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December 16, 2010

Mr. Kevin Cloe
Project Manager
Commander Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Boulevard
Norfolk, VA 23508-1278

Re: Review of the Draft Streamlined Remedial Investigation/Feasibility Study Report Solid Waste Management Unit 1 (SWMU 1), Former Vieques Naval Training Range, Vieques, Puerto Rico

Dear Mr. Cloe:

The U.S. Environmental Protection Agency (EPA) completed the review of the Draft Expanded Draft Streamlined Remedial Investigation/Feasibility Study Report Solid Waste Management Unit 1 (SWMU 1), Former Vieques Naval Training Range, Vieques, Puerto Rico, dated October 2010. Enclosed you will find our comments.

If you have any questions or comments, please contact me at (787) 741-5201.

Sincerely,

Daniel Rodríguez
Remedial Project Manager
Response and Remediation Branch

Enclosure

cc: Wilmarie Rivera, EQB, w/ encl.
Richard Henry, FWS, w/encl.
Brett Doerr, CH2M Hill, w/ encl.

EPA COMMENTS ON THE
DRAFT STREAMLINED REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT SOLID WASTE MANAGEMENT UNIT 1 (SWMU 1)
FORMER VIEQUES NAVAL TRAINING RANGE
VIEQUES, PUERTO RICO
OCTOBER 2010

Presented below are review comments on the *Draft Streamlined Remedial Investigation/Feasibility Study Report Solid Waste Management Unit 1 (SWMU 1), Former Vieques Naval Training Range, Vieques, Puerto Rico*, dated October 2010 (Draft Streamlined RI/FS).

GENERAL COMMENTS

1. Where established standards for one or more contaminant in a given medium are clearly exceeded, remedial action is generally warranted [see Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions, which states that if Maximum Contaminant Levels (MCLs) are exceeded [a response] action generally is warranted]. The Presumptive Remedy for CERCLA Municipal Landfill Sites, EPA 540-F-93-035, dated September 1993 (Presumptive Remedy Guidance) states on page 2 in the second paragraph under the Containment as a Presumptive Remedy heading, ". . . measures to control landfill leachate, affected groundwater at the perimeter of the landfill and /or upgradient ground-water that is causing saturation of the landfill mass may be implemented as part of the presumptive remedy." Presentation of the current understanding of groundwater conditions at the landfill's perimeter (i.e., the defined point of compliance for each landfill based on landfill-specific groundwater conditions), presentation of the seasonally adjusted high groundwater elevation with respect to the vertical limits of waste in the landfill, assessment of any detected constituents in groundwater to the most appropriate health based standard, and delineation and presentation of the limits of any defined groundwater plumes above the appropriate health-based standards should be presented in support of no further action with respect to groundwater. The containment presumptive remedy only applies to the soil based pathway, and does not preclude the need for a more expanded assessment of groundwater to ensure that a complimentary groundwater action is not warranted. Revise the Draft Streamlined RI/FS to present an appropriate assessment of groundwater.

2. Additional comments regarding groundwater and groundwater contamination is necessary. For example,

   a. Please provide a discussion regarding the rationale for placement of the monitoring wells at the site (i.e., wells were placed with the boundaries of the landfill to characterize any potential releases).

b. Page 4-7 of Section 4.2.2 (Migration from Potential Source Areas) states that, "Contaminant migration will follow the south-southwest groundwater flow direction in the northern portion of the site and to the southeast in the southern portion of the site. Wells were installed along this flow pathway and confirmed contaminant migration in groundwater is negligible." Based on Figure 2-7 (Groundwater Elevation Contour Map), only one monitoring well is located west of Dirt Road (i.e., MW-07) resulting in a lack of fully developed groundwater contours to the point of compliance/landfill boundary. Only two groundwater monitoring wells are located in the northern portion of the SWMU 1 (i.e., MW-01 and MW-09), and MW-01 is dry. In addition, no monitoring wells are located west of the approximate extent of landfill debris, which represents the downgradient side of the landfill. As such, it is unclear if groundwater contours and flow paths provided on Figure 2-7 are representative of site conditions due to the lack of available data in the northern and western portion of SWMU 1. Please provide a discussion of any uncertainties and potential data gaps.

Further, some level of post closure groundwater monitoring may be necessary as part of the remedy for this site due to the heterogeneous nature of landfills and the possibility for future settling and associated releases. At a minimum, post-closure groundwater sampling from appropriately placed perimeter wells may be necessary to ensure no releases occurred during closure activities.

