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LETTER AND COMMENTS FROM U S EPA REGION 1 REGARDING DRAFT SAMPLING AND ANALYSIS PLAN FOR TANK FARM 3 NS NEWPORT RI
06/03/2011
U S EPA REGION 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I
5 Post Office Square, Suite 100
Boston, MA 02109-3912

June 3, 2011

Mr. Roberto Pagtalunan
NAVFAC MIDLANT (Code OPNEEV)
Environmental Restoration
Building Z-144, Room 109
9742 Maryland Avenue
Norfolk, VA 23511-3095

Re: Draft Sampling and Analysis Plan for Tank Farm 3

Dear Mr. Pagtalunan:

Thank you for the opportunity to review the Draft Sampling and Analysis Plan for Tank Farm 3 at Naval Station Newport, Newport, Rhode Island, dated April 2011 (referred to as the SAP). The document presents the sampling design and rationale and the analytical and data assessment requirements for the project in accordance with the requirements of the *Uniform Federal Policy for Quality Assurance Plans* and *EPA Guidance for Quality Assurance Project Plans*. Detailed comments are provided in Attachment A.

The responses to EPA's comments on the Tank Farm 3 SASE indicate that the zone of known contamination at AOC 001 could exist anywhere between seven and twelve feet below ground surface (*see* RTC for Comment #13b). If correct, please extend the depth of the proposed borings to at least twelve feet below ground surface at AOC 001. Please confirm the current ground conditions at AOC 001. When the burn pit was cleaned, approximately seven feet of fill was removed, sludge was removed from the pit, the pit was cleaned, and the pit was backfilled with the overlying fill soil. Please clarify whether the fill was placed back over the pit area thus restoring the approximate grades that existed before the removal action.

Groundwater is within the bedrock and likely to migrate via bedrock fractures. Therefore, it is not apparent that the existing groundwater monitoring wells designated for sampling in this SAP are in locations that would capture contamination migrating in the groundwater. Also, it is not apparent that the wells to be sampled are downgradient of the areas of contamination but even if they are it is not apparent that groundwater would migrate in that direction. Unless the monitoring wells have been placed based on an investigation of groundwater fractures it appears that the proposed groundwater monitoring locations are not reliable locations for capturing contamination that might be migrating with groundwater.

The most recent groundwater contouring occurred in June of 1997 (refer to Appendix C of the Draft SASE for Tank Farm 3). At this time, recovery well RW-301 was in operation, which impacted the groundwater contours in the vicinity of the electrical control house. In addition, the ring drains for the UST were operational. As a result, it is not apparent that the June 1997 groundwater contours accurately represent the current or recent historical groundwater flow directions at the site. For this

reason and since the groundwater is only located in bedrock, please reconsider the groundwater monitoring plan and locations shown in this SAP.

This SAP depicts the location of many site features in locations that are significantly different from those depicted in the Draft SASE report. The responses to EPA's comments on the draft SASE indicate that "location coordinates are not available for some site features and therefore many site feature locations have been approximated." Please explain what was done since those responses were prepared to better locate site features. How accurate are the site feature locations in this SAP? Because we are relying on site feature locations for decision-making, please conduct a GPS survey of pertinent site features before the draft final SAP is prepared so that the available location data are suitable for decision-making.

Groundwater at AOC 001 should also be analyzed for dioxins.

In Appendix A on the selection of PAHs and dioxin background levels, a 1994 New England study for PAHs and a 1994 external review draft paper from EPA for dioxin were used to determine background values for PAHs and dioxins in soil at the Tank Farm 3 site. These are both outdated papers and the EPA paper is a draft, for review purpose only and does not constitute EPA policy and therefore should not be used for the site. Site-specific background studies and statistical analysis should be used instead to determine background levels. If site-specific background data are not available, these constituents should be further evaluated.

