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U S NAVY RESPONSE TO VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
COMMENTS TO VAPOR INTRUSION MONITORING SAMPLING AND ANALYSIS PLAN SITE
21 WORKSHEETS 10 AND 11 ST JULIENS CREEK ANNEX CHESAPEAKE VA
3/14/2011
CH2M HILL

Responses to Comments
Draft Site 21 Vapor Intrusion Monitoring UFP-SAP Worksheets 10 & 11
St. Juliens Creek Annex
Chesapeake, Virginia

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Please note that revisions that will be made in association with Comment 8 will result in changes to figure numbers. Figure 6, Proposed Vapor Intrusion Monitoring Locations, will become Figure 8; Figure 7, Vapor Intrusion (Inhalation) Monitoring Approach, will become Figure 6; and Figure 8, Vapor Intrusion (Explosion) Monitoring Approach, will become Figure 7.

Comments from VDEQ, provided 8 February 2011

1. **Comment:** Worksheet 10, Occupied Buildings Description, second paragraph, sixth sentence – not sure if “piling-supported pilings” is a typo.

Response: The text “piling-supported pilings” will be changed to “pile-supported foundation”.

2. **Comment:** Worksheet 10, Occupied Buildings Description, second paragraph, seventh sentence – does the referenced drawing say “vapor barrier”? May want to include the drawing as an attachment in the final SAP. Also may want to include elevator pit drawing in the final SAP.

Response: The term “vapor barrier” is used in the referenced drawing. The drawings referenced in this section will be included as an attachment in the final UFP-SAP.

3. **Comment:** Worksheet 11, Who will use the data, first sentence – remove “results” or reword sentence.

Response: The word “results” will be removed from the sentence.

4. **Comment:** Worksheet 11, What types of data are needed, weather measurements – what CVOC sampling is this referring to? Should this say COI sampling?

Response: If concentrations of indoor air inhalation risk COIs exceed PALs, weather measurements will be collected in conjunction with the concurrent subslab vapor, indoor air, and outdoor air sampling (as shown in the decision

tree for inhalation, Figure 6). Therefore, “CVOC” in the weather measurements discussion will be changed to “inhalation risk COI”.

5. **Comment:** Worksheet 11, How much data should be collected – update this section to include baseline indoor air methane and hydrogen sulfide measurements as discussed during partnering.

Response: The second sentence of the section will be revised as follows, “A round of subslab vapor and indoor air methane and hydrogen sulfide measurements will be collected prior to initial implementation of ERD to serve as a baseline.”

6. **Comment:** Worksheet 11, How much data should be collected – first paragraph, fourth sentence – provide more information describing the refinement of building surveys.

Response: In order to reach the point in the decision process where building survey refinement would occur, a building survey would have already been completed and indicated the need for indoor air sample collection. Therefore, it is expected that the only information in the building surveys that might change between that building survey and collection of the indoor air samples would potentially be the chemicals in use in the buildings or the activities being performed in the buildings, which could impact the results of the indoor air sampling. The text will be revised as follows, “Building surveys will be refined prior to each round of inhalation vapor intrusion monitoring sample collection, if sampling is required, in order to update the chemical inventory and identify any activities occurring in the buildings that could impact the indoor air sampling results.”

7. **Comment:** Worksheet 11, How much data should be collected, first paragraph, last sentence – according to Figure 6, Building 1556 has only 5 subslab vapor measurement locations.

Response: During the previous vapor intrusion investigation, co-located subslab vapor and indoor air samples were collected from five locations in Building 1556. An additional indoor air sample (IA09) was collected from a location identified as a potential preferential pathway during the investigation, although a subslab vapor probe was not installed at the location. Because the location is outside of the plume and no inhalation COIs were detected during the previous vapor intrusion investigation, it is proposed that this location be included in the vapor intrusion monitoring for indoor air sampling only. If results indicate vapor intrusion may be occurring at this location, a subslab vapor probe will be installed and sampled according to the decision tree. The last sentence of the first paragraph of the section will be revised to state that the methane and hydrogen sulfide measurements will be collected from the five existing subslab vapor probes in Building 1556. Additionally, the following footnote will be added to the first sentence of the third paragraph of the section, “A co-located subslab vapor sample will not initially be collected at indoor air sample location IA09 in Building 1556. If the indoor air sample results indicate vapor intrusion may be

occurring at this location, a subslab vapor probe will be installed and sampled in accordance with the decision tree (Figure 6)."

