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LETTER AND U S EPA REGION III COMMENTS ON DRAFT SAMPLING AND ANALYSIS
PLAN SITE 31 REMEDIAL INVESTIGATION NWS YORKTOWN VA
09/12/2013
U S EPA REGION III



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

September 12, 2013

Mr. James Gravette
Naval Facilities Engineering Command (Navy)
1510 Gilbert Avenue
Building N-26, Room 3300
Norfolk, VA 23511-3095

Re: Draft Sampling and Analysis Plan
Site 31 Phase 3 Remedial Investigation
Naval Weapons Station Yorktown
Yorktown, Virginia

Dear Mr. Gravette:

The United States Environmental Protection Agency Region III (EPA) has reviewed Navy's *Draft Sampling and Analysis Plan Site 31 Phase 3 Remedial Investigation Naval Weapons Station Yorktown, Yorktown, Virginia*; dated July, 2013. EPA's comments on the report are provided below:

A. EPA Biological Technical Assistance Team (BTAG) Comments

1. Page 30, first bullet: The text indicates soil sampling will be of three depths (0 to 1 foot below ground surface (bgs), 3 to 7 feet bgs, and 20 to 25 feet bgs). For ecological receptors, the soil sampling depths need to include 0 to 6 inches and 6 to 24 inches bgs.
2. Page 33, Regarding surface water, sediment and seeps, the text indicates that SVOCs, PCBs, pesticides, and explosives will not be included in the analyses because they were originally located under buildings or paved surfaces. Also, runoff from Site 31 is handled through a storm water system that serves a larger industrial area. Analyses for these constituents needs to be performed for evaluation in the ecological risk assessment. Not all ecological receptors are excluded from exposure to contaminants under pavement or buildings. Also, not all ecological receptors are excluded from exposure to contaminants under gravel. Therefore, soil sampling needs to be included in the ecological risk assessment and include the contaminants listed at the beginning of this comment. Regarding the storm water system, indicate if this system only serves the Navy, if water goes through a treatment system and what the concentrations of chemicals are when it is



discharged to a surface water body. Sampling of this storm water needs to be sufficient to be able to distinguish between Site 31 as a source as opposed to another source.

3. Page 35: The text indicates the drainage to the northwest of Site 31 flows to Roosevelt Pond. Indicate if Roosevelt Pond has been sampled and if it has been evaluated in an ecological risk assessment. Also indicate if this pond was sufficiently sampled for contaminants associated with Site 31. The current ecological risk assessment needs to include this migration pathway. This may mean more samples in the drainage way and Roosevelt Pond.
4. Page 41: The text raises concern about whether or not surface water runoff from Site 31 adversely impacts ecological receptors in the adjacent habitats. In particular, soil samples need to be collected and analyzed from the edges of the pavement areas, as well as within and outside of the gravel areas.
5. Page 44, Table 3: This table indicates that one purpose of the current investigation is to evaluate both current and future risk to human and ecological receptors. To assess current risk to ecological receptors, surface water and seeps will be sampled from receiving streams. However, there is no attempt to assess the potential for future risk to ecological receptors from discharging groundwater. To assess this pathway, concentrations of chemicals in groundwater should be compared to ecological screening values as an indicator of what could discharge into surface water. Currently, as shown in Worksheet #11 on page 45, no direct ecological evaluation of groundwater is proposed.
6. Worksheet #11 on page 45 states that ecological screening values were derived from the literature compiled for use at the Naval Weapons Station. Appendix E contains references for screening values with no actual values. The tables in Worksheet #15 provide screening values but no reference for the individual values. Information on how each of these values was selected should be provided. The primary source of screening values for surface water and sediment should be the BTAG screening levels. Other values can be used if BTAG values are not available.
7. Page 47, eighth bullet: The text indicates that two seep (if present) samples will be collected. If more than two seeps are identified, then at least one sample per each seep needs to be collected and analyzed, depending upon the length of the seep and the discharge point to the drainage.
8. Worksheet #11 on page 48 states that the fieldwork is tentatively scheduled to begin in fall/winter 2013. It is important that sampling occur between late fall to early spring as this is when water will most likely be flowing in seeps and intermittent streams. Sampling outside of this time may result in a data gap in this investigation. Therefore, if the schedule for this sampling is delayed until late spring to summer 2014, an additional sampling event may be necessary in late fall 2014 or when seeps and intermittent streams are flowing.
9. Figure 4 identifies groundwater flow directions. The text needs to state if groundwater from Site 31 enters the drainage ways along their entire length or at specific locations. Sampling of these drainage ways needs to be sufficient to minimize any uncertainty.



