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LETTER AND THE U S EPA REGION I COMMENTS REGARDING THE DRAFT FEASIBILITY
STUDY FOR TANK FARM 1, SITE 7, OPERABLE UNIT 13 (OU 13) NS NEWPORT RI
10/28/2014
U S EPA REGION I BOSTON MA



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I

5 Post Office Square, Suite 100
Boston, MA 02109-3912

October 28, 2014

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

Re: Draft Feasibility Study for Tank Farm 1 (Site 7), Operable Unit 13

Dear Mr. Pagtalunan:

EPA reviewed the *Draft Feasibility Study for Tank Farm 1, Site 7*, dated October 3, 2014 (FS). The FS evaluates remedial alternatives to mitigate unacceptable human and ecological risk at select areas of the site associated with historic releases of CERCLA contaminants. Detailed comments are provided in Attachment A.

Although the FS focuses on the two area where soil risks were identified, explain whether the entire OU was investigated to determine if there were any exceedances of both CERCLA risk standards and any applicable ARARs standards in surface and subsurface soils. Explain how the remainder of Tank Farm 1 will be addressed under CERCLA.

The NCP criteria are intended to evaluate alternatives relative to one another. It is inappropriate to evaluate the alternatives individually against the criteria (Tables 3-2 to 3-6 and 4-1 to 4-4).

Details regarding the volumes of soil to be excavated for S-2 and S-4 should be specified in Chapter 4. It is currently unclear what soils will be left behind under S-2. Likewise, details regarding the costs of each alternative should be incorporated into the text of Chapter 4. Currently, it is challenging to evaluate the alternatives relative to one another because you have to refer to several other chapters, figures, and tables to glean relevant information. Also, some tables are mixed in with the figures, so the FS should be reviewed by a competent editor.

Include a tag map that depicts where PRGs are exceeded.

Consistent with the NCP at 40 CFR §300.430(e)(2)(i), remedial action objectives must include remediation goals. Remediation goals shall establish acceptable exposure levels that are protective of human health and the environment. According to RIDEM regulations, if recreational use is present (or may be present in the future) the human health RGs need to be based on residential risk standards. Please replace the RAOs accordingly.

The Navy's proposed PRG of 10 mg/kg for PCBs does not adequately account for uncertainties in the magnitude and extent of PCB contamination and the risk calculation parameters and therefore is not acceptable. EPA calculated a central tendency preliminary remedial goal (PRG) for ecological risk from polychlorinated biphenyls (PCBs) as 3.4 milligrams per kilogram (mg/kg) based on an HQ of 1, an exposure area of 10% of the nominal home range, and a geometric mean of the NOAEL and LOAEL. Revise the ecological PRG for PCBs to 3.4 mg/kg and revise the scope of the FS accordingly.

EPA's proposed PCB PRG recognizes the following uncertainties:

- The home range of a receptor, such as a bird or mammal, is not an absolute. Reliable sources for home range values, including EPA's *Exposure Factors Handbook*, provide a range of values that vary by the habitat where the various studies were performed. For example, a shrew might have a small home range in a high-quality habitat where food is readily available. Conversely, the home range might be larger in a poor habitat that forces the animal to forage over a larger area. For Tank Farm 1, EPA proposes the use of 10% of the home range used in the initial assessment to address this uncertainty. The Navy changed the home range used in the initial SLERA and the Step 3A in the DGA report. EPA prefers to keep the home range consistent between SLERA and Step 3A. When two equally valid values are found in the literature, the mean of the two values could be used in a Step 3A refinement if such a change is explicitly described and justified. Changes to other exposure factors such as body weight should also be explicitly described and justified.
- The sampling does not justify assigning a contaminant concentration value to the nearest square foot. This is another reason to apply an uncertainty factor in developing a PRG. If the Navy cannot assure that future use will remain the same, it is possible that contaminants could be redistributed (*e.g.*, re-grading of the site as part of removing structures). EPA's proposed PRG provides a degree of protectiveness for changes in future use.
- If the risk calculation, after application of Step 3A, determines that risk is possible, then the contaminants should be retained for consideration in the FS unless additional information or sampling supports another course of action.