3. Section 7.1 (Feasibility Approach) states that a preliminary evaluation of the remedial option which included excavation and off-site disposal of all buried landfill debris and impacted soil was conducted and determined to be impractical and cost-prohibitive. However, the information to support this conclusion was not provided and/or referenced. For example, the text states that the estimated cost for this remedial option would likely exceed $15 million; however, information to support this cost have not been provided. Revise the Draft Streamlined RI/FS to provide and/or reference information to support the conclusion that the excavation and off-site disposal of all buried landfill debris and impacted soil is impractical and cost-prohibitive given that this is the primary competing remedial technology outlined in the presumptive remedy guidance.

4. The text implies that detection of inorganics in soil is attributed to background. For example, Page 3-7 states that, "However, maximum concentrations of each inorganic constituent (except for lead) only slightly exceeded the background concentrations and most are likely attributable to background." However, Page 4 of 12 of Table 3-3 (Test Pit Composite Soil and Subsurface Soil Detection and Exceedance Results) shows detections of aluminum, arsenic, beryllium, calcium, chromium, cobalt, iron, lead, manganese, and vanadium above the background upper threshold limit (UTL) with several detections more than double the background UTL. For example, arsenic was detected in subsurface soil sample VEW01-SO04-0209 at 3.2 milligrams per kilogram (mg/kg) which is double the background UTL (1.6 mg/kg). As such, it does not appear that the detections of inorganics in soil can be attributed to background as

implied. Revise the Draft Streamlined RI/FS to clarify how the detections of inorganic constituents can be attributed to background.

5. It is unclear if the current soil cover is sufficient to minimize erosion. Section 4.2.2 (Migration from Potential Source Areas) states that, "Contaminants and landfill debris are covered under a 2 ft-thick native soil cover that minimizes the potential for erosion." However, Section 4.2.1 (Potential Sources of Contamination) states that, "However, some randomly distributed areas have landfill debris exposed on the surface, either from soil erosion or incomplete placement of the initial cover." Revise the Draft Streamlined RI/FS to clarify how the current soil cover is sufficient to minimize the potential for erosion.

6. The Migration via Surface Runoff subsection of Section 4.2 (Contaminant Migration) states that, "Elevated concentrations of the COPCs [Constituents of Potential Concern] found in soil immediately within the landfill debris were not observed in surface soil located outside the extent of the landfill, suggesting this pathway is currently negligible, even if it occurred in the past when the landfill was active and there was less soil cover and vegetative cover." Based on Figure 3-1 (Geophysical Survey and Sample Location Map, SWMU 1), it does not appear that an appropriate number of soil samples were collected outside the extent of the landfill to substantiate that COPCs found in soil immediately within the landfill debris were not observed in surface soil located outside the extent of the landfill. Further, Page 3-7 states that, "Aluminum, arsenic, chromium, cobalt, iron, selenium, and vanadium were detected in ephemeral stream surface and subsurface soil above background concentrations and screening criteria." As such, it is unclear if the migration of contaminants via surface runoff is negligible. Revise the Draft Streamlined RI/FS to clarify how the migration of contaminants via surface runoff is negligible considering the limited sampling outside the limits of the landfill and the detections of inorganic constituents in ephemeral stream surface and subsurface soil.

7. No characterization of hot spots appears to have been performed and the text does not include as assessment of whether hot spots are believed to exist at the landfill; hotspots are to be addressed as part of the presumptive remedy approach. Hot spot determination needs to be completed to the extent possible early in the RI/FS process so as to preclude the need to excavate through an already installed soil cap. The proposed approach should be revised to assess whether sufficient data is believed to exist so as to establish whether hot spot areas exist within the landfill as part of the presumptive remedy.

8. Alternative 2 (Enhanced Native Soil Cover and Institutional Controls) includes covering of exposed waste areas. Based on Appendix F (Cost Summary of Alternatives), it is assumed that only 0.5 acres of the 41-acre SWMU 1 will be covered. However, an evaluation to support this assumption has not been provided. As such, the percentage of the soil cover that requires recovering is unknown and may impact the cost estimate and accuracy range of +50 to -30 percent provided in Appendix F (Cost Summary of Alternatives). Revise the Draft Streamlined RI/FS to

clarify why only 0.5 acres of the 41-acre site requires covering. In support of such an assessment, data from the test pits and borings competed through the current landfill footprint should be assessed to verify the current cover thickness in support of the 0.5 acres assumption.