10. Figure 11 shows the proposed surface water and sediment sample locations. Surface water and sediment samples in the drainage way northwest of Site 31 should increase from two samples in the vicinity of the site and include the migration pathway to and include Roosevelt Pond. Southwest of the label for Site 31, there appears to be a pond. This pond will need to be sampled. This pond also has a discharge pipe. Indicate if the proposed seep sample YS12-SP04 is associated with this discharge pipe. If not, then an additional surface water and sediment sample will be needed where the flow from this discharge pipe enters the drainage.
11. Appendix E needs to contain a table of ecological screening values for soil.

B. EPA Toxicologist Comments

1. Page 41: SAP Worksheet #10 discusses exposure pathways and receptors at the site. The report states, in part, that future industrial workers and residents could be exposed to surface soil at Site 31; however, contact with subsurface soil for these receptors is not mentioned.. An explanation in this regard should be provided in the report.
2. Page 45: In addition to the screening parameters discussed in SAP Worksheet #11, VOC concentrations in soil should be compared to soil-to-groundwater migration values (SSLs). This analysis will help determine if a contaminant source to groundwater exists at the site.
3. The report indicates that industrial RSLs will be used to screen soil at the site. Note, however, that if residential screening is not performed, the need for Institutional Controls to protect this receptor population will be necessary at the site.

If you have any questions, please contact me at (215) 814-3362 or via e-mail at oduwole.moshood@epa.gov .

Sincerely,



Moshood Oduwole, Remedial Project Manager
NPL/BRAC Federal Facilities Branch.

cc: Wade Smith, VADEQ





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October 17, 2013

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Mr. Moshood Oduwole, Remedial Project Manager
NPL/BRAC Federal Facilities Branch (3HS11)
United States Environmental Protection Agency, Region 3
1650 Arch Street
Philadelphia, Pennsylvania 19103

Subject: Response to Comments *Draft Sampling and Analysis Plan
Site 31 Phase 3 Remedial Investigation, Naval Weapons Station Yorktown, Yorktown
Virginia*

Dear Mr. Oduwole:

This letter is in response to the USEPA's comments on the *Draft Sampling and Analysis Plan Site 31 Phase 3 Remedial Investigation Naval Weapons Station Yorktown, Yorktown, Virginia*; dated July, 2013. EPA comments are shown followed by the Navy responses in italics.

A. EPA Biological Technical Assistance Team (BTAG) Comments

1. Page 30, first bullet: The text indicates soil sampling will be of three depths (0 to 1 foot below ground surface (bgs), 3 to 7 feet bgs, and 20 to 25 feet bgs). For ecological receptors, the soil sampling depths need to include 0 to 6 inches and 6 to 24 inches bgs.

The purpose of this phase of investigation is to spatially delineate the TCE in soil to estimate contaminant mass for the RI and FS. The source areas at Site 31 include the area between Sheds 3 and 6 (shallow subsurface soil, 3-5 feet bgs, and deep subsurface soil, greater than 20 feet bgs) and a smaller area north of Shed 4 (deep subsurface soil). The area between Shed 3 and 6 is paved with approximately 5 feet of fill covering the original grade. The source of contamination north of Shed 4 has been identified as a suspected underground storage tank located beneath a parking area. Surface (0-6 inches bgs) and shallow subsurface (2-3 feet bgs) soil sampling has been completed in the source areas and the site-specific COCs (chlorinated VOCs) have been identified and will be further delineated during this event. No changes are recommended to the sampling approach for this SAP.

Terrestrial pathways for ecological receptors are incomplete due to the industrial nature of the site (see Worksheet 10); the Partnering Team has previously agreed with this conclusion. The primary transport pathways from the source areas are infiltration and migration through groundwater and do not include overland flow because the

sources are located below ground surface and storm water is diverted through drainage ditches and the storm sewer system that discharges into the tributaries leading to Ballard Creek. The tributaries to the north and south would be the main receptors to any flow from the industrial area and they are being sampled for site specific contaminants (VOCs and metals) that were identified during Phase 1 and 2 soil and groundwater sampling. Thus, soil sampling depths do not need to account for ecological exposures.