I look forward to working with you and the Rhode Island Department of Environmental Management to select a final remedy for Tank Farm 1. Please contact me at (617) 918-1385 to arrange a meeting to resolve these comments.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Pamela Crump, RIDEM, Providence, RI
Darlene Ward, NETC, Newport, RI
David Peterson, USEPA, Boston, MA

Bart Hoskins, USEPA, Boston, MA

Mark Kauffman, Resolution Consultants, Chelmsford, MA

ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. ES-i, ¶1	If correct, at the end of the first paragraph add: “Outside of these two areas within the OU, no soil contamination above CERCLA risk or applicable or relevant and appropriate statutory/regulatory levels was identified. In addition, no groundwater risks were identified for the unrestricted use of groundwater.” Also note whether there were any risks from exposure to any sediments or surface water within the OU.
p. ES-i, ¶2	Identify how DLA Energy used the site. Were either the ethyl blending plant or the transformer vaults used by DLA Energy (<i>see also</i> §1.3)?
p. ES-ii	Regarding the RAO bullets, is there any subsurface soil exceeding unrestricted use standards below 2 feet? The RI Remediation Standards for residential exposure and the leachability standards apply throughout the vadose zone. RAOs should be for all soils, not just surface soils.
p. ES-ii, bullet 1	Replace “ARARs” with “Applicable or Relevant and Appropriate Requirements (ARARs).”
p. ES-ii, ¶2	Replace “Applicable or Relevant and Appropriate Requirements (ARARs)” with “ARARs.”
p. ES-iii, Table	Identify whether subsurface soil exceeds industrial and residential direct contact standards. Leachability standards apply to all soil down to the groundwater.
p. ES-iv, Table	The TSCA risk-based standard for unrestricted use is generally 1 ppm.
p. ES-iv	<p>In the description of the remedial alternatives, clarify whether all soil (surface and subsurface) exceeding leachability standards will be removed. If not, explain how remaining leachability exceedances will be addressed (<i>e.g.</i>, an impermeable cap/cover with LUCs and long-term monitoring).</p> <p>For Alternative S-2, clarify whether two feet of clean cover material will be used to backfill in the excavation and serve as a cover over any subsurface soils that exceed industrial or residential PRGs. Add LUCs and long-term monitoring to ensure the protectiveness of the cover.</p> <p>For Alternative S-2, would the LUC component of the remedy also include “...Short-term LUCs would likely be required until the ethyl blending plant structure is demolished and the soil beneath the building can be assessed and remediated, if necessary...” (as included in Alternative S-3)? Will the ethyl blending plant structure be removed separately from the CERCLA process or as part of Alternative S-3?</p>

p. ES-iv, ¶1 The Navy's proposed PRG of 10 mg/kg for PCBs does not adequately account for uncertainties in the magnitude and extent of PCB contamination and the risk calculation parameters and therefore is not acceptable. Part of the uncertainty concerns potential future site uses that could result in contaminants redistributed over an area that could comprise a larger proportion of a receptors home range. EPA calculated a central tendency preliminary remedial goal (PRG) for ecological risk from polychlorinated biphenyls (PCBs) as 3.4 milligrams per kilogram (mg/kg) based on an HQ of 1, an exposure area of 10% of the nominal home range, and a geometric mean of the NOAEL and LOAEL. Revise the ecological PRG for PCBs to 3.4 mg/kg and revise the scope of the FS accordingly.

p. ES-iv, last bullet As previously discussed, for Alternative S-3, all surface and subsurface soil that exceeds both residential/industrial and leachability standards will need to be removed (otherwise the alternative needs to maintain a cover over the soils [impermeable cover over any subsurface soil exceeding leachability standards to be left in place] and LUCs and long-term monitoring to prevent disturbance of the cover and underlying contaminated subsurface soils). If subsurface soils exceeding leachability standards are to be left in place then long-term monitoring will be required to confirm the alternative is protective in preventing contaminant migration to the groundwater.

p. ES-v, bullet 1 All surface soil that exceeds the TSCA 1 ppm standard needs to be removed (otherwise the alternative needs to maintain a protective cover over any PCB contaminated soil left in place and LUCs need to be maintained).

