



Alachua County Environmental Protection Department

Chris Bird, Director

October 27, 2010

Mr. Gregory W. Council, P.E., Principal Engineer
GeoTrans, Inc.
1165 Sanctuary Pkwy.
Suite 270
Alpharetta, GA 30004

Re: Response to Beazer East, Inc. Information Request on Alachua County Environmental Protection Department Stormwater Sampling

Dear Mr. Council:

This letter and the enclosed CD contains the Alachua County Environmental Protection Department (ACEPD) response to your August 25, 2010 letter requesting supplemental information on stormwater sampling conducted at the former Koppers wood treatment facility in Gainesville, Florida and in Springstead Creek. Our responses below follow the questions that were asked in your letter.

- 1) Please confirm that the work plan followed for the sampling was documented in the August 18, 2008 Task 6 Proposed Scope of Work (attached) with modifications as noted in your December 1, 2009, and June 18, 2010, letters. Were there other work plans, amendments, or procedures prepared to document the sampling and analysis plan? If so, please provide the documents. Also, please provide any standard operating procedures (SOPs) referenced by the work plan and/or used in conducting the sampling and analysis.*

No written work plan modifications, aside from those listed above, were prepared as part of the stormwater sampling effort. Given time constraints and the unpredictability of storm events, ACEPD determined that the original work plan, although comprehensive, was too extensive and labor intensive to implement under storm event conditions given the logistics of sampling the outfall and Springstead Creek upstream and downstream of the Koppers ditch outfall. Therefore modifications as documented in the December 1, 2009 and June 18, 2010 letters were necessary.

ACEPD follows Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOPs) DEP-SOP-001/01 for sample collection activities. Sections relevant to collection of surface water samples are FS 1000 General Sampling Procedures (Effective 12/3/08) and FS 2100 Surface Water Sampling (Effective 12/3/08). Electronic format copies of these documents are included on the enclosed CD.

- 2) *Please provide a list of any deviations from the procedures listed in the work plans and applicable SOPs, and a justification of each deviation. For example, the work plan calls for three samples at each location during each rainfall event (first flush, near peak flow, receding flow). Based on the June 18, 2010, report, it does appear three samples were collected, Please explain.*

Work Plan Modifications

Modifications made to the work plans as part of field sampling activities are documented in the letter reports summarizing the stormwater sampling results. ACEPD is experienced in storm event sampling and additional modifications were made based on both prior experience and site-specific conditions during stormwater events including rainfall duration and amount, sample collection logistics, personnel availability and safety.

The December 4 and 5, 2009 stormwater sampling event sample collection protocol was modified from the revised plan submitted December 1, 2009 based on timing of the rainfall events and sample collection logistics. The “first flush” sample was collected from the upstream location on the Koppers Ditch north of NW 23rd Avenue in the late afternoon of December 4, 2009. Rain continued to fall during the night and the “first flush” from the Koppers Ditch Outfall on City Public Works property likely occurred sometime during the early morning hours of December 5, 2009. Darkness and unsafe sampling conditions precluded ACEPD staff from obtaining “first flush” samples at this location. The decision was made to obtain samples from the outfall at first light and subsequently collect samples from the upstream location and upstream and downstream in Springstead Creek as documented in the letter report transmitting the June 18, 2010 sampling results. Due to sample collection logistics, the parameter coverage was also reduced at selected sites. This event yielded useful data from samples obtained near peak flow and during receding flow, which was used in planning and conducting future events.

Samples collected on March 11, 2010 focused on a “first flush” sample from the Koppers Ditch Outfall on City Public Works property since ACEPD was unable to obtain “first flush” samples from this location as part of the December 4 and 5, 2009 sampling event. As discussed in ACEPD’s response to question 4. below, intermittent rainfall during the early morning hours of March 11, 2010 prevented a “first flush” sample from the upstream location on the Koppers Ditch north of NW 23rd Avenue from being obtained.

Samples collected on August 26, 2010 followed the plan set forth in the June 18, 2010 report. However, it should be noted that ACEPD moved the upstream sampling location for Springstead Creek to a site above the confluence of the North Main Terrace Ditch and Springstead Creek. This was done to place the upstream sample location above any discharge of stormwater from the Koppers site to the east under the CSX railroad tracks that could influence upstream samples. Evidence of stormwater flowing under the tracks had been observed after heavy rainfall on August 13, 2010. ACEPD was prepared to collect a “first flush” sample from the upstream location on the Koppers Ditch north of NW 23rd Avenue; however, rapid development of the storm precluded collection of a “first flush” sample at this location (see response to question 4.).

