4.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.4.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria except as described below.

The pentachlorophenol \% D was high at $24 \%$ in CCAL JWG0604002. AMEC J qualified pentachlorophenol in samples SS043BB, SS044AA, SS044BA, SS076AA, SS076BA, SS010AA, SS010AB, SS010BA, SS021AA and SS021BA.

The pentachlorophenol \% D was high at $23 \%$ in CCAL JWG0604003. AMEC J qualified pentachlorophenol in samples SS008AA, SS008BA, SS009AA, SS009BA, SS006AA, SS006BA, SS004AA, SS004BA, SS004BB, SS002AA, SS002AC, SS002BA, SS011AA, SS011BA, SS058AA, SS058BA, SS037AA, SS037BA, SS043AA and SS043BA.

### 6.3.4.4 Laboratory Blanks

There were no PAHs detected in the laboratory blanks associated with the samples covered in this SDG except as described below.

| Blank ID | Analyte Concentrations ( $\mu \mathrm{g} / \mathrm{Kg}$ ) | Effects on Data Usability |
| :---: | :---: | :---: |
| JWG0603919-4 | Naphthalene (2.6) <br> Anthracene (0.83) <br> Fluoranthene (2.2) <br> Pyrene (1.5) <br> Chrysene (0.70) | AMEC U qualified the detected naphthalene results from samples SS009AA and SS009BA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. All other concentrations were either non-detect or greater than five times the blank concentration. |
| JWG0603922-4 | Naphthalene (4.3) <br> 2-Methylnaphthalene (4.2) <br> Acenaphthene (4.2) <br> Fluorene (2.9) <br> Pentachlorophenol (1.3) <br> Phenanthrene (4.4) <br> Anthracene (0.77) <br> Fluoranthene (0.80) Pyrene (0.53) | No qualifications were necessary because the detected concentrations in the samples were greater than five times the concentration detected in the method blank. |

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### 6.3.4.5 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS of the samples covered in this SDG.

### 6.3.4.6 MS/MSD Recovery

The laboratory selected and performed an MS/MSD on sample SS009AA. Recoveries were within the laboratory specified acceptance limits for the MS/MSD, except as bolded in the table below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :---: |
| SS009AA | Naphthalene 2-Methylnaphthalene Acenaphthylene Acenaphthene Fluorene <br> Pentachlorophenol Phenanthrene Fluoranthene Chrysene <br> Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene | $\begin{aligned} & \hline 127 \% / 131 \% \\ & 145 \% / 148 \% \\ & 138 \% / 138 \% \\ & 150 \% / 153 \% \\ & 149 \% / 151 \% \\ & 158 \% / 165 \% \\ & 158 \% / 156 \% \\ & 146 \% / 140 \% \\ & 143 \% / 139 \% \\ & 144 \% / 140 \% \\ & 157 \% / 160 \% \\ & 159 \% / 165 \% \end{aligned}$ | $2 \%$ $2 \%$ $0 \%$ $2 \%$ $1 \%$ $3 \%$ $1 \%$ $2 \%$ $1 \%$ $2 \%$ $1 \%$ $3 \%$ | AMEC J qualified the detected Acenaphthylene, Pentachlorophenol, Phenanthrene, Fluoranthene, Chrysene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene and Dibenz( $\mathrm{a}, \mathrm{h}$ )anthracene. |

### 6.3.4.7 Field Duplicates

Sample SS004BB was submitted as a field duplicate for sample SS004BA. All the RPDs were $\leq 30 \%$ except the following. AMEC J qualified the detected naphthalene (35\%), 2methylnaphthalene (39\%), acenaphthylene (44\%), fluorene ( $78 \%$ ), phenanthrene ( $42 \%$ ), anthracene ( $47 \%$ ), fluoranthene ( $58 \%$ ), pyrene ( $37 \%$ ), chrysene ( $31 \%$ ), benz(a)anthracene ( $43 \%$ ), benzo(b)fluoranthene ( $38 \%$ ), benzo(k)fluoranthene ( $43 \%$ ), benzo(a)pyrene ( $40 \%$ ), indeno( $1,2,3-\mathrm{cd})$ pyrene ( $47 \%$ ), dibenz (a,h)anthracene ( $46 \%$ ) and benzo( $\mathrm{g}, \mathrm{h}, \mathrm{i}$ ) perylene ( $46 \%$ ).

Sample SS002AC was submitted as a field duplicate for sample SS002AA. All the RPDs were $\leq 30 \%$.

Sample SS043BB was submitted as a field duplicate for sample SS043BA. All the RPDs were $\leq 30 \%$.

Sample SS010AB was submitted as a field duplicate for sample SS010AA. All the RPDs were $\leq 30 \%$.

### 6.3.4.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $-50 \%$ to $+100 \%$ acceptance limits for PAH analysis.

### 6.3.4.9 Surrogate Recoveries

All surrogates were within the laboratory acceptance criteria except as described below.

| Sample ID | Surrogates with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS009AA <br> SS009BA | 2-Fluorobiphenyl $(138 / 134 \%)$ <br> p-Terphenyl-d <br> 14$(171 / 171 \%)$ |  | | AMEC J qualified Acenaphthylene, Pyrene, Chrysene, |
| :--- |
| Benz(a)anthracene, Benzo(b)fluoranthene, |
| Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3- |
| cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene in |
| both samples. |

### 6.3.5 SDG J0605839

### 6.3.5.1 Holding Times

The sample was extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.3.5.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.5.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria.

### 6.3.5.4 Laboratory Blanks

Naphthalene, 2-methylnaphthalene, pentachlorophenol and fluoranthene were detected below the MRL at a concentration of $2.5 \mu \mathrm{~g} / \mathrm{Kg}, 1.6 \mu \mathrm{~g} / \mathrm{Kg}, 17 \mu \mathrm{~g} / \mathrm{Kg}$ and $0.67 \mu \mathrm{~g} / \mathrm{Kg}$, respectively in the method blank JWG0603937-4.

- AMEC U qualified naphthalene for samples SS080BB, SS080CA, SS080DA, SS035CA, SS035DA, SS033AA and SS033BA
- AMEC U qualified 2-methylnaphthalene for samples SS080CA, SS080DA, SS035CA and SS035DA.
- AMEC U qualified pentachlorophenol for samples SS080CA, SS080DA, SS035CA, SS035DA and SS033AA

Naphthalene, anthracene, fluoranthene, pyrene, chrysene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and benzo(g,h,i)perylene were detected below the MRL at a concentration of $1.6 \mu \mathrm{~g} / \mathrm{Kg}, 3.1 \mu \mathrm{~g} / \mathrm{Kg}$, $1.1 \mu \mathrm{~g} / \mathrm{Kg}, 1.1 \mu \mathrm{~g} / \mathrm{Kg}, 1.3 \mu \mathrm{~g} / \mathrm{Kg}, 0.93 \mu \mathrm{~g} / \mathrm{Kg}, 2.6 \mu \mathrm{~g} / \mathrm{Kg}, 2.1 \mu \mathrm{~g} / \mathrm{Kg}, 1.3 \mu \mathrm{~g} / \mathrm{Kg}, 1.9 \mu \mathrm{~g} / \mathrm{Kg}$ and $1.8 \mu \mathrm{~g} / \mathrm{Kg}$ respectively, in the method blank JWG0603940-4.

- AMEC U qualified naphthalene in samples SS048DA, SS090CD, SS057BA, SS057CA, SS057CB and SS057DA
- AMEC U qualified anthracene in samples SS048DA, SS057BA, SS057CA, SS057CB and SS057DA
- AMEC U qualified benzo(k)fluoranthene in samples SS095CA, SS057BA, SS057CA, SS057CB and SS057DA.
- AMEC U qualified chrysene in samples SS057BA, SS057CB and SS057DA.
- AMEC U qualified benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and benzo(g,h,i)perylene in samples SS057BA, SS057CA, SS057CB and SS057DA.
- AMEC U qualified fluoranthene and pyrene in sample SS057DA.


### 6.3.5.5 LCS Recovery

Recoveries were within the laboratory specified acceptance limits for the LCS samples associated with this SDG.

### 6.3.5.6 MS/MSD Recovery

Sample SS080DA and SS036CA were selected by the laboratory for MS/MSD analyses. Phenanthrene \% recovery was low in the MS ( $-12 \%$ ) and MSD ( $-22 \%$ ) for SS080DA. AMEC J qualified the phenanthrene result in SS080DA.

Acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, chrysene and benz(a)anthracene in MS/MSD for sample SS036CA were present in high concentrations before spiking, as such control criteria are not applicable. MS and MDS \% recovery for benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and indeno(1,2,3-cd)pyrene were all below the control criteria in MS and above criteria in MSD, and thus AMEC J qualified in the parent sample. Naphthalene, 2-methylnaphthalene, acenaphthylene, dibenz(a,h)anthracene and benzo(g,h,i)perylene were outside criteria in either the MS or MSD and therefore AMEC J qualified results for those compounds in SS036CA.

### 6.3.5.7 Field Duplicates

Sample SS036AC, SS048BB, SS057CB and SS080BB were submitted to the lab as field duplicates for SS0036AA, SS048BA, SS057CA and SS080BA. All RPDs for SS036AA/SS036AC and SS048BA/SS048BB were $\leq 30 \%$. The RPDs for the following compounds: anthracene, fluoranthene, pyrene, chrysene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene and benzo(g,h,i)perylene in samples SS080BA/SS080BB had an RPD $\geq$ $46 \%$ and were $J$ qualified in both samples.

### 6.3.5.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $-50 \%$ to $+100 \%$ acceptance limits for PAH analysis.

### 6.3.5.9 Surrogate Recoveries

SS048AA, SS095AA, SS035AA, SS032AA and SS032BA were diluted twenty to fifty times, thus surrogates were diluted below the range of calibration so no qualifications can be made.

2-Fluorobiphenyl \% recovery was below the acceptance criteria for sample SS036CA at 26\%. No qualifications were made since all other surrogates were within criteria.

### 6.3.6 SDG J0605876

### 6.3.6.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis, except as described below.

The laboratory re-extracted samples SS084CA and SS084DA 20 days beyond the 14 day holding time for extraction because of low-level naphthalene contamination in the associated method blank. The laboratory reported only the naphthalene results from the re-extracted analyses for these samples. AMEC J qualified the detected naphthalene results from samples SS084CA and SS084DA because of possible low bias in the analytical results because of the exceeded holding time.

### 6.3.6.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.6.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria.

### 6.3.6.4 Laboratory Blanks

PAHs or pentachlorophenol detected in the laboratory blanks associated with the samples covered in this report are described in the table below.

| Blank ID | Analyte Concentrations ( $\boldsymbol{\mu g} / \mathbf{K g})$ | Effects on Data Usability |
| :---: | :---: | :--- |
| JWG0603939-4 | Naphthalene (2.3) | AMEC U qualified the detected naphthalene results from <br> samples SS097AA, SS097BA, SS097CA, SS097DA, <br> SS001AA, SS001CA, SS001DA, SS038AA, SS038AC, |

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| Blank ID | Analyte Concentrations ( $\mu \mathrm{g} / \mathrm{Kg}$ ) | Effects on Data Usability |
| :---: | :---: | :---: |
|  |  | SS038BA, SS038CA, SS038DA, SS038DB, SS039AA, SS039BA, SS039BB, SS039CA, SS039DA and SS029AA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | 2-Methylnaphthalene (1.6) | AMEC U qualified the detected 2-methylnaphthalene results from samples SS097BA, SS097CA, SS097DA, SS038AA, SS038AC, SS038BA, SS038CA and SS039AA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | Fluoranthene (0.83) | AMEC U qualified the detected fluoranthene results from samples SS097CA, SS097DA, SS001DA, SS039BB and SS039DA because the detected concentrations in samples were less than five times the concentration detected in the method blank. |
| JWG0603972-4 | Naphthalene (1.7) | AMEC U qualified the detected naphthalene results from samples SS029BA, SS029CA, SS029DA, SS096CA, SS096DA, SS028AA, SS028AB, SS072AA, SS072BA and SS072DA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | 2-Methylnaphthalene (1.7) | AMEC U qualified the detected 2-methylnaphthalene results from samples SS029BA, SS072AA, SS072BA, SS072CA and SS072DA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | Pentachlorophenol (4.9) | AMEC U qualified the detected pentachlorophenol results from samples SS029BA SS029DA and SS096DA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | Pyrene (0.83) | AMEC U qualified the detected pyrene results from samples SS029CA and SS029DA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
| JWG0604043-4 | Naphthalene (1.5) | AMEC U qualified the detected naphthalene results from samples SS062DA, SS064BA, SS064CA and SS064DA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
| JWG0604113-4 | Naphthalene (3.8) | AMEC U qualified the detected naphthalene results from samples SS082AA, SS082CA, SS098CA, SS098DA, SS099CA, SS099DA, SS084DA, SS062AA, SS062BA and SS062CA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | 2-Methylnaphthalene (1.6) | AMEC U qualified the detected 2-methylnaphthalene results from samples SS098CA, SS098DA, SS099CA, SS084DA, SS062AA, SS062BA and SS062CA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | Pentachlorophenol (13) | AMEC U qualified the detected pentachlorophenol results from samples SS082DA, SS098AA, SS098BA, SS098CA, SS098DA, SS099AA, SS084CA, SS062AA and SS062BA because the detected concentrations in the samples were less than five times the concentration detected in the method blank. |

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| Blank ID | Analyte Concentrations ( $\mathbf{\mu g} / \mathbf{K g})$ | Effects on Data Usability |
| :---: | :---: | :--- |
|  | Fluoranthene (1.5) | AMEC U qualified the detected fluoranthene result from <br> sample SS084DA because the detected concentrations in the <br> sample were less than five times the concentration detected <br> in the method blank. |
|  | Pyrene (1.0) | AMEC U qualified the detected pyrene result from sample <br> SS084DA because the detected concentrations in the sample <br> were less than five times the concentration detected in the <br> method blank. |
| JWG0700217-4 | Naphthalene (0.97) <br> Fluoranthene (1.6) <br> Pyrene (1.1) | AMEC U qualified the detected naphthalene results from <br> samples SS084CA and SS084DA because the detected <br> concentrations in the samples were less than five times the <br> concentration detected in the method blank. |

### 6.3.6.5 LCS Recovery

All LCS recoveries associated with PAH and pentachlorophenol analysis of the samples covered in this report were within laboratory-established acceptance limits.

### 6.3.6.6 MS/MSD Recovery

MS/MSD recoveries and RPDs were within the laboratory-established acceptance limits, except as tabulated below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :---: |
| SS099AA | Acenaphthylene | 14\%/6\% | 3\% | AMEC J qualified the detected acenaphthylene result from this sample because of possible low bias in the analytical results due to potential matrix interference. |
|  | Anthracene <br> Fluoranthene Pyrene <br> Chrysene <br> Benzo(a)anthracene <br> Benzo(b)fluoranthene <br> Benzo(k)fluoranthene <br> Benzo(a)pyrene <br> Indeno(1,2,3-cd)pyrene <br> Benzo(g,h,i)perylene | All 0\% | NA | The concentrations for these analytes were more than four times the concentration of the spike added; therefore, the recoveries could not be fully evaluated. Data usability is not adversely affected by the lack of spike recovery. |
| SS098CA | Anthracene | 0\%/0\% | NA | AMEC J qualified the detected anthracene result from this sample because of possible low bias in the analytical results due to potential matrix interference. |

### 6.3.6.7 Field Duplicates

Sample SS038DB, SS039BB and SS028AB were submitted to the lab as field duplicates for SS038DA, SS039BA and SS028AA. All RPDs were $\leq 30 \%$ with the following exceptions.

| Sample ID | Analyte | RPD | Notes |
| :---: | :---: | :---: | :--- |
|  | Anthracene | $124 \%$ | AMEC J qualified the detected analytes from |
|  | Fluoranthene | $50 \%$ | both samples due to potential sampling |
| imprecision. |  |  |  |
|  | Pyrene | $71 \%$ |  |
|  | Chrysene | $69 \%$ |  |
|  | Benzo(b)fluoranthene | $115 \%$ |  |
|  | Benzo(k)fluoranthene | $103 \%$ |  |
|  | Benzo(a)pyrene | $124 \%$ |  |
|  | Indeno(1,2,3-cd)pyrene | $130 \%$ |  |
|  | Benzo(g,h,i)perylene | $126 \%$ |  |

### 6.3.6.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $50 \%$ to $150 \%$ acceptance limits for PAH and pentachlorophenol analysis of the samples covered in this report.

### 6.3.6.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-established limits for PAH and pentachlorophenol analysis of the samples covered in this report, except as tabulated below.


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| Sample ID | Surrogates with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :--- | :--- |
| SS028DA <br> SS028DC | 2,4,6-Tribromophenol (184\%) | These samples were analyzed at 500-fold dilutions. <br> Surrogate recoveries could not be fully evaluated. <br> Data usability is not adversely affected. |

### 6.3.7 SDG J0605879

### 6.3.7.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.3.7.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.7.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria except as described below.

| Affected Samples | Analyte | $\begin{gathered} \text { CCAL \% } \\ \text { D } \end{gathered}$ | Notes |
| :---: | :---: | :---: | :---: |
| CCAL JWG0604132, analyzed December 26, 2006 |  |  |  |
| $\begin{aligned} & \text { SS100AA, SS066AA, } \\ & \text { SS066AB, SS066BA, } \\ & \text { SS066CA, SS005AA, } \\ & \text { SS005BA } \end{aligned}$ | Pentachlorophenol | 21\% | AMEC J qualified the detected results for this analyte and UJ qualified the nondetected results. |
| SS066DA, SS066DC |  |  | AMEC UJ qualified the non-detected results for this analyte. |
| CCAL JWG0604173, analyzed December 27, 2006 |  |  |  |
| SS005CA, SS003AA, SS086AA, SS086BA, SS086BB, SS088AA, SS088BA, SS091AA, SS052BA, SS068AA | Pentachlorophenol | 23\% | AMEC J qualified the detected results for this analyte. |
| SS003BA, SS003CA, SS003CB, SS0077BA |  |  | AMEC UJ qualified the non-detected results for this analyte. |
| CCAL JWG0700147, analyzed January 05, 2007 |  |  |  |

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| Affected Samples | Analyte | CCAL \% <br> D | Notes |
| :--- | :---: | :---: | :--- |
| SS091BA, SS075AA, | Benzo(b)fluoranthene <br> SS077AA, SS075BA <br> Indeno(1,2,3-cd)pyrene <br> Dibenz(a,h)anthracene | $21 \%$ <br> $21 \%$ <br> $27 \%$ | AMEC J qualified the detected results for <br> these analytes. Only J qualify <br> Benzo(b)fluoranthene in SS075BA as other <br> analytes reported from different analytical <br> run. |
| CCAL JWG0700161, analyzed January 07, 2007 |  |  |  |
| SS052AA, SS052BA, | Benzo(b)fluoranthene | $28 \%$ | AMEC J qualified the detected results for <br> this analyte. |

### 6.3.7.4 Laboratory Blanks

PAHs or pentachlorophenol detected in the laboratory blanks associated with the samples covered in this report are described in the table below.

| Blank ID | Analyte Concentrations <br> $(\boldsymbol{\mu g} / \mathbf{K g})$ | Effects on Data Usability |
| :---: | :---: | :--- |
| JWG0604043-4 | Naphthalene (1.5) | AMEC U qualified the detected naphthalene results from <br> samples SS066DA and SS068DC because the detected <br> concentrations in the samples were less than five times the <br> concentration detected in the method blank. |
| JWG0604114-4 | Fluoranthene (1.1) | The detected concentrations in the samples were greater <br> than five times the concentration detected in the method <br> blank so no qualifications were necessary. |
| JWG0604115-4 | Naphthalene (2.4) <br> Pentachlorophenol (13) | The detected concentrations in the samples were greater <br> than five times the concentration detected in the method <br> blank so no qualifications were necessary. |

### 6.3.7.5 LCS Recovery

All LCS recoveries associated with PAH and pentachlorophenol analysis of the samples covered in this report were within laboratory-established acceptance limits.

### 6.3.7.6 MS/MSD Recovery

Sample SS052BA and SS077BA were selected by the laboratory for MS/MSD analyses. MS/MSD recoveries and RPDs were within the laboratory-established acceptance limits, except as bolded below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :--- |
| SS052BA | 2-Methylnaphthalene | $\mathbf{3 9 \%} \% / \mathbf{4 1 \%}$ <br> $\mathbf{- 1 2 0 \% / - 1 1 3 \%}$ | $1 \%$ <br> $5 \%$ | AMEC J qualified the detected result <br> from this sample because of possible <br> low bias in the analytical results due to <br> potential matrix interference. |

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| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :---: |
|  | Acenaphthylene Pentachlorophenol Anthracene Fluoranthene Pyrene <br> Chrysene <br> Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Benzo(g,h,i)perylene | 165\%/246\% <br> $267 \% / 532 \%$ <br> $-713 \% /-712 \%$ <br> $-495 \% / 511 \%$ <br> $-757 \% / 230 \%$ <br> $-720 \%-95 \%$ <br> $39 \% / 554 \%$ <br> $-1723 \% /-756 \%$ <br> $-635 \% /-151 \%$ <br> $89 \% / 364 \%$ <br> $263 \% / 396 \%$ <br> $331 \% / 346 \%$ | NA | The concentrations for these analytes were more than four times the concentration of the spike added; therefore, the recoveries could not be fully evaluated. Data usability is not adversely affected by the lack of spike recovery. |
|  | Dibenz(a,h)anthracene | 138\%/187\% | 10\% | AMEC J qualified the detected result from this sample because of possible high bias in the analytical result due to potential matrix interference. |
| SS077BA | Naphthalene 2-Methylnaphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Benzo(a)pyrene Dibenz(a,h)anthracene | $\begin{gathered} 71 \% / \mathbf{2 \%} \\ 82 \% / \mathbf{1 0 \%} \\ 96 \% / \mathbf{3 5 \%} \\ 91 \% / \mathbf{1 3 \%} \\ 88 \% / \mathbf{2 \%} \\ 97 \% / 7 \% \\ \hline 114 \% /-\mathbf{8 \%} \\ 88 \% /-5 \% \\ \hline \end{gathered}$ | $\begin{gathered} \hline 144 \% \\ 156 \% \\ 32 \% \\ 151 \% \\ 154 \% \\ 63 \% \\ 35 \% \\ 82 \% \\ \hline \end{gathered}$ | AMEC J qualified the detected anthracene result from this sample because of possible low bias in the analytical results due to potential matrix interference. |
|  | Fluoranthene Pyrene | $\begin{gathered} \hline 134 \% /-92 \% \\ 158 \% /-120 \% \end{gathered}$ | $\begin{aligned} & \hline 38 \% \\ & \mathbf{4 0} \% \end{aligned}$ | The concentrations for these analytes were more than four times the concentration of the spike added; therefore, the recoveries could not be fully evaluated. Data usability is not adversely affected by the lack of spike recovery. |

### 6.3.7.7 Field Duplicates

Sample SS100DB, SS066AB, SS066DC, SS003CB, SS086BB were submitted to the lab as field duplicates for SS100DA, SS066AA, SS066DA, SS003CA, SS086BA. All RPDs were $\leq$ $30 \%$ with the following exceptions.

| Sample ID | Analyte | RPD | Notes |
| :---: | :---: | :---: | :--- |
| SS100DA/SS100DB | Fluoranthene | $55 \%$ | AMEC J qualified the detected analytes from <br> both samples due to potential sampling <br> imprecision. |
| SS066AA/SS066AB | Naphthalene <br> 2-Methylnaphthene <br> Acenaphthene | $41 \%$ <br> $38 \%$ <br> $31 \%$ | AMEC J qualified the detected analytes from <br> both samples due to potential sampling <br> imprecision. |

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| Sample ID | Analyte | RPD | Notes |
| :---: | :---: | :---: | :---: |
|  | Pentachlorophenol <br> Pyrene <br> Chrysene <br> Benz(a)anthracene <br> Benzo(k)fluoranthene <br> Benzo(a)pyrene <br> Indeno(1,2,3-cd)pyrene | $\begin{aligned} & \hline 37 \% \\ & 51 \% \\ & 54 \% \\ & 61 \% \\ & 43 \% \\ & 33 \% \\ & 33 \% \\ & \hline \end{aligned}$ |  |
| SS066DC/SS066DA | Fluorene <br> Phenanthrene <br> Anthracene <br> Fluoranthene <br> Pyrene <br> Chrysene <br> Benz(a)anthracene | $\begin{aligned} & \hline 55 \% \\ & 57 \% \\ & 73 \% \\ & 63 \% \\ & 63 \% \\ & 38 \% \\ & 48 \% \\ & \hline \end{aligned}$ | AMEC J qualified the detected analytes from both samples due to potential sampling imprecision. |
| SS003CA/SS003CB | Acenaphthylene Phenanthrene Anthracene Fluoranthene Pyrene <br> Chrysene <br> Benz(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene | $38 \%$ $71 \%$ $58 \%$ $94 \%$ $99 \%$ $81 \%$ $93 \%$ $55 \%$ $70 \%$ $57 \%$ $33 \%$ $53 \%$ | AMEC J qualified the detected analytes from both samples due to potential sampling imprecision. |
| SS086BA/SS086BB | Chrysene | 56\% | AMEC J qualified the detected analytes from both samples due to potential sampling imprecision. |

### 6.3.7.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $50 \%$ to $150 \%$ acceptance limits for PAH and pentachlorophenol analysis of the samples covered in this SDG except as described below.

All IS recoveries were initially low in sample SS066AA. The sample was reanalyzed and all IS recoveries were within criteria, so no qualifications were necessary.

Chrysene- $\mathrm{d}_{12}$ was low in SS066AB and SS005AA but the samples were reanalyzed and the IS recoveries were within criteria, so no qualifications were necessary.

Perylene- $\mathrm{d}_{12}$ was low in SS005AA, the sample was reanalyzed and the IS recovery was within criteria, so no qualifications were necessary.

### 6.3.7.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-established limits for PAH and pentachlorophenol analysis of the samples covered in this report, except as tabulated below.

| Sample ID | Surrogates with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS100CA | 2-Fluorobiphenyl | These samples were analyzed at dilutions. Surrogate <br> SS100DA <br> SS100DB |
| 2,4,6-Tribromophenol |  |  |
| SS075BA | p-Terphenyl-d ${ }_{14}$ | is not adversely affected. |
| SS077AA |  |  |
| SS100BA | 2-Fluorobiphenyl (26\%) | These samples were analyzed at dilutions. Surrogate |
| SS005BA | 2-Fluorobiphenyl (27\%) | recoveries could not be fully evaluated. Data usability |
| SS005CA | 2-Fluorobiphenyl (11\%) | is not adversely affected. |
| SS003AA | 2-Fluorobiphenyl (29\%) |  |
| SS003CA | 2-Fluorobiphenyl (24\%) |  |
| SS003CD | 2-Fluorobiphenyl (22\%) |  |
| SS088BA | 2-Fluorobiphenyl (25\%) |  |

### 6.3.8 SDG J0605890

### 6.3.8.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis except as described below.

The laboratory re-extracted samples SS049DA, SS041DA, SS088CA, SS088DA, SS091DA, SS068CA, SS075DA and SS084DA 17 days beyond the 14 day holding time for extraction because of naphthalene, 2-methylnaphthalene, acenaphthene, fluorene and phenanthrene contamination in the associated method blank. The laboratory reported only some of the analytes results from the re-extracted analyses for these samples.

| Sample ID | Analyte | Days <br> Past <br> HT | Notes |
| :---: | :---: | :---: | :--- |
| SS088CA <br> SS088DA <br> SS075DA <br> SS049DA <br> SS041DA | Naphthalene <br> 2-Methylnaphthalene <br> Acenaphthene <br> Fluorene <br> Phenanthrene | 17 | AMEC J qualified the detected analytes due to <br> potential low bias for the holding time <br> exceedance. |
| SS091DA | Naphthalene <br> 2-Methylnaphthene <br> Acenaphthene <br> Fluorene <br> Phenanthrene | 17 | AMEC J qualified the detected analytes due to <br> potential low bias for the holding time <br> exceedance. AMEC R qualified the non-detected <br> Acenaphthene, Fluorene and Phenanthrene <br> results. |

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| Sample ID | Analyte | Days <br> Past <br> HT | Notes |
| :---: | :---: | :---: | :--- |
| SS068CA | Naphthalene <br> 2-Methylnaphthene <br> Acenaphthene <br> Fluorene <br> Phenanthrene | 17 | AMEC J qualified the detected analytes due to <br> potential low bias for the holding time <br> exceedance. AMEC R qualified the non-detected <br> Fluorene result. |
| SS078DA | Acenaphthene <br> Fluorene <br> Phenanthrene | 17 | AMEC J qualified the detected analytes due to <br> potential low bias for the holding time <br> exceedance. AMEC R qualified the non-detected <br> Phenanthrene result. |
| SS075CA | Naphthalene <br> 2-Methylnaphthene <br> Acenaphthene <br> Fluorene | 17 | AMEC J qualified the detected analytes due to <br> potential low bias for the holding time <br> exceedance. AMEC R qualified the non-detected <br> Acenaphthene and Fluorene result. |
| SS030CA | 2-Methylnaphthene <br> Acenaphthene <br> Phenanthrene | 23 | AMEC J qualified the detected analytes due to <br> potential low bias for the holding time <br> exceedance. AMEC R qualified the non-detected <br> Acenaphthene result. |
| SS030DA | Naphthalene <br> 2-Methylnaphthalene <br> Acenaphthene <br> Fluorene <br> Phenanthrene | 23 | AMEC J qualified the detected analytes due to <br> potential low bias for the holding time <br> exceedance. AMEC R qualified the non-detected <br> 2-Methylnaphthalene, Acenaphthene and <br> Fluorene result. |

### 6.3.8.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.8.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria except as described below.

| Affected Samples | Analyte | CCAL \% <br> D | Notes |
| :--- | :---: | :---: | :--- |
| CCAL JWG0700147, analyzed January 05, 2007 |  |  |  |
| SS041AA, SS041BA, | Benzo(b)fluoranthene | $21 \%$ | AMEC J qualified the detected results for |
| SS030AA, SS094AA, | Indeno(1,2,3-cd)pyrene | $21 \%$ | these analytes. |
| SS094AB, SS094BA, | Dibenz(a,h)anthracene | $27 \%$ |  |
| SS045AA, SS045BA, |  |  |  |
| SS047AA, SS047BA |  |  |  |

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| Affected Samples | Analyte | $\begin{gathered} \text { CCAL \% } \\ \text { D } \end{gathered}$ | Notes |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { SS030BA, SS101AA, } \\ & \text { SS101BA, SS047AC, } \\ & \text { SS024AA, SS024BA } \end{aligned}$ | Dibenz(a,h)anthracene | 27\% | AMECE J qualified the detected results for this analyte. |
| CCAL JWG0700161, analyzed January 07, 2007 |  |  |  |
| SS091DA, SS088DA, <br> SS068CA, SS068DA, <br> SS078BA, SS078CA, <br> SS078DA, SS075DA, <br> SS049DA, SS041DA <br> SS030DA | Benzo(b)fluoranthene | 28\% | AMEC J qualified the detected results for this analyte. |
| CCAL JWG0700162, analyzed January 08, 2007 |  |  |  |
| SS086CA, SS049CA, SS075CA, SS077CA, SS041CA, SS030BA, SS101AA, SS101BA, SS047AC, SS024AA, SS024BA, SS086DA, SS030CA | Benzo(b)fluoranthene | 24\% | AMEC J qualified the detected results for this analyte. |
| CCAL JWG0700167, analyzed January 08, 2007 |  |  |  |
| SS077DA, SS077DB | Benzo(b)fluoranthene | 26\% | AMEC J qualified the detected results for this analyte. |

### 6.3.8.4 Laboratory Blanks

PAHs or pentachlorophenol detected in the laboratory blanks associated with the samples covered in this report are described in the table below.

| Blank ID | Analyte Concentrations <br> $(\mathbf{\mu g} / \mathbf{K g})$ | Effects on Data Usability |
| :---: | :---: | :--- |
| JWG0604115-4 | Naphthalene (2.4) | AMEC U qualified the detected naphthalene results from <br> samples SS047AA because the detected concentration was <br> less than five times the concentration detected in the method <br> blank. |
| JWG0604115-4 | Pentachlorophenol (13) | AMEC U qualified the detected pentachlorophenol results <br> from samples 030AA, SS030BA, SS024AA and SS024BA <br> because the detected concentrations were less than five <br> times the concentration detected in the method blank. |
| JWG0604149-4 | Naphthalene (420) <br> 2-Methylnaphthalene (310) <br> Acenaphthylene (4.0) <br> Fluorene (70) <br> Pentachlorophenol (2) <br> Phenanthrene (20) <br> Anthracene (2.4) | AMEC U qualified the detected naphthalene, fluorene and <br> pentachlorophenol results from sample SS030CA because <br> the detected concentrations were less than five times the <br> concentration detected in the method blank. AMEC U <br> qualified the detected acenaphthylene and anthracene results <br> from sample SS030DA. |

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| Blank ID | Analyte Concentrations ( $\mu \mathrm{g} / \mathrm{Kg}$ ) | Effects on Data Usability |
| :---: | :---: | :---: |
|  | Fluoranthene (1.3) <br> Pyrene (0.97) |  |
| JWG0604166-4 | Naphthalene (210) 2-Methylnaphthalene (140) Acenaphthene (84) Fluorene (32) Phenanthrene (11) Anthracene (1.6) Fluoranthene (1.4) Pyrene (1.0) Chrysene (0.50) Benzo(b)fluoranthene (0.90) | AMEC U qualified the detected anthracene in samples SS091DA and SS078DA. AMEC U qualified the detected naphthalene in samples SS068DA, SS078BA, SS078CA, SS078DA, SS041CA, SS049CA, SS078AA, SS086DA and SS091CA. AMEC U qualified the 2-methylnaphthalene results detected in samples SS068DA, SS078BA, SS078CA, SS078DA, SS086DA, SS091CA, SS078AA, SS049CA and SS041CA. AMEC U qualified the detected acenaphthene in samples SS068DA, SS078BA, SS078CA, SS091CA, SS078AA, SS049CA and SS041CA. AMEC U qualified the detected fluorene result in samples SS068DA, SS078BA, SS078CA, SS091CA SS078AA, SS049CA and SS041CA. AMEC U qualified the detected phenanthrene results in samples SS068DA, SS078BA, SS078CA, SS091CA, SS078AA and SS041CA |
| JWG0700225-4 | Naphthalene (2.5) <br> 2-Methylnaphthalene (1.8) <br> Fluoranthene (1.2) <br> Pyrene (0.77) | AMEC U qualified the detected naphthalene result in sample SS068CA. AMEC U qualified the detected 2methylnaphthalene result in sample SS041DA. |

### 6.3.8.5 LCS Recovery

All LCS recoveries associated with PAH and pentachlorophenol analysis of the samples covered in this report were within laboratory-established acceptance limits except as described below.

| LCS ID | Analyte \% Recovery | Effects on Data Usability |
| :---: | :---: | :---: |
| JWG0604149-3 | Naphthalene (292) 2-Methylnaphthalene (225) Acenaphthene (169) | AMEC J qualified the naphthalene result in samples SS030CA and SS077DB due to the high LCS recovery. AMEC also J qualified 2-methylnaphthalene and acenaphthene from sample SS077DB. |
| JWG0604166-3 | Naphthalene (168) <br> 2-Methylnaphthalene (136) | AMEC J qualified the detected naphthalene and 2methylnaphthalene in samples SS086CA, SS077CA, SS077DA, SS078AA, SS078BA, SS078CA, SS086DA, SS091CA, SS068DA, SS078DA, SS049CA and SS041CA. |

### 6.3.8.6 MS/MSD Recovery

Sample SS030CA and SS091DA were selected by the laboratory for MS/MSD analyses. MS/MSD recoveries and RPDs were within the laboratory-established acceptance limits, except as bolded below.

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| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :--- |
| SS030CA | Fluoranthene | $\mathbf{- 1 1 6 \% / - \mathbf { 1 3 3 } \%}$ | $11 \%$ | AMEC J qualified the detected <br> fluoranthene and pyrene result from <br> this sample because of possible low <br> bias in the analytical results due to <br> potential matrix interference. |
|  | Chrysene | $\mathbf{2 7 \%} / \mathbf{1 3 \%}$ | $10 \%$ |  |
|  | Pyrene | $\mathbf{- 7 4 \% / - 9 1 \%}$ | $10 \%$ |  |

### 6.3.8.7 Field Duplicates

Sample SS094AB, SS047AC and SS077DBwere submitted to the lab as field duplicates for SS094AA, SS047AA and SS077DA. All RPDs were $\leq 30 \%$ with the following exceptions.

| Sample ID | Analyte | RPD | Notes |
| :---: | :---: | :---: | :--- |
| SS094AA/SS094AB | Naphthalene <br> Benzo(b)fluoranthene | $54 \%$ <br> $35 \%$ | AMEC J qualified the detected analytes from <br> both samples due to potential sampling <br> imprecision. |
| SS047AA/SS047AC | Pentachlorophenol | $42 \%$ | AMEC J qualified the detected analytes from <br> both samples due to potential sampling <br> imprecision. |
| SS077DA/SS077DB | Naphthalene | $32 \%$ | AMEC J qualified the detected analyte from <br> both samples due to potential sampling <br> imprecision. |

### 6.3.8.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $50 \%$ to $150 \%$ acceptance limits for PAH and pentachlorophenol analysis of the samples covered in this SDG except as described below. Sample SS086CA had low phenanthrene- $\mathrm{d}_{10}$ but the sample was reanalyzed and the IS recovery was within criteria, so no qualifications were necessary.

### 6.3.8.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-established limits for PAH and pentachlorophenol analysis of the samples covered in this report, except as tabulated below.

| Sample ID | Surrogates with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SS101AA | 2-Fluorobiphenyl | These samples were analyzed at dilutions. Surrogate <br> SS101BA |
| SS077CA | 2,4,6-Tribromophenol | recoveries could not be fully evaluated. Data usability |
| SS077DA | p-Terphenyl-d ${ }_{14}$ |  |
| SS077DB |  |  |

### 6.3.9 SDG J0605919

### 6.3.9.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of seven days for aqueous extraction and 14 days for solid extraction and 40 days for analysis, except as described below.

The laboratory re-extracted samples SS52CA, SS52DA, SS047CA, SS047DA, SS045CA, SS045DA, SS024CA, SS031BA, SS031CA, SS031DA, SS026BA, SS007CA, SS0022AA, SS0022AB, SS0022DA, SS020CA, SS020CC, SS020DA, SS046CA and SS046DA 24 days beyond the 14 day holding time for extraction because of low-level naphthalene, 2methylnaphthalene, acenaphthene, fluorene, phenanthrene, and anthracene contamination in the associated method blanks. The laboratory reported these analyte results from the re-extracted sample analyses. AMEC UJ qualified the non-detected results and J qualified the detected results for naphthalene, 2-methylnaphthalene, acenaphthene, fluorene and phenanthrene from samples SS52CA, SS52DA, SS047DA, SS045CA, SS045DA, SS031BA, SS031CA, SS031DA, SS026BA, SS0022DA, SS020CA, SS020CC, SS020DA, SS046CA, SS046DA and SS0022DA; the naphthalene, 2-methylnaphthalene, acenaphthene and fluorene results from sample SS047CA; the naphthalene, 2-methylnaphthalene, acenaphthene, fluorene and anthracene results from sample SS024CA; and the acenaphthene and fluorene results from samples SS007CA, SS0022AA, and SS0022AB because of possible low bias in the analytical results due to the exceeded holding time.

The laboratory re-extracted sample SS070AA 23 days beyond the 14 day holding time for extraction, because of surrogate recoveries. AMEC J qualified the detected results for this sample because of possible low bias in the analytical results due to the exceeded holding time.

### 6.3.9.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.9.3 Continuing Calibration

CCV recoveries for PAH and pentachlorophenol analysis of the samples covered in this SDG were acceptable.

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### 6.3.9.4 Laboratory and Equipment Blanks

No PAHs or pentachlorophenol were detected in the laboratory or equipment blanks associated with the samples covered in this report, except as described in the table below.

| Blank ID | Analyte Concentrations ( $\mu \mathrm{g} / \mathrm{Kg}$ ) | Effects on Data Usability |
| :---: | :---: | :---: |
| JWG0604149-4 | Naphthalene (420) <br> 2-Methylnaphthalene (310) <br> Acenaphthylene (4.0) <br> Acenaphthene (210) <br> Fluorene (70) <br> Pentachlorophenol (2.0) <br> Phenanthrene (20) <br> Anthracene (2.4) <br> Fluoranthene (1.3) <br> Pyrene (0.97) | The concentrations for these analytes in the associated samples were more than five times the blank concentrations. Data usability is not adversely affected by the method blank detections. |
| JWG0604170-4 | Naphthalene (130) | AMEC U qualified the detected naphthalene results from samples SS046AA, SS046BA, SD002AA, SD003AA, SD004AA, and SD004BA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | 2-Methylnaphthalene (93) | AMEC U qualified the detected 2-methylnaphthalene results from samples SS046AA, SS046BA, and SD004BA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | Acenaphthene (74) | AMEC U qualified the detected acenaphthene results from samples SS046AA and SD004AA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | Fluorene (34) | AMEC U qualified the detected fluorene results from samples SS046AA, SS046BA, and SD004AA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
| JWG0700100-4 | Naphthalene (49) | AMEC U qualified the detected naphthalene results from samples SS031DB, SS026AA, SS026CA, SS026CC, SS026DA, SS007CA, SS007DA, SS007DB, SS0022AA, SS0022AB, SS0022BA, SS0022CA, SS020AA, and SS020BA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | 2-Methylnaphthalene (55) | AMEC U qualified the detected 2-methylnaphthalene results from samples SS031DB, SS026CA, SS026CC, SS026DA, SS007CA, SS007DA, SS007DB, SS0022AA, SS0022AB, SS0022BA, SS0022CA, SS020AA, and SS020BA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | Acenaphthene (48) | AMEC U qualified the detected acenaphthene results from samples SS031DB, SS026CA, SS026CC, SS026DA, SS007DA, SS007DB, SS0022BA, SS0022CA, and SS020BA because the concentrations in the samples were less than five times the concentration detected in the method blank. |

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| Blank ID | Analyte Concentrations ( $\mu \mathrm{g} / \mathrm{Kg}$ ) | Effects on Data Usability |
| :---: | :---: | :---: |
|  | Fluorene (24) | AMEC U qualified the detected fluorene results from samples SS031DB, SS026CA, SS026CC, SS026DA, SS007DA, SS007DB, SS0022BA, SS0022CA, SS020AA, and SS020BA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
|  | Phenanthrene (12) | AMEC U qualified the detected phenanthrene results from samples SS031DB, SS026CA, SS026CC, SS026DA, SS007CA, SS007DA, SS007DB, SS0022AA, SS0022AB, SS0022BA, SS0022CA and SS020BA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
| JWG0700177-4 | Naphthalene (1.5) | AMEC U qualified the detected naphthalene results from samples SS031CA and SS031DA because the concentrations in the samples were less than five times the concentration detected in the method blank. |
| JWG0700178-4 | Penthachlorophenol (1.2) Fluoranthene (0.8) Pyrene (0.60) | The concentrations for these analytes in the associated samples were more than five times the blank concentrations. Data usability is not adversely affected by the method blank detections. |
| EB-01 | Naphthalene $(0.14)$ 2-Methylnaphthalene $(0.15)$ Acenaphthene $(0.28)$ Fluorene $(0.18)$ Pentachlorophenol $(0.53)$ Phenanthrene $(0.46)$ Anthracene $(0.054)$ Fluoranthene $(0.24)$ Pyrene $(0.14)$ Benzo(a)anthracene $(0.021)$ Chrysene $(0.019)$ | AMEC U qualified the detected pentachlorophenol results from samples SS007DA and SS007DB because the sample concentrations were less than five times the equipment blank concentrations. <br> All other analytes were either not detected or the sample concentrations were more than five times the equipment blank concentrations; therefore data usability is not adversely affected. |
| EB-02 | Naphthalene (0.63) <br> 2-Methylnaphthalene (0.18) <br> Acenaphthene (0.61) <br> Fluorene (0.39) <br> Pentachlorophenol (0.38) <br> Phenanthrene (0.36) <br> Anthracene (0.050) <br> Fluoranthene (0.14) <br> Pyrene (0.084) |  |

### 6.3.9.5 LCS Recovery

All LCS recoveries associated with PAH and pentachlorophenol analysis of the samples covered in this report were within laboratory-established acceptance limits, except as tabulated below.

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| LCS ID | Analytes with recoveries outside acceptance limits (\%) | Effects on Data Usability |
| :---: | :---: | :---: |
| JWG0604149-3 | $\begin{gathered} \text { Naphthalene (292\%) } \\ \text { 2-Methylnaphthalene (225\%) } \\ \text { Acenaphthene }(169 \%) \end{gathered}$ | AMEC J qualified the detected results for these analytes from samples SS094CA, SS094DA, SS101CA, and SS101DA; the detected naphthalene results from samples SS024DA, SS070AB, SS070DA, SS070BA, and SS070CA; and the detected 2methylnaphthalene results from samples SS070BA and SS070CA because of possible high bias in the analytical results. |
| JWG0604170-3 | ```Naphthalene (144%) 2-Methylnaphthalene (130%) Acenaphthene (121%)``` | AMEC J qualified the detected results for these analytes from sample SS046AA; the detected naphthalene results from samples SS046BA, SD002AA, SD003AA, SD004BA, and SD004AA; the detected 2-methylnaphthalene results from samples SS046BA and SD004BA; and the detected acenaphthene result from sample SD004AA because of possible high bias in the analytical results. |

### 6.3.9.6 MS/MSD Recovery

MS/MSD recoveries and RPDs were within the laboratory-established acceptance limits, except as bolded below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Notes |
| :---: | :---: | :---: | :---: | :---: |
| SS046BA | Phenanthrene | 114\%/233\% | 38\% | AMEC J qualified the detected phenanthrene result from this sample because of possible high bias in the analytical results due to potential matrix interference. |
|  | Pentachlorophenol Fluoranthene Pyrene Chrysene <br> Benzo(b)fluoranthene <br> Benzo(k)fluoranthene | $\begin{gathered} \hline 156 \% / 263 \% \\ \mathbf{1 6 5 \% / 2 8 9 \%} \\ 357 \% / 248 \% \\ 102 \% / 152 \% \\ -396 \% /-210 \% \\ -71 \% / 12 \% \end{gathered}$ | $\begin{gathered} \hline 9 \% \\ 10 \% \\ 7 \% \\ 4 \% \\ 8 \% \\ 8 \% \end{gathered}$ | The concentrations for these analytes were more than four times the concentration of the spike added; therefore, the recoveries could not be fully evaluated. Data usability is not adversely affected by the high or low spike recoveries. |

### 6.3.9.7 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $50 \%$ to $150 \%$ acceptance limits for PAH and pentachlorophenol analysis of the samples covered in this report.

### 6.3.9.8 Surrogate Recoveries

Surrogate recoveries were within the laboratory-established limits for PAH and pentachlorophenol analysis of the samples covered in this report, except as tabulated below.

| Sample ID | Surrogates with recoveries outside acceptance limits | Effects on Data Usability |
| :---: | :---: | :---: |
| SS070AB SS070BA SS026AA SD001AA SD001AB SD004BA | 2-Fluorobiphenyl (0\%) 2,4,6-Tribromophenol (0\%) p-Terphenyl-d ${ }_{14}(0 \%)$ | These samples were analyzed at 100 -fold dilutions. Surrogate recoveries could not be fully evaluated. Data usability is not adversely affected. |
| $\begin{aligned} & \text { SS094DA } \\ & \text { SS101DA } \end{aligned}$ | $\begin{aligned} & \text { p-Terphenyl-d }{ }_{14}(214 \%) \\ & \text { p-Terphenyl-d } \\ & 14 \\ & (294 \%) \end{aligned}$ | This sample was analyzed at 50 -fold and 5000fold dilutions. Surrogate recoveries could not be fully evaluated. Data usability is not adversely affected. |
| SS101CA | 2,4,6-Tribromophenol (0\%) <br> p-Terphenyl-d ${ }_{14}$ (298\%) |  |

### 6.3.9.9 Data Reporting

Samples SS094CA, SS094DA, SS101CA, SS101DA, SS20CA, SS52DA, SS047CA, SS047DA, SS024DA, SS070AA, SS070AB, SS070BA, SS070CA, SS031AA, SS026AA, SS026BA, SS020AA, SS046AA, SS046BA, SD001AA, SD001AB, SD002AA, SD003AA, SD004AA, and SD004BA required dilutions due to the presence of elevated levels of target analytes. The reporting limits were adjusted to reflect the dilutions.

### 6.3.10 SDG J0605944

### 6.3.10.1 Holding Times

All samples were extracted and analyzed within the QAPP-recommended maximum holding time of 14 days for solid extraction and 40 days for analysis.

### 6.3.10.2 Initial Calibration

The QAPP-specified criteria of SPCCs, CCCs and target analytes were met for the initial calibrations associated with PAH analysis.

The second source calibration verification QAPP requirement of $\pm 25 \%$ of the expected value was met.

### 6.3.10.3 Continuing Calibration

CCAL recoveries for the samples in this SDG were acceptable met QAPP-specified criteria except as described below.

| Affected Samples | Analyte | CCAL \% <br> D | Notes |
| :--- | :---: | :---: | :--- |
| CCAL JWG0700206, analyzed January 10, 2007 |  |  |  |
| SD006BA, SD007AA, <br> SD008AA, SD009AA, <br> SD006AC | Benzo(b)fluoranthene | $26 \%$ | AMEC J qualified the detected results for <br> this analyte. |

### 6.3.10.4 Laboratory Blanks

PAHs or pentachlorophenol detected in the laboratory blanks associated with the samples covered in this report are described in the table below.

| Blank ID | Analyte Concentrations <br> $(\mathbf{\mu g} / \mathbf{K g})$ | Effects on Data Usability |
| :---: | :---: | :--- |
| JWG0604170-4 | Naphthalene (130) | AMEC U qualified the detected naphthalene results from <br> samples SD005AA, SD007AA, SD008AA, SD006AC and <br> 2-Methylnaphthalene (93) <br> Acenaphthene (74) |
| Fluorene (34) | SD009AA. AMEC U qualified the detected 2- <br> methylnaphthalene results from samples SD005AA, <br> SD006AA, SD006BA and SD007AA. AMEC U qualified |  |
|  | Pentachlorophenol (1.5) | SDe detect fluorene results from samples SD005AA and <br> the <br> Phenanthrene (12) |
| Anthracene (1.4) | SD009AA because the detected concentration was less than |  |
| five times the concentration detected in the method blank. |  |  |
|  | Fluoranthene (0.77) |  |
|  |  |  |

### 6.3.10.5 LCS Recovery

All LCS recoveries associated with PAH and pentachlorophenol analysis of the samples covered in this report were within laboratory-established acceptance limits except as described below. Naphthalene, 2-methylnaphthalene and acenaphthene recoveries were high but naphthalene and 2-methylnaphthalene were $U$ qualified due to blank contamination and the Acenaphthene results were all non-detect, so no qualifications were necessary.

### 6.3.10.6 MS/MSD Recovery

The laboratory selected a non-project sample for the MS/MSD analysis for this batch so data quality could not be assessed.

### 6.3.10.7 Field Duplicates

Sample SD006AC was submitted to the lab as a field duplicates for SD006AA. All RPDs were $\leq 30 \%$ with the following exceptions.

| Sample ID | Analyte | RPD | Notes |
| :---: | :---: | :---: | :--- |
| SD006AA/SD006AC | Benzo(b)fluoranthene | $39 \%$ | AMEC J qualified the detected analytes from |
|  | Indeno(1,2,3-cd)pyrene | $34 \%$ | both samples due to potential sampling <br> imprecision. |
|  | Dibenz(a,h)anthracene | $34 \%$ |  |

### 6.3.10.8 Internal Standard Recoveries

IS recoveries were within the QAPP-specified $50 \%$ to $150 \%$ acceptance limits for PAH and pentachlorophenol analysis of the samples covered in this SDG.

### 6.3.10.9 Surrogate Recoveries

Surrogate recoveries were within the laboratory-established limits for PAH and pentachlorophenol analysis of the samples covered in this report, except as tabulated below.

| Sample ID | Surrogates with recoveries <br> outside acceptance limits | Effects on Data Usability |
| :--- | :---: | :--- |
| SD006BA | 2-Fluorobiphenyl $(21 \%)$ <br> $2,4,6$-Tribromophenol $(16 \%)$ <br> p-Terphenyl- $\mathrm{d}_{14}(24 \%)$ | These samples were analyzed at dilutions. Surrogate <br> recoveries could not be fully evaluated. Data usability <br> is not adversely affected. |

### 6.4 Metals by USEPA 6020 and USEPA 7471A

Samples were analyzed by USEPA method 6020, not by QAPP-specified method 6010B. There is no impact to data quality so no qualifications necessary. The results may be considered usable with the limitations and exceptions described below.

### 6.4.1 SDG J0605714

### 6.4.1.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.1.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.1.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs were acceptable.

### 6.4.1.4 Low Level Calibration Check Standard

All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.1.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.1.6 Laboratory Blanks

Chromium and vanadium were detected at concentrations above the MDL in the laboratory blank. The chromium results, for all samples, are greater than ten times the contract required quantitation limit (CRQL), so data usability is not adversely affected. The vanadium result of $0.91 \mathrm{mg} / \mathrm{kg}$ shows a possible low bias in the analytical results so AMEC UJ qualified the nondetected vanadium results from samples SS059AA, SS060AA, SS060BA, SS087AA and SS089BA. The detected vanadium results in samples SS059BA, SS073AA, SS073BA, SS085AA, SS085BA, SS087BA, SS089AA, SS090AA and SS090BA were J qualified.

### 6.4.1.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks except as described below. The initial calibration check contained an antimony result above the MDL but below the CRQL. Sample results for SS085AA, SS090BA and SS090BC which were also above the MDL but below the CRQL were U qualified. The CCB4 contained results for barium, chromium and lead but all sample results are greater than ten times the blank result so no qualifications were necessary.

### 6.4.1.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples.

### 6.4.1.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.1.10 MS/MSD Recovery

MS/MSD analysis was performed on sample SS059AA. Recoveries were within control limits for the MS. The recovery for arsenic and chromium exceeded the recovery criteria, $151 \%$ and $141 \%$ respectively in the MSD. AMEC J qualified the detected arsenic and chromium results in all samples due to potential matrix interference.

### 6.4.1.11 Post Digestion Spike Recovery

The QAPP-specified acceptance limits for metals post digestion spike recoveries are $75 \%$ to $125 \%$ recovery. All recoveries were within acceptance limits except for arsenic, which recovered high at $146 \%$. All samples were J qualified.

### 6.4.1.12 Serial Dilution

Percent difference for serial dilution analysis performed on sample SS059AA met QAPPspecified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL. The percent difference was greater than $10 \%$ for cadmium, selenium and silver, however the initial sample result was less than 50 times the MDL so no qualifications were made.

### 6.4.1.13 Laboratory Duplicates

The laboratory performed duplicate analyses on sample SS059AA. The RPDs were within the acceptance limits of $\leq 20 \%$ RPD.

### 6.4.1.14 Field Duplicates

Sample SS090BC was used this as a field duplicate for SS090BA. All RPDs were $\leq 30 \%$ with the exception of vanadium, which had an RPD of $38 \%$. AMEC J qualified the vanadium result in SS090BC and SS090BA. Table 3 is provided with RPDs.

### 6.4.2 SDG J0605735

### 6.4.2.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.2.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.2.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs were acceptable.

### 6.4.2.4 Low Level Calibration Check Standard

All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.2.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.2.6 Laboratory Blanks

Chromium was detected above the MDL in the laboratory blank at $0.21 \mathrm{mg} / \mathrm{kg}$. The chromium results, for all samples, are greater than ten times the CRQL, so data usability is not adversely affected.

### 6.4.2.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks except as described below.

| Blank ID | Detected <br> analytes | Analyte <br> concentration <br> $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |

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| Blank ID | Detected analytes | Analyte concentration ( $\mu \mathrm{g} / \mathrm{L}$ ) | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { ICB } \\ & 12 / 05 / 06 \end{aligned}$ | Antimony | 0.106 | SS079AA, SS079BA, SS067AA, SS067BA, SS067BB, SS069AA, SS069BA, SS092AA, SS092BA, SS093AA, SS093BA, SS083AA, SS083BA, SS081AA, SS081BA, SS019AA, SS019BA, SS019BB, SS054AA | The concentrations in the associated samples were more than 5 times the concentration detected in the blank or non-detect. Data usability is not adversely affected. |
| $\begin{aligned} & \mathrm{CCBs} \\ & 12 / 05 / 06 \end{aligned}$ | Barium <br> Antimony <br> Barium <br> Antimony <br> Barium <br> Chromium <br> Lead <br> Barium <br> Antimony <br> Barium | $\begin{aligned} & \hline 0.330 \\ & 0.156 \\ & -0.442 \\ & 0.147 \\ & 1.71 \\ & 0.17 \\ & 0.133 \\ & 0.395 \\ & 0.112 \\ & -0.442 \\ & \hline \end{aligned}$ |  | Antimony, barium, chromium, and lead were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \text { ICB } \\ & 12 / 12 / 06 \end{aligned}$ | Antimony <br> Silver <br> Vanadium | $\begin{aligned} & \hline 0.337 \\ & -0.117 \\ & 0.452 \end{aligned}$ | SS054ABSS054BASS071AASS071BASS042AASS042BASS042BBSS023AASS023BASS023BBSS040AASS040BA | AMEC UJ qualified the non-detected silver results from samples SS054AB, SS054BA, SS071AA, SS071BA, SS042AA, SS042BA, SS042BB, SS023AA, <br> SS023BA, SS023BB, SS040AA and SS040BA because of possible low bias in the analytical results due to the low instrument bias. Antimony and vanadium results were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. |
| $\begin{aligned} & \text { CCBs } \\ & 12 / 12 / 06 \end{aligned}$ | Silver <br> Barium <br> Chromium <br> Lead <br> Silver <br> Vanadium <br> Antimony <br> Barium <br> Silver <br> Vanadium | $\begin{aligned} & \hline 0.115 \\ & 2.25 \\ & 0.255 \\ & 0.264 \\ & -0.115 \\ & 0.202 \\ & 0.130 \\ & -0.144 \\ & -0.117 \\ & 0.336 \end{aligned}$ |  | Silver, antimony, barium, chromium, lead, vanadium and selenium were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |

### 6.4.2.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples.

### 6.4.2.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.2.10 MS/MSD Recovery

MS/MSD analysis was performed on samples SS079AA and SS054AB for all metals but mercury. The MS/MSD for mercury was performed on samples SS067BB and SS071BA. All recoveries were within criteria except as described below.

For sample SS079AA recoveries were within control limits for the MS. The recovery for arsenic and chromium exceeded the recovery criteria, $151 \%$ and $141 \%$ respectively, in the MSD. AMEC J qualified the detected arsenic and chromium results in all samples due to potential matrix interference.

For sample SS067BB the MS criteria was within control limits but the MSD was high 148\%. AMEC J qualified the detected mercury results for samples SS079AA, SS079BA, SS067AA, SS067BA, SS067BB, SS069AA, SS069BA, SS092AA, SS093AA, SS093BA, SS083AA, SS083BA, SS081AA and SS019AA.

### 6.4.2.11 Post Digestion Spike Recovery

The QAPP-specified acceptance limits for metals post digestion spike recoveries are $75 \%$ to $125 \%$ recovery. All recoveries were within acceptance limits except for arsenic, which recovered high at $146 \%$. All samples were $J$ qualified.

### 6.4.2.12 Serial Dilution

Percent difference for serial dilution analysis performed on sample SS059AA met QAPPspecified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL. The percent difference was greater than $10 \%$ for cadmium, selenium and silver, however the initial sample result was less than 50 times the MDL so no qualifications were made.

### 6.4.2.13 Laboratory Duplicates

The laboratory performed duplicate analyses on sample SS079AA and SS054AB for all metals but mercury. The mercury duplicate analysis was performed on samples SS071BA and SS067BB. The RPDs were within the acceptance limits of $\leq 20 \%$ RPD.

### 6.4.2.14 Field Duplicates

Sample SS067BB, SS019BB, SS054BB, SS042BB and SS023BB were submitted to the laboratory as a field duplicates for SS067BA, SS019BA, SS054BA, SS042BA and SS023BA. All RPDs were $\leq 30 \%$ with the following exceptions.

- AMEC J qualified the detected antimony, arsenic, chromium, copper and lead results in samples SS067BA and SS067BB due to elevated RPDs of $46 \%, 59 \%, 64 \%, 76 \%$ and $38 \%$, respectively.
- AMEC J qualified the detected arsenic and chromium results in samples SS023BA and SS023BB due to elevated RPDs of $32 \%$ and $37 \%$, respectively.


### 6.4.3 SDG J0605780

### 6.4.3.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.3.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.3.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs were acceptable.

### 6.4.3.4 Low Level Calibration Check Standard

All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.3.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.3.6 Laboratory Blanks

Chromium was detected above the MDL in the laboratory blank at $0.13 \mathrm{mg} / \mathrm{kg}$. The chromium results, for all samples, are greater than ten times the CRQL, so data usability is not adversely affected.

### 6.4.3.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks except as described below.

| Blank ID | Detected analytes | Analyte concentration $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { ICB } \\ & 12 / 13 / 06 \end{aligned}$ | Antimony Vanadium | $\begin{aligned} & \hline 0.218 \\ & 0.268 \end{aligned}$ | SS050AA, SS050BA SS051AA, SS051BA SS025AA, SS025BA SS027AA, SS027BA SS034AA, SS034BA SS013AA, SS012AA | The concentrations in the associated samples were either more than 5 times the concentration detected in the blank or non-detect. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { CCBs } \\ & 12 / 13 / 06 \end{aligned}$ | Antimony <br> Vanadium <br> Antimony <br> Arsenic <br> Barium <br> Vanadium <br> Vanadium <br> Barium | 0.109 0.205 0.143 -0.467 0.818 0.307 0.274 0.117 | $\begin{aligned} & \text { SS012AC, SS012BA } \\ & \text { SS014AA, SS014BA } \\ & \text { SS018AA, SS018BA } \end{aligned}$ | Antimony, barium, vanadium and arsenic were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { ICB } \\ & 12 / 09 / 06 \end{aligned}$ | Antimony <br> Barium <br> Vanadium | $\begin{aligned} & \hline 0.783 \\ & 0.103 \\ & 0.996 \end{aligned}$ | $\begin{aligned} & \hline \text { SS017BA, SS016AA } \\ & \text { SS016BA, SS007AA, } \\ & \text { SS007BA, SS007BC } \\ & \text { SS074AA, SS074BA } \\ & \text { SS015AA, SS015BA } \end{aligned}$ | The concentrations in the associated samples were either more than 5 times the concentration detected in the blank or non-detect. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { CCBs } \\ & 12 / 09 / 06 \end{aligned}$ | Antimony <br> Antimony <br> Vanadium <br> Antimony <br> Vanadium <br> Antimony | $\begin{aligned} & \hline 0.285 \\ & 0.287 \\ & -0.277 \\ & 0.345 \\ & 0.538 \\ & 0.202 \end{aligned}$ |  | AMEC UJ qualified the non-detected vanadium results from samples SS016AA, SS016BA and SS007BA due to low instrument bias. All other concentrations were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. |

### 6.4.3.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples.

### 6.4.3.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.3.10 MS/MSD Recovery

MS/MSD analysis was performed on samples SS050AA and SS017BA (no mercury). An MS/MSD for mercury was also performed on sample SS013BA. All recoveries were within criteria except as bolded below.

| Sample ID | Analyte | MS/MSD <br> Recovery | Notes |
| :---: | :---: | :---: | :--- |
| SS050AA | Antimony | $\mathbf{7 0 . 3 \% / 6 8 . 2 \%}$ | AMEC J qualified the detected results and UJ <br> qualified the non-detected results from <br> Arsenic <br> Chromium |
|  |  | $\mathbf{7 0 . 3 \% / 4 8 . 2 \%}$ |  |
|  |  | $\mathbf{3 1 . 2 \%} / \mathbf{1 6 . 1 \%}$ | samples SS050AA, SS050BA, SS051AA, <br> SS051BA, SS025AA, SS025BA, SS027AA, <br> SS027BA, SS034AA, SS034BA, SS013AA, <br>  <br>  |
|  |  |  | SS013BA, SS012AA, SS012AC, SS012BA, <br> SS014AA, SS014BA, SS018AA, S018BA, |
|  |  |  | SS017AA because of possible low bias in the <br> analytical results due to potential matrix <br> interference. |
| SS017BA |  | $74.6 \% / 70.3 \%$ | AMEC UJ and J qualified the non-detected <br> and detected results for samples SS017BA, |
|  |  |  | SS016AA, SS016BA, SS007AA, SS007BA, <br>  |
|  |  |  | SS007BC, SS074AA, SS074BA, SS015AA <br> and SS015BA |

### 6.4.3.11 Post Digestion Spike Recovery

The QAPP-specified acceptance limits for metals post digestion spike recoveries are $75 \%$ to $125 \%$ recovery. All recoveries were within acceptance limits except for mercury, which recovered low at $71 \%$ but both the MS/MSD recoveries were within criteria.

### 6.4.3.12 Serial Dilution

Percent difference for serial dilution analysis performed on sample SS050AA met QAPPspecified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL. The percent difference was greater than $10 \%$ for selenium, silver and vanadium; however the initial sample result was less than 50 times the MDL so no qualifications were made. The percent difference was not met for antimony at $31.6 \%$. AMEC J qualified the results for samples SS050AA, SS050BA, SS051AA, SS051BA, SS025AA, SS025BA, SS027AA, SS027BA, SS034AA, SS034BA, SS013AA, SS012AA, SS012AC, SS012BA, SS014AA, SS014BA, SS018AA and SS018BA.

### 6.4.3.13 Laboratory Duplicates

The laboratory performed duplicate analyses on sample SS050AA, which included mercury and SS017BA, which was for all metals but mercury. A mercury duplicate analysis was also performed on sample SS013BA. The RPDs were within the acceptance limits of $\leq 20 \%$ RPD.