If the demolition of the ethyl blending plant structure is a required component of this alternative, include a bullet to describe what will be done.

p. ES-v, bullet 6 For the Alternative S-4 LUC description, explain whether maintenance of the ethyl blending plant structure will be part of the cover and therefore included in the LUC requirements. Add long-term monitoring for the cover.

p. ES-vi, Table Incorporate previous comments into the Table.

Alternative S-1 is not protective because it does not address leachability exceedances in the soil.

Based on the current description of Alternative S-2, it is unclear whether it is protective (see previous questions concerning whether subsurface soils will be addressed by this alternative). It is therefore unclear whether Alternative S-2 complies with ARARs.

Alternative S-3 will be protective only if all surface and subsurface soil exceeding industrial/residential and leachability standards is removed, along with all soil that exceeds 1 ppm of PCBs in the transformer vault area. Therefore, it is unclear whether Alternative S-3 complies with ARARs.

Based on the current description of Alternative S-4 it is unclear whether any subsurface soil that exceed leachability standards will remain. An impermeable cover will be needed to address the leachability exceedance, with LUCs and long-term groundwater monitoring. Therefore, it is unclear whether Alternative S-4 complies with ARARs.

- p. 1, §1.1 Discuss any risk assessments that show whether there is risk from drinking the groundwater within the OU. Explain whether the entire OU was evaluated to determine that there were no exceedances of risk or ARARs-bases soil standards in the surface and subsurface soils, except in the ethyl blending plant and transformer vault areas. Also, describe whether there were any risks identified from exposure to any sediments or surface water within the OU.
- p. 4, §1.3.3 Describe the investigations conducted throughout the OU to show there were no other areas within the OU with CERCLA exceedances.
- p. 5, ¶¶4&5 Discuss the results of the subsurface soil sampling.
- p. 6, ¶4 At the end of the paragraph, add: “The groundwater is classified as a drinking water source based on federal criteria.”
- p. 6, ¶5 Discuss whether there are any wetlands (federal or state jurisdictional) or floodplain within the OU.
- p. 7, ¶¶2-3 Identify whether the contaminants identified in the surface and subsurface soil were above risk-based criteria or ARARs.
- p. 8, ¶1 If the metals are the result of Navy operations, they need to be addressed if they exceed risk-based criteria or ARARs.
- p. 8, §1.3.5, ¶2 Please identify what metals exceeded the background concentrations instead of listing only those metals that did not exceed background.
- p. 8, ¶3 State whether any of the groundwater contaminants exceeded MCLGs, federal risk-based standards (*i.e.*, for manganese), or more stringent State GA standards.
- p. 9, ¶4 If the metals are from any Navy operations - either directly or indirectly - they should be discussed in more detail here.
- p. 10, ¶1 Discuss the exceedances of leachability standards and how they relate to groundwater within the OU.
- p. 10, §1.3.7 Discuss any human health risk-assessments conducted throughout the OU. Discuss the basis for determining there were no CERCLA risks within the OU outside of the ethyl blending plant and transformer vault areas. Discuss

any risk exceedances in the subsurface soil.

