

November 25, 2015

Rusty Kestle
Remedial Project Manager
Superfund Restoration & Sustainability Section
U. S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

Re: Beazer Monitoring Well HG-29D
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

Dear Rusty:

On behalf of Cabot Corporation (Cabot), this letter responds to Tetra Tech's October 13, 2015 letter regarding the plugging and abandonment of Beazer's monitoring well, HG-29D. In their letter, Tetra Tech chooses not to address the groundwater quality temporal trend observed at HG-29D, the most important indicator of well seal leakage, and argues that the construction of the monitoring well did not have to satisfy the United States Environmental Protection Agency (US EPA) and Florida Department of Environmental Protection (FL DEP) requirements for monitoring well construction. As discussed below, groundwater quality clearly demonstrate that monitoring well HG-29D is leaking and needs to be plugged and abandoned. US EPA and the other stakeholders had agreed that plugging and abandonment of the monitoring well was appropriate based on discussions in the July 2014 meeting in Gainesville and in subsequent conference calls.

A. Groundwater quality temporal trends from HG-29D and other Lower Hawthorn Group (LHG) monitoring wells at the Cabot portion of the Site clearly demonstrate that HG-29D is leaking.

Groundwater concentrations for key pine processing compounds (*e.g.*, phenol, 3,4-methylphenol) at HG-29D have increased by more than order of magnitude and are now approaching concentrations observed in the paired Upper Hawthorn Group (UHG) monitoring well, HG-29S (Figure 1). In contrast, groundwater concentrations at the other LHG monitoring wells near and/or downgradient of the former Cabot lagoons (HG-30D, HG-31D, and HG-28D; Figure 2) are much lower and are stable. In fact, monitoring well HG-31D was installed immediately upgradient of HG-29D, and as close to the former Cabot lagoons as possible, with the sole purpose of replacing the compromised well (HG-29D). Groundwater concentrations at this replacement well continue to be significantly lower than at HG-29D (Figure 1). This difference in both the magnitude of observed groundwater concentrations and the difference in the temporal trend between the two monitoring wells, located less than 40 feet apart, is being caused by the leaking seal at HG-29D.

Tetra Tech argues that qualitative observations (odors, discoloration) noted in the borehole during the installation of well HG-29D were indicative of contaminant migration from the UHG to LHG. However, this hypothesis does not consider the analytical data, which clearly shows a trend of increasing groundwater concentrations noted at HG-29D and is a direct indicator of well leakage. Furthermore, despite similar qualitative conditions (*i.e.*, odor and discoloration) being noted at HG-30D and HG-31D during drilling, relatively low groundwater concentrations of pine processing compounds were detected at

these monitoring wells. These analytical chemistry data demonstrate that qualitative, field observations are not reliable indicators of contaminant levels, especially for compounds with low odor thresholds such as phenols.

Overall, a consideration of all the groundwater quality data collected in the LHG monitoring wells at the Cabot portion of the Site clearly demonstrates that the observed concentrations and temporal trends at HG-29D are anomalous, and are being caused by a leaking well seal.

B. Monitoring well HG-29D should have been installed using US EPA and FL DEP monitoring well installation requirements (and the Work Plan), given that the Beazer Work Plan discussed cross contamination-related risks at the Site.

The Beazer work plan for the installation of monitoring well HG-29D (and other work at the Site) acknowledged the cross-contamination risks due to the presence of significant downward gradients between the UHG and LHG at the Site (GeoTrans, 2009; pg. 3).¹ The Work Plan lists technical challenges associated with installation of deep monitoring wells at the Site to include: "drag down" from overlying deposits, and grout seal leakage (GeoTrans, 2009; pg. 3). Regarding grout seal leakage, the Work Plan states (GeoTrans, 2009; pg. 3):

"...it will be difficult to ensure long-term integrity of the grout seal outside of the casing [emphasis added], where the possibility exists for wells to become direct conduits for Site constituents."

To mitigate these cross-contamination risks, US EPA and FL DEP requirements for well construction specify a minimum annular seal of 2-inches. The Beazer Work Plan referred to the State's requirements and indicated that they intended to comply with them (GeoTrans, 2009; pg. 6):

"Each monitoring well will be completed as per the State of Florida requirements for monitoring wells."

Despite this commitment, monitoring well HG-29D did not conform with the State's monitoring well installation requirements and did not include the minimum outer annular seal of 2 inches (see Cabot letter, dated June 17, 2015). Now, Tetra Tech claims that the State's requirements are mere recommendations and do not need to be met, and the only applicable requirements are those from the St. John's Regional Water Management District (SJRWMD).

