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RESPONSE TO NAVY COMMENTS REGARDING DRAFT CONTAMINTATION ASSESSMENT REPORT FOR UNDERGROUND STORAGE TANK SITE N-12 MILLINGTON
SUPPACT TN
03/17/1998
ENSAFE

ENSAFE

FAX TRANSMISSION

DATE: 3-17-98 NUMBER OF PAGES: 7

To: John Kardyk

From: Barbara McGavern-Atkinson
Allison Dennen

INFO: Attached is the Response to Comments regarding the N-12 UST investigation at NSA Memphis. The final Work Plan Addendum is in progress and will be sent to you ASAP when completed. Thank you, Barbara McGavern-Atkinson

Please call if this transmission is incomplete or if you have questions

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Response to Comments
By: John Karlyk
Date: February 27, 1998

Draft Contamination Assessment Report
UST N-12
Facility ID #0-791696
NSA Memphis

Question 1: Executive summary: Is the 7.5 gallon size correct? I thought the tank was larger.

Answer: The 7.5 gallon capacity UST is correct, according to Randy Wilson.

Question 2: The vicinity map, Figure 2-1, is identical to the site map Figure 2-2. The way I see it, these maps are different types each with a specific objective. Modify the vicinity map.

Answer: Figures 2-1 and 2-2 are similar. However, Figure 2-2 shows the location of the former UST at Facility N-12, whereas Figure 2-1 does not. Figure 2-1 is meant to show general location of Facility Building N-12. Figure 2-2 is more specific, showing the general vicinity of Facility Building N-12 as well as the location of the former tank N-12.

Question 3: Section 3.2, second paragraph. B-1/N12G01LS does not appear upgradient of the release. Per all the figures in this report, B-2/N12G02LS appears to be the upgradient well?

Answer: B-2/N12G02LS is indeed the upgradient well. This oversight will be corrected in the report text.

Question 4: Page 14, first paragraph. The soil boring logs/monitoring well construction diagrams in Appendix A appear not to meet the requirements of TGD-006, Standard Drilling Log. Will this be a problem with TDEC accepting this report?

Per TDEC guidelines, Chain of Custody sheet needs to include the Facility ID number.

Answer: Tank N-12 is not a registered UST. Therefore, it is not necessary that the soil boring logs and monitoring well construction diagrams in Appendix A be revised to meet the TDEC requirements of TGD-006, Standard Drilling Log, for registered USTs.

Because tank N-12 is not a registered UST, it is not necessary for Chain of Custody sheets to include a Facility ID number for the tank.

Question 5: Table 3-2. Please explain the significance of Fractional Organic Carbon of 0.008 to me?

Answer: The soil sample 0136SFOC08 was collected and analyzed for Fractional Organic Carbon content in accordance with TDEC requirements.

Question 6: Monitoring wells were not placed in accordance with the work plan. What happened?

Answer: Please review the final work plan. The locations were only slightly modified. Monitoring well locations are not in accordance with the work plan due to unforseen drilling hazards which were encountered during field work. Specifically, placement of B-2/N12G02LS was modified due to the presence of several overhead power lines in the area. Once health and safety issues were assessed, the boring/monitoring well was placed as close to its originally proposed location as possible.

Question 7: Section 4.1.4. Unless the scale shown in Figure 4.1 is off, the horizontal distance

between monitoring wells N12G01LS and N12G04LS appears to be much less than 44 feet. It's more like 10 feet. I scaled Figure 4-1. This will change the hydraulic gradient of 0.01339?

Answer: The scale in the figure is correct. An error was made using an incorrect scale in the original calculation of the distance between N12G01LS and N12G04LS, as well as the distance between N12G02LS and N12G04LS. The correct distance between N12G01LS and N12G04LS is 14.71 feet; the distance between N12G02LS and N12G04LS is 8.99 feet. Therefore, the correct hydraulic gradients are shown in the following equations:

N12G01LS and N12G04LS (Highest hydaulic gradient)

$$dy/dx = (280.55 \text{ ft} - 279.96 \text{ ft})/14.71 \text{ ft} = 0.04011$$

N12G02LS and N12G04LS (Lowest hydraulic gradient)

$$dy/dx = (280.55 \text{ ft} - 280.46 \text{ ft})/8.99 \text{ ft} = 0.0099$$

Question 8: Section 4.1. Hydraulic gradient of 0.1339 does not agree with the "i" in section 4.1.4 (0.01339). The groundwater velocity calculation could be off by a factor of 10.