- p. 11, §1.3.8 Discuss any ecological risk-assessments conducted throughout the OU. Discuss the basis for determining there were no CERCLA ecological risks within the OU outside of the ethyl blending plant and transformer vault areas.
- p. 12, ¶2 Explain why no ecological COPCs were retained for further evaluation.
- p. 12, §1.3.8, ¶4 Please discuss the PCB results for transformer vault 3, as was done for transformer vault 2 and make the same change to Section 1.3.9.
- p. 12, §1.3.8, ¶5 EPA has not accepted the DGA report conclusion that PCBs do not pose a significant risk to ecological receptors. This paragraph must be rewritten to address EPA's requirement to establish a more conservative risk-based ecological PRG for PCBs that supersedes the RIDEM direct exposure criterion. Transformer vaults 2 and 3 should both be discussed in this context. Make the same change to Section 1.3.9.
- p. 13, ¶1 If the metals are the result, either directly or indirectly, from any Navy operations they should be discussed in more detail here.
- p. 13, §1.3.9, ¶1 Please supplement the last sentence with: "... samples; however, the concentrations did not result in any excess risk."
- p. 13, §1.3.9, ¶4 Please clarify that surface soil contamination at the ethyl blending plant also exceeded the RIDEM industrial/commercial direct exposure criteria (I/C DEC).
- p. 13, ¶4 Specify whether contaminants in subsurface soil (throughout the vadose zone) posed any risks.
- p. 13, ¶7 Why were hunters considered potential receptors for the transformer vault area, but not the ethyl blending plant area?
- p. 13, §1.3.9, ¶8 Please state that no excess human health risk was calculated for the contamination at transformer vault 2 but that one surface soil sample at transformer vault 2 exceeded both the RIDEM industrial/commercial direct exposure criteria (I/C DEC) and the ecological PRG.
- p. 14, §1.3.9 Revise this section to state that the DGA concluded that a risk to ecological receptors exists at transformer vault 2 from PCBs and that a Feasibility Study was recommended to address the location with the greatest concentration of PCBs.
- Include a summary of transformer vault 3 similar to the last paragraph on page 13 and add a paragraph similar to the one described in the first part of this comment that recommends additional sampling at transformer vault 3 to

verify that the magnitude of the PCB contamination is not significantly greater than the available data indicate.

- p. 18, §2.2 Regarding the RAO bullets, is there any subsurface soil exceeding unrestricted use standards below two feet? RI Remediation Standards for residential exposure and leachability standards apply throughout the vadose zone. RAOs should be for all soils, not solely surface soils.
- p. 18, §2.2, ¶1 Add an RAO to address the results of the ecological risk screening that determined that there is risk to ecological receptors and edit this paragraph accordingly.
- p. 19, §2.3 Discuss any risk-based PRGs required for subsurface soil or change the discussion about surface soil PRGs to apply to all soils.
- p. 20, §2.3, ¶2 Clarify the first sentence as follows: "... naphthalene, which is based on the RIDEM Leachability Criterion assuming protection of GA classified groundwater, and arsenic and chromium, which"
- p. 22, §2.3, ¶1 EPA calculated a PRG of 3.4 mg/kg for PCBs based on the shrew. This calculated value accounts for uncertainties regarding potential future redistribution of contaminants over a larger area, as well as uncertainty on the size of the receptors' home range for a given habitat type. This value is protective of current and possible future site use by ecological receptors. Please edit the FS to use this value as the ecological PRG for PCBs.
- p. 22, ¶3 The TSCA risk-based standard for unrestricted use is generally 1 ppm.
- p. 22, §2.4 This section also needs to address contaminated subsurface soil, if contaminant levels exceed either risk-based criteria or ARARs.
- p. 23, §2.4, ¶4 Please clarify whether the volume discussed in the first bullet also includes RIDEM GA leachability criteria exceedances. If it does not, then correct the assumptions in Table 5-1.
- p. 24, ¶1 What depth were the exceedances of leachability standards identified?
- p. 24, §2.4, ¶2 Please delete the second sentence that refers to transformer vault 3.
- Add another figure depicting the sample locations for transformer vault 3 and the one exceedance of the PRG. Add text for transformer vault 3 similar to that for transformer vault 2, but recommend additional sampling at transformer vault 3 rather than excavation.
- p. 26, §3.1.2 See previous comments concerning Alternative S-2. In the description of Alternative S-2, explain whether all soil (surface and subsurface) exceeding leachability standards will be removed and if not, explain how any remaining leachability exceedances will be addressed.