I look forward to working with you and the Rhode Island Department of Environmental Management toward the cleanup of the Tank Farms. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Gary Jablonski, RIDEM, Providence, RI
Deb Moore, NETC, Newport, RI
Steven Parker, Tetra Tech-NUS, Wilmington, MA

ATTACHMENT A

Page	Comment
p. 12, Worksheet #5	The organization chart should identify Kymberlee Keckler as the EPA RPM, as in Worksheet #3. Please correct.
Worksheet #9	a) This worksheet contains two separate pages both identified as the January 13, 2011 Scoping Session. Please correct the redundancy. b) The date for the Scoping Session on March 23, 2011 conflicts with the date presented in Worksheet #2 for this session (March 24, 2011). Please correct. c) The January 13, 2011 Scoping Session presented in this worksheet is not included in the sessions listed in Worksheet #2. Please correct the discrepancy.
p. 25, §10.3	The last sentence states that groundwater flows in an easterly/northeasterly direction toward Narragansett Bay. If that flow direction is correct, groundwater flows toward Lawton Brook, not Narragansett Bay. Please correct as appropriate.
p. 25, §10.4	Please correct the reference in the last sentence on this page to read *(TtEC 2005)* to be consistent with the date in the document list presented here and in the References.
p. 27, §10.4.1	It is not clear why the emergency response discussion in the last paragraph is included in Section 10.4.1 that discusses AOC 001. If the leaking pipe referenced was associated with the former burn chamber, please clarify and include a figure that shows the extent of the removal action. If that is the case, then PAHs, dioxins, and metals are of concern. However, the emergency removal action conducted did not address these contaminants. This is a data gap.
p. 30, §10.5	a) The second sentence in the second bullet states that the groundwater flow direction is to the west. This contradicts the subsequent sentence and previous discussions of the groundwater flow direction that indicate that groundwater flows to the east and northeast. Please correct as appropriate. b) Please correct the last sentence in the second bullet to indicate that the additional analytes for groundwater at AOC 001 include metals, PAHs, and dioxins.
p. 31, §10.5	a) The second last paragraph states that groundwater is currently inaccessible to receptors. To verify this, please indicate whether groundwater discharges to Lawton Brook or indicate what the

groundwater depth is at the brook. If groundwater discharges to the brook, it should be considered accessible.

b) Because EPA considers the top twelve inches to be surface soil, please clarify that shallow subsurface soil is accessible to some terrestrial receptors.

p. 32, §11.1

Please add the following new sentence after the third sentence: *These petroleum-related VOCs and PAHs are expected to be commingled with the CERCLA contaminants released during sludge burning.*

p. 34, §11.2.1

The third bullet states that the vertical datum for survey work will be MLW. A different vertical datum (NGVD 1929) was proposed for the Tank Farm 2 SAP. Please confirm that the MLW datum is consistent with the previous datum used for Tank Farm 3 work and/or that it is the intended vertical datum to be used at the Site.

p. 35, §11.2.2

Please rewrite the first bullet to more clearly explain the rationale for sampling at AOC 001. Unless VOCs are a potential combustion byproduct, the bullet should read similar to: "For AOC 001, concentrations of PAHs, dioxins, and metals in surface and subsurface soil, sediment, and groundwater are needed. These analytical groups were identified as the most likely classes of contaminants associated with the burning of petroleum sludge and these data are needed to determine whether a risk assessment is necessary. In addition, data for non-chlorinated VOCs and PAHs, that are components of aviation fuels, are needed because the ring drain system discharged these contaminants through the burn chamber and these contaminants may be commingled with the combustion products."

p. 36, §11.2.3

a) The second last paragraph states that non-detected results greater than the PSLs will be treated as values less than the PSL for decision-making. Because the purpose of the sampling is to screen the site, the screening criteria should be selected to conservatively capture potential contamination rather than to eliminate potential contamination of concern. Therefore, this sampling and analysis program should be designed accordingly and non-detected results greater than the PSLs should be treated as exceedances or as data gaps. Please edit the document accordingly.

b) The last sentence should refer to *Section 11.4.2 Background Comparisons*.

p. 37, §11.3.1

The discussion in the third paragraph refers to sediment sampling location SD-02 in Figure 2 as an upstream/reference sample location. Based on a groundwater flow direction that is easterly to northeasterly as discussed in this SAP, it appears that SD-2 is likely to be impacted by releases from Site operations and even potentially from operations at a