SOP Modifications

The upstream sample from Springstead Creek (collection time 0815 hr) in Round 1 of the December 5, 2009 stormwater sampling event was obtained prior to collection of the downstream sample (0820 hr). ACEPD recognized the deviation in the field, but sufficient containers were not available to collect a second sample. Given the relatively high flow in the creek at the time of sampling, ACEPD believes the data collected are representative of the conditions downstream during the event.

Water samples were collected at mid-depth in the ditch and Springstead Creek, which is a standard ACEPD operating procedure. FS 2100 Surface Water Sampling (Effective 12/3/08) describes collection of a "surface grab" as a sample obtained from a depth of 0-12 inches. The August 26, 2010 samples collected at approximately mid-depth in Springstead Creek may have been collected at a depth of slightly more than 12 inches. Mid-depth samples, especially under storm event conditions are considered by ACEPD to be more representative of the water column than surface grabs.

Under some storm event conditions in the ditch and in Springstead Creek the water was too shallow to allow pre-preserved containers to be tilted vertically for sample collection following submersion. In these cases the containers were tilted as much as possible to reduce the potential for preservative loss.

- 3) *Does ACEPD have documentation that the "first flush" samples on March 11, 2010, met the definition listed in the work plan (i.e. within the first 30 minutes of flow)? If so, please provide that documentation.*

Yes, on March 11, 2010, ACEPD staff members were present onsite on City Public Works Property at approximately 11:00 AM when the culvert was dry before any water began flowing through the culvert from the Koppers site. ACEPD staff observed the initial flow from the Koppers site discharge through the culvert onto City Public Works property and move down the ditch to Springstead Creek.

- 4) *Why were upstream samples (NW 23rd Ave) not sampled on March 11, 2010? Are other data available to provide background information for that day?*

No upstream samples were collected in the ditch at NW 23rd Avenue anytime on March 11, 2010. First flush samples are logistically difficult to obtain in the ditch north of NW 23rd Avenue because runoff from NW 23rd Avenue begins immediately during storm events. Based on data from ACEPD's recording rain gage #2 at Waldo Road and NE 8th Avenue (approximately 1.5 miles southeast of Koppers), on March 11, 2010, light rain fell from 12:45 to 3:45 AM, and again between 8:00 and 8:15 AM, before heavier rain provided an adequate accumulation of water in the ditch to allow flow to exit the Koppers site. Given that rain had occurred during the night ACEPD did not believe representative "first flush" samples could be collected on March 11, 2010 at the upstream location north of NW 23rd Avenue. Representative "first flush samples were obtained as part of storm event sampling conducted December 4 and 5, 2009.

On August 26, 2010 ACEPD staff were unable to mobilize for stormwater sampling and arrive at the upstream sample site on the ditch north of NW 23rd Avenue within the first 30 minutes of the event to obtain “first flush” samples. Based on data from ACEPD’s recording rain gage #3 at SR20 and SE 24th Street (approximately 4.5 miles southeast of the Koppers site), during the afternoon of August 26, 2010, 0.84 inches of rain fell between 2:30 and 3:00 PM. Due to the rapid development of this storm “first flush” samples were unable to be obtained at the upstream location on the ditch north of NW 23rd Avenue within the first 30 minutes of flow. Rain gage #3 was used for comparison purposes in this instance because ACEPD’s rain gage #2 was not operational during this part of August 2010. These data (from rain gage #3) also compare favorably with the rainfall, 0.88 inches, reported at the Gainesville airport for the same date.

- 5) *Given the timing constraints of collecting stormwater samples. Beazer was unable to have personnel on hand to observe ACEPD’s collection efforts. Please provide copies of the field notes taken by the sample collection staff on each of the days that samples were collected. Please describe in detail the method of filling the samples containers at each location on each day. For example, were lab supplied and pre-cleaned sample containers lowered directly into the water or was an intermediate vessel used? What types of vessels were used and how were they lowered into the water, allowed to fill with water and capped? Which direction were sample containers oriented (open toward upstream or downstream) when filled?*

All stormwater samples were obtained by direct grab using lab supplied pre-cleaned sample containers supplied by TestAmerica in Tallahassee, Florida. The containers were filled directly with no use of any intermediate vessel. Unpreserved containers were opened and slowly submerged into the water with the container opening pointed toward the water flow. Sample containers with premeasured preservations were submerged unopened to approximately mid-depth, turned upright (as room allowed, see response to question 2.), oriented with the container opening toward the flow, the lid removed, the container then allowed to fill, and then the container capped.