### 6.4.3.14 Field Duplicates

Sample SS012AC and SS007BC were submitted to the laboratory as a field duplicates for SS012AA and SS007BA. All RPDs were $\leq 30 \%$ with the following exceptions.

- AMEC J qualified the detected arsenic, barium, chromium, copper, lead and vanadium results in samples SS012AA and SS012AC due to elevated RPDs of $39 \%, 40 \%, 41 \%$, $41 \%, 39 \%$ and $37 \%$, respectively.


### 6.4.4 SDG J0605810

### 6.4.4.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.4.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.4.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs were acceptable.

### 6.4.4.4 Low Level Calibration Check Standard

All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.4.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.4.6 Laboratory Blanks

Chromium was detected above the MDL in the laboratory blank at $0.19 \mathrm{mg} / \mathrm{kg}$. The chromium results, for all samples, are greater than ten times the CRQL, so data usability is not adversely affected.

### 6.4.4.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks except as described below.

| Blank ID | Detected <br> analytes | Analyte <br> concentration <br> $(\mu \mathrm{mg} / \mathbf{L})$ | Samples affected | Effects on Data Usability |
| :--- | :--- | :--- | :--- | :--- |

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| Blank ID | Detected analytes | Analyte concentration $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
|  | Barium <br> Vanadium <br> Antimony | $\begin{aligned} & \hline-0.109 \\ & -0.501 \\ & 0.141 \end{aligned}$ |  | associated samples were more than 5 times the absolute concentration detected in the blank. |

### 6.4.4.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples.

### 6.4.4.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.4.10 MS/MSD Recovery

MS/MSD analysis was performed on samples SS008AA and SS043BB. An MS/MSD for mercury was also performed on sample SS013BA. All recoveries were within criteria except as bolded below.

| Sample ID | Analyte | MS/MSD <br> Recovery | Notes |
| :---: | :---: | :---: | :--- |
| SS050AA | Antimony | $78.2 \% / 71.9 \%$ | AMEC J qualified the detected results <br> and UJ qualified the non-detected <br> results from samples SS008AA, <br> SS008BA, SS009AA, SS009BA, |
|  |  |  | SS006AA, SS006BA, SS004AA, <br> SS004BA, SS004BB, SS002AA, <br> SS002AC, SS002BA, SS011AA, <br>  |
|  |  |  | SS011BA, SS058AA, SS058BA, <br> SS037AA, SS037BA, SS043AA and <br> SS043BA because of possible low bias <br> in the analytical results due to potential <br> matrix interference. |

### 6.4.4.11 Post Digestion Spike Recovery

The QAPP-specified acceptance limits for metals post digestion spike recoveries are $75 \%$ to $125 \%$ recovery. All recoveries were within acceptance limits except for arsenic and chromium, which recovered low at $70 \%$ and $44 \%$ but both the MS/MSD recoveries were within criteria.

### 6.4.4.12 Serial Dilution

Percent difference for serial dilution analysis performed on sample SS008AA met QAPPspecified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL.

### 6.4.4.13 Laboratory Duplicates

The laboratory performed duplicate analyses on sample SS008AA and SS043BB. The RPDs were within the acceptance limits of $\leq 20 \%$ RPD.

### 6.4.4.14 Field Duplicates

Sample SS004BB, SS002AC, SS043BB and SS010AB were submitted to the laboratory as a field duplicates for SS004BA, SS002AA, SS043BA and SS010AA. All RPDs were $\leq 30 \%$ with the following exceptions.

- AMEC J qualified the detected arsenic, barium, chromium, copper, lead and vanadium results in samples SS002AA and SS002AC due to elevated RPDs of $36 \%, 31 \%, 39 \%$, $35 \%, 33 \%$ and $36 \%$, respectively.


### 6.4.5 SDG J0605839

### 6.4.5.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.5.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.5.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs were acceptable.

### 6.4.5.4 Low Level Calibration Check Standard

All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.5.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.5.6 Laboratory Blanks

Chromium was detected above the MDL in the laboratory blank at $0.14 \mathrm{mg} / \mathrm{kg}$. The chromium results, for all samples, are greater than ten times the CRQL, so data usability is not adversely affected.

### 6.4.5.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks except as described below.

| Blank ID | Detected analytes | Analyte concentration $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { ICB } \\ & 01 / 03 / 07 \end{aligned}$ | Vanadium | -0.563 | SS036AA, SS036AC, SS039BA, SS036CA, SS036DA, SS048AA, SS048BA, SS048BB, SS048CA, SS048DA, SS095AA, SS095BA, SS095CA, SS095DA, SS057AA, SS057BA, SS057CA, SS057CB, SS057DA, SS080AA | AMEC UJ qualified the non-detected vanadium results for samples SS095AA, SS095BA and SS095CA due to low instrument bias. The concentrations in the other samples were either more than 5 times the concentration detected in the blank or non-detected. |
| $\begin{aligned} & \text { CCBs } \\ & 01 / 03 / 07 \end{aligned}$ | Vanadium <br> Antimony <br> Barium <br> Vanadium <br> Barium <br> Selenium <br> Vanadium | $\begin{aligned} & 0.275 \\ & 0.140 \\ & 0.869 \\ & -0.541 \\ & 0.140 \\ & 0.906 \\ & 0.886 \end{aligned}$ |  | Antimony, barium, selenium and vanadium were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { ICB } \\ & 01 / 03 / 07 \end{aligned}$ | Antimony | -0.144 | SS080BA, SS080BB, SS080CA, SS080DA, SS035AA, SS035BA, SS035CA, SS035DA, SS033AA, SS033BA, SS032AA, SS032BA | The concentrations in the associated samples were more than 5 times the concentration detected in the blank or non-detect. Data usability is not adversely affected. |
| CCBs | Vanadium | 0.327 |  | AMEC UJ qualified the non-detected vanadium results from samples |

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| Blank ID | Detected analytes | Analyte concentration $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| 01/03/07 | Barium <br> Antimony <br> Barium | $\begin{aligned} & \hline-0.182 \\ & -0.101 \\ & -0.179 \end{aligned}$ |  | SS076AA, SS076BA, SS021AA and SS021BA due to low instrument bias. All the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. |
| $\begin{aligned} & \hline \text { ICB } \\ & 01 / 07 / 07 \end{aligned}$ | Arsenic Selenium | $\begin{aligned} & \hline-0.312 \\ & -1.10 \end{aligned}$ | $\begin{aligned} & \text { SS095AA, SS095BA, } \\ & \text { SS057AA } \end{aligned}$ | AMEC UJ qualified the non-detected result for selenium for samples SS095AA, SS095BA and SS057AA. The arsenic concentrations in the associated samples were more than 5 times the concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { CCB } \\ & 01 / 07 / 07 \end{aligned}$ | Selenium | 1.3 |  | All associated samples were nondetect. |

### 6.4.5.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples.

### 6.4.5.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.5.10 MS/MSD Recovery

MS/MSD analysis was performed on samples SS036AA for all metals and SS080BA for all metals but mercury. An MS/MSD for mercury was also performed on samples SS095AA and SS080CA. All recoveries were within criteria except as described below.

| Sample ID | Analyte | MS/MSD <br> Recovery | Notes |
| :---: | :---: | :---: | :--- |
| SS095AA | Mercury | $-\mathbf{6 1 . 5 \% / 1 6 2 . 9 \%}$ | No qualifications were applicable <br> because the sample result was greater <br> than four times the spike amount <br> added. |

### 6.4.5.11 Post Digestion Spike Recovery

The QAPP-specified acceptance limits for metals post digestion spike recoveries are $75 \%$ to $125 \%$ recovery except the following. The mercury spike recovery for SS095AA was $1 \%$ but concentration in sample was greater than four times the spike amount added.

### 6.4.5.12 Serial Dilution

Percent difference for serial dilution analysis performed on sample SS036AA met QAPPspecified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL.

### 6.4.5.13 Laboratory Duplicates

The laboratory performed duplicate analyses for all metals but mercury on samples SS036AA and SS080BA. The lab performed duplicate analysis for mercury on SS095AA and SS080CA. The RPDs are within the specified acceptance limits of $\leq 20 \%$ RPD.

### 6.4.5.14 Field Duplicates

Sample SS036AC, SS048BB, SS057CB and SS080BB were submitted to the lab as field duplicates for SS0036AA, SS048BA, SS057CA and SS080BA. All RPDs were $\leq 30 \%$ with the following exceptions.

- AMEC J qualified the detected arsenic, barium, chromium, copper and vanadium results in samples SS036AA and SS036AC due to elevated RPDs of $44 \%, 49 \%$, $\%$, $50 \%, 51 \%$ and $67 \%$, respectively.
- AMEC J qualified the detected arsenic, chromium, copper, lead and mercury results in samples SS048BA SS048BB due to elevated RPDs of $87 \%, 62 \%, 84 \%, 41 \%$ and $41 \%$, respectively.


### 6.4.6 SDG J0605876

### 6.4.6.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.6.2 Initial Calibration

ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.6.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.6.4 Low Level Calibration Check Standard

The QAPP-specified acceptance limits for metals low-level check standards are within $\pm 50 \%$ of the true value. All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable except as described below.

Arsenic recovery was high at $153 \%$ in the low-level check standard analyzed on January 10 , 2007 at 22:51. The arsenic concentration in the associated sample was greater than two-times the low-level check standard concentration. Data usability is not adversely affected by the high bias.

### 6.4.6.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.6.6 Laboratory Blanks

Target analytes detected at concentrations above the MDL in laboratory blanks associated with metals analysis of the samples covered in this report are described below.

| Blank ID | Detected <br> analytes | Analyte <br> concentration <br> (mg/Kg) | Samples affected | Effects on Data Usability |
| :---: | :--- | :--- | :---: | :---: |
| MB3-1213 <br> MBS3-1213 | Chromium <br> Chromium | 0.13 <br> 0.21 | None | Chromium concentrations in all <br> associated samples were greater than <br> five times the concentrations detected <br> in the associated method blanks. Data <br> usability is not adversely affected by <br> the low-level method blank results. |
| MBS4-0110 | Chromium | 0.14 |  |  |
| MB7-1213 | Chromium | 0.19 |  |  |

### 6.4.6.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks associated with metals analysis of the samples covered in this report except as described below. AMEC reported the highest analyte concentrations (or absolute concentration) from the CCBs within each analytical sequence in the table below.

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| Blank ID | Detected analytes | Analyte concentration $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { ICB } \\ & 12 / 13 / 06 \end{aligned}$ | Antimony Vanadium | $\begin{aligned} & \hline 0.386 \\ & -0.679 \end{aligned}$ | SS097AA SS097BA SS097CA SS097DA SS001AA SS001BA | AMEC UJ qualified the non-detected vanadium results from samples SS097AA, SS097BA, SS001CA, and SS038AA because of possible low bias in the analytical results because of the low instrument bias. |
| $\begin{aligned} & \hline \text { CCBs } \\ & 12 / 13 / 06 \end{aligned}$ | Barium <br> Barium <br> Chromium <br> Lead | $\begin{aligned} & 1.62 \\ & -0.113 \\ & 0.156 \\ & 0.225 \end{aligned}$ | $\begin{aligned} & \text { SS001CA } \\ & \text { SS001DA } \\ & \text { SS038AA } \end{aligned}$ | Antimony, barium, chromium, and lead were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| ICB 1/8/07 | Vanadium | -0.185 | SS038AC SS038BA SS038CA SS038DA SS038DB SS039AA | AMEC UJ qualified the non-detected vanadium results from samples SS038AC, SS038BA, SS038CA, SS039BA, SS039BB, and SS028AB because of possible low bias in the analytical results due to the low instrument bias. |
| $\begin{aligned} & \hline \text { CCBs } \\ & 1 / 8 / 07 \end{aligned}$ | Antimony <br> Arsenic <br> Barium <br> Barium <br> Selenium <br> Vanadium <br> Vanadium | 0.129 0.364 0.254 -0.108 0.799 -0.737 0.534 | SS039BA SS039BB SS039CA SS039DA SS029AA SS029BA SS029CA SS029DA SS096AA SS096BA SS096CA SS096DA SS028AA SS028AB | Antimony, arsenic, barium, selenium and vanadium were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { ICB } \\ & 1 / 10 / 07 \end{aligned}$ | Chromium | 0.139 | SS038AC | Chromium and arsenic concentrations in the associated samples were more than |
| $\begin{aligned} & \hline \text { CCB } \\ & 1 / 10 / 07 \end{aligned}$ | Arsenic | 0.297 | SS096AA | five times the concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { ICB } \\ & 1 / 12 / 07 \end{aligned}$ | Antimony | 0.197 | SS099DA SS084AA SS084BA SS084CA SS084DA SS062AA | Antimony was either not detected above the MRL or the concentrations in the associated samples were more than five times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \text { CCBs } \\ & 1 / 12 / 07 \end{aligned}$ | Antimony <br> Barium <br> Selenium <br> Vanadium | $\begin{aligned} & -0.157 \\ & 0.472 \\ & 0.844 \\ & 0.277 \end{aligned}$ | $\begin{aligned} & \text { SS062BA } \\ & \text { SS062CA } \\ & \text { SS062CC } \\ & \text { SS062DA } \\ & \text { SS064AA } \\ & \text { SS064BA } \\ & \text { SS064CA } \\ & \text { SS064DA } \end{aligned}$ | Barium, selenium, and vanadium were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the concentration detected in the blank. Data usability is not adversely affected. |

### 6.4.6.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples associated with metals analysis of the samples covered in this report.

### 6.4.6.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.6.10 MS/MSD Recovery

MS/MSD recoveries were within the QAPP-specified $75 \%$ to $125 \%$ acceptance limits and RPDs were less than the method-specified $20 \%$ acceptance limit, except as bolded in the table below.

| Sample ID | Analyte | MS/MSD <br> Recovery | RPD | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| SS038AC | Chromium | 31.6\%/192\% | 23.3\% | The chromium concentration in the sample was more than four times the spike concentration added. The MS/MSD results could not be fully evaluated. AMEC J qualified the detected chromium results from samples SS038AC, SS038BA, SS038CA, SS038DA, SS038DB, SS039AA, SS039BA, SS039BB, SS039CA, SS039DA, SS029AA, SS029BA, SS029CA, SS029DA, SS096AA, SS096BA, SS096CA, SS096DA, SS028AA, and SS028AB because of possible bias in the analytical results due to the analytical imprecision. |
|  | Copper | 64.0\%/100\% | 13.3\% | AMEC J qualified the detected copper results from samples SS038AC, SS038BA, SS038CA, SS038DA, SS038DB, SS039AA, SS039BA, SS039BB, SS039CA, SS039DA, SS029AA, SS029BA, SS029CA, SS029DA, SS096AA, SS096BA, SS096CA, SS096DA, SS028AA, and SS028AB because of possible low bias in the analytical results due to potential matrix interference. |
| SS038BA | Mercury | 166\%/106\% | 15.1\% | AMEC J qualified the detected mercury results from samples SS038AC, SS038BA, SS038CA, SS038DA, SS038DB, SS039AA, SS039BA, SS039BB, SS039CA, SS039DA, SS029AA, SS029BA, SS029CA, SS029DA, SS096AA, SS096BA, SS096CA, SS096DA, and SS028AA because of possible high bias in the analytical results due to potential matrix interference. |

### 6.4.6.11 Post-Digestion Spike Recovery

Post-digestion spike recoveries were within the QAPP-specified $75 \%$ to $125 \%$ acceptance limits, except as tabulated below.

| Sample ID | Analyte | Recovery | Effects on Data Usability |
| :---: | :---: | :---: | :--- |$|$| SS097AA |
| :--- |
| Lead |
| SS099CA |
| Mercury |

### 6.4.6.12 Serial Dilution

Percent difference for serial dilution analysis performed on samples in this report met QAPPspecified criteria of less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL.

### 6.4.6.13 Laboratory Duplicates

The laboratory performed duplicate analyses for all metals on samples SS097AA and all metals but mercury on samples SS038AC, SS028BA and SS099DA. The lab performed duplicate analysis for mercury on SS099CA, SS038BA and SS028AB. The RPDs were within the specified acceptance limits of $\leq 20 \%$ RPD except as described below.

The chromium RPD for sample SS038AC was high at $23.3 \%$. AMEC J qualified the detected chromium result in SS038AC.

### 6.4.6.14 Field Duplicates

Sample SS038DB, SS039BB and SS028AB were submitted to the lab as field duplicates for SS0038DA, SS039BA and SS028AA. All RPDs were $\leq 30 \%$ with the following exceptions.

- AMEC J qualified the detected arsenic, barium, chromium, and vanadium results from samples SS038DA and SS038DB because of possible bias in the analytical results due to field sampling and/or analytical imprecision.


### 6.4.7 SDG J0605879

### 6.4.7.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.7.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.7.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs were acceptable.

### 6.4.7.4 Low Level Calibration Check Standard

All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.7.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.7.6 Laboratory Blanks

Chromium was detected above the MDL in the laboratory blank at $0.16 \mathrm{mg} / \mathrm{kg}, 0.16 \mathrm{mg} / \mathrm{kg}$ and $0.17 \mathrm{mg} / \mathrm{kg}$. The chromium results, for all samples, are greater than ten times the CRQL, so data usability is not adversely affected.

### 6.4.7.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks except as described below.

| Blank ID | Detected <br> analytes | Analyte <br> concentration <br> $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :--- | :---: | :---: | :---: | :---: |

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| Blank ID | Detected analytes | Analyte concentration $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { ICB } \\ & 01 / 09 / 07 \end{aligned}$ | Antimony Chromium Vanadium | $\begin{aligned} & \hline 0.109 \\ & 0.139 \\ & 0.256 \end{aligned}$ | SS100AA, SS100BA, SS100CA, SS100DA, SS100DB, SS66AA, SS066AB, SS066BA, SS066CA, SS066DA, SS066DC, SS005AA, SS005BA, SS005CA, SS005DA, SS003AA, SS003BA, SS003CA, SS003CB, SS003DA | The concentrations in the associated samples were either more than 5 times the concentration detected in the blank or not detected. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { CCBs } \\ & 01 / 09 / 07 \end{aligned}$ | Selenium <br> Vanadium <br> Arsenic <br> Selenium <br> Vanadium <br> Antimony <br> Vanadium | 1.20 0.397 0.612 1.63 -0.594 -0.145 0.320 |  | Antimony, arsenic, selenium and vanadium were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { ICB } \\ & 12 / 27 / 06 \end{aligned}$ | Chromium Vanadium | $\begin{aligned} & 0.125 \\ & 0.886 \end{aligned}$ | SS086AA, SS086BA, SS086BB, SS088AA, SS088BA, SS091AA, SS091BA, SS075AA, SS075BA, SS077AA, SS077BA, SS049AA, SS049BA, SS052AA, SS052BA, SS068AA, SS068BA | The concentrations in the associated samples were either more than 5 times the concentration detected in the blank or not detected. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { CCBs } \\ & 12 / 27 / 06 \end{aligned}$ | Barium <br> Vanadium <br> Barium <br> Vanadium <br> Barium <br> Vanadium | -0.107 0.242 -0.101 0.583 -0.108 0.936 |  | All the concentrations in the associated samples were either more than 5 times the absolute concentration detected in the blank or not detected. |

### 6.4.7.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples.

### 6.4.7.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.7.10 MS/MSD Recovery

MS/MSD analysis was performed on samples SS100AA for all metals and SS086AA for all metals but mercury. An MS/MSD for mercury was also performed on samples SS066AA and SS091AA. All recoveries were within criteria except as bolded below.

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| Sample ID | Analyte | MS/MSD <br> Recovery | Notes |
| :---: | :---: | :---: | :---: |
| SS100AA | Arsenic Chromium Copper Mercury | $\begin{gathered} \hline 26.0 \% / 35.9 \% \\ 0 \% / 62.7 \% \\ 69.3 \% / 71.7 \% \\ 66.5 \% / 44.8 \% \end{gathered}$ | AMEC J qualified arsenic, chromium, copper and mercury in SS100AA, SS100BA, SS100CA, SS100DA, SS100DB, SS066AA, SS066AB, SS066BA, SS066CA, SS066DA, SS066DC, SS005AA, SS005BA, SS005CA, SS005DA, SS003AA, SS003BA, SS003CA, SS003CB and SS003DA. AMEC UJ qualified mercury in sample SS066DA. |
| SS086AA | Antimony Chromium Silver | $\begin{aligned} & \hline 77.7 \% / 72.0 \% \\ & 84.8 \% / 74.2 \% \\ & 85.8 \% / 73.3 \% \end{aligned}$ | AMEC either J qualified the detected result or UJ qualified the non-detect for samples SS086AA, SS086BA, SS086BB, SS088AA, SS088BA, SS091AA, SS091BA, SS075AA, SS075BA, SS077AA, SS077BA, SS049AA, SS049BA, SS052AA, SS052BA, SS068AA and SS068BA. |

### 6.4.7.11 Post Digestion Spike Recovery

The QAPP-specified acceptance limits for metals post digestion spike recoveries are $75 \%$ to $125 \%$ recovery except the following. The chromium spike recovery for SS0100AA was high at $126 \%$. All associated samples have already been J qualified due to low spike recovery.

### 6.4.7.12 Serial Dilution

Percent difference for serial dilution analysis performed on sample SS036AA met QAPPspecified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL with the following exception. The percent difference for lead was $159 \%$. AMEC J qualified the detected lead results in samples SS100AA, SS100BA, SS100CA, SS100DA, SS100DB, SS66AA, SS066AB, SS066BA, SS066CA, SS066DA, SS066DC, SS005AA, SS005BA, SS005CA, SS005DA, SS003AA, SS003BA, SS003CA, SS003CB and SS003DA due to the potential high bias.

### 6.4.7.13 Laboratory Duplicates

The laboratory performed duplicate analyses for all metals on sample SS100AA and all metals but mercury on SS086AA. The lab also performed duplicate analysis for mercury on SS066AA and SS091AA. The RPDs are within the specified acceptance limits of $\leq 20 \%$ RPD.

### 6.4.7.14 Field Duplicates

Sample SS100DB, SS066AB, SS066DC, SS003CB and SS086BB were submitted to the lab as field duplicates for SS100DA, SS066AA, SS066DA, SS003CA and SS086BA. All RPDs were $\leq 30 \%$ with the following exceptions.

- AMEC J qualified the detected arsenic, chromium and copper results in samples SS100DA and SS100DB due to elevated RPDs of $118 \%, 91 \%$ and $100 \%$, respectively.
- AMEC J qualified the detected barium, copper, lead and vanadium results in samples SS066AA and SS066AB due to elevated RPDs of $38 \%, 47 \%, 112 \%$ and $58 \%$, respectively.
- AMEC J qualified the detected barium result in samples SS066DA and SS066DC due to the elevated RPD of $32 \%$.
- AMEC J qualified the detected vanadium result in samples SS003CA and SS066CB due to the elevated RPD of $32 \%$.
- AMEC J qualified the detected barium, copper and vanadium results in samples SS066AA and SS066AB due to elevated RPDs of $40 \%, 33 \%$ and $36 \%$, respectively.


### 6.4.8 SDG J0605890

### 6.4.8.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.8.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.8.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs were acceptable.

### 6.4.8.4 Low Level Calibration Check Standard

All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.8.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.8.6 Laboratory Blanks

Chromium was detected above the MDL in the laboratory blank at $0.24 \mathrm{mg} / \mathrm{kg}$ and $0.26 \mathrm{mg} / \mathrm{kg}$. The chromium results, for all samples, are greater than ten times the CRQL, so data usability is not adversely affected. Vanadium was detected above the MDL at -0.91 . AMEC J qualified the detected results in samples SS041AA, SS041BA, SS030AA, SS030BA, SS094AA, SS094AB, SS094BA, SS101AA, SS101BA, SS045AA, SS045BA, SS047AA, SS047AC, SS047BA, SS024AA, SS024BA, SS086CA, SS086DA, SS088CA and SS088DA due to potential low instrument bias.

### 6.4.8.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks except as described below.

| Blank ID | Detected analytes | Analyte concentration ( $\mu \mathrm{g} / \mathrm{L}$ ) | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { ICB } \\ & 01 / 10 / 07 \end{aligned}$ | Antimony <br> Arsenic <br> Chromium <br> Selenium | $\begin{aligned} & \hline 0.159 \\ & -0.368 \\ & 0.133 \\ & -1.17 \end{aligned}$ | SS041AA, SS041BA, SS030AA, SS030BA, SS094AA, SS094AB, SS094BA, SS101AA, SS101BA, SS045AA, SS045BA, SS047AA, SS047AC, SS047BA, SS024AA, SS024BA, SS086CA, SS086DA, SS088CA, SS088DA | The concentrations in the associated samples were more than 5 times the concentration detected in the blank or non-detect. Data usability is not adversely affected. AMEC UJ qualified the non-detected selenium results in all the associated samples due to potential low instrument bias. |
| $\begin{aligned} & \text { CCBs } \\ & 01 / 10 / 07 \end{aligned}$ | Vanadium <br> Selenium <br> Chromium <br> Selenium | $\begin{aligned} & \hline 0.782 \\ & -1.11 \\ & 0.130 \\ & -1.09 \end{aligned}$ |  | Chromium, selenium and vanadium were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { CCB } \\ & 01 / 16 / 07 \end{aligned}$ | Vanadium <br> Vanadium | $\begin{aligned} & \hline 0.256 \\ & 0.195 \end{aligned}$ | $\begin{aligned} & \hline \text { SS030BA, SS094AA, } \\ & \text { SS094AB, SS094BA, } \end{aligned}$ | All the concentrations in the associated samples were more than 5 times the |

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| Blank ID | Detected analytes | Analyte concentration ( $\mu \mathrm{g} / \mathrm{L}$ ) | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | SS101AA, SS101BA, SS045AA, SS045BA, SS047AA, SS047AC, SS047BA, SS024AA, SS024BA, SS086CA, SS086DA, SS088CA, SS088DA | absolute concentration detected in the blank. |
| $\begin{aligned} & \text { CCBs } \\ & \text { 12/27/06 } \end{aligned}$ | Vanadium Antimony Vanadium | $\begin{aligned} & 0.458 \\ & -0.111 \\ & 0.296 \end{aligned}$ | SS091CA, SS091DA, SS068CA, SS068DA, SS078AA, SS078BA, SS078CA, SS078DA, SS075CA, SS075DA, SS077CA, SS077DA, SS049CA, SS049DA, SS041CA, SS041DA, SS030CA, SS030DA, SS077DB | All the concentrations in the associated samples were either more than 5 times the absolute concentration detected in the blank or non-detect. AMEC UJ qualified the non-detected antimony result for samples SS091CA, SS091DA, SS068CA, SS068DA, SS078AA, SS078BA, SS078CA, SS078DA, SS075DA and SS077DA due to potential low instrument bias. |

### 6.4.8.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples.

### 6.4.8.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.8.10 MS/MSD Recovery

MS/MSD analysis was performed on samples SS041AA for all metals and SS091CA for all metals but mercury. An MS/MSD for mercury was also performed on samples SS101BA and SS075CA. All recoveries were within criteria except as bolded below.

| Sample ID | Analyte | MS/MSD <br> Recovery | Notes |
| :---: | :---: | :---: | :--- |
| SS041AA | Antimony | $\mathbf{6 6 . 1 \%} / \mathbf{6 2 . 6 \%}$ | AMEC J qualified the antimony in SS041AA, <br> SS041BA, SS030AA, SS030BA, SS101AA, <br> SS101BA, SS045BA and SS086CA. AMEC UJ <br> qualified the antimony in samples SS094AA, <br> SS094AB, SS094BA, SS045AA, SS047AA, |

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| Sample ID | Analyte | MS/MSD <br> Recovery | Notes |
| :---: | :---: | :---: | :--- |$|$| SS047AC, SS047BA, SS024AA, SS024BA, |
| :--- |

### 6.4.8.11 Post Digestion Spike Recovery

The QAPP-specified acceptance limits for metals post digestion spike recoveries are $75 \%$ to $125 \%$ recovery except the following. The mercury spike recovery for SS0101BA was low at $73 \%$. All associated sample has already been J qualified due to low spike recovery.

### 6.4.8.12 Serial Dilution

Percent difference for serial dilution analysis performed on samples SS041AA, SS091CA and SS030BA (for vanadium only) met QAPP-specified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL with the following exception.

The percent difference for vanadium in sample SS041AA was $29.6 \%$. AMEC J qualified the detected vanadium results in samples SS041AA, SS041BA, SS030AA, SS030BA, SS094AA, SS094AB, SS094BA, SS101AA, SS101BA, SS045AA, SS045BA, SS047AA, SS047AC, SS047BA, SS024AA, SS024BA, SS086CA, SS086DA, SS088CA and SS088DA due to the potential low bias.

The percent difference for copper, lead and vanadium in sample SS091CA was high at 21.6\%, $23.8 \%$ and $14.7 \%$, respectively. AMEC J qualified the detected copper, lead and vanadium results in samples SS091CA, SS091DA, SS068CA, SS068DA, SS078AA, SS078BA,

SS078CA, SS078DA, SS075CA, SS075DA, SS077CA, SS077DA, SS049CA, SS049DA, SS041CA, SS041DA, SS030CA, SS030DA and SS077DB.

### 6.4.8.13 Laboratory Duplicates

The laboratory performed duplicate analyses for all metals on sample SS041AA and all metals but mercury on SS091CA. The lab also performed duplicate analysis for mercury on SS101BA and SS075CA. The RPDs are within the specified acceptance limits of $\leq 20 \%$ RPD.

### 6.4.8.14 Field Duplicates

Sample SS094AB, SS047AC, SS066DC and SS077DB were submitted to the lab as field duplicates for SS094AA, SS047AA and SS077DA. All RPDs were $\leq 30 \%$ with the following exceptions.

- AMEC J qualified the detected barium results in samples SS094AA and SS094AB due to an elevated RPD of $32 \%$.
- AMEC J qualified the detected mercury results in samples SS047AC and SS047AA due to an elevated RPD of $37 \%$.
- AMEC J qualified the detected barium, copper, mercury and vanadium results in samples SS077DA and SS077DB due to elevated RPDs of $39 \%, 56 \%, 144 \%$ and $34 \%$, respectively.


### 6.4.9 SDG J0605919

### 6.4.9.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.9.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.9.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable, except as described below.

Mercury recovery in CCV8 analyzed on January 4, 2007 at $10: 56$ was low at $87 \%$. AMEC J qualified the detected mercury results from samples SS094CA, SS094DA, SS101CA, SS101DA, SS52CA, SS52DA, SS047CA, SS047DA, SS045CA, and SS045DA because of possible low bias in the analytical results.

### 6.4.9.4 Low Level Calibration Check Standard

QAPP-specified acceptance limits for metals low-level check standards are within $50 \%$ of the true value. All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.9.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.9.6 Laboratory Blanks

Target analytes were not detected at concentrations above the MDL in laboratory blanks associated with metals analysis of the samples covered in this report, except as described below.

| Blank ID | Detected analytes | Analyte concentration $(\mathrm{mg} / \mathrm{Kg})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| MBS5-1220 | Antimony | -0.44 | SS094CA SS094DA SS101CA SS101DA SS52CA SS52DA SS047CA SS047DA | AMEC J qualified the detected antimony results from samples SS070AA and SS070AB and UJ qualified the nondetected antimony results from the remaining of the associated samples because of possible low bias in the analytical results due to the low instrument bias. |
|  | Chromium | 0.30 | $\begin{aligned} & \text { SS045CA } \\ & \text { SS045DA } \\ & \text { SS024CA } \\ & \text { SS024DA } \\ & \text { SS070BA } \\ & \text { SS070CA } \\ & \text { SS070DA } \\ & \text { SS031AA } \\ & \text { SS031BA } \\ & \text { SS031CA } \\ & \text { SS070AA } \\ & \text { SS070AB } \end{aligned}$ | Chromium concentrations in all associated samples were greater than five times the concentration detected in the associated method blank. Data usability is not adversely affected by the low-level method blank result. |
| MB1-1221 | Chromium | 0.18 | None | Chromium concentrations in all associated samples were greater than five |

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| Blank ID | Detected <br> analytes | Analyte <br> concentration <br> (mg/Kg) | Samples <br> affected | Effects on Data Usability |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  | times the concentration detected in the <br> associated method blank. Data usability is <br> not adversely affected by the low-level <br> method blank result. |

### 6.4.9.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks associated with metals analysis of the samples covered in this report except as described below. AMEC reported the highest analyte concentrations (or absolute concentration) from the CCBs within each analytical sequence in the table below.

| Blank ID | Detected analytes | Analyte concentration $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { ICB and CCBs } \\ & 01 / 10 / 07 \end{aligned}$ | Antimony | -0.922 | SS094CA, SS094DA SS101CA,SS101DA SS052CA, SS052DA SS047CA, SS047DA SS045CA, SS045DA SS024CA, SS024DA SS070AA, SS070AB SS070BA, SS070CA SS070DA, SS031AA SS031BA, SS031CA | Antimony results from associated samples have been previously qualified based on method blank detection; therefore, no further qualification is required. |
|  | Arsenic | -0.53 |  | AMEC UJ qualified the non-detected arsenic results from samples SS024AC and SS031CA because of possible low bias in the analytical results due to the low instrument bias. |
|  | Vanadium | 0.891 |  | AMEC U qualified the detected vanadium results from samples SS094CA, SS094DA, SS101CA, SS101DA, SS52CA, SS52DA, SS047DA, SS045DA, SS070CA, SS070DA, SS031AA, and SS031CA because the sample concentrations were less than five times the blank concentrations. |
| CCB 1/12/07 | Vanadium | 0.541 | $\begin{gathered} \hline \text { SS020CA, SS020CC, } \\ \text { SS020DA, SS046AA } \\ \text { SS046BA, SS046CA } \\ \text { SS046DA, SD001AA } \\ \text { SD001AB, SD002AA } \\ \text { SD003AA,SD004AA } \\ \text { SD004BA } \end{gathered}$ | Vanadium concentrations in the associated samples were more than 5 times the concentration detected in the blank. Data usability is not adversely affected by the lowlevel CCB result. |

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| Blank ID | Detected analytes | Analyte concentration ( $\mu \mathrm{g} / \mathrm{L}$ ) | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| CCBs 12/26/06 | Barium | -0.187 | $\begin{gathered} \hline \text { SS031DA, SS031DB } \\ \text { SS026AA, SS026BA } \\ \text { SS026CA, SS026CC } \\ \text { SS026DA, SS007CA } \\ \text { SS007DA, SS007DB, } \\ \text { SS022AA,SS022AB } \\ \text { SS022BA, SS022CA } \\ \text { SS0022DA, SS020AA } \\ \text { SS020BA } \end{gathered}$ | Barium concentrations in the associated samples were more than five times the CCB concentration. Data usability is not adversely affected, by the low instrument bias. |

### 6.4.9.8 Equipment Blanks

Target analytes were not detected at concentrations above the MDL in equipment blanks associated with metals analysis of the samples covered in this report, except as described below.

| Blank ID | Detected <br> analytes | Analyte <br> concentration <br> $(\mu \mathrm{g} / \mathrm{L})$ | Samples <br> affected | Effects on Data Usability |
| :--- | :--- | :--- | :--- | :--- |$|$| EB-01 | Antimony <br> Chrium <br> Chromium | 0.12 <br> 0.16 <br> 0.66 |
| :--- | :--- | :--- |
| EB-02 | Antimony <br> Chromium <br> Copper | Antimony, barium and chromium <br> concentrations in the associated samples <br> were not detected above the MDL or the <br> analyte concentrations were more than five <br> times the blank detections. Data usability is <br> not adversely affected by the equipment <br> blank contamination. |
| 0.68 | None | Antimony, chromium and copper <br> concentrations in the associated samples <br> were not detected above the MDL or the <br> analyte concentrations were more than five <br> times the blank detections. Data usability is <br> not adversely affected by the equipment <br> blank contamination. |

### 6.4.9.9 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples associated with metals analysis of the samples covered in this report.

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### 6.4.9.10 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.9.11 MS/MSD Recovery

MS/MSD recoveries were within the QAPP-specified $75 \%$ to $125 \%$ acceptance limits and RPDs were less than the method-specified $20 \%$ acceptance limit, except as bolded below.

| Sample ID | Analyte | MS/MSD <br> Recovery | Effects on Data Usability |
| :---: | :---: | :---: | :---: |
| SS094CA | Mercury | 80\%/73\% | AMEC J qualified the detected mercury result from samples SS094CA, SS094DA, SS101CA, SS101DA, SS52CA, SS52DA, SS047CA, SS047DA, and SS045CA because of possible low bias in the analytical results due to potential matrix interference. |
| SS031DA | Antimony | 67\%/67\% | AMEC UJ qualified the non-detected antimony results from samples SS031DA, SS031DB, SS026AA, SS026BA, SS026CA, SS026CC, SS026DA, SS007CA, SS007DA, SS007DB, SS0022AA, SS0022BA, SS0022CA and SS0022DA; and J qualified the detected antimony results from samples SS0022AB, SS020AA, and SS020BA because of possible low bias in the analytical results due to potential matrix interference. |
| SS020CA | Antimony | 71\%/73\% | AMEC J qualified the detected antimony results from samples SS020CA, SD001AA, SD002AA, SD003AA, SD004AA and SD004BA and UJ qualified the nondetected antimony results from samples SS020CC, SS020DA, SS046AA, SS046BA, SS046CA, SS046DA, and SD001AB because of possible low bias in the analytical result due to potential matrix interference. |
| SD004BA | Mercury | 0\%/302\% | AMEC J qualified the detected mercury result from sample SD004BA because of possible bias in the analytical result due to analytical imprecision. |

### 6.4.9.12 Post-Digestion Spike Recovery

Post-digestion spike recoveries were within the QAPP-specified $75 \%$ to $125 \%$ acceptance limits.

### 6.4.9.13 Serial Dilution

Percent difference for serial dilution analysis performed on samples in this report met QAPPspecified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL except as tabulated below.

| Sample ID | Analyte | \% <br> Difference | Effects on Data Usability |
| :---: | :---: | :---: | :--- |
| SS094CA | Vanadium | $58.6 \%$ | AMEC J qualified the detected vanadium result from <br> sample SS094CA because of possible bias in analytical <br> result due to potential matrix interference. |
| SS031DA | Barium <br>  <br>  <br>  <br> Chromium <br> Lead | $16.8 \%$ | AMEC J qualified the detected barium, chromium and <br> lead results from sample SS031DA because of possible <br> bias in analytical results due to potential matrix <br> interference. |
| SS020CA | Lead | 16.3 | $11.5 \%$ |
|  | Vanadium | 27.3 | AMEC J qualified the detected lead and vanadium <br> results from sample SS020CA because of possible bias <br> in analytical results due to potential matrix <br> interference. |

### 6.4.9.14 Laboratory Duplicates

The laboratory performed duplicate analyses for all metals on sample SS094CA and all metals but mercury on SS031DA and SS020CA. The lab also performed duplicate analysis for mercury on SS045DA, SS007DB and SD004BA. The RPDs are within the specified acceptance limits of $\leq 20 \%$ RPD.

### 6.4.9.15 Field Duplicates

Sample SS070AB, SS031DB, SS007DB, SS022AB and SD001AB were submitted to the lab as field duplicates for SS070AA, SS031DA, SS007DA, SS022AA and SD001AA. All RPDs were $\leq 30 \%$ with the following exceptions.

- AMEC J qualified the detected chromium, and copper results from samples SS031DA and SS031DB because of possible bias in the analytical results due to field sampling and/or analytical imprecision.
- AMEC J qualified the detected barium, lead and vanadium results from samples SD001AA and SD001AB because of possible bias in the analytical results due to field sampling and/or analytical imprecision.


### 6.4.10 SDG J0605944

### 6.4.10.1 Holding Times

All samples were analyzed for metals within the QAPP-recommended technical holding time of 180 days and for mercury within the QAPP- recommended technical holding time of 28 days.

### 6.4.10.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 6020 and 7471A were acceptable.

### 6.4.10.3 Initial and Continuing Calibration Verification

QAPP-specified acceptance limits for metals initial and continuing calibration verification (ICV and CCV) are $90 \%$ to $110 \%$. All ICV and CCVs were acceptable.

### 6.4.10.4 Low Level Calibration Check Standard

All low-level check standards associated with the analysis of these samples using USEPA Methods 6020 and 7471A were acceptable with all analytes within $\pm 50 \%$ of the expected value.

### 6.4.10.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples exhibited recoveries within the QAPP-specified acceptance limits of $80 \%$ to $120 \%$.

### 6.4.10.6 Laboratory Blanks

Chromium was detected above the MDL in the laboratory blank at $0.15 \mathrm{mg} / \mathrm{kg}$. The chromium results, for all samples, are greater than ten times the CRQL, so data usability is not adversely affected.

### 6.4.10.7 Initial and Continuing Calibration Blanks

Target analytes were not detected at concentrations greater than the MDL in initial or continuing calibration blanks except as described below.

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| Blank ID | Detected analytes | Analyte concentration $(\mu \mathrm{g} / \mathrm{L})$ | Samples affected | Effects on Data Usability |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { ICB } \\ & 01 / 16 / 07 \end{aligned}$ | Antimony Vanadium | $\begin{aligned} & \hline 0.381 \\ & 0.352 \end{aligned}$ | SD005AA, SD006AA, <br> SD006BA, SD007AA, <br> SD008AA, SD009AA, SD006AC | The concentrations in the associated samples were more than 5 times the concentration detected in the blank or non-detect. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { CCBs } \\ & 01 / 16 / 07 \end{aligned}$ | Antimony <br> Arsenic <br> Barium <br> Selenium <br> Antimony <br> Chromium <br> Vanadium <br> Selenium | 0.150 -0.362 0.138 1.09 0.137 0.132 -0.265 0.927 |  | Antimony, Arsenic, Barium, Selenium, Chromium and Vanadium were either not detected above the MRL or the concentrations in the associated samples were more than 5 times the absolute concentration detected in the blank. Data usability is not adversely affected. |
| $\begin{aligned} & \hline \text { CCBs } \\ & 01 / 17 / 07 \end{aligned}$ | Chromium | -0.123 | SD005AA | The concentration in the associated sample was more than 5 times the absolute concentration detected in the blank. |

### 6.4.10.8 LCS Recovery

Recoveries were within the QAPP-specified $80 \%$ to $120 \%$ acceptance limits in all LCS samples.

### 6.4.10.9 Internal Standard Recoveries

Recoveries of all internal standards were within the laboratory-specified acceptance limits of $60 \%$ to $125 \%$ for ICP-MS metals analysis.

### 6.4.10.10 MS/MSD Recovery

MS/MSD analysis was performed on sample SD005AA for all metals and SS091CA for all metals but mercury. An MS/MSD for mercury was also performed on samples SS101BA and SS075CA. All recoveries were within criteria except as described below.

| Sample ID | Analyte | MS/MSD <br> Recovery | Notes |
| :---: | :---: | :---: | :--- |
| SS041AA | Antimony | $\mathbf{7 1 . 6 \% / 7 6 . 6 \%}$ | AMEC J qualified the antimony results |
|  | Chromium | $\mathbf{1 3 . 2 \% / 1 0 . 4 \%}$ | in samples SD005AA, SD006AA, <br> SD006BA, SD007AA, SD009AA and <br> SD006AC. AMEC UJ qualified the |

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| Sample ID | Analyte | MS/MSD <br> Recovery | Notes |
| :--- | :--- | :--- | :--- |
|  |  |  | antimony result in sample SD008AA. <br> AMEC J qualified the chromium <br> results in samples SD005AA, <br> SD006AA, SD006BA, SD007AA, <br> SD008AA, SD009AA and SD006AC. |

### 6.4.10.11 Post Digestion Spike Recovery

The QAPP-specified acceptance limits for metals post digestion spike recoveries are $75 \%$ to $125 \%$ recovery except the following. The chromium spike recovery for SD005AA was low at $54 \%$. AMEC J qualified samples SD005AA, SD006AA, SD006BA, SD007AA, SD008AA, SD009AA and SD006AC due to low spike recovery.

### 6.4.10.12 Serial Dilution

Percent difference for serial dilution analysis performed on sample SD005AA met QAPPspecified criteria with less than $10 \%$ difference for analytes with concentrations greater than 50 times the MDL with the following exception.

The percent difference for antimony was $52.4 .6 \%$. AMEC J qualified the detected antimony results in samples SD005AA, SD006AA, SD006BA, SD007AA, SD009AA and SD006AC due to the potential bias. AMEC UJ qualified the non-detected result in sample SD008AA.

The percent difference for vanadium in samples was high at $15.6 \%$. AMEC J qualified the detected vanadium results in samples SD005AA, SD006AA, SD006BA, SD007AA, SD008AA, SD009AA and SD006AC.

### 6.4.10.13 Laboratory Duplicates

The laboratory performed duplicate analyses for all metals on sample SD005AA. The RPDs are within the specified acceptance limits of $\leq 20 \%$ RPD.

### 6.4.10.14 Field Duplicates

Sample SD006AC was submitted to the lab as field duplicate for SD006AA. All RPDs were $\leq$ $30 \%$ with the following exceptions.

- AMEC J qualified the detected mercury and vanadium results due to elevated RPDs of $129 \%$ and $41 \%$, respectively.


### 6.5 Total Organic Carbon (TOC)

Samples were analyzed by USEPA method 9060 and not the QAPP-specified Lloyd Kahn method. Data is not adversely affected.

### 6.5.1 SDG J0605944

### 6.5.1.1 Holding Times

All samples were analyzed for TOC within the recommended technical holding time of 28 days.

### 6.5.1.2 Initial Calibration

All ICAL associated with analysis of these samples using USEPA Methods 9060 were acceptable.

### 6.5.1.3 Continuing Calibration Verification

QAPP-specified acceptance limits for TOC continuing calibration verification (CCV) are $90 \%$ to $110 \%$. All CCVs were acceptable.

### 6.5.1.4 Laboratory Blanks

TOC was not detected above the RL in the laboratory blank.

### 6.5.1.5 Calibration Blanks

TOC was not detected at concentrations greater than the RL in the calibration blanks.

### 6.5.1.6 LCS Recovery

Recoveries were within the laboratory specified $85 \%$ to $115 \%$ acceptance limits in all LCS samples.

### 6.5.1.7 MS Recovery

MS analysis was performed on sample SD005AA. All recoveries were within laboratory specified criteria.

### 6.5.1.8 Laboratory Duplicates

The laboratory performed duplicate analyses for TOC on sample SD005AA. The RPDs are within the specified acceptance limits of $\leq 20 \%$ RPD.

### 6.5.1.9 Field Duplicates

Sample SD006AC was submitted to the lab as field duplicate for SD006AA. All RPDs were $\leq$ 30\%.

### 7.0 Summary and Conclusions

The data are generally usable and of good quality, with the exceptions and limitations listed below.

The data for the analyses of VOCs, SVOCs, PAHs, Metals and TOC are generally usable and of good quality, with the exceptions and limitations listed below. The majority of data qualifications for samples covered in this report were made for trace level blank contamination, minor calibration deviations, matrix interferences and duplicate imprecision.

There were a small number of samples that showed severe matrix interference for the analysis of VOCs. AMEC R qualified isopropylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane and 1,2,4-trichlorobenzene in samples SS077CA, SS100CA, SS100DA, SS100DB and SD006AC due to extremely low internal standards. All VOC internal standards were extremely low for sample SS073BA; as such AMEC R qualified all VOC compounds for the sample.

There was laboratory blank and LCS contamination for a number of the PAH compounds causing the laboratory to re-extract past the technical holding times. The laboratory reported the original set of data when the re-extracted data matched the original set. Otherwise for a limited number of samples some compounds were reported past the holding time.

## REFERENCES

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U. S. Environmental Protection Agency, October 1999a. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA540/R-99/008.
U. S. Environmental Protection Agency, October 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004.
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## LIMITATIONS

This report was prepared exclusively for Beazer East, Inc by AMEC Earth \& Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Data Validation/Review Report is intended to be used by Beazer East, Inc for the Supplemental Soil and Sediment Sampling Plan, Cabot Carbon/Koppers Superfund Site only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

## TABLES

Table 1
Field Samples Submitted to Columbia Analytical Services, Inc.
Koppers Inc. Site
SDG J0605714

| Sample Location | Collection Date | Matrix | Columbia <br> Sample ID | Data Validation Level | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { U } \\ & 0 \\ & 0 \\ & \vdots \end{aligned}$ |  |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS059AA | 11/29/06 | Soil | J0605714-001 | DQR | X | X | X | X |  |
| SS059BA | 11/30/06 | Soil | J0605714-002 | DQR | X | X | X | X |  |
| SS060AA | 11/30/06 | Soil | J0605714-003 | DQR | X | X | X | X |  |
| SS060BA | 11/30/06 | Soil | J0605714-004 | DQR | X | X | X | X |  |
| SS073AA | 11/30/06 | Soil | J0605714-005 | DQR | X | X | X | X |  |
| SS073BA | 11/30/06 | Soil | J0605714-006 | DQR | X | X | X | X |  |
| SS085AA | 11/30/06 | Soil | J0605714-007 | DQR | X | X | X | X |  |
| SS085BA | 11/30/06 | Soil | J0605714-008 | DQR | X | X | X | X |  |
| SS087AA | 11/30/06 | Soil | J0605714-009 | DQR | X | X | X | X |  |
| SS087BA | 11/30/06 | Soil | J0605714-010 | DQR | X | X | X | X |  |
| SS089AA | 11/30/06 | Soil | J0605714-011 | DQR | X | X | X | X |  |
| SS089BA | 11/30/06 | Soil | J0605714-012 | DQR | X | X | X | X |  |
| SS090AA | 11/30/06 | Soil | J0605714-013 | DQR | X | X | X | X |  |
| SS090BA | 11/30/06 | Soil | J0605714-014 | DQR | X | X | X | X |  |
| SS090BC | 11/30/06 | Soil | J0605714-015 | DQR | X | X | X | X | Field Duplicate of SS090BA |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

Table 1
Field Samples Submitted to Columbia Analytical Services, Inc.
Koppers Inc. Site
SDG J0605735

| Sample <br> Location | Collection Date | Matrix | Columbia Sample ID | Data <br> Validation Level | 0 <br> 0 <br> 0 | ¢ |  |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS079AA | 11/30/06 | Soil | J0605735-001 | DQR | X | X | X | X |  |
| SS079BA | 11/30/06 | Soil | J0605735-002 | DQR | X | X | X | X |  |
| SS067AA | 11/30/06 | Soil | J0605735-003 | DQR | X | X | X | X |  |
| SS067BA | 11/30/06 | Soil | J0605735-004 | DQR | X | X | X | X |  |
| SS067BB | 11/30/06 | Soil | J0605735-005 | DQR | X | X | X | X | Field Duplicate for SS067BA |
| SS069AA | 11/30/06 | Soil | J0605735-006 | DQR | X | X | X | X |  |
| SS069BA | 11/30/06 | Soil | J0605735-007 | DQR | X | X | X | X |  |
| SS092AA | 11/30/06 | Soil | J0605735-008 | Full | X | X | X | X |  |
| SS092BA | 11/30/06 | Soil | J0605735-009 | Full | X | X | X | X |  |
| SS093AA | 12/1/06 | Soil | J0605735-010 | DQR | X | X | X | X |  |
| SS093BA | 12/1/06 | Soil | J0605735-011 | DQR | X | X | X | X |  |
| SS083AA | 12/1/06 | Soil | J0605735-012 | DQR | X | X | X | X |  |
| SS083BA | 12/1/06 | Soil | J0605735-013 | DQR | X | X | X | X |  |
| SS081AA | 12/1/06 | Soil | J0605735-014 | Full | X | X | X | X |  |
| SS081BA | 12/1/06 | Soil | J0605735-015 | Full | X | X | X | X |  |
| SS019AA | 12/1/06 | Soil | J0605735-016 | DQR | X | X | X | X |  |
| SS019BA | 12/1/06 | Soil | J0605735-017 | DQR | X | X | X | X |  |
| SS019BB | 12/1/06 | Soil | J0605735-018 | DQR | X | X | X | X | Field Duplicate for SS019BA |
| SS054AA | 12/1/06 | Soil | J0605735-019 | DQR | X | X | X | X |  |
| SS054AB | 12/1/06 | Soil | J0605735-020 | DQR | X | X | X | X | Field Duplicate for SS054AA |
| SS054BA | 12/1/06 | Soil | J0605735-021 | DQR | X | X | X | X |  |
| SS071AA | 12/1/06 | Soil | J0605735-022 | DQR | X | X | X | X |  |
| SS071BA | 12/1/06 | Soil | J0605735-023 | DQR | X | X | X | X |  |
| SS042AA | 12/1/06 | Soil | J0605735-024 | DQR | X | X | X | X |  |
| SS042BA | 12/1/06 | Soil | J0605735-025 | DQR | X | X | X | X |  |
| SS042BB | 12/1/06 | Soil | J0605735-026 | DQR | X | X | X | X | Field Duplicate for SS042BA |
| SS023AA | 12/1/06 | Soil | J0605735-027 | DQR | X | X | X | X |  |
| SS023BA | 12/1/06 | Soil | J0605735-028 | DQR | X | X | X | X |  |
| SS023BB | 12/1/06 | Soil | J0605735-029 | DQR | X | X | X | X | Field Duplicate for SS023BA |
| SS040AA | 12/1/06 | Soil | J0605735-030 | DQR | X | X | X | X |  |
| SS040BA | 12/1/06 | Soil | J0605735-031 | DQR | X | X | X | X |  |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan
DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

Table 1
Field Samples Submitted to Columbia Analytical Services, Inc.
Koppers Inc. Site
SDG J0605780

| Sample Location | Collection Date | Matrix | Columbia Sample ID | Data <br> Validation Level | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { U } \\ & 0 \\ & \text { 心 } \end{aligned}$ |  |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS050AA | 12/4/06 | Soil | J0605780-001 | DQR | X | X | X | X |  |
| SS050BA | 12/4/06 | Soil | J0605780-002 | DQR | X | X | X | X |  |
| SS051AA | 12/4/06 | Soil | J0605780-003 | DQR | X | X | X | X |  |
| SS051BA | 12/4/06 | Soil | J0605780-004 | DQR | X | X | X | X |  |
| SS025AA | 12/4/06 | Soil | J0605780-005 | DQR | X | X | X | X |  |
| SS025BA | 12/4/06 | Soil | J0605780-006 | DQR | X | X | X | X |  |
| SS027AA | 12/4/06 | Soil | J0605780-007 | DQR | X | X | X | X |  |
| SS027BA | 12/4/06 | Soil | J0605780-008 | DQR | X | X | X | X |  |
| SS034AA | 12/4/06 | Soil | J0605780-009 | DQR | X | X | X | X |  |
| SS034BA | 12/4/06 | Soil | J0605780-010 | DQR | X | X | X | X |  |
| SS013AA | 12/4/06 | Soil | J0605780-011 | DQR | X | X | X | X |  |
| SS013BA | 12/4/06 | Soil | J0605780-012 | DQR | X | X | X | X |  |
| SS012AA | 12/4/06 | Soil | J0605780-013 | DQR | X | X | X | X |  |
| SS012AC | 12/4/06 | Soil | J0605780-014 | DQR | X | X | X | X | Field Duplicate of SS012AA |
| SS012BA | 12/4/06 | Soil | J0605780-015 | DQR | X | X | X | X |  |
| SS014AA | 12/4/06 | Soil | J0605780-016 | DQR | X | X | X | X |  |
| SS014BA | 12/4/06 | Soil | J0605780-017 | DQR | X | X | X | X |  |
| SS018AA | 12/4/06 | Soil | J0605780-018 | DQR | X | X | X | X |  |
| SS018BA | 12/4/06 | Soil | J0605780-019 | DQR | X | X | X | X |  |
| SS017AA | 12/4/06 | Soil | J0605780-020 | DQR | X | X | X | X |  |
| SS017BA | 12/4/06 | Soil | J0605780-021 | DQR | X | X | X | X |  |
| SS016AA | 12/4/06 | Soil | J0605780-022 | DQR | X | X | X | X |  |
| SS016BA | 12/4/06 | Soil | J0605780-023 | DQR | X | X | X | X |  |
| SS007AA | 12/4/06 | Soil | J0605780-024 | Full | X | X | X | X |  |
| SS007BA | 12/4/06 | Soil | J0605780-025 | Full | X | X | X | X |  |
| SS007BC | 12/4/06 | Soil | J0605780-026 | Full | X | X | X | X | Field Duplicate of SS007BA |
| SS074AA | 12/4/06 | Soil | J0605780-027 | DQR | X | X | X | X |  |
| SS074BA | 12/4/06 | Soil | J0605780-028 | DQR | X | X | X | X |  |
| SS015AA | 12/4/06 | Soil | J0605780-029 | Full | X | X | X | X |  |
| SS015BA | 12/4/06 | Soil | J0605780-030 | Full | X | X | X | X |  |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan
DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

Table 1
Field Samples Submitted to Columbia Analytical Services, Inc.
Koppers Inc. Site
SDG J0605810

| Sample Location | Collection Date | Matrix | Columbia Sample ID | Data <br> Validation Level | $\begin{aligned} & \text { n } \\ & 0 \\ & 0 \end{aligned}$ | u 0 ¢ |  | $\begin{aligned} & \overline{(0)} \\ & \stackrel{n}{0} \\ & \stackrel{0}{0} \end{aligned}$ | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS008AA | 12/5/06 | Soil | J0605810-001 | Full | X | X | X | X |  |
| SS008BA | 12/5/06 | Soil | J0605810-002 | Full | X | X | X | X |  |
| SS009AA | 12/5/06 | Soil | J0605810-003 | DQR | X | X | X | X |  |
| SS009BA | 12/5/06 | Soil | J0605810-004 | DQR | X | X | X | X |  |
| SS006AA | 12/5/06 | Soil | J0605810-005 | DQR | X | X | X | X |  |
| SS006BA | 12/5/06 | Soil | J0605810-006 | DQR | X | X | X | X |  |
| SS004AA | 12/5/06 | Soil | J0605810-007 | Full | X | X | X | X |  |
| SS004BA | 12/5/06 | Soil | J0605810-008 | DQR | X | X | X | X |  |
| SS004BB | 12/5/06 | Soil | J0605810-009 | DQR | X | X | X | X | Field Duplicate of SS004BA |
| SS002AA | 12/5/06 | Soil | J0605810-010 | DQR | X | X | X | X |  |
| SS002AC | 12/5/06 | Soil | J0605810-011 | Full | X | X | X | X | Field Duplicate of SS002AA |
| SS002BA | 12/5/06 | Soil | J0605810-012 | Full | X | X | X | X |  |
| SS011AA | 12/5/06 | Soil | J0605810-013 | DQR | X | X | X | X |  |
| SS011BA | 12/5/06 | Soil | J0605810-014 | DQR | X | X | X | X |  |
| SS058AA | 12/5/06 | Soil | J0605810-015 | DQR | X | X | X | X |  |
| SS058BA | 12/5/06 | Soil | J0605810-016 | DQR | X | X | X | X |  |
| SS037AA | 12/5/06 | Soil | J0605810-017 | DQR | X | X | X | X |  |
| SS037BA | 12/5/06 | Soil | J0605810-018 | DQR | X | X | X | X |  |
| SS043AA | 12/5/06 | Soil | J0605810-019 | DQR | X | X | X | X |  |
| SS043BA | 12/5/06 | Soil | J0605810-020 | DQR | X | X | X | X |  |
| SS043BB | 12/5/06 | Soil | J0605810-021 | DQR | X | X | X | X | Field Duplicate of SS043BA |
| SS044AA | 12/5/06 | Soil | J0605810-022 | DQR | X | X | X | X |  |
| SS044BA | 12/5/06 | Soil | J0605810-023 | DQR | X | X | X | X |  |
| SS076AA | 12/5/06 | Soil | J0605810-024 | DQR | X | X | X | X |  |
| SS076BA | 12/5/06 | Soil | J0605810-025 | DQR | X | X | X | X |  |
| SS010AA | 12/5/06 | Soil | J0605810-026 | DQR | X | X | X | X |  |
| SS010AB | 12/5/06 | Soil | J0605810-027 | DQR | X | X | X | X | Field Duplicate of SS010AA |
| SS010BA | 12/5/06 | Soil | J0605810-028 | DQR | X | X | X | X |  |
| SS021AA | 12/6/06 | Soil | J0605810-029 | DQR | X | X | X | X |  |
| SS021BA | 12/6/06 | Soil | J0605810-030 | DQR | X | X | X | X |  |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan
DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

Table 1
Field Samples Submitted to Columbia Analytical Services, Inc.
Koppers Inc. Site
SDG J0605839

| Sample Location | Collection Date | Matrix | Columbia Sample ID | Data <br> Validation Level | $\begin{aligned} & n \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | 告 |  |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS036AA | 12/6/06 | Soil | J0605839-001 | DQR | X | X | X | X |  |
| SS036AC | 12/6/06 | Soil | J0605839-002 | DQR | X | X | X | X | Field Duplicate of SS036AA |
| SS036BA | 12/6/06 | Soil | J0605839-003 | DQR | X | X | X | X |  |
| SS036CA | 12/6/06 | Soil | J0605839-004 | DQR | X | X | X | X |  |
| SS036DA | 12/6/06 | Soil | J0605839-005 | DQR | X | X | X | X |  |
| SS048AA | 12/6/06 | Soil | J0605839-006 | DQR | X | X | X | X |  |
| SS048BA | 12/6/06 | Soil | J0605839-007 | DQR | X | X | X | X |  |
| SS048BB | 12/6/06 | Soil | J0605839-008 | DQR | X | X | X | X | Field Duplicate of SS048BA |
| SS048CA | 12/6/06 | Soil | J0605839-009 | DQR | X | X | X | X |  |
| SS048DA | 12/6/06 | Soil | J0605839-010 | DQR | X | X | X | X |  |
| SS095AA | 12/6/06 | Soil | J0605839-011 | DQR | X | X | X | X |  |
| SS095BA | 12/6/06 | Soil | J0605839-012 | DQR | X | X | X | X |  |
| SS095CA | 12/6/06 | Soil | J0605839-013 | DQR | X | X | X | X |  |
| SS095DA | 12/6/06 | Soil | J0605839-014 | DQR | X | X | X | X |  |
| SS057AA | 12/6/06 | Soil | J0605839-015 | DQR | X | X | X | X |  |
| SS057BA | 12/6/06 | Soil | J0605839-016 | DQR | X | X | X | X |  |
| SS057CA | 12/6/06 | Soil | J0605839-017 | DQR | X | X | X | X |  |
| SS057CB | 12/6/06 | Soil | J0605839-018 | DQR | X | X | X | X | Field Duplicate of SS057CA |
| SS057DA | 12/6/06 | Soil | J0605839-019 | DQR | X | X | X | X |  |
| SS080AA | 12/6/06 | Soil | J0605839-020 | DQR | X | X | X | X |  |
| SS080BA | 12/6/06 | Soil | J0605839-021 | Full | X | X | X | X |  |
| SS080BB | 12/6/06 | Soil | J0605839-022 | Full | X | X | X | X | Field Duplicate of SS080BA |
| SS080CA | 12/6/06 | Soil | J0605839-023 | DQR | X | X | X | X |  |
| SS080DA | 12/6/06 | Soil | J0605839-024 | DQR | X | X | X | X |  |
| SS035AA | 12/6/06 | Soil | J0605839-025 | DQR | X | X | X | X |  |
| SS035BA | 12/6/06 | Soil | J0605839-026 | DQR | X | X | X | X |  |
| SS035CA | 12/6/06 | Soil | J0605839-027 | DQR | X | X | X | X |  |
| SS035DA | 12/6/06 | Soil | J0605839-028 | DQR | X | X | X | X |  |
| SS033AA | 12/6/06 | Soil | J0605839-029 | Full | X | X | X | X |  |
| SS033BA | 12/6/06 | Soil | J0605839-030 | Full | X | X | X | X |  |
| SS032AA | 12/6/06 | Soil | J0605839-031 | Full | X | X | X | X |  |
| SS032BA | 12/6/06 | Soil | J0605839-032 | Full | X | X | X | X |  |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan
DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