For Alternative S-2, clarify if two feet of clean cover material will be used to backfill in the excavation and serve as a cover over any subsurface soils that exceed industrial or residential PRGs. Add LUCs and long-term monitoring to ensure the protectiveness of the cover.

p. 26, ¶5

Discuss how the excavated soil will be characterized and managed on-site before disposal.

p. 27, ¶4

In the LUC description, include the standard language used in other Newport decision documents concerning how LUCs will be maintained at the property if it were transferred from Navy control.

Discuss the need for short-term LUCs under the building foundation here.

p. 27, §3.1.3

See previous comments concerning Alternative S-3. For Alternative S-3, all surface and subsurface soil that exceeds both residential/industrial and leachability standards will need to be removed (otherwise the alternative needs to maintain an impermeable cover over any subsurface soil exceeding leachability standards to be left in place and LUCs and long-term monitoring to prevent disturbance of the cover and underlying contaminated subsurface soils). If subsurface soils exceeding leachability standards are left in place, long-term monitoring will be required to confirm the alternative is protective in preventing contaminant migration to the groundwater.

Also, all surface soil that exceeds the TSCA 1 ppm standard either needs to be removed or needs a protective cover over any PCB contaminated soil left in place and LUCs need to be maintained.

Discuss how the excavated soil will be characterized and managed on-site before disposal.

p. 28, §3.1.3, ¶1

Further sampling at transformer vault 3 will be required before remedial action. Further pre-remedial sampling at transformer vault 2 is not required if the Navy extends the excavations to the locations of samples with PCB concentrations less than the ecological PRG of 3.4 mg/kg.

p. 28, §3.1.4

See previous comments concerning Alternative S-4. Based on the current description of Alternative S-4, it is unclear whether any subsurface soils that exceed leachability standards will remain. If so, an impermeable cover is necessary to address the leachability exceedance, with LUCs and long-term groundwater monitoring.

All surface soil that exceeds the TSCA 1 ppm standard will need to be removed (otherwise the alternative needs to maintain a protective cover over any PCB contaminated soil remaining and LUCs need to be maintained).

Discuss how the excavated soil from the transformer vault area will be

characterized and managed on-site before disposal.

In the LUC description, include the standard language used in other Newport decision documents concerning how LUCs will be maintained at the property if it were to be transferred from Navy control.

Discuss the need for short-term LUCs under the building foundation (until the building is demolished). If the building will be maintained, describe how the LUCs will include maintenance of the building foundation as part of the cover.

- p. 28, ¶5 Stormwater controls will be required during installation of the cover and until the site is stabilized to prevent erosion of the cover material to less than the required protective depth.
- p. 29, §3.1.5 Many of the comments that pertain to Alternatives S2 through S4 also pertain to this alternative. Describe where the consolidated soil would be put on the site and what standards would apply. If the subsurface soil is contaminated above risk and ARAR standards, then this alternative does not address the newly exposed contaminated subsurface soil that now is at the surface.
- p. 29, §3.1.5, ¶1 Please supplement the text for Alternative S-5 to indicate that the soil that exceeds the RIDEM GA Leachability Criteria will be segregated for off-site disposal as indicated in Table 3-1.
- Please edit the last sentence to read: "... implemented because the contaminant concentrations in the consolidated soil do not exceed the RIDEM GA Leachability Criteria."
- p. 31, ¶4 Since soil PCB levels are above 1 ppm, the Alternative does not address TSCA risk-based standards for protecting human health.
- p. 32, §4.2.1 See all previous questions/comments about Alternative S-2, in particular, if the excavations are not to be backfilled, then if the subsurface soil still contains contamination above risk and ARAR based standards the alternative is not protective.
- p. 32, §4.2.1, ¶1 Please reference transformer vault 3 or state that supplemental sampling will be performed at transformer vault 3 to assess the magnitude of PCB contamination.
- p. 32, §4.2.1, ¶3 Move the third sentence, which discusses the ethyl blending plant, to the second paragraph. Edit the third paragraph to discuss transformer vault 3.
- p. 34, ¶¶ 4 to 6 As previously discussed, this alternative may not be protective if the excavation exposes deeper contaminated subsurface soil above industrial risk, direct contact, or leachability standards. The alternative also would not meet ARAR standards, particularly State remediation standards that require a clean

cover over subsurface soils above industrial direct contact standards. Also leachability standards apply to all soils down to groundwater, so if there are leachability exceedances below two feet, this alternative would not meet ARAR requirements.