2. Page 33, Regarding surface water, sediment and seeps, the text indicates that SVOCs, PCBs, pesticides, and explosives will not be included in the analyses because they were originally located under buildings or paved surfaces. Also, runoff from Site 31 is handled through a storm water system that serves a larger industrial area. Analyses for these constituents needs to be performed for evaluation in the ecological risk assessment. Not all ecological receptors are excluded from exposure to contaminants under pavement or buildings. Also, not all ecological receptors are excluded from exposure to contaminants under gravel. Therefore, soil sampling needs to be included in the ecological risk assessment and include the contaminants listed at the beginning of this comment. Regarding the storm water system, indicate if this system only serves the Navy, if water goes through a treatment system and what the concentrations of chemicals are when it is discharged to a surface water body. Sampling of this storm water needs to be sufficient to be able to distinguish between Site 31 as a source as opposed to another source.

Regarding soil, see the response to BTAG Comment 1. Based on the CSM, analytes of concern for aquatic media are VOCs. Metals were later added based on a qualitative evaluation of existing groundwater data (comparison to freshwater ESVs). The other analytical groups were excluded for the reasons stated in the UFP-SAP (refer to Worksheet 17). There is no treatment system for surface water at Site 31 other than the stormwater retention pond located to the northwest. This pond only serves Navy property, but receives surface water input from operations outside the Site 31 boundary. Information regarding the existence of the stormwater retention pond and areas that it serves will be added to the text, but no other changes are recommended to the surface water, sediment, or seep sampling approach for the SAP.

3. Page 35: The text indicates the drainage to the northwest of Site 31 flows to Roosevelt Pond. Indicate if Roosevelt Pond has been sampled and if it has been evaluated in an ecological risk assessment. Also indicate if this pond was sufficiently sampled for contaminants associated with Site 31. The current ecological risk assessment needs to include this migration pathway. This may mean more samples in the drainage way and Roosevelt Pond.

Based on the conceptual site model (Worksheet 10), the majority of flow from the source area between Sheds 3 and 6 (surface and groundwater) from the site is southeast toward the tributary of Ballard Creek. With the exception of one seep sample, all previously sampled surface water, seep, and sediment samples collected in the tributary northwest of the site (that eventually leads to Roosevelt Pond) did not

contain site-related contaminants (VOCs) as summarized in Worksheet 10 and the AOC 23 Site Inspection report. One seep sample north of Site 31 did contain TCE at a concentration of 19 µg/L (YS12-SP03) which was above the human health risk screening value of 2.6 µg/L but below the Yorktown ESV of 47 µg/L. Select locations within the tributary will be resampled to confirm that the tributary leading to Roosevelt Pond continues to be unimpacted by activities at Site 31. See Figure 11 for proposed sample locations. The Navy believes it is premature to sample Roosevelt Pond or elsewhere in this drainage until the results of the proposed samples are evaluated. No changes are proposed for surface water, sediment, or seep sampling for the tributary north east of Site 31.

4. Page 41: The text raises concern about whether or not surface water runoff from Site 31 adversely impacts ecological receptors in the adjacent habitats. In particular, soil samples need to be collected and analyzed from the edges of the pavement areas, as well as within and outside of the gravel areas.

See response to BTAG Comments 1 and 3. Based on the conceptual site model, groundwater impacts to surface water are the dominant pathway for site-related contaminants. Soil samples have previously been collected within and around the source areas of Site 31 (see Figure 5 for locations and Appendix C for data), data indicate the primary contaminants of potential concern (human health industrial scenario) are chlorinated VOCs and metals. No additional soil samples are recommended based on the CSM.

5. Page 44, Table 3: This table indicates that one purpose of the current investigation is to evaluate both current and future risk to human and ecological receptors. To assess current risk to ecological receptors, surface water and seeps will be sampled from receiving streams. However, there is no attempt to assess the potential for future risk to ecological receptors from discharging groundwater. To assess this pathway, concentrations of chemicals in groundwater should be compared to ecological screening values as an indicator of what could discharge into surface water. Currently, as shown in Worksheet #11 on page 45, no direct ecological evaluation of groundwater is proposed.

Worksheet 11, Page 45 will be updated to include evaluation of groundwater. Groundwater PALs (Worksheet 15) include ESVs and Table 3 (Worksheet 11) indicates that the only media excluded from the ERA is soil (groundwater is included).