Table 1
Field Samples Submitted to Columbia Analytical Services Inc.
Koppers Inc. Site
SDG J0605876

| Sample Location | Collection Date | Matrix | Columbia <br> Sample ID | Data Validation Level | $\begin{aligned} & 0 \\ & 00 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ひ } \\ & 0 \\ & \text { in } \end{aligned}$ |  |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS097AA | 12/7/2006 | Soil | J0605876-001 | Full | x | x | X | x |  |
| SS097BA | 12/7/2006 | Soil | J0605876-002 | Full | X | X | X | X |  |
| SS097CA | 12/7/2006 | Soil | J0605876-003 | DQR | x | X | X | x |  |
| SS097DA | 12/7/2006 | Soil | J0605876-004 | DQR | X | X | X | x |  |
| SS001AA | 12/7/2006 | Soil | J0605876-005 | Full | X | X | X | x |  |
| SS001BA | 12/7/2006 | Soil | J0605876-006 | DQR | x | X | x | x |  |
| SS001CA | 12/7/2006 | Soil | J0605876-007 | DQR | x | x | x | x |  |
| SS001DA | 12/7/2006 | Soil | J0605876-008 | DQR | x | X | x | x |  |
| SS038AA | 12/7/2006 | Soil | J0605876-009 | DQR | x | x | x | x |  |
| SS038AC | 12/7/2006 | Soil | J0605876-010 | DQR | x | x | x | x |  |
| SS038BA | 12/7/2006 | Soil | J0605876-011 | DQR | X | X | X | X |  |
| SS038CA | 12/7/2006 | Soil | J0605876-012 | DQR | X | X | X | X |  |
| SS038DA | 12/7/2006 | Soil | J0605876-013 | DQR | X | X | X | X |  |
| SS038DB | 12/7/2006 | Soil | J0605876-014 | DQR | X | X | x | x | Field Duplicate of SS038DA |
| SS039AA | 12/7/2006 | Soil | J0605876-015 | DQR | X | X | X | X |  |
| SS039BA | 12/7/2006 | Soil | J0605876-016 | DQR | X | X | X | X |  |
| SS039BB | 12/7/2006 | Soil | J0605876-017 | DQR | x | X | x | X | Field Duplicate of SS039BA |
| SS039CA | 12/7/2006 | Soil | J0605876-018 | DQR | X | X | X | X |  |
| SS039DA | 12/7/2006 | Soil | J0605876-019 | DQR | x | X | X | X |  |
| SS029AA | 12/7/2006 | Soil | J0605876-020 | DQR | X | X | X | X |  |
| SS029BA | 12/7/2006 | Soil | J0605876-021 | DQR | X | X | X | X |  |
| SS029CA | 12/7/2006 | Soil | J0605876-022 | DQR | x | x | X | x |  |
| SS029DA | 12/7/2006 | Soil | J0605876-023 | DQR | x | x | x | x |  |
| SS096AA | 12/7/2006 | Soil | J0605876-024 | DQR | X | X | X | X |  |
| SS096BA | 12/7/2006 | Soil | J0605876-025 | DQR | X | X | X | X |  |
| SS096CA | 12/7/2006 | Soil | J0605876-026 | DQR | X | X | X | X |  |
| SS096DA | 12/7/2006 | Soil | J0605876-027 | DQR | X | X | X | X |  |
| SS028AA | 12/7/2006 | Soil | J0605876-028 | DQR | X | X | X | X |  |
| SS028AB | 12/7/2006 | Soil | J0605876-029 | DQR | X | X | x | X | Field Duplicate of SS028AA |
| SS028BA | 12/7/2006 | Soil | J0605876-030 | DQR | X | X | X | X |  |
| SS028CA | 12/7/2006 | Soil | J0605876-031 | DQR | X | X | X | x |  |
| SS028DA | 12/7/2006 | Soil | J0605876-032 | DQR | X | X | X | X |  |
| SS028DC | 12/7/2006 | Soil | J0605876-033 | DQR | X | X | X | X |  |
| SS072AA | 12/7/2006 | Soil | J0605876-034 | DQR | X | X | X | X |  |
| SS072BA | 12/7/2006 | Soil | J0605876-035 | DQR | X | X | X | X |  |
| SS072CA | 12/7/2006 | Soil | J0605876-036 | DQR | X | X | X | x |  |
| SS072CC | 12/7/2006 | Soil | J0605876-037 | DQR | X | X | X | X |  |
| SS072DA | 12/7/2006 | Soil | J0605876-038 | DQR | X | X | X | X |  |
| SS082AA | 12/7/2006 | Soil | J0605876-039 | Full | X | X | X | X |  |
| SS082BA | 12/7/2006 | Soil | J0605876-040 | Full | X | X | X | X |  |
| SS082CA | 12/7/2006 | Soil | J0605876-041 | Full | X | X | X | X |  |
| SS082DA | 12/7/2006 | Soil | J0605876-042 | Full | X | X | X | X |  |

3/29/2007

Table 1
Field Samples Submitted to Columbia Analytical Services Inc.
Koppers Inc. Site
SDG J0605876

| SS098AA | 12/8/2006 | Soil | J0605876-043 | DQR | x | x | x | x |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS098BA | 12/8/2006 | Soil | J0605876-044 | DQR | X | X | X | x |  |
| SS098CA | 12/8/2006 | Soil | J0605876-045 | DQR | X | X | X | x |  |
| SS098DA | 12/8/2006 | Soil | J0605876-046 | DQR | X | X | x | x |  |
| SS099AA | 12/8/2006 | Soil | J0605876-047 | DQR | X | X | X | x |  |
| SS099BA | 12/8/2006 | Soil | J0605876-048 | DQR | X | X | X | x |  |
| SS099CA | 12/8/2006 | Soil | J0605876-049 | DQR | X | X | X | X |  |
| SS099DA | 12/8/2006 | Soil | J0605876-050 | DQR | X | X | x | x |  |
| SS084AA | 12/8/2006 | Soil | J0605876-051 | DQR | x | x | x | x |  |
| SS084BA | 12/8/2006 | Soil | J0605876-052 | DQR | X | x | x | x |  |
| SS084CA | 12/8/2006 | Soil | J0605876-053 | DQR | X | X | X | x |  |
| SS084DA | 12/8/2006 | Soil | J0605876-054 | DQR | X | X | X | X |  |
| SS062AA | 12/8/2006 | Soil | J0605876-055 | DQR | X | X | X | X |  |
| SS062BA | 12/8/2006 | Soil | J0605876-056 | DQR | X | X | X | x |  |
| SS062CA | 12/8/2006 | Soil | J0605876-057 | DQR | X | X | X | x |  |
| SS062CC | 12/8/2006 | Soil | J0605876-058 | DQR | X | X | X | x |  |
| SS062DA | 12/8/2006 | Soil | J0605876-059 | DQR | x | x | x | x |  |
| SS064AA | 12/8/2006 | Soil | J0605876-060 | DQR | X | X | X | X |  |
| SS064BA | 12/8/2006 | Soil | J0605876-061 | DQR | X | X | X | X |  |
| SS064CA | 12/8/2006 | Soil | J0605876-062 | DQR | X | X | X | X |  |
| SS064DA | 12/8/2006 | Soil | J0605876-063 | DQR | X | X | X | X |  |
| Trip Blank 1 | 12/8/2006 | Water | J0605876-064 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 2 | 12/8/2006 | Water | J0605876-065 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 3 | 12/8/2006 | Water | J0605876-066 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 4 | 12/8/2006 | Water | J0605876-067 | DQR | x |  |  |  | Trip Blank |
| Trip Blank 5 | 12/8/2006 | Water | J0605876-068 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 6 | 12/8/2006 | Water | J0605876-069 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 7 | 12/8/2006 | Water | J0605876-070 | DQR | X |  |  |  | Trip Blank |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

Table 1
Field Samples Submitted to Columbia Analytical Services Inc.
Koppers Inc. Site
SDG J0605879

| Sample Location | Collection Date | Matrix | Columbia Sample ID | Data <br> Validation Level | 0 0 8 | べ |  |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS100AA | 12/8/06 | Soil | J0605879-001 | DQR | X | X | X | X |  |
| SS100BA | 12/8/06 | Soil | J0605879-002 | DQR | X | X | X | X |  |
| SS100CA | 12/8/06 | Soil | J0605879-003 | DQR | X | X | X | X |  |
| SS100DA | 12/8/06 | Soil | J0605879-004 | DQR | X | X | X | X |  |
| SS100DB | 12/8/06 | Soil | J0605879-005 | DQR | X | X | X | X | Field Duplicate of SS100DA |
| SS66AA | 12/8/06 | Soil | J0605879-006 | DQR | X | X | X | X |  |
| SS066AB | 12/8/06 | Soil | J0605879-007 | DQR | X | X | X | X | Field Duplicate of SS66AA |
| SS066BA | 12/8/06 | Soil | J0605879-008 | DQR | X | X | X | X |  |
| SS066CA | 12/8/06 | Soil | J0605879-009 | DQR | X | X | X | X |  |
| SS066DA | 12/8/06 | Soil | J0605879-010 | DQR | X | X | X | X |  |
| SS066DC | 12/8/06 | Soil | J0605879-011 | DQR | X | X | X | X | Field Duplicate of SS066DA |
| SS005AA | 12/8/06 | Soil | J0605879-012 | Full | X | X | X | X |  |
| SS005BA | 12/8/06 | Soil | J0605879-013 | Full | X | X | X | X |  |
| SS005CA | 12/8/06 | Soil | J0605879-014 | Full | X | X | X | X |  |
| SS005DA | 12/8/06 | Soil | J0605879-015 | Full | X | X | X | X |  |
| SS003AA | 12/8/06 | Soil | J0605879-016 | Full | X | X | X | X |  |
| SS003BA | 12/8/06 | Soil | J0605879-017 | Full | X | X | X | X |  |
| SS003CA | 12/8/06 | Soil | J0605879-018 | Full | X | X | X | X |  |
| SS003CB | 12/8/06 | Soil | J0605879-019 | Full | X | X | X | X | Field Duplicate of SS003CA |
| SS003DA | 12/8/06 | Soil | J0605879-020 | Full | X | X | X | X |  |
| SS086AA | 12/9/06 | Soil | J0605879-021 | DQR | X | X | X | X |  |
| SS086BA | 12/9/06 | Soil | J0605879-022 | DQR | X | X | X | X |  |
| SS086BB | 12/9/06 | Soil | J0605879-023 | DQR | X | X | X | X | Field Duplicate of SS086BA |
| SS088AA | 12/9/06 | Soil | J0605879-024 | DQR | X | X | X | X |  |
| SS088BA | 12/9/06 | Soil | J0605879-025 | DQR | X | X | X | X |  |
| SS091AA | 12/9/06 | Soil | J0605879-026 | DQR | X | X | X | X |  |
| SS091BA | 12/9/06 | Soil | J0605879-027 | DQR | X | X | X | X |  |
| SS075AA | 12/9/06 | Soil | J0605879-028 | DQR | X | X | X | X |  |
| SS075BA | 12/9/06 | Soil | J0605879-029 | DQR | X | X | X | X |  |
| SS077AA | 12/9/06 | Soil | J0605879-030 | DQR | X | X | X | X |  |
| SS077BA | 12/9/06 | Soil | J0605879-031 | DQR | X | X | X | X |  |
| SS049AA | 12/9/06 | Soil | J0605879-032 | DQR | X | X | X | X |  |
| SS049BA | 12/9/06 | Soil | J0605879-033 | DQR | X | X | X | X |  |
| SS052AA | 12/9/06 | Soil | J0605879-034 | DQR | X | X | X | X |  |
| SS052BA | 12/9/06 | Soil | J0605879-035 | DQR | X | X | X | X |  |
| SS068AA | 12/9/06 | Soil | J0605879-036 | DQR | X | X | X | X |  |
| SS068BA | 12/9/06 | Soil | J0605879-037 | DQR | X | X | X | X |  |
| Trip Blank 1 | 12/9/06 | Water | J0605879-038 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 2 | 12/9/06 | Water | J0605879-039 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 3 | 12/9/06 | Water | J0605879-040 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 4 | 12/9/06 | Water | J0605879-041 | DQR | X |  |  |  | Trip Blank |
| Trip Blank 5 | 12/9/06 | Water | J0605879-042 | DQR | X |  |  |  | Trip Blank |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan
DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan
3/29/2007
DVR_1_Table1.xls SDG J0605879
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Table 1
Field Samples Submitted to Columbia Analytical Services Inc.
Koppers Inc. Site
SDG J0605890

| Sample Location | Collection Date | Matrix | Columbia <br> Sample ID | Data Validatio n Level | $\begin{aligned} & \text { n} \\ & 0 \\ & 0 \end{aligned}$ | ひ 0 む |  | $\begin{aligned} & \bar{\pi} \\ & \stackrel{n}{0} \\ & \stackrel{n}{0} \end{aligned}$ | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS041AA | 12/11/06 | Soil | J0605890-001 | DQR | X | X | X | X |  |
| SS041BA | 12/11/06 | Soil | J0605890-002 | DQR | X | X | X | X |  |
| SS030AA | 12/11/06 | Soil | J0605890-003 | DQR | X | X | X | X |  |
| SS030BA | 12/11/06 | Soil | J0605890-004 | DQR | X | X | X | X |  |
| SS094AA | 12/11/06 | Soil | J0605890-005 | DQR | X | X | X | X |  |
| SS094AB | 12/11/06 | Soil | J0605890-006 | DQR | X | X | X | X | Field Duplicate of SSolita SS094AA |
| SS094BA | 12/11/06 | Soil | J0605890-007 | DQR | X | X | X | X |  |
| SS101AA | 12/11/06 | Soil | J0605890-008 | DQR | X | X | X | X |  |
| SS101BA | 12/11/06 | Soil | J0605890-009 | DQR | X | X | X | X |  |
| SS045AA | 12/11/06 | Soil | J0605890-010 | DQR | X | X | X | X |  |
| SS045BA | 12/11/06 | Soil | J0605890-011 | DQR | X | X | X | X |  |
| SS047AA | 12/11/06 | Soil | J0605890-012 | Full | X | X | X | X |  |
| SS047AC | 12/11/06 | Soil | J0605890-013 | Full | X | X | X | X | Field Duplicate of SS047AA |
| SS047BA | 12/11/06 | Soil | J0605890-014 | Full | X | X | X | X |  |
| SS024AA | 12/11/06 | Soil | J0605890-015 | DQR | X | X | X | X |  |
| SS024BA | 12/11/06 | Soil | J0605890-016 | DQR | X | X | X | X |  |
| SS086CA | 12/11/06 | Soil | J0605890-017 | DQR | X | X | X | X |  |
| SS086DA | 12/11/06 | Soil | J0605890-018 | DQR | X | X | X | X |  |
| SS088CA | 12/11/06 | Soil | J0605890-019 | DQR | X | X | X | X |  |
| SS088DA | 12/11/06 | Soil | J0605890-020 | DQR | X | X | X | X |  |
| SS091CA | 12/11/06 | Soil | J0605890-021 | DQR | X | X | X | X |  |
| SS091DA | 12/11/06 | Soil | J0605890-022 | DQR | X | X | X | X |  |
| SS068CA | 12/11/06 | Soil | J0605890-023 | DQR | X | X | X | X |  |
| SS068DA | 12/11/06 | Soil | J0605890-024 | DQR | X | X | X | X |  |
| SS078AA | 12/11/06 | Soil | J0605890-025 | DQR | X | X | X | X |  |
| SS078BA | 12/11/06 | Soil | J0605890-026 | DQR | X | X | X | X |  |
| SS078CA | 12/11/06 | Soil | J0605890-027 | DQR | X | X | X | X |  |
| SS078DA | 12/11/06 | Soil | J0605890-028 | DQR | X | X | X | X |  |
| SS075CA | 12/11/06 | Soil | J0605890-029 | DQR | X | X | X | X |  |
| SS075DA | 12/11/06 | Soil | J0605890-030 | DQR | X | X | X | X |  |
| SS077CA | 12/11/06 | Soil | J0605890-031 | DQR | X | X | X | X |  |
| SS077DA | 12/11/06 | Soil | J0605890-032 | DQR | X | X | X | X |  |
| SS049CA | 12/11/06 | Soil | J0605890-033 | DQR | X | X | X | X |  |
| SS049DA | 12/11/06 | Soil | J0605890-034 | DQR | X | X | X | X |  |
| SS041CA | 12/11/06 | Soil | J0605890-035 | DQR | X | X | X | X |  |
| SS041DA | 12/11/06 | Soil | J0605890-036 | DQR | X | X | X | X |  |
| SS030CA | 12/11/06 | Soil | J0605890-037 | DQR | X | X | X | X |  |
| SS030DA | 12/11/06 | Soil | J0605890-038 | DQR | X | X | X | X |  |
| SS077DB | 12/11/06 | Soil | J0605890-039 | DQR | X | X | X | X | Field Duplicate of SSO77DA |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan
DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

Table 1
Field Samples Submitted to Columbia Analytical Services Inc.
Koppers Inc. Site
SDG J0605919

| Sample Location | Collection Date | Matrix | Columbia Sample ID | Data Validation Level | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ๗ } \\ & 0 \\ & \text { ॐ } \end{aligned}$ | $\begin{aligned} & \bar{\pi} \\ & \stackrel{n}{0} \\ & \stackrel{n}{0} \end{aligned}$ |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS094CA | 12/11/2006 | Soil | J0605917-001 | DQR | x | X | X | X |  |
| SS094DA | 12/11/2006 | Soil | J0605919-002 | DQR | x | X | X | X |  |
| SS101CA | 12/11/2006 | Soil | J0605919-003 | DQR | X | X | X | X |  |
| SS101DA | 12/11/2006 | Soil | J0605919-004 | DQR | X | X | X | X |  |
| SS52CA | 12/11/2006 | Soil | J0605919-005 | DQR | X | X | X | x |  |
| SS52DA | 12/11/2006 | Soil | J0605919-006 | DQR | x | X | x | x |  |
| SS047CA | 12/11/2006 | Soil | J0605919-007 | DQR | x | X | X | x |  |
| SS047DA | 12/11/2006 | Soil | J0605919-008 | DQR | x | X | X | X |  |
| SS045CA | 12/11/2006 | Soil | J0605919-009 | DQR | X | X | X | X |  |
| SS045DA | 12/11/2006 | Soil | J0605919-010 | DQR | X | X | X | X |  |
| SS024CA | 12/11/2006 | Soil | J0605919-011 | DQR | X | X | X | x |  |
| SS024DA | 12/11/2006 | Soil | J0605919-012 | DQR | X | X | X | X |  |
| EB-01 | 12/12/2006 | Water | J0605919-013 | DQR | X | X | X | X | Equipment blank |
| EB-02 | 1212/2006 | Water | J0605919-014 | DQR | x | x | x | x | Equipment blank |
| SS070AA | 12/12/2006 | Soil | J0605919-015 | DQR | x | X | X | X |  |
| SS070AB | 12/12/2006 | Soil | J0605919-016 | DQR | X | x | x | x | Field Duplicate of SS070AA |
| SS070BA | 12/7/2006 | Soil | J0605919-017 | DQR | x | x | x | x |  |
| SS070CA | 12/12/2006 | Soil | J0605919-018 | DQR | x | x | X | x |  |
| SS070DA | 12/12/2006 | Soil | J0605919-019 | DQR | X | X | X | X |  |
| SS031AA | 12/12/2006 | Soil | J0605919-020 | DQR | X | X | X | X |  |
| SS031BA | 12/12/2006 | Soil | J0605919-021 | DQR | X | X | x | x |  |
| SS031CA | 12/12/2006 | Soil | J0605919-022 | DQR | X | X | X | X |  |
| SS031DA | 12/12/2006 | Soil | J0605919-023 | DQR | X | x | X | X |  |
| SS031DB | 12/12/2006 | Soil | J0605919-024 | DQR | X | X | x | x | Field Duplicate of SS031DA |
| SS026AA | 12/12/2006 | Soil | J0605919-025 | DQR | X | X | X | X |  |
| SS026BA | 12/12/2006 | Soil | J0605919-026 | DQR | x | X | X | X |  |
| SS026CA | 12/12/2006 | Soil | J0605919-027 | DQR | X | X | X | X |  |
| SS026CC | 12/12/2006 | Soil | J0605919-028 | DQR | X | X | X | X |  |
| SS026DA | 12/12/2006 | Soil | J0605919-029 | DQR | X | X | X | X |  |
| SS007CA | 12/12/2006 | Soil | J0605919-030 | Full | x | X | X | X |  |
| SS007DA | 12/12/2006 | Soil | J0605919-031 | Full | X | X | X | X |  |
| SS007DB | 12/12/2006 | Soil | J0605919-032 | Full | X | x | x | x | Field Duplicate of SS007DA |
| SS0022AA | 12/12/2006 | Soil | J0605919-033 | DQR | X | X | X | X |  |
| SS0022AB | 12/12/2006 | Soil | J0605919-034 | DQR | X | X | X | x | Field duplicate of SS0022AA |
| SS0022BA | 12/12/2006 | Soil | J0605919-035 | DQR | X | X | X | X |  |
| SS0022CA | 12/12/2006 | Soil | J0605919-036 | DQR | x | X | X | X |  |
| SS0022DA | 12/12/2006 | Soil | J0605919-037 | DQR | X | X | X | X |  |
| SS020AA | 12/12/2006 | Soil | J0605919-038 | DQR | X | X | X | X |  |
| SS020BA | 12/12/2006 | Soil | J0605919-039 | DQR | X | X | X | X |  |
| SS020CA | 12/12/2006 | Soil | J0605919-040 | DQR | x | x | x | x |  |
| SS020CC | 12/12/2006 | Soil | J0605919-041 | DQR | x | X | X | X |  |
| SS020DA | 12/12/2006 | Soil | J0605919-042 | DQR | X | X | x | X |  |

3/29/2007

Table 1
Field Samples Submitted to Columbia Analytical Services Inc.
Koppers Inc. Site
SDG J0605919

| SS046AA | 12/12/2006 | Soil | J0605919-043 | Full | x | x | x | x |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SS046BA | 12/12/2006 | Soil | J0605919-044 | DQR | x | x | x | X |  |
| SS046CA | 12/12/2006 | Soil | J0605919-045 | DQR | X | X | X | X |  |
| SS046DA | 12/12/2006 | Soil | J0605919-046 | DQR | x | x | x | X |  |
| SD001AA | 12/12/2006 | Soil | J0605919-047 | DQR | x | x | X | X |  |
| SD001AB | 12/12/2006 | Soil | J0605919-048 | DQR | X | X | X | x | Field Duplicate of SD001AA |
| SD002AA | 12/12/2006 | Soil | J0605919-049 | DQR | X | x | x | x |  |
| SD003AA | 12/12/2006 | Soil | J0605919-050 | DQR | X | X | X | X |  |
| SD004AA | 12/12/2006 | Soil | J0605919-051 | Full | X | X | X | X |  |
| SD004BA | 12/12/2006 | Soil | J0605919-052 | Full | X | X | X | X |  |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

Table 1
Field Samples Submitted to Columbia Analytical Services Inc.
Koppers Inc. Site
SDG J0605944

| Sample Location | Collection Date | Matrix | Columbia <br> Sample ID | Data Validation Level | - | $\begin{aligned} & \text { ひ } \\ & 0 \\ & \text { is } \end{aligned}$ |  |  | $\begin{aligned} & \text { U } \\ & \end{aligned}$ |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SD005AA | 12/12/06 | Sediment | J0605944-001 | DQR | X | X | X | X | X | X |  |
| SD006AA | 12/12/06 | Sediment | J0605944-002 | DQR | X | X | X | X | X | X |  |
| SD006BA | 12/12/06 | Sediment | J0605944-003 | DQR | X | X | X | X | X | X |  |
| SD007AA | 12/12/06 | Sediment | J0605944-004 | Full | X | X | X | X | X | X |  |
| SD008AA | 12/12/06 | Sediment | J0605944-005 | DQR | X | X | X | X | X | X |  |
| SD009AA | 12/12/06 | Sediment | J0605944-006 | DQR | X | X | X | X | X | X |  |
| SD006AC | 12/12/06 | Sediment | J0605944-007 | DQR | X | X | X | X | X | X | Field Duplicate of SD006AA |

Full: Full data validation procedure as described in Section 9.2.2 of the Quality Assurance Project Plan DQR: Data quality review as described by Section 9.2.2 of the Quailty Assurance Project Plan

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| SDG J0605714 |  |  |  |  |
| Sample SS090BA/SS090BC |  |  |  |  |
| DIBENZOFURAN | 76 | 61 | 22\% | None |
| CARBAZOLE | 430 | 340 | 23\% | None |
| BUTYL BENZYL PHTHALATE | 23 | ND | NC | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 26 | 27 | 4\% | None |
| NAPHTHALENE | 230 | 190 | 19\% | None |
| ACENAPHTHYLENE | 2500 | 2200 | 13\% | None |
| FLUORENE | 200 | 210 | 5\% | None |
| PENTACHLOROPHENOL | 1900 | 1500 | 24\% | None |
| PHENANTHRENE | 650 | 550 | 17\% | None |
| ANTHRACENE | 13000 | 12000 | 8\% | None |
| FLUORANTHENE | 4400 | 3300 | 29\% | None |
| PYRENE | 4500 | 3400 | 28\% | None |
| CHRYSENE | 3900 | 2900 | 29\% | None |
| BENZ(A)ANTHRACENE | 2700 | 2100 | 25\% | None |
| BENZO(B)FLUORANTHENE | 5400 | 4400 | 20\% | None |
| BENZO(K)FLUORANTHENE | 4400 | 3500 | 23\% | None |
| BENZO(A)PYRENE | 2900 | 2400 | 19\% | None |
| INDENO(1,2,3-CD)PYRENE | 3700 | 3100 | 18\% | None |
| DIBENZO(A,H)ANTHRACENE | 790 | 690 | 14\% | None |
| BENZO(G,H,I)PERYLENE | 3400 | 2900 | 16\% | None |
| ANTIMONY | 0.69 | 0.51 | 30\% | None |
| ARSENIC | 41 | 35 | 16\% | None |
| BARIUM | 13 | 11 | 17\% | None |
| CHROMIUM | 43 | 38 | 12\% | None |
| COPPER | 30 | 27 | 11\% | None |
| LEAD | 13 | 11 | 17\% | None |
| MERCURY | 0.27 | 0.26 | 4\% | None |
| VANADIUM | 1.9 | 1.3 | 38\% | J |
| SDG J0605735 |  |  |  |  |
| Sample SS067BA/SS067BB |  |  |  |  |
| N-NITROSODIPHENYLAMINE | 86 | ND | NC | None |
| 2,4-DIMETHYLPHENOL | 30 | ND | NC | None |
| 4-CHLORO-3-METHYLPHENOL | 34 | ND | NC | None |
| 2,4,5-TRICHLOROPHENOL | 45 | ND | NC | None |
| 2-NITROANILINE | 30 | ND | NC | None |
| DIMETHYL PHTHALATE | 36 | ND | NC | None |
| 3-NITROANILINE | 37 | ND | NC | None |
| DIBENZOFURAN | 140 | 63 | 76\% | J |
| 2,4-DINITROTOLUENE | 82 | ND | NC | None |
| 4-CHLOROPHENYL PHENYL ETHER | 35 | ND | NC | None |
| DIETHYL PHTHALATE | 64 | ND | NC | None |
| 4-NITROANALINE | 70 | ND | NC | None |
| 2-METHYL-4,6-DINITROPHENOL | 60 | ND | NC | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| 4-BROMOPHENYL PHENYL ETHER | 53 | ND | NC | None |
| HEXACHLOROBENZENE | 78 | ND | NC | None |
| CARBAZOLE | 880 | 310 | 96\% | J |
| DI-N-BUTYL PHTHALATE | 190 | ND | NC | None |
| BUTYL BENZYL PHTHALATE | 180 | 25 | 151\% | J |
| BIS(2-ETHYLHEXYL) PHTHALATE | 190 | 29 | 147\% | J |
| DI-N-OCTYL PHTHALATE | 180 | 21 | 158\% | J |
| NAPHTHALENE | 290 | 180 | 47\% | J |
| 2-METHYNAPHTHALENE | 220 | 130 | 51\% | J |
| ACENAPHTHYLENE | 2200 | 1300 | 51\% | J |
| PENTACHLOROPHENOL | 2900 | 2100 | 32\% | J |
| PHENANTHRENE | 1000 | 1200 | 18\% | None |
| ANTHRACENE | 3700 | 2700 | 31\% | J |
| FLUORANTHENE | 5900 | 12000 | 68\% | J |
| PYRENE | 6600 | 12000 | 58\% | J |
| CHRYSENE | 5600 | 7500 | 29\% | None |
| BENZ(A)ANTHRACENE | 3700 | 5500 | 39\% | J |
| BENZO(B)FLUORANTHENE | 8300 | 7600 | 9\% | None |
| BENZO(K)FLUORANTHENE | 6700 | 6200 | 8\% | None |
| BENZO(A)PYRENE | 4300 | 3500 | 21\% | None |
| INDENO(1,2,3-CD)PYRENE | 5900 | 4300 | 31\% | J |
| DIBENZO(A,H)ANTHRACENE | 1500 | 1200 | 22\% | None |
| BENZO(G,H,I)PERYLENE | 5200 | 3500 | 39\% | J |
| ANTIMONY | 3.5 | 2.2 | 46\% | J |
| ARSENIC | 220 | 120 | 59\% | J |
| BARIUM | 25 | 19 | 27\% | None |
| CHROMIUM | 350 | 180 | 64\% | J |
| COPPER | 190 | 85 | 76\% | J |
| LEAD | 28 | 19 | 38\% | J |
| MERCURY | 0.38 | 0.32 | 17\% | None |
| Sample SS019BA/SS019BB |  |  |  |  |
| DIBENZOFURAN | 16 | ND | NC | None |
| CARBAZOLE | 29 | 24 | 19\% | None |
| BUTYL BENZYL PHTHALATE | 23 | 28 | 20\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 32 | 27 | 17\% | None |
| NAPHTHALENE | 23 | 20 | 14\% | None |
| 2-METHYLNAPHTHALENE | 19 | ND | NC | None |
| ACENAPHTHYLENE | 59 | 52 | 13\% | None |
| FLUORENE | 23 | ND | NC | None |
| PENTACHLOROPHENOL | 85 | 67 | 24\% | None |
| PHENANTHRENE | 410 | 150 | 93\% | J |
| ANTHRACENE | 160 | 99 | 47\% | J |
| FLUORANTHENE | 980 | 460 | 72\% | J |
| PYRENE | 830 | 390 | 72\% | J |
| CHRYSENE | 670 | 320 | 71\% | J |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| BENZO(A)ANTHRACENE | 540 | 220 | 84\% | J |
| BENZO(B)FLUORANTHENE | 730 | 400 | 58\% | J |
| BENZO(K)FLUORANTHENE | 550 | 290 | 62\% | J |
| BENZO(A)PYRENE | 580 | 270 | 73\% | J |
| INDENO(1,2,3-CD)PYRENE | 550 | 300 | 59\% | J |
| DIBENZO(A,H)ANTHRACENE | 130 | 66 | 65\% | J |
| BENZO(G,H,I)PERYLENE | 460 | 260 | 56\% | J |
| ARSENIC | 3.9 | 4.4 | 12\% | None |
| BARIUM | 6.2 | 7 | 12\% | None |
| CHROMIUM | 6.9 | 8.3 | 18\% | None |
| COPPER | 5 | 5.5 | 10\% | None |
| LEAD | 33 | 40 | 19\% | None |
| MERCURY | 0.047 | 0.045 | 4\% | None |
| VANADIUM | 1.6 | 1.8 | 12\% | None |
| Sample SS054AA/SS054BB |  |  |  |  |
| ACETONE | 75 | 32 | 80\% | J |
| BIS(2-CHLOROETHYL) ETHER | 1300 | ND | NC | None |
| DIBENZOFURAN | 220 | 250 | 13\% | None |
| 4-NITROANALINE | ND | 69 | NC | None |
| CARBAZOLE | 300 | 350 | 15\% | None |
| BUTYL BENZYL PHTHALATE | 61 | ND | NC | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 110 | 120 | 9\% | None |
| NAPHTHALENE | 570 | 610 | 7\% | None |
| 2-METHYLNAPHTHALENE | 380 | 410 | 8\% | None |
| ACENAPHTHYLENE | 710 | 740 | 4\% | None |
| ACENAPHTHENE | 73 | 75 | 3\% | None |
| FLUORENE | 45 | 51 | 13\% | None |
| PENTACHLOROPHENOL | 320 | 330 | 3\% | None |
| PHENANTHRENE | 1200 | 1200 | 0\% | None |
| ANTHRACENE | 1200 | 1300 | 8\% | None |
| FLUORANTHENE | 2900 | 3000 | 3\% | None |
| PYRENE | 2400 | 2500 | 4\% | None |
| CHRYSENE | 2300 | 2400 | 4\% | None |
| BENZO(A)ANTHRACENE | 1500 | 1500 | 0\% | None |
| BENZO(B)FLUORANTHENE | 2900 | 3200 | 10\% | None |
| BENZO(K)FLUORANTHENE | 2200 | 2100 | 5\% | None |
| BENZO(A)PYRENE | 1700 | 1700 | 0\% | None |
| INDENO(1,2,3-CD)PYRENE | 1900 | 1800 | 5\% | None |
| DIBENZO(A,H)ANTHRACENE | 490 | 550 | 12\% | None |
| BENZO(G,H,I)PERYLENE | 1500 | 1400 | 7\% | None |
| ANTIMONY | 1.7 | 2 | 16\% | None |
| ARSENIC | 26 | 23 | 12\% | None |
| BARIUM | 85 | 76 | 11\% | None |
| CADMIUM | 0.54 | 0.47 | 14\% | None |
| CHROMIUM | 43 | 40 | 7\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| COPPER | 54 | 49 | 10\% | None |
| LEAD | 150 | 140 | 7\% | None |
| MERCURY | 0.32 | 0.33 | 3\% | None |
| SELENIUM | ND | 1.2 | NC | None |
| VANADIUM | 12 | 11 | 9\% | None |
| Sample SS042BA/SS042BB |  |  |  |  |
| 2,4-DIMETHYLPHENOL | 36 | 36 | 0\% | None |
| DIBENZOFURAN | 72 | 62 | 15\% | None |
| CARBAZOLE | 370 | 410 | 10\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 30 | ND | NC | None |
| NAPHTHALENE | 130 | 100 | 26\% | None |
| 2-METHYLNAPHTHALENE | 92 | ND | NC | None |
| ACENAPHTHYLENE | 2300 | 1800 | 24\% | None |
| FLUORENE | 110 | 91 | 19\% | None |
| PENTACHLOROPHENOL | 450 | 370 | 20\% | None |
| PHENANTHRENE | 610 | 470 | 26\% | None |
| ANTHRACENE | 3400 | 2900 | 16\% | None |
| FLUORANTHENE | 7500 | 4100 | 59\% | J |
| PYRENE | 8400 | 5500 | 42\% | J |
| CHRYSENE | 5400 | 3500 | 43\% | J |
| BENZO(A)ANTHRACENE | 3900 | 2300 | 52\% | J |
| BENZO(B)FLUORANTHENE | 6600 | 5100 | 26\% | None |
| BENZO(K)FLUORANTHENE | 5400 | 3900 | 32\% | J |
| BENZO(A)PYRENE | 4500 | 3400 | 28\% | None |
| INDENO(1,2,3-CD)PYRENE | 3900 | 3000 | 26\% | None |
| DIBENZO(A,H)ANTHRACENE | 1200 | 810 | 39\% | J |
| BENZO(G,H,I)PERYLENE | 3300 | 2600 | 24\% | None |
| ARSENIC | 15 | 14 | 7\% | None |
| BARIUM | 17 | 16 | 6\% | None |
| CHROMIUM | 23 | 22 | 4\% | None |
| COPPER | 15 | 15 | 0\% | None |
| LEAD | 13 | 13 | 0\% | None |
| MERCURY | 0.12 | 0.12 | 0\% | None |
| VANADIUM | 3.5 | 3 | 15\% | None |
| Sample SS023BA/SS023BB |  |  |  |  |
| CARBAZOLE | 38 | 23 | 49\% | J |
| NAPHTHALENE | 22 | 16 | 32\% | J |
| ACENAPHTHYLENE | 87 | 69 | 23\% | None |
| PENTACHLOROPHENOL | 130 | 140 | 7\% | None |
| PHENANTHRENE | 74 | 61 | 19\% | None |
| ANTHRACENE | 140 | 100 | 33\% | J |
| FLUORANTHENE | 460 | 420 | 9\% | None |
| PYRENE | 410 | 360 | 13\% | None |
| CHRYSENE | 340 | 290 | 16\% | None |
| BENZO(A)ANTHRACENE | 150 | 140 | 7\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| BENZO(B)FLUORANTHENE | 370 | 310 | 18\% | None |
| BENZO(K)FLUORANTHENE | 260 | 240 | 8\% | None |
| BENZO(A)PYRENE | 140 | 120 | 15\% | None |
| INDENO(1,2,3-CD)PYRENE | 150 | 150 | 0\% | None |
| DIBENZO(A,H)ANTHRACENE | 33 | 33 | 0\% | None |
| BENZO(G,H,I)PERYLENE | 120 | 120 | 0\% | None |
| ARSENIC | 13 | 18 | 32\% | J |
| BARIUM | 7.6 | 9.9 | 26\% | None |
| CHROMIUM | 9.6 | 14 | 37\% | J |
| COPPER | 12 | 14 | 15\% | None |
| LEAD | 7.5 | 9.1 | 19\% | None |
| MERCURY | 0.02 | 0.02 | 0\% | None |
| VANADIUM | 1.3 | 1.5 | 14\% | None |
| SDG J0605780 |  |  |  |  |
| Sample SS012AAISS012AC |  |  |  |  |
| DIBENZOFURAN | 47 | 50 | 6\% | None |
| CARBAZOLE | 230 | 220 | 4\% | None |
| BIS(2-ETHYLHEXYL)PHTHALATE | 25 | ND | NC | None |
| NAPHTHALENE | 46 | 51 | 10\% | None |
| 2-METHYLNAPHTHALENE | 26 | 30 | 14\% | None |
| ACENAPHTHYLENE | 450 | 460 | 2\% | None |
| FLUORENE | 29 | 32 | 10\% | None |
| PENTACHLOROPHENOL | 530 | 550 | 4\% | None |
| PHENANTHRENE | 130 | 140 | 7\% | None |
| ANTHRACENE | 830 | 870 | 5\% | None |
| FLUORANTHENE | 840 | 830 | 1\% | None |
| PYRENE | 1200 | 1200 | 0\% | None |
| CHRYSENE | 1100 | 1100 | 0\% | None |
| BENZO(A)ANTHRACENE | 750 | 760 | 1\% | None |
| BENZO(B)FLUORANTHENE | 1600 | 1700 | 6\% | None |
| BENZO(K)FLUORANTHENE | 1400 | 1300 | 7\% | None |
| BENZO(A)PYRENE | 1100 | 1100 | 0\% | None |
| INDENO(1,2,3-CD)PYRENE | 850 | 860 | 1\% | None |
| DIBENZO(A,H)ANTHRACENE | 230 | 230 | 0\% | None |
| BENZO(G,H,I)PERYLENE | 710 | 730 | 3\% | None |
| ANTIMONY | 1.3 | 0.96 | 30\% | None |
| ARSENIC | 49 | 33 | 39\% | J |
| BARIUM | 60 | 40 | 40\% | J |
| CHROMIUM | 44 | 29 | 41\% | J |
| COPPER | 47 | 31 | 41\% | J |
| LEAD | 46 | 31 | 39\% | J |
| MERCURY | 0.13 | 0.14 | 7\% | None |
| VANADIUM | 8 | 5.5 | 37\% | J |
| Sample SS007BA/SS007BC |  |  |  |  |
| ACETONE | 59 | 34 | 54\% | J |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| DIBENZOFURAN | 19 | 20 | 5\% | None |
| CARBAZOLE | 120 | 140 | 15\% | None |
| NAPHTHALENE | 56 | 65 | 15\% | None |
| 2-METHYLNAPHTHALENE | 44 | 52 | 17\% | None |
| ACENAPHTHYLENE | 550 | 640 | 15\% | None |
| FLUORENE | ND | 42 | NC | None |
| PENTACHLOROPHENOL | 480 | 650 | 30\% | None |
| PHENANTHRENE | 140 | 180 | 25\% | None |
| ANTHRACENE | 1100 | 1300 | 17\% | None |
| FLUORANTHENE | 860 | 1000 | 15\% | None |
| PYRENE | 1100 | 1300 | 17\% | None |
| CHRYSENE | 940 | 1200 | 24\% | None |
| BENZO(A)ANTHRACENE | 680 | 810 | 17\% | None |
| BENZO(B)FLUORANTHENE | 1800 | 2100 | 15\% | None |
| BENZO(K)FLUORANTHENE | 1300 | 1700 | 27\% | None |
| BENZO(A)PYRENE | 1000 | 1300 | 26\% | None |
| INDENO(1,2,3-CD)PYRENE | 1300 | 1500 | 14\% | None |
| DIBENZO(A,H)ANTHRACENE | 310 | 370 | 18\% | None |
| BENZO(G,H,I)PERYLENE | 1100 | 1300 | 17\% | None |
| ARSENIC | 4.3 | 5.5 | 24\% | None |
| BARIUM | 8.1 | 10 | 21\% | None |
| CHROMIUM | 6.5 | 7.1 | 9\% | None |
| COPPER | 4.7 | 6.1 | 26\% | None |
| LEAD | 5.4 | 6.2 | 14\% | None |
| MERCURY | 0.072 | 0.08 | 11\% | None |
| SDG J0605810 |  |  |  |  |
| Sample SS004BAISS004BB |  |  |  |  |
| DIBENZOFURAN | 53 | 89 | 51\% | J |
| CARBAZOLE | 43 | 50 | 15\% | None |
| NAPHTHALENE | 70 | 100 | 35\% | J |
| 2-METHYLNAPHTHALENE | 67 | 99 | 39\% | J |
| ACENAPHTHYLENE | 460 | 720 | 44\% | J |
| ACENAPHTHENE | 39 | ND | NC | None |
| FLUORENE | 29 | 66 | 78\% | J |
| PENTACHLOROPHENOL | 51 | 54 | 6\% | None |
| PHENANTHRENE | 170 | 260 | 42\% | J |
| ANTHRACENE | 520 | 840 | 47\% | J |
| FLUORANTHENE | 940 | 1700 | 58\% | J |
| PYRENE | 1100 | 1600 | 37\% | J |
| CHRYSENE | 880 | 1200 | 31\% | J |
| BENZO(A)ANTHRACENE | 710 | 1100 | 43\% | J |
| BENZO(B)FLUORANTHENE | 1500 | 2200 | 38\% | J |
| BENZO(K)FLUORANTHENE | 1100 | 1700 | 43\% | J |
| BENZO(A)PYRENE | 930 | 1400 | 40\% | J |
| INDENO(1,2,3-CD)PYRENE | 990 | 1600 | 47\% | J |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| DIBENZO(A,H)ANTHRACENE | 220 | 350 | 46\% | J |
| BENZO(G,H,I)PERYLENE | 880 | 1400 | 46\% | J |
| ARSENIC | 4.8 | 5.1 | 6\% | None |
| BARIUM | 33 | 31 | 6\% | None |
| CHROMIUM | 14 | 15 | 7\% | None |
| COPPER | 9.1 | 9.8 | 7\% | None |
| LEAD | 13 | 14 | 7\% | None |
| MERCURY | 0.2 | 0.27 | 30\% | None |
| VANADIUM | 7.8 | 9 | 14\% | None |
| Sample SS002AA/SS002AC |  |  |  |  |
| DIBENZOFURAN | 20 | 23 | 14\% | None |
| CARBAZOLE | 75 | 80 | 6\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | ND | 20 | NC | None |
| NAPHTHALENE | 70 | 75 | 7\% | None |
| 2-METHYLNAPHTHALENE | 42 | 44 | 5\% | None |
| ACENAPHTHYLENE | 350 | 370 | 6\% | None |
| PENTACHLOROPHENOL | 150 | 170 | 13\% | None |
| PHENANTHRENE | 140 | 150 | 7\% | None |
| ANTHRACENE | 780 | 860 | 10\% | None |
| FLUORANTHENE | 700 | 730 | 4\% | None |
| PYRENE | 1100 | 1100 | 0\% | None |
| CHRYSENE | 1000 | 1100 | 10\% | None |
| BENZO(A)ANTHRACENE | 680 | 710 | 4\% | None |
| BENZO(B)FLUORANTHENE | 1800 | 1900 | 5\% | None |
| BENZO(K)FLUORANTHENE | 1300 | 1400 | 7\% | None |
| BENZO(A)PYRENE | 1000 | 1100 | 10\% | None |
| INDENO(1,2,3-CD)PYRENE | 960 | 1000 | 4\% | None |
| DIBENZO(A,H)ANTHRACENE | 230 | 250 | 8\% | None |
| BENZO(G,H,I)PERYLENE | 730 | 770 | 5\% | None |
| ANTIMONY | ND | 0.39 | NC | None |
| ARSENIC | 4.1 | 5.9 | 36\% | J |
| BARIUM | 11 | 15 | 31\% | J |
| CHROMIUM | 4.5 | 6.7 | 39\% | J |
| COPPER | 5.1 | 7.3 | 35\% | J |
| LEAD | 18 | 25 | 33\% | J |
| MERCURY | 0.41 | 0.32 | 25\% | None |
| VANADIUM | 1.6 | 2.3 | 36\% | J |
| Sample SS043BA/SS043BB |  |  |  |  |
| DIBENZOFURAN | 37 | 36 | 3\% | None |
| CARBAZOLE | 97 | 110 | 13\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 280 | 330 | 16\% | None |
| NAPHTHALENE | 77 | 80 | 4\% | None |
| 2-METHYLNAPHTHALENE | 63 | 69 | 9\% | None |
| ACENAPHTHYLENE | 720 | 730 | 1\% | None |
| ACENAPHTHENE | 61 | 79 | 26\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| FLUORENE | 92 | 110 | 18\% | None |
| PENTACHLOROPHENOL | 580 | 520 | 11\% | None |
| PHENANTHRENE | 320 | 340 | 6\% | None |
| ANTHRACENE | 2000 | 1900 | 5\% | None |
| FLUORANTHENE | 1900 | 2100 | 10\% | None |
| PYRENE | 1600 | 1800 | 12\% | None |
| CHRYSENE | 1300 | 1500 | 14\% | None |
| BENZO(A)ANTHRACENE | 960 | 1100 | 14\% | None |
| BENZO(B)FLUORANTHENE | 2300 | 2500 | 8\% | None |
| BENZO(K)FLUORANTHENE | 1700 | 2000 | 16\% | None |
| BENZO(A)PYRENE | 1100 | 1200 | 9\% | None |
| INDENO(1,2,3-CD)PYRENE | 1500 | 1600 | 6\% | None |
| DIBENZO(A,H)ANTHRACENE | 380 | 380 | 0\% | None |
| BENZO(G,H,I)PERYLENE | 1200 | 1200 | 0\% | None |
| ANTIMONY | ND | 0.58 | NC | None |
| ARSENIC | 20 | 16 | 22\% | None |
| BARIUM | 7.9 | 7.7 | 3\% | None |
| CHROMIUM | 28 | 23 | 20\% | None |
| COPPER | 16 | 15 | 6\% | None |
| LEAD | 6.1 | 4.7 | 26\% | None |
| MERCURY | 0.095 | 0.081 | 16\% | None |
| VANADIUM | 2.7 | 3 | 11\% | None |
| Sample SS010AA/SS010AB |  |  |  |  |
| DIBENZOFURAN | 90 | 100 | 11\% | None |
| CARBAZOLE | 72 | 74 | 3\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | ND | 20 | NC | None |
| NAPHTHALENE | 330 | 290 | 13\% | None |
| 2-METHYLNAPHTHALENE | 180 | 170 | 6\% | None |
| ACENAPHTHYLENE | 230 | 240 | 4\% | None |
| PENTACHLOROPHENOL | 76 | 79 | 4\% | None |
| PHENANTHRENE | 810 | 700 | 15\% | None |
| ANTHRACENE | 410 | 410 | 0\% | None |
| FLUORANTHENE | 1200 | 1100 | 9\% | None |
| PYRENE | 1000 | 1000 | 0\% | None |
| CHRYSENE | 960 | 970 | 1\% | None |
| BENZO(A)ANTHRACENE | 580 | 620 | 7\% | None |
| BENZO(B)FLUORANTHENE | 1100 | 1200 | 9\% | None |
| BENZO(K)FLUORANTHENE | 810 | 840 | 4\% | None |
| BENZO(A)PYRENE | 620 | 650 | 5\% | None |
| INDENO(1,2,3-CD)PYRENE | 590 | 610 | 3\% | None |
| DIBENZO(A,H)ANTHRACENE | 160 | 190 | 17\% | None |
| BENZO(G,H,I)PERYLENE | 470 | 480 | 2\% | None |
| ANTIMONY | 3.4 | 3.3 | 3\% | None |
| ARSENIC | 16 | 12 | 29\% | None |
| BARIUM | 60 | 47 | 24\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| CHROMIUM | 21 | 16 | 27\% | None |
| COPPER | 43 | 35 | 21\% | None |
| LEAD | 170 | 140 | 19\% | None |
| MERCURY | 0.36 | 0.31 | 15\% | None |
| VANADIUM | 7.9 | 6.1 | 26\% | None |
| SDG J0605839 |  |  |  |  |
| Sample SS036AA/SS036AC |  |  |  |  |
| DIBENZOFURAN | 31 | 28 | 10\% | None |
| CARBAZOLE | 42 | 50 | 17\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 33 | 32 | 3\% | None |
| NAPHTHALENE | 36 | 43 | 18\% | None |
| 2-METHYLNAPHTHALENE | 40 | 46 | 14\% | None |
| ACENAPHTHYLENE | 190 | 200 | 5\% | None |
| PENTACHLOROPHENOL | 190 | 210 | 10\% | None |
| PHENANTHRENE | 190 | 180 | 5\% | None |
| ANTHRACENE | 270 | 270 | 0\% | None |
| FLUORANTHENE | 740 | 750 | 1\% | None |
| PYRENE | 760 | 770 | 1\% | None |
| CHRYSENE | 620 | 600 | 3\% | None |
| BENZ(A)ANTHRACENE | 390 | 400 | 3\% | None |
| BENZO(B)FLUORANTHENE | 760 | 820 | 8\% | None |
| BENZO(K)FLUORANTHENE | 690 | 660 | 4\% | None |
| BENZO(A)PYRENE | 410 | 440 | 7\% | None |
| INDENO(1,2,3-CD)PYRENE | 510 | 520 | 2\% | None |
| DIBENZ(A,H)ANTHRACENE | 130 | 130 | 0\% | None |
| BENZO(G,H,I)PERYLENE | 470 | 480 | 2\% | None |
| ANTIMONY | 2.7 | 3.5 | 26\% | None |
| ARSENIC | 77 | 120 | 44\% | J |
| BARIUM | 14 | 23 | 49\% | J |
| CADMIUM | ND | 0.4 | NC | None |
| CHROMIUM | 80 | 120 | 40\% | J |
| COPPER | 34 | 57 | 51\% | J |
| LEAD | 14 | 15 | 7\% | None |
| MERCURY | 0.045 | 0.051 | 13\% | None |
| VANADIUM | 1.8 | 3.6 | 67\% | J |
| Sample SS048BA/SS048BB |  |  |  |  |
| ACETONE | 64 | 110 | 53\% | J |
| CARBAZOLE | ND | 27 | NC | None |
| NAPHTHALENE | 43 | 41 | 5\% | None |
| 2-METHYLNAPHTHALENE | 24 | 23 | 4\% | None |
| ACENAPHTHYLENE | 150 | 140 | 7\% | None |
| PENTACHLOROPHENOL | 110 | 120 | 9\% | None |
| PHENANTHRENE | 80 | 80 | 0\% | None |
| ANTHRACENE | 170 | 160 | 6\% | None |
| FLUORANTHENE | 340 | 300 | 13\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| PYRENE | 370 | 330 | 11\% | None |
| CHRYSENE | 330 | 320 | 3\% | None |
| BENZ(A)ANTHRACENE | 240 | 230 | 4\% | None |
| BENZO(B)FLUORANTHENE | 480 | 460 | 4\% | None |
| BENZO(K)FLUORANTHENE | 390 | 360 | 8\% | None |
| BENZO(A)PYRENE | 290 | 270 | 7\% | None |
| INDENO(1,2,3-CD)PYRENE | 320 | 300 | 6\% | None |
| DIBENZ(A,H)ANTHRACENE | 95 | 91 | 4\% | None |
| BENZO(G,H,I)PERYLENE | 280 | 270 | 4\% | None |
| ARSENIC | 15 | 5.9 | 87\% | J |
| BARIUM | 9.8 | 9.2 | 6\% | None |
| CHROMIUM | 19 | 10 | 62\% | J |
| COPPER | 12 | 4.9 | 84\% | J |
| LEAD | 6.7 | 4.4 | 41\% | J |
| MERCURY | 0.031 | 0.047 | 41\% | J |
| VANADIUM | 2.1 | 2.7 | 25\% | None |
| Sample SS057CAISS057CB |  |  |  |  |
| ARSENIC | 0.66 | 0.43 | 42\% | None |
| BARIUM | 13 | 16 | 21\% | None |
| CHROMIUM | 6.3 | 7.2 | 13\% | None |
| COPPER | 1.1 | 1.1 | 0\% | None |
| LEAD | 7.2 | 8.4 | 15\% | None |
| MERCURY | 0.012 | 0.012 | 0\% | None |
| VANADIUM | 3.9 | 4.3 | 10\% | None |
| Sample SS080BAISS080BB |  |  |  |  |
| NAPHTHALENE | 18 | ND | NC | None |
| ACENAPHTHYLENE | 180 | ND | NC | None |
| PENTACHLOROPHENOL | ND | 98 | NC | None |
| PHENANTHRENE | 45 | ND | NC | None |
| ANTHRACENE | 86 | 140 | 48\% | J |
| FLUORANTHENE | 190 | 120 | 45\% | J |
| PYRENE | 230 | 140 | 49\% | J |
| CHRYSENE | 240 | 120 | 67\% | J |
| BENZ(A)ANTHRACENE | 200 | 67 | 100\% | J |
| BENZO(B)FLUORANTHENE | 310 | 140 | 76\% | J |
| BENZO(K)FLUORANTHENE | 270 | 120 | 77\% | J |
| BENZO(A)PYRENE | 290 | 84 | 110\% | J |
| INDENO(1,2,3-CD)PYRENE | 240 | 69 | 111\% | J |
| DIBENZ(A,H)ANTHRACENE | 64 | 17 | 116\% | J |
| BENZO(G,H,I)PERYLENE | 190 | 59 | 105\% | J |
| ARSENIC | 0.95 | 1.0 | 5\% | None |
| BARIUM | 10 | 13 | 26\% | None |
| CHROMIUM | 3.5 | 4.3 | 21\% | None |
| COPPER | 2.0 | 2.3 | 14\% | None |
| LEAD | 18 | 19 | 5\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| MERCURY | 0.043 | 0.042 | 2\% | None |
| VANADIUM | 3.1 | 3.3 | 6\% | None |
| SDG J0605876 |  |  |  |  |
| Sample SS038DA/ SS038DB |  |  |  |  |
| ACETONE | 8.1 | 11 | 30\% | None |
| METHYLENE CHLORIDE | <38 | 0.48 | NC | None |
| NAPHTHALENE | 2.1 | 2.9 | 32\% | None |
| ACENAPHTHYLENE | <8.1 | 6 | NC | None |
| PENTACHLOROPHENOL | 12 | 13 | 8\% | None |
| PHENANTHRENE | <8.1 | 4 | NC | None |
| ANTHRACENE | 2.6 | 11 | 124\% | J |
| FLUORANTHENE | 7.2 | 12 | 50\% | J |
| PYRENE | 5.7 | 12 | 71\% | J |
| CHRYSENE | 4.6 | 9.4 | 69\% | J |
| BENZO(A)ANTHRACENE | 3 | 5.6 | 60\% | None |
| BENZO(B)FLUORANTHENE | 5.7 | 21 | 115\% | J |
| BENZO(K)FLUORANTHENE | 4.5 | 14 | 103\% | J |
| BENZO(A)PYRENE | 2 | 8.5 | 124\% | J |
| INDENO(1,2,3-CD)PYRENE | 3.6 | 17 | 130\% | J |
| DIBENZ(A,H)ANTHRACENE | 0.91 | 4 | 126\% | None |
| BENZO(G,H,I)PERYLENE | 3.4 | 15 | 126\% | J |
| ARSENIC | 19000 | 120000 | 145\% | J |
| BARIUM | 16000 | 30000 | 61\% | J |
| CHROMIUM | 33000 | 59000 | 57\% | J |
| COPPER | 1200 | 1600 | 29\% | None |
| LEAD | 14000 | 11000 | 24\% | None |
| MERCURY | 62 | 60 | 3\% | None |
| VANADIUM | 30000 | 22000 | 31\% | J |
| Sample SS039BA/SS039BB |  |  |  |  |
| ACETONE | 20 | 14 | 35\% | None |
| NAPHTHALENE | 1.9 | 2.2 | 15\% | None |
| ACENAPHTHYLENE | 3.7 | <8.5 | NC | None |
| PENTACHLOROPHENOL | 15 | 14 | 7\% | None |
| ANTHRACENE | 6.7 | 3.9 | 53\% | None |
| FLUORANTHENE | 5.6 | 4.2 | 29\% | None |
| PYRENE | 6.1 | 4.8 | 24\% | None |
| CHRYSENE | 5 | 3.6 | 33\% | None |
| BENZO(A)ANTHRACENE | 3.4 | 2.6 | 27\% | None |
| BENZO(B)FLUORANTHENE | 9.4 | 6 | 44\% | None |
| BENZO(K)FLUORANTHENE | 7.1 | 4.7 | 41\% | None |
| BENZO(A)PYRENE | 4.2 | 2.8 | 40\% | None |
| INDENO(1,2,3-CD)PYRENE | 7.2 | 3.9 | 59\% | None |
| DIBENZ(A,H)ANTHRACENE | 1.5 | <4.3 | NC | None |
| BENZO(G,H,I)PERYLENE | 7 | 3.6 | 64\% | None |
| ARSENIC | 14000 | 12000 | 15\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| BARIUM | 3600 | 3300 | 9\% | None |
| CHROMIUM | 20000 | 18000 | 11\% | None |
| COPPER | 1400 | 1000 | 33\% | None |
| LEAD | 2000 | 1700 | 16\% | None |
| MERCURY | 21 | 22 | 5\% | None |
| Sample SS028AA/SS028AB |  |  |  |  |
| ACETONE | 13 | 40 | 102\% | None |
| CARBAZOLE | 700 | 600 | 15\% | None |
| NAPHTHALENE | 180 | 220 | 20\% | None |
| ACENAPHTHYLENE | 3400 | 3400 | 0\% | None |
| FLUORENE | 170 | 190 | 11\% | None |
| PENTACHLOROPHENOL | 2600 | 3200 | 21\% | None |
| PHENANTHRENE | 970 | 880 | 10\% | None |
| ANTHRACENE | 4700 | 4900 | 4\% | None |
| FLUORANTHENE | 18000 | 21000 | 15\% | None |
| PYRENE | 32000 | 36000 | 12\% | None |
| CHRYSENE | 20000 | 20000 | 0\% | None |
| BENZO(A)ANTHRACENE | 15000 | 17000 | 13\% | None |
| BENZO(B)FLUORANTHENE | 22000 | 24000 | 9\% | None |
| BENZO(K)FLUORANTHENE | 20000 | 19000 | 5\% | None |
| BENZO(A)PYRENE | 16000 | 17000 | 6\% | None |
| INDENO(1,2,3-CD)PYRENE | 8900 | 8900 | 0\% | None |
| DIBENZ(A,H)ANTHRACENE | 2600 | 3100 | 18\% | None |
| BENZO(G,H,I)PERYLENE | 6500 | 6300 | 3\% | None |
| ARSENIC | 5000 | 4300 | 15\% | None |
| BARIUM | 7800 | 6100 | 24\% | None |
| CHROMIUM | 8200 | 7700 | 6\% | None |
| COPPER | 5000 | 4900 | 2\% | None |
| LEAD | 10000 | 9600 | 4\% | None |
| MERCURY | 140 | 160 | 13\% | None |
| VANADIUM | 1600 | <1000 | NC | None |
| SDG J0605879 |  |  |  |  |
| Sample SS100DA/SS100DB |  |  |  |  |
| ACETONE | 140 | 89 | 45\% | J |
| METHYL ETHYL KETONE | 15 | 7.2 | 70\% | J |
| BENZENE | 1.9 | 1.7 | 11\% | None |
| METHYLCYLOHEXANE | 2.1 | 1.6 | 27\% | None |
| METHYLBENZENE | 140 | 120 | 15\% | None |
| ETHYLBENZENE | 0.47 | 0.42 | 11\% | None |
| M,P-XYLENES | 1.1 | 1 | 10\% | None |
| O-XYLENE | 0.75 | 0.64 | 16\% | None |
| STYRENE (MONOMER) | 230 | 200 | 14\% | None |
| 2,4-DIMETHYLPHENOL | 3800 | 2300 | 49\% | J |
| BIPHENYL | 93000 | 57000 | 48\% | J |
| DIBENZOFURAN | 340000 | 340000 | 0\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| CARBAZOLE | 140000 | 160000 | 13\% | None |
| NAPHTHALENE | 770000 | 570000 | 30\% | None |
| 2-METHYLNAPHTHALENE | 250000 | 230000 | 8\% | None |
| ACENAPHTHYLENE | 17000 | 16000 | 6\% | None |
| ACENAPHTHENE | 310000 | 280000 | 10\% | None |
| FLUORENE | 340000 | 300000 | 13\% | None |
| PHENANTHRENE | 1300000 | 960000 | 30\% | None |
| ANTHRACENE | 190000 | 170000 | 11\% | None |
| FLUORANTHENE | 700000 | 400000 | 55\% | J |
| PYRENE | 350000 | 310000 | 12\% | None |
| CHRYSENE | 100000 | 93000 | 7\% | None |
| BENZO(A)ANTHRACENE | 120000 | 110000 | 9\% | None |
| BENZO(B)FLUORANTHENE | 68000 | 62000 | 9\% | None |
| BENZO(K)FLUORANTHENE | 47000 | 40000 | 16\% | None |
| BENZO(A)PYRENE | 54000 | 46000 | 16\% | None |
| INDENO(1,2,3-CD)PYRENE | 17000 | 15000 | 13\% | None |
| DIBENZO(A,H)ANTHRACENE | 6800 | 5600 | 19\% | None |
| BENZO(G,H,I)PERYLENE | 16000 | 14000 | 13\% | None |
| ARSENIC | 0.83 | 3.2 | 118\% | J |
| BARIUM | 4.9 | 5.2 | 6\% | None |
| CHROMIUM | 2.2 | 5.9 | 91\% | J |
| COPPER | 1 | 3 | 100\% | J |
| LEAD | 2.1 | 2.2 | 5\% | None |
| MERCURY | 0.022 | 0.018 | 20\% | None |
| Sample SS66AAISS066AB |  |  |  |  |
| DIBENZOFURAN | 170 | 180 | 6\% | None |
| CARBAZOLE | 180 | 210 | 15\% | None |
| BIS(2-ETHYLHEXYL)PHTHALATE | 56 | ND | NC | None |
| NAPHTHALENE | 86 | 130 | 41\% | J |
| 2-METHYLNAPHTHALENE | 49 | 72 | 38\% | J |
| ACENAPHTHYLENE | 380 | 450 | 17\% | None |
| ACENAPHTHENE | 63 | 86 | 31\% | J |
| FLUORENE | 110 | 140 | 24\% | None |
| PENTACHLOROPHENOL | 350 | 510 | 37\% | J |
| PHENANTHRENE | 650 | 660 | 2\% | None |
| ANTHRACENE | 640 | 680 | 6\% | None |
| FLUORANTHENE | 1200 | 1500 | 22\% | None |
| PYRENE | 1300 | 2200 | 51\% | J |
| CHRYSENE | 920 | 1600 | 54\% | J |
| BENZO(A)ANTHRACENE | 640 | 1200 | 61\% | J |
| BENZO(B)FLUORANTHENE | 1600 | 2000 | 22\% | None |
| BENZO(K)FLUORANTHENE | 970 | 1500 | 43\% | J |
| BENZO(A)PYRENE | 790 | 1100 | 33\% | J |
| INDENO(1,2,3-CD)PYRENE | 720 | 1000 | 33\% | J |
| DIBENZO(A,H)ANTHRACENE | 280 | 280 | 0\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| BENZO(G,H,I)PERYLENE | 890 | 900 | 1\% | None |
| ANTIMONY | ND | 1.1 | NC | None |
| ARSENIC | 81 | 95 | 16\% | None |
| BARIUM | 13 | 19 | 38\% | J |
| CHROMIUM | 64 | 85 | 28\% | None |
| COPPER | 33 | 53 | 47\% | J |
| LEAD | 9.6 | 34 | 112\% | J |
| MERCURY | 0.12 | 0.16 | 29\% | None |
| VANADIUM | 1.1 | 2 | 58\% | J |
| Sample SS066DA/SS066DC |  |  |  |  |
| FLUORENE | 2.5 | 4.4 | 55\% | J |
| PHENANTHRENE | 15 | 27 | 57\% | J |
| ANTHRACENE | 3.1 | 6.7 | 73\% | J |
| FLUORANTHENE | 13 | 25 | 63\% | J |
| PYRENE | 11 | 21 | 63\% | J |
| CHRYSENE | 5.7 | 8.4 | 38\% | J |
| BENZO(A)ANTHRACENE | 4.3 | 7 | 48\% | J |
| BENZO(B)FLUORANTHENE | 6.6 | 8.4 | 24\% | None |
| BENZO(K)FLUORANTHENE | 6.2 | 8 | 25\% | None |
| BENZO(A)PYRENE | 2.9 | 3.9 | 29\% | None |
| INDENO(1,2,3-CD)PYRENE | 4.2 | 5.2 | 21\% | None |
| DIBENZO(A,H)ANTHRACENE | 0.96 | 1.2 | 22\% | None |
| BENZO(G,H,I)PERYLENE | 4 | 4.9 | 20\% | None |
| ARSENIC | 0.68 | 0.83 | 20\% | None |
| BARIUM | 2.4 | 3.3 | 32\% | J |
| CHROMIUM | 4.9 | 5.1 | 4\% | None |
| COPPER | 0.66 | 0.55 | 18\% | None |
| LEAD | 0.88 | 1.1 | 22\% | None |
| MERCURY | ND | 0.0046 | NC | None |
| VANADIUM | ND | 1.5 | NC | None |
| Sample SS003CAISS003CB |  |  |  |  |
| DIBENZOFURAN | 22 | 24 | 9\% | None |
| CARBAZOLE | 42 | 34 | 21\% | None |
| NAPHTHALENE | 38 | 42 | 10\% | None |
| 2-METHYLNAPHTHALENE | 38 | 49 | 25\% | None |
| ACENAPHTHYLENE | 75 | 51 | 38\% | J |
| FLUORENE | 23 | ND | NC | None |
| PHENANTHRENE | 200 | 95 | 71\% | J |
| ANTHRACENE | 200 | 110 | 58\% | J |
| FLUORANTHENE | 940 | 340 | 94\% | J |
| PYRENE | 1100 | 370 | 99\% | J |
| CHRYSENE | 590 | 250 | 81\% | J |
| BENZO(A)ANTHRACENE | 410 | 150 | 93\% | J |
| BENZO(B)FLUORANTHENE | 630 | 360 | 55\% | J |
| BENZO(K)FLUORANTHENE | 520 | 250 | 70\% | J |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| BENZO(A)PYRENE | 360 | 200 | 57\% | J |
| INDENO(1,2,3-CD)PYRENE | 250 | 180 | 33\% | J |
| DIBENZO(A,H)ANTHRACENE | 74 | 43 | 53\% | J |
| BENZO(G,H,I)PERYLENE | 210 | 160 | 27\% | None |
| ARSENIC | 19 | 14 | 30\% | None |
| BARIUM | 12 | 11 | 9\% | None |
| CHROMIUM | 3.4 | 3.6 | 6\% | None |
| COPPER | 2.1 | 2.1 | 0\% | None |
| LEAD | 6.3 | 5.1 | 21\% | None |
| MERCURY | 0.024 | 0.022 | 9\% | None |
| VANADIUM | 2.4 | 3.3 | 32\% | J |
| Sample SS086BA/SS086BB |  |  |  |  |
| ACETONE | 160 | 63 | 87\% | J |
| DIBENZOFURAN | 190 | 250 | 27\% | None |
| CARBAZOLE | 320 | 380 | 17\% | None |
| NAPHTHALENE | 140 | 130 | 7\% | None |
| 2-METHYLNAPHTHALENE | 110 | 100 | 10\% | None |
| ACENAPHTHYLENE | 950 | 990 | 4\% | None |
| ACENAPHTHENE | 96 | 110 | 14\% | None |
| FLUORENE | 81 | 100 | 21\% | None |
| PENTACHLOROPHENOL | 3100 | 2800 | 10\% | None |
| PHENANTHRENE | 610 | 620 | 2\% | None |
| ANTHRACENE | 1900 | 1800 | 5\% | None |
| FLUORANTHENE | 4000 | 4000 | 0\% | None |
| PYRENE | 4600 | 4900 | 6\% | None |
| CHRYSENE | 2600 | 4600 | 56\% | J |
| BENZO(A)ANTHRACENE | 1800 | 2100 | 15\% | None |
| BENZO(B)FLUORANTHENE | 7600 | 8200 | 8\% | None |
| BENZO(K)FLUORANTHENE | 3500 | 4300 | 21\% | None |
| BENZO(A)PYRENE | 2200 | 2500 | 13\% | None |
| INDENO(1,2,3-CD)PYRENE | 2000 | 2100 | 5\% | None |
| DIBENZO(A,H)ANTHRACENE | 620 | 600 | 3\% | None |
| BENZO(G,H,I)PERYLENE | 1800 | 1800 | 0\% | None |
| ANTIMONY | 0.43 | 0.57 | 28\% | None |
| ARSENIC | 42 | 41 | 2\% | None |
| BARIUM | 21 | 14 | 40\% | J |
| CHROMIUM | 69 | 75 | 8\% | None |
| COPPER | 36 | 50 | 33\% | J |
| LEAD | 18 | 19 | 5\% | None |
| MERCURY | 0.69 | 0.57 | 19\% | None |
| VANADIUM | 2.3 | 1.6 | 36\% | J |
| SDG J0605890 |  |  |  |  |
| Sample SS094AA/SS094AB |  |  |  |  |
| ACETONE | 5.5 | 4.9 | 12\% | None |
| DIBENZOFURAN | 25 | 26 | 4\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| CARBAZOLE | 74 | 65 | 13\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | ND | 24 | NC | None |
| NAPHTHALENE | 66 | 38 | 54\% | J |
| 2-METHYLNAPHTHALENE | 40 | 31 | 25\% | None |
| ACENAPHTHYLENE | 320 | 300 | 6\% | None |
| ACENAPHTHENE | 30 | ND | NC | None |
| FLUORENE | 32 | 27 | 17\% | None |
| PENTACHLOROPHENOL | 180 | 170 | 6\% | None |
| PHENANTHRENE | 150 | 140 | 7\% | None |
| ANTHRACENE | 690 | 650 | 6\% | None |
| FLUORANTHENE | 1100 | 970 | 13\% | None |
| PYRENE | 1300 | 1000 | 26\% | None |
| CHRYSENE | 1000 | 830 | 19\% | None |
| BENZO(A)ANTHRACENE | 770 | 620 | 22\% | None |
| BENZO(B)FLUORANTHENE | 2000 | 1400 | 35\% | J |
| BENZO(K)FLUORANTHENE | 920 | 730 | 23\% | None |
| BENZO(A)PYRENE | 790 | 610 | 26\% | None |
| INDENO(1,2,3-CD)PYRENE | 710 | 620 | 14\% | None |
| DIBENZO(A,H)ANTHRACENE | 250 | 210 | 17\% | None |
| BENZO(G,H,I)PERYLENE | 730 | 660 | 10\% | None |
| ARSENIC | 30 | 25 | 18\% | None |
| BARIUM | 8.7 | 6.3 | 32\% | J |
| CHROMIUM | 39 | 35 | 11\% | None |
| COPPER | 23 | 20 | 14\% | None |
| LEAD | 3.7 | 3.3 | 11\% | None |
| MERCURY | 0.058 | 0.058 | 0\% | None |
| VANADIUM | 2.8 | 2.3 | 20\% | None |
| Sample SS047AA/SS047AC |  |  |  |  |
| ACETONE | 3.5 | 4.4 | 23\% | None |
| CARBAZOLE | 31 | 32 | 3\% | None |
| NAPHTHALENE | ND | 13 | NC | None |
| 2-METHYLNAPHTHALENE | 5.2 | 5.4 | 4\% | None |
| ACENAPHTHYLENE | 83 | 91 | 9\% | None |
| ACENAPHTHENE | 4.7 | 5.3 | 12\% | None |
| FLUORENE | 5.7 | 6.2 | 8\% | None |
| PENTACHLOROPHENOL | 490 | 320 | 42\% | J |
| PHENANTHRENE | 22 | 28 | 24\% | None |
| ANTHRACENE | 240 | 280 | 15\% | None |
| FLUORANTHENE | 130 | 150 | 14\% | None |
| PYRENE | 180 | 200 | 11\% | None |
| CHRYSENE | 150 | 170 | 13\% | None |
| BENZO(A)ANTHRACENE | 130 | 150 | 14\% | None |
| BENZO(B)FLUORANTHENE | 340 | 430 | 23\% | None |
| BENZO(K)FLUORANTHENE | 150 | 170 | 13\% | None |
| BENZO(A)PYRENE | 170 | 190 | 11\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| INDENO(1,2,3-CD)PYRENE | 120 | 140 | 15\% | None |
| DIBENZO(A,H)ANTHRACENE | 46 | 52 | 12\% | None |
| BENZO(G,H,I)PERYLENE | 120 | 140 | 15\% | None |
| ARSENIC | 6.7 | 6.1 | 9\% | None |
| BARIUM | 9.2 | 9.1 | 1\% | None |
| CHROMIUM | 5.7 | 6.2 | 8\% | None |
| COPPER | 2.2 | 2.7 | 20\% | None |
| LEAD | 5.2 | 5.3 | 2\% | None |
| MERCURY | 0.069 | 0.1 | 37\% | J |
| VANADIUM | 2.9 | 3.1 | 7\% | None |
| Sample SS077DA/SS077DB |  |  |  |  |
| ACETONE | 42 | 39 | 7\% | None |
| 2-BUTANONE | 3.1 | 39 | 171\% | J |
| TOLUENE | ND | 0.53 | NC | None |
| ETHYLBENZENE | ND | 18 | NC | None |
| M,P-XYLENES | ND | 48 | NC | None |
| O-XYLENE | 7.9 | 37 | 130\% | J |
| STYRENE | 2.2 | 8.8 | 120\% | J |
| ACENAPHTHYLENE | 9900 | 10000 | 1\% | None |
| PENTACHLOROPHENOL | 89 | ND | NC | None |
| BENZO(K)FLUORANTHENE | 29000 | 26000 | 11\% | None |
| INDENO(1,2,3-CD)PYRENE | 16000 | 14000 | 13\% | None |
| DIBENZO(A,H)ANTHRACENE | 7600 | 6800 | 11\% | None |
| BENZO(G,H,I)PERYLENE | 16000 | 13000 | 21\% | None |
| ARSENIC | 0.94 | 0.7 | 29\% | None |
| BARIUM | 7 | 4.7 | 39\% | J |
| CHROMIUM | 7.1 | 6.3 | 12\% | None |
| COPPER | 1.3 | 0.73 | 56\% | J |
| LEAD | 5.5 | 5.5 | 0\% | None |
| MERCURY | 0.018 | 0.11 | 144\% | J |
| VANADIUM | 2.4 | 1.7 | 34\% | J |
| NAPHTHALENE | 290000 | 400000 | 32\% | J |
| 2-METHYLNAPHTHALENE | 180000 | 200000 | 11\% | None |
| ACENAPHTHENE | 250000 | 240000 | 4\% | None |
| FLUORENE | 300000 | 270000 | 11\% | None |
| PHENANTHRENE | 850000 | 680000 | 22\% | None |
| ANTHRACENE | 140000 | 120000 | 15\% | None |
| FLUORANTHENE | 400000 | 350000 | 13\% | None |
| PYRENE | 290000 | 250000 | 15\% | None |
| CHRYSENE | 90000 | 75000 | 18\% | None |
| BENZO(A)ANTHRACENE | 100000 | 87000 | 14\% | None |
| BENZO(B)FLUORANTHENE | 68000 | 55000 | 21\% | None |
| BENZO(A)PYRENE | 49000 | 42000 | 15\% | None |
| BIPHENYL | 35000 | 39000 | 11\% | None |
| DIBENZOFURAN | 190000 | 210000 | 10\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| CARBAZOLE | 57000 | 61000 | 7\% | None |
| SDG J0605919 |  |  |  |  |
| Sample SS070AA/SS070AB |  |  |  |  |
| ACETONE | 41 | 25 | 48\% | J |
| METHYLENE CHLORIDE | 1.5 | 1.6 | 6\% | None |
| TOLUENE | 2.4 | <0.81 | NC | None |
| DIBENZOFURAN | 86 | 93 | 8\% | None |
| CARBAZOLE | 1000 | 1200 | 18\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 44 | <23 | NC | None |
| NAPHTHALENE | 170 | 220 | 26\% | None |
| 2-METHYLNAPHTHALENE | 110 | <210 | NC | None |
| ACENAPHTHYLENE | 2000 | 2100 | 5\% | None |
| ACENAPHTHENE | 95 | <380 | NC | None |
| FLUORENE | 110 | <210 | NC | None |
| PENTACHLOROPHENOL | 3700 | 2700 | 31\% | J |
| PHENANTHRENE | 820 | 900 | NC | None |
| ANTHRACENE | 4200 | 4200 | 0\% | None |
| FLUORANTHENE | 7100 | 7500 | 5\% | None |
| PYRENE | 14000 | 15000 | 7\% | None |
| CHRYSENE | 8600 | 8500 | 1\% | None |
| BENZO(A)ANTHRACENE | 5700 | 6100 | 7\% | None |
| BENZO(B)FLUORANTHENE | 12000 | 16000 | 29\% | None |
| BENZO(K)FLUORANTHENE | 8100 | 7700 | 5\% | None |
| BENZO(A)PYRENE | 6300 | 7600 | 19\% | None |
| INDENO(1,2,3-CD)PYRENE | 3900 | 5100 | 27\% | None |
| DIBENZ(A,H)ANTHRACENE | 1700 | 1900 | 11\% | None |
| BENZO(G,H,I)PERYLENE | 4200 | 5100 | 19\% | None |
| ANTIMONY | 0.61 | 0.68 | 11\% | None |
| ARSENIC | 48 | 53 | 10\% | None |
| BARIUM | 27 | 29 | 7\% | None |
| CHROMIUM | 51 | 57 | 11\% | None |
| COPPER | 45 | 50 | 11\% | None |
| LEAD | 23 | 26 | 12\% | None |
| MERCURY | 0.84 | 0.94 | 11\% | None |
| VANADIUM | 4.9 | 5.6 | 13\% | None |
| Sample SS031DAISS031DB |  |  |  |  |
| ACETONE | 4.5 | 14 | 103\% | J |
| METHYLENE CHLORIDE | 6.9 | 0.74 | 161\% | J |
| TOLUENE | 0.48 | 0.95 | 66\% | J |
| NAPHTHALENE | 5.3 | 15 | 96\% | J |
| 2-METHYLNAPHTHALENE | 2.3 | 8.4 | 114\% | J |
| ACENAPHTHYLENE | 7.2 | 4.4 | 48\% | J |
| ACENAPHTHENE | <2.9 | 4.5 | NC | None |
| FLUORENE | <1.6 | 3.3 | NC | None |
| PENTACHLOROPHENOL | 4.6 | 3.6 | 24\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| PHENANTHRENE | <3.5 | 6.4 | NC | None |
| ANTHRACENE | 16 | 9.9 | 47\% | J |
| FLUORANTHENE | 15 | 11 | 31\% | J |
| PYRENE | 18 | 12 | 40\% | J |
| CHRYSENE | 16 | 8.1 | 66\% | J |
| BENZO(A)ANTHRACENE | 13 | 6.1 | 72\% | J |
| BENZO(B)FLUORANTHENE | 36 | 19 | 62\% | J |
| BENZO(K)FLUORANTHENE | 18 | 9.8 | 59\% | J |
| BENZO(A)PYRENE | 14 | 8.0 | 55\% | J |
| INDENO(1,2,3-CD)PYRENE | 15 | 8.8 | 52\% | J |
| DIBENZ(A,H)ANTHRACENE | 5.2 | 2.8 | NC | None |
| BENZO(G,H,I)PERYLENE | 16 | 9.7 | 49\% | J |
| ARSENIC | 1.2 | <0.41 | NC | None |
| BARIUM | 6.3 | 8.0 | 24\% | None |
| CHROMIUM | 4.4 | 3.0 | 38\% | J |
| COPPER | 1.1 | 0.62 | 56\% | J |
| LEAD | 5.6 | 5.1 | 9\% | None |
| MERCURY | 0.024 | 0.020 | 18\% | None |
| VANADIUM | 1.4 | 1.2 | 15\% | None |
| Sample SS007DA/SS007DB |  |  |  |  |
| ACETONE | 7.5 | 4.0 | 61\% | J |
| METHYLENE CHLORIDE | 1.6 | 1.3 | 21\% | None |
| NAPHTHALENE | 7.4 | 15 | 68\% | J |
| 2-METHYLNAPHTHALENE | 4.8 | 8.5 | 56\% | J |
| ACENAPHTHYLENE | 3.2 | 4.5 | 34\% | J |
| ACENAPHTHENE | 15 | 8.2 | 59\% | J |
| FLUORENE | 8.7 | 5.6 | 43\% | J |
| PENTACHLOROPHENOL | 1.1 | 1.5 | 31\% | J |
| PHENANTHRENE | 8.2 | 7.6 | 8\% | None |
| ANTHRACENE | 6.2 | 7.4 | 18\% | None |
| FLUORANTHENE | 9.2 | 9.1 | 1\% | None |
| PYRENE | 12 | 13 | 8\% | None |
| CHRYSENE | 7.8 | 9.7 | 22\% | None |
| BENZO(A)ANTHRACENE | 5.8 | 7.1 | 20\% | None |
| BENZO(B)FLUORANTHENE | 14 | 19 | 30\% | None |
| BENZO(K)FLUORANTHENE | 8.6 | 10 | 15\% | None |
| BENZO(A)PYRENE | 7.1 | 10 | 34\% | J |
| INDENO(1,2,3-CD)PYRENE | 6.5 | 8.9 | 31\% | J |
| DIBENZ(A,H)ANTHRACENE | 2.1 | 2.8 | 29\% | None |
| BENZO(G,H,I)PERYLENE | 6.5 | 8.9 | 31\% | J |
| ARSENIC | $<0.42$ | 0.44 | NC | None |
| BARIUM | 8.0 | 8.9 | 11\% | None |
| CHROMIUM | 3.1 | 3.4 | 9\% | None |
| COPPER | 0.39 | 0.47 | 19\% | None |
| LEAD | 4.0 | 4.0 | 0\% | None |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| MERCURY | 0.016 | 0.018 | 12\% | None |
| VANADIUM | 1.3 | 2.2 | NC | None |
| Sample SS0022AA/SS0022AB |  |  |  |  |
| ACETONE | 100 | 110 | 10\% | None |
| METHYLENE CHLORIDE | 0.7 | 1.3 | 60\% | J |
| 2-BUTANONE | 2.2 | 3.2 | 37\% | J |
| TOLUENE | <0.53 | 0.63 | NC | None |
| DIBENZOFURAN | 83 | 89 | 7\% | None |
| NAPHTHALENE | 28 | 27 | 4\% | None |
| 2-METHYLNAPHTHALENE | 22 | 17 | 26\% | None |
| ACENAPHTHYLENE | 48 | 43 | 11\% | None |
| ACENAPHTHENE | 4.5 | 4.9 | 9\% | None |
| FLUORENE | 4.4 | 4.3 | 2\% | None |
| PENTACHLOROPHENOL | 31 | 28 | 10\% | None |
| PHENANTHRENE | 44 | 35 | 23\% | None |
| ANTHRACENE | 110 | 110 | 0\% | None |
| FLUORANTHENE | 95 | 83 | 13\% | None |
| PYRENE | 110 | 100 | 10\% | None |
| CHRY | 100 | 88 | 13\% | None |
| BENZO(A)ANTHRACENE | 59 | 52 | 13\% | None |
| BENZO(B)FLUORANTHENE | 210 | 200 | 5\% | None |
| BENZO(K)FLUORANTHENE | 83 | 72 | 14\% | None |
| BENZO(A)PYRENE | 76 | 72 | 5\% | None |
| INDENO(1,2,3-CD)PYRENE | 67 | 59 | 13\% | None |
| DIBENZ(A,H)ANTHRACENE | 24 | 21 | 13\% | None |
| BENZO(G,H,I)PERYLENE | 65 | 57 | 13\% | None |
| ANTIMONY | $<0.36$ | 0.37 | NC | None |
| ARSENIC | 4.2 | 4.2 | 0\% | None |
| BARIUM | 8.1 | 7.9 | 2\% | None |
| CHROMIUM | 10 | 9.6 | 4\% | None |
| COPPER | 6 | 5.6 | 7\% | None |
| LEAD | 18 | 18 | 0\% | None |
| MERCURY | 0.054 | 0.054 | 0\% | None |
| VANADIUM | 1.4 | 1.1 | 24\% | None |
| Sample SD001AA/SD001AB |  |  |  |  |
| ACETONE | <3.1 | 3.6 | NC | None |
| METHYLENE CHLORIDE | 4.6 | 1.1 | 123\% | J |
| TOLUENE | 0.88 | 0.87 | 1\% | None |
| CARBAZOLE | 550 | 420 | 27\% | None |
| BUTYL BENZYL PHTHALATE | 230 | <220 | NC | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 680 | $<190$ | NC | None |
| PENTACHLOROPHENOL | 110 | <83 | NC | None |
| PHENANTHRENE | 2500 | 4400 | 55\% | J |
| ANTHRACENE | 460 | 690 | 40\% | J |
| FLUORANTHENE | 6000 | 9900 | 49\% | J |