- p. 35, ¶1 If the circumstances described above are present, Alternative S-2 would not meet this criterion.
- p. 36, §4.3.1 See all previous comments about Alternative S-3. In particular, if the excavations are not backfilled and the subsurface soil still contains contamination above risk and ARAR based standards, the alternative is not protective.
- p. 36, §4.3.1, ¶1 Edit the first sentence to reference transformer vault 3 or state that supplemental sampling will be performed at transformer vault 3 to assess the magnitude of PCB contamination.
- p. 37, ¶5 As previously discussed, this alternative may not be protective if the excavation exposes deeper contaminated subsurface soil above industrial risk, direct contact, or leachability standards.
- p. 38, ¶1 If contaminated subsurface soils are present, the alternative would not meet ARAR standards, particularly State remediation standards that require a clean cover over subsurface soils above industrial direct contact standards and LUC to prevent contact with subsurface soils that exceed residential standards. Also leachability standards apply to all soils down to groundwater, so if there are leachability exceedances below two feet this alternative would not meet ARAR requirements.
- p. 38, ¶2 If the circumstances described above are present, Alternative S-3 would not meet this criterion.
- p. 38, ¶3 Change the text to: “This alternative does not involve/include treatment.”
- p. 39, §4.4.1 See all previous comments about Alternative S-4. In particular, if leachability standards are exceeded in the subsurface soil, then an impermeable cover is required.
- p. 41, ¶¶ 4 to 6 If there are leachability exceedances in the subsurface soil that are not addressed by the soil removal, this alternative would not be protective, would not meet ARAR requirements, and would not meet the long-term effectiveness and permanence criterion unless an impermeable cover is installed and long-term groundwater monitoring included.
- p. 43, §5.0 See all previous comments about all of the alternatives. It is not possible to evaluate the comparative analysis until it is determined which, if any, of the proposed alternatives meets the Protectiveness and ARARs compliance criteria.

p. 45, §5.1.3 It appears that S-2 would be more effective than S-4 based on current and projected future industrial/commercial use because soil exceeding the remedial goals for industrial exposure would be removed by S-2, but not S-4. Neither would be effective in the long-term under a future residential scenario. Please revise the text accordingly.

p. 46, §5.1.5, ¶1 Both S-3 and S-4 would result in the greatest short-term harm to the surrounding environment because of the larger area that would be impacted by each alternative - one by excavation and the other by a soil cover. Please edit the discussion accordingly.

p. 47, §5.1.6, ¶4 There is a difference among the alternatives regarding additional remedial actions. S-3 would have removed contamination exceeding the remedial goals while both S-2 and S-4 leave contamination in place. Therefore, additional effort would be required for S-2 and S-4 to remove contamination if additional remedial actions are necessary. This effort could be onerous for S-4 because the soil cover would have to be removed to conduct additional remedial action. Please edit the discussion accordingly.

p. 47, §5.1.6, ¶7 Text is missing from the beginning of this paragraph. Please correct.

p. 49, §5.2, ¶2 Table 5-1 indicates that the baseline cost for S-3 is not greater than the upper-end cost for S-2. Please correct.

Table 2-1 The Table should include the groundwater ARARs (MCLs, MCLGs, State GA standards) and TBCs (EPA Health Advisories) that were used to determine that there were no groundwater exposure/consumption risks within the OU.

Table 2-3 Cite the TSCA risk-based standard for unrestricted exposure of 1 ppm.
Include tables for subsurface soil data.