9. The Human Health Risk Assessment (HHRA) evaluated site exposures to current/future adult trespassers and current/future Fish and Wildlife Service (FWS) workers. While this is consistent with the *Technical Memorandum for the Interim Deliverable for the Human Health Risk Assessment* (CH2M Hill, 2010a), it is unclear why current/future adolescent trespassers were not evaluated when the exposure assumptions for this receptor population are more protective than for adult trespassers. Please revise to state why the adolescent trespasser was not evaluated.

10. It is unclear if portions of SWMU 1 outside the landfill area were adequately characterized. Subsurface media (e.g., subsurface soil and groundwater) were not quantitatively evaluated in the HHRA. While this approach is considered appropriate for the landfill itself as outlined in the *Presumptive Remedy Guidance*, surface *and* subsurface media of any portion of the site extending beyond the landfill area and/or institutional control should be quantitatively evaluated in the HHRA in order to ensure the selected remedy is protective of areas outside of the landfill footprint. Revise the HHRA to demonstrate that portions of SWMU 1 outside the landfill area are adequately characterized and update the CSM, if appropriate. The HHRA figures depict the extent of the landfill debris and other features, but do not depict the actual SWMU 1 boundary. Ensure that a figure is provided in the HHRA that depicts the SWMU 1 boundary in relation to the landfill debris.

11. Surface water data were not available for use in the HHRA. While ephemeral streams at SWMU 1 were sampled, they were dry at the time of sampling; therefore, only surface soil data were collected. For completeness, clarify in the uncertainty analysis why the lack of surface water data is not considered a data gap relevant to the HHRA.

12. Section 1.2.1.3, Exposure Concentrations (page 7), of the Master ERA protocol notes that those chemical with the potential to bioaccumulate will be evaluated in the food web exposures. Further, it is noted in Section 1.2.3 Risk Characterization of the Master ERA protocol, that non-detected chemicals will be retained as COPCs if the maximum detection limits exceeds the ecological screening value (ESV) for that medium or if the ingestion dose calculated using the maximum detection limit exceeds the TRV. However, the manner in which to proceed when bioaccumulative compounds without screening values are not detected is unclear. For example, acenapthene, acenapthylene, anthracene, fluorene, pentachlorophenol, and phenanthrene all lack ECO-SSLs and are identified as bioaccumulative compounds in Table 4. However, they are not included in the list of chemicals evaluated in the Step 2 food chain modeling (Attachments 3-1 through 3-4), presumably because they were not detected (Attachment 1-1). Further discussion is recommended between the Navy and the regulatory Agencies to discuss this issue.

SPECIFIC COMMENTS

1. **Section 2.1.5, Hydrogeology, page 2-4:** It is unclear why monitoring well MW12 was abandoned. Based on Figure 2-7 (Groundwater Elevation Contour Map), monitoring well MW12 was abandoned on 5/14/09. Revise the Groundwater Flow subsection to clarify why monitoring well MW12 was abandoned. In addition, revise Tables 2-1 (Summary of Well Construction Details) and 2-2 (Monitoring Well Parameters) to include monitoring well MW12.

2. **Section 3.2.1, Landfill Debris, page 3-3:** Figures 1-5 (PA/SI cover Material Surface Soil Sample Locations and Monitoring Wells), 1-6 (SWMU 1 North, Geophysical Transects, Test Pits & Excavations), and 1-7 (SWMU 1 South, Geophysical transects, Test Pits & Excavations) include the magnetic and electromagnetic geophysical survey locations and exploratory excavation limits not Figure 1-5, 1-7, and 1-8 (Ephemeral Stream Samples and Monitoring Wells), as stated in Section 3.2.1. Revise Section 3.2.1 to reference Figures 1-5, 1-6, and 1-7 for the locations of the magnetic and electromagnetic geophysical surveys and exploratory excavation limits.

3. **Section 3.2.2, Soil, page 3-4:** The Volatile Organic Compounds (VOC) subsection states that, "Three VOCs (acetone, methylene chloride, and styrene) were detected in surface and/or subsurface soil at SWMU 1 (Tables 3-1 through 3-4 and Figures 3-1 through 3-2b)." It is unclear from the text which VOCs were detected in surface soil and subsurface soil. Revise the subsection to differentiate which VOCs were detected in surface soil and subsurface soil.