TABLE 2
Field Duplicate Detected Results and RPD Koppers Inc. Site

| Analyte | Primary Result | Duplicate Result | RPD | Qualifier |
| :---: | :---: | :---: | :---: | :---: |
| PYRENE | 5500 | 9100 | 49\% | J |
| CHRYSENE | 3600 | 5600 | 43\% | J |
| BENZO(A)ANTHRACENE | 2700 | 4500 | 50\% | J |
| BENZO(B)FLUORANTHENE | 5200 | 7800 | 40\% | J |
| BENZO(K)FLUORANTHENE | 2600 | 4000 | 42\% | J |
| BENZO(A)PYRENE | 3500 | 5300 | 41\% | J |
| INDENO(1,2,3-CD)PYRENE | 2500 | 3700 | 39\% | J |
| DIBENZ(A,H)ANTHRACENE | 880 | 1300 | 39\% | J |
| BENZO(G,H,I)PERYLENE | 2500 | 3600 | 36\% | J |
| ANTIMONY | 0.43 | <0.38 | NC | None |
| ARSENIC | 2.1 | 1.7 | 21\% | None |
| BARIUM | 110 | 8.1 | 173\% | J |
| CADMIUM | 0.42 | <0.32 | NC | None |
| CHROMIUM | 9.8 | 8.5 | 14\% | None |
| COPPER | 18 | 16 | 12\% | None |
| LEAD | 62 | 170 | 93\% | J |
| MERCURY | 0.032 | 0.026 | 21\% | None |
| VANADIUM | 6.4 | 4.1 | 44\% | J |
| SDG J0605944 |  |  |  |  |
| Sample SD006AA/SD006AC |  |  |  |  |
| ACETONE | 66 | 15 | 126\% | J |
| DIBENZOFURAN | 150 | 150 | 0\% | None |
| CARBAZOLE | 320 | 380 | 17\% | None |
| BIS(2-ETHYLHEXYL) PHTHALATE | 70 | 95 | 30\% | None |
| ACENAPHTHYLENE | 1100 | 1300 | 17\% | None |
| PENTACHLOROPHENOL | 1400 | 1800 | 25\% | None |
| PHENANTHRENE | 680 | 770 | 12\% | None |
| ANTHRACENE | 1800 | 2100 | 15\% | None |
| FLUORANTHENE | 2700 | 3000 | 11\% | None |
| PYRENE | 3500 | 3900 | 11\% | None |
| CHRYSENE | 2600 | 2700 | 4\% | None |
| BENZO(A)ANTHRACENE | 1600 | 1900 | 17\% | None |
| BENZO(B)FLUORANTHENE | 4400 | 6500 | 39\% | J |
| BENZO(K)FLUORANTHENE | 2900 | 3100 | 7\% | None |
| BENZO(A)PYRENE | 2100 | 2800 | 29\% | None |
| INDENO(1,2,3-CD)PYRENE | 2200 | 3100 | 34\% | J |
| DIBENZO(A,H)ANTHRACENE | 710 | 1000 | 34\% | J |
| BENZO(G,H,I)PERYLENE | 2700 | 3300 | 20\% | None |
| ANTIMONY | 4.2 | 3.6 | 15\% | None |
| ARSENIC | 280 | 210 | 29\% | None |
| BARIUM | 51 | 39 | 27\% | None |
| CADMIUM | 0.81 | 0.63 | 25\% | None |
| CHROMIUM | 450 | 340 | 28\% | None |
| COPPER | 240 | 180 | 29\% | None |
| LEAD | 59 | 51 | 15\% | None |

TABLE 2
Field Duplicate Detected Results and RPD
Koppers Inc. Site

| Analyte | Primary Result | Duplicate <br> Result | RPD | Qualifier |
| :--- | :---: | :---: | :---: | :---: |
| MERCURY | 1.4 | 0.3 | $\mathbf{1 2 9 \%}$ | J |
| VANADIUM | 13 | 8.6 | $\mathbf{4 1 \%}$ | J |
| TOTAL ORGANIC CARBON | 4500 | 4500 | $0 \%$ | None |

NC=Not Calculable

## Appendix C

Data Validation Reports for the Reanalysis of PCDD/PCDF Samples by Vista and for the Analysis of PCDD/PCDF Samples by CAS

## Data Validation Report for the Reanalysis of PCDD/PCDF Samples by Vista

# DATA VALIDATION REPORT 

Soil Samples
From
Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL

Analyses for PCDDs/PCDFs<br>VISTA 28905

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

Samples were initially submitted to Columbia Analytical Services of Houston, TX for analyses of polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs).

A subset of program samples were subsequently submitted to Vista Analytical Laboratory, El Dorado Hills, CA for analyses for PCDDs and PCDFs. Results of these analyses are valid with limited qualifications.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS037AA | SS082AA |
| :--- | :--- |
| SS037BA | SS082BA |
| SS038AA | SS082CA |
| SS038AC | SS084BA |
| SS081AA | SS086AA |
| SS081BA |  |

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples with PCDDs/PCDFs are generally valid as reported.
TEQ values for the samples as calculated by VISTA are based on the 1989 International Toxic equivalency factors (ITEFs). TEQs have been recalculated using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Sample receipt
3. Chain of Custody documentation
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Chromatographic resolution
10. Method blank analysis
11. Laboratory Control Samples
12. Identification criteria
13. Second column confirmation analysis
14. Detection Limits
15. Labeled compound recoveries
16. Interferences
17. Dilutions
18. Equipment blanks
19. Field Duplicates
20. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. Raw data were reviewed for samples SS037AA and SS081AA in this set.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

Analyses were conducted as requested and full deliverables as required for validation provided.

### 5.2 Sample Receipt

Samples were received at Vista via FedEx on April 21, 2007 from CAS Houston, TX and on April 26, 2007 from CAS Gainesville, FL. Sample SS038AA had been in a shipment from the Houston laboratory that was delayed in transit. A replacement sample from the remainder of the metals and semivolatile organics sample from this location was subsequently shipped from the Florida facility.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples had been stored frozen at CAS prior to the shipment. Sample coolers were $1.6^{\circ} \mathrm{C}-$ $4^{\circ} \mathrm{C}$, within the method recommended range. Method 1613B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence. Final checks for calibration and resolution were performed and reported by Vista; all criteria applicable to the initial checks were satisfied for the final checks as well.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. The window-defining mix was combined with the calibration check standard mix so a single analysis addressed both calibration stability and chromatographic resolution. All congeners in the solution were detected within their respective windows. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

A six-point calibration was conducted on December 4, 2006 for the instrument used for the DB5 column analyses of all PCDDs and PCDFs. Calibrations included an additional low standard at one-half the low level required by Method 1613B. Demonstration of linearity at the lower level extended the range for reporting of data without qualifications.

The initial calibration was acceptable with percent relative standard deviations (\%RSDs) $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were conducted during the period May 4 through May 6, 2007. All calibration checks demonstrated acceptable response stability, with the percent difference (\%D) of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Calibration checks were analyzed at the end of each analytical sequence of 12 hours or less. All requirements applicable to the initial calibration check were met for the final check.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. Resolution of 123678 - and $123789-H x C D D$ isomers, although not required by Method 1613, was also achieved in standards and in those samples where raw data were reviewed. No qualifications to sample data as a result of chromatographic performance were required.

### 5.10 Method Blanks

One soil method blank was prepared and analyzed with these samples. A trace level of OCDD was present and a trace level peak that failed to meet the ion ratio criterion for identification as $1234678-H p C D D$ was noted. All sample concentrations of these two analytes were 4,000 times or more greater than the blank; no data have been qualified.

### 5.11 Laboratory Control Samples (LCS)

An ongoing precision and recovery sample (OPR) was extracted with each preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Peaks that are present at the expected retention time and have both masses for a target analyte but fail to meet ion ratio criteria are reported as EMPC (estimated maximum possible concentrations). The following PCDFs are reported as EMPCs:

SS037AA 2378-TCDF, 12378-PeCDF
SS081AA 2378-TCDD, 12378-PeCDF
SS081BA 2378-TCDD
SS082AA 2378-TCDF

In all cases, the levels noted as maximum possible concentrations are below instrument calibration. Peak ratios are marginally outside of the limits.

### 5.13 Confirmation Analyses

2,3,6,7-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. This is generally conducted only for samples where the level noted in the initial analysis is above the calibration range for the confirmatory analysis. All detections of 2378-TCDF in these samples were reported below the calibration range for the confirmation analysis, and no second column analyses were conducted. Positive results for 2378-TCDF in all samples are qualified as estimated.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel for non-detected analytes.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards for all samples were within method control limits.

### 5.16 Interferences

Cleanup procedures at Vista, which included florisil column cleanup as recommended in Method 1613, were successful in removing most non-PCDD/PCDF constituents in the samples. Polychlorinated diphenylethers (PCDPEs), which are similar in structure and chemical properties to PCDDs/PCDFs cannot be removed, and when present, can interfere with the unequivocal identification and accurate quantitation of PCDFs. They create the same fragments as PCDFs with the same mass ratio and can result in false positives or high bias to PCDF results. PCDPEs were present in several of the samples in this set, but no target PCDFs were affected.

Some peaks detected during the analysis of PCDFs are potentially attributable to these ethers. Vista includes peaks in the totals for each group (Total TCDFs, etc) that are possibly attributable to PCDPEs. Vista also reports results for the estimated maximum possible concentrations
(EMPCs) of totals for each group; this result includes the concentrations of peaks that failed to meet ion ratio criteria for positive identification as a PCDD or PCDF. Results for Totals are qualified as estimated when raw data indicate that ethers are present.

### 5.17 Sample Dilutions

Vista reduced the amount of sample extracted and increased the final extract volume for these samples in order to minimize the number of analytes measured above instrument calibration. No samples in this set required further dilutions.

### 5.18 Equipment Blank

No equipment blanks were included in the sets submitted to Vista. Significant contamination of these blanks was not noted in the analyses conducted at CAS.

### 5.19 Field Duplicates

Samples SS038AA and SS038AC are field duplicates. Results demonstrated acceptable agreement with all relative percent differences (RPDs) below $50 \%$ as shown in Table 1.

### 5.20 Calculations

Calculations for toxic equivalencies as provided were calculated using 1989 International Toxic Equivalency Factors (TEF) and one-half the detection limit for non-detected analytes. Values have been recalculated for program usage using the revised 2006 WHO TEF values and onehalf the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

## amec ${ }^{\text {® }}$

Table 1: PCDDs/PCDFs in Field Duplicate Samples

| chemical_name | $\begin{gathered} \text { SS038AA } \\ \text { E1668 pg/g } \\ \hline \end{gathered}$ | VQ | $\begin{gathered} \text { SS038AC } \\ \text { E1668 pg/g } \\ \hline \end{gathered}$ | VQ | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | VISTA |  | VISTA |  |  |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 11 | J | 9.47 | J | 15\% |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 187 |  | 177 |  | 5\% |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 606 |  | 577 |  | 5\% |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 2110 |  | 1860 |  | 13\% |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 1160 |  | 1060 |  | 9\% |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 70700 |  | 59900 |  | 17\% |
| OCTACHLORODIBENZO-P-DIOXIN | 689000 |  | 568000 |  | 19\% |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 13.6 |  | 13 | J | 5\% |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 16.5 | J | 18.6 | J | 12\% |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 82.7 |  | 79.2 |  | 4\% |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 319 |  | 277 |  | 14\% |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 175 |  | 161 |  | 8\% |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 359 |  | 336 |  | 7\% |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 87.6 |  | 74.9 |  | 16\% |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 10400 |  | 9360 |  | 11\% |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 600 |  | 545 |  | 10\% |
| OCTACHLORODIBENZOFURAN | 37700 |  | 33500 |  | 12\% |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 122 |  | 120 |  | 2\% |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 1110 |  | 950 |  | 16\% |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 16600 |  | 14600 |  | 13\% |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 187000 |  | 151000 |  | 21\% |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 236 |  | 208 |  | 13\% |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 1020 |  | 1000 |  | 2\% |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 11100 |  | 9650 | J | 14\% |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 41200 |  | 37000 |  | 11\% |

# DATA VALIDATION REPORT 

Soil Samples
From
Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL

Analyses for PCDDs/PCDFs<br>VISTA 28906

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.

J The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

Samples were initially submitted to Columbia Analytical Services of Houston, TX for analyses of polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). A subset of the samples were subsequently submitted to Vista Analytical Laboratory, El Dorado Hills, CA for analyses for PCDDs and PCDFs. Results of these analyses are valid with limited qualifications.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS086BA | SS094CA |
| :--- | :--- |
| SS086CA | SS094DA |
| SS088AA | SS041BA |
| SS093AA | SS044AA |
| SS093BA | SS044BA |
| SS094BA |  |

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples with PCDDs/PCDFs are generally valid as reported. Method modifications implemented to accommodate the high levels of PCDDs and PCDFs included extraction of a smaller amount of some samples, the addition of more internal standards to allow for a larger final extract volume and dilutions performed without additional internal standards introduced into the extracts. Qualifications applied are with limited exceptions due to measurements below the instrument calibration range.

TEQ values for the samples as calculated by VISTA are based on 1989 International Toxic equivalency factors (ITEFs). TEQs have been recalculated using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the

Functional Guidelines are based, the requirements and criteria of the cited method were applied.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Sample receipt
3. Chain of Custody documentation
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Chromatographic resolution
10. Method blank analysis
11. Laboratory Control Samples
12. Identification criteria
13. Second column confirmation analysis
14. Detection Limits
15. Labeled compound recoveries
16. Interferences
17. Dilutions
18. Equipment blanks
19. Field Duplicates
20. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. Raw data were reviewed for all sample and quality control analyses associated with samples in this set.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

Analyses were conducted as requested and full deliverables for data validation were provided.

### 5.2 Sample Receipt

Samples were received from CAS Houston at Vista via FedEx on April 21 and April 26, 2007 from the CAS laboratory in Gainesville, FL. Samples received on April 26, 2007, including SS094CA and SS094DA, were listed on the COC from CAS Houston for the April 21, 2007 set but were not in the cooler. Subsequently, the CAS laboratory in Gainesville, FL provided samples from the bottles submitted to them for metals and semivolatile organics analyses.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed. As noted above, two samples listed on the CAS Houston COC were not included in the cooler.

### 5.4 Holding Times, Storage and Preservation

Samples had been stored frozen at CAS prior to the shipment. Sample coolers were within $1.6^{\circ} \mathrm{C}-4^{\circ} \mathrm{C}$, within the method recommended range. Method 1613 B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence. Final checks for calibration and resolution were performed and reported by Vista; all criteria applicable to the initial checks were satisfied in these final checks.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. The window-defining mix was combined with the calibration check standard mix so a single analysis addressed both calibration stability and chromatographic resolution. All congeners in the solution were detected within their respective windows. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9-TCDF, 2,3,4,7TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

A six-point calibration was conducted on October 24, 2006 for the instrument used for initial analyses of all PCDDs and PCDFs. Calibrations included an additional low standard at 0.25 $\mathrm{ng} / \mathrm{ml}$, one-half the low level required by Method 1613B. Demonstration of linearity at the lower level extended the calibration range and allowed reporting of data without qualifications at lower concentrations.

A five-point calibration for $2,3,7,8$-TCDF confirmation on the DB-225 column was conducted on November 1, 2006. The initial calibrations were acceptable with percent relative standard deviations (\%RSDs) $\leq 20 \%$ for the relative response factors (RRF) for unlabeled compounds and $\leq 35 \%$ for the RRFs for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were conducted on May 8, 9 and 10, 2007 and on the DB225 column on May 8 and 10, 2007. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Calibration checks were also analyzed at the end of each analytical sequence of 12 hours or less. All requirements applicable to the initial calibration check were met for the final check.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. Resolution of 123678 - and 123789-HxCDD isomers, although not required by Method 1613, was also achieved in standards and in all samples. No qualifications to sample data as a result of chromatographic performance were required.

### 5.10 Method Blanks

Two soil method blanks were associated with the initial extractions of samples in this set. The method blank associated with SS086CA, SS093BA, SS094BA, SS094CA, SS094DA and SS041BA contained a trace level of OCDD. All reported sample concentrations of OCDD were greater than 25,000 times the blank and were not qualified.

### 5.11 Laboratory Control Samples

An ongoing precision and recovery sample (OPR) was extracted with each preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

All target PCDDs and PCDFs were detected in all samples in this set. All peaks met the identification criteria.

### 5.13 Confirmation Analyses

2,3,6,7-TCDF may not be separated completely from other TCDF isomers on the primary DB5 chromatographic column, so if it is detected on the initial analysis, a second-column analysis is required by the method to confirm its presence. Confirmation analyses were conducted on all samples with potential detections of $2,3,7,8-$ TCDF above the calibration range of the DB-225 second column analysis. Since the calibration range for the DB5 analysis extended below that of the DB225 analysis, there were low level detections reported without qualification by Vista from the initial analysis that were not confirmed. 2378-TCDF results are qualified as estimated (J) for SS086BA, SS044BA, SS086CA and SS094DA, although data for other samples with confirmation data would indicate that the DB5 results are accurate and do not include other 2378-TCDF isomers. Final validated data and the TEQ includes the lower of the two results for this analyte where the confirmation analysis was conducted.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel. Detection limits were not reported for samples since all analytes were confirmed present in all samples.

### 5.15 Labeled Compound Recoveries

With limited exceptions, all recoveries of internal standards were within Method 1613 limits. The internal standard for OCDD in SS094BA and SS094DA had apparent recoveries of 179\% and $168 \%$ respectively, above the method limit of 157\%. OCDD was present at elevated levels in both samples and the sample extract was diluted for analysis for this analyte. OCDD is qualified as estimated in these samples.

### 5.16 Interferences

Cleanup procedures at Vista, which included florisil column cleanup as recommended in Method 1613, were successful in removing most non-PCDD/PCDF constituents in the samples. Polychlorinated diphenylethers (PCDPEs), which are similar in structure and chemical properties to PCDDs/PCDFs cannot be removed, and when present, can interfere with the
unequivocal identification and accurate quantitation of PCDFs. They create the same fragments as PCDFs with the same mass ratio and can result in false positives or high bias to PCDF results. PCDPEs were present in several of the samples in this set, but 123678-HxCDF in SS088AA and SS094CA was the only target PCDF potentially biased high by the presence of an ether. Results for this analyte in these samples are qualified as estimated.

PCDPEs were detected in other samples and peaks with the masses for PCDFs in several samples are potentially attributable to these ethers. Vista includes peaks in the totals for each group (Total TCDFs, etc) that are possibly attributable to PCDPEs. Vista also reports results for the estimated maximum possible concentrations (EMPCs) of totals for each group; this result includes the concentrations of peaks that failed to meet ion ratio criteria for positive identification as a PCDD or PCDF. Results for Totals are qualified as estimated when raw data indicate that ethers are present.

### 5.17 Sample Dilutions

Vista reduced the amount of sample extracted and increased the final extract volume for samples SS086BA, SS088AA, SS093AA, SS044AA and SS044BA in order to minimize the number of analytes measured above instrument calibration. OCDD in SS094BA, SS094CA, SS094DA, and SS041BA were analyzed at a dilution of 1:10 of the initial extract. No additional internal standards were added prior to the dilution analysis.

### 5.18 Equipment Blank

No equipment blanks were included in the sets submitted to Vista. Significant contamination of these blanks was not noted in the analyses conducted at CAS.

### 5.19 Field Duplicates

No field duplicate samples were included in this set of samples.

### 5.20 Calculations

Calculations for toxic equivalencies as provided were calculated using 1989 International Toxic Equivalency Factors (TEF) and one-half the detection limit for non-detected analytes. Values have been recalculated for program usage using the revised 2006 WHO TEF values and onehalf the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

# DATA VALIDATION REPORT 

# Soil Samples <br> From <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs VISTA 28907

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples during December 2006 at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

Samples were initially submitted to Columbia Analytical Services of Houston, TX for analyses of polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). A subset of the samples were subsequently submitted to Vista Analytical Laboratory, El Dorado Hills, CA for analyses for PCDDs and PCDFs. Results as reported by Vista are valid with a limited number of qualifications.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS046BA | SS066AA |
| :--- | :--- |
| SS057DA | SS068BA |
| SS058AA | SS070AA |
| SS058BA | SS070BA |
| SS062AA | SS070AB |
|  | SS076AA |

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples as reported by Vista are valid as reported with a limited number of qualifications. Method modifications implemented to accommodate the high levels of PCDDs and PCDFs included extraction of a smaller amount of all samples except SS057DA, the addition of more internal standards to allow for a larger final extract volume and dilutions performed without additional internal standards introduced into the extracts.

TEQ values for the samples as calculated by VISTA are based on 1989 International T toxic equivalency factors (ITEFs). TEQs have been recalculated using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US

EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Sample receipt
3. Chain of Custody documentation
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Chromatographic resolution
10. Method blank analysis
11. Laboratory Control Samples
12. Identification criteria
13. Second column confirmation analysis
14. Detection Limits
15. Labeled compound recoveries
16. Interferences
17. Dilutions
18. Equipment blanks
19. Field Duplicates
20. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. Raw data were reviewed for sample SS058BA.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

### 5.2 Sample Receipt

Samples were received at Vista via FedEx on April 21, 2007 from the CAS Houston, TX laboratory and on April 26, 2007 from the CAS Gainesville, FL facility.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed. Samples SS046BA, SS070AA, SS070AB, and SS070BA were listed on the COC from Houston, TX but were not in the cooler. The portions
remaining from the metals and SVOC submittals for these samples were subsequently shipped from the Gainesville, FL laboratory to Vista.

### 5.4 Holding Times, Storage and Preservation

Samples had been stored frozen at CAS prior to the shipment. Sample coolers were received at temperatures within $1.6^{\circ} \mathrm{C}-2.4^{\circ} \mathrm{C}$, within the method recommended range. Method 1613B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence. Final checks for calibration and resolution were performed and reported by Vista; all criteria applicable to the initial checks were satisfied for the final checks as well.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. The window-defining mix was combined with the calibration check standard mix so a single analysis addressed both calibration stability and chromatographic resolution. All congeners in the solution were detected within their respective windows. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9-TCDF, 2,3,4,7TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

Six-point calibrations were conducted on October 24, 2006 and December 4, 2007 for the two instruments used for initial analyses of all PCDDs and PCDFs. Calibrations included an additional low standard at $0.25 \mathrm{ng} / \mathrm{ml}$, one-half the lowest level required by Method 1613B. Demonstration of linearity at the lower level extended the calibration range and allowed reporting of data without qualifications at lower concentrations.

A five-point calibration for 2,3,7,8-TCDF confirmation on the DB-225 column was conducted on November 1, 2006.

The initial calibrations were acceptable with percent relative standard deviations (\%RSDs) $\leq 20 \%$ for the relative response factors (RRF) for unlabeled compounds and $\leq 35 \%$ for the RRFs for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were conducted on May 5, 6 and 8, 2007 and on the DB225 column on May 8 and 9, 2007. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Calibration checks were also analyzed at the end of each analytical sequence of 12 hours or less. All requirements applicable to the initial calibration check were met for the final check.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. Resolution of 123678 - and 123789-HxCDD isomers, although not required by Method 1613, was also achieved in standards and in all samples. No qualifications to sample data as a result of chromatographic performance were required.

### 5.10 Method Blanks

Two method blanks were prepared and analyzed with this set. OCDD was detected at a trace level in one blank and OCDD, OCDF and1234678-HpCDD were present the other. All samples had concentrations 200 times or more higher than the blank. No data have been qualified.

### 5.11 Laboratory Control Samples (LCS)

An ongoing precision and recovery sample (OPR) was extracted with each preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Peaks that are present at the expected retention time and have both masses for a target analyte but fail to meet ion ratio criteria are reported as EMPC (estimated maximum possible concentrations). 12378-PeCDD in SS046BA, 2378-TCDF in SS062AA and SS076AA, and 2378-TCDD in SS070BA are reported at trace levels as EMPC. The levels noted are below instrument calibration and the peak ratios are marginally outside of the limits.

### 5.13 Confirmation Analyses

$2,3,6,7$-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of $2,3,7,8$-TCDF within the confirmation column calibration range from the DB-5 column analysis. In general, results for 2378-TCDF from the DB5 and DB225 analyses of the samples were comparable. For samples with confirmation data, the final validated data and the TEQ includes the lower of the results from the two analyses for 2378-TCDF.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

All internal standards were recovered within method limits for all samples. However, the OCDD internal standard in SS058AA and SS058BA did not meet the method criterion for ion ratio due to interferences. Both samples had high levels of OCDD and were analyzed at dilution, with the ion ratio outside of limits at both the initial and dilution analysis. Results for OCDD are qualified as estimated in both samples.

### 5.16 Interferences

Cleanup procedures at Vista, which included florisil column cleanup as recommended in Method 1613, were successful in removing most non-PCDD/PCDF constituents in the samples. Polychlorinated diphenylethers (PCDPEs), which are similar in structure and chemical properties to PCDDs/PCDFs cannot be removed, and when present, can interfere with the unequivocal identification and accurate quantitation of PCDFs. They create the same fragments as PCDFs with the same mass ratio and can result in false positives or high bias to PCDF
results. PCDPEs were present in several of the samples in this set. Results for these analytes are qualified as estimated based on the review. Results for 123678-HxCDF and 1234678HpCDF in SS058AA and SS058BA, 1234678-HpCDF in SS066AA and SS070AA, and 123678HxCDF in SS070BA have been qualified as estimated due to potential bias from ethers.

PCDPEs were detected in other samples and peaks with the masses for PCDFs in several samples are potentially attributable to these ethers. Vista includes peaks in the totals for each group (Total TCDFs, etc) that are possibly attributable to PCDPEs. Vista also reports results for the estimated maximum possible concentrations (EMPCs) of totals for each group; this result includes the concentrations of peaks that failed to meet ion ratio criteria for positive identification as a PCDD or PCDF. Results for Totals are qualified as estimated when raw data indicate that ethers are present.

### 5.17 Sample Dilutions

Vista reduced the amount of sample extracted and increased the final extract volume for all samples in this set except SS057DA in order to minimize the number of analytes measured above instrument calibration. Dilutions were still required to place one or more analytes within the calibration range in SS058AA, SS058BA, SS068BA and SS070BA. No additional internal standards were added prior to the dilution analyses.

Data are not qualified for the dilutions since no additional internal standards were added and sensitivity after dilution was acceptable.

### 5.18 Equipment Blank

No equipment blanks were included in the subset of samples submitted to Vista. Results from their analyses at CAS indicated that field contamination was not a concern for sample results.

### 5.19 Field Duplicates

Samples SS070AA and SS070AB are field duplicate samples. Precision was acceptable with relative percent differences for all target analytes below $50 \%$ except for 2378-TCDD. The ion ratio between the peaks for this analyte was slightly outside of the method limits in SS070AB and it was reported as an estimated maximum possible concentration of $20 \mathrm{pg} / \mathrm{g}$. Results are summarized in Table 1 below.

### 5.20 Calculations

Calculations for toxic equivalencies as provided were calculated using 1989 International Toxic Equivalency Factors (TEF) and one-half the detection limit for non-detected analytes. Values have been recalculated for program usage using the revised 2006 WHO TEF values and onehalf the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.
6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

Table 1: PCDDs/PCDFs in Field Duplicate Samples

| chemical_name | $\begin{gathered} \text { SS070AA } \\ \mathrm{pg} / \mathrm{g} \end{gathered}$ | VQ | $\begin{gathered} \text { SS070AB } \\ \mathrm{pg} / \mathrm{g} \end{gathered}$ | VQ | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | VISTA |  | VISTA |  |  |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 24.2 |  | NA | U | 200\% |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 430 |  | 293 |  | 38\% |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1540 |  | 1050 |  | 38\% |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 4640 |  | 3300 |  | 34\% |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 2620 |  | 1800 |  | 37\% |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 162000 |  | 115000 |  | 34\% |
| OCTACHLORODIBENZO-P-DIOXIN | 1490000 |  | 1040000 |  | 36\% |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 11.6 | J | 7.62 | J | 41\% |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 59.6 | J | 42.5 | J | 33\% |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 180 |  | 128 |  | 34\% |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 693 |  | 470 |  | 38\% |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 571 |  | 381 |  | 40\% |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 987 |  | 700 |  | 34\% |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 185 |  | 127 |  | 37\% |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 26900 | J | 18700 |  | 36\% |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 1750 |  | 1220 |  | 36\% |
| OCTACHLORODIBENZOFURAN | 108000 |  | 78200 |  | 32\% |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 263 |  | 123 |  | 73\% |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 3100 |  | 2180 |  | 35\% |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 54100 |  | 38800 |  | 33\% |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 590000 |  | 424000 |  | 33\% |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 440 | J | 319 |  | 32\% |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 3090 | J | 2180 | J | 35\% |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 25800 | J | 17800 | J | 37\% |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 98300 | J | 69000 |  | 35\% |

* 2378-TCDD in SS070BA reported as an EMPC of $20 \mathrm{pg} / \mathrm{g}$.


# DATA VALIDATION REPORT 

# Soil Samples <br> From <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs <br> VISTA 28908

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples during December 2006 at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

Samples were initially submitted to Columbia Analytical Services of Houston, TX for analyses of polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). A subset of the samples were subsequently submitted to Vista Analytical Laboratory, El Dorado Hills, CA for analyses for PCDDs and PCDFs. Results as reported by Vista are valid with a limited number of qualifications.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS076BA | SS100DA |
| :--- | :--- |
| SS095AA | SS100DB |
| SS095BA | SS101AA |
| SS096AA | SS101BA |
| SS099BA | SS101CA |
| SS099CA | SD004AA |
| SS100AA | SD004BA |
| SS100BA |  |
| SS100CA |  |

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples as reported by Vista are valid as reported with a limited number of qualifications.

TEQ values for the samples as calculated by VISTA are based on 1989 International T toxic equivalency factors (ITEFs). TEQs have been recalculated using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the

Functional Guidelines are based, the requirements and criteria of the cited method were applied.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Sample receipt
3. Chain of Custody documentation
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Chromatographic resolution
10. Method blank analysis
11. Laboratory Control Samples
12. Matrix Spike
13. Identification criteria
14. Second column confirmation analysis
15. Detection Limits
16. Labeled compound recoveries
17. Interferences
18. Dilutions
19. Equipment blanks
20. Field Duplicates
21. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. Raw data were reviewed for sample SS101AA.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

### 5.2 Sample Receipt

Samples were received at Vista via FedEx on April 21, 2007 from the CAS Houston, TX laboratory and on April 26, 2007 from the CAS Gainesville, FL facility.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed. Samples SS099CA, SS100BA, SD004AA were listed on the COC from Houston, TX but were not in the cooler. The portions remaining from the
metals and SVOC submittals for these samples as well as SD004BA were subsequently shipped from the Gainesville, FL laboratory to Vista.

### 5.4 Holding Times, Storage and Preservation

Samples had been stored frozen at CAS prior to the shipment. Sample coolers were received at temperatures within $1.6^{\circ} \mathrm{C}-2.4^{\circ} \mathrm{C}$, within the method recommended range. Method 1613B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence. Final checks for calibration and resolution were performed and reported by Vista; all criteria applicable to the initial checks were satisfied for the final checks as well.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. The window-defining mix was combined with the calibration check standard mix so a single analysis addressed both calibration stability and chromatographic resolution. All congeners in the solution were detected within their respective windows. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9-TCDF, 2,3,4,7TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

A six-point calibration was conducted on October 24, 2006 for the instrument used for initial analyses of all PCDDs and PCDFs. Calibrations included an additional low standard at 0.25 $\mathrm{ng} / \mathrm{ml}$, one-half the low level required by Method 1613B. Demonstration of linearity at the lower level extended the calibration range and allowed reporting of data without qualifications at lower concentrations.

A five-point calibration for 2,3,7,8-TCDF confirmation on the DB-225 column was conducted on November 1, 2006. The initial calibrations were acceptable with percent relative standard
deviations (\%RSDs) $\leq 20 \%$ for the relative response factors (RRF) for unlabeled compounds and $\leq 35 \%$ for the RRFs for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were conducted during the period May 7 through May 11 and on May 15, 2007 and on the DB225 column on May 9 and 11, 2007. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Calibration checks were also analyzed at the end of each analytical sequence of 12 hours or less. All requirements applicable to the initial calibration check were met for the final check.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. Resolution of 123678- and 123789-HxCDD isomers, although not required by Method 1613, was also achieved in standards and in all samples. No qualifications to sample data as a result of chromatographic performance were required.

### 5.10 Method Blanks

Three method blanks were prepared and analyzed with this set. OCDD was detected at a trace level in two of these blanks; the other had no detectable target analytes. OCDD was present in all samples at concentrations 1000 times or more higher than the blank. No data have been qualified.

### 5.11 Laboratory Control Samples (LCS)

An ongoing precision and recovery sample (OPR) was extracted with each preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs.
Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Matrix Spike

Matrix spike and matrix spike duplicate samples were prepared from sample SS100DA. Recoveries of all analytes were within control limits except for 1234678-HpCDD and OCDD.

These PCDDs were present in the sample at levels significantly above the amounts spiked and recovery criteria are not applicable.

### 5.13 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Peaks that are present at the expected retention time and have both masses for a target analyte but fail to meet ion ratio criteria are reported as EMPC (estimated maximum possible concentrations). 2378 -TCDD in SS101AA is reported at a trace level as an EMPC. The peak ratio is marginally outside of the limits.

### 5.14 Confirmation Analyses

2,3,6,7-TCDF may not be separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of 2,3,7,8TCDF within the confirmation column calibration range from the DB-5 column analysis. 2378TCDF was detected in the initial analyses of SS100AA, SS100BA, SS110AA and SS101CA, but since the levels were below the calibration range of the second column analysis, confirmation was not performed. The reported concentrations in these samples are qualified as estimated. In general, results for 2378 -TCDF from the DB5 and DB225 analyses of the samples were comparable. For samples with confirmation data, the final validated data and the TEQ includes the lower of the results from the two analyses for 2378-TCDF.

### 5.15 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.16 Labeled Compound Recoveries

All internal standards were recovered within method limits for all samples.

### 5.17 Interferences

Cleanup procedures at Vista, which included florisil column cleanup as recommended in Method 1613, were successful in removing most non-PCDD/PCDF constituents in the samples. Polychlorinated diphenylethers (PCDPEs), which are similar in structure and chemical properties to PCDDs/PCDFs cannot be removed, and when present, can interfere with the unequivocal identification and accurate quantitation of PCDFs. They create the same fragments
as PCDFs with the same mass ratio and can result in false positives or high bias to PCDF results. PCDPEs were present in several of the samples in this set, 1234678-HpCDF in SD004AA was the only target PCDF flagged by Vista as potentially biased high by the presence of an ether. The result for this analyte in this sample is qualified as estimated.

PCDPEs were detected in other samples and peaks with the masses for PCDFs in several samples are potentially attributable to these ethers. Vista includes peaks in the totals for each group (Total TCDFs, etc) that are possibly attributable to PCDPEs but flags the result. Results for totals are qualified as estimated if data are potentially biased high by the inclusion of ethers. Vista also reports results for the estimated maximum possible concentrations (EMPCs) of totals for each group; this includes concentrations for peaks that failed to meet ion ratio criteria for positive identification as a PCDD or PCDF. Results for totals are not used for TEQ calculations.

### 5.18 Sample Dilutions

Sample SS101CA was diluted by a factor of 20 for reanalyses for OCDD. This dilution was made without the addition of more internal standards. Data are not qualified for the dilution.

### 5.19 Equipment Blank

No equipment blanks were included in the subset of samples submitted to Vista. Results from their analyses at CAS indicated that field contamination was not a concern for sample results.

### 5.20 Field Duplicates

Samples SS100DA and SS100DB are field duplicate samples. Although precision exceeded the relative percent difference data quality objective of $50 \%$, concentrations are low and these differences are similar to what was noted for the analyses of these field duplicate samples at CAS. Results are summarized in Table 1 below.

### 5.21 Calculations

Calculations for toxic equivalencies as provided were calculated using 1989 International Toxic Equivalency Factors (TEF) and one-half the detection limit for non-detected analytes. Values have been recalculated for program usage using the revised 2006 WHO TEF values and onehalf the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

Table 1: PCDDs/PCDFs in Field Duplicate Samples

| chemical_name | $\begin{gathered} \text { SS100DA } \\ \mathrm{pg} / \mathrm{g} \\ \hline \end{gathered}$ | VQ | $\begin{gathered} \text { SS100D } \\ \text { B pg/g } \\ \hline \end{gathered}$ | VQ | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 0 | U | 0.546 | J | NA |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 2.58 | J | 5.9 |  | 78\% |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 10.3 |  | 20.8 |  | 68\% |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 24.3 |  | 53.2 |  | 75\% |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 14.9 |  | 28.5 |  | 63\% |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 1150 |  | 2140 |  | 60\% |
| OCTACHLORODIBENZO-P-DIOXIN | 12000 |  | 21400 |  | 56\% |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0 | U | 0 | U | NA |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.477 | J | 0 | U | NA |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 1.04 | J | 2.24 | J | 73\% |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 2.77 | J | 5.94 |  | 73\% |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 2.22 | J | 5.42 |  | 84\% |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 4.89 |  | 10.8 |  | 75\% |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 1.11 | J | 2.16 | J | 64\% |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 98.1 |  | 216 |  | 75\% |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 6.49 |  | 14.9 |  | 79\% |
| OCTACHLORODIBENZOFURAN | 447 |  | 963 |  | 73\% |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 3.63 |  | 5.11 |  | 34\% |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 28.4 |  | 63.9 |  | 77\% |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 416 |  | 943 |  | 78\% |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 5100 |  | 8750 |  | 53\% |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 3.32 |  | 4.71 |  | 35\% |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 18 |  | 43.3 |  | 83\% |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 97.4 |  | 229 |  | 81\% |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 380 |  | 812 |  | 72\% |

# DATA VALIDATION REPORT 

# Soil Samples <br> From <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs <br> VISTA 28909

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples during December 2006 at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

Samples were initially submitted to Columbia Analytical Services of Houston, TX for analyses of polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). A subset of the samples were subsequently submitted to Vista Analytical Laboratory, El Dorado Hills, CA for analyses for PCDDs and PCDFs. Results as reported by Vista are valid with a limited number of qualifications.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS002AA | SS020AA |
| :--- | :--- |
| SS002CA | SS024CA |
| SS003BA | SS026AA |
| SS005BA | SS026BA |
| SS006AA | SS035AA |
| SS006BA |  |

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples as reported by Vista are valid as reported with a limited number of qualifications.

TEQ values for the samples as calculated by VISTA are based on 1989 International T toxic equivalency factors (ITEFs). TEQs have been recalculated using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Sample receipt
3. Chain of Custody documentation
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Chromatographic resolution
10. Method blank analysis
11. Laboratory Control Samples
12. Matrix Spike
13. Identification criteria
14. Second column confirmation analysis
15. Detection Limits
16. Labeled compound recoveries
17. Interferences
18. Dilutions
19. Equipment blanks
20. Field Duplicates
21. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. Raw data were reviewed for samples SS026AA, SS024CA and SS005BA.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

### 5.2 Sample Receipt

Samples were received at Vista via FedEx on April 21, 2007 from the CAS Houston, TX laboratory and on April 26, 2007 from the CAS Gainesville, FL facility.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed. Samples SS005BA, SS020AA, SS024CA, SS026AA and SS026BA were listed on the COC from Houston, TX but were not in the cooler. The portions remaining from the metals and SVOC submittals for these samples were subsequently shipped from the Gainesville, FL laboratory to Vista.

### 5.4 Holding Times, Storage and Preservation

Samples had been stored frozen at CAS prior to the shipment. Sample coolers were received at temperatures within $1.6^{\circ} \mathrm{C}-2.4^{\circ} \mathrm{C}$, within the method recommended range. Method 1613B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence. Final checks for calibration and resolution were performed and reported by Vista; all criteria applicable to the initial checks were satisfied for the final checks as well.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. The window-defining mix was combined with the calibration check standard mix so a single analysis addressed both calibration stability and chromatographic resolution. All congeners in the solution were detected within their respective windows. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD was less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9-TCDF, 2,3,4,7TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

A six-point calibration was conducted on October 24, 2006 for the instrument used for initial analyses of all PCDDs and PCDFs. Calibrations included an additional low standard at 0.25 $\mathrm{ng} / \mathrm{ml}$, one-half the low level required by Method 1613B. Demonstration of linearity at the lower level extended the calibration range and allowed reporting of data without qualifications at lower concentrations.

A five-point calibration for 2,3,7,8-TCDF confirmation on the DB-225 column was conducted on November 1, 2006. The initial calibrations were acceptable with percent relative standard deviations (\%RSDs) $\leq 20 \%$ for the relative response factors (RRF) for unlabeled compounds and $\leq 35 \%$ for the RRFs for labeled compounds. The relative retention times and ion abundance ratios
were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were conducted on May 8 and 9, 2007 and on the DB225 column on May 9, 2007. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Calibration checks were also analyzed at the end of each analytical sequence of 12 hours or less. All requirements applicable to the initial calibration check were met for the final check.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. Resolution of 123678 - and $123789-H x C D D$ isomers, although not required by Method 1613, was also achieved in standards and in all samples. No qualifications to sample data as a result of chromatographic performance were required.

### 5.10 Method Blanks

One method blank was prepared and analyzed with this set. OCDD was detected at a trace level in this blank. OCDD was present in all samples at concentrations 1000 or more higher than the blank. No data have been qualified.

### 5.11 Laboratory Control Samples (LCS)

An ongoing precision and recovery sample (OPR) was extracted with each preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs.
Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Matrix Spike

Matrix spike and matrix spike duplicate samples were prepared from sample SS002AC. Recoveries of all tetra-, penta- and hexachlorinated PCDDs and PCDFs were within control limits. Levels of $1234678-H p C D D$, OCDD, $1234678-H p C D F$ and OCDF were present in the sample at levels significantly above the amounts spiked and recovery criteria are not applicable.

### 5.13 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Peaks that are present at the expected retention time and have both masses for a target analyte but fail to meet ion ratio criteria are reported as EMPC (estimated maximum possible concentrations). 2378-TCDD in SS003BA is reported at a trace level as an EMPC. The level noted is below instrument calibration and the peak ratio is marginally outside of the limits.

### 5.14 Confirmation Analyses

$2,3,6,7$-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of $2,3,7,8$-TCDF within the confirmation column calibration range from the DB-5 column analysis. 2378-TCDF was detected in the initial analysis of SS035AA, but since the level was below the calibration range of the second column analysis, confirmation was not performed. The reported concentration in this sample is qualified as estimated. In general, results for 2378 -TCDF from the DB5 and DB225 analyses of the samples were comparable. For samples with confirmation data, the final validated data and the TEQ includes the lower of the results from the two analyses for 2378TCDF.

### 5.15 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.16 Labeled Compound Recoveries

All internal standards were recovered within method limits for all samples.

### 5.17 Interferences

Cleanup procedures at Vista, which included florisil column cleanup as recommended in Method 1613, were successful in removing most non-PCDD/PCDF constituents in the samples. Polychlorinated diphenylethers (PCDPEs), which are similar in structure and chemical properties to PCDDs/PCDFs cannot be removed, and when present, can interfere with the unequivocal identification and accurate quantitation of PCDFs. They create the same fragments as PCDFs with the same mass ratio and can result in false positives or high bias to PCDF results. PCDPEs were present in several of the samples in this set, 1234678-HpCDF in SS005BA and 123678-HxCDF in SS020AA were the only target PCDFs flagged by Vista as

## amed ${ }^{0}$

potentially biased high by the presence of an ether. Results for these analytes in these samples are qualified as estimated. Review of raw data for SS026AA also identified the presence of PDPEs at the retention time of $123678-H x C D F, 1234678-H p C D F$ and $1234789-H p C D F$ that may have biased data high for the target PCDFs. Results for these analytes are qualified as estimated based on the review.

PCDPEs were detected in other samples and peaks with the masses for PCDFs in several samples are potentially attributable to these ethers. Vista includes peaks in the totals for each group (Total TCDFs, etc) that are possibly attributable to PCDPEs. Vista also reports results for the estimated maximum possible concentrations (EMPCs) of totals for each group; this result includes the concentrations of peaks that failed to meet ion ratio criteria for positive identification as a PCDD or PCDF. Results for Totals are qualified as estimated when raw data indicate that ethers are present.

### 5.18 Sample Dilutions

Sample SS020AA was diluted by a factor of 10 and samples SS005AA, SS006AA, SS006BA were diluted by a factor of 20 for reanalyses for OCDD. Sample SS026AA was diluted by a factor of 100 for reanalysis for 1234678 -HpCDD, OCDD and OCDF. All dilutions were made without the addition of more internal standards. Data are not qualified for the dilutions.

### 5.19 Equipment Blank

No equipment blanks were included in the subset of samples submitted to Vista. Results from their analyses at CAS indicated that field contamination was not a concern for sample results.

### 5.20 Field Duplicates

Samples SS002AA and SS002AC are field duplicate samples. Precision was acceptable with relative percent differences for all analytes below 50\%. Results are summarized in Table 1 below.

### 5.21 Calculations

Calculations for toxic equivalencies as provided were calculated using 1989 International Toxic Equivalency Factors (TEF) and one-half the detection limit for non-detected analytes. Values have been recalculated for program usage using the revised 2006 WHO TEF values and onehalf the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

Table 1: PCDDs/PCDFs in Field Duplicate Samples

| chemical_name | $\begin{gathered} \text { SS002AA } \\ \mathrm{pg} / \mathrm{g} \end{gathered}$ | VQ | $\begin{gathered} \text { SS002AC } \\ \mathrm{pg} / \mathrm{g} \end{gathered}$ | VQ | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | VISTA |  | VISTA |  |  |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 1.08 |  | 1.11 |  | 3\% |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 8.01 |  | 7.92 |  | 1\% |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 26 |  | 25.5 |  | 2\% |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 94.7 |  | 96.2 |  | 2\% |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 44.3 |  | 41.9 |  | 6\% |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 5550 |  | 5330 |  | 4\% |
| OCTACHLORODIBENZO-P-DIOXIN | 53000 |  | 51900 |  | 2\% |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 1.3 |  | 1.35 |  | 4\% |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.925 | J | 0.82 | J | 12\% |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 2.76 |  | 2.65 |  | 4\% |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 11.2 |  | 10.5 |  | 6\% |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 6.97 |  | 5.93 |  | 16\% |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 11.6 |  | 10.8 |  | 7\% |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 2.59 |  | 2.33 | J | 11\% |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 552 |  | 516 |  | 7\% |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 33.3 |  | 32 |  | 4\% |
| OCTACHLORODIBENZOFURAN | 3210 |  | 3070 |  | 4\% |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 19 |  | 21.2 |  | 11\% |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 105 |  | 103 |  | 2\% |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 2310 |  | 2250 |  | 3\% |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 33700 |  | 33800 |  | 0\% |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 24.8 |  | 24.6 |  | 1\% |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 59.2 |  | 56.3 | J | 5\% |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 432 |  | 390 | J | 10\% |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 2480 |  | 2320 |  | 7\% |

## Data Validation Report for the Analysis of PCDD/PCDF Samples by CAS

# DATA VALIDATION AND REVIEW 

Soil and Sediment Samples
from

## Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL

Analyses for PCDDs/PCDFs
CAS Reports J0605735, J0605789, J0605780, J0605810, J0605839, J0605876, J0605879, J0605890, J0605919, J0605944

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

## SUMMARY

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil and sediment samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the site.