Answer: Using the corrected values for the hydraulic gradient (Question 7), the groundwater velocity calculations will be revised accordingly:

V_l = lowest estimated groundwater velocity

$= (3.0 \times 10^{-5} \text{ ft/min})(0.0099)/(0.439) = 6.765 \times 10^{-7} \text{ ft/min}$

V_h = highest estimated groundwater velocity

$= (3.0 \times 10^{-5} \text{ ft/min})(0.04011)/(0.439) = 2.741 \times 10^{-6} \text{ ft/min}$

Question 9: Section 4.2.2. Do the four (4) wells and the one additional soil boring adequately define the plume? The subsurface soil contaminants found during the tank closure assessment are substantial. The high readings may cast some doubt on the site

assessment and this report. You may need to take additional soil samples in the former UST area to either confirm or disprove data in the tank closure assessment.

Answer: Additional soil samples will be collected from within the UST cavity area. EnSafe Inc. proposes two advance to soil borings, one at each end of the UST cavity, for collection of soil samples beneath the pit. Additional borings will be advanced downgradient of the pit for the collection of soil samples: one boring approximately 10 feet west of the pit, and a second boring approximately 20 feet west of the pit. Analyses of these soil samples will help to confirm or dispute the site assessment and report.

Question 10: Please add a Section 5, Summary of Findings and Recommendation. Do we need a Corrective Action Plan or go for closure per TGD-008?

Answer: Section 5, Summary of Findings and Recommendation will be added to the Site Assessment Report. Depending on the results of the additional soil sampling, a recommendation will be made.

Question 11: Please add Section 6, the signature page.

Answer: The Section 6, signature page will be added to the document.

Question 12: Pagee 33. TDEC Site Assessment Guideline requires a minimum thickness of the filter pack to be two (2) feet. Your minimum thickness is 6 inches.

The thickness of annular grout is similar. TDEC recommends two (2) feet.

Answer: In accordance with TDEC requirements and guidelines, monitoring wells were constructed using 15 feet of screen, i.e., five (5) feet of screen above the water table surface and 10 feet of screen penetrating the saturated zone. Since the water table elevation at the site is seven (7) to eight (8) feet below ground surface, there is little room, three (3) feet, to place the top of the sand filter pack, bentonite seal, and grout or cementing material. As with boring/monitoring well placement, field decisions were made regarding well construction based on the site-specific conditions.

Question 13: Appendix A.

a. The soil boring logs and the well construction diagrams do not meet the requirements of TGD-006, i.e., no facility #, no location map, license number of driller, water level etc. Will this be a problem with TDEC?

b. Well diagram N12G01LS shows bentonite grout used above the filter pack seal. Is annular grout (page 33) the same as bentonite grout? Well diagram should show flush completion with concrete slab.

Answer:

a. Because tank N-12 is not a registered UST, a facility I.D. # is not required. Location map, license number of drilling subcontractor, and water level data will be provided once the soil boring/monitoring well construction diagrams are revised according to TGD-006.

b. Bentonite grout is different than annular grout. The bentonite grout or seal used during the Facility N-12 site monitoring well construction consisted of high-solids bentonite pellets. Cementing materials used in the annular grout consisted of partly powdered bentonite and Portland cement, as stated in the TDEC guidelines.

Question 14: Appendix B.

a. Chain of custody needs to have Facility I. D. #.

b. What is the significance of disclaimer "unvalidated data do not cite"? As a minimum, QA/QC as outlined in TDEC Site Assessment Guidelines (page 16) should have been met?

c. Each analytical report sheet needs to list the method detection limit.

d. Define "U" on lab report.

e. Each lab analytical report sheet needs to show the method used, i.e., Method 8020 for BTEX.

f. One (1) of the final reports needs to include the original lab reports. This report needs to be submitted to TDEC.

g. Lab report on page 15. Please explain how the client sample #80101-3 correlates to the lab sample ID# N12SMW0308 and the format shown in the report page 31. All other similar.

Answer:

a. Because the former UST at Facility N-12 was not a registered tank, a Facility I.D. number

is not required.

b. The analytical data had not been validated at the time of report production. Once data validation is complete, and a data validation report is included with the site assessment report, some of the QA/QC qualifiers and numbers may change. Therefore, until validation is completed, the data is not to be cited.

c. Once the data validation report is completed, the method detection limit will be referenced on each page.

d. The analyte was analyzed but not detected above the practical quantitation limit (PQL.)

e. Once the data validation report is completed, the analytical method will be referenced on each page.

f. A final report will be submitted to TDEC, and will include the original lab reports.

g. This I.D. is a laboratory-related I.D. number, to which the laboratory correlates the EnSafe sample number to the laboratory database. Other sample notations are similar.