Nowell, Keith, Env. Health

From: Pardini, Chuck [Chuck.Pardini@arcadis-us.com]
Sent: Friday, January 10, 2014 3:27 PM
To: Roe, Dilan, Env. Health; Nowell, Keith, Env. Health
Cc: Gopal Nair (GNair@oaklandnet.com); xtong@otgenv.com
Subject: Notes from January 6, 2014 ACEH Meeting

Dilan and Keith,

On behalf of the City of Oakland and the rest of the project team, following below are the notes from our meeting earlier this week. Thank you for the time and effort you put into the meeting, your review of the report and the comments to it, and the e-mail that you sent to us earlier this week. Our goal is to satisfy the outstanding issues at this site and plot the course moving forward. We look forward to getting your feedback on these notes, and we are working on the deliverable (a completed Table 5-1 in Appendix G) due to be submitted on February 14. Have a good weekend.

Chuck

Specific Comments

Monitoring well network: A critical analysis of the adequacy of the monitoring well network was not included.

- Assess screened intervals, material that is screened, lithologic logs.
- Example: MW-17 is downgradient of MW-16 which is downgradient of well RW-B3. RW-B3 had 3 feet of product and now has concentrations of various COPCs at around 2,000. MW-16's casing has been observed as black, tar-coated. It had product, high concentrations. Boring log indicated high (830) PID readings. Why is it dry now? Screened from 5 to 15 ft. Why does downgradient well MW-17 have low to ND concentrations? Is it due to dilution (according to log, it is screened from 5-20 ft in gravel – rip rap)? Does the difference in well screen length in the two wells matter?
- Example: OB-C1 appears to have an obstruction at around 5 feet.
- Further assess wells that we are using as examples of no impact on the bay. (Look at MW-16 and MW-17 screened intervals and water-quality data as an example).
- Assess/explain examples of wells in which benzene concentration is greater than TPH-g concentration. THP-g appears to be degrading, benzene is not.
- Further assess the presence of free product at the site. Example: well RW-B3 had 3 feet of product when depth to water was 13 feet. Since then, depth to water has been about 9 feet and there is no product measured. Where did the product go? Need to look for other anomalies in the data that need to be explained.
- Concentrations are relatively high in some downgradient wells.
- A figure illustrating all wells (monitoring and remediation) needs to be prepared with groundwater elevations and chemical concentration data. Are wells used for groundwater elevation contouring appropriate?
- Further assess the potential that water levels are influenced by the tide. An historical analysis comparing when samples were collected versus tidal data should be included (i.e. are sampling results influenced by tide).

- Provide a table that includes the status of all wells, including those that were properly abandoned as well as those that may have been lost/destroyed. Did we look for them?

Preferential pathways: Need to be assessed more thoroughly. Buried stream channels (ACC Environmental-12/16/97), utility trenches, buried dikes) Do they influence groundwater/product migration?

- Example: Buried stream channel intersects plumes A and B
- Sewer lines and storm drains appear to intersect water table.

Berms/Dikes: Berms/dikes that are located on the western side of the site do not appear to be acting as dams.

- Is there evidence of mounding?
- Where are wells in relation to the berms/dikes?
- What are the berms/dikes constructed of?

Groundwater Elevation Data: Conduct a historical review.

Damon Slough:

- Is the water in the slough impacted by site groundwater?
- Is the slough lined?
- What is the depth of the slough?

UST 8 an 9 (active): Provide construction details, product piping and dispenser details.

Asphalt vault: Requires location and discussion.

UST 14 vault: Requires discussion.

Well Survey: Need to conduct. Fitchburg Well Field from 1800s was located near/at the site. Reference is the East Bay Plain Beneficial Use Study.

HHRA Discussion:

- Vapor intrusion – uncertainty is high. Therefore, we need to provide high and low to bound the uncertainty.
- PAHs – Some hit 10-6, so it's not below risk level.

WQO Discussion page 32): Why refer to MCLs?

Site Development: Assess the Coliseum EIR and plans for site.

Tables: Additional as follows:

- Provide mass removal rates for the system – monthly and cumulative

Table 1: Historical Groundwater Quality –

Note 2 – The port is too small for insertion of O/W interface probe. In the case of RW-D11 on 10/29/09, we state this and that there is no product with this note. How can that be stated if it cannot measured? (Example of poor QA/QC.)

Table 6: Historical Soil Quality –

- Indicate if soil is still there or if the soil has been removed (shade removed samples in table)
- Are there confirmation samples?

Figures: Additional as follows:

- Map showing all of the boring/well locations
- Map showing excavations
- Map showing utilities
- Historical (specific timeframes) free product contour map
- Historical (specific timeframes) water-quality contour maps, showing decrease over time
- Map showing buried streams (ACC Environmental-12/16/97)?

Appendix B: Data Gap Identification Forms were not completed correctly. Well construction details were not completed, as well as other information that was required on the table. In addition, three copies of the same incomplete table was included in the draft submitted to ACEH. Other parts of the checklist were not completed thoroughly. Items marked "NE" – are identified data gaps. Many of these items are not addressed as data gaps in the report.

Appendix C:

- Well construction logs: incomplete set
- Boring logs: incomplete set

Appendix D: Cross sections need to include the following:

- the range (max and min) of historical groundwater elevations in each well;
- all of the soil sampling locations along a given transect;
- soil and groundwater chemical concentration range;
- preferential pathways, and USTs, excavations, etc.;
- elevation of dike, second fill, product pipeline;
- plumes – groundwater and product;
- smear zones;
- additional detail regarding lithology, discoloration, odor, etc.

Appendix E: Hydrographs need to include the following:

- the range of historical groundwater elevations (max and min - will illustrate the potential smear zone);
- the presence and thickness of free product;
- line showing both top and bottom of well screen;
- DPE and hydrogen peroxide events (beginning and end).
- appropriate scales (may need more than one hydrograph per well – pre and post-injection).
- also, some are missing

Appendix G: CSM and Data Gap Identification tables were not completed correctly. The intent is that completing these forms, looking at all the site data critically, will result in a more sufficient report.

Appendix H: The set of Water Quality Sampling Forms from the last event was not complete.

Also, additional monitoring (forthcoming) will be required with assessment of comparing presence of free product with groundwater elevations, high vs. low tide, and wells that no longer have product.

Finally, chemical analysis or assessment of potential saltwater intrusion should be considered for assessment.

Charles H. Pardini, P.G. | Vice President, Principal Geologist | chuck.pardini@arcadis-us.com
ARCADIS U.S., Inc.
The new San Jose office address is:
ARCADIS U.S., Inc.
2550 North First Street, Suite 200
San Jose, California 95131
DD. (408) 797-2023 | M. (510) 813-1053 | F. (408) 456-0320

Emeryville Office | 2000 Powell Street, 7th Floor | Emeryville, CA, 94608
T. (510) 596-9536 | M. (510) 813-1053 | F. (510) 652-4906
www.arcadis-us.com
Professional Geologist - California No. 6444
ARCADIS, Imagine the result
Please consider the environment before printing this email.