A total of 152 soil samples, 13 sediment samples and two aqueous field blanks were collected during the period of December 1 through December 12, 2006 for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL and subsequently transferred to the CAS laboratory in Houston, TX for analysis for PCDDs and PCDFs in accordance with EPA Method 1613. These samples were analyzed at CAS under Service Request Numbers J0605735, J0605789, J0605780, J0605810, J0605839, J0605876, J0605879, J0605890, J0605919, J0605944

Method requirements for instrument tuning and initial and continuing calibration were satisfied for the analyses. Method blanks and equipment blanks were free of significant contamination and laboratory control samples demonstrated acceptable accuracy and precision. Results for analytes within the range of the instrument calibration during the initial analyses of samples are generally valid as reported. Results below the calibration range are qualified as estimated. Results for analytes measured after dilution, however, should in many cases be considered as gross estimates. Calculation protocols followed by CAS for dilution analyses are poorly documented and likely introduce significant bias.

Interferences from non-PCDD/PCDF organics in the samples were present in many samples, especially those with elevated concentrations of dioxins and furans. These unidentifiable organics were not successfully removed during sample preparation and as a result the apparent recoveries of the internal standards for the hexa-, hepta- and octachlorinated PCDDs and PCDFs were well above method limits in affected samples. No reliable data on recoveries of these standards could be obtained. The laboratory subsequently adjusted the results from dilutions of these samples in a manner that is considered likely to introduce significant low bias to their final reported results.

While it is evident that PCDDs and PCDFs are present in these affected samples, the interferences preclude accurate quantitations. As detailed in the attached validation reports for each sample grouping, AMEC has identified those measurements that should be considered as gross estimates. While exact values for the toxicity equivalents (TEQs) for affected samples cannot be determined with confidence, conservative estimates of potential bias can be made.

The major contributors to the TEQs at this site are $1234678-\mathrm{HpCDD}$ and OCDD. In most cases, the laboratory assumed that the recoveries of the affected hexa-, hepta and octachlorinated internal standards had been comparable to recoveries of the tetra- and pentachlorinated internal standards which were not affected by the interferences and were near $100 \%$ in most samples. However, in blanks, laboratory control samples and relatively clean field samples not affected by the interference, recoveries of the HpCDD internal standard were typically $60 \%$, while the OCDD internal standard frequently recovered near $20-30 \%$. As a conservative approach,

AMEC recalculated TEQs for the affected samples using the assumption that the HpCDD recovery could have been as low as 33\% and that the OCDD recovery could be as low as 10\%.
Results for these samples should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and site action limits. Although no samples have been rejected in their entirety based on the validation, they may not all be suitable to support project decisions.

## LIMITATIONS

This report was prepared exclusively for Beazer East by AMEC Earth \& Environmental, Inc. The quality of information, and conclusions contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation; ii) data supplied by outside sources; and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended to be used by Beazer East only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

# DATA VALIDATION REPORT 

# Soil Samples <br> from <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs

CAS Report J0605735

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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Attachment A: Data Summary
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## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

This report provides an evaluation of data for six samples collected on December 1, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December 5, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605735.

### 2.0 SAMPLES

Samples included in this set are listed below.
SS093AA
SS093BA
SS081AA
SS081BA
SS071AA
SS071BA

Samples from the locations noted below represent site perimeter samples:
SS071 - Southern border near SE corner
SS081 - Eastern border near SE corner

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples with PCDDs/PCDFs within the range of the instrument calibration upon initial analysis are generally valid as reported. Results below the calibration range are qualified as estimated. Results for analytes initially above the calibration range and then reported from dilution analyses are qualified as estimated with a wide window of uncertainty.

Matrix interferences were not successfully removed during the extract cleanup steps for samples from locations SS081 and SS093. These interferences resulted in internal standard recoveries that were outside control limits and required qualification of associated target analyte results. The absence of valid internal standard recoveries then precluded accurate quantitation of analyte concentrations from dilution analyses. CAS further compounded the uncertainty by
adjusting data by factors that are not considered applicable or reliable. Results for these samples should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and site action limits. Although no samples have been rejected based on the validation, they may not all be suitable to support project decisions.

Toxicity equivalency (TEQ) values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

Raw data were reviewed for all sample and quality control analyses associated with the analyses of the site border samples.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries
15. Field blanks
16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. All reported results on the final summary forms were verified from the raw data instrument printouts for sample concentrations and chromatograms were reviewed for all samples in this set.

Results for the total congener class PCDDs and PCDFs have not been validated and should be considered as estimated in all samples. These data are not included in the TEQ calculations. These are quantified based on the assumption that their response factors are the same as the 2378 -substitued isomers. All data reported are from the initial analyses and may include congeners above instrument calibration. Any factors affecting the accuracy of results for the 2378 -isomers apply to the entire congener group and interferences in addition to those noted for the 2378 -isomers may significantly bias data for these groupings of PCDDs and PCDFs.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The submitted data packages contained raw data and instrument records required for full validation. However, the subsequent data adjustments made by CAS for dilution analyses were not documented.

It should be noted that data for the required QA/QC analyses including the mass calibration and resolution checks, window-defining mix and continuing calibration standards were not in chronological order in the package.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 5, 2006.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $1^{\circ} \mathrm{C}$, within the method recommended range. Method 1613 B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. All congeners in the solution were detected at expected times. The height of the valley between the closely eluting isomers 1,2,3,8-TCDD and 2,3,7,8-TCDD less than 25\%. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9TCDF, $2,3,4,7-$ TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

Two instruments were used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. Five-point calibrations were conducted on October 25 and November 7, 2006. Calibration for $2,3,7,8$-TCDF confirmation on the DB-225 column was conducted on November 9 , 2006. The initial calibrations were acceptable with $\%$ RSDs $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted on December 8, 2006 with analyses of samples at dilution on December 11, 2007. Analyses for 2,3,7,8-TCDF on the DB225 column were conducted on December 11, 2006. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package. Method 1613 does not specifically require these.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. However, resolution of 123478- and 123678-HxCDD isomers was not achieved in some standards or in several samples. Since the TEF of these isomers is the same, this does not affect the TEQ for the sample. In several instances, apparent matrix interferences resulted in poor chromatographic separations for target analytes from nontarget PCDDs and PCDFs. Results for affected measurements are qualified as estimated.

```
SS093AA 2378-TCDD
SS081AA 123789-HxCDF, 12378-PeCDF, 23478-PeCDF, 123789-HxCDF, 123678-HxCDD
SS071AA 123478-HxCDD, 234678-HxCDF
```


### 5.10 Method Blanks

One method blank was prepared with the initial extraction and this was analyzed twice. The method blank contained trace levels of several target PCDDs and PCDFs, including. OCDD, $123678-H x C D D, 1234678-H p C D D$, OCDF and $1234678-H p C D F$. Since the duplicate analyses of the one method blank demonstrated variability in the levels detected, the maximum concentration from the two analyses of the method blank were used for data qualifications. All reported sample concentrations of these analytes were greater than 5 times the blanks and were not qualified.

### 5.11 Laboratory Control Samples (LCS)

Laboratory control sample and a duplicate were extracted with the preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Samples in this set contained a variety of interferents resulting in peaks that failed criteria for identification. These interferents may be non-PCDD/PCDFs with one or both of the mass fragments of a target analyte. Review of the raw data confirmed that the majority of these results, reported by CAS as estimated maximum possible concentrations (EMPC) with the "K" qualifier, represented peaks with ratios close to that expected for the respective PCDD of PCDF. In accordance with Region 4 guidance and the USEPA Functional Guidelines, results for these analytes in the affected samples have been qualified as non-detected with the reporting
limit set at the amount calculated. This provides a high bias to the reporting limit since the actual maximum possible amount in the sample would be include only that fraction of the area of one peak that would satisfy the ratio requirement. Based on review of the data, it is considered likely that the target analyte is present at a concentration below the reported value in all instances.

234678-HxCDF failed to meet identification criteria in sample SSO93AA on its initial analysis. The peak did meet the ion ratio criterion upon dilution. Although CAS reported the sample with the initial EMPC result, this has been replaced by the results upon dilution for calculation of the TEQ. CAS included all EPMC peaks as detections in the TEQ calculation. TEQs have been corrected to treat these peaks as non-detected analytes with elevated reporting limits.

### 5.13 Confirmation Analyses

$2,3,6,7-$ TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of $2,3,7,8$-TCDF from the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards for some or all HxCDDs, HpCDD, HxCDF and HpCDDs were above control limits for the initial analysis of SS093AA, SS093BA, SS081AA and SS081BA

Review of the raw data for the above samples indicates that the extract cleanup procedures used did not remove significant matrix interferences, and these apparently affected the measurement of the 123789-HxCDD recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards. Since the measurement of the $123789-H x C D D$ recovery standard is biased low by these interferences, the apparent recoveries of the related internal standards are biased high. No reliable data on the recovery of the internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs can be obtained when this occurs. All reported data for target dioxins and furans with internal standard recoveries outside of the limits are qualified as estimated. In addition, the calculated recoveries of the OCDD internal standard, while within the method control limits, must also be biased high since these recoveries are also calculated against the 123789-HxCDD recovery standard.

### 5.16 Interferences

As noted above, matrix interferences affected the quantitation of the recovery standard used to determine internal standard recoveries for hexa-, hepta- and octachlorinated dioxins and furans.

Matrix interferences were also noted to affect the analyses of other PCDDs/PCDFs. Polychlorinated ethers were present in most samples and affected the identification of totals for each congener level. Ethers that interfered with target PCDFs were noted in SS071BA at the retention times for 12378-PeCDF and 123478-HxCDF and in SS093A at the retention time of $123478-H x C D F$. Reported results for these analytes are qualified to be estimated at the level reported.

### 5.17 Sample Dilutions

Samples SS093AA, SS093BA, SS081AA and SS081BA, contained levels of PCDDs and PCDFs above the instrument calibration. The primary corrective action for this in Method 1613 is to extract a smaller portion of the sample. Dilution by a factor of 10 is an alternative if it is determined that a smaller sample size will not be representative. Although these samples are characterized as sandy soils where representativeness would not be expected to be problematic, no reeextractions were performed. Samples were diluted by factors up to 100 by adding more internal standards to the extract.

Dilution with internal standards introduces uncertainty into the analysis since measurement by isotope dilution is no longer possible. In the cases where apparent recoveries of internal standards on the initial analysis were greater than $100 \%$, results for the dilution analysis were calculated and then adjusted for recoveries of one or more tetra- and pentachlorinated internal standards in the initial analysis. It should be noted however, that CAS recoveries of tetra and pentachlorinated internal standards from their blanks, quality assurance samples and relatively clean soils typically are significantly higher than their recoveries of hepta- and octachlorinated internal standards. This secondary adjustment introduces significant uncertainty into the reported results and leads to a low bias in the sample results for hexa- through octachlorinated PCDDs and PCDFs from dilution analyses. Results for affected analytes, including 1234678HpCDD, OCDD, and OCDF in samples SS093AA, SS093BA, SS081AA and SS081BA and additionally $1234678-H p C D F$ in SS093AA should be considered as gross estimates.

The combined effects of the dilution and subsequent data manipulation cannot be quantified. It was noted, however, that while OCDD typically was reported at higher levels from the dilution analysis, 1234678 -HpCDD, OCDF and 1234678 -HpCDF were significantly lower after dilution.

CAS does not reanalyze samples where OCDD and/or OCDF are the only analytes above the calibration range. The reported results for OCDD in SS071AA and SS071BA were above calibration and are qualified as estimated.

### 5.18 Data Consistency

Results obtained on dilution for the samples were compared to the initial analyses. Results for all analytes above the calibration range in the initial analysis except OCDD are lower upon dilution, with OCDF generally less than half the initial result. Results for these are already qualified as estimated based on the internal standard and dilution issues noted above; the significantly lower concentrations reported from a dilution analysis reflect the uncertainty as well.

SS081AA OCDF
SS081BA 1234678-HpCDD, OCDF
SS093AA 1234678-HpCDF, OCDF
SS093BA 1234678-HpCDD, OCDF

### 5.19 Equipment Blank

No equipment blank was collected with this sample set.

### 5.20 Field Duplicates

No field duplicate samples were submitted with this set of samples.

### 5.21 Calculations

Calculations for measurements within the instrument calibration range were verified for the initial analyses of perimeter samples. As noted above, calculations from dilutions for hexa, hepta and octa-chlorinated dioxins and furans were adjusted for the initial recoveries of tetra or tetra and pentachlorinated internal standards. CAS calculations of the adjustment factors for each sample were not documented and in some cases the exact value used could not be verified. All data affected by this procedure are qualified as estimated with a wide window of uncertainty.

Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-00

ATTACHMENT A

## DATA SUMMARY

| Chemical Name | SS071AA |  |  | SS071BA |  |  | SS081AA |  |  | SS081BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 0.24 | J | OC |  | U | EM | 1.46 |  |  | 2.21 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 4.43 | J | OC | 3.29 | J | OC | 45.09 |  |  | 44.03 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 12.15 | J | CR | 9.10 |  |  | 110.49 | J | I | 93.26 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 39.77 |  |  | 27.32 |  |  | 284.43 | J | I,CR | 240.27 | J | I |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 37.69 |  |  | 27.00 |  |  | 186.14 | J | I,CR | 229.79 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 1,688.64 |  |  | 1,202.93 |  |  | 8,247.90 | J | I,LE | 7,169.17 | J | LE,SE |
| OCTACHLORODIBENZO-P-DIOXIN | 15,534.01 | J | E | 10,958.78 | J | E | 51,015.14 | J | LE | 40,712.44 | J | LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U | EM |  | U |  | 1.06 |  |  | 0.82 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.55 | J | OC | 0.43 | J | DP,OC | 3.09 | J | CR,OC | 2.19 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.82 | J | OC | 0.78 | J | OC | 4.56 | J | CR,OC | 3.54 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 5.20 |  |  | 4.12 | J | DP,OC | 33.97 | J | 1 | 27.03 |  | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 4.10 | J | OC | 3.18 | J | OC | 22.81 | J | 1 |  | UJ | EM, |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 0.98 | J | I,OC,CR | 0.82 | J | I,OC |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 4.07 | J | OC,CR | 2.89 | J | OC | 21.72 | J | 1 | 10.11 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 223.71 |  |  | 156.28 |  |  | 1,035.21 | J | 1 | 670.87 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 11.71 |  |  | 8.10 |  |  | 64.50 | J | 1 | 42.72 | J | 1 |
| OCTACHLORODIBENZOFURAN | 1,204.69 |  |  | 774.55 |  |  | 2,875.66 | J | LE,SE | 2,098.47 | J | LE,SE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 3.92 |  |  | 6.63 |  |  | 54.08 |  |  | 96.86 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 57.60 |  |  | 42.78 |  |  | 554.40 |  |  | 740.02 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 572.69 |  |  | 394.65 |  |  | 5,575.50 |  |  | 4,438.79 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 6,088.93 |  |  | 4,303.93 |  |  | 28,117.79 |  |  | 24,272.71 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 11.33 |  |  | 8.50 |  |  | 41.36 |  |  | 32.94 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 31.84 |  |  | 25.26 |  |  | 219.01 |  |  | 121.56 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 168.12 |  |  | 118.58 |  |  | 1,179.11 |  |  | 347.64 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 766.54 |  |  | 535.26 |  |  | 4,181.86 |  |  | 2,964.63 |  |  |


| Chemical Name | SS093AA |  |  | SS093BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 12.65 | J | CR | 0.64 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 152.80 |  |  | 17.90 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 347.61 | J | I | 43.23 | J | I |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1,196.91 | J | 1 | 194.27 | J | I |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 555.25 | J | 1 | 92.42 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 29,721.93 | J | E,LE | 4,686.96 | J | LE,SE,E |
| OCTACHLORODIBENZO-P-DIOXIN | 223,648.85 | J | E,LE | 37,940.03 | J | LE,E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 3.54 |  |  | 1.33 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 22.24 |  |  | 3.11 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 26.21 |  |  | 9.07 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 196.06 | J | I,DP | 49.87 | J | I |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 146.72 | J | 1 | 28.53 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 7.31 | J | 1 | 1.29 | J | 1 |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 119.00 | J | DD | 17.95 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 3,248.51 | J | I,LE,SE | 1,054.45 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 483.84 | J | M | 92.02 | J | 1 |
| OCTACHLORODIBENZOFURAN | 14,000.30 | J | LE,SE | 2,924.59 | J | LE,SE,E |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 34.97 |  |  | 8.05 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 651.69 |  |  | 95.15 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 16,866.13 |  |  | 1,650.24 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 19,326.99 |  |  | 21,439.40 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 87.44 |  |  | 36.44 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 856.01 |  |  | 191.14 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 7,345.67 |  |  | 644.82 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 17,156.40 |  |  | 4,120.70 |  |  |

ATTACHMENT BREASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.

# DATA VALIDATION REPORT 

# Soil Samples <br> from <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

Analyses for PCDDs/PCDFs
CAS Report J0605780

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## List of Attachments

Attachment A: Data Summary
Attachment B: Reason Codes for Data Qualification

## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.
This report provides an evaluation of data for three samples collected on December 4, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December 5, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605780.

### 2.0 SAMPLES

Samples included in this set are listed below.
SS007AA
SS007BA
SS007BC
These samples are site perimeter samples on the western boundary.

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for these samples are generally valid as reported. Results below the calibration range are qualified as estimated. Results for OCDD are reported from measurements above the calibration range and are qualified as estimated.

Toxicity equivalency (TEQ) values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the

Functional Guidelines are based, the requirements and criteria of the cited method were applied.

Raw data were reviewed for all sample and quality control analyses associated with the analyses of these site border samples.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries
15. Field blanks
16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. All reported results on the final summary forms were verified from the raw data instrument printouts for sample concentrations and chromatograms were reviewed for all samples in this set.

Results for the total congener class PCDDs and PCDFs have not been validated and should be considered as estimated in all samples. These data are not included in the TEQ calculations. These are quantified based on the assumption that their response factors are the same as the 2378 -substitued isomers. All data reported are from the initial analyses and may include congeners above instrument calibration. Any factors affecting the accuracy of results for the 2378-isomers apply to the entire congener group and interferences in addition to those noted for the 2378 -isomers may significantly bias data for these groupings of PCDDs and PCDFs.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The submitted data packages contained raw data and instrument records required for full validation.

It should be noted that data for the required QA/QC analyses including the mass calibration and resolution checks, window-defining mix and continuing calibration standards were not in chronological order in the package.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 7, 2006.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $1^{\circ} \mathrm{C}$, within the method recommended range. Method 1613B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. All congeners in the solution were detected at expected times. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9TCDF, $2,3,4,7-$ TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

One instrument was used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. A five-point calibration was conducted on November 7, 2006. Calibration for
$2,3,7,8$-TCDF confirmation on the DB-225 column was conducted on November 9, 2006. The initial calibrations were acceptable with $\%$ RSDs $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted on December 12, 2006 and January 5, 2007 with analyses of samples at dilution on December 22, 2006 and January 6, 2007. Analyses for $2,3,7,8$-TCDF on the DB225 column were conducted on December 13, 2006 and January 9, 2007. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package. Method 1613 does not specifically require these.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied.

### 5.10 Method Blanks

One method blank was prepared with the initial extraction and a second with the reextraction of SS007BC. The first method blank contained trace levels of 123678-HxCDD, OCDD and $1234678-H p C D F ;$ the second contained $123678-H x C D D$, OCDD and OCDF. All reported sample concentrations of these analytes were greater than 5 times the blanks and were not qualified.

### 5.11 Laboratory Control Samples (LCS)

Laboratory control sample and a duplicate were extracted with the preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met. No instances were noted for these samples where a peak at the expected retention time for a target analyte failed to satisfy the ratio requirement for identification.

### 5.13 Confirmation Analyses

$2,3,6,7$-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of $2,3,7,8$-TCDF from the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards were within control limits for all initial analyses. Additional internal standards were added for analyses at dilution, and apparent recoveries of the pentachlorinated internal standards in SS007AA and SS007BA were elevated. Results for the associated target analytes are reported from the initial analysis and data have not been qualified.

### 5.16 Interferences

Matrix interferences were noted that would potentially bias results for non-target PCDDs and PCDFs, but no significant interferences to the target analytes were noted.

### 5.17 Sample Dilutions

All three samples contained OCDD above the instrument calibration range, with 1234678HpCDD also above calibration in SS007BA. Samples were diluted by factors up to 100 by adding more internal standards to the extract.

CAS does not reanalyze samples where OCDD and/or OCDF are the only analytes above the calibration range. The reported results for OCDD in all three samples remained above calibration after the dilution and are qualified as estimated.

### 5.18 Data Consistency

Results obtained on dilution for the samples were compared to the initial analyses. Reasonable agreement was noted for analytes present within the calibration range for both analyses.

### 5.19 Equipment Blank

No equipment blank was collected with this sample set.

### 5.20 Field Duplicates

No field duplicate samples were submitted with this set of samples.

### 5.21 Calculations

Calculations for measurements within the instrument calibration range were verified.
Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-00

ATTACHMENT A

## DATA SUMMARY

| Chemical Name | SS007AA |  |  | SS007BA |  |  | SS007BC |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 2.09 |  |  | 2.61 |  |  | 2.26 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 29.11 |  |  | 39.59 |  |  | 40.54 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 81.23 |  |  | 108.69 |  |  | 121.15 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 253.99 |  |  | 336.56 |  |  | 462.90 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 246.88 |  |  | 338.73 |  |  | 356.93 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 11,911.19 |  |  | 14,276.19 |  |  | 16,845.94 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 93,948.36 | J | E | 114,044.05 | J | E | 144,856.58 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.76 | J | OC | 1.08 | J | OC | 1.62 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 3.92 | J | OC | 5.26 | J | OC | 9.52 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 7.60 |  |  | 10.16 |  |  | 14.77 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 67.73 |  |  | 93.01 |  |  | 139.07 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 34.04 |  |  | 46.08 |  |  | 77.31 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 1.25 | J | OC | 1.73 | J | OC |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 19.48 |  |  | 27.58 |  |  | 71.63 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 1,382.00 |  |  | 1,898.06 |  |  | 2,704.31 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 84.49 |  |  | 115.07 |  |  | 176.20 |  |  |
| OCTACHLORODIBENZOFURAN | 6,975.37 |  |  | 9,426.47 |  |  | 11,901.89 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 13.00 |  |  | 11.33 |  |  | 7.29 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 212.70 |  |  | 292.32 |  |  | 274.80 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 3,814.34 |  |  | 5,155.31 |  |  | 6,758.84 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 39,697.86 |  |  | 49,924.61 |  |  | 62,918.05 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 24.11 |  |  | 31.28 |  |  | 34.84 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 238.12 |  |  | 321.07 |  |  | 444.56 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 1,789.13 |  |  | 2,487.42 |  |  | 3,251.61 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 5,565.63 |  |  | 7,652.56 |  |  | 11,496.57 |  |  |

ATTACHMENT B
REASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.

# DATA VALIDATION REPORT 

# Soil Samples <br> from <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs

## CAS Report J0605810

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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Attachment A: Data Summary
Attachment B: Reason Codes for Data Qualification

## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

This report provides an evaluation of data for sixteen samples collected on December 5, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December 8, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605839.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS006AA | SS043AA |
| :--- | :--- |
| SS006BA | SS043BA |
| SS002AA | SS043BB |
| SS002AC | SS044AA |
| SS002BA | SS044BA |
| SS058AA | SS076AA |
| SS058BA | SS076BA |
| SS037AA |  |
| SS037BA |  |

Samples from the locations noted below represent site perimeter samples:

| SS006 | West boundary |
| :--- | :--- |
| SS002 | Southwest boundary |

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results PCDDs/PCDFs within the range of the instrument calibration upon initial analysis are generally valid as reported. Results below the calibration range are qualified as estimated. The majority of data points for samples from SS002, SS006, SS037, SS0044, SS058 and SS076 are qualified as estimated, and all measurements made from sample dilutions must be considered as gross estimates.

The minimal cleanup procedures implemented did not remove matrix interferences in samples from these above locations. These interferences resulted in internal standard recoveries that were outside control limits and required qualification of associated target analyte results. The absence of valid internal standard recoveries then compromised the quantitation of analyte concentrations from dilution analyses. CAS further compounded the uncertainty by adjusting data by factors that are not considered applicable. Results for these samples should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and site action limits. Although no samples have been rejected based on the validation, they may not all be suitable to support project decisions.

Toxicity equivalency (TEQ) values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

Raw data were reviewed for all sample and quality control analyses associated with perimeter samples in this set.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries
15. Field blanks
16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. All reported results on the final summary forms were verified from the raw data instrument printouts for sample concentrations and chromatograms were reviewed for perimeter samples in this set.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The submitted data packages contained raw data and instrument records required for full validation. However, the subsequent data adjustments made by CAS for dilution analyses were not documented and could not in all cases be traced. An amended report for SS058BA was provided after errors were noted during validation; this provides documentation for representative data calculations.

It should be noted that data for the required QA/QC analyses including the mass calibration and resolution checks, window-defining mix and continuing calibration standards were not in chronological order in the package.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 8, 2006.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $1^{\circ} \mathrm{C}$. Method 1613 B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. All congeners in the solution were detected at expected times. The height of the valley between the closely eluting isomers 1,2,3,8-TCDD and 2,3,7,8-TCDD less than 25\%. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9TCDF, $2,3,4,7-$ TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

Two instruments were used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. Five-point calibrations were conducted on October 25 and November 7, 2006. Calibration for $2,3,7,8$-TCDF confirmation on the DB-225 column was conducted on November 9 , 2006. The initial calibrations were acceptable with $\%$ RSDs $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted on December 23 and 24, 2006 with analyses of samples at dilution on January 3, 2007. Analyses for 2,3,7,8-TCDF on the DB225 column were conducted on December 28 and 29, 2006. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package. Method 1613 does not specifically require these.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. However, resolution of 123678- and 123789-HxCDD isomers was not achieved in some standards or in the perimeter samples for which raw data were reviewed. Results for affected measurements in these samples are already qualified as estimated based on internal standard recoveries.

### 5.10 Method Blanks

One method blank was prepared with the initial extraction. The method blank contained trace levels of OCDD and 1234678-HpCDD. A separate method blank accompanied the reextraction of SS058BA. This contained low levels of OCDD, OCDF and 1234678 -HpCDD. All reported sample concentrations of these analytes were greater than 5 times the blanks and were not qualified.

### 5.11 Laboratory Control Samples (LCS)

Laboratory control samples and a duplicate were extracted with the preparation batches. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits with the exception of OCDD, which recovered at 194\% from the LCS. Results for OCDD in all samples are already qualified as above calibration or as a result of matrix interferences that precluded accurate determination of the internal standard recovery subsequently used to calculate results upon dilution.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Samples in this set contained a variety of interferents resulting in peaks that failed criteria for identification. These interferents may be non-PCDD/PCDFs with one or both of the mass fragments of a target analyte. Review of the raw data confirmed that the majority of these results, reported by CAS as estimated maximum possible concentrations (EMPC) with the "K" qualifier, represented peaks with ratios close to that expected for the respective PCDD of PCDF. In accordance with Region 4 guidance and the USEPA Functional Guidelines, results for these analytes in the affected samples have been qualified as non-detected with the reporting limit set at the amount calculated. This provides a high bias to the reporting limit since the actual maximum possible amount in the sample would be include only that fraction of the area of one peak that would satisfy the ratio requirement. Based on review of the data, it is
considered likely that the target analyte is present at a concentration below the reported value in all instances.

OCDF did not meet the criteria for positive identification in the initial analysis of SS002AA and $12378-\mathrm{PeCDF}$ and $1234678-\mathrm{HpCDF}$ failed to meet the ion ratio criteria for positive identification in the initial analysis of SSO58AA. Both peaks met criteria in the dilution analyses of the extracts. Results from the dilutions are reported for these analytes in these samples.

### 5.13 Confirmation Analyses

2,3,6,7-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of 2,3,7,8-TCDF from the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards for some or all of the hexa- through octachlorinated PCDD and PCDF internal standards were above control limits for 12 of the 16 samples:

SS006AA, SS006BA,
SS002AA, SS002AC
SS058AA, SS058BA
SS037AA, SS037BA
SS044AA, SS044BA
SS076AA, SS076BA
Method 1613 specifies gel permeation chromatography cleanup for soil samples. CAS did not perform this step, and review of the raw data for the above samples indicates that the minimal extract cleanup procedures used did not remove significant matrix interferences. These interferences suppressed the response of the 123789-HxCDD recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards in the above samples. Internal standards were reported with apparent recoveries up to 300\%. No reliable data on the recovery of the internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs can be obtained when this occurs. All reported data for target dioxins and furans with internal standard recoveries outside of the limits are qualified as estimated.

### 5.16 Interferences

As noted above, matrix interferences affected the quantitation of the recovery standard used to determine internal standard recoveries. Matrix interferences were also noted to affect the analyses of other PCDDs/PCDFs. In some cases, polychlorinated ethers were present. These can result in false positives for PCDFs, but while several interfered with the quantitation of total PCDF congeners, no instances were noted where 2,3,7,8-subsituted target PCDF were affected.

### 5.17 Sample Dilutions

Except for SS002BA, all samples in this set contained levels of PCDDs and PCDFs above the instrument calibration. The primary corrective action for this in Method 1613 is to extract a smaller portion of the sample. Dilution by a factor of 10 is an alternative if it is determined that a smaller sample size will not be representative. Although these samples are characterized as sandy soils where representativeness would not be expected to be problematic, no reeextractions were performed. Samples were diluted by factors up to 200 by adding more internal standards to the extract.

As noted above, the 123789-HxCDD recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards was affected by severe interferences and the apparent recoveries of the related internal standards are biased high. CAS data reduction protocol for diluted samples where recoveries were elevated in the initial analysis is to correct the recovery in the diluted analysis by recoveries of tetra- or tetra and penta-chlorinated internal standards. Review of data for samples unaffected by interferences and apparent high recoveries does not support the use of this average; tetra- and penta-chlorinated internal standards consistently recover at significantly higher levels than the hexa- through octachlorinated internal standards. This data reduction practice likely leads to a significant low bias to results in affected samples. All measurements of hexa, hepta and octachlorinated dioxins and furans reported from dilutions where their quantitation was adjusted for tetra- and pentachlorinated standard recoveries have been qualified as estimated with potential significant bias.

### 5.18 Data Consistency

Results obtained on dilution for the samples were compared to the initial analyses. Results for analytes above calibration on the initial analyses are expected on dilution to be comparable to or greater than the initial result. In several cases, results after dilution are significantly lower. This is likely attributable to the bias introduced by the CAS data adjustment protocol as detailed above for sample dilutions.

The results for the following samples demonstrate significantly lower concentrations reported from the dilution analysis for analytes that exceeded the calibration curve on the initial analysis:

SS006AA OCDF

| SS006BA | $123789-H x C D D$, OCDF |
| :--- | :--- |
| SS002AA | $1234678-H p C D D$, OCDD |
| SS002AC | OCDD |
| SS058AA | $234678-H x C D F$ |
| SS037AA | OCDF |
| SS037BA | OCDF |
| SS044AA | OCDF |
| SS044BA | OCDF |
| SS076AA | $1234678-H p C D F$, OCDF |
| SS076BA | $1234678-H p C D F$, OCDF |

Results for most analytes within the calibration range on the initial analysis for SS058BA were approximately two times higher upon dilution. Measurements from the dilution were also within the calibration range and no apparent explanation could be determined from the raw data. Laboratory dilution or spiking error is suspected. Results from the initial analysis are reported for all analytes within the calibration range.

### 5.19 Equipment Blank

No equipment blank was collected with this sample set.

### 5.20 Field Duplicates

Field duplicate samples were collected at SS002A and SS043B. Precision for SS043BA and SS043BB was acceptable with relative percent differences for all analytes and the CAS TEQ below 50\%. The variability between the duplicates from SSOO2A is slightly greater on a percentage basis, but the levels at this location are relatively low and the absolute differences in concentration are not significant.

### 5.21 Calculations

Calculations for measurements within the instrument calibration range were verified for the initial analyses of perimeter samples. As noted above, calculations from dilutions for hexa, hepta and octa-chlorinated dioxins and furans were adjusted for the initial recoveries of tetra or tetra and pentachlorinated internal standards. CAS calculations of the adjustment factors for each sample were not documented and in some cases the exact value used could not be replicated. All data affected by this procedure are qualified as estimated with a wide window of uncertainty.

Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

SDG J0605810: PCDDs/PCDFs in Field Duplicate Samples

| Analyte | SS043BA | SS043BB | RPD | SS002AA | SS002AC | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| 2,3,7,8-TCDD | 1.59 | 1.77 | 11\% | 1.09 | 0.74 | 38\% |
| 1,2,3,7,8-PeCDD | 18.9 | 25.4 | 29\% | 8.82 | 5.36 | 49\% |
| 1,2,3,4,7,8-HxCDD | 58.8 | 76.6 | 26\% | 24.9 | 14.7 | 52\% |
| 1,2,3,6,7,8-HxCDD | 185 | 232 | 23\% | 94.5 | 56.4 | 50\% |
| 1,2,3,7,8,9-HxCDD | 159 | 196 | 21\% | ND | 14 | NA |
| 1,2,3,4,6,7,8- |  |  |  |  |  |  |
| HpCDD | 9280 | 12900 | 33\% | 4007 | 2770 | 37\% |
| OCDD | 106000 | 163000 | 42\% | 29400 | 19800 | 39\% |
| 2,3,7,8-TCDF | 0.66 | 1.08 | 48\% | 1.16 | ND | NA |
| 1,2,3,7,8-PeCDF | 2.11 | 2.76 | 27\% | 0.9 | 0.48 | 61\% |
| 2,3,4,7,8-PECDF | 2.87 | 3.72 | 26\% | 1.39 | 0.75 | 60\% |
| 1,2,3,4,7,8-HxCDF | 26.1 | 33.6 | 25\% | 8.54 | 4.75 | 57\% |
| 1,2,3,6,7,8-HxCDF | 17.3 | 22.9 | 28\% | 5.09 | 3.09 | 49\% |
| 1,2,3,7,8,9-HxCDF | 0.48 | 0.88 | 59\% | ND | ND | NA |
| 2,3,4,6,7,8-HxCDF | 12.6 | 17.3 | 31\% | 7.82 | 6.42 | 20\% |
| 1,2,3,4,6,7,8- |  |  |  |  |  |  |
| HpCDF | 819 | 1070 | 27\% | 474 | 286 | 49\% |
| 1,2,3,4,7,8,9- |  |  |  |  |  |  |
| HpCDF | 58.8 | 68.8 | 16\% | 42.5 | 50.6 | 17\% |
| OCDF | 5510 | 8340 | 41\% | 2091 | 2200 | 5\% |
| TEQ, ng/kg | 1.81E+02 | $2.45 \mathrm{E}+02$ | 30\% | 7.34E+01 | $4.98 \mathrm{E}+01$ | 38\% |

* Value reported as estimated maximum possible concentration


## ATTACHMENT A

## DATA SUMMARY

| Chemical Name | SS002AA |  |  | SS002AC |  |  | SS002BA |  |  | SS006AA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 1.09 | J |  | 0.74 | J | OC |  | U | EM | 5.74 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 8.82 |  |  | 5.36 | J | OC | 4.29 | J | OC | 104.06 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 24.88 | J | 1 | 14.70 |  |  | 10.01 |  |  | 252.58 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 94.48 | J | 1 | 56.40 | J | 1 | 51.22 |  |  | 738.89 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN |  | UJ | 1 | 13.98 |  |  | 12.27 |  |  | 222.28 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 4,007.38 | J | SE,LE | 2,770.79 | J | LE | 2,877.37 | J | E | 23,020.51 | J | LE |
| OCTACHLORODIBENZO-P-DIOXIN | 29,352.99 | J | I,SE,LE | 19,764.35 | J | LE,SE | 28,365.19 | J | E | 105,208.11 | J | LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 1.16 | J | OC |  | U |  |  | U |  | 1.63 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.90 | J | OC |  | U | EM | 0.55 | J | OC | 8.07 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 1.39 | J | OC | 0.75 | J | OC | 0.81 | J | OC | 10.96 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 8.54 | J | 1 | 4.75 | J | OC | 5.38 | J | OC | 86.66 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 5.09 | J | I, OC | 3.09 | J | OC | 2.67 | J | OC | 86.10 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | UJ | 1 |  | U |  |  | U |  |  | UJ | 1 |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 7.82 | J | 1 | 6.42 |  |  | 2.36 | J | OC | 65.97 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 473.51 | J | 1 | 286.42 |  |  | 251.55 |  |  | 2,845.39 | J | LE |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 42.51 | J | 1 | 50.63 |  |  | 18.08 |  |  | 223.38 | J | 1 |
| OCTACHLORODIBENZOFURAN | 2,091.00 | J | DD,I,LE | 2,202.67 |  |  | 1,968.87 |  |  | 10,110.42 | J | LE,SE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 17.85 |  |  | 7.68 |  |  | 5.63 |  |  | 34.19 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 111.31 |  |  | 59.44 |  |  | 52.81 |  |  | 744.90 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 2,101.35 |  |  | 1,235.52 |  |  | 1,271.88 |  |  | 12,041.88 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 28,310.51 |  |  | 17,037.69 |  |  | 17,099.91 |  |  | 76,980.58 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 25.17 |  |  | 12.54 |  |  | 8.85 |  |  | 93.44 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 44.88 |  |  | 29.81 |  |  | 26.70 |  |  | 621.14 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 443.94 |  |  | 280.66 |  |  | 219.93 |  |  | 2,222.77 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 2,291.04 |  |  | 1,393.57 |  |  | 1,297.65 |  |  | 12,818.88 |  |  |


| Chemical Name | SS006BA |  |  | SS037AA |  |  | SS037BA |  |  | SS043AA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 2.93 |  |  |  | U | EM | 1.97 |  |  | 2.66 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 67.93 |  |  | 89.04 |  |  | 39.70 |  |  | 22.76 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 185.11 | J | 1 | 176.03 | J | 1 | 118.06 | J | 1 | 64.92 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 613.50 | J | 1 | 501.01 | J | 1 | 436.08 | J | 1 | 197.24 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 149.10 | J | I,CR, SE, | 222.00 | J | 1 | 157.89 | J | 1 | 186.27 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 23,317.23 | J | LE | 17,146.32 | J | I,LE | 17,784.13 | J | I,LE | 9,564.90 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 132,774.99 | J | E,LE | 137,535.42 | J | E,LE | 154,061.38 | J | E | 93,290.89 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 1.10 | J | OC | 3.24 |  |  | 3.71 |  |  | 1.15 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 5.10 | J | OC | 7.19 |  |  | 4.84 | J | OC | 3.73 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 7.20 |  |  | 11.25 |  |  | 6.70 |  |  | 5.07 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 65.90 | J | 1 | 56.29 | J | 1 | 46.12 | J | 1 | 28.97 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 58.73 | J | 1 | 76.95 | J | 1 | 35.09 | J | 1 | 21.46 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | UJ | 1 | 1.46 | J | 1 |  | UJ | EM, I | 2.04 | J | OC |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 47.68 | J | 1 | 80.87 | J | 1 | 23.16 | J | 1 | 15.64 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 2,451.86 | J | 1 | 2,306.08 | J | 1 | 2,142.71 | J | 1 | 821.06 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 191.73 | J | 1 | 121.41 | J | 1 | 125.30 | J | 1 | 58.90 |  |  |
| OCTACHLORODIBENZOFURAN | 10,722.27 | J | SE,LE | 10,034.65 | J | LE,SE | 11,107.00 | J | LE,SE | 3,759.50 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 39.08 |  |  | 119.16 |  |  | 36.65 |  |  | 13.45 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 504.78 |  |  | 812.01 |  |  | 265.99 |  |  | 194.09 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 10,627.93 |  |  | 7,437.54 |  |  | 3,950.86 |  |  | 3,241.92 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 78,470.29 |  |  | 46,649.39 |  |  | 41,671.40 |  |  | 37,329.92 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 73.24 |  |  | 208.16 |  |  | 49.24 |  |  | 23.33 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 451.42 |  |  | 559.94 |  |  | 230.69 |  |  | 169.16 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 3,174.29 |  |  | 2,569.30 |  |  | 2,070.03 |  |  | 999.99 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 12,173.14 |  |  | 9,449.49 |  |  | 2,289.89 |  |  | 3,216.21 |  |  |


| Chemical Name | SS043BA |  |  | SS043BB |  |  | SS044AA |  |  | SS044BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 1.59 |  |  | 1.77 |  |  | 4.31 |  |  |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 18.88 |  |  | 25.37 |  |  | 56.36 |  |  | 87.46 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 58.83 |  |  | 76.56 |  |  | 236.25 |  |  | 665.76 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 185.07 |  |  | 231.77 |  |  | 1,437.86 |  |  | 2,412.60 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 159.25 |  |  | 196.35 |  |  | 944.22 | J | 1 | 1,920.22 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 9,279.74 |  |  | 12,879.19 |  |  | 87,450.22 | J | LE | 103,372.69 | J | LE |
| OCTACHLORODIBENZO-P-DIOXIN | 106,045.60 | J | E | 163,147.30 | J | E | 737,243.45 | J | E,LE | 887,531.90 | J | E,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.66 | J | OC | 1.08 | J | OC | 3.76 |  |  | 5.43 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 2.12 | J | OC | 2.76 | J | OC | 14.47 |  |  | 34.08 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 2.87 | J | OC | 3.72 | J | OC | 19.09 |  |  | 11.60 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 26.05 |  |  | 33.59 |  |  | 153.69 | J | I | 284.63 | J | I |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 17.26 |  |  | 22.95 |  |  | 85.43 | J | 1 | 218.58 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 0.48 | J | OC | 0.88 | J | OC | 5.95 | J | OC | 13.25 | J | 1 |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 12.59 |  |  | 17.33 |  |  | 66.29 |  |  | 152.47 | J | I |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 818.60 |  |  | 1,069.46 |  |  | 6,142.55 | J | I,LE | 8,668.86 | J | 1 |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 58.81 |  |  | 68.77 |  |  | 509.68 | J | 1 | 948.22 | J | 1 |
| OCTACHLORODIBENZOFURAN | 5,508.11 |  |  | 8,340.79 |  |  | 32,811.39 | J | I,SE,LE | 47,289.03 | J | SE,LE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 8.27 |  |  | 14.68 |  |  | 78.84 |  |  | 96.26 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 174.98 |  |  | 226.36 |  |  | 954.96 |  |  | 1,496.29 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 3,030.16 |  |  | 3,782.51 |  |  | 54,487.97 |  |  | 109,518.72 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 35,730.73 |  |  | 34,776.17 |  |  | 109,674.65 |  |  | 64,873.86 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 15.63 |  |  | 27.78 |  |  | 92.78 |  |  | 163.39 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 146.70 |  |  | 193.27 |  |  | 653.05 |  |  | 1,438.42 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 923.95 |  |  | 1,272.96 |  |  | 2,304.89 |  |  | 6,374.32 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 3,358.56 |  |  | 4,487.99 |  |  | 24,739.41 |  |  | 10,563.11 |  |  |


| Chemical Name | SS058AA |  |  | SS058BA |  |  | SS076AA |  |  | SS076BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 120.48 |  |  |  | U | EM | 10.46 |  |  | 7.45 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 2,103.96 |  |  | 905.52 | J | SE | 117.07 |  |  | 107.35 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 7,500.68 |  |  | 3,182.87 | J | SE | 236.66 | J | 1 | 521.24 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 28,526.82 |  |  | 35,058.94 |  |  | 975.01 |  |  | 1,060.51 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 18,757.94 | J | MI | 7,206.58 | J | SE | 573.45 |  |  | 921.81 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 976,963.14 | J | I,LE, E | 1,190,336.30 | J | I,LE | 19,075.51 |  |  | 26,170.57 | J | I,LE |
| OCTACHLORODIBENZO-P-DIOXIN | 2,488,408.20 | J | I,LE, E | 10,380,583.00 | J | E,LE | 144,447.64 | J | E | 184,600.47 | J | I,E,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 81.81 |  |  | 38.62 |  |  | 4.39 |  |  | 4.12 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 505.00 | J | DD | 234.92 | J | SE | 14.71 |  |  | 16.37 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 207.93 |  |  | 278.10 | J | SE | 16.19 |  |  | 49.84 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 4,864.51 | J | I,LE | 2,885.30 | J | I,SE | 137.91 | J | 1 | 187.88 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 3,289.93 | J | I,LE | 1,960.62 | J | I,SE | 122.93 | J | 1 | 156.03 | J | I |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 242.53 | J | I,LE |  | UJ | 1 | 3.35 | J | OC, | 7.09 | J | 1 |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 1,902.70 | J | SE,LE | 4,965.75 | J | I,SE | 71.12 | J | 1 | 89.75 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 122,492.17 | J | I,LE | 188,531.78 | J | I,LE | 2,418.14 | J | LE,SE | 3,462.24 | J | SE,LE |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 12,504.39 | J | I,LE | 11,115.67 | J | 1 | 335.41 | J | 1 | 437.89 | J | 1 |
| OCTACHLORODIBENZOFURAN | 535,827.27 | J | I,LE, E | 1,069,174.20 | J | I,LE | 11,059.96 | J | SE,LE | 13,958.82 | J | SE,LE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 721.42 |  |  | 1,277.83 |  |  | 70.65 |  |  | 62.92 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 7,767.50 |  |  | 3,531.24 |  |  | 760.07 |  |  | 592.35 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 437,400.02 |  |  | 176,878.51 |  |  | 13,104.30 |  |  | 28,925.58 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 187,786.09 |  |  | 291,503.72 |  |  | 49,075.53 |  |  | 52,464.23 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 1,495.06 |  |  | 969.52 |  |  | 64.17 |  |  | 73.39 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 3,719.67 |  |  | 8,999.34 |  |  | 553.83 |  |  | 705.26 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 22,164.43 |  |  | 56,756.27 |  |  | 3,821.59 |  |  | 5,282.74 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 120,005.18 |  |  | 130,921.57 |  |  | 12,637.00 |  |  | 15,703.74 |  |  |

ATTACHMENT B
REASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.

## ATTACHMENT C

CAS REPORT AMENDMENT

March 8, 2007
Mandy Sullivan
Columbia Analytical Services, Inc
8540 Baycenter Road
Jacksonville, FL 32256
$\begin{array}{ll}\text { Subject: } & \text { Amendment to J0605810-016 RE DL } \\ & \text { AMEC/Beazer East, Inc }\end{array}$ AMEC/Beazer East, Inc

Dear Mandy,
Our response to Marilyn Hoyt's validation email is enclosed. Replace pages 83 and 515 of the original report with the attached pages.

Please call if you have any questions. My extension is 23. You may also contact me via email at jfreemyer@houston.caslab.com.

Respectfully submitted,
Columbia Analytical Services, Inc
Fane fuengh
Project Manager

## Jane Freemyer

From: Hoyt, Marilyn P [marilyn.hoyt@amec.com]
Sent: Tuesday, March 06, 2007 3:37 PM
To: Jane Freemyer
Cc: Tom Kissinger
Subject: RE: SDG J0605810
Please provide documentation for the internal standard concentrations and calculations for the results from the dilution analysis of SS058BA (J0605810-016RE).

Thank you -

Marilyn Hoyt
Senior Associate
AMEC Earth and Environmental
2 Robbins Road
Westford, MA 01886
(978)-692-9090
(978)-692-6633 (FAX)

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## RESPONSE FOR PROJECT J0605810-016REDL

(1). Page 83 of the original report was incorrect. Please use the attached page 83 when validating the data. The concentrations of labeled standard spiked were 2000 pg for 13 C TCDF/TCDD, 13C-PeCDF/PeCDD, 13C-HxCDF/HxCDD and 13C-HpCDF/HpCDD, 4000pg for $13 \mathrm{C}-\mathrm{OCDD}$.
(2). When calculating the concentration of the analytes on a diluted standard, the internal standard recovery from the original extract is used to correct the results for losses during isolation and cleanup. The entry $54.59 \%(0.5459)$ is from 13C-2,3,7,8-TCDD on pg. 80. This value was used in calculating all the concentrations of the analytes, since it was the only concentration not affected by the sample matrix. All other internal standard recoveries were inflated due to the matrix interference.

The concentrations for the following analytes, which were over the MRL, were manually calculated:

## 1,2,3,6,7,8-HxCDD:

$\frac{(3.205 e 3+2.607 e 3) \times 2000 \times 200}{(7.644 e 4+6.064) \times 1.035 \times 0.8963 \times 0.94 \times 0.5459}=35626.8 \mathrm{pg} / \mathrm{g}(\mathrm{ng} / \mathrm{Kg})$

## 1,2,3,4,6,7,8-HpCDD

$$
\frac{(8.337 e 4+7.964 e 4) \times 2000 \times 200}{(5.778 e 4+5.531 e 4) \times 1.035 \times 0.8963 \times 0.94 \times 0.5459}=1211124.2 \mathrm{pg} / \mathrm{g}(\mathrm{ng} / \mathrm{Kg})
$$

## 1,2,3,4,6,7,8-HpCDF

$$
\frac{(1.926 e 4+1.922 e 4) \times 2000 \times 200}{(3.386 e 4+7.706 e 4) \times 1.035 \times 0.8963 \times 1.43 \times 0.5459}=191620.7 \mathrm{pg} / \mathrm{g}(\mathrm{ng} / \mathrm{Kg})
$$

## OCDD

$$
\frac{(7.283 e 5+8.233 e 5) \times 4000 \times 200}{(1.062 e 5+1.189 e 5) \times 1.035 \times 0.8963 \times 1.035 \times 0.5459}=10520759 \mathrm{pg} / \mathrm{g}(\mathrm{ng} / \mathrm{Kg})
$$

## OCDF

$$
\frac{(7.991 e 4+8.951 e 4) \times 4000 \times 200}{(1.062 e 5+1.189 e 5) \times 1.035 \times 0.8963 \times 1.10 \times 0.5459}=1080885.4 \mathrm{pg} / \mathrm{g}(\mathrm{ng} / \mathrm{Kg})
$$

FORM 2: PCDD/PCDF LABELED COMPOUND AND CLEANUP STANDARD RECOVERIES
$\frac{\text { CLIENT ID. }}{\frac{\text { SS058BA DL }}{\text { SDG NO: }}}$

Lab ID:J0605810-016RED

Client Name: AMEC

Matrix (Solid/Aqueous/Waste/Ash): Solid
Sample Receipt Date: 12/08/06
Ext. Date: 12/28/06
Analysis Date: 9-JAN-07 Time: 14:16:22
Ext.Vol(ul):20.0 Inj.Vol(ul):1.0
Contract:

Client No:
Sample Wt/Vol: $1.035 \quad g$ or mL: $g$
Initial Calibration Date: 11/07/06
Instrument ID: Autospec-Ultima
GC Column ID: DB-5

Sample Data Filename: U18705\#1
Blank Data Filename: U18619\#1

Cal. Ver. Data Filename: U18699\#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg \% Solid/Lipids: 89.63

|  |  | ION |  |  |  |
| :--- | :--- | :---: | :---: | :---: | :---: |
| SPIKE | CONC. | R(\%) | QC | ABUND. | RRT |
| CONC. FOUND | $(1)$ | Limite (1) | RATIO | $(2)$ | $(2)$ |

LABELED COMPOUNDS
$13 \mathrm{C}-2,3,7,8-\mathrm{TCDD}$
$13 \mathrm{C}-1,2,3,7,8-\mathrm{PeCDD}$
$13 \mathrm{C}-1,2,3,4,7,8-\mathrm{HxCDD}$
$13 \mathrm{C}-1,2,3,6,7,8-\mathrm{HxCDD}$
$13 \mathrm{C}-1,2,3,4,6,7,8-\mathrm{HPCDD}$
$13 \mathrm{C}-\mathrm{OCDD}$

| 2000 | 2354.53 | 64.27 | $25-164$ | 0.78 | 1.013 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 2000 | 2695.97 | 73.59 | $25-181$ | 1.59 | 1.225 |
| 2000 | 1862.79 | 50.85 | $32-141$ | 1.28 | 0.989 |
| 2000 | 1966.90 | 53.69 | $28-130$ | 1.26 | 0.992 |
| 2000 | 1741.37 | 47.53 | $23-140$ | 1.04 | 1.069 |
| 4000 | 3472.93 | 47.40 | $17-157$ | 0.89 | 1.138 |
|  |  |  |  |  |  |
| 2000 | 2346.65 | 64.05 | $24-169$ | 0.76 | 0.972 |
| 2000 | 2598.52 | 70.93 | $24-185$ | 1.56 | 1.176 |
| 2000 | 2614.77 | 71.37 | $21-178$ | 1.60 | 1.209 |
| 2000 | 1932.91 | 52.76 | $26-152$ | 0.52 | 0.968 |
| 2000 | 1683.77 | 45.96 | $26-123$ | 0.52 | 0.971 |
| 2000 | 2299.21 | 62.76 | $29-147$ | 0.53 | 1.005 |
| 2000 | 1973.47 | 53.87 | $28-136$ | 0.53 | 0.986 |
| 2000 | 1678.28 | 45.81 | $28-143$ | 0.44 | 1.047 |
| 2000 | 1931.45 | 52.72 | $26-138$ | 0.45 | 1.079 |

CLEANUP STANDARD

| $37 \mathrm{Cl}-2,3,7,8-T C D D$ | 800 | 6.88 | 171.89 | $35-197$ | 1.015 |
| :--- | :--- | :--- | :--- | :--- | :--- |

(1) Contract-required limits for percent recovery (R) are specified in Table 7, Method 1613.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for $37 \mathrm{Cl} 4-2378-\operatorname{TCDD}$ (cleanup standard).

Columbia Analytical Services, Inc.
Sample Response Summary

CLIENT ID.
SS058BA DI

Run \#11 Filename U18705\#1 Tamp: 1 In: 1 Acquired: 9-JAN-07 14:16:22 Processed: 11-JAN-07 12:14:37 Sample ID: J0605810-016RED

$(7.283 e+05+8.233 e+05) \times 4000 \mathrm{pg} \times 200$
$\begin{aligned} \mathrm{OCDD}= & (1.062 e+05+1.189 e+05) \times 1.035 \text { g } \times 89.63 / 100 \times 1.035 \times(0.5459\end{aligned}$

# DATA VALIDATION REPORT 

# Soil Samples <br> from <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs

## CAS Report J0605839

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## List of Attachments

Attachment A Data Summary
Attachment B Reason Codes for Data Qualification

## DATA QUALIFIER DEFINITIONS

U The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.

N The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected th the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

This report provides an evaluation of data for eighteen samples collected on December 6, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December 7, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605839.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS095AA | SS080AA |
| :--- | :--- |
| SS095BA | SS080BA |
| SS095CA | SS080BB |
| SS095DA | SS080CA |
| SS057AA | SS080DA |
| SS057BA | SS035AA |
| SS057CA | SS035BA |
| SS057CB | SS035CA |
| SS057DA | SS035DA |

Samples from the locations noted below represent site perimeter samples:
SS057 - Southern border
SS080 - Southeast corner
SS035 - Southern border

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results PCDDs/PCDFs within the range of the instrument calibration upon initial analysis are generally valid as reported. Results below the calibration range are qualified as estimated.

Cleanup procedures implemented did not remove matrix interferences. These interferences resulted in internal standard recoveries that were outside control limits in SSO35AA and SS095AA and affected target analyte results and the absence of valid internal standard
recoveries compromised the quantitation of analyte concentrations from dilution analyses in SS035AA and SS095AA. Interferences additionally affected some data in SS095BA and SS057DA. CAS has further compounded the uncertainty by adjusting data by factors that are not considered applicable. Results for these samples should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and site action limits. Although no samples have been rejected based on the validation, they may not all be suitable to support project decisions.

Toxicity equivalency (TEQ) values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

Raw data were reviewed for all sample and quality control analyses associated with all samples in this set.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries
15. Field blanks

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16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. All reported results on the final summary forms were verified from the raw data instrument printouts for sample concentrations and chromatograms were reviewed for all samples in this set.

Results for the total congener class PCDDs and PCDFs have not been validated and should be considered as estimated in all samples. These data are not included in the TEQ calculations. These are quantified based on the assumption that their response factors are the same as the 2378 -substitued isomers. All data reported are from the initial analyses and many include congeners above instrument calibration. Any factors affecting the accuracy of results for the 2378-isomers apply to the entire congener group and interferences in addition to those noted for the 2378-isomers may significantly bias data for these groupings of PCDDs and PCDFs.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The submitted data packages contained instrumental documentation elements required for full validation. However, documentation of data calculations involving adjustments of measured results were not included as part of the reporting package. Upon request, CAS provided explanations of selected individual sample calculations for other sample delivery groups, but the approach taken was sample-specific.

It should be noted that data for the required QA/QC analyses including the mass calibration and resolution checks, window-defining mix and continuing calibration standards were not in chronological order in the package.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 11, 2006.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $2^{\circ} \mathrm{C}$, within the method recommended range. Method 1613 B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. All congeners in the solution were detected at expected times. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9TCDF, $2,3,4,7$-TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

Two instruments were used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. Five-point calibrations were conducted on October 25 and November 7, 2006. Calibration for 2,3,7,8-TCDF confirmation on the DB-225 column was conducted on November 9,2006 . The initial calibrations were acceptable with $\%$ RSDs $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted on December 23 and 24, 2006 with analyses of samples at dilution on January 3, 2007. Analyses for $2,3,7,8$-TCDF on the DB225 column were conducted on December 28 and 29, 2006. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds
$<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package. Method 1613 does not specifically require these.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. However, resolution of 123678- and 123789-HxCDD isomers was not achieved in some standards or in several samples and in several instances, apparent matrix interferences resulted in poor chromatographic separations for other analytes as well. 123678-HxCDD and 123789-HxCDD have the same toxic equivalency factor (TEF) so incomplete resolution of these from each other does not impact final TEQ calculations. Results for other affected measurements are qualified as estimated.

SS095AA: 2,3,7,8-TCDD peak poorly resolved; likely high bias from other isomers;
SS095BA: 2378-TCDD peak poorly resolved; likely high bias from other isomers
SS080BA 123789-HxCDD not resolved from non-2,3,7,8-substituted isomer

### 5.10 Method Blanks

One method blank was prepared with the initial extraction and this was analyzed twice. The method blank contained trace levels of several target PCDDs and PCDFs. OCDD, 1234678HpCDD, OCDF and $1234678-H p C D F$ were detected in the blank analyses. Since the duplicate analyses of the one method blank demonstrated variability in the levels detected, the maximum concentration from the two analyses of the method blank were used for data qualifications. All reported sample concentrations of these analytes were greater than 5 times the blank and were not qualified.

### 5.11 Laboratory Control Samples (LCS)

Laboratory control sample and a duplicate were extracted with the preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored

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for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Samples in this set contained a variety of interferents resulting in peaks that failed criteria for identification. These interferents may be non-PCDD/PCDFs with one or both of the mass fragments of a target analyte. Review of the raw data confirmed that the majority of these results, reported by CAS as estimated maximum possible concentrations (EMPC) with the "K" qualifier, represented peaks with ratios close to that expected for the respective PCDD of PCDF. In accordance with Region 4 guidance and the USEPA Functional Guidelines, results for these analytes in the affected samples have been qualified as non-detected with the reporting limit set at the amount calculated. This provides a high bias to the reporting limit since the actual maximum possible amount in the sample would be include only that fraction of the area of one peak that would satisfy the ratio requirement. Based on review of the data, it is considered likely that the target analyte is present at a concentration below the reported value in all instances.

### 5.13 Confirmation Analyses

2,3,6,7-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of 2,3,7,8-TCDF from the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards for all HxCDDs and two HxCDFs were above of control limits for the initial analysis of SS035AA and for 123478-HxCDD, 1234678-HpCDD, all HpCDDs, and all HxCDFs and HpCDFs for SS095AA. Apparent recoveries ranged up to 300\%.

Method 1613 specifies gel permeation chromatography cleanup for soil samples. CAS did not perform this step, and review of the raw data for the above samples indicates that the minimal extract cleanup procedures used did not remove significant matrix interferences. These affected the response of the $123789-H x C D D$ recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards in the above samples. No reliable data on the recovery of the internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs can be obtained when this occurs. All reported data for target dioxins and furans with internal standard recoveries outside of the limits are qualified as estimated.

In addition to the above samples, these matrix interferences to the quantitation of internal standard recoveries were noted in samples SS095BA and SS035BA. Although the internal standard recoveries for these samples fell within the relatively wide limits of Method 1613, it is likely that there is bias to the results reported for OCDD and 1234789-HpCDD in SS095BA from the dilution analysis. While the internal standard recoveries for SS035BA may be biased, results are reported for all target analytes from the undiluted analysis and should not be affected.

### 5.16 Interferences

As noted above, matrix interferences affected the quantitation of the recovery standard used to determine internal standard recoveries. Matrix interferences were also noted to affect the analyses of other PCDDs/PCDFs. In some cases, polychlorinated ethers were present. These can result in false positives for PCDFs, but while several interfered with the quantitation of total PCDF congeners, no instances were noted where $2,3,7,8$-subsituted target PCDF were affected. Unidentifiable matrix interferences can also result in poor chromatographic separation of PCDDs and PCDFs or suppression of the signal.

Matrix interferences were evident that likely affected the quantitation of target analytes even through internal standard recoveries were within control limits :

```
SS035AA 123789-HxCDF, 234678-HxCDF
SS057DA 1234678-HpCDD
SS095AA all HxCDDs, 1234678-HpCDD, OCDD, OCDF
SS095BA 1234678-HpCDD, OCDD, OCDF
```


### 5.17 Sample Dilutions

Several samples in this set, including including SS095AA, SS095BA, SS080AA, SS035AA, contained levels of PCDDs and PCDFs above the instrument calibration. The primary corrective action for this in Method 1613 is to extract a smaller portion of the sample. Dilution by a factor of 10 is an alternative if it is determined that a smaller sample size will not be representative. Although these samples are characterized as sandy soils where representativeness would not be expected to be problematic, no reeextractions were performed. Samples were diluted by factors up to 50 by adding more internal standards to the extract.

Review of the raw data for the above samples indicates that except for SS080AA, the extract cleanup procedures used did not remove significant matrix interferences, and these affected the measurement of the 123789-HxCDD recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards. Since the measurement of the $123789-H x C D D$ is biased low by these interferences, the apparent recoveries of the related internal standards are biased high. No reliable data on the recovery of the internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs can be obtained when this occurs.

CAS data reduction protocol for diluted samples where recoveries were elevated in the initial analysis is to correct the recovery in the diluted analysis by recoveries of tetra- and penta-
chlorinated internal standards. Review of data for samples unaffected by interferences and apparent high recoveries does not support the use of this average; tetra- and penta-chlorinated internal standards consistently recover at significantly higher levels than the hexa- through octachlorinated internal standards. This data reduction practice likely leads to a significant low bias to results in affected samples. All measurements of hexa, hepta and octachlorinated dioxins and furans reported from dilutions where their quantitation was adjusted for tetra- and pentachlorinated standard recoveries have been qualified as estimated with potential significant bias.

CAS states that they do not reanalyze samples where OCDD and/or OCDF are the only analytes above the calibration range. They also did not reanalyze when HpCDD and OCDD in SS057AA were above calibration. All data from above calibration measurements are qualified as estimated.

### 5.18 Data Consistency

Results obtained on dilution for the samples were compared to the initial analyses. Results for 123678 -HxCDD and OCDF in SS095AA were significantly lower in the dilution analysis. Results for OCDF were significantly lower after dilution of SS035AA. These inconsistencies are likely attributable to the CAS data adjustment protocol as detailed above for sample dilutions.

In sample SS095BA, 123789-HxCDF was detected in the analysis of the diluted extract at 50 $\mathrm{ng} / \mathrm{kg}$, while this analyte was reported as non-detected, less than $0.342 \mathrm{ng} / \mathrm{kg}$ in the initial analysis. No peak was detectable at the retention time of this analyte in the initial analysis, but in the dilution analysis, a poorly resolved peak was present. This may represent carryover contamination during analysis and may indicate the potential for false positives in other samples.

### 5.19 Equipment Blank

No equipment blank was collected with this sample set.

### 5.20 Field Duplicates

Field duplicate samples were collected at SS057B and SS080C. Precision for SS080C was acceptable with relative percent differences for most analytes and the CAS TEQ below 50\%. The variability between the duplicates from SS057B is greater on a percentage basis, but the levels at this location are relatively low and the absolute differences in concentration are not significant.

### 5.21 Calculations

Calculations for measurements within the instrument calibration range were verified for the initial analyses of perimeter samples. As noted above, calculations from dilutions for hexa, hepta and
octa-chlorinated dioxins and furans were adjusted for the initial recoveries of tetra or tetra and pentachlorinated internal standards. CAS calculations of the adjustment factors for each sample were not documented and in some instances it could not be determined exactly which tetra or penta recovery standards were used for this manipulation. All data from this procedure are qualified with as estimates with wide uncertainty.

Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

J0605839: PCDDs/PCDFs in Field Duplicate Samples

|  | SS057CA | SS057CB | RPD | SS080BA | SS080BB | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2,3,7,8-TCDD | ND | ND |  | ND | ND |  |
| 1,2,3,7,8-PeCDD | 0.464 | 0.256 | 58\% | 0.639 | 0.481 | 28\% |
| 1,2,3,4,7,8-HxCDD | 1.2 | 0.669 | 57\% | 1.96 | 1.6 | 20\% |
| 1,2,3,6,7,8-HxCDD | 4.2 | 2.48 | 51\% | 5.4 | 3.84 | 34\% |
| 1,2,3,7,8,9-HxCDD | 3.35 | 1.85 | 58\% | 3.73 | 2.71* | 32\% |
| 1,2,3,4,6,7,8-HpCDD | 182 | 104 | 55\% | 297 | 234 | 24\% |
| OCDD | 1694 | 983 | 53\% | 2520 | 1890 | 29\% |
| 2,3,7,8-TCDF | ND | ND |  | ND | ND |  |
| 1,2,3,7,8-PeCDF | ND | ND |  | 0.095 | ND |  |
| 2,3,4,7,8-PECDF | ND | ND |  | 0.151 | 0.138 | 9\% |
| 1,2,3,4,7,8-HxCDF | 0.604 | 0.331 | 58\% | 0.826 | 0.657 | 23\% |
| 1,2,3,6,7,8-HxCDF | 0.517 | 0.289 | 57\% | 0.605 | 0.442 | 31\% |
| 1,2,3,7,8,9-HxCDF | ND | ND |  | ND | ND |  |
| 2,3,4,6,7,8-HxCDF | 0.596 | 0.251 | 81\% | 0.614 | 0.534 | 14\% |
| 1,2,3,4,6,7,8-HpCDF | 33.1 | 18.3 | 58\% | 35.5 | 27.8 | 24\% |
| 1,2,3,4,7,8,9-HpCDF | 1.3 | 0.762 | 52\% | 1.7 | 1.23 | 32\% |
| OCDF | 85 | 51.5 | 49\% | 160 | 115 | 33\% |
| TEQ (CAS), ng/kg | 3.88 | 2.2 | 55\% | 5.66 | 4.27 | 28\% |

* Value reported as estimated maximum possible concentration


## ATTACHMENT A

## DATA SUMMARY

| Chemical Name | SS035AA |  |  | SS035BA |  |  | SS035CA |  |  | SS035DA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 5.54 |  |  | 0.58 | J | OC | 0.13 | J | OC |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 19.60 | J | 1 | 1.49 | J | OC | 0.22 | J | OC | 0.28 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 66.24 | J | 1 | 4.96 | J | OC | 0.77 | J | OC | 0.85 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 40.95 | J | 1 | 4.86 | J | OC | 0.62 | J | OC | 0.86 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 1,682.20 | J | SE,LE | 219.20 |  |  | 28.91 |  |  | 37.34 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 16,971.47 | J | LE | 1,785.30 |  |  | 243.97 |  |  | 331.02 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.61 | J | OC | 0.43 | J | OC |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 1.16 | J | OC | 0.34 | J | OC |  | U |  |  | U |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 1.90 | J | OC |  | U | EM |  | U |  |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 11.00 |  |  | 2.62 | J | OC | 0.17 | J | OC | 0.17 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 6.88 |  |  | 1.48 | J | OC | 0.12 | J | OC |  | U | EM |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 0.27 | J | MI,OC | 1.68 | J | OC |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 6.18 | J | Mı, | 1.41 | J | OC |  | U |  | 0.13 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 358.00 |  |  | 38.20 |  |  | 4.47 | J | OC | 5.91 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 23.14 |  |  | 1.74 | J | OC |  | U |  | 0.32 | J | OC |
| OCTACHLORODIBENZOFURAN | 1,894.18 |  |  | 118.70 |  |  | 14.78 |  |  | 18.86 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 10.63 |  |  | 1.94 |  |  | 0.10 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 71.99 |  |  | 7.18 |  |  | 0.63 |  |  | 0.55 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 1,038.23 |  |  | 82.25 |  |  | 10.56 |  |  | 13.90 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 13,261.19 |  |  | 1,043.37 |  |  | 118.26 |  |  | 164.06 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 21.40 |  |  | 5.81 |  |  | 0.14 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 50.30 |  |  | 10.96 |  |  | 0.18 |  |  | 0.39 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 310.58 |  |  | 35.25 |  |  | 3.47 |  |  | 4.32 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 1,388.24 |  |  | 118.60 |  |  | 14.20 |  |  | 18.58 |  |  |


| Chemical Name | SS057AA |  |  | SS057BA |  |  | SS057CA |  |  | SS057CB |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 0.43 | J | OC |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 5.16 | J | OC | 0.39 | J | OC | 0.46 | J | OC | 0.26 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 14.33 |  |  | 0.91 | J | OC | 1.20 | J | OC | 0.67 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 55.41 |  |  | 3.25 | J | OC | 4.20 | J | OC | 2.48 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 42.33 |  |  | 2.49 | J | OC | 3.35 | J | OC | 1.85 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 2,255.34 | J | E | 138.07 |  |  | 181.88 |  |  | 104.33 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 20,890.34 | J | E | 1,247.43 |  |  | 1,694.10 |  |  | 982.55 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U | EM |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.55 | J | OC | 0.04 | J | OC |  | U |  |  | U |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.76 | J | OC |  | U |  |  | U |  |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 7.03 |  |  | 0.48 | J | OC | 0.60 | J | OC | 0.33 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 5.12 | J | OC | 0.41 | J | OC | 0.52 | J | OC | 0.29 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 0.18 | J | OC |  | U |  |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 5.11 | J | OC | 0.48 | J | OC | 0.60 | J | OC |  | U | EM |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 315.04 |  |  | 23.09 |  |  | 33.13 |  |  | 18.32 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 16.10 |  |  | 1.02 | J | OC | 1.30 | J | OC | 0.76 | J | OC |
| OCTACHLORODIBENZOFURAN | 1,284.94 |  |  | 65.40 |  |  | 85.02 |  |  | 51.54 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 9.48 |  |  | 0.74 |  |  | 0.13 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 56.22 |  |  | 3.46 |  |  | 4.08 |  |  | 1.80 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 615.41 |  |  | 37.56 |  |  | 50.81 |  |  | 28.89 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 6,870.79 |  |  | 426.34 |  |  | 545.02 |  |  | 325.36 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 9.19 |  |  | 0.77 |  |  | 0.45 |  |  | 0.19 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 30.08 |  |  | 1.79 |  |  | 2.76 |  |  | 1.34 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 241.48 |  |  | 16.93 |  |  | 24.08 |  |  | 13.35 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 1,103.86 |  |  | 72.25 |  |  | 98.59 |  |  | 55.89 |  |  |


| Chemical Name | SS057DA |  |  | SS080AA |  |  | SS080BA |  |  | SS080BB |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U | EM |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN |  | U |  | 8.07 |  |  | 0.64 | J | OC | 0.48 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 0.19 | J | OC | 25.34 | J | CR | 1.96 | J | OC | 1.60 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 0.71 | J | OC | 75.97 | J | CR | 5.40 |  |  | 3.84 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 0.55 | J | OC | 43.48 |  |  | 3.73 | J | OC,CR |  | U | EM |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 29.31 | J | MI | 4,081.93 |  |  | 296.83 |  |  | 223.56 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 325.53 |  |  | 39,638.91 |  |  | 2,519.65 |  |  | 1,886.57 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.32 | J | OC | 0.65 | J | OC |  | U |  |  | U | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN |  | U | EM | 1.02 | J | OC,DP | 0.10 | J | OC |  | U | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.06 | J | OC | 1.80 | J | OC | 0.15 | J | OC |  | U | EM |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 0.17 | J | OC | 10.36 |  |  | 0.83 | J | OC | 0.66 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN |  | U | EM | 6.88 |  |  | 0.61 | J | OC | 0.44 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 0.07 | J | OC | 6.52 |  |  | 0.61 | J | OC | 0.53 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 4.79 | J | OC | 403.42 |  |  | 35.54 |  |  | 27.85 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 0.67 | J | OC | 21.20 |  |  | 1.70 | J | OC | 1.23 | J | OC |
| OCTACHLORODIBENZOFURAN | 22.53 |  |  | 2,308.29 |  |  | 160.47 |  |  | 114.55 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 0.17 |  |  | 22.39 |  |  | 1.64 |  |  | 1.76 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 0.14 |  |  | 138.83 |  |  | 9.91 |  |  | 7.08 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 7.22 |  |  | 1,486.95 |  |  | 116.28 |  |  | 83.34 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 121.58 |  |  | 17,867.04 |  |  | 1,525.70 |  |  | 1,108.41 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 0.45 |  |  | 32.09 |  |  | 3.86 |  |  | 2.44 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 0.65 |  |  | 83.37 |  |  | 6.61 |  |  | 5.04 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 3.19 |  |  | 355.74 |  |  | 29.04 |  |  | 22.32 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 17.77 |  |  | 1,584.14 |  |  | 129.22 |  |  | 97.75 |  |  |


| Chemical Name | SS080CA |  |  | SS080DA |  |  | SS095AA |  |  | SS095BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  | 27.97 | J | CR | 2.98 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  |  | U | EM | 30.60 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 0.52 | J | OC | 0.14 | J | OC | 966.25 | J | I,MI,LE,CR | 75.04 | J | CR |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1.46 | J | OC | 0.39 | J | OC | 4,176.54 | J | MI,LE,SE,CR | 305.01 | J | CR |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 1.75 | J | OC | 0.48 | J | OC | 2,218.82 | J | MI,LE, | 186.26 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 72.80 |  |  | 18.87 |  |  | 131,874.43 | J | MI,LE | 11,831.78 | J | DMI |
| OCTACHLORODIBENZO-P-DIOXIN | 622.73 |  |  | 148.12 |  |  | 986,660.25 | J | MI,LE | 124,961.74 | J | E,DMI |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U |  | 45.41 |  |  | 2.27 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN |  | U |  |  | U |  | 59.15 |  |  | 2.95 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN |  | U |  |  | U |  | 89.95 |  |  | 4.66 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 0.21 | J | OC |  | U |  | 971.08 | J | 1 | 57.47 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 0.16 | J | OC |  | U |  | 440.13 | J | 1 | 24.89 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 15.94 | J | I,CR |  | UJ | SE |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 0.13 | J | OC |  | U |  | 690.93 | J | 1 | 19.94 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 10.16 |  |  | 2.30 | J | OC | 17,934.56 | J | I,LE | 1,556.63 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 0.49 | J | OC | 0.18 | J | OC | 1,802.58 | J | 1 | 81.70 |  |  |
| OCTACHLORODIBENZOFURAN | 36.07 |  |  | 8.71 |  |  | 78,151.15 | J | MI,LE,SE | 9,033.12 | J | DMI |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS |  | U |  |  | U |  | 193.49 |  |  | 19.17 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 1.83 |  |  | 0.34 |  |  | 1,104.03 |  |  | 200.11 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 29.63 |  |  | 7.38 |  |  | 65,159.29 |  |  | 2,182.08 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 352.49 |  |  | 90.97 |  |  | 123,366.79 |  |  | 27,186.77 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 0.16 |  |  |  | U |  | 505.63 |  |  | 37.09 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 1.12 |  |  | 0.35 |  |  | 2,831.51 |  |  | 175.98 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 8.06 |  |  | 1.99 |  |  | 5,507.40 |  |  | 871.66 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 33.38 |  |  | 7.85 |  |  | 19,997.65 |  |  | 1,638.32 |  |  |


| Chemical Name | SS095CA |  |  | SS095DA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN |  | U | EM | 1.74 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 3.38 | J | OC | 3.95 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 10.56 |  |  | 12.59 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 8.66 |  |  | 10.15 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 355.88 |  |  | 438.31 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 2,961.45 |  |  | 3,851.93 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN |  | U |  | 0.14 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN |  | U | EM | 0.26 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 2.26 | J | OC | 1.98 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 0.78 | J | OC | 1.24 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 0.80 | J | OC | 0.93 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 48.41 |  |  | 62.12 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN |  | U | EM | 3.31 | J | OC |
| OCTACHLORODIBENZOFURAN | 173.37 |  |  | 261.12 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS |  | U |  | 0.35 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 5.44 |  |  | 8.80 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 81.46 |  |  | 96.13 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 933.30 |  |  | 1,070.56 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 0.79 |  |  | 0.75 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 4.33 |  |  | 8.18 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 67.39 |  |  | 60.11 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 173.18 |  |  | 234.23 |  |  |

ATTACHMENT B
REASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.

# DATA VALIDATION REPORT 

# Soil Samples <br> from <br> Koppers Portion of Cabot/Koppers Superfund Site <br> Gainesville, FL 

Analyses for PCDDs/PCDFs
CAS Report J0605876

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## List of Attachments

Attachment A Data Summary

Attachment B Reason Codes for Data Qualification

## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

This report provides an evaluation of data for 37 samples collected on December 7 and 8, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December 8, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605876.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS097AA | SS096AA | SS099AA |
| :--- | :--- | :--- |
| SS097BA | SS096BA | SS099BA |
| SS097CA | SS096CA | SS099CA |
| SS097DA | SS096DA | SS099DA |
| SS001AA | SS082AA | SS084AA |
| SS001BA | SS082BA | SS084BA |
| SS001CA | SS082CA | SS062AA |
| SS001DA | SS082DA | SS062BA |
| SS038AA | SS098AA | SS062CA |
| SS038AC | SS098BA | SS062CC |
| SS038BA | SS098CA | SS062DA |
| SS038CA | SS098DA |  |
| SS038DA |  |  |
| SS038DB |  |  |

Samples from the site perimeter include those from locations listed below:
SS097 (South border)
SS001 (Southwest corner)
SS082 (Southeast border, inside source area)
SS084 (Southeast border)

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples with PCDDs/PCDFs within the range of the instrument calibration upon initial analysis are generally valid as reported. Results below the calibration range are qualified as estimated. Results for samples initially above the calibration range and then reported from dilution analyses are qualified as estimated with a wide window of uncertainty.

Cleanup procedures implemented did not remove matrix interferences in several samples. These interferences resulted in apparent internal standard recoveries that were above control limits and required qualification of associated target analyte results. The absence of valid internal standard recoveries then compromised the quantitation of analyte concentrations from dilution analyses. CAS further compounded the uncertainty by adjusting data by factors that are not considered applicable. Samples where results for some analytes should be considered as gross estimates include SS038AA, SS038AC, SS062AA, SS082AA, SS82BA, SS082CA, SS096AA, SS096BA, SS096CA, SS099BA, SS099CA and SS084BA. Results for these samples should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and site action limits. Although no samples have been rejected in their entirety based on the validation, they may not all be suitable to support project decisions.

Toxicity equivalency (TEQ) values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries
15. Field blanks
16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. Chromatograms and raw data were reviewed for those samples collected on the site perimeter, and reported results on the final summary forms for these samples were verified from the raw data instrument print-outs for sample concentrations.

Results for the total congener class PCDDs and PCDFs have not been validated and should be considered as estimated in all samples. These data are not included in the TEQ calculations. These are quantified based on the assumption that their response factors are the same as the 2378-substitued isomers. All data reported are from the initial analyses and many include congeners above instrument calibration. Any factors affecting the accuracy of results for the 2378-isomers apply to the entire congener group and interferences in addition to those noted for the 2378-isomers may significantly bias data for these groupings of PCDDs and PCDFs.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The submitted data packages contained instrumental documentation elements required for full validation. However, documentation of data calculations involving adjustments of measured results were not included as part of the reporting package. Upon request, CAS provided explanations of selected individual sample calculations, but the approach taken was samplespecific.

It should be noted that data for the required QA/QC analyses including the mass calibration and resolution checks, window-defining mix and continuing calibration standards were not in chronological order in the package.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 12, 2006. Chain of Custody (COC) Documentation

COCs were legible and properly completed. Samples from SS096 (all depths) and SS038DB were not checked on the COC for dioxin analysis. The Jacksonville laboratory noted that extra
bottles for dioxin analysis were submitted, but no documentation that client approval for the analysis had been obtained was provided.

### 5.3 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $4^{\circ} \mathrm{C}$, within the method recommended range. Method 1613B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.4 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence.

### 5.5 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. All congeners in the solution were detected at expected times. The height of the valley between the closely eluting isomers 1,2,3,8-TCDD and 2,3,7,8-TCDD less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers $1,2,3,9-$ TCDF, $2,3,4,7$-TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.6 Initial Calibrations

Two instruments were used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. Five-point calibrations were conducted on October 25 and November 7, 2006. Calibration for $2,3,7,8$-TCDF confirmation on the DB- 225 column was conducted on November 9,2006 . The initial calibrations were acceptable with $\%$ RSDs $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.7 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted on December 26, 27 and 28, 2006 with analyses of samples at dilution on January 6, 2007. Analyses for 2,3,7,8-TCDF on the DB225 column were conducted on December 28 and 29, 2006 and January 4,5 and 31, 2007. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package. Method 1613 does not specifically require these.

### 5.8 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. Resolution of 123678- and 123789-HxCDD isomers was not achieved in some standards or in several samples. Since these isomers have the same TEFs, this does not significantly impact sample results.

### 5.9 Method Blanks

Two method blanks were prepared with the initial extraction and one of these was analyzed twice. The method blanks contained trace levels of several target PCDDs and PCDFs. OCDD, $1234678-H p C D D$, OCDF and $123478-H x C D F$ and $234678-H p C D F$ were detected in one or more of the blank analyses. Since the duplicate analyses of the one method blank demonstrated variability in the analytes and levels detected, the maximum concentration from the three analyses of method blanks were used for data qualifications. Results for these analytes in samples at concentrations comparable to or less than 2 times blank have been qualified to be reported as non-detected with the reporting limit set at the amount initially reported. Results within a factor of 5 of the blank have been qualified to be estimated with potential high bias. Detections affected by method blank levels are summarized below:

| SS097CA | $1234679-H p C D D, 123478-H x C D F$ |
| :--- | :--- |
| SS097DA | $123678-H x C D D, 1234679-H p C D D, 123478-H x C D F, 1234678-H p C D F$, OCDD, |
|  |  |
| SS001CA | $123478-H x C D F$, OCDF |
| SS001DA | $123478-H x C D F, 1234789-H p C D F$ |
| SS038CA | $123478-H x C D F$ |
| SS062DA | $123478-H x C D F$ |

### 5.10 Laboratory Control Samples (LCS)

Laboratory control samples and duplicates were extracted with each preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.11 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Samples in this set contained a variety of interferents resulting in peaks that failed criteria for identification. These interferents may be non-PCDD/PCDFs with one or both of the mass fragments of a target analyte. Review of the raw data confirmed that the majority of these results, reported by CAS as estimated maximum possible concentrations (EMPC) with the "K" qualifier, represented peaks with ratios close to that expected for the respective PCDD of PCDF. In accordance with Region 4 guidance and the USEPA Functional Guidelines, results for these analytes in the affected samples have been qualified as non-detected with the reporting limit set at the amount calculated. This provides a high bias to the reporting limit since the actual maximum possible amount in the sample would be include only that fraction of the area of one peak that would satisfy the ratio requirement. Based on review of the data, it is considered likely that the target analyte is present at a concentration below the reported value in all instances.
$12378-\mathrm{PeCDD}$ and $123478-\mathrm{HxCDF}$ failed to meet the ion ratio criteria in the initial analysis of SS038AC and were reported as estimated maximum possible concentrations (EMPC). However, the peaks at dilution did meet the criterion for positive identification; results from this analysis are estimated and have been used by AMEC for revised TEQ calculations.

The internal standard ${ }_{13} \mathrm{C}$-OCDD failed to meet the ion ratio requirement for the analyses of SS099BA and SS099CA. The recoveries noted for this internal standard are not valid and their use for calculation of OCDD and OCDF concentrations introduces additional uncertainty. Results for OCDD and OCDF are qualified as estimated in these samples for this and additional reasons as noted below.

### 5.12 Confirmation Analyses

2,3,6,7-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of 2,3,7,8-TCDF from
the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.13 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.14 Labeled Compound Recoveries

Recoveries of internal standards fell outside of control limits for the initial analysis of several samples. Recoveries of the labeled internal standards for some or all HxCDDs, HpCDD, HxCDFs, HpCDFs, OCDD and OCDF were above control limits in samples as listed below:

```
SS038AA, SS038AC
SS096AA,SS096BA, SS096CA,
SS082AA, SS082BA, SS082CA
SS099BA, SS099CA,
SS084BA
SS062AA
```

Method 1613 specifies gel permeation chromatography cleanup for soil samples. CAS did not perform this step, and review of the raw data for the above samples indicates that the extract cleanup procedures used did not remove significant matrix interferences. These interferences affected the measurement of the $123789-$ HxCDD recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards. As a result of the suppression of the instrument response to the recovery standard, calculations for recoveries of the listed internal standards gave apparent recoveries of up to $600 \%$. No reliable data on the recovery of the affected internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs could be obtained. All reported data for target dioxins and furans with internal standard recoveries outside of the limits are qualified as estimated.

### 5.15 Sample Dilutions

Several samples in this set, as listed below, contained levels of PCDDs and PCDFs above the instrument calibration.

SS038AA, SS038AC, SS038BA
SS096AA, SS096BA, SS096CA, SS096DA
SS082AA, SS082BA, SS082CA
SS098AA
SS099AA, SS099BA, SS099CA
SS084BA
SS062AA, SS062BA

The primary corrective action for this in Method 1613 is to extract a smaller portion of the sample. Dilution by a factor of 10 is an alternative if it is determined that a smaller sample size will not be representative. Although these samples are characterized as sandy soils where representativeness would not be expected to be problematic, no reeextractions were performed. Samples were diluted by factors up to 100 by adding more internal standards to the extract.

CAS data reduction protocol for diluted samples where internal standard recoveries were elevated in the initial analysis is to correct the recovery in the diluted analysis by the recoveries of tetra- or tetra and penta-chlorinated internal standards. Review of data for samples unaffected by interferences and apparent high recoveries does not support the use of this average; tetra- and penta-chlorinated internal standards consistently recover at significantly higher levels than the hexa- through octa-chlorinated internal standards. This data reduction practice likely leads to a significant low bias to results in affected samples. All measurements of hexa, hepta and octachlorinated dioxins and furans reported from dilutions where their quantitation was adjusted for tetra- and pentachlorinated standard recoveries have been qualified as estimated with potential significant bias.

Although internal standard recoveries for 1234678 -HpCDD and OCDD/OCDF in SS062AA, SS062BA SS096DA and SS099AA fell within the relatively wide limits of Method 1613, the same matrix interference was evident in their analysis and the internal standards are likely biased high. The results for HpCDD, OCDD and OCDF from the dilution analyses of these samples are qualified for low bias.

CAS stated that they do not reanalyze samples where OCDD and/or OCDF are the only analytes above the calibration range. In practice, they sometimes but not always reanalyze samples where HpCDD is above calibration. HpCDD and OCDD in SS097AA and SS084AA and OCDD in SS001AA, SS098BA, and SS098CA were above the calibration range from the initial analysis and are qualified as estimated. In addition, many of the measurements for OCDD and HpCDD in the diluted samples were also measured above the calibration range.

### 5.16 Equipment Blank

No equipment blank was collected with this sample set.

### 5.17 Field Duplicates

Field duplicate samples were collected at SS038D, SS038A and SS062C. Results as summarized below demonstrate acceptable precision for SS038A and SSO62C with relative percent differences for most analytes and the TEQs below $50 \%$. The variability between the duplicates from SS038D is greater on a percentage basis, but the levels at this location are relatively low and the absolute differences in concentration are not significant.

### 5.18 Data Consistency

Results obtained on dilution for the samples were compared to the initial analyses. Results for several analytes were significantly lower in the dilution analyses although the analyte was present above the calibration curve or at saturation level in the initial analysis. This is likely an artifact of the CAS data adjustment protocol as detailed above for sample dilutions and illustrates the bias introduced. Results for analytes as listed below are qualified as estimated based on significantly lower results reported from the dilution analyses than noted from the initial analyses.

SS038AA 234678-HxCDF
SS038AC 1234678-HpCDF, OCDF
SS096AA 123678-HxCDD
SS096BA 1234678-HpCDF, 1234678-HpCDD, OCDF
SS096CA OCDF
SS096DA 1234678-HpCDD, OCDD
SS082AA 1234678-HpCDD, OCDF
SS082BA 1234678-HpCDF, OCDF
SS082CA OCDF
SS098AA OCDF
SS099AA 1234678-HpCDD, OCDF
SS099BA 123678-HxCDD, 123789-HxCDD
SS062AA 1234678-HpCDF, OCDF
SS062BA 1234678-HxCDD, 1234678-HpCDF, OCDF

### 5.19 Calculations

Calculations for measurements within the instrument calibration range were verified for the initial analyses of perimeter samples. As noted above, calculations from dilutions for hexa, hepta and octa-chlorinated dioxins and furans in several samples were adjusted for the initial recoveries of tetra or tetra and pentachlorinated internal standards. CAS calculations of the adjustment factors for each sample were not documented and in some instances it could not be determined exactly which tetra or penta recovery standards were used for this manipulation. All data from this procedure are qualified with as estimates with wide uncertainty.

Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

Beazer East
Data Review for PCDDs/PCFs J0605876

## amec ${ }^{0}$

SDG J0605876: PCDDs/PCDFs in Field Duplicate Samples

| Analyte | SS062CA | SS062CC | RPD | SS038AC | SS038CC | RPD | SS038DA | SS038DB | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2,3,7,8-TCDD | ND | ND |  | 2.84 | 6.34 | 76\% | ND | ND |  |
| 1,2,3,7,8-PeCDD | 1.04 | 1.28 | 21\% | 196 | 137* | 35\% | 1.228 | 0.334 | 114\% |
| 1,2,3,4,7,8-HxCDD | 1 | 1.84 | 59\% | 764 | 589 | 26\% | 2.51 | 0.781 | 105\% |
| 1,2,3,6,7,8-HxCDD | 13.4 | 19.6 | 38\% | 2662 | 2171 | 20\% | 14.6 | 2.761 | 136\% |
| 1,2,3,7,8,9-HxCDD | 2.94 | 3.04 | 3\% | 1542 | 1260 | 20\% | 6.94 | 1.067 | 147\% |
| 1,2,3,4,6,7,8-HpCDD | 254 | 389 | 42\% | 72100 | 47500 | 41\% | 412 | 171 | 83\% |
| OCDD | 2570 | 3847 | 40\% | 376000 | 339000 | 10\% | 3387 | 977 | 110\% |
| 2,3,7,8-TCDF | ND | ND |  | 121 | 99.9 | 19\% | ND | 1.82 |  |
| 1,2,3,7,8-PeCDF | 0.465 | 0.48 | 3\% | 74.9 | 53.4 | 34\% | 0.243* | 2.32 | 162\% |
| 2,3,4,7,8-PECDF | 0.607 | 0.708 | 15\% | 82.7 | 77.6 | 6\% | 0.309 | 0.997 | 105\% |
| 1,2,3,4,7,8-HxCDF | 1.47 | 1.83 | 22\% | 358 | 312* | 14\% | 1.565 | 3.38 | 73\% |
| 1,2,3,6,7,8-HxCDF | 1.83 | 2.34 | 24\% | 277 | 210 | 28\% | 1.117 | 1.185 | 6\% |
| 1,2,3,7,8,9-HxCDF | 0.27 | 0.209 | 25\% | 5.34 | 10.7 | 67\% | ND | ND |  |
| 2,3,4,6,7,8-HxCDF | 1.57 | 2.2 | 33\% | 185 | 278 | 40\% | 2.36 | 0.867 | 93\% |
| 1,2,3,4,6,7,8-HpCDF | 38.5 | 52 | 30\% | 10400 | 6620 | 44\% | 44.3 | 14.7 | 100\% |
| 1,2,3,4,7,8,9-HpCDF | 2.21 | 2.96 | 29\% | 587 | 527 | 11\% | 3.98 | 1.381 | 97\% |
| OCDF | 185 | 273 | 38\% | 30700 | 24000 | 24\% | 146 | 60.223 | 83\% |
| TEQ (CAS), ng/kg | 6.89 | 9.69 | 34\% | 1.70E+03 | $1.26 \mathrm{E}+03$ | 30\% | 9.31 | 4.27 | 74\% |

[^1]
## ATTACHMENT A

## DATA SUMMARY

| Chemical Name | SS001AA |  |  | SS001BA |  |  | SS001CA |  |  | SS001DA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U | EM |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 2.01 | J | OC | 0.55 | J | OC |  | U |  |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 6.18 |  |  | 1.06 | J | OC | 0.20 | J | OC |  | U | EM |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 16.72 |  |  | 4.78 | J | OC | 0.68 | J | OC | 1.06 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 15.98 |  |  | 3.76 | J | OC | 0.65 | J | OC | 0.52 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 746.83 |  |  | 192.40 |  |  | 26.11 |  |  | 28.93 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 6,956.79 | J | E | 1,730.72 |  |  | 240.16 |  |  | 316.93 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.31 | J | OC | 0.37 | J | OC |  | U |  |  | U |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.68 | J | OC | 0.71 | J | OC |  | U |  |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 2.74 | J | OC,MB | 1.43 | J | OC,MB |  | U | MB |  | U | MB |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 2.38 | J | OC | 0.75 | J | OC |  | U |  |  | U |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U | EM |  | U |  |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 1.69 | J | OC | 0.75 | J | OC |  | U |  |  | U |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 95.77 |  |  | 17.53 |  |  | 3.27 | J | OC | 4.17 | J | OC |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 6.07 |  |  | 1.28 | J | OC | 0.21 | J | OC | 0.25 | J | OC |
| OCTACHLORODIBENZOFURAN | 458.96 |  |  | 82.16 |  |  | 14.05 |  |  | 23.20 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 8.24 |  |  | 1.85 |  |  | 0.20 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 26.01 |  |  | 3.81 |  |  | 0.30 |  |  |  | U |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 281.29 |  |  | 54.61 |  |  | 8.41 |  |  | 6.03 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 3,274.27 |  |  | 705.17 |  |  | 103.96 |  |  | 65.67 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 21.05 |  |  | 8.98 |  |  | 0.41 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 43.76 |  |  | 11.86 |  |  | 0.79 |  |  | 0.31 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 105.91 |  |  | 22.87 |  |  | 2.95 |  |  | 4.35 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 372.96 |  |  | 69.29 |  |  | 12.07 |  |  | 20.85 |  |  |


| Chemical Name | SS038AA |  |  | SS038AC |  |  | SS038BA |  |  | SS038CA |  |  |
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|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U | EM | 6.34 |  |  |  | U | EM |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 196.01 |  |  | 163.48 | J | DD | 5.71 |  |  | 0.50 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 764.89 |  |  | 589.49 |  |  | 16.61 |  |  | 0.83 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 2,662.97 | J | LE | 2,171.34 | J | LE | 54.16 |  |  | 2.81 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 1,543.66 | J | LE | 1,260.96 |  |  | 50.82 |  |  | 2.00 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 72,086.74 | J | I,LE | 47,506.08 | J | LE.I | 3,050.14 |  |  | 102.58 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 376,328.91 | J | LE,E | 339,461.94 | J | LE | 26,714.59 |  |  | 972.28 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 120.65 |  |  | 99.87 |  |  | 0.68 | J | OC |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 74.90 |  |  | 53.40 |  |  | 0.93 | J | OC |  | U | EM |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 82.73 |  |  | 77.56 |  |  | 0.92 | J | OC |  | U | EM |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 357.80 | J | 1 | 284.43 | J | DD, I | 9.32 |  |  | 0.60 | J | OC,MB |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 277.02 | J | 1 | 210.35 | J | 1 | 4.46 | J | OC |  | U |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 5.34 | J | 1 | 10.66 | J | 1 |  | U | EM |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 184.52 | J | I,SE | 277.70 |  |  | 7.49 |  |  |  | U |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 10,419.89 | J | I,LE,E | 6,623.65 | J | SE,LE | 259.99 |  |  | 13.79 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 587.50 | J | I,LE | 527.39 | J | 1 | 18.54 |  |  | 1.60 | J | OC |
| OCTACHLORODIBENZOFURAN | 30,735.08 | J | LE | 24,014.83 | J | LE,SE | 1,273.72 |  |  | 59.54 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 93.31 |  |  | 191.99 |  |  | 29.29 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 1,315.86 |  |  | 864.93 |  |  | 58.88 |  |  | 0.98 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 33,271.89 |  |  | 20,851.59 |  |  | 761.39 |  |  | 23.76 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 77,421.32 |  |  | 69,249.43 |  |  | 12,301.16 |  |  | 294.78 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 221.16 |  |  | 335.80 |  |  | 10.67 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 1,586.37 |  |  | 1,411.69 |  |  | 41.98 |  |  | 1.64 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 5,513.60 |  |  | 7,940.51 |  |  | 361.55 |  |  | 11.00 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 10,446.67 |  |  | 9,668.30 |  |  | 1,139.78 |  |  | 70.09 |  |  |


| Chemical Name | SS038DA |  |  | SS038DB |  |  | SS062AA |  |  | SS062BA |  |  |
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|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U | EM |  | U | EM | 6.27 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 1.23 | J | OC | 0.33 | J | OC | 71.45 |  |  | 43.02 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 2.51 | J | OC | 0.78 | J | OC | 157.45 |  |  | 52.45 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 14.61 |  |  | 2.76 | J | OC | 848.03 |  |  | 499.76 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 6.94 |  |  | 2.07 | J | OC | 495.39 |  |  | 267.76 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 412.75 |  |  | 171.06 |  |  | 19,053.29 | J | DMI | 11,445.34 | J | SE,DMI |
| OCTACHLORODIBENZO-P-DIOXIN | 3,387.12 |  |  | 976.93 |  |  | 142,298.32 | J | E,DMI | 93,149.54 | J | DMI |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  | 1.82 |  |  | 5.10 |  |  | 3.84 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN |  | U | EM | 2.32 | J | OC | 11.40 |  |  | 8.51 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.31 | J | OC | 1.00 | J | OC | 16.90 |  |  | 10.16 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 1.57 | J | OC | 3.38 | J | OC | 80.27 | J | 1 | 46.02 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 1.12 | J | OC | 1.19 | J | OC | 68.87 | J | 1 | 41.82 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 4.88 | J | OC, | 8.76 |  |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 2.36 | J | OC | 0.87 | J | OC | 61.89 | J | 1 | 40.49 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 44.26 |  |  | 14.70 |  |  | 1,949.71 | J | SE,LE | 1,458.31 | J | SE,DMI |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 3.98 | J | OC | 1.38 | J | OC | 185.59 | J | 1 | 97.01 |  |  |
| OCTACHLORODIBENZOFURAN | 146.64 |  |  | 60.22 |  |  | 8,898.74 | J | SE,DMI | 5,591.95 | J | SE,DMI |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS |  | U |  |  | U |  | 178.59 |  |  | 136.66 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 3.35 |  |  | 1.11 |  |  | 781.70 |  |  | 534.74 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 83.77 |  |  | 22.95 |  |  | 11,992.89 |  |  | 4,241.84 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 941.09 |  |  | 357.26 |  |  | 48,806.85 |  |  | 35,876.00 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 1.16 |  |  | 3.24 |  |  | 92.48 |  |  | 85.03 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 9.64 |  |  | 7.10 |  |  | 647.07 |  |  | 450.15 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 51.52 |  |  | 16.69 |  |  | 2,366.75 |  |  | 1,793.31 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 183.43 |  |  | 54.60 |  |  | 11,789.41 |  |  | 5,783.98 |  |  |


| Chemical Name | SS062CA |  |  | SS062CC |  |  | SS062DA |  |  | SS082AA |  |  |
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|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  |  | U |  | 1.92 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 1.04 | J | OC | 1.28 | J | OC | 0.31 | J | OC | 37.77 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1.00 | J | I,OC | 1.85 | J | OC, 1 | 0.42 | J | OC | 99.37 | J | I |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 13.36 | J | 1 | 19.64 | J | 1 | 0.85 | J | OC | 401.09 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 2.94 | J | OC | 3.04 | J | 1 | 0.80 | J | OC | 105.30 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 253.77 |  |  | 388.59 | J | 1 | 25.46 |  |  | 11,185.13 | J | LE,I,SE |
| OCTACHLORODIBENZO-P-DIOXIN | 2,568.47 |  |  | 3,947.59 | J | E | 266.62 |  |  | 87,362.17 | J | LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  | 1.73 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.47 | J | OC | 0.48 | J | OC | 0.17 | J | OC | 4.23 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN |  | U | EM | 0.71 | J | OC | 0.27 | J | OC | 5.40 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 1.47 | J | I,OC | 1.83 | J | OC, 1 |  | U | MB | 41.34 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 1.83 | J | I,OC | 2.34 | J | OC, 1 | 0.28 | J | OC | 31.74 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U | EM | 0.21 | J | OC, 1 | 0.18 | J | OC | 0.85 | J | I,OC |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 1.57 | J | I,OC | 2.20 | J | OC, I | 0.38 | J | OC | 45.26 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 38.54 | J | I,OC | 52.05 | J | 1 | 3.25 | J | OC | 1,700.66 | J | 1 |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 2.21 | J | I,OC | 2.96 | J | OC, 1 | 0.27 | J | OC | 115.85 | J | 1 |
| OCTACHLORODIBENZOFURAN | 184.81 |  |  | 272.80 |  |  | 13.60 |  |  | 5,874.71 | J | LE,SE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 0.77 |  |  | 1.06 |  |  |  | U |  | 11.99 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 4.82 |  |  | 5.04 |  |  | 0.31 |  |  | 174.77 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 141.94 |  |  | 131.87 |  |  | 8.39 |  |  | 2,877.69 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 748.18 |  |  | 1,113.46 |  |  | 86.38 |  |  | 36,626.06 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 4.92 |  |  | 4.02 |  |  |  | U |  | 33.53 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 19.59 |  |  | 25.88 |  |  | 1.07 |  |  | 203.42 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 59.26 |  |  | 79.08 |  |  | 4.22 |  |  | 1,885.21 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 129.76 |  |  | 180.15 |  |  | 11.80 |  |  | 7,435.63 |  |  |


| Chemical Name | SS082BA |  |  | SS082CA |  |  | SS082DA |  |  | SS084AA |  |  |
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|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 2.04 |  |  |  | U |  |  | U | EM | 0.96 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 26.81 |  |  | 6.32 |  |  | 0.18 | J | OC | 9.01 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 83.10 |  |  | 44.21 |  |  |  | U | EM | 24.17 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1,589.07 |  |  | 466.20 |  |  | 1.13 | J | OC | 50.89 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 959.11 |  |  | 305.78 |  |  | 1.02 | J | OC | 60.07 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 86,565.55 | J | I,LE | 31,559.88 | J | I,LE | 77.73 |  |  | 2,217.06 | J | E |
| OCTACHLORODIBENZO-P-DIOXIN | 830,637.85 | J | I,E,LE | 252,398.73 | J | I,LE | 913.28 |  |  | 22,319.19 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 4.80 |  |  |  | U |  |  | U |  | 3.47 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 16.39 |  |  |  | U |  | 0.14 | J | OC | 0.87 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 21.89 |  |  | 1.97 | J | OC |  | U | EM | 1.15 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 279.56 | J | 1 | 54.79 | J | 1 |  | U | EM | 5.95 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 51.14 | J | 1 | 11.50 | J | 1 |  | U |  | 5.47 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 5.82 | J | 1 | 23.67 | J | 1 |  | U |  | 0.33 | J | OC |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 166.51 |  |  | 26.39 |  |  |  | U |  |  | U | EM |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 6,293.49 | J | LE,SE | 2,986.04 | J | 1 | 7.68 |  |  | 247.93 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 700.53 | J | 1 | 210.60 | J | 1 | 0.86 | J | OC | 14.53 |  |  |
| OCTACHLORODIBENZOFURAN | 44,928.36 | J | I,LE, SE | 18,173.02 | J | I,LE,SE | 50.97 |  |  | 1,210.88 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 101.60 |  |  | 28.02 |  |  | 0.08 |  |  | 5.79 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 559.50 |  |  | 149.19 |  |  | 0.35 |  |  | 90.52 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 143,574.26 |  |  | 51,277.45 |  |  | 26.41 |  |  | 997.11 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 228,758.83 |  |  | 140,158.50 |  |  | 548.37 |  |  | 9,447.53 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 57.08 |  |  | 3.94 |  |  | 0.12 |  |  | 14.86 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 263.64 |  |  | 37.06 |  |  | 0.59 |  |  | 50.35 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 15,478.66 |  |  | 5,501.61 |  |  | 6.10 |  |  | 236.26 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 43,347.32 |  |  | 15,275.77 |  |  | 39.37 |  |  | 908.41 |  |  |


| Chemical Name | SS084BA |  |  | SS096AA |  |  | SS096BA |  |  | SS096CA |  |  |
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|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | $\cup$ | EM |  | U | EM | 7.83 | J | DD |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 20.14 |  |  | 619.12 |  |  | 79.19 |  |  | 24.18 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 56.04 | J | 1 | 2,003.61 |  |  | 204.88 |  |  | 98.40 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 404.38 | J | 1 | 5,549.93 | J | LE,SE | 1,048.15 |  |  | 490.00 | J | DD |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 105.94 | J | 1 | 3,803.76 | J | LE | 375.26 |  |  | 344.19 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 19,947.67 | J | I,LE | 189,612.94 | J | I,LE | 26,710.24 | J | I,LE,SE | 32,472.93 | J | LE |
| OCTACHLORODIBENZO-P-DIOXIN | 205,959.81 | J | E,LE | 140,581.70 | J | I,LE | 217,716.17 | J | LE | 357,166.74 | J | I,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 2.00 |  |  | 18.04 |  |  | 2.22 |  |  | 1.86 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 4.58 | J | OC | 71.54 |  |  | 9.84 |  |  | 5.28 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 6.17 |  |  | 81.81 |  |  | 12.60 |  |  |  | U | EM |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 61.88 | J | 1 | 642.11 | J | 1 | 97.89 | J | 1 | 75.67 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 31.25 | J | 1 | 539.51 | J | 1 | 78.24 | J | 1 | 35.51 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 10.81 | J | 1 | 118.94 | J | 1 | 20.37 | J | 1 | 12.33 | J | I |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 48.47 | J | 1 | 1,348.94 |  |  | 175.33 |  |  | 85.62 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 1,797.00 | J | 1 | 20,353.72 | J | I,LE | 2,784.48 | J | I,SE,LE | 2,504.85 | J | I,LE |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 172.53 | J | 1 | 2,046.47 | J | 1 | 247.88 | J | 1 | 198.47 | J | 1 |
| OCTACHLORODIBENZOFURAN | 11,602.61 | J | LE | 100,966.39 | J | I,LE | 15,111.92 | J | LE,SE | 16,298.08 | J | I,SE,LE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 10.02 |  |  | 9.99 |  |  | 18.98 |  |  | 51.32 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 189.11 |  |  | 2,686.92 |  |  | 375.18 |  |  | 306.78 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 6,627.37 |  |  | 105,662.02 |  |  | 11,121.79 |  |  | 31,617.21 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 18,918.61 |  |  | 105,806.78 |  |  | 72,231.21 |  |  | 82,542.70 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 39.81 |  |  | 264.83 |  |  | 70.08 |  |  | 59.59 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 236.23 |  |  | 3,289.08 |  |  | 457.62 |  |  | 283.49 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 2,526.39 |  |  | 20,043.93 |  |  | 5,243.80 |  |  | 4,162.95 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 11,090.13 |  |  | 27,408.72 |  |  | 18,406.48 |  |  | 14,084.39 |  |  |


| Chemical Name | SS096DA |  |  | SS097AA |  |  | SS097BA |  |  | SS097CA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 0.70 | J | OC | 0.36 | J | OC |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 11.23 |  |  | 5.77 | J | OC | 0.26 | J | OC |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 33.12 |  |  | 18.21 |  |  | 0.58 | J | OC |  | U |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 128.61 |  |  | 66.61 |  |  | 2.45 | J | OC | 0.45 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 64.20 |  |  | 51.55 |  |  | 1.67 | J | OC | 0.24 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 3,203.15 | J | SE,DMI | 2,563.91 | J | E | 79.52 |  |  | 12.83 | J | MB |
| OCTACHLORODIBENZO-P-DIOXIN | 33,059.94 | J | SE,DMI | 22,685.56 | J | E | 734.20 |  |  | 147.75 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.56 | J | OC |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 1.29 | J | OC | 1.13 | J | OC | 0.13 | J | OC |  | U |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 1.69 | J | OC | 3.25 | J | OC | 0.33 | J | OC |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 13.04 |  |  | 18.00 |  |  | 1.88 | J | MB |  | U | MB |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 9.73 |  |  | 10.67 |  |  | 0.82 | J | OC |  | U |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 0.49 | J | OC | 0.41 | J | OC |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 8.63 |  |  | 8.12 |  |  | 0.52 | J | OC |  | U |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 508.95 |  |  | 379.49 |  |  | 19.65 |  |  | 1.48 | J | OC,MB |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 31.75 |  |  | 23.79 |  |  |  | U | EM |  | U |  |
| OCTACHLORODIBENZOFURAN | 3,138.65 | J | DMI | 1,686.37 |  |  | 48.48 |  |  | 5.87 | J | MB,OC |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 3.29 |  |  | 14.95 |  |  | 1.30 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 49.06 |  |  | 78.48 |  |  | 2.80 |  |  |  | U |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 775.28 |  |  | 789.60 |  |  | 27.34 |  |  | 3.80 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 9,949.34 |  |  | 8,462.15 |  |  | 260.15 |  |  | 42.26 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 6.39 |  |  | 26.16 |  |  | 2.05 |  |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 61.26 |  |  | 69.80 |  |  | 4.28 |  |  | 0.17 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 592.82 |  |  | 306.81 |  |  | 10.36 |  |  | 1.02 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 2,249.64 |  |  | 1,319.58 |  |  | 50.34 |  |  | 4.62 |  |  |


| Chemical Name | SS097DA |  |  | SS098AA |  |  | SS098BA |  |  | SS098CA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  | 1.95 |  |  |  | U |  |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN |  | U |  | 50.12 |  |  | 3.01 | J | OC | 1.20 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN |  | U |  | 120.51 |  |  | 14.52 |  |  | 5.15 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN |  | U | EM | 368.43 |  |  | 33.85 |  |  | 11.63 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN |  | U |  | 409.59 |  |  | 62.87 |  |  | 20.69 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN |  | U | MB | 13,551.92 |  |  | 1,811.13 |  |  | 671.49 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 43.12 | J | MB | 111,245.22 | J | E | 13,169.40 | J | E | 5,262.50 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  | 0.44 |  |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.33 | J | OC | 3.01 | J | OC | 0.59 | J | OC | 0.31 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.15 | J | OC | 3.60 | J | OC | 1.39 | J | OC | 0.56 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 0.69 | J | OC, MB | 31.63 |  |  | 11.05 |  |  | 3.34 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 0.26 | J | OC | 23.43 |  |  | 3.74 | J | OC | 1.43 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  | 1.07 | J | OC | 0.37 | J | OC |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN |  | U |  | 22.11 |  |  | 3.07 | J | OC | 1.23 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 0.90 | J | OC,MB | 1,328.82 |  |  | 155.07 |  |  | 60.90 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN |  | U |  | 76.41 |  |  | 8.49 |  |  | 3.09 | J | OC |
| OCTACHLORODIBENZOFURAN | 2.72 | J | OC,MB | 9,725.37 | J | SE | 561.15 |  |  | 200.71 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS |  | U |  | 31.73 |  |  | 2.50 |  |  | 0.37 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS |  | U |  | 473.94 |  |  | 43.13 |  |  | 13.87 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 0.74 |  |  | 4,944.65 |  |  | 929.59 |  |  | 308.91 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 16.05 |  |  | 33,254.14 |  |  | 12,058.99 |  |  | 4,759.60 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS |  | U |  | 33.37 |  |  | 3.42 |  |  | 0.69 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 0.60 |  |  | 211.59 |  |  | 30.03 |  |  | 9.41 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 1.23 |  |  | 1,184.12 |  |  | 181.13 |  |  | 57.47 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 0.90 |  |  | 5,606.16 |  |  | 509.86 |  |  | 196.99 |  |  |


| Chemical Name | SS098DA |  |  | SS099AA |  |  | SS099BA |  |  | SS099CA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U | EM | 3.69 |  |  | 26.88 |  |  | 5.62 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 0.45 | J | OC | 29.00 |  |  | 195.26 |  |  | 61.38 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1.31 | J | OC | 95.21 |  |  | 764.36 |  |  | 202.29 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 4.55 |  |  | 292.52 |  |  | 7,025.13 | J | LE, SE | 3,172.29 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 5.59 |  |  | 372.18 |  |  | 4,213.51 | J | LE,SE | 1,116.32 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 268.88 |  |  | 11,014.36 | J | SE,DMI | 245,606.66 | J | E | 131,232.90 | J | E,LE |
| OCTACHLORODIBENZO-P-DIOXIN | 2,295.59 |  |  | 119,068.40 | J | DMI | 2,792,427.80 | J | E, I | 2,269,147.30 | J | E,I,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  | 0.79 | J | OC |  | U | EM | 0.86 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.18 | J | OC | 2.93 | J | OC | 47.06 |  |  | 60.40 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.24 | J | OC | 2.99 | J | OC | 48.81 |  |  | 6.09 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 0.96 | J | OC | 29.54 |  |  | 910.68 | J | I,LE | 255.79 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 0.46 | J | OC | 15.47 |  |  | 280.34 | J | I,LE | 54.61 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  | 1.19 | J | OC | 29.94 | J | I,LE | 3.96 | J | OC, I |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 0.68 | J | OC | 13.57 |  |  | 277.94 | J | I,LE | 136.49 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 19.05 |  |  | 1,123.90 |  |  | 31,967.20 | J | I,LE | 11,236.12 | J | I,LE |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 1.23 | J | OC | 99.01 |  |  | 1,667.33 | J | I,LE | 936.21 |  |  |
| OCTACHLORODIBENZOFURAN | 105.79 |  |  | 8,580.93 | J | SE,DMI | 379,726.11 | J | 1 | 296,197.26 | J | E,I,LE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 0.16 |  |  | 61.27 |  |  | 1,220.39 |  |  | 409.41 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 2.86 |  |  | 516.56 |  |  | 9,619.84 |  |  | 4,890.33 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 104.99 |  |  | 5,261.06 |  |  | 144,829.28 |  |  | 46,323.40 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 2,012.00 |  |  | 41,286.60 |  |  | 197,518.27 |  |  | 121,243.03 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 0.25 |  |  | 14.53 |  |  | 223.14 |  |  | 63.64 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 2.62 |  |  | 115.55 |  |  | 1,729.42 |  |  | 388.14 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 17.00 |  |  | 999.57 |  |  | 4,133.67 |  |  | 13,847.17 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 76.10 |  |  | 5,576.30 |  |  | 28,010.32 |  |  | 15,760.16 |  |  |


| Chemical Name | SS099DA |  |  |
| :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 0.29 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 1.61 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 5.66 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 22.80 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 16.41 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 1,124.78 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 15,412.68 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.42 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.37 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 2.23 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN |  | U | EM |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 2.15 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 79.44 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 5.85 |  |  |
| OCTACHLORODIBENZOFURAN | 645.56 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 2.11 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 21.11 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 281.26 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 4,246.73 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 0.21 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 8.22 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 73.18 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 394.45 |  |  |

ATTACHMENT B
REASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.

## ATTACHMENT C

CAS REPORT AMENDMENT

February 20, 2007
Mandy Sullivan
Columbia Analytical Services, Inc
8540 Baycenter Road
Jacksonville, FL 32256

Subject: $\quad \begin{aligned} & \text { Amendment to Report; } 10605876 \\ & \\ & \text { AMEC/Beazer East, Inc }\end{aligned}$

Dear Mandy,
The Form 3 for SS096BA has been corrected to include the appropriate dilution factor. Please replace page 148 with page 1-148 when validating

- the data package.

The correct Form 2 for sample SS098DA is enclosed. Please replace page 190 with page l-190 when validating the data package.

Please let us know if we can help with anything else.

Sincerely,
Columbia Analytical Services, Inc


- .

HRMS Chemist: Quality \& Projects
ifreemyer@houston.caslab.com

CLIENTID.
SSO96BA

Lab Name: Columbia Analytical Services
Lab Code: CAS
Client Name: AMEC
Matrix(Solid/Aqueous/Waste/Ash): Solid
Sample Receipt Date: 12/12/2006
Ext. Date 12/19/2006
CONCENTRATION UNITS: ( $\mathrm{pg} / \mathrm{L}$ or $\mathrm{ng} / \mathrm{Kg}$ )

Contract:
Lab ID: J0605876-025
Sample Wt/Vol: 9.904 g
Initial Calibration Date: 10/25/2004
Instrument ID: AutoSpec-Ulitima
GC Column ID: DB-5,DB-225
$\mathrm{ng} / \mathrm{Kg} \quad$ \%Moisture:
90.86

| TARGET ANALYTE | CONCENTRATIDFIL. |  | EDL |  | TEF | TEF-ADJUSTED CONCENTRATION |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2378-TCDD | 3.297 | 1 | 0.251 | x | 1.0 | $3.297 E+00$ |
| 12378-PeCDD | 79.192 | 1 | 0.500 | x | , | $7.919 \mathrm{E}+01$ |
| 123478-HxCDD | 204.882 | 1 | 0.783 | x | 0.1 | $2.049 \mathrm{E}+01$ |
| 123678-HxCDD | 1048.147 | 1 | 0.944 | X | 0.1 | $1.048 \mathrm{E}+02$ |
| 123789-HxCDD | 375.260 | 1 | 0.866 | X | 0.1 | $3.753 \mathrm{E}+01$ |
| 1234678-HpCDD | 26710.238 | 50 | 13.433 | X | 0.01 | $2.671 \mathrm{E}+02$ |
| OCDD | 217716.174 | 50 | 0.898 | x | 0.0001 | $2.177 \mathrm{E}+01$ |
| 2378-TCDF | 2.216 | 1 | 0.342 | x | 0.1 | 2.216E-01 |
| 12378-PeCDF | 9.837 | 1 | 0.107 | x | 0.05 | 4.919E-01 |
| 23478-PeCDF | 12.597 | 1 | 0.151 | x | 0.5 | $6.299 \mathrm{E}+00$ |
| 123478-HxCDF | 97.894 | 1 | 0.215 | x | 0.1 | $9.789 \mathrm{E}+00$ |
| 123678-HxCDF | 78.238 | 1 | 0.282 | x | 0.1 | $7.824 \mathrm{E}+00$ |
| 123789-HxCDF | 20.371 | 1 | 0.153 | x | 0.1 | $2.037 \mathrm{E}+00$ |
| 234678-HxCDF | 175.326 | 1 | 0.325 | x | 0.1 | $1.753 \mathrm{E}+01$ |
| 1234678-HpCDF | 2784.481 | 50 | 2.684 | - | 0.01 | $2.784 \mathrm{E}+01$ |
| 1234789-HpCDF | 247.879 | 1 | 3.509 | - | 0.01 | $2.479 \mathrm{E}+00$ |
| OCDF | 15111.919 | 50 | 0.498 | X | 0.0001 | $1.511 \mathrm{E}+00$ |
|  |  |  |  |  |  |  |
|  |  |  |  |  | Total $=$ | $6.102 \mathrm{E}+02$ |

(1) World Health Organization (WHO) adopted TEF's taken from: Van Den Berg, et al: Toxic Equivalency Factor(TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildife (environ Health Perspect 106: 775-792 (1998)). and 1989 Update.
(2) The concentration which has "E" flag in the first analysis has been replaced by the dilution analysis, and the dilution factor is reported in "DIL.FACT" column.

The TCDF value is reported from the confirmation analysis (DB-225 column).
Note: Non-detected values are reported as one-half the detection limits(DL/2).


LAABELED COMPOUNDS

| 13C-2,3,7,8-TCDD | 2000 | 2177.36 | 108.87 | 25-164 | 0.77 | 1.012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 13C-1, 2, 3, 7, 8-PeCDD | 2000 | 2301.87 | 115.09 | 25-181 | 1. 54 | 1.012 1.220 |
| 13C-1, 2, 3, 4, 7, 8-HxCDD | 2000 | 1875.72 | 93.79 | 32-141 | 1.54 <br> 1.27 | 1.220 0.990 |
| 13C-I, $2,3,6,7,8-\mathrm{HXCDD}$ | 2000 | 1908.90 | 95.44 | 28-130 | 1.27 1.26 | 0.990 0.992 |
| 13C-1, 2, 3, 4, 6, 7, 8-HpCDD | 2000 | 1327.94 | 66.40 | 23-140 | 1.26 1.03 | 0.992 1.070 |
| 13C-OCDD | 4000 | 1928.02 | 48.20 | 17-157 | 0.89 | 1.1 .138 1.15 |
| 13C-2,3,7,8-TCDF | 2000 | 1815.21 | 90.76 | 24-169 | 0.79 | 0.971 |
| 13C-1, 2, 3, 7, 8-PeCDF | 2000 | 2343.66 | 117.18 | 24-185 | 1.56 | 0.971 1.172 |
| 13C-2,3,4,7,8-PeCDE | 2000 | 2079.76 | 203.99 | 21-178 | 1.56 | 1.172 1.205 |
| 13C-1, $2,3,4,7,8-\mathrm{HxCDE}$ | 2000 | 1898.76 | 94.94 | 26-152 | 0.52 | 1.205 0.969 |
| 13C-1, $2,3,6,7,8-\mathrm{HxCDF}$ | 2000 | 1641.63 | 82.08 | 26-123 | 0.52 | 0.971 |
| $13 \mathrm{C}-1,2,3,7,8,9-\mathrm{HxCDF}$ | 2000 | 2419.90 | 121.00 | 29-147 | 0.52 | 1.006 |
| 13C-2, 3, 4, 6, 7, 8-HxCDF | 2000 | 1895.65 | 94.78 | 28-136 | 0.52 | 0.986 |
| $13 \mathrm{C}-1,2,3,4,6,7,8-\mathrm{HPCDF}$ | 2000 | 1280.89 | 64.04 | 28-143 | 0.44 | 1.047 |
| $13 \mathrm{C}-1,2,3,4,7,8,9-\mathrm{HPCDF}$ | 2000 | 1782.17 | 89.11 | 26-138 | 0.44 | 1.079 |

## CLEANUP STANDARD

| $37 C 1-2,3,7,8-T C D D$ | 800 | 851.00 | 206.38 | $35-197$ | 1.013 |
| :--- | :--- | :--- | :--- | :--- | :--- |

(I) Contract-required limits for percent recovery (R) are specified in Table 7, Method 1613.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There
is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

Q: Please provide detail on the standard procedures for diluting samples. Is the amount of internal standard from the initial spike before extraction taken into account in the dilution process? If so, how?

In accordance with 1613 para 17.5.3, a portion of the extract is diluted with labeled standard to form the desired dilution. For example, if the desired dilution is $1: 10,2 \mathrm{ul}$ of the original 20 ul extract is added to 20 ul of $100 \mathrm{ng} / \mathrm{ml}$ labeled standard. This makes the $1: 10$ dilution of the extract. The 2000 pg of labeled standard is quantitated with 2000 pg of recovery standard by adding 20 ul of recovery standard solution at $100 \mathrm{ng} / \mathrm{ml}$.

Q: Please provide the standard procedures for data reduction in the case of dilutions.
The diluted sample was calculated using the labeled standard recoveries calculated from the initial analysis to correct the results for the losses during isolation and cleanup. For example, if the factor in for 13C-2378-TCDD is 2000pg and the internal standard recovery of the initial analysis was $80 \%$, then the calculation factor for the diluted sample would be 2000/0.80 or 2500pg. This calculation is repeated for all labeled standards. Since the cleanup standard, ${ }^{37} \mathrm{Cl}_{4}-2,3,7,8$-TCDD is not added to the diluted extract, its factor is simply divided by the dilution. For a $1: 10$ dilution, the original factor of 800 pg becomes $800 / 10$ or 80 pg . The sample amount is adjusted to $1 / 10$ of the original value.

Please document the calculations for SS096BA as an example.
The manual calculation in question on $p 823$ is

$$
\begin{aligned}
& \text { OCDD }=\text { (7.455e5 + 8.320e5) x } 4000 \mathrm{pg} \times 50 \\
& (9.155 \mathrm{e} 4+1.004 \mathrm{e} 5) \times 9.904 \times 90.86 / 100 \times 1.035 \times 0.81014
\end{aligned}
$$

Where
7.455 e 5 is the primary ion response of the analyte
8.320 e 5 is the secondary ion response of the analyte

4000 pg is the amount of ${ }^{13} \mathrm{C}$-OCCD internal added to the sample at extraction
50 is the dilution factor
9.155 e 4 is the primary ion response of the internal standard
1.00 e 5 is the secondary ion response of the internal standard
$90.86 / 100$ is the \% solids factor
1.035 is the response factor of OCDD on this instrument, using the initial calibration of 10/25/04
0.81014 is the recovery of 13C-OCDD in the original sample. This corrects the 4000 factor in the numerator.

However, Form 2 of the original sample ( p 147 ) shows recovery of ${ }^{13} \mathrm{C}-\mathrm{OCDD}$ at $146.95 \%$. Page 842 of this report shows severe matrix interference with ${ }^{13} \mathrm{C}-1,2,3,7,8,9-$ HxCDD, the recovery standard. The loss of response of this standard systematically elevates the quantitation results of all Hexa, Hepta and Octa internal standards in the original undiluted sample. Inspection of ${ }^{13} \mathrm{C}-1,2,3,7,8,9-\mathrm{HxCDD}$ in the 1:50 diluted sample on page 865 , shows that the matrix interference has been substantially diluted out. The recovery of the labeled standards affected by matrix interference is to average the recoveries of the unaffected labeled standards. In this case, the Tetra and Penta recoveries are $\operatorname{Av}(63.31,70.87,90.78,96.93,83.18)=81.014 \%$, the estimated recovery of 13C-OCDD subsequently used in the calculation of the diluted OCDD concentration. Note that the OCDD peak for SS096BA, page 848, is saturated, which accounts for the poor correlation between the original and diluted results.

TEQ Summary sheet for SS096BA is updated for the actual dilution of 50 and is submitted as page 148A.

Form 2, Internal Standards recovery for SS098DA is submitted as page 190A.
Sample Set J0605839
Q: Provide calculations and derivation of any factors that are not directly evident from the raw data for the reported concentration of target analytes in the SS095AA dilution sample (J0605839-011DL)

Like the previous case, there is significant matrix interference with ${ }^{13 \mathrm{C}}$-123789-HxCDD (p. 181) that would affect the quantitation of SS095AA internal standards. In this case, the average internal recovery factor is $\operatorname{Av}(100+99.44+100+100+100)=99.89 \%$. By convention, recoveries greater than $100 \%$ are reduced to $100 \%$ for the purpose of estimating the labeled standard correction in the diluted sample.

There is no significant matrix interference with the recovery standards of SS095BA. The recovery of ${ }^{13} \mathrm{C}$-OCDD is $45.68 \%$ in the original sample. The corrected value of the internal in the calculations for the dilution would then be $4000 \mathrm{pg} / 0.4568$.

# DATA VALIDATION REPORT 

# Soil Samples <br> from <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs <br> CAS Report J0605879

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## List of Attachments

Attachment A Data Summary
Attachment B Reason Codes for Data Qualification

## DATA QUALIFIER DEFINITIONS

U The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.

N The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.
This report provides an evaluation of data for 24 samples collected on December 8 and 9, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December 9, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605879.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS100AA | SS005AA | SS086AA |
| :--- | :--- | :--- |
| SS100BA | SS005BA | SS086BA |
| SS100CA | SS005CA | SS086BB |
| SS100DA | SS005DA | SS088AA |
| SS100DB | SS003AA | SS088BA |
| SS066AA | SS003BA | SS068AA |
| SS066AB | SS003CA | SS068BA |
| SS066BA | SS003CB |  |
|  | SS003DA |  |

Samples from the locations noted below represent site perimeter samples:
SS003 - West border
SS005 - West border
SS086 - East border
SS088 - East border

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples with PCDDs/PCDFs within the range of the instrument calibration upon initial analysis are generally valid as reported. Results below the calibration range are qualified as estimated. Most results for samples initially above the calibration range and then reported from dilution analyses are qualified as estimated with a wide window of uncertainty.

Cleanup procedures implemented did not remove matrix interferences in several samples, including those from SS100, SS005, SS066, SS068, SS086 and SS088. In some samples, these interferences resulted in apparent internal standard recoveries that were above control
limits and required qualification of associated target analyte results. In others, the recoveries were within the relatively wide limits of the method, but likely biased. The absence of valid internal standard recoveries then compromised the quantitation of analyte concentrations from dilution analyses. CAS further compounded the uncertainty by adjusting data by factors that are not considered applicable. Results for these samples should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and site action limits. Although no samples have been rejected in their entirety based on the validation, they may not all be suitable to support project decisions.

Corrective measures required by the method in the event of failure to recover the cleanup or internal standards were not taken. Results for non-detected analytes in SS100DA are rejected and all reported analytes in this sample are qualified as estimated.

Toxicity equivalency (TEQ) values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

Raw data were reviewed for all sample and quality control analyses associated with the analyses of the site border samples.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries
15. Field blanks
16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. Chromatograms for all samples requiring dilutions were reviewed for evidence of interferences that would bias results.

Results for the total congener class PCDDs and PCDFs have not been validated and should be considered as estimated in all samples. These data are not included in the TEQ calculations. These are quantified based on the assumption that their response factors are the same as the 2378 -substitued isomers. All data reported are from the initial analyses and may include congeners above instrument calibration. Any factors affecting the accuracy of results for the 2378-isomers apply to the entire congener group and interferences in addition to those noted for the 2378 -isomers may significantly bias data for these groupings of PCDDs and PCDFs.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The submitted data packages contained instrumental documentation elements required for full validation. However, documentation of data calculations involving adjustments of measured results from dilutions were not included as part of the reporting package. Upon request, CAS provided explanations of selected individual sample calculations, but the approach taken was sample-specific.

It should be noted that data for the required QA/QC analyses including the mass calibration and resolution checks, window-defining mix and continuing calibration standards were not in chronological order in the package.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 9, 2006.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $4^{\circ} \mathrm{C}$, within the method recommended range. Method 1613 allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence and documentation for this measure was not reported.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. All congeners in the solution were detected at expected times. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9TCDF, $2,3,4,7$-TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

Two instruments were used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. Five-point calibrations were conducted on October 25 and November 7, 2006. Calibration for $2,3,7,8$-TCDF confirmation on the DB- 225 column was conducted on November 9, 2006. The initial calibrations were acceptable with \%RSDs $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted on December 27, 28 and 29, 2006 with analyses of samples at dilution on January 6, 10 and 16, 2007. Analyses for 2,3,7,8TCDF on the DB225 column were conducted on January 4, 5, 9, 10 and 15, 2006. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package. Method 1613 does not specifically require these.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. However, resolution of 123678- and 123478-HxCDD isomers was not achieved in some standards or in several samples and in several instances, apparent matrix interferences resulted in poor chromatographic separations for other target analytes. The $123678-H x C D D$ and $123478-H x C D D$ have the same TEF, so failure to resolve them has little impact on the TEQ for the sample. Results for target analytes not fully resolved from other non-target analytes in perimeter samples as listed below are qualified as estimated.

| SS005AA | $123789-H x C D D$ |
| :--- | :--- |
| SS005BA | $234678-H x C D F, 123789-H x C D D$ |
| SS005CA | $234678-H x C D F, 123789-H x C D D$ |
| SS005DA | $123789-H x C D D$ |
| SS003AA | $234678-H x C D F$ |
| SS003BA | $123789-H x C D D$ |
| SS086AA | $123789-H x C D D$ |

### 5.10 Method Blanks

Three method blanks were prepared with the initial extractions and one with a subsequent reextraction of one sample. The method blanks contained trace levels of several target PCDDs and PCDFs, including. OCDD, 1234678-HpCDD, OCDF and 1234678-HpCDF. Since the duplicate analyses of method blanks demonstrate variability in the levels detected, the maximum concentration from the analyses of the method blanks were used for data qualifications. All reported sample concentrations of these analytes were greater than 5 times the blanks and were not qualified.