4. **Section 7.2, Remedial Action Objectives, page 7.2:** There is no RAO for limiting the potential for migration to groundwater from the landfill. Section 7.4 states that migration to groundwater is not an issue, because the waste has been in place for over 30 years, and impacts to groundwater would have been seen by this time. However, since it is a landfill with heterogeneous waste, should an RAO be developed to address potential future impacts to groundwater?

5. **Table 7-1(b), Puerto Rico Chemical Specific ARARs, page 2 of 6:** The citation for the Puerto Rick Water Quality Standards for surface water should reference the March 2010 values, rather than the March 2003 values.

6. **Sections 8.2 and 8.3, pages 8-2 and 8-3:** These sections, which describe Remedial Alternatives 2 and 3, do not include any groundwater monitoring as part of future activities. Since contamination will be left onsite, it is recommended that some groundwater sampling be included. At a minimum, sampling conducted over a few years would allow for a standard sampling protocol to track trends over time. Any decision on the long-term monitoring and the limited leaching potential of the waste in the landfill would be evaluated upon review of these groundwater sampling events and the trend analysis.

7. **Appendix A, Aerial Photographic Analysis, Section 4.0, Detailed Site Analysis Findings By Year, page 9:** The table indicates that a debris trench at SWMU 1 contained liquids. While Page 1-5 cautions the use of the aerial photographic analysis, the lack of verification and information to substantiate this claim represents a data gap. For example, it is unclear if the liquid within the debris trench was combustible and if debris was burned during disposal practices. This potential practice may account for the detections of polychlorinated biphenyls (PAHs) in subsurface soil. Further, it is unclear how this potential liquid within the debris trenches may have impacted contaminant migration. Revise the Draft Streamlined RI/FS to clarify how liquids within the debris trenches may have historically impacted the migration of contaminants. Further, clarify whether the liquids could be associated with the burning of waste during the disposal process.

8. **Appendix B, SSRG Tool:**

   a. Appendix B does not provide a sufficient discussion of the facility's use of the Soil Screening and Remediation Goals (SSRG) Tool. For example, the SSRG Tool includes three scenarios for various vertical extents of contamination. Although the description of the vertical extent of contamination in Appendix B resembles Scenario 2 in the SSRG Tool, the text does not state whether that scenario was used by the facility. In addition, the appendix discusses the development of a CSM to "evaluate the use of SSRG values," yet the results of this evaluation are not presented. Finally, Note 2 on Table B-1 [Site Specific Soil Screening Level (SSL) Algorithm] states that, "Attenuation through dilution using the DAF [dilution attenuation factor] was not evaluated due to the lack of site-specific hydraulic parameters on the underlying groundwater-bearing unit." If site-specific groundwater parameters are not available, it is unclear how the SSRG Tool was used. Revise Appendix B to include a full discussion of how the SSRG Tool was applied. In cases where site-specific groundwater data were not available, provide information regarding any estimated values or alternate methodologies used.

   b. Appendix B does not provide sufficient information on the parameters used by the facility in the SSRG Tool. The SSRG Tool requires the use of multiple soil, groundwater, and chemical parameters. Appendix B clearly identifies only the chemical parameters used by the facility in the SSRG Tool, in Table B-2 (SSRG Tool Output). The discussion of the development of a CSM includes several parameters required for the SSRG Tool, including source layer thickness and soil type. However, it is not clear whether these are the same parameters which were used in the SSRG Tool, or if they were merely used in the CSM. Table B-1 [Site Specific Soil Screening Level (SSL) Algorithm] lists soil parameters, but based on the table's title, it is not apparent if these parameters were used in the SSRG Tool, or if they were used only in separate SSL calculations. In addition, the following site-specific groundwater parameters are required by the SSRG Tool, but were not listed in Appendix B: source length parallel to groundwater flow (L), aquifer saturated

horizontal hydraulic conductivity (K), aquifer thickness (da), and horizontal hydraulic gradient in aquifer (I). All site-specific and default soil and groundwater parameters used in the SSRG Tool should be clearly identified, so that the validity of the calculated SSRGs can be evaluated. Revise the Streamlined RI/FS to include and clearly identify all site-specific soil and groundwater parameters that were used in the SSRG Tool.