- 6) *Please provide field-measured data such as pH, specific conductance, dissolved oxygen, and turbidity (copies of original field data sheets are preferred).*

Field data is summarized below for the December 2009 and March 2010 sampling events. In some instances more than one set of field readings were taken during sample collection. ACEPD used a YSI 556 multiparameter instrument for in-situ measurement of temperature, pH, specific conductance and dissolved oxygen. Turbidity was measured on grab samples with a Hach 2100P portable turbidimeter. Water velocity was measured with a Marsh-McBirney Flomate 2000 during the December sampling event and a Sontek Flow Tracker during the March and August sampling events. The data presented below are the field readings closest in time to the collection of samples for laboratory analyses. Copies of field logbook notes for the storm event sampling are included as an attachment.

Table 1. Koppers Ditch and Outfall Field Meter Readings for the December 4 and 5, 2009 Stormwater Sampling Event.

Parameter	Koppers Ditch Upstream at NW 23 rd Avenue (First Flush)	Koppers Ditch Outfall on City Public Works Property (Round 1)	Koppers Ditch Upstream at NW 23 rd Avenue (Round 2)	Koppers Ditch Outfall on City Public Works Property (Round 2)
Map ID (Fig 4)	5	4	5	4
Sample Date	12/4/2009	12/5/2009	12/5/2009	12/5/2009
Sample Time	1650 hr	0715 hr	0907 hr	0957 hr
Total Water Depth at Sampling Point	0.58 feet	0.5 feet (in culvert)*	0.7 feet	0.3 feet (in culvert)*
Flow	0.29 cfs	3.8 cfs	0.25 cfs	0.31 cfs
Turbidity	118 NTU	78.7 NTU	7.43 NTU	13.3 NTU
pH	7.73 SU**	7.76 SU	7.18 SU	7.65 SU
Specific Conductance	181 uS/cm	85 uS/cm	NM*	86 uS/cm
Temperature	17.74 °C	12.64 °C	13.32 °C	12.83 °C
Dissolved Oxygen	6.82 mg/L	10.44 mg/L	9.71 mg/L	10.19 mg/L

NM – Not Measured, meter was not providing a stable reading.

*Total water depth in the culvert approximately 3-5 feet upstream of sample collection point.

**pH is reported for field measurement at 1711, all other parameters are for 1650.

Table 2. Springstead Creek and Koppers Ditch Outfall above Springstead Creek Field Meter Readings for the December 5, 2009 Stormwater Sampling Event, Round 1.

Parameter	Springstead Creek Upstream of Koppers Ditch	Koppers Ditch Outfall Upstream of Springstead Creek	Springstead Creek Downstream of Koppers Ditch
Map ID (Fig 4)	1	2	3
Sample Time	0815 hr	0835 hr	0820 hr
Total Water Depth at Sampling Point	1.2 feet	1.0 feet	1.5 feet
Turbidity	15.4 NTU	49.9 NTU	12.9 NTU
pH	7.41 SU	7.20 SU	7.23 SU
Specific Conductance	87 uS/cm	90 uS/cm	83 uS/cm
Temperature	13.88 °C	12.46 °C	13.85 °C
Dissolved Oxygen	9.41 mg/L	10.5 mg/L	9.55 mg/L

Table 3. Springstead Creek and Koppers Ditch Outfall above Springstead Creek Field Meter Readings for the December 5, 2009 Stormwater Sampling Event, Round 2.

Parameter	Springstead Creek Upstream of Koppers Ditch	Koppers Ditch Outfall Upstream of Springstead Creek	Springstead Creek Downstream of Koppers Ditch
Map ID (Fig 4)	1	2	3
Sample Time	1211 hr	1155 hr	1147 hr
Total Water Depth at Sampling Point	0.7 feet	0.2 feet	1.2 feet
Turbidity	9.11 NTU	9.42 NTU	9.65 NTU
pH	7.04 SU	7.36 SU	7.18 SU
Specific Conductance	131 uS/cm	134 uS/cm	124 uS/cm
Temperature	14.51 °C	13.46 °C	14.4 °C
Dissolved Oxygen	8.82 mg/L	9.11 mg/L	8.95 mg/L

Table 4. Koppers Ditch Outfall on City Public Works Property Field Meter Readings for the March 11, 2010 Stormwater Sampling Event.

Parameter	Koppers Ditch Outfall on City Public Works Property
Map ID (Fig 4)	4
Sample Time	1151 hr
Total Water Depth at Sampling Point	0.5 feet (in culvert)*
	5.2 cfs
Turbidity	802 NTU**
pH	7.31 SU
Specific Conductance	130 uS/cm
Temperature	17.13 °C
Dissolved Oxygen	8.58 mg/L

*Total water depth in the culvert approximately 3-5 feet upstream of sample collection point.

**Initial turbidity measured at 11:35 AM prior to sample collection.

- 7) *Were the laboratory data validated by ACEPD or by a third party? If so, please provide reports certifying that the reported data have been validated.*

No validation of laboratory data from TestAmerica for any of the stormwater sampling events, December 4 and 5, 2009, March 11, 2010 or August 26, 2010, was conducted by ACEPD or by any third party.