### 5.11 Laboratory Control Samples (LCS)

Laboratory control sample and a duplicate were extracted with the preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Samples in this set contained a variety of interferents resulting in peaks that failed criteria for identification. These interferents may be non-PCDD/PCDFs with one or both of the mass fragments of a target analyte. Review of the raw data confirmed that the majority of these results, reported by CAS as estimated maximum possible concentrations (EMPC) with the "K" qualifier, represented peaks with ratios close to that expected for the respective PCDD of PCDF. In accordance with Region 4 guidance and the USEPA Functional Guidelines, results for these analytes in the affected samples have been qualified as non-detected with the reporting limit set at the amount calculated. This provides a high bias to the reporting limit since the actual maximum possible amount in the sample would be include only that fraction of the area of one peak that would satisfy the ratio requirement. Based on review of the data, it is considered likely that the target analyte is present at a concentration below the reported value in all instances.

12378-PeCDD failed to satisfy the ion ratio requirement for identification in sample SS100AA on its initial analysis; 123478-HxCDF failed in the initial analysis of SS88AA and OCDF failed in the initial analysis of SS003BA. These target analytes did meet the ion ratio criteria upon dilution. Although CAS reported the sample with the initial EMPC results, these have been replaced by the results from the dilution analyses for calculation of the TEQ.

CAS included all EPMC peaks as detections in the TEQ calculation. With the exception of the analytes noted above that subsequently were confirmed present in the dilution analysis, TEQs have been corrected to treat these peaks as non-detected analytes with elevated reporting limits.

The OCDD internal standard failed to meet the ion ratio criterion in the analysis of SS068BA. Results for OCDD and OCDF are qualified as estimated for this and other reasons. The TCDD and TCDF internal standards for SS100DA failed to meet ion ratio criteria. 2,3,7,8-TCDD and $2,3,7,8-T C D F$ were reported as non-detected, but the results have been rejected for recoveries of the cleanup standard below $10 \%$.

### 5.13 Confirmation Analyses

2,3,6,7-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of 2,3,7,8-TCDF from the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards for some or all HxCDDs, HpCDD, HxCDF and HpCDDs were above control limits for the initial analysis of samples as listed below:

SS100AA, SS100BA, SS100CA, SS100DA, SS100DB
SS005BA
SS068BA
All reported data for target dioxins and furans with internal standard recoveries outside of the limits are qualified as estimated with a high degree of uncertainty.

Review of the raw data for the above samples indicates that the extract cleanup procedures used did not remove significant matrix interferences, and these affected the measurement of the $123789-H x C D D$ recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards. Since the measurement of the 123789-HxCDD is biased low by these interferences, the apparent recoveries of the related internal standards are biased high, ranging up to $380 \%$. No reliable data on the recovery of the internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs can be obtained when this occurs.

Recovery of the internal standard for 2378-TCDD was below the control limit in SS100DA and the recovery for OCDD in SS086BB was below the control limit. Neither sample was reextracted as required by the method. The cleanup standard in SS100DA was below 10\%, and nondetected analytes in the sample have been rejected and all detected analytes qualified as estimated.

Sample SS088BA was re-extracted for internal standard recovery failures. It is not evident why samples SS100DA and SS086BB were not also reextracted as the method requires.

### 5.16 Interferences

As noted above, matrix interferences affected the quantitation of the recovery standard used to determine internal standard recoveries. Matrix interferences were also noted to affect the analyses of other PCDDs/PCDFs. Polychlorinated ethers were present in most samples and these can preclude the positive identification of PCDFs. In most cases, PCDEs in these samples affected the identification of non-2,3,7,8-substituted PCDFs as reported for the Totals for each congener level but did not affect the target analytes.

Ethers that interfered with target PCDFs were noted in samples as listed below. Reported results for these analytes are qualified to be estimated with potential high bias.

```
SS005BA 12378-PeCDF
SS086AA 123478-HxCDF
SS0086BA 123478-HxCDF
```

Unidentifiable matrix interferences can also result in poor chromatographic separation of PCDDs and PCDFs or suppression of the signal. Unknown matrix interferences affecting 2,3,7,8-PCDDS or PCDFs in site border samples are likely responsible for the chromatographic issues noted above. Matrix interferences that may have affected quantitation were noted in addition for $123478-H x C D D, 123678-H x C D D$ and 123789-HxCDD on SS086BA.

### 5.17 Sample Dilutions

Several samples in this set, as listed below, contained levels of PCDDs and PCDFs above the instrument calibration.

SS100AA, SS100BA, SS100CA
SS066AA, SS066AB
SS005AA, SS005BA, SS005CA
SS003AA, SS003BA
SS086AA, SS086BA, SS086BB
SS088AA, SS088BA
SS068AA, SS068BA
The primary corrective action for this in Method 1613 is to extract a smaller portion of the sample. Dilution by a factor of 10 is an alternative if it is determined that a smaller sample size will not be representative. Although these samples are characterized as sandy soils where representativeness would not be expected to be problematic, no reeextractions were performed. Samples were diluted by factors up to 200 by adding more internal standards to the extract.

Dilution with internal standards introduces uncertainty into the analysis since measurement by isotope dilution is no longer possible. CAS data reduction protocol for diluted samples where recoveries were elevated in the initial analysis is to correct the recovery in the diluted analysis by the recoveries of tetra- or tetra and penta-chlorinated internal standards. Review of data for
samples unaffected by interferences and apparent high recoveries does not support the use of this average; tetra- and penta-chlorinated internal standards consistently recover at significantly higher levels than the hexa- through octa-chlorinated internal standards. This data reduction practice likely leads to a significant low bias to results in affected samples. All measurements of hexa, hepta and octachlorinated dioxins and furans reported from dilutions where their quantitation was adjusted for tetra- and pentachlorinated standard recoveries have been qualified as estimated with potential significant bias.

In addition to the above samples, CAS adjusted data for dilution results for 123678-HxCDD, $1234678-H p C D D, ~ O C D D, 1234678-H p C D F$ and OCDF in samples SS003BA, SS006AA,SS086AA, SS086BA, SS088AA by recoveries of tetra or tetra and penta internal standards. The internal standard recoveries from the initial analyses were within the method control limits, but matrix interferences were noted that may have biased their reported recoveries. Results adjusted in this manner are qualified as estimated.

### 5.18 Data Consistency

Results for analytes above the calibration range in the initial analysis that are significantly lower after dilution analyses are qualified as estimated. This likely reflects bias resulting from the data adjustment protocol used by CAS for dilutions. These data include:

| SS086AA | OCDF |
| :--- | :--- |
| SS086BA | $234678-H x C D F$ |
| SS068BB | OCDF |
| SS005BA | OCDF |
| SS003BA | $1234678-H p C D D$ |
| SS068BA | $123678-H x C D D$, OCDD, 1234789-HpCDF, OCDF |
| SS088AA | $1234678-H p C D F$, OCDF |
| SS088BA | OCDF |
| SS066AA | OCDF |
| SS068AA | OCDF |
| SS100CA | OCDF |

CAS does not reanalyze samples where OCDD and/or OCDF are the only analytes above the calibration range. The results for OCDD in SS100DA, SS100DB, SS066BA, SS005DA, SS003DA were above calibration and are qualified as estimated.

### 5.19 Equipment Blank

No equipment blank was collected with this sample set.

### 5.20 Field Duplicates

Four pairs of field duplicates were included in this submittal. Duplicates from SS066A and SS086B agreed within 50\% relative difference (RPD). Although most individual target analytes
differed by over $50 \%$ relative difference for SS003C, levels were low and the RPD for the TEQs as calculated by CAS was $27 \%$ RPD. RPDs for analytes and the CAS TEQs for the duplicates from SS100D varied with RPDs $>50 \%$, but levels overall were low.

### 5.21 Calculations

Calculations for measurements within the instrument calibration range were verified for the initial analyses of perimeter samples. As noted above, calculations from dilutions for hexa, hepta and octa-chlorinated dioxins and furans in several samples were adjusted for the initial recoveries of tetra or tetra and pentachlorinated internal standards. CAS calculations of the adjustment factors for each sample were not documented and in some instances it could not be determined exactly which tetra or penta recovery standards were used for this manipulation. All data from this procedure are qualified as estimates with wide uncertainty.

Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

Field Duplicates: SDG $\mathbf{J 0 6 0 5 8 7 9}$

|  | SS100DA | SS100DB | RPD | SS066AA | SS066AB | RPD | SS003CA | SS003CB | RPD | SS086BA | SS086BB | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analyte |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,3,7,8-TCDD | ND | ND | NA | 4 | 4.32 | 8\% | ND | ND | NA | 19.3 | 21.3 | 10\% |
| 1,2,3,7,8-PeCDD | 1.12 | 2.29 | 69\% | 90.2 | 94.7 | 5\% | ND | ND | NA | 252 | 261 | 4\% |
| 1,2,3,4,7,8-HxCDD | 4.16 | 7.82* | 61\% | 241 | 266 | 10\% | 1.07 | 0.659 | 48\% | 698 | 725 | 4\% |
| 1,2,3,6,7,8-HxCDD | 12.7 | 22.8 | 57\% | 785 | 841 | 7\% | 4.1 | 2.88 | 35\% | 3040 | 3070 | 1\% |
| 1,2,3,7,8,9-HxCDD | 12.7 | 22.8 | 57\% | 510 | 736 | 36\% | 4.31 | 1.83 | 81\% | 1730 | 1420 | 20\% |
| 1,2,3,4,6,7,8-HpCDD | 495 | 961 | 64\% | 25300 | 18400 | 32\% | 223 | 147 | 41\% | 121000 | 113000 | 7\% |
| OCDD | 4560 | 8560 | 61\% | 175000 | 78200 | 76\% | 2061 | 1403 | 38\% | 714000 | 761000 | 6\% |
| 2,3,7,8-TCDF | ND | ND | NA | 4.5 | 4.67 | 4\% | ND | 0.509 | NA | 12.2 | 11.8 | 3\% |
| 1,2,3,7,8-PeCDF | ND | ND | NA | 12.3 | 16.1 | 27\% | ND | 0.598 | NA | 24.4 | 25 | 2\% |
| 2,3,4,7,8-PECDF | ND | ND | NA | 14.8 | 15.7 | 6\% | 0.16 | 0.466 | 98\% | 41.7 | 41.8 | 0\% |
| 1,2,3,4,7,8-HxCDF | 1.45 | 2.43 | 51\% | 118 | 127 | 7\% | 0.538 | 1.43 | 91\% | 643 | 626 | 3\% |
| 1,2,3,6,7,8-HxCDF | 1.35 | 2.23 | 49\% | 103 | 119 | 14\% | 0.324* | 0.743 | 79\% | 262 | 269 | 3\% |
| 1,2,3,7,8,9-HxCDF | 0.635 | 0.18* | 112\% | 3.16 | 3.78 | 18\% | 0.347* | 0.749 | 73\% | 9.83 | 8.58 | 14\% |
| 2,3,4,6,7,8-HxCDF | 1.21 | 1.28 | 6\% | 68.3 | 79.8 | 16\% | 0.134* | 0.571 | 124\% | 200 | 181 | 10\% |
| 1,2,3,4,6,7,8-HpCDF | 49.8 | 92.4 | 60\% | 3350 | 2820 | 17\% | 22.7 | 29.4 | 26\% | 12500 | 12200 | 2\% |
| 1,2,3,4,7,8,9-HpCDF | 3.35 | 6.19 | 60\% | 270 | 323 | 18\% | 2.92 | 1.22 | 82\% | 1320 | 1320 | 0\% |
| OCDF | 264 | 523 | 66\% | 13600 | 10500 | 26\% | 120 | 79.3 | 41\% | 44600 | 46000 | 3\% |
| CAS TEQ, ng/kg | 1.08E+01 | 1.99E+01 | 59\% | $5.92 \mathrm{E}+02$ | $5.49 \mathrm{E}+02$ | 8\% | 4.2 | 3.19 | 27\% | $2.37 \mathrm{E}+03$ | $2.28 \mathrm{E}+03$ | 4\% |

* = Reported as estimated maximum possible concentration.


## ATTACHMENT A

DATA SUMMARY

| Chemical Name | SS003AA |  |  | SS003BA |  |  | SS003CA |  |  | SS003CB |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 0.39 | J | OC |  | U | EM |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 5.99 | J | OC | 5.56 | J | OC |  | U | EM |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 37.27 |  |  | 22.26 | J | CR | 1.07 | J | OC | 0.66 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 164.22 |  |  | 105.30 | J | CR | 4.10 | J | OC | 2.88 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 159.48 |  |  | 37.38 | J | CR | 4.31 | J | OC | 1.83 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 10,366.93 |  |  | 4,654.09 | J | SE,LE | 223.15 |  |  | 147.14 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 87,059.26 | J | E | 40,098.67 | J | LE | 2,061.96 |  |  | 1,403.44 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  | 0.60 | J | OC |  | U |  | 0.51 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN |  | U | EM | 0.88 | J | OC |  | U |  | 0.60 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.71 | J | OC |  | U | EM | 0.16 | J | OC | 0.47 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 13.75 |  |  | 14.00 |  |  | 0.54 | J | OC | 1.43 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 6.57 |  |  | 6.72 |  |  |  | U | EM | 0.74 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  | 0.66 | J | OC |  | U | EM | 0.75 | J | OC |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 8.11 | J | CR |  | U | EM |  | U | EM |  | U | EM |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 865.79 |  |  | 573.37 |  |  | 22.71 |  |  |  | U | EM |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 51.43 |  |  | 42.46 |  |  | 2.92 | J | OC | 1.22 | J | OC |
| OCTACHLORODIBENZOFURAN | 5,567.71 |  |  | 2,885.00 | J | DD,LE | 119.87 |  |  | 79.27 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 2.77 |  |  | 12.74 |  |  |  | U |  | 0.39 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 149.45 |  |  | 69.02 |  |  | 3.69 |  |  | 1.55 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 3,196.06 |  |  | 1,152.03 |  |  | 79.43 |  |  | 54.35 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 36,959.21 |  |  | 18,827.58 |  |  | 1,123.60 |  |  | 768.94 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 6.93 |  |  | 16.77 |  |  | 3.32 |  |  | 5.54 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 49.76 |  |  | 55.99 |  |  | 8.73 |  |  | 11.68 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 619.97 |  |  | 478.99 |  |  | 20.91 |  |  | 19.23 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 4,013.56 |  |  | 2,773.62 |  |  | 94.91 |  |  | 56.04 |  |  |


| Chemical Name | SS003DA |  |  | SS005AA |  |  | SS005BA |  |  | SS005CA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  | 1.10 | J | OC |  | U | EM | 0.60 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 0.33 | J | OC | 23.77 |  |  | 28.68 |  |  | 11.59 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1.01 | J | OC | 74.53 |  |  | 90.63 | J | CR | 42.41 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 3.75 | J | OC | 196.91 |  |  | 685.80 | J | CR | 119.63 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 2.30 | J | OC | 143.56 | J | CR | 353.60 | J | CR | 81.82 | J | CR |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 213.10 |  |  | 7,383.23 |  |  | 26,238.61 | J | 1 | 5,481.34 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 1,930.38 | J | E | 54,339.63 | J | E | 194,193.92 | J | LE,E | 47,246.05 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  | 0.67 | J | OC | 1.72 |  |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.24 | J | OC | 2.26 | J | OC | 3.37 | J | OC,DP | 1.31 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.23 | J | OC | 3.29 | J | OC | 4.15 | J | 1 | 1.77 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 0.54 | J | OC | 28.91 |  |  | 45.21 | J | 1 | 16.66 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 0.38 | J | OC | 27.55 |  |  | 28.63 | J | 1 | 12.90 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 1.09 | J | I,OC |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 0.42 | J | OC | 23.24 |  |  | 14.74 | J | I,CR | 9.60 | J | CR |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 29.11 |  |  | 1,007.75 |  |  | 2,167.48 | J | 1 | 615.29 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 1.03 | J | OC | 66.97 |  |  | 147.01 | J | 1 | 43.36 |  |  |
| OCTACHLORODIBENZOFURAN | 112.89 |  |  | 4,225.44 |  |  | 8,748.94 | J | LE,SE | 3,389.94 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS |  | U |  | 12.80 |  |  | 252.56 |  |  | 9.47 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 1.87 |  |  | 215.06 |  |  | 537.02 |  |  | 122.60 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 74.31 |  |  | 2,543.80 |  |  | 22,670.19 |  |  | 1,882.39 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 1,048.55 |  |  | 25,566.22 |  |  | 60,166.46 |  |  | 21,113.42 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS |  | U |  | 27.49 |  |  | 34.40 |  |  | 13.87 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 0.99 |  |  | 163.55 |  |  | 189.46 |  |  | 108.98 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 15.79 |  |  | 1,026.36 |  |  | 667.95 |  |  | 645.00 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 102.01 |  |  | 3,687.81 |  |  | 10,970.31 |  |  | 2,543.51 |  |  |


| Chemical Name | SS005DA |  |  | SS066AA |  |  | SS066AB |  |  | SS066BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  | 4.00 |  |  | 4.32 |  |  |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 2.15 | J | OC | 90.25 |  |  | 94.67 |  |  | 3.41 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 7.06 |  |  | 241.08 |  |  | 266.17 |  |  | 10.64 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 24.08 |  |  | 784.90 |  |  | 841.49 |  |  | 34.26 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 13.32 | J | CR | 510.48 |  |  | 736.42 |  |  | 25.22 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 1,228.71 |  |  | 25,271.49 | J | LE | 18,374.04 | J | LE | 1,408.03 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 11,326.67 | J | E | 175,245.69 | J | LE | 78,219.34 | J | LE | 14,403.74 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  | 4.50 |  |  | 4.67 |  |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.32 | J | OC | 12.29 |  |  | 16.08 |  |  | 0.64 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.30 | J | OC | 14.80 |  |  | 15.69 |  |  | 0.39 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 3.13 | J | OC | 118.00 | J | DD | 126.83 |  |  | 4.52 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 2.28 | J | OC | 102.56 |  |  | 117.73 |  |  | 3.76 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  | 3.16 | J | OC | 3.77 |  |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 1.92 | J | OC | 68.28 |  |  | 152.00 | J | DD | 3.02 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 124.47 |  |  | 3,349.75 | J | LE | 2,820.67 | J | LE | 204.18 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN |  | U | EM | 269.67 |  |  | 323.18 |  |  | 11.84 |  |  |
| OCTACHLORODIBENZOFURAN | 704.68 |  |  | 13,648.21 | J | SE,LE | 10,543.47 | J | SE,LE | 1,171.54 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 1.42 |  |  | 33.92 |  |  | 39.75 |  |  | 0.53 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 22.57 |  |  | 469.97 |  |  | 510.08 |  |  | 18.73 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 375.46 |  |  | 7,442.25 |  |  | 7,529.22 |  |  | 299.32 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 5,598.26 |  |  | 53,019.60 |  |  | 44,793.66 |  |  | 5,162.22 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 1.76 |  |  | 98.51 |  |  | 106.93 |  |  | 7.04 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 17.99 |  |  | 754.49 |  |  | 805.23 |  |  | 30.54 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 120.15 |  |  | 2,443.21 |  |  | 4,417.90 |  |  | 219.32 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 515.24 |  |  | 4,349.62 |  |  | 15,156.57 |  |  | 796.18 |  |  |


| Chemical Name | SS068AA |  |  | SS068BA |  |  | SS086AA |  |  | SS086BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 5.56 |  |  | 22.46 |  |  | 24.73 |  |  | 19.30 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 79.71 |  |  | 479.38 |  |  | 277.36 |  |  | 252.60 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 241.61 |  |  | 1,291.43 | J | 1 | 724.43 |  |  | 698.45 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 646.59 |  |  | 4,677.95 | J | LE,SE,I | 1,704.38 |  |  | 3,042.41 | J | MI,LE |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 548.88 |  |  | 1,534.75 | J | I | 1,233.11 | J | CR | 1,729.50 | J | MI |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 35,255.71 |  |  | 96,648.76 | J | LE | 67,126.50 | J | LE | 120,601.50 | J | LE,E |
| OCTACHLORODIBENZO-P-DIOXIN | 793,360.53 | J | E | 129,831.67 | J | I,M,LE,SE | 618,320.76 | J | LE | 713,962.16 | J | LE, E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 3.10 |  |  | 18.95 |  |  | 18.01 |  |  | 12.17 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 9.22 |  |  | 112.58 |  |  | 26.57 |  |  | 24.43 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 13.28 |  |  | 101.61 |  |  | 38.42 |  |  | 41.73 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 112.48 |  |  | 736.55 | J | 1 | 260.82 | J | DP | 642.98 | J | DP |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 85.99 |  |  | 631.15 | J | 1 | 179.56 |  |  | 262.37 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 2.55 | J | OC | 27.18 | J | 1 | 5.46 |  |  | 9.83 |  |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 159.64 |  |  | 913.55 | J | 1 | 146.28 |  |  | 199.87 | J | SE |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 3,724.54 |  |  | 15,023.92 | J | I,LE | 6,246.47 | J | LE | 12,535.19 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 251.79 |  |  | 887.85 | J | LE,SE | 559.70 |  |  | 1,320.57 |  |  |
| OCTACHLORODIBENZOFURAN | 37,598.20 |  |  | 47,547.34 | J | I,LE,SE | 25,903.76 | J | LE, SE | 44,639.32 | J | LE,SE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 29.75 |  |  | 215.21 |  |  | 171.71 |  |  | 148.70 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 397.02 |  |  | 2,145.82 |  |  | 1,682.67 |  |  | 1,636.75 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 6,232.15 |  |  | 32,267.21 |  |  | 17,841.06 |  |  | 26,453.36 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 58,503.21 |  |  | 135,479.39 |  |  | 85,550.33 |  |  | 119,213.06 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 53.00 |  |  | 473.02 |  |  | 175.39 |  |  | 189.93 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 445.27 |  |  | 1,433.23 |  |  | 1,127.80 |  |  | 1,417.64 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 1,866.14 |  |  | 5,832.69 |  |  | 4,113.97 |  |  | 7,379.47 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 11,889.92 |  |  | 18,395.28 |  |  | 7,182.67 |  |  | 15,217.89 |  |  |


| Chemical Name | SS086BB |  |  | SS088AA |  |  | SS088BA |  |  | SS100AA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 21.32 |  |  | 30.66 |  |  | 5.86 |  |  | 4.52 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 260.65 |  |  | 381.58 |  |  | 74.53 |  |  | 30.65 | J | DD,OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 724.69 |  |  | 998.19 |  |  | 209.83 |  |  | 271.42 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 3,070.40 | J | LE | 2,308.91 | J | LE | 582.23 |  |  | 513.42 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 1,421.01 |  |  | 1,869.52 |  |  | 512.51 |  |  | 530.93 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 112,843.56 |  |  | 86,528.59 | J | LE | 15,559.27 | J | SE | 13,053.55 | J | LE |
| OCTACHLORODIBENZO-P-DIOXIN | 760,786.87 | J | I,E,LE | 561,556.56 | J | LE | 184,492.67 |  |  | 82,593.40 | J | LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 11.76 |  |  | 20.71 |  |  | 3.14 |  |  | 3.38 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 25.02 |  |  | 49.00 |  |  | 8.83 | J | OC | 8.33 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 41.78 |  |  | 58.52 |  |  | 13.32 |  |  | 10.92 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 625.52 |  |  | 348.00 | J | DD | 95.34 |  |  | 59.94 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 268.97 |  |  | 339.65 |  |  | 77.32 |  |  | 54.03 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 8.58 |  |  | 12.57 |  |  | 2.84 | J | OC | 1.71 | J | OC, I |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 180.52 |  |  | 220.85 |  |  | 119.49 |  |  | 42.60 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 12,186.39 | J | LE | 9,494.04 | J | LE | 2,618.80 |  |  | 2,169.74 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 1,324.95 |  |  | 1,127.50 |  |  | 217.30 |  |  | 136.05 |  |  |
| OCTACHLORODIBENZOFURAN | 46,049.54 | J | I,LE, SE | 40,376.37 | J | LE,SE | 9,810.76 | J | SE | 4,282.40 | J | LE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 177.62 |  |  | 226.59 |  |  | 35.83 |  |  | 43.60 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 1,660.78 |  |  | 2,399.32 |  |  | 437.47 |  |  | 684.58 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 26,425.78 |  |  | 32,847.79 |  |  | 6,574.77 |  |  | 11,896.09 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 134,136.91 |  |  | 115,374.16 |  |  | 60,105.00 |  |  | 49,122.24 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 196.14 |  |  | 297.49 |  |  | 68.06 |  |  | 61.68 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 1,399.56 |  |  | 2,115.39 |  |  | 510.84 |  |  | 423.34 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 6,902.97 |  |  | 7,741.24 |  |  | 3,084.56 |  |  | 2,399.38 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 16,141.06 |  |  | 13,103.29 |  |  | 10,215.00 |  |  | 8,715.83 |  |  |


| Chemical Name | SS100BA |  |  | SS100CA |  |  | SS100DA |  |  | SS100DB |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 9.99 |  |  |  | U |  |  | R | CS |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 227.35 |  |  | 10.76 |  |  | 1.12 | J | OC | 2.29 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 964.30 |  |  | 24.30 | J | 1 | 4.16 | J | OC |  | U | EM |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 2,962.28 | J | LE | 267.31 | J | 1 | 12.67 | J | CS | 22.78 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 3,254.84 | J | LE | 60.13 |  |  | 12.65 | J | CS | 22.76 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 124,549.59 | J | I,LE | 9,159.73 | J | I,LE | 495.48 | J | I,CS | 961.22 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 884,538.49 | J | LE | 70,703.49 | J | LE | 4,563.85 | J | E,CS | 8,555.74 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 12.45 |  |  |  | U |  |  | R | CS |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 52.22 |  |  | 4.62 |  |  |  | R | CS |  | U |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 28.55 |  |  | 3.39 | J | OC |  | R | CS |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 393.91 | J | 1 |  | U | EM | 1.45 | J | OC | 2.43 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 311.96 | J | 1 | 16.96 | J | 1 | 1.35 | J | OC | 2.23 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 19.49 | J | 1 | 1.44 | J | 1 | 0.64 | J | I,OC |  | U | EM |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 729.18 |  |  | 43.19 | J | 1 | 1.21 | J | OC | 1.28 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 13,010.46 | J | I,LE | 856.93 | J | 1 | 49.80 | J | I,CS | 92.44 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 992.92 | J | I,LE | 220.28 | J | 1 | 3.35 | J | I,CS | 6.19 | J | 1 |
| OCTACHLORODIBENZOFURAN | 56,174.27 | J | LE | 4,574.79 | J | LE,SE | 264.39 | J | CS | 523.72 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 93.97 |  |  |  | U |  |  |  |  | 0.44 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 2,230.84 |  |  | 58.25 |  |  |  |  |  | 22.40 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 94,784.78 |  |  | 2,772.16 |  |  |  |  |  | 754.55 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 41,608.97 |  |  | 20,056.71 |  |  |  |  |  | 4,005.86 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 130.65 |  |  |  | U |  |  |  |  | 0.71 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 1,667.24 |  |  | 94.47 |  |  |  |  |  | 14.14 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 10,550.00 |  |  | 1,359.20 |  |  |  |  |  | 132.61 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 13,276.86 |  |  | 4,569.19 |  |  |  |  |  | 377.65 |  |  |

ATTACHMENT B
REASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.

# DATA VALIDATION REPORT 

Soil Samples from
Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL

## Analyses for PCDDs/PCDFs

CAS Report J0605890

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## List of Attachments

Attachment A Data Summary
Attachment B Reason Codes for Data Qualification

## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

This report provides an evaluation of data for seventeen samples collected on December 11, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December 13, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605839.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS041AA | SS086CA |
| :--- | :--- |
| SS041BA | SS086DA |
| SS094AA | SS088CA |
| SS094AB | SS088DA |
| SS094BA | SS068CA |
| SS101AA | SS068DA |
| SS101BA | SS041CA |
| SS024AA | SS041DA |
| SS024BA |  |

Samples from the locations noted below represent site perimeter samples:

```
SS086 East boundary
SS088 East boundary
```


### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for samples with PCDDs/PCDFs within the range of the instrument calibration upon initial analysis are generally valid as reported. Results below the calibration range are qualified as estimated. Most results for samples initially above the calibration range and then reported from dilution analyses are qualified as estimated with a wide window of uncertainty.

Cleanup procedures implemented did not remove matrix interferences from several samples. These interferences resulted in internal standard recoveries that were above control limits and required qualification of associated target analyte results. The absence of valid internal standard recoveries then compromised the quantitation of analyte concentrations from dilution analyses.

CAS further compounded the uncertainty by adjusting data by factors that are not considered applicable. Results for SS101AA and SS101BA should be considered as gross estimates. Results for these samples should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and site action limits. Although no samples have been rejected based on the validation, they may not all be suitable to support project decisions.

Toxicity equivalency (TEQ) values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

Raw data were reviewed for all sample and quality control analyses associated with samples SS041AA, SS041BA, SS101AA and SS086CA in this set. All reported results on the final summary forms were verified from the raw data instrument print-outs for sample concentrations.

Chromatograms were reviewed for evidence of interferences in all samples.
The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries

# amed ${ }^{\circ}$ 

15. Field blanks
16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results.
Results for the total congener class PCDDs and PCDFs have not been validated and should be considered as estimated in all samples. These data are not included in the TEQ calculations. These are quantified based on the assumption that their response factors are the same as the 2378 -substitued isomers. All data reported are from the initial analyses and many include congeners above instrument calibration. Any factors affecting the accuracy of results for the 2378-isomers apply to the entire congener group and interferences in addition to those noted for the 2378 -isomers may significantly bias data for these groupings of PCDDs and PCDFs.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The report narrative as provided contained errors and a revised narrative was provided upon request and is attached to this report. The submitted data packages contained analytical elements required; however, documentation of data calculations involving adjustments of measured results were not included as part of the reporting package. Upon request, CAS provided explanations for selected individual sample calculations, but the approach taken was determined to be sample-specific.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 13, 2006.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $4^{\circ} \mathrm{C}$. Method 1613 allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. All congeners in the solution were detected at expected times. The height of the valley between the closely eluting isomers 1,2,3,8-TCDD and 2,3,7,8-TCDD less than 25\%. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9TCDF, $2,3,4,7-$ TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

Two instruments were used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. Five-point calibrations were conducted on October 25 and November 7, 2006. Calibration for $2,3,7,8$-TCDF confirmation on the DB-225 column was conducted on November 9 , 2006. The initial calibrations were acceptable with $\%$ RSDs $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted on December 28 and 29, 2006 and January 3, 2007 with analyses of samples at dilution on January 9, 22 and 23, 2007. Analyses for 2,3,7,8-TCDF on the DB225 column were conducted on January 3, 10,11, 12 and 13, 2007. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package. Method 1613 does not specifically require these.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. However, resolution of 123478- and 123689-HxCDD isomers was not achieved in most standards or in the samples for which raw data were reviewed. Since these isomers have the same toxicity equivalency factor, the overall result on the TEQ of the sample is not likely affected.

123789-HxCDD was not resolved from a non-2,3,7,8-HxCDD isomer, and results are estimated for this analyte in samples SS041BA, SS086CA and SS101AA.

123789-HxCDF was not resolved from a non-2,3,7,8-HxCDF isomer, which was present in most samples at levels significantly greater than the target analyte. Results for 123789-HxCDF are qualified as estimated in SS041AA. Results for 123478-HxCDF, 123678-HxCDf and 234678HxCDF are qualified as estimated due to poor chromatographic resolution in SS041BA

Chromatographic resolution for TCDDs and PeCDDs in SS101AA was unacceptable, with excessive peak widths for the internal standards and noted peaks. Although 2378-TCDD was reported as an estimated maximum concentration in the sample, the broad peak cannot be necessarily attributed to the 2378-TCDD isomer. In a similar manner, the peak reported for 12378 -PeCDD was very broad, likely included other isomers and may or may not have included the target analyte. Results for these two analytes have been rejected in the sample.

### 5.10 Method Blanks

Samples were split between two extraction batches. The method blanks contained trace levels of OCDD, 1234678-HpCDD, 1234678-HpCDF and OCDF. All reported sample concentrations of these analytes were greater than 5 times the blanks and were not qualified.

### 5.11 Laboratory Control Samples (LCS)

Laboratory control samples and a duplicate were extracted with the preparation batchs. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits with the exception of OCDD, which recovered at $194 \%$ from the LCS. Results for OCDD in all samples are qualified as above calibration or as a result of matrix interferences that precluded accurate determination of the internal standard recovery subsequently used to calculate results upon dilution.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion
is met. CAS uses the same data flag for peaks that fail to meet the ion ratio criterion for identification and for peaks possibly affected by the presence of polychlorinated diphenyl ethers

Samples in this set contained a variety of interferents resulting in peaks that failed criteria for ion ratios. These interferents may be non-PCDD/PCDFs with one or both of the mass fragments of a target analyte. Review of the raw data confirmed that the majority of these results, reported by CAS as estimated maximum possible concentrations (EMPC) with the "K" qualifier, represented peaks with ratios close to that expected for the respective PCDD of PCDF. In accordance with Region 4 guidance and the USEPA Functional Guidelines, results for these analytes in the affected samples have been qualified as non-detected with the reporting limit set at the amount calculated. This provides a high bias to the reporting limit since the actual maximum possible amount in the sample would be include only that fraction of the area of one peak that would satisfy the ratio requirement. Based on review of the data, it is considered likely that the target analyte is present at a concentration below the reported value in all instances.

The OCDD internal standard failed to meet the ion ratio criterion for the initial analyses of SS041AA and SS101AA. These samples were reanalyzed after dilution with additional internal standards. The use of a calculated internal standard recovery with a failed ion ratio in SS041AA to adjust the results for OCDD and OCDF from the dilution of that sample introduces significant uncertainty. Results for OCDD and OCDF in SS001AA are calculated using the recoveries of the tetra and penta-chlorinated internal standards for data adjustment as discussed below. Results for OCDD and OCDF in both SS001AA and SS041AA should be considered as gross estimates.

### 5.13 Confirmation Analyses

$2,3,6,7-$ TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of 2,3,7,8-TCDF from the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards for some or all of the hexa- through octachlorinated PCDD and PCDF internal standards were above control limits for SS041AA, SS094BA, SS101AA, SS101BA, and SS086CA. Apparent recoveries ranged as high as 600\%.

Method 1613 specifies gel permeation chromatography cleanup for soil samples. CAS did not perform this step, and review of the raw data for the above samples indicates that the minimal

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extract cleanup procedures used did not remove significant matrix interferences. These ssuppressed the response of the $123789-H x C D D$ recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards in the above samples, leading to apparent high recoveries for these. No reliable data on the recovery of the internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs can be obtained when this occurs. All reported data for target dioxins and furans with internal standard recoveries outside of the limits are qualified as estimated.

### 5.16 Interferences

As noted above, matrix interferences affected the quantitation of the recovery standard used to determine internal standard recoveries. Matrix interferences were also noted to affect the analyses of other PCDDs/PCDFs. In some cases, polychlorinated ethers were present. These can result in false positives for PCDFs, and as noted above, CAS reports these analytes with the same qualifier flag as used for peaks that fail ion ratio requirements for identification.

Severe non-ether interferences were noted in the initial analysis of SS101AA, affecting all target analytes. While many analytes were reported from an analysis of this sample at a high dilution, those reported from the initial analysis can only be interpreted as qualitative with no quantitative certainty. Chromatography was unacceptable, with peaks for some internal standards extending over 30 seconds and no resolution of target PCDDs and PCDFs from other isomers. As noted above, results for 2378-TCDD, 12378 -PeCDD and 23478 -PeCDF are rejected as a result of chromatographic failure. Chromatography on the confirmation column was acceptable for 2378TCDF.

Although CAS flagged 234678-HxCDF in SS101AA for ether interferences, review of the chromatogram indicates that it is $123478-\mathrm{HxCDF}$ that has potential ether interferences, while $234678-H p C D F$ is not resolved from other HpCDF isomers. $234678-\mathrm{HxCDF}$ in the dilution analysis is still not chromatographically resolved, but the results from this analysis appear more defensible and have been used. Other analytes reported from the initial analysis, including $12378-\mathrm{PeCDD}$ and $1234789-\mathrm{HpCDF}$, are also qualified as estimated for potential bias from coeluting isomers.

Ethers were noted at the retention times of $123478-H x C D F, 123678-H x C D F$ and 1234678HpCDF in SS041AA. Results for these analytes are qualified as estimated with potential high bias.

### 5.17 Sample Dilutions

Samples as listed below contained levels of PCDDs and PCDFs above the instrument calibration:

SS041AA
SS041BA
SS094AA
SS094AB

SS094BA
SS101AA
SS101BA
SS024AA
SS024BA
SS086CA
SS041CA
The primary corrective action for levels above calibration in Method 1613 is to extract a smaller portion of the sample. Dilution by a factor of 10 is an alternative if it is determined that a smaller sample size will not be representative. Although these samples are characterized as sandy soils where representativeness would not be expected to be problematic, no reeextractions were performed. Samples were diluted by factors up to 200 by adding more internal standards to the extract.

CAS data reduction protocol for diluted samples where internal standard recoveries were elevated in the initial analysis, as noted for SS094BA, SS101AA, SS101BA, and SS086CA, is to correct the recovery in the diluted analysis by recoveries of tetra- or tetra- and pentachlorinated internal standards. Review of data for samples unaffected by interferences and apparent high recoveries does not support the use of this average; tetra- and penta-chlorinated internal standards consistently recover at significantly higher levels than the hexa- through octachlorinated internal standards. This data reduction practice likely leads to a significant low bias to results in affected samples. All measurements of hexa, hepta and octachlorinated dioxins and furans reported from dilutions where their quantitation was adjusted for tetra- and pentachlorinated standard recoveries have been qualified as estimated with potential significant bias.

Although internal standard recoveries were within the method limits for SS041BA, interferences were noted and CAS also adjusted data from dilution analyses for 1234678 -HpCDD, OCDD, $1234678-H p C D F$ and OCDF for recoveries of tetra and penta internal standards. These results are qualified as estimated with low bias and a wide range of uncertainty.

In the remaining samples, the internal standard recoveries fell within the control limits and their recoveries were used to adjust the calculated concentration of analytes in the dilution analysis. This may also introduce significant uncertainty. Apparent recoveries of the internal standard in the initial analysis may be biased low by high levels of the native PCDD or PCDF or other interferences that suppress or enhance the signal; subsequent use of this to correct the dilution result may also lead to a high or low bias in the result.

OCDD and OCDF were reported from measurements above instrument calibration in samples SS086DA, SS088CA and OCDD was reported from measurement above instrument calibration for samples SS088DA, SS068CA, SS068DA and from the dilution analyses of SS041AA, SS0441BA and ASS094AA.

### 5.18 Data Consistency

Results obtained on dilution for the samples were compared to the initial analyses. Results for analytes above calibration or at saturation on the initial analyses are expected on dilution to be comparable to or greater than the initial result. In several cases, results after dilution are significantly lower. In the samples with elevated internal standard recoveries, this is likely attributable to the bias introduced by the CAS data adjustment protocol as detailed above for sample dilutions.

The results in the following samples demonstrate significantly lower concentrations reported from the dilution analysis for analytes that exceeded the calibration curve on the initial analysis:

SS041BA OCDF
SS094BA OCDF
SS101AA OCDF
SS101BA OCDF
SS086CA OCDF

### 5.19 Equipment Blank

No equipment blank was collected with this sample set.

### 5.20 Field Duplicates

Field duplicate samples were collected at SS094A. Precision was acceptable with relative percent differences for all analytes and the CAS TEQ below $50 \%$. The levels at this location are relatively low and the absolute differences in concentration are not significant.

### 5.21 Calculations

Calculations for measurements within the instrument calibration range were verified for the initial analyses of perimeter samples. As noted above, calculations from dilutions for hexa, hepta and octa-chlorinated dioxins and furans in several samples were adjusted for the initial recoveries of tetra or tetra and pentachlorinated internal standards. CAS calculations of the adjustment factors for each sample were not documented and in some instances it could not be determined exactly which tetra or penta recovery standards were used for this manipulation. All data from this procedure are qualified with as estimates with wide uncertainty.

Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

Beazer East
Data Review for PCDDs/PCDFs J0605890
amec ${ }^{\theta}$
SDG J0605890: PCDDs/PCDFs in Field Duplicate Samples

|  |  |  |  |
| :--- | :---: | :---: | :---: |
| Analyte | SS094AA | SS094AB | RPD |
| $2,3,7,8-T C D D$ | 2.78 | 2.98 | $7 \%$ |
| $1,2,3,7,8-P e C D D$ | 36.9 | 37.8 | $2 \%$ |
| $1,2,3,4,7,8-H x C D D$ | 112 | 106 | $6 \%$ |
| $1,2,3,6,7,8-H x C D D$ | 252 | 281 | $11 \%$ |
| $1,2,3,7,8,9-H x C D D$ | 260 | 273 | $5 \%$ |
| 1,2,3,4,6,7,8- |  |  |  |
| HpCDD | 11200 | 12500 | $11 \%$ |
| OCDD | 115000 | 126000 | $9 \%$ |
| 2,3,7,8-TCDF | 0.96 | 0.96 | $0 \%$ |
| $1,2,3,7,8-P e C D F$ | 3.23 | 3.51 | $8 \%$ |
| 2,3,4,7,8-PECDF | 5.04 | 5.02 | $0 \%$ |
| $1,2,3,4,7,8-H x C D F$ | 33 | 38.7 | $16 \%$ |
| $1,2,3,6,7,8-H x C D F$ | 28.6 | 37.5 | $27 \%$ |
| $1,2,3,7,8,9-H x C D F$ | $0.84^{*}$ | ND |  |
| 2,3,4,6,7,8-HxCDF | 62.2 | 62.4 | $0 \%$ |
| $1,2,3,4,6,7,8-$ |  |  |  |
| HpCDF | 1220 | 1520 | $22 \%$ |
| $1,2,3,4,7,8,9-$ |  |  |  |
| HpCDF | 63.4 | 69.5 | $9 \%$ |
| OCDF | 7800 | 8730 | $11 \%$ |
| CAS TEQ, ng/kg | $2.54 \mathrm{E}+02$ | $2.78 \mathrm{E}+02$ | $9 \%$ |

* Value reported as estimated maximum possible concentration


## ATTACHMENT A: SAMPLE RESULTS

| Chemical Name | SS024AA |  |  | SS024BA |  |  | SS041AA |  |  | SS041BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 3.62 |  |  | 3.54 |  |  | 3.73 |  |  | 1.33 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 43.83 |  |  | 42.36 |  |  | 92.76 |  |  | 50.58 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 107.35 |  |  | 110.81 |  |  | 309.65 |  |  | 170.55 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 194.52 |  |  | 212.95 |  |  | 1,000.86 |  |  | 548.31 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 221.70 |  |  | 254.42 |  |  | 795.47 |  |  | 349.56 | J | CR |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 6,801.06 | J | E | 8,072.64 |  |  | 76,192.45 |  |  | 25,895.70 | J | LE |
| OCTACHLORODIBENZO-P-DIOXIN | 58,364.18 | J | E | 95,491.45 | J | E | 952,380.32 | J | I,E,LE | 144,022.47 | J | E,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.68 | J | OC | 0.93 | J | OC | 4.62 |  |  | 2.24 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 2.94 | J | OC | 3.21 | J | OC | 13.13 |  |  | 7.36 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 3.96 | J | OC | 4.58 | J | OC | 18.50 |  |  | 10.57 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 29.69 |  |  | 34.53 |  |  | 139.50 | J | DP | 82.03 | J | CR |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 33.18 |  |  | 46.41 |  |  | 107.40 | J | DP | 216.00 | J | CR |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 0.72 | J | OC |  | U | EM | 3.50 | J | CR |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 37.47 |  |  | 68.38 |  |  | 215.53 |  |  | 75.98 | J | CR |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 933.36 |  |  | 1,047.36 |  |  | 6,851.68 | J | DP | 2,463.33 | J | LE |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 49.14 | J |  | 58.36 |  |  | 290.97 |  |  | 165.95 |  |  |
| OCTACHLORODIBENZOFURAN | 3,762.34 |  |  | 5,634.84 |  |  | 61,558.54 | J | I,LE | 9,669.33 | J | SE,LE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 24.41 |  |  | 21.08 |  |  | 27.44 |  |  | 21.98 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 322.23 |  |  | 291.79 |  |  | 725.65 |  |  | 295.46 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 3,200.89 |  |  | 3,287.02 |  |  | 14,328.77 |  |  | 8,162.59 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 28,389.63 |  |  | 25,744.05 |  |  | 89,276.93 |  |  | 60,576.59 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 30.23 |  |  | 29.56 |  |  | 91.36 |  |  | 61.18 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 251.42 |  |  | 271.99 |  |  | 743.28 |  |  | 532.89 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 1,183.04 |  |  | 1,272.93 |  |  | 2,805.13 |  |  | 1,711.77 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 2,981.11 |  |  | 3,598.45 |  |  | 16,300.71 |  |  | 9,708.81 |  |  |


| Chemical Name | SS041CA |  |  | SS041DA |  |  | SS068CA |  |  | SS068DA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 5.38 |  |  | 0.86 | J | OC | 1.45 | J | OC | 0.97 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 20.60 |  |  | 3.05 | J | OC | 3.92 | J | OC | 2.39 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 65.20 |  |  | 8.72 |  |  | 14.65 |  |  | 11.42 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 60.99 |  |  | 9.04 |  |  | 9.35 |  |  | 6.29 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 3,062.68 |  |  | 435.49 |  |  | 416.24 |  |  | 359.43 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 35,328.15 | J | E | 4,357.77 |  |  | 4,663.34 | J | E | 4,230.05 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.83 | J | OC |  | U | EM |  | U |  | 0.22 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 1.07 | J | OC | 0.22 | J | OC |  | U |  | 0.25 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 9.76 |  |  | 1.53 | J | OC | 1.82 | J | OC | 1.38 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 6.97 |  |  | 1.09 | J | OC | 3.48 | J | OC | 1.06 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 16.56 |  |  | 2.33 | J | OC |  | U | EM | 2.47 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 325.74 |  |  | 48.24 |  |  | 58.03 |  |  | 46.45 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 19.87 |  |  | 3.18 | J | OC | 3.21 | J | OC | 2.58 | J | OC |
| OCTACHLORODIBENZOFURAN | 1,785.74 |  |  | 231.38 |  |  | 263.16 |  |  | 229.52 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 1.19 |  |  | 0.27 |  |  |  | U |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 36.15 |  |  | 4.80 |  |  | 4.44 |  |  | 2.31 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 995.38 |  |  | 150.20 |  |  | 103.26 |  |  | 66.12 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 13,364.39 |  |  | 2,023.41 |  |  | 1,250.79 |  |  | 888.71 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 4.50 |  |  |  | U |  |  | U |  | 0.13 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 49.99 |  |  | 6.31 |  |  | 6.51 |  |  | 6.38 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 337.95 |  |  | 47.84 |  |  | 61.34 |  |  | 54.74 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 1,308.92 |  |  | 194.54 |  |  | 226.40 |  |  | 187.34 |  |  |


| Chemical Name | SS086CA |  |  | SS086DA |  |  | SS088CA |  |  | SS088DA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 0.73 | J | OC | 0.65 | J | OC |  | U | EM |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 7.75 |  |  | 5.72 |  |  | 4.88 | J | OC | 1.85 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 24.11 | J | 1 | 13.56 |  |  | 15.61 |  |  | 6.14 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 90.32 | J | 1 | 36.61 |  |  | 37.44 |  |  | 15.39 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 35.67 | J | I,CR | 37.48 |  |  | 36.05 |  |  | 14.86 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 5,036.03 | J | I,LE | 1,633.52 |  |  | 1,540.86 |  |  | 659.18 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 39,167.64 | J | I,LE | 17,748.20 | J | E | 17,446.92 | J | E | 7,624.98 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.61 | J | OC |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.70 | J | OC | 0.41 | J | OC | 0.49 | J | OC | 0.20 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 1.20 | J | OC | 0.81 | J | OC | 0.72 | J | OC | 0.30 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 12.72 | J | 1 | 4.52 | J | OC | 3.96 | J | OC | 1.89 | J | OC |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN |  | UJ | EM,I |  | U | EM | 3.47 | J | OC | 1.53 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | UJ | 1 |  | U |  |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 8.24 | J | 1 | 6.93 |  |  | 8.82 |  |  | 3.56 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 476.36 | J | 1 | 158.57 |  |  | 186.77 |  |  | 82.19 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 36.21 | J | 1 | 10.00 |  |  | 12.59 |  |  | 5.14 |  |  |
| OCTACHLORODIBENZOFURAN | 2,199.86 | J | I,SE,LE | 923.58 | J | E | 961.23 | J | E | 387.65 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 5.49 |  |  | 2.65 |  |  | 1.43 |  |  | 0.38 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 61.58 |  |  | 36.77 |  |  | 24.26 |  |  | 11.20 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 2,658.26 |  |  | 578.22 |  |  | 427.79 |  |  | 196.06 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 29,050.29 |  |  | 7,833.52 |  |  | 5,707.21 |  |  | 2,432.14 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 5.72 |  |  | 2.42 |  |  | 1.63 |  |  | 0.31 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 32.82 |  |  | 23.21 |  |  | 27.07 |  |  | 11.03 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 489.96 |  |  | 165.15 |  |  | 184.93 |  |  | 83.16 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 2,498.45 |  |  | 674.26 |  |  | 734.41 |  |  | 311.67 |  |  |


| Chemical Name | SS094AA |  |  | SS094AB |  |  | SS094BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 2.78 |  |  | 2.98 |  |  | 3.82 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 36.88 |  |  | 37.76 |  |  | 57.21 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 112.18 |  |  | 106.20 |  |  | 163.78 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 252.13 |  |  | 280.70 |  |  | 585.37 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 260.01 |  |  | 272.52 |  |  | 224.81 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 11,169.32 |  |  | 12,502.68 |  |  | 24,804.65 | J | I,LE |
| OCTACHLORODIBENZO-P-DIOXIN | 114,968.63 | J | E | 125,970.35 | J | E | 174,442.36 | J | E,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.96 |  |  | 0.97 |  |  | 1.32 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 3.23 | J |  | 3.51 | J |  | 6.63 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 5.04 |  |  | 5.02 |  |  | 8.69 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 33.01 |  |  | 38.65 |  |  | 79.07 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 28.62 |  |  | 37.47 |  |  | 58.82 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U | EM |  | U | OC | 1.53 | J | 1 |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 62.25 |  |  | 62.39 |  |  | 58.97 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 1,215.13 |  |  | 1,523.88 |  |  | 2,726.54 | J | I,LE |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 63.45 |  |  | 69.53 |  |  | 164.32 | J | 1 |
| OCTACHLORODIBENZOFURAN | 7,795.11 |  |  | 8,728.22 |  |  | 11,583.41 | J | SE,LE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 19.26 |  |  | 22.75 |  |  | 20.50 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 224.91 |  |  | 303.62 |  |  | 448.36 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 4,229.54 |  |  | 4,522.22 |  |  | 8,245.37 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 36,196.43 |  |  | 37,962.15 |  |  | 64,678.93 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 33.99 |  |  | 37.24 |  |  | 53.96 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 339.69 |  |  | 269.54 |  |  | 408.49 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 1,382.67 |  |  | 1,438.12 |  |  | 2,866.49 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 4,574.97 |  |  | 4,846.51 |  |  | 11,202.91 |  |  |


| Chemical Name | SS101AA |  |  | SS101BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | R | CR | 10.56 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN |  | R | CR | 345.45 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 3,911.75 | J | LE | 965.95 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 6,732.20 | J | LE | 3,460.32 | J | LE |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 16,659.24 | J | LE,CR | 2,446.99 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 247,082.24 | J | I,LE | 163,843.11 | J | I,LE |
| OCTACHLORODIBENZO-P-DIOXIN | 575,881.06 | J | 2,LE | 1,418,910.70 | J | E,I,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 8.97 |  |  | 7.71 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN |  | U | EM | 38.74 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN |  | R |  | 21.52 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 619.67 | J | I,DP | 435.18 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 439.14 | J | 1 | 327.80 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | UJ | 1 |  | UJ | 1 |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 399.00 | J | I,CR,DD | 664.38 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 15,861.81 | J | I,LE | 15,388.81 | J | 1 |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 1,352.35 | J | 1 | 1,249.37 | J | 1 |
| OCTACHLORODIBENZOFURAN | 45,250.85 | J | I,SE | 78,555.91 | J | I,LE,SE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 199.69 |  |  | 110.27 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 6,895.63 |  |  | 2,213.36 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 567,060.52 |  |  | 234,555.41 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 401,931.98 |  |  | 115,492.87 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 346.79 |  |  | 112.74 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 2,484.94 |  |  | 1,769.95 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 32,777.44 |  |  | 17,227.96 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 67,655.93 |  |  | 53,554.71 |  |  |

ATTACHMENT B
REASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.

## ATTACHMENT C

CAS REPORT AMENDMENT

## COLUMBIA ANALYTICAL SERVICES, INC

| Client: | AMEC | Service Request No.: | J0605890 |
| :--- | :--- | :--- | :--- |
| Project: | Beazer East, Inc | Date Received: | $12 / 13 / 06$ |
| Sample Matrix: | Solid |  |  |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

## Sample Receipt

Seventeen soil samples were received for analysis at Columbia Analytical Services on 12/13/06.
The samples were received at $4^{\circ} \mathrm{C}$ in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at $4^{\circ} \mathrm{C}$ upon receipt at the laboratory.

## Data Validation Notes and Discussion

## B flags - Method Blanks

The Method Blank EB28030-MB/U27861\#1 contained low levels of $1234678-H p C D D, 1234678-H p C D F ~ a n d ~$ OCDF at or below the Method Reporting Limit (MRL).

The Method Blank EB28031-MB/U27936\#1 contained low levels of 1234678-HpCDD, OCDD, 1234678-HpCDF and OCDF at or below the Method Reporting Limit (MRL).

EB28030-MB/U27861\#1: One compound, OCDD, was above the MRL (CRQL) in this batch. CAS/Houston follows the EPA National Functional Guidelines for CDDs and CDFs, September 2005, which states on page 31, "The concentration of OCDD/OCDF in the method blank must be <3x the CRQL (MRL.) "

The associated compounds in the samples are flagged with ' $B$ ' flags.

## Y flags - Labeled Standards

Samples that had recoveries of labeled standards outside the acceptance limits are flagged with ' Y ' flags on the Form 2 s . In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

## MS/MSD

EB28037: Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch.

EB28058: Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch.

## C flags - 2378-TCDF Confirmation

Confirmation of the TCDF compound: When 2378-TCDF is detected on the DB-5 column, confirmation analyses are performed on a second column (DB-225.) The results from both the DB-5 column and the DB-225 column are included in this data package.

The valid result for the 2378-TCDF compound is reported from the confirmation column.
The confirmation results have been included on the Form 3 summary pages.

## MRL

Samples SD005AA, SD006AA, SD006BA, SD007AA, SD008AA, SD009AA and SD006AC required dilutions due to the presence of elevated levels of target analytes.

The undiluted and diluted results were combined into one Form 3 summary report for each sample. This reports a 'Total' result that includes the most appropriate concentration found for the associated target analyte.

## E flags

When OCDD and/or OCDF exceed the upper method calibration limit (MCL), CAS/Houston does not perform a dilution (Section 10.6.6 of the DLM02.0 SOW). We use an ' $E$ ' flag on the Form 1 results to indicate a compound has exceeded the MCL.

## K flags

CAS/Houston reports EMPC results that comply with Section 11.2.6 of the DLM02.0 SOW. An EMPC result is flagged with a ' $K$ ' flag.

## Detection Limits

Detection limits are calculated for each congener in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

## The Form 3 results for each sample have been calculated by CAS/Houston to include:

> WHO-98 TEFs
> 2378-TCDF from the DB-225 column, when confirmation required
$>$ Non-detected compounds reported as ND $=1 / 2$ * Detection Limit
$>$ The 1:1 and associated dilution have been combined into one Form 3 summary report

# DATA VALIDATION REPORT 

# Soil Samples <br> from <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs <br> CAS Report J0605919

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## List of Attachments

Attachment A: Data Summary<br>Attachment B: Reason Codes for Data Qualification<br>Attachment C: CAS Report Amendment

## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the Site.

This report provides an evaluation of data for thirty-one soil samples, 6 sediment samples and two aqueous field blanks collected on December 11 and 12, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December 12, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605919.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SS094CA | SS007CA | SS046BA |
| :--- | :--- | ---: |
| SS094DA | SS007DA | SS046CA |
| SS101CA | SS007DB | SS046DA |
| SS101DA | SS022AA | SD001AA |
| SS024CA | SS022AB | SD001AB |
| SS024DA | SS022BA | SD002AA |
| SS070AA | SS022CA | SD003AA |
| SS070AB | SS022DA | SD004AA |
| SS070BA | SS020AA | SD004BA |
| SS026AA | SS020BA | EB-01 |
| SS026BA | SS020CA | EB-02 |
| SS026CA | SS020CC |  |
| SS026CC | SS020DA |  |
| SS026DA | SS046AA |  |

Samples from the locations noted below represent site perimeter samples:
SS007 Eastern boundary

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for analytes within the range of the instrument calibration upon initial analysis are generally valid as reported. However, most measurements made from sample dilutions must be considered as gross estimates.

The extract cleanup procedures implemented did not successfully remove matrix interferences in several samples. These interferences resulted in internal standard recoveries that were outside control limits and required qualification of associated target analyte results. The absence of valid internal standard recoveries then precluded accurate quantitation of analyte concentrations from dilution analyses. CAS further compounded the uncertainty by adjusting data by factors that are not considered applicable or reliable.

Results for samples in critical areas and along the site perimeter should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and the action limit. Although no samples have been rejected based on the validation, they may not all be suitable to support project decisions.

TEQ values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and using the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries
15. Field blanks
16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. Raw data were reviewed for all sample and quality control analyses associated with all perimeter samples in this set. In addition, chromatograms were reviewed for all samples with data reported from dilution analyses to evaluate the potential for bias from interferences and from the CAS data adjustment approach.

Results for the total congener class PCDDs and PCDFs have not been validated and should be considered as estimated in all samples. These data are not included in the TEQ calculations. These are quantified based on the assumption that their response factors are the same as the 2378 -substitued isomers. All data reported are from the initial analyses and many include congeners above instrument calibration. Any factors affecting the accuracy of results for the 2378-isomers apply to the entire congener group and interferences in addition to those noted for the 2378 -isomers may significantly bias data for these groupings of PCDDs and PCDFs.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The submitted data package was missing forms for SD004AA. These were provided upon request and have been attached to this report. The data package contained other instrumental printouts and analytical elements required; however, documentation of data calculations involving adjustments of measured results were not included as part of the reporting package. Upon request, CAS provided explanations of selected individual sample calculations, but the approach taken was sample-specific.

It should be noted that data for the required QA/QC analyses including the mass calibration and resolution checks, window-defining mix and continuing calibration standards were not in chronological order in the package. Method blank analyses were reported for each extraction set but not for each analytical sequence as required by Method 1613.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 14 and 15, 2006. The sample bottle for SS007DB was broken in the initial shipment and a replacement bottle was received on the $15^{\text {th }}$.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $0^{\circ} \mathrm{C}$, within the method recommended range. Method 1613B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence and no data were reported for final checks unless these also served as the initial checks for the next 12 hour period.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical run. All congeners in the solution were detected within the window. The height of the valley between the closely eluting isomers 1,2,3,8-TCDD and 2,3,7,8-TCDD less than 25\%. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9TCDF, $2,3,4,7$-TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

Two instruments were used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. Five-point calibrations were conducted on October 25 and November 7, 2006. Calibration for $2,3,7,8$-TCDF confirmation on the DB- 225 column was conducted on November 9 , 2006. The initial calibrations were acceptable with $\%$ RSDs $\leq 20 \%$ for the relative responses $(R R)$ for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted over the period January $3-7$, January 17 and 29, 2006 with analyses of samples at dilution on January 20, 23, 24 and 31. 2007. Analyses for $2,3,7,8$-TCDF on the DB225 column were conducted on January 3, 6, 9, 10, 11, 13, 15 and 17, 2006. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package unless they also served as the initial check for the next 12 hour period. Method 1613 does not specifically require these.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied. However, several samples in this set demonstrated unacceptable chromatography likely due to interferences not removed in sample cleanup.

Results for 2378-TCDD and 2378-TCDF are rejected in SS101CA and SS101DA due to excessive peak broadening. Although these analytes were not detected, the detection limits are not valid.

Resolution of 123789-HxCDF from a non-target HxCDF was not achieved in any samples where raw data were reviewed. Results for this PCDF are generally low and qualified as estimated for that reason or for internal standard recovery anomalies. Resolution of 123678- and 123789HxCDD isomers was not achieved in some standards or in those samples where raw data were reviewed. Since both HxCDD isomers have the same toxic equivalency factor (TEF), this would not affect the TEQ for the sample.

### 5.10 Method Blanks

Four soil blanks and one aqueous method blank were associated with the initial extractions of samples in this set. Method blank analyses were reported for each extraction set but not for each analytical sequence as required by Method 1613. The method blanks contained trace levels of several target PCDDs and PCDFs, including OCDD, 123678-HxCDD, 1234678HpCDD, OCDF and $1234678-H p C D F$. Since the replicate analyses of method blanks demonstrated variability in the levels detected, the maximum concentration from the analyses of
the soil method blanks were used for data qualifications. All reported sample concentrations of these analytes were greater than 5 times the blank and were not qualified.

### 5.11 Laboratory Control Samples (LCS)

A laboratory control sample and a duplicate were extracted with each preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

Samples in this set contained a variety of interferents resulting in peaks that failed criteria for identification. These interferents may be non-PCDD/PCDFs with one or both of the mass fragments of a target analyte. Review of the raw data confirmed that the majority of these results, reported by CAS as estimated maximum possible concentrations (EMPC) with the "K" qualifier, represented peaks with ratios close to that expected for the respective PCDD of PCDF. In accordance with Region 4 guidance and the USEPA Functional Guidelines, results for these analytes in the affected samples have been qualified as non-detected with the reporting limit set at the amount calculated. This provides a high bias to the reporting limit since the actual maximum possible amount in the sample would include only that fraction of the area of one peak that would satisfy the ratio requirement. Based on review of the data, it is considered likely that the target analyte is present at a concentration below the reported value in all instances.
$1234678-H p C D F$ failed to satisfy the ion ratio requirement in the initial analysis of SD004BA, and $123478-H x C D D$ failed to meet the requirement in the initial analysis of SSO70BA. On dilution of the samples, the peaks met the criteria. CAS reported the initial results, but results from the dilution analysis have been applied for the final reporting. These results are qualified as estimated in both cases due to the matrix interferences and the data manipulation protocol followed by CAS for dilution analyses.

### 5.13 Confirmation Analyses

2,3,6,7-TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of 2,3,7,8-TCDF from the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards for one or more of the HxCDDs, HxCDFs, HxCDFs, HpCDFs and OCDD fell outside of Method 1613 control limits for the initial analysis of samples as listed below:

| SS094CA | SS070BA | SD001AA |
| :--- | :--- | :--- |
| SS094DA | SS026AA | SD004AA |
| SS024CA | SS026BA | SD004BA |
| SS070AA | SS046AA |  |
| SS070AB | SS046BA |  |

Method 1613 specifies gel permeation chromatography cleanup for soil samples. CAS did not perform this step, and review of the raw data for the above samples indicates that the minimal extract cleanup procedures used did not remove significant matrix interferences. Except for SD004AA and SD004BA, interferences in the above samples affected the response of the 123789-HxCDD recovery standard used for calculation of the HxCDD, HxCDF, HpCDD, HpCDF and OCDD internal standards in samples. No reliable data on the recovery of the internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs can be obtained when this occurs. All reported data for target dioxins and furans with internal standard recoveries outside of the limits are qualified as estimated.

Although the internal standard recoveries for the initial analyses of the four samples listed below fell within the relatively wide limits of Method 1613, matrix interferences to the recovery standard were evident and it is likely that there is significant bias to results reported from dilution analyses in these samples as well.

| SD002AA | SS101CA |
| :--- | :--- |
| SS020AA | SS101DA |

The recoveries of the OCDD internal standard in SD004AA and SD004BA were below the method control limit and in SD004BA, the peak also failed to meet the ion ratio requirement for positive identification. CAS diluted the samples and added additional internal standards. OCDD and OCDF results from the dilution analyses were calculated on the assumption that the OCDD recovery through the sample preparation steps had been $85 \%$, not the $16 \%$ measured. Results reported are likely biased significantly low by this data manipulation.

The internal standard for 2378-TCDF in SS101CA recovered below Method 1613 control limits. Results for this analyte in the sample are rejected due to unacceptable chromatography that likely would have precluded the detection of the analyte if present.

It should be noted that the reported recovery of internal standards from the dilution analyses could not always verified. As discussed below in Section 5.17, CAS adjusted the measured data in samples affected by matrix interferences. No documentation was provided to support these adjustments, and in some cases the derivation of the adjustment factor could not be discerned. All adjustments made by CAS were determined to likely introduce low bias to the reported results, and data were qualified as estimated with potential significant bias.

### 5.16 Additional Interferences

As noted above, matrix interferences affected the quantitation of the recovery standard used to determine internal standard recoveries. Matrix interferences were also noted to affect the analyses of other PCDDs/PCDFs.

Polychlorinated ethers were present in several samples. These can result in false positives or high bias for PCDFs. Results for 12378-PeCDF in SS094DA are qualified as estimated due to the presence of a coeluting ether. In several other samples, ethers were noted to interfere with the quantitation of total PCDF congeners. CAS in some but not all cases removed these peaks from the calculation of the total congener classes. Results for total congeners are not included in the TEQ calculations.