The Navy's proposed PRG of 10 mg/kg for PCBs does not adequately account for uncertainties in the magnitude and extent of PCB contamination and the risk calculation parameters and therefore is not acceptable. EPA calculated a central tendency preliminary remedial goal (PRG) for ecological risk from PCBs as 3.4 mg/kg based on an HQ of 1, an exposure area of 10% of the nominal home range, and a geometric mean of the NOAEL and LOAEL. Please revise the ecological PRG for PCBs to 3.4 mg/kg and revise the scope of the FS accordingly.

Table 2-5 Change the PRG to 3.4 mg/kg.

Table 2-6, p. 1 The screening comment for fencing is not appropriate because remediation is required to address exposures based on exceedances of the RIDEM industrial/commercial direct exposure criteria (I/C DEC)s, not just residential

risk. In addition, a fence currently prevents access to Tank Farm 1 without authorization. Please revise the rationale for fencing.

The screening comment related to excavation and on-site disposal is not consistent with the text on page 30, Section 3.1.a that states that this alternative was not retained because it is not cost effective. Please correct the table accordingly.

Table 2-6, p. 3 Please revise the screening comment for land treatment because fuel spills are the primary release mechanism for contamination at the ethyl blending plant.

Table 2-6, p. 5 Revise the screening comments for all the biological processes because fuel spills are the primary release mechanism for the contamination at the ethyl blending plant.

Table 2-6 This table should apply to all soils.

Table 3-1 See all previous comments about the descriptions of the Alternatives and incorporate any text changes made into this Table. The Table should apply to all soils, not just surface soil.

Table 3-1 The scope of the S-4 and S-5 remedies are inconsistent. S-5 requires groundwater monitoring to evaluate leaching of the contamination left in place. S-4 does not include groundwater monitoring even though the same contamination will be left in place. Please correct the discrepancy here and in Tables 3-5 and 3-6.

Table 3-2 Please edit the description and the effectiveness disadvantage to include "... , ecological receptors, or address exceedances of the RIDEM I/C DEC's or GA Leachability Criteria."

Table 3-3 Please edit the description and the effectiveness advantage to include "... , the RIDEM I/C DEC's, and the ecological PRG."

See all previous comments about the descriptions of this Alternative and incorporate any text changes made here. In particular, the Alternative may neither be protective nor meet ARAR requirements.

Table 3-4 See all previous comments about the descriptions of this Alternative and incorporate any text changes made into this Table. In particular, the Alternative potentially may neither be protective nor meet ARAR requirements.

Please edit the description of the effectiveness disadvantage to read: "... potential for current and future liability."

Table 3-5 Please edit the description to include removal of ecological PRG exceedances and the effectiveness disadvantage to read: “Does not remove all contaminants.”

See all previous comments about the descriptions of this Alternative and incorporate any text changes made into this Table. In particular, the Alternative potentially may neither be protective nor meet ARAR requirements.

Table 3-6 Please edit the description of the effectiveness disadvantage to read: “Does not remove all contaminants.”

See all previous comments about the descriptions of this Alternative and incorporate any text changes made into this Table. In particular, the Alternative may neither be protective nor meet ARAR requirements.

Table 4-1 Revise this Table. Since soil PCB levels are above 1 ppm, the Alternative does not address TSCA risk-based standards for protecting human health.

Table 4-2 See all previous comments about this Alternative and incorporate any text changes made. In particular, the Alternative may neither be protective nor meet ARAR requirements.

Ecological protection should also include removal of soil at transformer vault 3 or supplemental sampling to verify the magnitude of PCB concentrations.

Under Adequacy and Reliability, please change “determined” to “confirmed.”

Table 4-3 Ecological protection should also include removal of soil at transformer vault 3 or supplemental sampling to verify the magnitude of PCB concentrations.

See all previous comments about this Alternative and incorporate any text changes made. In particular, the Alternative potentially may neither be protective nor meet ARAR requirements.

Table 4-4 See all previous comments about this Alternative and incorporate any text changes made. In particular, the Alternative potentially may neither be protective nor meet ARAR requirements.

Ecological protection should also include removal of soil at transformer vault 3 or supplemental sampling to verify the magnitude of PCB concentrations.