9. **Appendix B, SSRG Tool, Table B-1, Site Specific Soil Screening Level (SSL) Algorithm, page 1-2:** It is unclear if the use of loamy sand as the soil type for the SSRG model is appropriate. Based on Section 2.1.5 (Hydrogeology), the geology encountered during drilling operations consisted of sand, clay, silt, and gravel to depths between 15 feet below ground surface (bgs) and 30 feet bgs which is described as an ephemeral alluvial depositional environment. Revise the Draft Streamlined RI/FS to clarify how the use of loamy sand as the soil type for the SSRG model is appropriate given the geology described in Section 2.1.5.

10. **Appendix C, Human Health Risk Assessment, Section 2.3 , Selection of Chemicals of Potential Concern, page 2-2.** This section indicates that trivalent chromium is the expected form of chromium to be at the site; however, a reference to support this statement is not provided. Since the RSL for hexavalent chromium is significantly lower than the RSL for trivalent chromium, justification should be provided to demonstrate that the form of chromium is likely to be in the trivalent form. Either refer to another section in the report where this justification is provided, or add clarification in the report that provides justification that chromium at the site is most likely in the trivalent form.

11. **Appendix C, Human Health Risk Assessment, Section 2.3, Selection of Chemicals of Potential Concern, page 2-2:** Please include that all Class A/Known Human Carcinogens are retained as CoPCs.

12. **Appendix C, Human Health Risk Assessment, Section 2.3.2, COPC Screening Results, page 2-3:** EPA has released draft guidance on PRGs for dioxin. It may be helpful to include a comparison of onsite dioxin concentrations to the draft PRGs for risk management purposes. Once a final decision is made regarding the remediation goal for dioxins, sites with dioxins may need to be revisited, so including this comparison would be helpful for future evaluation. This comparison can be included elsewhere in the report, if a more appropriate place, such as the risk characterization, is identified.

13. **Appendix C, Human Health Risk Assessment, Section 3.1, COPC Exposure Pathways Quantified, page 3-1:** Please clarify the age of the trespasser in this section. Also, since child and adolescent trespassers are not included, please include text stating that the land use and environment (vegetation) is such that only adults are reasonably anticipated to access the site. Also, the exposure scenario developed for the adult trespasser is expected to be conservative to also protect for children and adolescents who may access the site less frequently.

14. **Appendix C, Human Health Risk Assessment, Section 4.2, Carcinogenic Toxicity Values, page 4-1:** Please acknowledge that certain CoPCs (B[a]P, Hexavalent Chromium) are known to act through a mutagenic mode of action, but the ADAFs are not applied since only adults are quantitatively evaluated in the HHRA.

15. **Figure 5-1, Human Health Conceptual Site Model, and Appendix C, Human Health Risk Assessment, Figure 1, Human Health Risk Exposure Model:** The Human Health CSM indicates that exposures to surface soil at SWMU 1 were not evaluated for future hypothetical residents because "the site is within a National Wildlife Refuge…residential and industrial development are not allowed." It should be noted that the site status as a National Wildlife Refuge does not, in and of itself, preclude future residential development. However, given the nature of the site as a former landfill, residential development would be incompatible with the need to maintain the integrity of the landfill containment systems. Therefore, as is consistent with *Presumptive Remedy Guidance*, revise the CSM footnotes to clarify that site exposure to future residential populations represents an incomplete pathway as residential development would be incompatible with the need to maintain the integrity of the landfill containment systems (i.e., landfill cap, etc.), and cite EPA, 1993 accordingly. Additionally, clarify in the CSM footnotes why adult and child recreational users as well as, *both* adult and adolescent trespassers are not considered applicable site receptors.

16. **Appendix C, Human Health Risk Assessment, Attachment C-1, Tables 4.1.RME, and 4.2.RME:** It is unclear from the HHRA if an exposure frequency (EF) of 52 days/year reflects actual anticipated exposure for FWS workers. The EF of 52 days/year is for a maintenance worker as outlined in the HHRA protocol contained in the *Master Standard Operating Procedures, Protocols, and Plans* (Vieques Master HHRA Protocol). Revise the HHRA to provide additional justification that an EF of 52 days/year is appropriate for FWS workers encountering SWMU 1 (including the conservation zone located on the southern portion of SWMU 1).

17. **Appendix D, Section 1.3.2.3, Small Mammals, page D-14:** The discussion of the whole-body tissue concentration in small mammal should clearly note that during the SLERA the Norway rat is considered an herbivore (98% terrestrial plants), and the Indian mongoose is considered an invertivore(97.2% soil invertebrates). During the BERA both those organisms are considered omnivores, and their dietary intake is revised accordingly (Norway Rat, 49% terrestrial plants/49% soil invertebrates & Indian mongoose 56.4% soil invertebrates/29.7% small mammals). This will ensure transparency in calculating tissue concentrations.