6. Worksheet #11 on page 45 states that ecological screening values were derived from the literature compiled for use at the Naval Weapons Station. Appendix E contains references for screening values with no actual values. The tables in Worksheet #15 provide screening values but no reference for the individual values. Information on how each of these values was selected should be provided. The primary source of screening values for surface water and sediment should be the BTAG screening levels. Other values can be used if BTAG values are not available.

The values in Appendix E are in tables that follow the list of references (Appendix E-1 and E-2). BTAG values were considered as one of multiple sources during the ESV compilation. A complete copy of Appendix E is attached in case it was missing from the reviewed version of the report.

7. Page 47, eighth bullet: The text indicates that two seep (if present) samples will be collected. If more than two seeps are identified, then at least one sample per each seep needs to be collected and analyzed, depending upon the length of the seep and the discharge point to the drainage.

This is reasonable provided that the seeps are separated by a reasonable distance (e.g., more than 50 feet). Language will be added to indicate that a seep survey will be conducted prior to sampling and that additional seep samples will be added, as needed, based on the results of that survey (BTAG will be invited to participate).

8. Worksheet #11 on page 48 states that the fieldwork is tentatively scheduled to begin in fall/winter 2013. It is important that sampling occur between late fall to early spring as this is when water will most likely be flowing in seeps and intermittent streams. Sampling outside of this time may result in a data gap in this investigation. Therefore, if the schedule for this sampling is delayed until late spring to summer 2014, an additional sampling event may be necessary in late fall 2014 or when seeps and intermittent streams are flowing.

The Navy agrees that every effort will be made to sample seeps during the late fall to early spring as determined by field conditions. A sentence will be added to the SAP text to emphasize the timing of the seep sampling and that the exact timeframe for sampling will be determined in consultation with the Partnering Team and technical support.

9. Figure 4 identifies groundwater flow directions. The text needs to state if groundwater from Site 31 enters the drainage ways along their entire length or at specific locations. Sampling of these drainage ways needs to be sufficient to minimize any uncertainty.

This phase of investigation was initiated to evaluate the potential source of VOCs detected in surface water downgradient of the source area between Sheds 3 and 6. Samples have been selected in all drainage ways downgradient of the source area to ensure that adequate coverage of potential discharge locations is achieved (See Figure 11). No changes are recommended to the sample locations for surface water and sediment.

10. Figure 11 shows the proposed surface water and sediment sample locations. Surface water and sediment samples in the drainage way northwest of Site 31 should increase from two samples in the vicinity of the site and include the migration pathway to and include Roosevelt Pond. Southwest of the label for Site 31, there appears to be a pond. This pond will need to be sampled. This pond also has a discharge pipe. Indicate if the proposed seep sample YS12-SP04 is associated with this discharge pipe. If not, then

an additional surface water and sediment sample will be needed where the flow from this discharge pipe enters the drainage.

See the response to BTAG Comment 3 regarding Roosevelt Pond and its tributary. The pond and discharge pipe in the figure is a stormwater retention pond for runoff from the industrial area located northwest of Site 31 (including Buildings 2086, 683, 2090, etc) and is not related to Site 31. Therefore, sampling will not occur in the retention pond or associated outfall. SP04 is not related to the discharge pipe; its location is coincidental. If water is observed flowing from the retention pond outfall, sampling will be delayed at SP04 until such flows is not observed. Language will be added to the SAP to reflect this.

11. Appendix E needs to contain a table of ecological screening values for soil.

See the response to BTAG Comment 1. This phase of investigation only includes sampling soil in the source area for TCE to support estimating the volume of source material. The soil samples collected during this event will not be compared with ESVs.

B. EPA Toxicologist Comments

1. Page 41: SAP Worksheet #10 discusses exposure pathways and receptors at the site. The report states, in part, that future industrial workers and residents could be exposed to surface soil at Site 31; however, contact with subsurface soil for these receptors is not mentioned. An explanation in this regard should be provided in the report.

Worksheet 10, Page 41 will be updated to include potential contact with subsurface soil for industrial and residential receptors.

2. Page 45: In addition to the screening parameters discussed in SAP Worksheet #11, VOC concentrations in soil should be compared to soil-to-groundwater migration values (SSLs). This analysis will help determine if a contaminant source to groundwater exists at the site.

Industrial RSLs will be used to screen the soil collected during Phase 3 of the investigation since the purpose is to delineate highly contaminated soil for nature and extent purposes. The SSLs were included as PALs for the data collected during previous phases of investigation at Site 31, references to previous UFP-SAPs and clarifying text will be added to this section.

