

GRU Comments to the Cabot Preliminary Design Investigation Work Plan September 15, 2017

General Comment: GRU suggests that Cabot and USEPA convene a meeting to discuss the Cabot RD Work Plan, PDI Work Plan, and the Groundwater Remedy Work Plan simultaneously. GRU believes that all three documents are interrelated to the point that changes in one will likely result in impacts to work being conducted under the others. It is good that all three documents have been submitted essentially concurrently.

Specific Comments:

1. Section 3.3.1, pdf page 11 The work plan cites SOG-001 as a guidance the field crew will follow:
Comment: The SOGs included in this work plan are very general in nature and usually provide much less detail than the work plan. For instance, SOG-001 provides a list of drilling methods that could be used. The work plan specifies hollow stem augers with SPT and Shelby tube. (The same general comment is true of the well development SOG.)

2. Section 3.3.1, pdf page 11
Comment: Regarding SPT samples at odd-numbered boring locations: Please confirm that SPT split spoon samples will be collected continuously from ground surface to boring total depth.

3. Section 3.3.1, pdf page 11 The plan states that “The Geosyntec field Engineer/geologist will visually inspect soil cuttings for mobile DNAPL (pooled pine tar), as drilling occurs ...”.
Comment: GRU believes the intent should be to record evidence of any DNAPL (residual, liquid free product that may be immobile, as well as mobile product). NAPLs other than pine tar may be present (as seen in FDEP Transect #4 near the Cabot Lagoons).

4. Section 3.3.1, pdf page 11 The work plan states “If evidence of pooled pine tar is observed, the boring will be abandoned where such tar is observed, the boring will be grouted and another boring (i.e., step-out) will be performed approximately 25 ft outward from the initial boring.”
 - a. Comment: See Comment #5b below. GRU believes that the slurry wall should be aligned such that, at a minimum, all significant DNAPL impacts – whether pooled tar or other forms – must be contained within the slurry wall enclosure. The FFS states “The selected remedy for the Cabot Carbon portion of the Site is Alternative 8a/b, which is a containment based remedial approach with mass removal/treatment components. The remedial approach involves the physical containment of the source area and concentrated portion of the groundwater plume with a slurry wall and a low permeability cap...”.

- b. Comment: Regarding step-out borings: When Geosyntec proposes to move borings “outward” we assume that means perpendicular to the original orientation of the cutoff wall and farther from the Cabot Lagoons (source). Please confirm
- 5. Section 3.3.1, pdf page 11 The work plan states: “Step-out borings will not be performed on the north and east edges of the proposed VBW alignment (i.e., for approximately VBW-05 through VBW- 10) because roadways prohibit installing a VBW beyond the footprint shown on Figure 4. I
 - a. Comment: The road on the east side is a limerock jeep trail. DNAPL has already been documented east of that in NEL Transect #4.
 - b. Comment: GRU’s position is that all substantial accumulations of source material should be treated or contained within the slurry wall. While GRU does not expect to see DNAPL impacts at the northern proposed boring locations, we do not accept the statement that it is not possible to extend the wall north of the road.
- 6. Section 3.3.1, pdf page 12 The work plan states “The Geosyntec field engineer/geologist will collect soil samples from every split spoon sample by placing soil from each split spoon (i.e., discrete samples) into a 1-gallon resealable bag.”
Comment: What is the target volume from each split spoon? How many discrete samples will be collected from each split spoon?
- 7. Section 3.3.1, pdf page 12 The work plan states “The driller will mix all drill cuttings (i.e., all subsurface layers) from one boring to make a uniform composite of the soil for the location.” And “The field engineer/geologist will collect a composite soil sample into a 1- gallon resealable bag.”
Comment: How will Geosyntec assure reproducibility of sampling? How will cuttings from 65 ft of borehole be uniformly homogenized?
- 8. Section 3.3.1, pdf page 12 Last paragraph.
Comment: Geotechnical analyses are proposed at only four locations. Is that sufficiently close spacing?
- 9. Section 3.3.1, pdf page 13, The work plan states “The laboratory tests as described in PDI-3 will be the determining factor regarding which of these samples are carried forward for additional testing. “
Comment: What lab results/criteria will qualify a sample for additional testing? What criteria will disqualify a sample? How does that relate to suitability for a slurry wall?
- 10. Section 3.3.2, pdf page 13 The work plan calls for two borings for low-permeability cap design (load-bearing capacity).
Comment: GRU suggests a minimum of one boring in each of the three former Cabot Lagoons because the ponds were constructed sequentially with

the eastern lagoon being the oldest, the western lagoon being the youngest, and materials discharged to the lagoons may have changed over the years.

11. Section 3.3.2, pdf page 14

The work plan states “For the Shelby tube sample, use a flat-edged spatula or equivalent to create a smooth, competent face on the bottom of the sample, conduct three field torvane tests on this face, and record the results of the torvane test on the field forms. “

- a. Comment: Does this assume that the bottom of the Shelby tube is within the lagoon-bottom sediment? What if the Shelby tube has fully penetrated the lagoon fill and terminates in underlying surficial sands?
- b. Comment: The depth at which the Shelby tube sample will be collected will presumably be determined based on nearby borings. Please plot those in Figure 4.
- c. Comment: Is it possible to conduct multiple torvane tests on a single surface? Won't the first test alter the sediment and thereby alter the results of subsequent tests?