18. **Appendix D, SWMU 1 RI/FS Ecological Risk Assessment, Section 1.5.2, BERA Approach, 2nd bullet, page D-19**: This bullet states, "Ingestion-based (food web) COPCs [Chemicals of Potential Concern] were based upon a comparison of mean and 95% UCL [Upper Confidence Limit] exposure doses with ingestion TRVs [Toxicity Reference Values] based upon the NOAEL [No Observable Adverse Effect Level],

MATC [Maximum Acceptable Toxicant Concentration], and LOAEL [Lowest Observable Adverse Effect Level]." However, the statistical program used to calculate the 95% UCLs is not disclosed in the report. It is recommended to include in this section a brief description of how the 95% UCLs were calculated and provide each 95% UCL program output in Appendix D. The inclusion of this information will make 95% UCL calculation process transparent and independently verifiable.

19. **Appendix D, SWMU 1 RI/FS Ecological Risk Assessment, 1.5.2 BERA Approach, 4th bullet, page D-19 and D-20:** There should be a discussion regarding soil types Kv and Qa and how these soils related to the soils used as soil cover for the SWMU 1 landfill.

20. **Appendix D, SWMU 1 RI/FS Ecological Risk Assessment, 1.5.4, Risk Evaluation, 1st paragraph, page D-22:** Both Steps 2 and 3a identified selenium as a soil COPC for plants and soil invertebrates. However, the ERA concluded that the potential risk to selenium are negligible because the detected concentrations are within range with background soil concentrations and the presence of lush vegetation indicates no apparent harm to the terrestrial plant community. Simply stating that the site appears lush and diverse is insufficient grounds to conclude a lack of risk. For example, the local plant community may show lower species diversity, reduced growth, or other more subtle responses that might be observable only when compared to an unimpacted reference location. Please discuss in the uncertainty section the limitations of the current conclusion on the lack of risk to the plant community. This additional information will help support risk management decision making.

21. **Appendix D, SWMU 1 RI/FS Ecological Risk Assessment, Table 12, Soil Ecological Screening Values (ESVs) for Plants and Soil Invertebrates**: This table lists ESVs on a chemical-by-chemical basis and even includes chemicals lacking an ESVs. Comparing the ESVs in this table against the values presented in Table 18 (Screening Statistics for Plants and Soil Invertebrates – Surface Soil) found that several chemicals lacking an ESV in Table 18 were not present in Table 12. As a result, the reviewer could not verify that these chemicals truly lack an ESV due to their absence in Table 12. Revise Table 12 to include all of the chemicals analyzed in the surface soils samples from SWMU1 and consider an ESV search for each new chemical added to the list.

22. **Appendix D, SWMU 1 RI/FS Ecological Risk Assessment, Table 17, Background Data – Surface Soil:** This table lists the maximum, mean, and UTL values for inorganics and pesticides in soil types Kv, Qa, and "combined set". The purpose for deriving the "combined set" is not footnoted in this table or explained Section 1.5.2 (BERA Approach). Add a footnote to Table 17 and explain in Section 1.5.2 why the "combined set" is provided and how these data are used, if applicable.

23. **Appendix D, SWMU 1 RI/FS Ecological Risk Assessment, Table 18, Screening Statistics for Plants and Soil Invertebrates – Surface Soil:** The following discrepancies were found:

   a. The screening value for acetophenone is listed as "PAH" instead of "NSV" based the information presented in Table 12 (Soil Ecological Screening Values [ESVs] for Plants and Soil Invertebrates). Revise the screening value text for acetophenone accordingly.

   b. Inorganic and pesticide soil concentrations are compared to background UTLs in Step 3A. Comparing the background UTLs in Table 18 to those in Table 17 (Background Data – Surface Soil) shows that the background UTL for endrin ketone (1.30 ug/kg) in Table 18 is actually the maximum background concentration for the "combined set" in Table 17. Table 17 does not provide a UTL for endrin ketone. Remove this value from Table 18 or footnote why the maximum background concentrations is substituted for the UTL.

   c. This table contains a column titled "Maximum Ratio" with no footnote explaining its derivation. Add a derivation footnote to this table for clarification.