3. The report indicates that industrial RSLs will be used to screen soil at the site. Note, however, that if residential screening is not performed, the need for Institutional Controls to protect this receptor population will be necessary at the site.

See response to Toxicologist Comment 2. Data collected from previous phases of investigation will be compared with the most current residential RSLs as well. This

Page 6
October 17, 2013

will be added to WS 11 and a reference will be made to the previous UFP-SAPs that the samples were collected under to help clarify.

Sincerely,

CH2M HILL

A handwritten signature in cursive script that reads "Kristin R. Brickman".

Kristin Brickman
Project Manager

cc: Mr. Jim Gravette/NAVFAC
Mr. Wade Smith/VDEQ
Mr. Bill Friedmann/CH2M HILL
Ms. Mary Anderson/CH2M HILL

Brickman, Kristin/RAL

From: Friedmann, William/VBO
Sent: Wednesday, November 20, 2013 5:08 PM
To: High, Jessica/CLT
Cc: Anderson, Mary/VBO; Brickman, Kristin/RAL; Cook, Laura/VBO
Subject: FW: Yorktown Site 31 Phase 3 RI UFP-SAP

Jessica,

See the response to the Site 31 comments. It appears that the EPA has accepted our comment letter and the next step is to create the red-line document.

Thanks,
Bill

From: Oduwole, Moshood [mailto:Oduwole.Moshood@epa.gov]
Sent: Wednesday, November 20, 2013 4:35 PM
To: Friedmann, William/VBO
Cc: james.gravette@navy.mil; Anderson, Mary/VBO; Brickman, Kristin/RAL; Wade.Smith@deq.virginia.gov
Subject: RE: Yorktown Site 31 Phase 3 RI UFP-SAP

Bill:

EPA has completed the review of the Site 31 RTCs and does not have any further comment at this time. Please incorporate all changes and submit the red-lined draft final version for EPA's review.

Sincerely



M.G Oduwole

US EPA Region III

Hazardous Site Cleanup Division

NPL/BRAC Federal Facilities Branch (3HS11)

T: 215.814.3362 * F: 215.814.5518 * oduwole.moshood@epa.gov * www.epa.gov

From: William.Friedmann@CH2M.com [mailto:William.Friedmann@CH2M.com]
Sent: Thursday, October 17, 2013 12:35 PM
To: Oduwole, Moshood
Cc: james.gravette@navy.mil; Mary.Anderson@CH2M.com; Kristin.Brickman@ch2m.com; Wade.Smith@deq.virginia.gov
Subject: RE: Yorktown Site 31 Phase 3 RI UFP-SAP

Moshood,

Following our discussion with you regarding the Site 31 RTCs, attached please find the Navy's response to your September 12, 2013 comments. Please review along with your technical people as soon as is possible given the political climate.

Thanks,
Bill

From: Oduwole, Moshood [<mailto:Oduwole.Moshood@epa.gov>]
Sent: Thursday, September 12, 2013 12:43 PM
To: Brickman, Kristin/RAL; james.gravette@navy.mil; Wade.Smith@deq.virginia.gov; John_McCloskey@fws.gov
Cc: Friedmann, William/VBO; Anderson, Mary/VBO
Subject: RE: Yorktown Site 31 Phase 3 RI UFP-SAP

Jim:

Please see the attached EPA comment letter (PDF and DOCX) on the above subject document. Please let me know if you have any questions.

Regards
Moshood

Moshood Oduwole

Geologist/Remedial Project Manager

US EPA Region III

Hazardous Site Cleanup Division

NPL/BRAC Federal Facilities Branch (3HS11)

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From: Kristin.Brickman@ch2m.com [<mailto:Kristin.Brickman@ch2m.com>]
Sent: Tuesday, July 16, 2013 8:36 AM
To: james.gravette@navy.mil; Oduwole, Moshood; Wade.Smith@deq.virginia.gov; John_McCloskey@fws.gov
Cc: William.Friedmann@CH2M.com; Mary.Anderson@CH2M.com; Kristin.Brickman@ch2m.com
Subject: Yorktown Site 31 Phase 3 RI UFP-SAP

Good Morning,

This e-mail is to notify you that the Draft Site 31 Phase 3 RI UFP-SAP has been shipped and will arrive at your respective offices shortly. The cover letter is attached with distribution information. Comments are requested by September 13.

Please let me know if you have any questions or concerns.

Thank you,

Kristin R. Brickman, P.E.*
Environmental Engineer

****Please note new address****

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