Given the presence of contaminated groundwater in the UHG, the SJRWMD requirements are inadequate and are minimum requirements that do not account for Site conditions. The US EPA and FL DEP well installation requirements, including the need for a minimum of a 2-inch annular grout seal outside of the casing (that Beazer acknowledged was an important leakage mechanism – see quote above), reflect regulatory requirements and industry best practices for minimizing cross contamination risks when working at contaminated sites. A geologist from the SJRWMD confirmed that their rules are minimum requirements and that they would have taken Site-specific conditions, such as significant contamination in the UHG and a strong downward hydraulic gradient, into account to determine the appropriate casing and borehole sizes (Weston Personal Communication, 2015).. The non-standard method used for installing monitoring well HG-29D has resulted in a compromised well seal and the anomalously high groundwater concentrations observed in this well.

¹ GeoTrans, Inc. 2009. Supplemental Hawthorn Group Investigation and Monitoring Well Installation Work Plan, Koppers Inc. Site, Gainesville, Florida. Prepared for: Beazer East, Inc. January 14.

In summary, HG-29D cannot be plugged and abandoned in accordance with the Cabot work plan (Gradient and Weston, 2014)² because of the well's improper construction. As discussed above, groundwater quality temporal trends at HG-29D and a comparison to trends observed at other LHG wells clearly indicate that the monitoring well is serving as a preferential conduit for contaminant migration and needs to be plugged and abandoned. We would appreciate US EPA's assistance in getting Beazer to promptly plug and abandon this well.