	Category 1 area (the electrical control house). Therefore, only SD-1 should be considered a reference/upstream location.
p. 38, §11.3.3	Regarding the third paragraph that discusses groundwater impacts, it is not apparent from review of Figure 4 that relevant groundwater monitoring wells are located in positions that would detect contamination from Building 227 if groundwater flows east to northeast as this SAP states. Therefore, a supplemental groundwater monitoring well(s) is necessary to confirm the absence of groundwater impacts from Building 227 especially where the soil screening level concentrations are exceeded. Since the groundwater is in bedrock, fractures will apparently determine the groundwater flow direction.
p. 39, §11.4.1	The fifth bullet should instead refer to *Section 11.4.2 Background Comparisons*. Please correct.
p. 40, §11.4.2	No site-specific background data are available for PAHs and dioxins for the site and it is not appropriate to eliminate contaminants at this stage of investigation based on literature background values. Decisions for these contaminants in the Category 1 AOCs should be made without consideration to background and if background concentrations appear to be potentially relevant, then further discussions and a background study are recommended.
p. 42, Worksheet 12	Please delete Note #3 for this worksheet.
p. 54, Worksheet 15b	EPA Method 8011 is better suited for analysis of EDB because it has a much lower detection limit (~0.01 µg/L). Although the PSL cannot be achieved with 8011, the MCL can and therefore, EPA recommends the use of this method for EDB. Please edit the SAP accordingly. Please clarify why EDB will not be analyzed by Method SW 846 8011. Method 8011 will have a significantly lower reporting limit for EDB compared to 8260B.
p. 55, Worksheet 15b	The PSLs for arsenic and chromium are almost fifty times lower than the other metals, and the laboratory cannot meet the project goals for either metal. Please clarify why the MCLs are not being used for arsenic and chromium.
p. 63, Worksheet 17	The first paragraph under Building 227 refers to the collection of a groundwater sample from well GZ-334. This well is located northwest of Building 227. Section 10.1, paragraph one states that groundwater flows to the east and northeast. Therefore, GZ-334 is not apparently in a downgradient location. Please supplement this SAP with documentation regarding the groundwater flow direction for Tank Farm 3 and confirm that the wells selected for monitoring are downgradient of the areas of contamination. If they are not, add wells in appropriate

	downgradient locations for sampling. Note also that groundwater is in bedrock and therefore, fractures will determine the groundwater flow direction.
p. 65, Worksheet 17	Table 17-1 indicates that monitoring well GZ-328 will be sampled to characterize groundwater downgradient of the electrical control house (Building 227). However, the discussion on page 63 states that well GZ-334 will be sampled. Please correct. Because well GZ-328 is north of the electrical control house, it is not likely in a downgradient location either. A new groundwater monitoring well will need to be installed unless there is an appropriate existing downgradient well in the vicinity of the electrical control house.
p. 66, Worksheet 18	Please re-evaluate the groundwater sampling locations and analytes identified based on the comments herein.
p. 67, Worksheet 19	Please correct the table note number used for the holding time for PCBs. The number should be (5) to conform to the note text on page 68.
p. 69, Worksheet 20	Dioxins should be an analyte for AOC 001 groundwater. Please edit this table and the SAP accordingly.
p. 88, Worksheet #27	In the last sentence under Field Duplicates, change *TF4* to *TF3* and in the last sentence under Rinsate Blanks change *TF2 to TF3*. Also, close the parentheses after "MW" for the Trip Blank discussion.
p. 97, Worksheet 28e	The matrix spike recovery is listed as 80-120% under the Method Acceptance Limits, but it is 75-125% under the Measurement Performance Criteria (MPC). Please correct as appropriate.
p. 111, Worksheet 36	For the metals discussion under Validation Criteria, please delete Method 6010C which has not been proposed for this SAP (see Worksheet 19).
Figure 3	a) Because of the uncertainty about the specific direction of groundwater flow, please complete boring TF3-001-SB-101 as a groundwater monitoring well and sample it in addition to GZ-301. Please edit the SAP accordingly. b) If the terminus of the burn chamber discharge line is depicted correctly in this figure, then the investigation at SD-03 needs to be a boring not just a surface sediment sample. As was discovered at Tank Farm 4, a significant layer of contamination may exist beneath the surface layer owing to years of discharging contaminated water. The same concern exists throughout the wetland area and surface samples are not likely to be adequate for investigating the wetland area. Please include subsurface sampling of the wetland for this SAP over a broader area than proposed.