### 5.17 Sample Dilutions

Several samples in this set contained levels of PCDDs and PCDFs above the instrument calibration.

The primary corrective action for this in Method 1613 is to extract a smaller portion of the sample. Dilution by a factor of 10 is an alternative if it is determined that a smaller sample size will not be representative. Although these samples are characterized as sandy soils where representativeness would not be expected to be problematic, no reeextractions for this reason were performed. Samples were diluted by factors up to 200 by adding more internal standards to the extract.

As noted in Section 5.15, review of the raw data for the 17 samples listed indicates that the extract cleanup procedures used did not remove significant matrix interferences to the recovery standard and defensible data on the recovery of the hexa-, hepta- and octachlorinated internal standards spiked into the sample and used for quantitation of target PCDDs and PCDFs were not generated.

CAS data reduction protocol for diluted samples where recoveries were elevated in the initial analysis is to correct the recovery in the diluted analysis by the average recoveries of one or more tetra- and penta-chlorinated internal standards. Review of data for laboratory spikes, method blanks and samples unaffected by interferences and apparent high recoveries does not
support the use of this average; tetra- and penta-chlorinated internal standards consistently recover at significantly higher levels than the hexa- through octa-chlorinated internal standards. This data reduction practice likely leads to a significant low bias to results in affected samples. All measurements of hexa, hepta and octachlorinated dioxins and furans reported from dilutions where their quantitation was adjusted for tetra- and pentachlorinated standard recoveries have been qualified as estimated with potential significant bias.

In the instances where the internal standard recoveries fell within the control limits, their recoveries sometimes but not always were used to adjust the calculated concentration of analytes in the dilution analysis. Apparent recoveries of the internal standard in the initial analysis of a sample may be biased by signal suppression or enhancement from interferences and the subsequent use of this to correct the dilution result may also lead to a high or low bias in the result.

CAS states that they do not reanalyze samples where OCDD and/or OCDF are the only analytes above the calibration range. They also did not reanalyze when HpCDD as well as OCDD was above calibration in SD001AB and SS070BA. All data reported from abovecalibration measurements are qualified as estimated.

### 5.18 Data Consistency

Results obtained on dilution for the samples were compared to the initial analyses. Results were significantly lower after dilution for analytes saturated or above calibration in several samples. This is likely attributable to the CAS data adjustment protocol as detailed above for sample dilutions.

Results for the following analytes are qualified as estimated due to these differences:

| SD001AA | $1234678-H p C D D$ |
| :--- | :--- |
| SD002AA | $1234678-H p C D D$ |
| SD004AA | OCDF |
| SD004BA | OCDF |
| SS024CA | $1234678-H p C D F$, OCDF |
| SS026AA | OCDF |
| SS046AA | $1234678-H p C D F$, OCDF |
| SS070AA | $123678-H x C D D, O C D F$ |
| SS070AB | $1234678-H p C D F$, OCDF |
| SS094CA | $1234678-H p C D D$, OCDD,1234678-HpCDF, OCDF |
| SS094DA | OCDF |
| SS101DA | $1234678-H p C D D$, OCDD,1234678-HpCDF, OCDF |

### 5.19 Equipment Blank

Two equipment blanks were collected with this sample set. Both were reported with trace levels of PCDDs.PCDFs, including 1234678-HpCDD, OCDD and OCDF. 1234678-HpCDF was also
noted in one equipment blank. Levels were not high enough to significantly contribute to the concentrations noted in samples.

### 5.20 Field Duplicates

Field duplicate samples were collected at six locations. Precision was acceptable for all sets with relative percent differences for most analytes below 50\%. Results are summarized in Table 1 below.

### 5.21 Calculations

Calculations for measurements within the instrument calibration range were verified for the initial analyses of perimeter samples. As noted above, dilution results for hexa, hepta and octachlorinated dioxins and furans were adjusted for initial recoveries of tetra- or tetra and pentachlorinated internal standards in samples where interferences were noted to the recovery standard. CAS calculations of the adjustment factors for each sample were not documented and in some instances, it could not be determined which combination of tetra- and pentainternal standards was used to calculate the adjustment factor. All data affected by this procedure are qualified with inherent uncertainty and should be considered as gross estimates.

Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated for program usage using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

Table 1: PCDDs/PCDFs in Field Duplicate Samples
SDG J0605919

|  | SS070AA | SS070AB | RPD | SS026CA | SS026CC | RPD | SS007DA | SS007DB | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2,3,7,8-TCDD | 11 | 10 | 6\% | ND | ND |  | ND | ND |  |
| 1,2,3,7,8-PeCDD | 338 | 293 | 14\% | 0.177 | ND |  | 0.157 | 0.168 | 7\% |
| 1,2,3,4,7,8-HxCDD | 634 | 867 | 31\% | 0.674 | 1.345 | 66\% | 0.397 | 0.47 | 17\% |
| 1,2,3,6,7,8-HxCDD | 3166 | 2950 | 7\% | 4.37 | 6.9 | 45\% | 1.56 | 1.23 | 24\% |
| 1,2,3,7,8,9-HxCDD | 1637 | 1574 | 4\% | 2 | 2.253 | 12\% | 1.45 | 1.36 | 6\% |
| 1,2,3,4,6,7,8-HpCDD | 110000 | 84300 | 26\% | 240 | 318 | 28\% | 83.1 | 66.4 | 22\% |
| OCDD | 749000 | 646000 | 15\% | 3540 | 4690 | 28\% | 804 | 657 | 20\% |
| 2,3,7,8-TCDF | 6.98 | 5.858 | 16\% | ND | ND |  | ND | ND |  |
| 1,2,3,7,8-PeCDF | 50.7 | 38.2 | 28\% | ND | ND |  | ND | 0.069 |  |
| 2,3,4,7,8-PECDF | 53.0 | 44.8 | 17\% | ND | ND |  | ND | 0.135 |  |
| 1,2,3,4,7,8-HxCDF | 539 | 442 | 20\% | 0.946 | ND |  | 0.52 | 0.509 | 2\% |
| 1,2,3,6,7,8-HxCDF | 448 | 375 | 18\% | 0.279 | ND |  | 0.18 | 0.24 | 29\% |
| 1,2,3,7,8,9-HxCDF | 15 | 14 | 5\% | ND | ND |  | ND | 0.096 |  |
| 2,3,4,6,7,8-HxCDF | 963 | 478 | 67\% | 0.674 | ND |  | 0.295 | 0.337 | 13\% |
| 1,2,3,4,6,7,8-HpCDF | 14800 | 10400 | 35\% | 31.1 | 36.1 | 15\% | 10.4 | 9.01 | 14\% |
| 1,2,3,4,7,8,9-HpCDF | 1360 | 1090 | 22\% | 1.679 | ND |  | 0.523 | 0.518 | 1\% |
| OCDF | 70700 | 48000 | 38\% | 189 | 323 | 52\% | 56.2 | 44.5 | 23\% |
| CAS TEQ, ng/kg | $2.46 \mathrm{E}+03$ | $2.03 \mathrm{E}+03$ | 19\% | 4.187 | 5.3 | 23\% | 1.68 | 1.5 | 11\% |


|  | SS022AA | SS022AB | RPD | SS020CA | SS020CC | RPD | SD001AA | SD001AB | RPD |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2,3,7,8-TCDD | 0.251 | ND |  | ND | ND |  | 0.97 | ND |  |
| 1,2,3,7,8-PeCDD | 8.03 | 6.354 | 23\% | 4.60 | 3.62 | 24\% | 5.74 | 5.91 | 3\% |
| 1,2,3,4,7,8-HxCDD | 24.547 | 19.177 | 25\% | 17.80 | 15.20 | 16\% | 15.90 | 17.00 | 7\% |
| 1,2,3,6,7,8-HxCDD | 68.112 | 54.68 | 22\% | 83.00 | 72.00 | 14\% | 70.70 | 57.00 | 21\% |
| 1,2,3,7,8,9-HxCDD | 68.989 | 57.122 | 19\% | 40.10 | 32.10 | 22\% | 37.60 | 41.00 | 9\% |
| 1,2,3,4,6,7,8-HpCDD | 2622.508 | 2673.258 | 2\% | 3910.00 | 3491.427 | 11\% | 2170.00 | 2330.00 | 7\% |
| OCDD | 26076.18 | 26723.54 | 2\% | 27080.157 | 31249.59 | 13\% | 27900.00 | 21200.00 | 27\% |
| 2,3,7,8-TCDF | 0.879 | ND |  | ND | ND |  | 1.13 | 0.72 | 44\% |
| 1,2,3,7,8-PeCDF | 1.443 | 1.11 | 26\% | 0.528 | 0.418 | 26\% | 2.90 | 1.04 | 94\% |
| 2,3,4,7,8-PECDF | 2.481 | 1.973 | 23\% | 0.411 | 0.405 | 1\% | 2.61 | 1.20 | 74\% |
| 1,2,3,4,7,8-HxCDF | 15.4 | 12.215 | 23\% | 7.44 | 6.369 | 17\% | 15.30 | 7.98 | 63\% |
| 1,2,3,6,7,8-HxCDF | 9.813 | 7.949 | 21\% | 3.547 | 3.206 | 11\% | 10.20 | 6.71 | 41\% |
| 1,2,3,7,8,9-HxCDF | ND | ND |  | 0.332 | ND |  | 1.09 | 0.42 | 89\% |
| 2,3,4,6,7,8-HxCDF | 15.889 | 12.679 | 22\% | 3.58 | 2.794 | 28\% | 6.71 | 7.04 | 5\% |
| 1,2,3,4,6,7,8-HpCDF | 379.158 | 301.594 | 23\% | 405.048 | 344.523 | 18\% | 472.00 | 299.00 | 45\% |
| 1,2,3,4,7,8,9-HpCDF | 20.77 | 15.658 | 28\% | 26.449 | 21.923 | 21\% | 27.40 | 19.00 | 36\% |
| OCDF | 1977.085 | 1587.32 | 22\% | 2801.76 | 2387.342 | 17\% | 2260.00 | 1550.00 | 37\% |
| CAS TEQ, ng/kg | $6.30 \mathrm{E}+01$ | $5.69 \mathrm{E}+01$ | 10\% | $6.68 \mathrm{E}+01$ | 5.90E+01 | 12\% | $5.36 \mathrm{E}+01$ | 4.96E+01 | 8\% |

ATTACHMENT A

## DATA SUMMARY

| Chemical Name | EB-01 |  |  | EB-02 |  |  | SD001AA |  |  | SD001AB |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  | 0.97 | J | OC |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  | 5.74 | J | OC | 5.91 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  | 15.87 |  |  | 17.05 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  | 70.01 |  |  | 57.07 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  | 37.58 |  |  | 40.95 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 8.98 | J | OC |  | U | EM | 2,167.65 | J | SE,DMI | 2,332.96 | J | E |
| OCTACHLORODIBENZO-P-DIOXIN | 67.85 | J | OC | 66.60 | J | OC | 27,861.10 | J | DMI | 21,217.95 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U |  | 1.13 | J | OC | 0.72 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN |  | U |  |  | U |  | 2.90 | J | OC | 1.04 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN |  | U |  |  | U |  | 2.61 | J | OC | 1.20 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 15.30 |  |  | 7.98 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 10.20 |  |  | 6.71 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 1.09 | J | OC, | 0.42 | J | OC |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 6.71 |  |  | 7.04 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN |  | U |  | 1.09 | J | OC | 471.50 |  |  | 299.36 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN |  | U |  |  | U |  | 27.43 |  |  | 19.04 |  |  |
| OCTACHLORODIBENZOFURAN | 4.65 | J | OC | 4.51 | J | OC | 2,259.88 |  |  | 1,547.21 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS |  | U |  |  | U |  | 9.21 |  |  | 5.93 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS |  | U |  |  | U |  | 58.86 |  |  | 71.14 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 1.37 |  |  |  | U |  | 962.77 |  |  | 819.13 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 31.37 |  |  | 22.90 |  |  | 15,028.33 |  |  | 9,512.17 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS |  | U |  |  | U |  | 15.46 |  |  | 12.68 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS |  | U |  |  | U |  | 90.86 |  |  | 63.44 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS |  | U |  |  | U |  | 631.50 |  |  | 327.09 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 2.47 |  |  | 3.94 |  |  | 2,129.89 |  |  | 1,227.10 |  |  |


| Chemical Name | SD002AA |  |  | SD003AA |  |  | SD004AA |  |  | SD004BA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 2.10 |  |  | 7.10 |  |  | 1.47 |  |  | 26.78 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 23.99 |  |  | 88.15 |  |  | 18.10 |  |  | 376.29 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 61.85 |  |  | 248.85 |  |  | 64.23 |  |  | 1,145.00 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 228.06 |  |  | 874.00 |  |  | 178.04 |  |  | 3,650.83 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 131.24 |  |  | 568.67 |  |  | 155.01 |  |  | 3,167.03 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 4,790.20 | J | SE,DMI | 29,952.76 |  |  | 9,138.89 |  |  | 79,277.87 | J | LE |
| OCTACHLORODIBENZO-P-DIOXIN | 63,809.89 | J | DMI | 347,508.63 | J | E | 110,558.64 | J | E,I | 500,249.54 | J | I,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U | EM | 9.40 |  |  | 1.48 |  |  | 27.71 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 4.38 | J | OC | 11.25 | J | OC | 2.84 | J | OC | 50.57 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 6.03 | J | OC | 17.72 |  |  | 3.92 | J | OC | 73.29 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 31.32 |  |  | 108.80 |  |  | 23.95 |  |  | 490.51 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 30.80 |  |  | 90.76 |  |  | 19.03 |  |  | 400.02 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 1.17 | J | OC |  | U |  |  | U |  | 11.63 |  |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 34.86 |  |  | 69.60 |  |  | 24.88 |  |  | 308.05 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 1,218.16 |  |  | 3,980.89 |  |  | 904.20 |  |  | 9,545.02 | J | LE,DD |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 87.09 |  |  | 261.25 |  |  | 57.78 |  |  | 1,162.76 |  |  |
| OCTACHLORODIBENZOFURAN | 7,043.43 |  |  | 25,420.24 |  |  | 4,561.02 | J | SE, I | 39,291.63 | J | I,SE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 29.99 |  |  | 46.25 |  |  | 16.01 |  |  | 207.87 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 243.47 |  |  | 779.83 |  |  | 157.38 |  |  | 2,821.91 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 2,580.30 |  |  | 8,801.58 |  |  | 2,389.95 |  |  | 43,514.21 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 23,119.19 |  |  | 89,041.65 |  |  | 26,342.94 |  |  | 132,468.86 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 60.76 |  |  | 189.16 |  |  | 21.90 |  |  | 489.15 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 266.34 |  |  | 820.93 |  |  | 169.18 |  |  | 3,131.17 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 1,299.49 |  |  | 4,769.57 |  |  | 1,038.52 |  |  | 10,874.58 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 4,984.09 |  |  | 17,629.24 |  |  | 3,823.29 |  |  | 51,314.01 |  |  |


| Chemical Name | SS007CA |  |  | SS007DA |  |  | SS007DB |  |  | SS020AA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  | U |  |  | U |  | 1.80 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN |  | U |  | 0.16 | J | OC | 0.17 | J | OC | 42.42 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1.12 | J | OC | 0.40 | J | OC | 0.47 | J | OC | 125.73 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 6.51 |  |  | 1.56 | J | OC | 1.23 | J | OC | 843.15 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 7.15 |  |  | 1.45 | J | OC | 1.36 | J | OC | 372.44 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 453.53 |  |  | 83.18 |  |  | 66.39 |  |  | 35,870.15 | J | DMI |
| OCTACHLORODIBENZO-P-DIOXIN | 4,573.66 | J | E | 803.72 |  |  | 656.80 |  |  | 326,015.11 | J | E,DMI |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  | 0.58 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN |  | U | EM |  | U |  |  | U | EM | 3.30 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN |  | U |  |  | U |  | 0.14 | J | OC | 3.28 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN |  | U | EM | 0.52 | J | OC | 0.51 | J | OC | 66.91 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN |  | U |  | 0.18 | J | OC | 0.24 | J | OC | 35.77 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  | 0.10 | J | OC |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN |  | U |  | 0.30 | J | OC | 0.34 | J | OC | 30.32 | J | DP |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 53.51 |  |  | 10.37 |  |  | 9.01 |  |  | 3,676.31 | J | DMI |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 3.05 | J | OC |  | U | EM |  | U | EM | 244.10 | J | DMI |
| OCTACHLORODIBENZOFURAN | 397.63 |  |  | 56.21 |  |  | 44.45 |  |  | 31,866.71 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS |  | U |  |  | U |  |  | U |  | 35.24 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 3.29 |  |  | 0.67 |  |  | 0.68 |  |  | 201.10 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 169.56 |  |  | 28.49 |  |  | 23.59 |  |  | 4,120.15 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 3,200.60 |  |  | 525.56 |  |  | 393.11 |  |  | 50,425.45 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 0.38 |  |  |  | U |  |  | U |  | 34.32 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 4.44 |  |  | 0.95 |  |  | 1.04 |  |  | 198.50 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 49.41 |  |  | 11.28 |  |  | 9.49 |  |  | 2,967.12 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 313.53 |  |  | 45.90 |  |  | 34.57 |  |  | 15,175.49 |  |  |


| Chemical Name | SS020BA |  |  | SS020CA |  |  | SS020CC |  |  | SS020DA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U | EM |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 11.93 |  |  | 4.60 | J | OC | 3.62 | J | OC | 6.30 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 48.70 |  |  | 17.75 |  |  | 15.24 |  |  | 26.56 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 226.53 |  |  | 82.99 |  |  | 72.04 |  |  | 110.39 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 105.75 |  |  | 40.16 |  |  | 32.11 |  |  | 55.25 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 10,099.39 |  |  | 3,906.03 |  |  | 3,491.43 |  |  | 5,138.25 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 79,283.52 | J | E | 27,080.16 |  |  | 31,249.59 |  |  | 45,545.23 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 1.35 | J | OC | 0.53 | J | OC | 0.42 | J | OC | 0.81 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 1.31 | J | OC | 0.41 | J | OC | 0.41 | J | OC | 0.81 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 23.14 |  |  | 7.44 |  |  | 6.37 |  |  | 12.52 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 10.26 |  |  | 3.55 | J | OC | 3.21 | J | OC | 5.69 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  | 0.33 | J | OC |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 9.65 |  |  | 3.58 | J | OC | 2.79 | J | OC | 4.88 | J | OC |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 1,095.08 |  |  | 405.05 |  |  | 344.52 |  |  | 576.30 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 71.88 |  |  | 26.45 |  |  | 21.92 |  |  | 37.67 |  |  |
| OCTACHLORODIBENZOFURAN | 9,483.53 |  |  | 2,801.76 |  |  | 2,387.34 |  |  | 3,940.33 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 9.03 |  |  | 2.67 |  |  | 2.75 |  |  | 4.12 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 55.64 |  |  | 21.50 |  |  | 16.21 |  |  | 27.68 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 1,176.60 |  |  | 434.26 |  |  | 375.97 |  |  | 602.87 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 19,169.22 |  |  | 7,029.33 |  |  | 6,067.38 |  |  | 9,928.49 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 9.29 |  |  | 2.13 |  |  | 1.54 |  |  | 3.85 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 61.50 |  |  | 20.92 |  |  | 17.52 |  |  | 29.09 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 851.32 |  |  | 306.06 |  |  | 259.46 |  |  | 425.36 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 5,204.39 |  |  | 1,901.22 |  |  | 1,666.03 |  |  | 2,633.75 |  |  |


| Chemical Name | SS022AA |  |  | SS022AB |  |  | SS022BA |  |  | SS022CA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U | EM |  | U | EM |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 8.03 |  |  | 6.35 |  |  | 0.99 | J | OC | 0.44 | J |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 24.55 |  |  | 19.18 |  |  | 2.96 | J | OC |  | U | EM |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 68.11 |  |  | 54.68 |  |  | 9.17 |  |  | 5.02 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 68.99 |  |  | 57.12 |  |  | 9.48 |  |  |  | U | EM |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 2,622.51 |  |  | 2,673.26 |  |  | 404.59 |  |  | 97.44 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 26,076.18 |  |  | 26,723.54 |  |  | 3,751.70 |  |  | 733.33 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.88 | J | OC |  | U | EM |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 1.44 | J | OC | 1.11 | J | OC | 0.23 | J | OC | 0.12 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 2.48 | J | OC | 1.97 | J | OC | 0.44 | J | OC | 0.17 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 15.40 |  |  | 12.22 |  |  |  | U | EM |  | U | EM |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 9.81 |  |  | 7.95 |  |  | 1.00 | J | OC |  | U | EM |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 15.89 |  |  | 12.68 |  |  | 1.85 | J | OC |  | U | EM |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 379.16 |  |  | 301.59 |  |  | 52.89 |  |  | 8.98 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 20.77 |  |  | 15.66 |  |  | 2.75 | J | OC | 0.52 | J | OC |
| OCTACHLORODIBENZOFURAN | 1,977.09 |  |  | 1,587.32 |  |  | 261.12 |  |  | 35.44 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 31.12 |  |  | 26.54 |  |  | 7.12 |  |  | 0.54 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 93.01 |  |  | 74.25 |  |  | 12.58 |  |  | 0.72 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 1,270.44 |  |  | 1,009.25 |  |  | 159.01 |  |  | 42.18 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 13,920.25 |  |  | 11,285.38 |  |  | 1,838.91 |  |  | 339.24 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 157.63 |  |  | 133.66 |  |  | 30.20 |  |  | 3.76 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 74.86 |  |  | 59.23 |  |  | 9.68 |  |  | 7.00 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 256.14 |  |  | 314.80 |  |  | 49.01 |  |  | 12.32 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 1,435.20 |  |  | 1,158.50 |  |  | 202.56 |  |  | 34.61 |  |  |


| Chemical Name | SS022DA |  |  | SS024CA |  |  | SS024DA |  |  | SS026AA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  | 2.99 |  |  |  | U |  |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 0.39 | J | OC | 52.45 |  |  | 1.08 | J | OC | 63.22 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 0.59 | J | OC | 154.42 |  |  | 3.33 | J | OC | 370.71 | J | I |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 1.49 | J | OC | 501.51 | J | I | 9.74 |  |  | 1,483.68 | J | I,LE |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 1.16 | J | OC | 284.77 | J | 1 | 10.43 |  |  | 419.18 | J | I |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 59.80 |  |  | 16,293.82 | J | LE | 431.35 |  |  | 66,368.79 | J | I,LE |
| OCTACHLORODIBENZO-P-DIOXIN | 449.10 |  |  | 108,639.81 | J | E,LE | 4,159.60 | J | E | 328,389.27 | J | I,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  | 1.52 |  |  |  | U |  | 1.64 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 0.28 | J | OC | 7.23 |  |  |  | U |  | 67.36 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 0.46 | J | OC | 9.37 |  |  |  | U | EM | 46.56 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 0.53 | J | OC | 74.72 | J | 1 | 1.53 | J | OC | 455.99 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN |  | U | EM | 62.75 | J | 1 |  | U | EM | 105.72 | J | I |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U |  | 2.30 | J | 1 |  | U |  | 7.39 | J | I |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 0.43 | J | OC | 42.21 | J | 1 | 2.37 | J | OC | 201.90 | J | 1 |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 5.16 | J | OC | 1,916.73 | J | SE,LE | 56.54 |  |  | 8,132.72 | J | I,LE |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 0.41 | J | OC | 163.51 | J | 1 | 3.42 | J | OC | 787.69 | J | 1 |
| OCTACHLORODIBENZOFURAN | 22.72 |  |  | 7,975.82 | J | SE,LE | 261.40 |  |  | 40,771.90 | J | I,LE,SE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 0.40 |  |  | 30.29 |  |  |  | U |  | 17.40 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 0.91 |  |  | 439.36 |  |  | 3.66 |  |  | 700.32 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 16.78 |  |  | 8,126.40 |  |  | 165.51 |  |  | 25,022.38 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 243.62 |  |  | 49,523.98 |  |  | 2,185.40 |  |  | 148,183.53 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 1.78 |  |  | 68.51 |  |  | 0.46 |  |  | 99.61 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 1.73 |  |  | 439.97 |  |  | 7.32 |  |  | 892.87 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 5.43 |  |  | 1,640.19 |  |  | 55.93 |  |  | 4,332.02 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 18.88 |  |  | 2,571.63 |  |  | 216.28 |  |  | 11,279.52 |  |  |


| Chemical Name | SS026BA |  |  | SS026CA |  |  | SS026CC |  |  | SS026DA |  |  |
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|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 0.27 | J | OC |  | U |  |  | $\cup$ |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 2.58 | J | OC | 0.18 | J | OC |  | U |  | 0.81 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 13.79 |  |  | 0.67 | J | OC | 1.35 | J | OC |  | $\cup$ |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 75.62 |  |  | 4.37 | J | OC | 6.90 |  |  |  | U |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 21.64 |  |  | 2.01 | J | OC |  | U | EM |  | U |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 4,884.02 |  |  | 240.29 |  |  | 317.50 |  |  | 596.27 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 66,041.07 |  |  | 3,535.86 |  |  | 4,691.99 | J | E | 8,236.20 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  | U |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 1.42 | J | OC |  | U |  |  | U |  | 0.18 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 1.46 | J | OC |  | U |  |  | U |  |  | U |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 16.59 |  |  | 0.95 | J | OC |  | U |  |  | U | EM |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 5.36 |  |  | 0.28 | J | OC |  | U |  |  | U |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U | EM |  | U |  |  | $\cup$ |  |  | $\cup$ |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 254.63 | J | CR | 0.67 | J | OC |  | U |  |  | U |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 486.87 |  |  | 31.17 |  |  | 36.05 |  |  | 72.43 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 27.22 |  |  | 1.68 | J | OC |  | U |  | 2.66 | J | OC |
| OCTACHLORODIBENZOFURAN | 4,582.27 |  |  | 188.93 |  |  | 231.70 |  |  | 480.26 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 0.82 |  |  |  | U |  |  | U |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 27.04 |  |  | 0.96 |  |  |  | U |  | 3.81 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 1,134.49 |  |  | 46.05 |  |  | 57.00 |  |  | 30.97 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 17,006.63 |  |  | 915.29 |  |  | 1,218.77 |  |  | 2,390.28 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 8.09 |  |  |  | U |  |  | U |  |  | U |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 70.96 |  |  | 1.59 |  |  | 2.09 |  |  | 5.60 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 1,148.44 |  |  | 30.93 |  |  | 33.21 |  |  | 65.62 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 2,449.82 |  |  | 153.16 |  |  | 184.76 |  |  | 353.71 |  |  |


| Chemical Name | SS046AA |  |  | SS046BA |  |  | SS046CA |  |  | SS046DA |  |  |
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|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U | EM |  | U | EM |  | U |  |  | U | EM |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 35.42 |  |  | 50.52 |  |  | 3.21 | J | OC | 2.24 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 100.82 |  |  | 481.75 | J | 1 | 17.25 |  |  | 11.75 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 670.50 |  |  | 1,195.56 |  |  | 48.57 |  |  | 65.01 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 291.83 |  |  | 1,239.68 |  |  | 48.08 |  |  | 35.75 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 14,122.67 | J | SE,DMI | 43,182.17 | J | DMI,SE | 2,729.81 |  |  | 4,339.88 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 136,299.78 | J | E,DMI | 474,908.63 | J | E,I,DMI | 25,130.32 |  |  | 36,369.91 |  |  |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 0.76 | J | OC | 0.75 | J |  |  | U |  |  | U |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 11.22 |  |  | 6.29 |  |  | 0.40 | J | OC | 0.97 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN |  | U | EM |  | U | EM |  | $\cup$ | EM | 0.39 | J | OC |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 99.50 |  |  | 119.13 | J | 1 | 6.55 |  |  | 7.91 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 59.38 |  |  | 44.96 | J | 1 | 2.82 | J | OC | 3.29 | J | OC |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 3.12 | J | OC,CR | 3.28 | J | OC, I |  | $\cup$ |  |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 41.65 |  |  | 38.94 | J | 1 | 9.02 |  |  | 8.06 | J | CR |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 1,481.17 |  |  | 3,545.17 | J | LE | 242.14 |  |  | 366.62 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 215.12 |  |  | 327.67 | J | 1 | 17.11 |  |  | 21.18 |  |  |
| OCTACHLORODIBENZOFURAN | 9,634.89 | J | DMI,SE | 31,394.98 | J | I,LE,SE | 1,596.34 |  |  | 2,672.14 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 10.39 |  |  | 44.85 |  |  | 1.35 |  |  | 0.89 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 291.32 |  |  | 1,584.21 |  |  | 43.60 |  |  | 30.59 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 8,154.59 |  |  | 24,172.24 |  |  | 776.63 |  |  | 730.20 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 65,972.60 |  |  | 75,461.96 |  |  | 11,923.00 |  |  | 12,849.53 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 46.65 |  |  | 51.87 |  |  | 2.11 |  |  | 2.06 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 340.87 |  |  | 313.97 |  |  | 18.38 |  |  | 17.15 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 3,011.55 |  |  | 1,831.25 |  |  | 242.07 |  |  | 296.22 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 12,504.75 |  |  | 20,196.50 |  |  | 1,183.94 |  |  | 1,847.44 |  |  |


| Chemical Name | SS070AA |  |  | SS070AB |  |  | SS070BA |  |  | SS094CA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 10.91 | J | CR | 10.27 |  |  | 11.94 |  |  | 1.56 | J | CR |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 337.67 |  |  | 293.45 |  |  | 365.16 |  |  | 19.13 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 634.35 | J | I,CR | 867.18 |  |  | 1,776.00 | J | DD | 55.49 | J | CR |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 3,166.21 | J | LE,SE,CR | 2,950.07 |  |  | 8,296.31 | J | LE | 505.79 | J | CR |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 1,637.58 |  |  | 1,574.24 |  |  | 5,882.20 | J | LE | 240.05 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 109,745.55 | J | I,LE | 84,295.20 | J | I, LE | 324,866.61 | J | E,I,LE | 16,038.70 | J | I.SE, |
| OCTACHLORODIBENZO-P-DIOXIN | 749,165.24 | J | I,LE | 646,260.13 | J | LE,E | 1,690,239.30 | J | E,I,LE | 153,100.67 | J | I,SE, |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 6.99 |  |  | 5.86 |  |  | 4.24 |  |  | 0.70 | J | OC |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 50.65 |  |  | 38.21 |  |  | 43.34 |  |  | 3.75 | J | I,OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 53.06 |  |  | 44.91 |  |  | 55.21 |  |  | 4.87 | J | I,OC,CR |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 539.68 | J | 1 | 442.04 | J | 1 | 1,262.93 | J | 1 | 66.81 | J | 1 |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 448.24 | J | 1 | 374.98 | J | 1 | 495.42 | J | 1 | 30.03 | J | 1 |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 15.16 | J | I,CR | 14.32 | J | 1 | 24.99 | J | 1 | 1.51 | J | I,OC |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 962.92 | J | 1 | 477.64 | J | 1 | 1,472.09 |  |  | 65.38 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 14,778.61 | J | 1 | 10,364.43 | J | I,LE,SE | 43,668.88 | J | 1 | 1,383.66 | J | I,SE |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 1,356.74 | J | 1 | 1,091.03 | J | I | 3,826.07 | J | 1 | 153.76 | J | 1 |
| OCTACHLORODIBENZOFURAN | 70,706.58 | J | I,LE,SE | 48,002.97 | J | LE,SE | 247,720.39 | J | 1 | 8,219.19 | J | I,SE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 129.97 |  |  | 120.63 |  |  | 179.61 |  |  | 4.73 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 1,998.83 |  |  | 1,763.70 |  |  | 2,582.42 |  |  | 183.40 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 79,172.66 |  |  | 69,858.41 |  |  | 157,888.96 |  |  | 26,750.52 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 191,830.39 |  |  | 168,750.52 |  |  | 283,986.72 |  |  | 69,554.62 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 367.74 |  |  | 323.91 |  |  | 259.56 |  |  | 12.70 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 2,623.03 |  |  | 2,294.39 |  |  | 1,948.67 |  |  | 159.04 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 4,789.39 |  |  | 4,582.48 |  |  | 18,497.16 |  |  | 3,251.30 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 16,457.95 |  |  | 47,022.33 |  |  | 76,322.60 |  |  | 10,343.55 |  |  |


| Chemical Name | SS094DA |  |  | SS101CA |  |  | SS101DA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |  | U |  |  |  |  |  |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 4.27 | J | OC | 11.31 |  |  | 9.29 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN |  | $\cup$ | EM | 85.32 |  |  | 65.11 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 414.21 | J | CR | 527.83 |  |  | 594.59 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 261.27 | J | CR | 344.88 |  |  | 367.25 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 27,960.95 | J | I,LE | 11,333.88 | J | SE,SE | 17,358.29 | J | SE,DMI |
| OCTACHLORODIBENZO-P-DIOXIN | 261,477.77 | J | LE,E | 119,766.63 | J | SE,LE | 169,191.01 | J | SE,DMI |
| 2,3,7,8-TETRACHLORODIBENZOFURAN |  | U |  |  |  |  |  |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 4.90 | J | OC,DP | 7.68 |  |  | 4.69 | J | OC |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 5.05 | J | OC | 9.68 |  |  | 7.81 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 69.65 | J | 1 | 85.49 |  |  | 85.51 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN |  | UJ | I,EM | 22.37 |  |  | 19.48 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | UJ | 1 | 4.16 | J | OC |  | U |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 37.52 |  |  | 13.84 |  |  | 10.76 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 2,388.33 | J | I,LE | 1,321.05 | J | SE,LE | 1,937.82 | J | SE,DMI |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 158.96 | J | 1 | 206.62 | J | SE,LE | 220.45 | J | SE,DMI |
| OCTACHLORODIBENZOFURAN | 16,154.61 | J | LE,SE | 8,976.74 |  |  | 13,714.56 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS |  | U |  |  | U |  | 2.60 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 181.13 |  |  | 227.85 |  |  | 229.61 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 24,662.11 |  |  | 14,993.81 |  |  | 13,857.31 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 140,735.99 |  |  | 276,727.26 |  |  | 245,943.19 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 2.32 |  |  | 49.21 |  |  | 11.02 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 94.14 |  |  | 135.85 |  |  | 140.89 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 887.58 |  |  | 4,621.64 |  |  | 4,025.61 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 15,518.89 |  |  | 22,305.76 |  |  | 21,263.73 |  |  |

ATTACHMENT B
REASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.

## ATTACHMENT C

CAS REPORT AMENDMENT

March 9, 2007
Mandy Sullivan
Columbia Analytical Services, Inc
8540 Baycenter Road
Jacksonville, FL 32256

## Subject: Amendment to J0605919 <br> AMEC/Beazer East, Inc

Dear Mandy,
The following pages (208 and 209) were omitted from the original report. Please add them and let us know if we can help with anything else.

Respectfully submitted,
Columbia Analytical Services, Inc


Jane Freemyer
Project Manager
713-266-1599 $\times 23$
jfreemyer@houston.caslab.com

## Jane Freemyer

| From: | Hoyt, Marilyn P [marilyn.hoyt@amec.com] |
| :--- | :--- |
| Sent: | Friday, March 09, 2007 8:56 AM |
| To: | Karen Verschoor |
| Cc: | Mandy Sullivan; Jane Freemyer; Tom Kissinger |
| Subject: RE: Amended J0605810 |  |

thank you.

The data report for J 0605919 is missing Form I and Form 2 for SD004AA. Please provide a copy of those pages.

From: Karen Verschoor [mailto:kverschoor@houston.caslab.com]
Sent: Thursday, March 08, 2007 7:31 PM
To: Hoyt, Marilyn P
Cc: Mandy Sullivan; Jane Freemyer; Tom Kissinger
Subject: RE: Amended J0605810
Importance: High

I have attached the amend ment for J0705810

Let us know if there is anything else you need.


Visit us at www.caslab.com

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.

SDOO4AA

Lab Name: Columbia Analytical Services
Contract
SDG No:

Client No: Lab ID: J0605919-051

Client Name: AMEC

Matrix (Solid/Aqueous/Waste/Ash): Solid

Sample Wt/Vol: 10.248 g or $\mathrm{mL}: ~ g$
Initial Calibration Date: 11/07/06

Ext. Date: 12/27/06
Ext. Vol(ul):20.0 Inj. Vol(ul):1.0
Analysis Date: 6-JAN-07 Time: 03:58:30
Dilution Factor: 1
Cal. Ver. Data Filename: U18625\#1
Concentration Units (pg/L or ng/Kg dry weight): ng/Kg \% Solids/Lipids: 81.94

ANALYTE

## CONCENTRATION FOUND

DETECTION
Qual. ION ABUND.
RRT
MEAN

| $2,3,7,8-\mathrm{TCDD}$ | 1.470 | 0.036 |
| :--- | ---: | ---: |
| $1,2,3,7,8-\mathrm{PeCDD}$ | 18.097 | 0.068 |
| $1,2,3,4,7,8$-HxCDD | 64.234 | 0.129 |
| $1,2,3,6,7,8$-HxCDD | 178.038 | 0.141 |
| $1,2,3,7,8,9$-HxCDD | 155.010 | 0.137 |
| $1,2,3,4,6,7,8-\mathrm{HpCDD}$ | 7208.866 | 7.713 |
| OCDD | 62356.717 | 1.182 |
| $2,3,7,8-\mathrm{TCDF}$ | 2.178 | 0.044 |
| $1,2,3,7,8-\mathrm{PeCDF}$ | 2.839 | 0.147 |
| $2,3,4,7,8-$ PeCDF | 3.918 | 0.162 |
| $1,2,3,4,7,8-\mathrm{HxCDF}$ | 23.947 | 0.713 |
| $1,2,3,6,7,8$-HxCDF | 19.031 | 0.830 |
| $1,2,3,7,8,9$-HxCDF | $*$ | 1.032 |
| $2,3,4,6,7,8-\mathrm{HxCDF}$ | 24.884 | 0.857 |
| $1,2,3,4,6,7,8-\mathrm{HpCDF}$ | 904.204 | 5.016 |
| $1,2,3,4,7,8,9$-HpCDF | 57.775 | 6.757 |
| OCDF | 4561.018 | 0.462 |
|  |  |  |
| Total Tetra-Dioxins | 16.013 | 0.036 |
| Total Penta-Dioxins | 157.377 | 0.068 |
| Total Hexa-Dioxins | 2389.947 | 0.129 |
| Total Hepta-Dioxins | 26342.941 | 7.713 |
| Total Tetra-Furans | 21.899 | 0.044 |
| Total Penta-Furans | 169.175 | 0.162 |
| Total Hexa-Furans | 1038.520 | 0.713 |
| Total Hepta-Furans | 3823.286 | 5.016 |

(1) Qualifier $U$ indicates not detected; The $K$ indicates EMPC. The $C$ needs value from second column analysis. The $B$ indicates possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 2 and 9, Method 1613.

FORM 2: PCDD/PCDF LABELED COMPOUND AND CLEANUP STANDARD RECOVERIES

CLIENT ID.

SD004AA

Lab Name: Columbia Analytical Services Contract: Lab Code: CAS Method:1613 Case No: Client No: Lab ID:J0605919-051

Sample Wt/Vol: 10.248 $g$ or mL: $g$

Initial Calibration Date: 11/07/06
Instrument ID: AutoSpec-Ultima

GC Column ID: DB-5

Sample Data Filename: U18636\#1
Blank Data Filename: U27959\#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg \% Solid/Lipids: 8I. 94

|  |  |  | ION |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SPIKE | CONC. | R(\%) | QC | ABUND. | RRT |  |
|  | CONC. | FOUND | $(1)$ | Limite (1) | RATIO | $(2)$ | $(2)$ |

LABELED COMPOUNDS

13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD
13C-1, $2,3,4,7,8-\mathrm{HxCDD}$
13C-1,2,3,6,7,8-HxCDD
$13 \mathrm{C}-1,2,3,4,6,7,8-\mathrm{HPCDD}$ 13C-OCDD

13C-2,3,7,8-TCDF
13C-1,2,3,7,8-PeCDF
13C-2,3, 4, 7, 8-PeCDF
13C-1,2,3,4,7,8-HxCDF
$13 \mathrm{C}-1,2,3,6,7,8-\mathrm{HxCDF}$
$13 \mathrm{C}-1,2,3,7,8,9-\mathrm{HxCDF}$
$13 \mathrm{C}-2,3,4,6,7,8-\mathrm{HxCDF}$
$13 \mathrm{C}-1,2,3,4,6,7,8-\mathrm{HPCDF}$
13C-1,2,3,4,7,8,9-HpCDF

| 2000 | 1446.85 | 72.34 | $25-164$ | 0.79 | 1.012 |
| ---: | ---: | ---: | ---: | :--- | ---: |
| 2000 | 1185.10 | 59.25 | $25-181$ | 1.55 | 1.221 |
| 2000 | 1242.70 | 62.13 | $32-141$ | 1.25 | 0.990 |
| 2000 | 1278.79 | 63.94 | $28-130$ | 1.25 | 0.992 |
| 2000 | 701.65 | 35.08 | $23-140$ | 1.03 | 1.069 |
| 4000 | 793.08 | 19.83 | $17-157$ | 0.91 | 1.138 |
|  |  |  |  |  |  |
| 2000 | 1226.30 | 61.31 | $24-169$ | 0.77 | 0.972 |
| 2000 | 1281.91 | 64.10 | $24-185$ | 1.57 | 1.173 |
| 2000 | 1130.36 | 56.52 | $21-178$ | 1.54 | 1.205 |
| 2000 | 1311.78 | 65.59 | $26-152$ | 0.53 | 0.969 |
| 2000 | 1158.74 | 57.94 | $26-123$ | 0.52 | 0.971 |
| 2000 | 1400.57 | 70.03 | $29-147$ | 0.52 | 1.006 |
| 2000 | 1266.23 | 63.31 | $28-136$ | 0.53 | 0.986 |
| 2000 | 755.87 | 37.79 | $28-143$ | 0.45 | 1.046 |
| 2000 | 804.96 | 40.25 | $26-138$ | 0.45 | 1.078 |

CLEANUP STANDARD

| $37 C 1-2,3,7,8-T C D D$ | 800 | 669.13 | 83.64 | $35-197$ | 1.013 |
| :--- | :--- | :--- | :--- | :--- | :--- |

(1) Contract-required limits for percent recovery (R) are specified in Table 7, Method 1613.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for $37 \mathrm{Cl} 4-2378-T C D D$ (cleanup standard).

# DATA VALIDATION REPORT 

# Soil Samples <br> from <br> Koppers Portion of Cabot/Koppers Superfund Site Gainesville, FL 

## Analyses for PCDDs/PCDFs <br> CAS Report J0605944

Prepared for:
Beazer East

Prepared by:
AMEC Earth \& Environmental, Inc.
2 Robbins Road
Westford, MA 01886

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## List of Attachments

Attachment A Data Summary
Attachment B Reason Codes for Data Qualification

## DATA QUALIFIER DEFINITIONS

$\mathrm{U} \quad$ The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
$\mathrm{J} \quad$ The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation indicate a data limitation related to a QC element that exceeds required acceptance limits.

UJ The UJ qualifier indicates that the associated analyte was not detected at or above the method detection limit (MDL). However, the reported MDL is approximate and may be inaccurate or imprecise.
$\mathrm{N} \quad$ The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

### 1.0 INTRODUCTION

On behalf of Beazer East, Inc., AMEC Earth and Environmental (AMEC) collected soil and sediment samples at the Koppers Portion of the Cabot/Koppers Superfund site in Gainesville, Florida. Samples were collected as part of the activities specified in the Revised Supplemental Soil and Sediment Sampling Plan - Additional Data for Risk Assessment dated September 2006. This sampling is being conducted to support a human health risk assessment that will be conducted for the site.

This report provides an evaluation of data for seven sediment samples collected on December 12, 2006 and submitted for analysis for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in accordance with EPA Method 1613. Samples were submitted to Columbia Analytical Services (CAS) in Jacksonville, FL on December12, 2006 and subsequently transferred to the CAS laboratory in Houston, TX for analysis. These samples were analyzed at CAS under Service Request Number J0605944.

### 2.0 SAMPLES

Samples included in this set are listed below.

| SD005AA | SD007AA |
| :--- | :--- |
| SD006AA | SD008AA |
| SD006AC | SD009AA |
| SD006BA |  |

### 3.0 SUMMARY OF VALIDATION FINDINGS

Results for analytes within the range of the instrument calibration upon initial analysis are generally valid as reported. Results below the calibration range are qualified as estimated. Results for analytes measured after dilution, including OCDD and OCDF in SS005AA, SS006AA and SS006AC should be considered as gross estimates. Calculation protocols followed by CAS for dilution analyses are poorly documented and likely introduce significant bias. Results for these samples should be reviewed by the project manager to evaluate the margin between their toxic equivalencies (TEQs) and site action limits. Although no samples have been rejected in their entirety based on the validation, they may not all be suitable to support project decisions.

Toxicity equivalency (TEQ) values for the samples as calculated by CAS are based on the 1998 WHO toxic equivalency factors (TEFs) and include measurements for peaks that failed to meet method criteria for positive identification. TEQs have been recalculated in accordance with EPA Region 4 guidance and the updated WHO 2006 TEFs.

### 4.0 DATA VALIDATION METHODOLOGY

Data have been reviewed and validated with reference to the requirements of EPA Method 1613B, and the USEPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Data Review (EPA-540-R-05-001, September 2005) and USEPA Region 4 Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002. For those instances where Method 1613B requirements or criteria differ from the US EPA Contract Laboratory Program Statement of Work for dioxin/furan analyses, upon which the Functional Guidelines are based, the requirements and criteria of the cited method were applied.

Raw data were reviewed for all sample and quality control analyses associated with all samples in this set.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

1. Data completeness and deliverables
2. Chain of Custody documentation
3. Sample receipt
4. Holding times, storage and preservation
5. Mass calibration and mass spectrometer resolution
6. Window defining mixture
7. Initial calibration
8. Continuing calibrations
9. Identification criteria
10. Method blank analysis
11. Laboratory Control Samples
12. Second column confirmation analysis
13. Detection Limits
14. Labeled compound recoveries
15. Field blanks
16. Field Duplicates
17. Calculations

Data for all samples were reviewed for reported quality assurance/quality control results. All reported results on the final summary forms were checked against the raw data instrument printouts for sample concentrations. Chromatograms were reviewed for all samples in this set.

Results for the total congener class PCDDs and PCDFs have not been validated and should be considered as estimated in all samples. These data are not included in the TEQ calculations. These are quantified based on the assumption that their response factors are the same as the 2378 -substitued isomers. All data reported are from the initial analyses and many include congeners above instrument calibration. Any factors affecting the accuracy of results for the

2378-isomers apply to the entire congener group and interferences in addition to those noted for the 2378-isomers may significantly bias data for these groupings of PCDDs and PCDFs.

### 5.0 DATA VALIDATION FINDINGS

### 5.1 Data completeness and deliverables

The submitted data packages contained instrumental documentation elements required for full validation. However, documentation of data calculations involving adjustments of measured results from dilutions were not included as part of the reporting package. Upon request, CAS has provided explanations of selected individual sample calculations, but the approach taken was sample-specific.

It should be noted that data for the required QA/QC analyses including the mass calibration and resolution checks, window-defining mix and continuing calibration standards were not in chronological order in the package.

### 5.2 Sample Receipt

Samples were received at CAS Houston via FedEx on December 15, 2006.

### 5.3 Chain of Custody (COC) Documentation

COCs were legible and properly completed.

### 5.4 Holding Times, Storage and Preservation

Samples were received with a cooler temperature of $1^{\circ} \mathrm{C}$, within the method recommended range. Method 1613B allows for holding times up to 1 year if solid samples are frozen to $-10^{\circ} \mathrm{C}$. Samples were extracted within 14 days of sampling, and extracts analyzed within 40 days.

### 5.5 Mass Calibration and Resolution

Mass calibration and resolution were checked prior to each analytical run sequence. Mass calibration and resolution met method criteria for all sample analyses with a static resolving power of greater than 10,000 and a mass accuracy within 5 ppb of the actual for the PFK peaks monitored.

Method 1613 does not specify that the mass calibration and resolution must be verified at the end of each sequence.

### 5.6 Window Defining Mixture and Isomer Specificity Check

The retention times for the first- and last-eluting congener at each PCDD and PCDF chlorination level were demonstrated by the analysis of the window-defining mixture prior to each analytical
run. All congeners in the solution were detected at expected times. The height of the valley between the closely eluting isomers $1,2,3,8$-TCDD and $2,3,7,8$-TCDD less than $25 \%$. No qualifications were required.

The GC column resolution for the DB225 confirmation analyses was demonstrated with separate analyses of the Isomer Specificity Check mix prior to the initial and continuing calibration analyses. The height of the valleys between the closely eluting isomers 1,2,3,9TCDF, $2,3,4,7$-TCDF and $2,3,7,8$-TCDF was less than $25 \%$. No qualifications were required.

### 5.7 Initial Calibrations

One instrument was used for the DB-5 column analysis for all PCDDs and PCDFs except 2,3,7,8-TCDF. Five-point calibrations were conducted on November 7, 2006. Calibration for 2,3,7,8-TCDF confirmation on the DB-225 column was conducted on November 9, 2006. The initial calibrations were acceptable with \%RSDs $\leq 20 \%$ for the relative responses (RR) for unlabeled compounds and $\leq 35 \%$ for the relative response factors (RRFs) for labeled compounds. The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613B for all standards. A representative number of \%RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

No second-source standard was analyzed to verify the calibration.

### 5.8 Continuing Calibrations

Mid-point calibration standards were analyzed prior to and after each 12-hour analytical sequence. Sample analyses on the DB5 column were initially conducted on January 7, 17 and 30, 2007 with analyses of samples at dilution on January 23 and 31, 2007. Analyses for 2,3,7,8-TCDF on the DB225 column were conducted on January 15 and 17, 2007. All calibration checks demonstrated acceptable response stability, with the \%D of the RRs of unlabeled compounds within $20 \%$ of the average from the initial calibration and the RRFs of the labeled compounds $<35 \%$. The ion abundance ratios, sensitivity and relative retention times were within the method QC limits. A representative number of \%Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

Although run logs indicate that calibration check standards were analyzed at the end of each sequence, no data for these checks were included in the package. Method 1613 does not specifically require these.

### 5.9 Chromatographic Resolution

Method 1613 requires that chromatographic resolution of the column be verified for closely eluting TCDD isomers on the DB5 column and TCDF isomers on the DB225 column. All method requirements were satisfied.

### 5.10 Method Blanks

One method blank was prepared with the initial extraction and this was analyzed twice. A second method blank was prepared with the reextraction of SS006BA. The method blanks contained trace levels of several target PCDDs and PCDFs, including OCDD, 1234678-HpCDD, OCDF and $1234678-H p C D F$. Since the duplicate analyses of the one method blank demonstrated variability in the levels detected, the maximum concentration from the analyses of the method blanks were used for data qualifications. All reported sample concentrations of these analytes were greater than 5 times the blank and were not qualified.

### 5.11 Laboratory Control Samples (LCS)

Laboratory control sample and a duplicate were extracted with the preparation batch. These samples were prepared by spiking clean sand with the target PCDDs/PCDFs. Recoveries of all target PCDDs and PCDFs were within the method control limits.

### 5.12 Identification Criteria

Target PCDDs and PCDFs are identified based on peak retention time and the presence of the two masses monitored for the congener level with relative abundances within $15 \%$ of the theoretical value. Since numerous chemicals may result in one of both of the masses monitored for the PCDDs/PCDFs, a peak cannot be identified as a target analyte unless the ratio criterion is met.

The OCDD internal standard failed to satisfy the ion ratio criteria for the analysis of SD006AA. The sample was diluted with additional internal standards and reanalyzed. Results for OCDD and OCDF in this sample are qualified as estimated since no valid data on recovery of the internal standard was generated.

### 5.13 Confirmation Analyses

$2,3,6,7-$ TCDF is not separated completely on the primary chromatographic column, so if it is detected on the initial analysis, a second-column analysis is necessary to confirm its presence. These analyses were conducted on all samples with potential detections of 2,3,7,8-TCDF from the DB-5 column analysis. Final validated data and the TEQ includes the confirmation result for this analyte.

### 5.14 Detection Limits

Detection limits were calculated on a sample-specific, analyte specific basis using the signal to noise level in each ion channel.

### 5.15 Labeled Compound Recoveries

Recoveries of internal standards were within Method 1613 control limits for all samples in this set. As noted, however, the OCDD internal standard failed to satisfy the ion ratio requirement for SS006AA. CAS did not flag this outlier on the report but did base the quantitation of OCDD and OCDF using adjusted areas. Final results for OCDD and OCDF are reported from reanalyses at dilution and are based on adjustments by an undocumented and untraceable factor.

### 5.16 Interferences

Polychlorinated ethers were present at low levels, but while several interfered with the quantitation of total PCDF congeners, no instances were noted where $2,3,7,8$-subsituted target PCDF were affected.

### 5.17 Sample Dilutions

All samples in this set contained levels of one or more of the following PCDDs/PCDFs above calibration: OCDD, OCDF, 1234678-HpCDD, 1234678-HpCDF. The primary corrective action for this in Method 1613 is to extract a smaller portion of the sample. Dilution by a factor of 10 is an alternative if it is determined that a smaller sample size will not be representative. Although these samples are characterized as sandy soils where representativeness would not be expected to be problematic, no reeextractions were performed for this reason. Samples were diluted by factors up to 100 by adding more internal standards to the extract.

CAS data reduction protocol for measurements at dilution was inconsistent and poorly or not documented. Sample results for OCDD from dilutions of SS005AA and SS006AC were corrected for some combination of tetra- and pentachlorinated internal standard recoveries, whereas dilution results for SS008AA and SS008BA were corrected by the initial recovery of the OCDD internal standard and results for SS007AA and SD009AA were not corrected for any initial recovery. The basis for the data adjustment used for SS006AA could not be determined; the reported result does not agree with the hand-written calculation on the raw data. Review of data for samples unaffected by interferences and apparent high recoveries does not support the use of tetra- and penta-chlorinated internal standards. These consistently recover at significantly higher levels than the hexa- through octa-chlorinated internal standards. This data reduction practice likely leads to a significant low bias to results in affected samples.

SS006AA and SS006AC are field duplicates, and their chromatograms demonstrate the same approximate level of interferents to the recovery standard. In both samples, the measured recoveries of the HpCDD, HpCDF and OCDD internal standards were within the control limits. However, CAS corrected results for these analytes in the dilution analyses differently, using a combination of tetra and penta recoveries for SSO06AC and an unknown factor for SS006AA. Results for OCDD and OCDF are significantly lower in SS006AC, confirming that this correction process likely introduces low bias. Results for all analytes from dilution analyses where data were corrected by tetra-penta standard recoveries are qualified as gross estimates.

CAS states that they do not reanalyze samples where OCDD and/or OCDF are the only analytes above the calibration range. OCDD was above calibration in all final reported sample analyses and results for this analyte in all samples are qualified as estimated.

### 5.18 Data Consistency

Results obtained on dilution for the samples were compared to the initial analyses. The dilution results for 1234678 -HpCDF and OCDF in SS005AA were significantly lower than the initila analysis for SS095AA. This is likely attributable to the CAS data adjustment protocol as detailed above for sample dilutions.

### 5.19 Equipment Blank

No equipment blank was collected with this sample set.

### 5.20 Field Duplicates

Field duplicate samples were collected at SS006AA. Precision for those analytes reported from This is possibly attributable to the differing data adjustments made by CAS rather than sample non-homogeneity. Results for OCDD and OCDF are qualified as estimated in both samples.

### 5.21 Calculations

As noted, CAS calculations for results reported from dilution analyses were not documented and were inconsistently performed. All reported results from dilutions where data were adjusted based on recoveries of internal standards other than that for the specific analyte are qualified as gross estimates.

The reported result for OCDD in SS006AA could not be traced from the raw data or the handwritten calculations. The higher value has been retained as a gross estimate pending explanation from CAS.

Calculations for toxic equivalencies as provided were calculated using 1998 WHO toxic equivalency factors (TEF) and one-half the detection limit for non-detected analytes. Peaks reported that did not meet identification criteria were included. Values have been recalculated using the revised 2006 WHO TEF values and one-half the maximum possible concentrations for analytes where peaks were present but did not meet criteria for positive identification.

### 6.0 REFERENCES

USEPA 1994. Method 1613B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRCG/HRMS. October 1994.

USEPA Region 4. 2002. Data Validation Standard Operating Procedures for Chlorinated Dioxin/Furan Analysis by High Resolution Gas Chromatography/High Resolution Mass Spectrometry, Revision 3.0, May 2002.
U. S. EPA. 2005. USEPA Analytical Services Branch: National Functional Guidelines for Chlorinated Dibenzo-p-dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review, EPA540-R-05-001.

## amec ${ }^{\theta}$

PCDDs/PCDFs in Field Duplicate Samples

| Analyte | SS006AA | SS006AC | RPD |
| :---: | :---: | :---: | :---: |
| 2,3,7,8-TCDD | 18.3 | 20.2 | 10\% |
| 1,2,3,7,8-PeCDD | 275 | 298 | 8\% |
| 1,2,3,4,7,8-HxCDD | 628 | 897 | 35\% |
| 1,2,3,6,7,8-HxCDD | 2920 | 2740 | 6\% |
| 1,2,3,7,8,9-HxCDD | 3150 | 2160 | 37\% |
| 1,2,3,4,6,7,8-HpCDD | 114000 | 118000 | 3\% |
| OCDD | 2050000 | 543000 | 116\% |
| 2,3,7,8-TCDF | 28.7 | 28.7 | 0\% |
| 1,2,3,7,8-PeCDF | 34.8 | 38.2 | 9\% |
| 2,3,4,7,8-PECDF | 53.5 | 60.6 | 12\% |
| 1,2,3,4,7,8-HxCDF | 338 | 381 | 12\% |
| 1,2,3,6,7,8-HxCDF | 273 | 308 | 12\% |
| 1,2,3,7,8,9-HxCDF | 7.96 | 9.79 | 21\% |
| 2,3,4,6,7,8-HxCDF | 209 | 402 | 63\% |
| 1,2,3,4,6,7,8-HpCDF | 12900 | 12400 | 4\% |
| 1,2,3,4,7,8,9-HpCDF | 781 | 832 | 6\% |
| OCDF | 128797 | 43000 | 100\% |
| TEQ, ng/kg | $2.47 \mathrm{E}+03$ | $2.41 \mathrm{E}+03$ | 2\% |

## ATTACHMENT A: SAMPLE RESULTS

| Chemical Name | SD005AA |  |  | SD006AA |  |  | SD006AC |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 20.38 |  |  | 18.27 |  |  | 20.16 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 262.12 |  |  | 275.06 |  |  | 297.87 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 778.10 |  |  | 627.98 |  |  | 897.01 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 2,296.12 |  |  | 2,916.05 |  |  | 2,744.24 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 1,878.33 |  |  | 2,151.29 |  |  | 2,164.64 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 61,111.16 | J | LE | 113,521.12 |  |  | 118,482.36 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 358,022.51 | J | E,LE | 2,048,970.20 | J | I,E,FD,LE | 543,262.57 | J | FD,LE |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 36.66 |  |  | 28.67 |  |  | 28.68 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 39.84 |  |  | 34.77 |  |  | 38.23 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 59.61 |  |  | 53.50 |  |  | 60.60 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 307.71 |  |  | 337.89 |  |  | 381.01 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 272.19 |  |  | 272.91 |  |  | 308.25 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN | 8.49 |  |  | 7.96 |  |  | 9.79 |  |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 226.21 |  |  | 209.47 |  |  | 402.49 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 7,188.26 | J | LE | 12,890.74 |  |  | 12,368.64 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 666.38 |  |  | 781.06 |  |  | 831.53 |  |  |
| OCTACHLORODIBENZOFURAN | 25,200.63 | J | LE | 128,797.47 | J | I,FD,LE | 43,067.99 | J | FD,LE |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 183.05 |  |  | 143.36 |  |  | 152.94 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 2,050.44 |  |  | 2,012.42 |  |  | 2,126.31 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 28,729.72 |  |  | 29,979.65 |  |  | 31,893.84 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 86,441.89 |  |  | 97,541.89 |  |  | 129,239.08 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 423.35 |  |  | 351.82 |  |  | 337.86 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 2,215.46 |  |  | 2,165.88 |  |  | 2,328.17 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 11,512.31 |  |  | 7,476.87 |  |  | 8,199.64 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 32,180.26 |  |  | 38,093.10 |  |  | 13,129.93 |  |  |


| Chemical Name | SD006BA |  |  | SD007AA |  |  | SD008AA |  |  | SD009AA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason | Result | ValQual | Reason |
| 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN | 2.10 | J | OC | 3.12 |  |  | 1.93 |  |  | 5.99 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN | 35.82 |  |  | 45.83 |  |  | 40.09 |  |  | 110.69 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN | 142.34 |  |  | 172.69 |  |  | 118.78 |  |  | 320.32 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN | 387.72 |  |  | 478.15 |  |  | 515.03 |  |  | 1,603.03 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN | 357.74 |  |  | 460.40 |  |  | 357.24 |  |  | 894.76 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN | 15,302.86 |  |  | 22,430.72 |  |  | 22,573.62 |  |  | 68,762.65 |  |  |
| OCTACHLORODIBENZO-P-DIOXIN | 147,043.84 | J | E | 255,252.91 | J | E | 283,836.08 | J | E | 798,634.64 | J | E |
| 2,3,7,8-TETRACHLORODIBENZOFURAN | 3.82 |  |  | 5.56 |  |  |  | U | EM | 5.84 |  |  |
| 1,2,3,7,8-PENTACHLORODIBENZOFURAN | 4.44 | J | OC | 5.73 |  |  | 6.67 |  |  | 25.51 |  |  |
| 2,3,4,7,8-PENTACHLORODIBENZOFURAN | 7.02 | J | OC | 9.37 |  |  | 6.75 |  |  | 26.12 |  |  |
| 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN | 57.45 |  |  | 68.96 |  |  | 63.28 |  |  | 207.62 |  |  |
| 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN | 50.70 |  |  | 53.23 |  |  | 43.81 |  |  | 145.84 |  |  |
| 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN |  | U | EM |  | U |  | 2.46 | J | OC | 6.44 |  |  |
| 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN | 100.67 |  |  | 76.55 |  |  | 64.00 |  |  | 121.49 |  |  |
| 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN | 2,644.51 |  |  | 2,241.29 |  |  | 2,269.70 |  |  | 6,956.40 |  |  |
| 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN | 159.86 |  |  | 149.56 |  |  | 154.40 |  |  | 505.84 |  |  |
| OCTACHLORODIBENZOFURAN | 11,474.71 |  |  | 17,032.91 |  |  | 16,981.36 |  |  | 54,657.89 |  |  |
| TOTAL TETRACHLORINATED DIBENZO-P-DIOXINS | 15.61 |  |  | 25.42 |  |  | 20.13 |  |  | 49.02 |  |  |
| TOTAL PENTACHLORINATED DIBENZO-P-DIOXINS | 266.09 |  |  | 372.89 |  |  | 295.65 |  |  | 765.17 |  |  |
| TOTAL HEXACHLORINATED DIBENZO-P-DIOXINS | 4,539.61 |  |  | 5,752.87 |  |  | 5,648.48 |  |  | 14,433.55 |  |  |
| TOTAL HEPTACHLORINATED DIBENZO-P-DIOXINS | 53,619.73 |  |  | 38,674.62 |  |  | 42,952.02 |  |  | 62,649.41 |  |  |
| TOTAL TETRACHLORINATED DIBENZOFURANS | 33.92 |  |  | 61.33 |  |  | 45.96 |  |  | 132.49 |  |  |
| TOTAL PENTACHLORINATED DIBENZOFURANS | 334.25 |  |  | 418.30 |  |  | 340.12 |  |  | 1,056.64 |  |  |
| TOTAL HEXACHLORINATED DIBENZOFURANS | 2,430.13 |  |  | 1,484.70 |  |  | 2,521.66 |  |  | 3,988.05 |  |  |
| TOTAL HEPTACHLORINATED DIBENZOFURANS | 9,142.61 |  |  | 9,719.00 |  |  | 9,701.59 |  |  | 22,595.79 |  |  |

ATTACHMENT B
REASON CODES FOR DATA QUALILFICATION

## Reason Codes for Data Qualification - Dioxins and Furans

MB Contaminated blank
DD Result is from dilution where ion ratio criterion not met on initial analysis
OC Measurement below calibration
I Internal standard recovery outside of control limits
MI Matrix interference
EM Estimated maximum possible concentration (ion ratio criterion not satisfied))
DMI Result from dilution analysis; internal standard recovery from initial analysis within limits but biased by matrix interference
E Exceeded calibration range
CR Chromatographic resolution poor
DP Diphenyl ether interference
SE Excessive difference in results between analyses of samples. Significantly lower (>25\%) result after dilution for analyte above calibration or at saturation in initial analysis.
CS Cleanup standard recovery unacceptable
LE Result from dilution calculated assuming recovery of internal standard equal to tetra or tetra and penta chlorinated internal standards
FD Variability noted between field duplicates.


[^0]:    ${ }^{1}$ Fifty-six samples with potential bias were submitted for reanalysis. However, analytical results reported by the two laboratories for sample SS024CA were dramatically different with a concentration of 4.3 $\mathrm{ng} / \mathrm{kg}$ TEQ reported by Vista and a concentration of $389.6 \mathrm{ng} / \mathrm{kg}$ TEQ reported by CAS. (Table 1). Vista's physical description of the sample differed from the description recorded by CAS for the bottle from which the sample was taken. CAS described the sample as sand with rocks; the sample analyzed by Vista had no rocks. In addition, reported moisture contents were different. This difference may have been the result of the sample sent to Vista coming from the same sampling point but taken from a slightly deeper soil stratum. Because the data for the samples were vertically consistent, going from higher to lower concentrations with increased depth, it is most likely that the sample that was sent to Vista may have been taken from a deeper stratum than the one analyzed by CAS's Houston laboratory and reported as a surface soil sample. Alternatively, the samples could have been either misidentified or unintentionally switched before they were sent. While it is not clear why the differences were so great, AMEC does not believe that the samples are comparable and, thus, did not compare them as if they were parallel analyses of the same starting material.

[^1]:    * Value reported as estimated maximum possible concentration

