**From:** Helton, Kelsey
**To:** "Scott Miller"; wayne_reiber@cabot-corp.com; Scott Teresa A.; John Herbert; Hutton Richard H; Brett P. Goodman; Gregory W. Council; Brourman Mitch (Pittsburgh) NA; John Mousa; Jim Erickson; osteen.bill@epa.gov; koporec.kevin@epa.gov; spicuzzajp@koppers.com; Fankulewski Joyce; murryfj@cityofgainesville.org; Pat Cline; Helton, Kelsey; Cowdery, Robert; Kulakowski, Zoe
**Subject:** RE: Gainesville ISGS Phase 1 Investigation Borehole Completion
**Date:** Sunday, July 22, 2012 7:38:29 PM

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Scott-

DEP has reviewed the proposal for an alternative completion of each of the 100 borings with PVC pipe and 10 feet of gravel in each boring immediately above the middle Hawthorn clay, thus providing additional locations that may serve as injection or monitoring points as appropriate. DEP supports this proposal to complete the borings as outlined. We anticipate that additional injection points may be installed as necessary to adequately treat DNAPL source areas throughout the Upper Hawthorn, based on the results of the DNAPL characterization efforts.

*Kelsey*

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*Please take a few minutes to share your comments on the service you received from the department by clicking on this link DEP Customer Survey.*

**From:** Scott Miller [mailto:Miller.Scott@epamail.epa.gov]
**Sent:** Sunday, July 15, 2012 1:26 PM
**To:** wayne_reiber@cabot-corp.com; Scott Teresa A.; John Herbert; Hutton Richard H; Brett P. Goodman; Gregory W. Council; Brourman Mitch (Pittsburgh) NA; Helton, Kelsey; John Mousa; Jim Erickson; osteen.bill@epa.gov; koporec.kevin@epa.gov; spicuzzajp@koppers.com; Fankulewski Joyce; murryfj@cityofgainesville.org; Pat Cline
**Subject:** Fw: Gainesville ISGS Phase 1 Investigation Borehole Completion

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-----Forwarded by Scott Miller/R4/USEPA/US on 07/15/2012 01:25PM -----

To: Scott Miller/R4/USEPA/US@EPA, "Helton, Kelsey" <Kelsey.Helton@dep.state.fl.us>
From: "Erickson, Jim" <Jim.Erickson@tetratech.com>
Date: 07/15/2012 12:21PM
Cc: "Brourman, Mitch (Pittsburgh) USA" <Mitch.Brourman@TRMI.Biz>, "Council, Greg" <Greg.Council@tetratech.com>, Bill Osteen/R4/USEPA/US@EPA
Subject: Gainesville ISGS Phase 1 Investigation Borehole Completion

*(See attached file: Borehole_CompletionPhase1_070612.pdf)*

Scott, as previously discussed with you on the telephone approximately 3 weeks ago, Beazer would like to modify the borehole completion for the Phase 1 ISGS Investigation work. The February 14, 2012 ISGS workplan stated that the boreholes would be abandoned by backfilling then with a cement grout. This was to prevent short-circuiting during ISGS reagent injection. The Beazer team strongly believes that these 100 boreholes could be put to better use to assist with pre-injection DNAPL characterization and ISGS reagent injection. As such, Beazer proposes to modify the completion of these boreholes.

Beazer proposes to install 1" diameter temporary PVC casing to provide additional locations for injecting ISGS reagent (see attached figure). The 1" diameter casing will be installed immediately above the HG middle clay unit at the base of each boring. Approximately 10 ft of pea gravel will be installed in the lower 10 ft of the borehole and the remainder of the borehole will be cement grouted to land surface. The advantage of the revised borehole completion is the following:

) **Provides 100 additional temporary ISGS reagent injection points** for delivery of reagent in the bottom 10 ft of the Upper Hawthorn;

a. We expect that the majority of the DNAPL impacts observed in the Hawthorn deposits will be in the lower 10 ft of the Upper Hawthorn, immediately above the middle clay unit.

b. We plan to target the lower 10 ft of the Upper Hawthorn to preferentially place ISGS reagent above the HG middle clay unit;

c. Placement of ISGS reagent above the middle clay unit will help to ensure that potential preferential pathways in this clay unit are treated;

d. In addition, the 100 points will help to better distribute ISGS reagent that is injected in adjacent geoprobe locations; any reagent that encounters the boreholes as it propagates out will be distributed throughout the pea gravel and into more permeable sand stringers intersected by the borehole;

) **Provides temporary DNAPL observation points** to detect the presence of free-phase DNAPL prior to the injection program;

a. The approximately 10 ft of pea gravel will act as DNAPL traps;

b. Free-phase DNAPL in the immediate vicinity of the borehole will drain into

the pea gravel backfill because DNAPL preferentially flows to the larger pores in a formation, hence the reason it accumulates in coarse gravels and wells;

c. Approximate thicknesses of DNAPL can be obtained by lowering a measuring tape into the casing;

d. At a minimum, the ISGS reagent will treat the DNAPL that preferentially accumulates in the pea gravel;

) **Provides ISGS reagent observation points** to investigate reagent distribution during geoprobe injections;

a. The 1" diameter casing will be fitted with pressure tight caps to prevent short circuiting of ISGS reagent during geoprobe injections; however, it may be useful to utilize these observation points to further investigate ISGS reagent distribution post-geoprobe injection and prior to injecting in the 1" casing. A measuring tape can be used to investigation the presence of reagent in the casing following geoprobe injections;

b. The decision to utilize these temporary injection points for reagent observation will be determined during field injections;

Please provide approval of the proposed modifications to the February 14, 2012 workplan. The drillers are prepared to implement this modification to the program starting the week of July 23rd. Thanks Jim

**James R. Erickson, P.G.**
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