- 8) *Please provide full (Level IV) laboratory data packages for all of the sampling results reported. For dioxin samples, the packages should include all chromatograms, including PFK traces, all non-conformance memoranda, and all internal communications regarding sample preparation. Additionally, if any instructions were provided to the laboratory project manager on the handling of biphasic (liquid + solid) samples, please include these instructions. If ACEPD does not have the full packages, please provide the highest level packages available and authorize Beazer to obtain the full data package from the laboratories.*

Level IV laboratory data packages prepared by TestAmerica are provided in electronic format on the enclosed CD for the stormwater sampling conducted by ACEPD on December 4 and 5, 2009, March 11, 2010, and August 26, 2010. All stormwater samples collected by ACEPD were submitted to TestAmerica as water samples; ACEPD did not give TestAmerica any instructions to handle any of these samples as biphasic samples.

- 9) *If not included in the Level IV package, please provide the dioxin laboratory's internal notes regarding (a) whether steps were taken to determine the percent solids in dioxin samples, (b) whether the lab treated any samples as solid samples, (c) how the samples were extracted, and (d) the pH of the samples. If ACEPD does not have these notes, please authorize Beazer to obtain them.*

No steps were requested by ACEPD or taken by TestAmerica to determine the percent solids in the dioxin samples, and as such there are no laboratory notes about this to provide. The dioxin samples collected by ACEPD were submitted to TestAmerica as water samples and were run by TestAmerica as "non-drinking water samples" as outlined in their SOPs. TestAmerica confirmed that the water samples were filtered and the filtered particulate material was extracted using a combined Soxhlet extraction while the aqueous portion was extracted with methylene chloride. The extracts were then combined and brought to volume prior to analysis. Copies of the TestAmerica SOPs for dioxin and the source method used for the analyses are attached.

Determination of the initial pH of the samples analyzed for dioxins is not a standard procedure per TestAmerica and is not run on samples for dioxins unless requested. ACEPD did not request pH analyses on the samples submitted for dioxin analysis; however, pH was requested as a separate analyte and was run by TestAmerica on a separate sample. These data were reported in the Level II data packages previously provided and are in the attached Level IV packages. ACEPD also measured pH in the field at all sample sites during storm event sampling.

Letter to Mr. Gregory Council, P.E.

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October 27, 2010

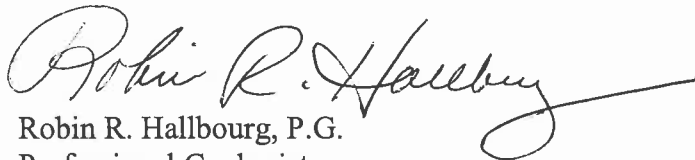
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10) Please provide all laboratory notes on the TSS analyses performed for samples 604-25059-1 and 640-26584-1. If ACEPD does not have these notes, please authorize Beazer to obtain them.

Per TestAmerica no internal notes were taken on the total suspended solids (TSS) analyses conducted on any of the stormwater samples analyzed by TestAmerica. TestAmerica provided the General Chemistry Worksheets for TSS that contains the raw data (weights and volumes) as well as run logs for sample analyses in the Level IV data packages.

Should you have additional questions regarding the laboratory data, ACEPD authorizes Beazer-East, Inc. and its representatives to contact TestAmerica directly with questions relating to the attached Level IV data packages and validation of the laboratory data from these stormwater sampling events. The person to contact at TestAmerica (Tallahassee, Florida) is Amy Marks, or in her absence Tim Preston, both of whom can be reached at 850-878-3994. Please do not hesitate to contact me at 352-264-6825 if you have further questions regarding the storm event sampling.

Sincerely,



Robin R. Hallbourg, P.G.
Professional Geologist

cc: John Mousa, ACEPD (w/o enclosures and attachments)
Scott Miller, USEPA (w/o enclosures and attachments)

Enclosures:

CD containing the following:

- 1) Test America Level IV data packages for stormwater sampling conducted December 4 and 5, 2009, March 11, 2010 and August 26, 2010
- 2) FDEP SOPs FS 1000 General Sampling Procedures (Effective 12/3/2008) and FS 2100 Surface Water Sampling (Effective 12/3/2008).
- 3) TestAmerica SOPs for Dioxin Analysis SOP No. WS-ID-0007 Rev. 3.3 (Effective 11/02/2009) and SOP No. WS-ID-0007 Rev. 3.4 (Effective 3/26/2010)
- 4) Dioxin Source Method1613B (from TestAmerica)
- 5) Copy of the ACEPD Field Log Book Pages for Storm Event Sampling conducted December 4 and 5, 2009, March 11, 2010 and August 26, 2010