12. Section 3.3.3, pdf page 15 The work plan states “The objective of this PDI activity is to assess subsurface conditions above the water table in the proposed location for the relocated stormwater pond. ... The driller will advance a boring into the surficial aquifer using 4.25-inch HSAs to a depth of approximately 25 ft bgs...

- a. Comment: GRU encourages drilling to the top of the UHG clay at the proposed stormwater pond - to determine the presence/absence of contaminants there. GRU notes that the water table is much shallower than 25 ft.
- b. Comment: What specific “subsurface conditions” are Cabot investigating?
- c. Comment: Is the stormwater pond intended to be a retention pond or a detention pond (lined?) and what is the proposed depth?

13. Section 3.3.3, pdf page 15

Comment: SOG-006 should include, by reference(?), SOG-010 (Description of Pooled DNAPL - as amended). All soil sample descriptions for the Cabot Site should include observations of odors, staining by DNAPL (whether indicative of mobile pine tar or other NAPL impacts), color changes on exposure to air, etc.

14. Section 3.3.3, pdf page 15 The work plan states “The field engineer/geologist will composite soil samples from all split spoon samples at a given location by placing the soil onto plastic sheeting, a plywood board, or in a bucket, and then mixing the soil into a single composite sample for each borehole.?”

Comment: Twenty-five feet of split spoon sample is a large volume of soil to homogenize. How will Geosyntec produce a homogeneous sample from that large volume? If the objective is to determine the potential infiltration rate for soils, should two or more samples be generated from each boring - one between the proposed bottom of the stormwater pond and the water table and one or more below that?

15. Section 3.4, pdf page 16 Aquifer hydraulic testing is proposed for existing monitoring HG-29S and either SA-29 or ITW-8.

Comment: GRU understands that HG-28S supports a flow rate of 0.1 gpm during sampling (water levels drew down at 0.25 gpm during well development), that SA-29 maintained flow rate of approximately 1.5 gpm during development, and that ITW-8 sustains a flow of 0.2 gpm during sampling with minimal drawdown. Are these low flow rates likely to be significantly increased by additional well development to the point that a step drawdown test can yield useful data?

16. Section 4, pdf page 26 The work plan states “...design information will be shared with US EPA and other stakeholders either in a report, as one or more technical memoranda, and/or in a technical workshop that would be held in Gainesville, FL so that US EPA and local Stakeholders can comment on the work and participate in the remedial design.”

Comment: GRU appreciates Cabot’s continued collaborative approach to investigation and remediation at this site. GRU recommends that the reports, technical memoranda, etc. transmitting the findings of investigations and design information be conveyed as soon as possible after being generated and well in advance of the 50% design milestone.

17. Section 4, pdf page 26

Comment: Regarding the project schedule - GRU suggests that Cabot and EPA convene a workshop at the earliest possible date to discuss the RD Work Plan, the PDI Work Plan and the Remedy Optimization WP - to allow Cabot to begin work as early as possible. However, GRU believes that, if our recommended improvements to the to the RD Work Plan are implemented, the proposed schedule is unrealistic.

18. Figure 3:

- a. Comment: What is the rationale for extraction well locations and groundwater sample locations inside the containment area? Groundwater gradient will be flat inside the barrier wall after construction. UHG permeability is low. Should the extraction wells be distributed more uniformly?
- b. Comment: Look at COC distribution in UHG. Other extraction wells to capture the plumes?
- c. Comment: What will the flow field look like after the Cabot and Koppers slurry walls are constructed? Are the locations plotted for

HR-EW-01 through HR-EW-03 appropriate for that flow field condition? GRU understands that the locations plotted are “conceptual” but the concept appears to relate to existing conditions and does not appear to consider the influence of the two slurry walls.

19. Appendix B: SOG-001 – Soil and Rock Boring

Comment: SOG-006 should include, provisions of SOG-010 (Description of Pooled DNAPL - as amended). All soil sample descriptions for the Cabot Site should include observations of odors, staining by DNAPL (whether indicative of , color changes on exposure to air, etc. See Comment #13.

20. Appendix B: SOG-10 SOG-10 states “This Standard Operating Guideline (SOG) was prepared to direct field personnel on the methods for visual identification of pooled pine tar (i.e., mobile DNAPL)... the goal is to place the vertical barrier wall such that it encircles areas of mobile DNAPL, to the extent practicable in the field.”

Comment: The FFS states “The remedial approach involves the physical containment of the source area and concentrated portion of the groundwater plume with a slurry wall and a low permeability cap...”. GRU believes strongly that this objective should not be reduced.

Comment: SOG-10 should be expanded to include not only identifying mobile pine tar but also lesser DNAPL impacts to soil. GRU suggests that Cabot adopt a method for qualitatively characterizing contaminant impacts similar to the one used by Beazer East at the Koppers Site (Category 1 through Category 5). GRU believes it is important to note odors and residual DNAPL impacts – whether in the form of immobile pine tar, immobile NAPLs that may not be pine tar, staining, etc.