c) Please clarify how and when the wetland boundary shown on this figure was established. It may no longer be accurate.

d) Please clarify the current status of the bottom sediment and water line shown. If it terminates near the brook as shown and in Figure 2, then supplemental sampling at and downstream of the discharge location is warranted for AOC 001 contaminants.

e) The reference to TtEC 2004 in the Legend should be TtEC 2005 (*see* page R-1).

Figure 4

a) There is no groundwater monitoring well shown on this figure that is clearly in a downgradient location from the electrical control house. Either document that an existing well is downgradient of the electrical control house or complete one of the proposed borings (*e.g.*, TF3-ECH-SB-101) as a downgradient monitoring well and sample it for this SAP.

b) please change the reference to TtEC 2004 in the drawing notes to TtEC 2005 (*see* page R-1).

Figure 5

Please document that groundwater monitoring well GZ-314 is in a downgradient location to the two transformers because it is not apparent from the discussion of the groundwater flow direction. If this cannot be documented, then construct a downgradient monitoring well, possibly from one of the proposed borings (*e.g.*, TF3-020-106). Note also that groundwater is in bedrock and therefore, fractures will likey determine the groundwater flow direction.

Figure 6

To be complete, this conceptual model should include airborne migration of sludge burning byproducts. However, the SAP text assumes that contamination spread by air would be too dilute to contribute to risk. Therefore, please add a note to this figure.

Appendix A

This appendix suggests literature-based background concentrations for PAHs and dioxins in soil for use at Tank Farm 3. The proposed values for PAHs are based on samples collected from urban areas much larger and more densely populated than that in the vicinity of Tank Farm 3. Further, the proposed background values result in exceedance of EPA's acceptable risk range for residential exposure and a cumulative risk for industrial exposure in excess of RIDEM's criterion of 1×10^{-5} excess lifetime cancer risk based on Regional Screening Level concentrations. Screening decisions for these contaminants in the Category 1 AOCs should be made without consideration to background and if background concentrations appear to be potentially relevant, then further discussions and actions, including conducting a background study, would be appropriate.

Appendix C

a) Please correct references in the field forms to ensure that they refer to Tank Farm 3.

b) GRO and ExTPH are not analytes of concern for this SAP. Please correct the forms in this appendix to delete references to those analytes.

Appendix D, p. L-2-2

a) The first paragraph states that dioxins will not be collected from the subsurface soil sample at AOC 001 if the subsurface sample analyzed is collected at a depth greater than four feet. This is not consistent with the discussion of AOC 001 in Worksheet #17 or in Table 17-1 where no such limitation is identified and it is inappropriate considering that the site has been covered with fill. Please collect two dioxin samples for each boring at AOC 001 irrespective of the depth of the sample.

b) The discussion in the second paragraph needs to be rewritten to more accurately describe the procedure to be followed. For example, the first sentence should refer to each interval to be collected, not each interval to be sampled. The text should state that one sample will be collected from the surface interval for analysis plus another sample from a field-identified subsurface interval. Each jar headspace sample needs to be collected as close as possible to the most heavily contaminated portion of the collected interval. Presumably multiple VOC samples will initially be collected, one from each soil interval collected and the subsurface VOC sample selected for laboratory analysis will be determined after all the soil intervals have been field evaluated.

c) Please change the reference in the third paragraph from 4°C to 6°C which is used throughout the rest of the SAP.

Appendix D, p. L-2-5

a) For consistency throughout the SAP, please refer to the monitoring wells here as GZ-XXX rather than MW-XXX.

b) The reference to MW-302 in the first bullet is not consistent with the rest of the SAP, which refers to GZ-301 as the well selected for sampling at AOC 001. However, please refer to EPA's comments on the groundwater monitoring wells selected in this SAP for sampling.