Under Adequacy and Reliability, please change “determined” to “confirmed.”

Regarding Ease of Undertaking Additional Remedial Actions, please edit the text as follows: “... to occur following removal of the soil cover.”

Table 5-1	<p>Please verify the upper-end cost for S-3 that is essentially equal to the upper-end cost for S-2. The relative changes in the sensitivity assumptions do not appear appropriate.</p> <p>Review the assumptions for S-3 that require three waste characterization samples even though only 450 cubic yards will be excavated.</p> <p>Please explain why the analysis assumes a doubling of the excavation volume for S-2, a tripling for S-4, but only a 10% increase in the excavation volume for S-3. These assumptions are not appropriate.</p>
Figure 5	Please add the Shaw sample to this figure.
Figure 7	Provide the missing text associated with the asterisk.
Figure 8	<p>The sample locations between this figure and Figure 2-1 in the Draft Final Data Gaps Assessment Report of April 2014 differ significantly. Please correct the sample locations in Figure 8, all of which are erroneously offset.</p> <p>Revise the red and green color scheme to be consistent with Figures 6 and 8.</p>
Figure 9	The sample locations in this figure differ from Figure 2-2 in the Draft Final Data Gaps Assessment Report from April 2014. Please correct the sample locations in Figure 9, all of which are erroneously offset.
Appendix A	Table 4-6A: Please highlight the exceedances.
Appendix A	The appendix tables show exceedances in subsurface soils and groundwater. This needs to be incorporated into the text. In particular, the protectiveness and ARARs compliance of the proposed soil alternatives relies on whether the alternatives also address the subsoil exceedances (further complicated by the requirement to sample subsoil throughout the vadose zone).
Table C-2a	See all previous ARARs comments about this Alternative and incorporate any text changes made. In particular, the Table needs to identify if there are any ARARs that the alternative does not meet (<i>e.g.</i> , RI Remediation standards for direct contact and leachability).
Table C-2b	For the alternative to meet TSCA risk-based standards, the PCB PRG needs to be 1 ppm for unrestricted use.
Table C-3a	See all previous ARARs comments about this Alternative and incorporate any text changes made. In particular, the Table needs to identify if there are any ARARs that the alternative does not meet (in particular the RI Remediation standards for direct contact and leachability).
Table C-3b	For the alternative to meet TSCA risk-based standards, the PCB PRG needs to be 1 ppm for unrestricted use.

Table C-2a See all previous ARARs comments about this Alternative and incorporate any text changes made. In particular, the Table needs to identify all ARARs that the alternative does not meet (*e.g.*, the RI Remediation standards for leachability).

Table C-2b Note that for the alternative to meet TSCA risk-based standards, the PCB PRG needs to be 1 ppm for unrestricted use.

Remove the citation to “Expedited Policy for Remediation of Environmental Simple Sites” as it refers to a state administrative process that does not apply to CERCLA sites.

Appendix C Table C-4b: Several Rhode Island Solid Waste requirements incorporated into the Tank Farm 5 Record of Decision have not been identified in this table for Alternative S-4. Please correct as appropriate.

Appendix D Alternative S-2: Please edit the description to refer to meeting GA leachability criteria (even though these exceedances are currently co-located with I/C DEC exceedances). Add supplemental sampling at transformer vault 3.

Alternative S-3: Following excavation, some regrading is expected and the area cleared and grubbed is expected to be seeded. Please modify the costs accordingly.

Alternative S-3: Confirmation sampling is expected for this alternative, as indicated in Section 4.3.1. PDI sampling is not required. The confirmation sampling will include all parameters with a PRG. Please edit the costs accordingly.

Alternative S-3: Based on Table 5-1 that indicated one waste characterization sample per 250 cubic yards, two waste characterization samples are required for S-3. Please correct.

Alternative S-3: Add supplemental sampling at transformer vault 3.

Alternative S-4: Capital costs indicate clearing and grubbing of 5300 square feet, but only seeding 460 square feet. Please correct. Add supplemental sampling at transformer vault 3.