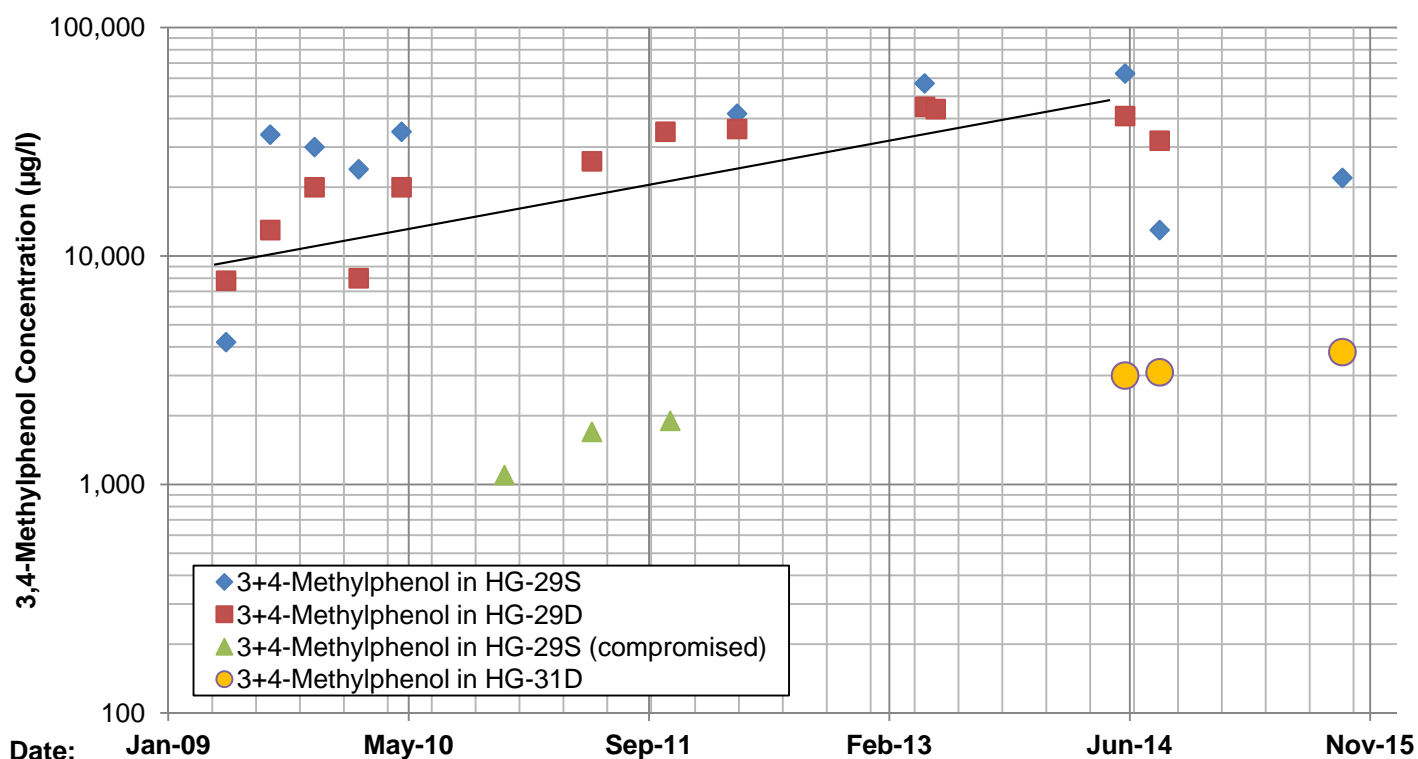
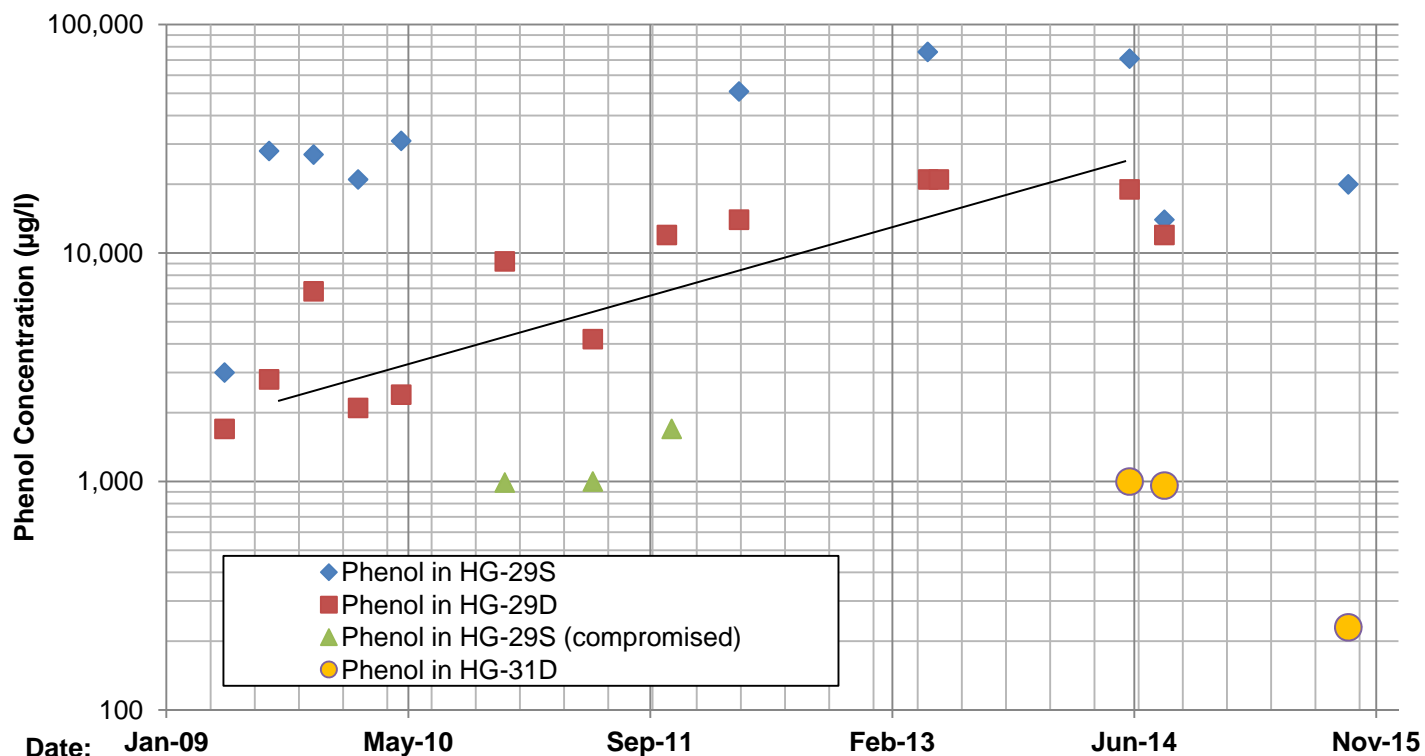
Yours truly,

GRADIENT

A handwritten signature in black ink, appearing to read 'Manu Sharma', is written over a horizontal line.

Manu Sharma, P.E.
Principal

² Gradient and Weston Solutions, Inc. 2014. Work Plan for Supplemental Hawthorn Group Characterization, Cabot Carbon/Koppers Superfund Site. November 21.