8. **Comment:** Worksheet 11, How much data should be collected – refer the reader to the appropriate figures in the text of this section.

Response: A reference to the decision trees will be added to the first sentence of the section and a reference to the proposed sample locations figure will be added to the last sentence of the first paragraph of the section. Adding these references will result in a change in the figure numbers for these figures.

9. **Comment:** Worksheet 11, Where, when, and how should the data be collected/generated – how will the explosive hazard subslab vapor measurements be collected? Are there subslab ports from the previous data collection events?

Response: The explosive hazard subslab vapor measurements will be collected from the existing subslab vapor probes, which were installed during the previous vapor intrusion investigation, with the exception of the additional sample location being added in Building 47. A subslab vapor probe will be installed at that location. The following footnote will be added to the first sentence of the first paragraph of the section, "Subslab vapor probes installed during the previous investigation were left in place and will be utilized during this investigation for collection of subslab vapor inhalation risk COI samples, if collected, and measurement of explosive hazard COIs. A new subslab vapor probe will be installed in the sample location being added in Building 47 for the purpose of this monitoring." The details of the sample and measurement collection methods will be discussed in Worksheet 14, Summary of Project Tasks.

10. **Comment:** Worksheet 11, Where, when, and how should the data be collected/generated, second paragraph, second sentence - reword this sentence to include baseline indoor air methane and hydrogen sulfide measurements as discussed during partnering.

Response: The second sentence will be revised and split into the following two sentences: "Explosive hazard COI measurements will be collected once in the subslab vapor and indoor air prior to implementation of ERD in order to establish baseline conditions. Following implementation of ERD, explosive hazard COI measurements will be collected in the subslab vapor, and potentially indoor air, during each of the building surveys conducted throughout the Remedial Action and every 6 months after the Remedial Action is complete until concentrations in all subslab vapor probes are below PALs for three consecutive rounds of monitoring."

11. **Comment:** Figures 2 and 6 – update these figures with new data from baseline groundwater sampling event.

Response: The requested changes will be made.

12. **Comment:** Figure 4 – include possible pilings in this figure.

Response: The requested change will be made.

13. **Comment:** Figure 7, Note 2 – update this note since we will have baseline indoor air methane and hydrogen sulfide data.

Response: Figure 7 (will be Figure 6 in the revised worksheets) pertains to the inhalation risk COI monitoring; therefore, Note 2 will not be revised. Figure 8 (will be Figure 7 in the revised worksheets), the explosive hazard COI monitoring decision tree, will be revised to include indoor air baseline monitoring of the explosive hazard COIs as discussed in Comment 16.

14. **Comment:** Figure 7, Note 3 – remove extraneous at the end of this note.

Response: The requested change will be made.

15. **Comment:** Figure 7, Notes box – format text size for consistency.

Response: The requested change will be made.

16. **Comment:** Figure 8, Box 1 – update to include baseline indoor air methane and hydrogen sulfide data.

Response: A box that reads “Collect indoor air and subslab vapor explosive hazard COI measurements prior to initiation of ERD to establish baseline conditions” will be added as Box 1. A new Box 2 will be added to ask “Are baseline condition explosive hazard COI concentrations in indoor air or subslab vapor greater than PALs?” If the answer is yes, a new Box 3 indicates “Notify NMCPHC and SJCA Industrial Hygienist and re-evaluate the monitoring approach.” If the answer is no, the decision tree leads to Box 4, previously Box 1. Box 4 will be revised as follows, “Collect subslab vapor explosive hazard COI measurements during each vapor intrusion monitoring building survey (See Figure 6, Boxes 4 & 17). If the groundwater Remedial Action is complete and ERD and fermentation reactions have ceased, continue through the flow chart after 6 months from the most recent monitoring event.” The following sentence will be added to Boxes 11 and 12, formerly Boxes 8 and 9, “Consider sources of explosive hazard COIs.”

17. **Comment:** Figure 8, Box 5 – remove first “COI”.

Response: Box 8, formerly Box 5, will be revised as follows, “Collect measurements of indoor air explosive hazard COIs that exceeded the explosive hazard PAL.”