LEGEND

▲ Indicates samples were compromised due to surface water infiltration at the well cap.

NOTES:

1) April 2014 sampling results were not included due to issues with the laboratory analysis of the samples.

SOURCES:

1) Beazer, 2009-2013.
2) Weston, 2014.

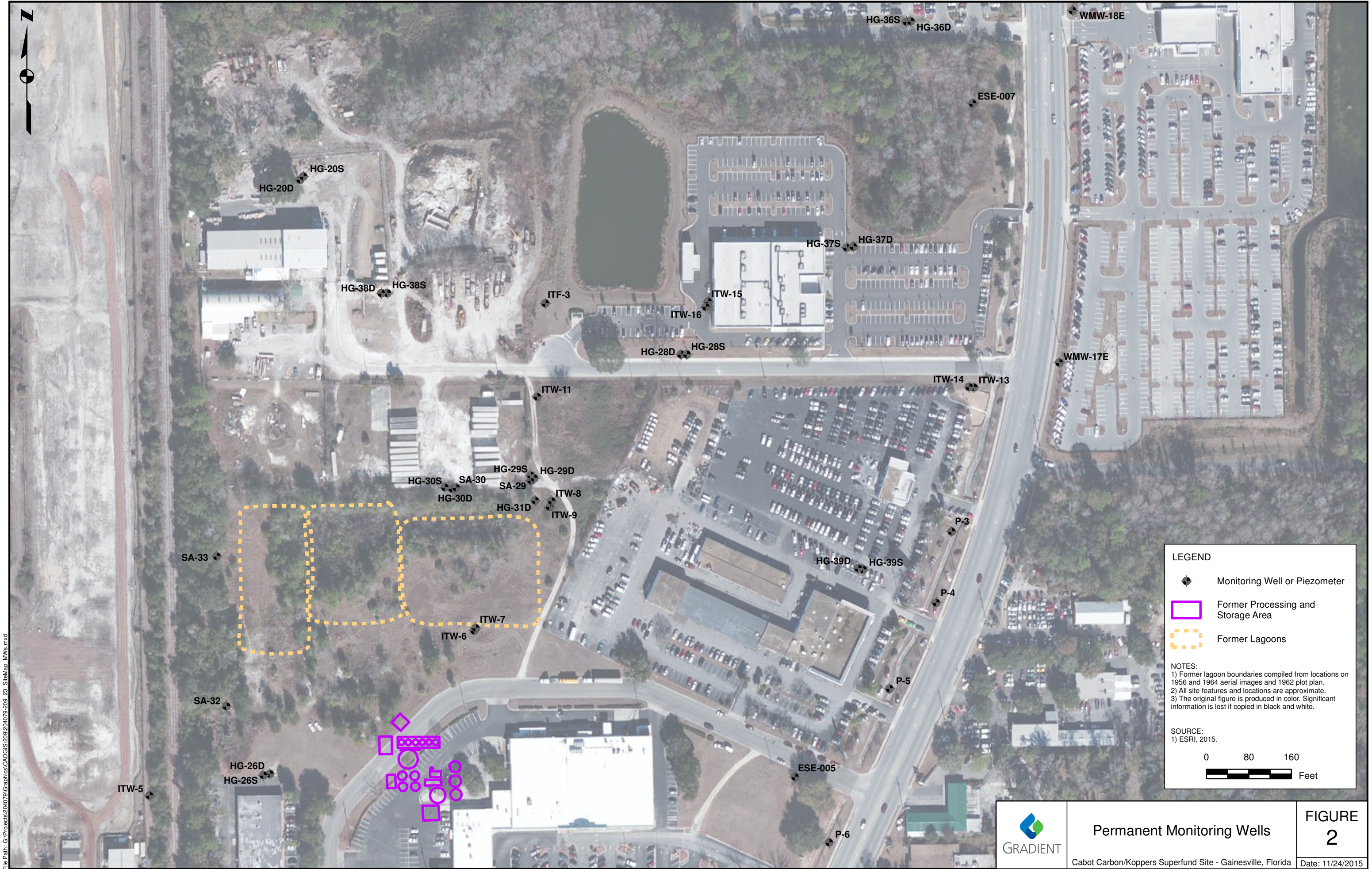


Concentration Temporal Trends at HG-29S/HG-29D

Carbon/Koppers Superfund Site – Gainesville, Florida

FIGURE 1

Date: 11/24/15



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