N60138.AR.003028
FISC WILLIAMSBURG
5090.3a

U S NAVY RESPONSE TO THE U S EPA REGION III COMMENTS ON THE SAMPLING AND ANALYSIS PLAN ADDENDUM FOR AREA OF CONCERN 6 (AOC6) PENNIMAN AOC WASTE SLAG MATERIAL SUBAREA WILLIAMSBURG FISC VA

6/26/2012

U S NAVY

Response to Comments

Soil Sample Collection
Sampling and Analysis Plan Addendum
AOC 6 – Penniman AOC, Waste Slag Material Subarea

Naval Weapons Station Yorktown Cheatham Annex
Williamsburg, VA
June 26, 2012
Revised 7/20/12 (based on June 28, 2012 Partnering Team discussion of EPA RPM Comment 1 and EPA BTAG Comment 1)

*EPA ESC General Comment: The document is inconsistent with the naming conventions used in 40CFR. A sampling and analysis plan (SAP) is defined as being both a quality assurance project plan (QAPP) and a field sampling plan (FSP) combined. A QAPP can reference other documents. A FSP must be stand alone - as it could well be the only document with the sampling team in the field. This document references the original QAPP repeatedly, as in SAP Worksheet #11 (Original QAPP -**Worksheet #12, Worksheet #28, Worksheet #36, Worksheet #37…and others)** while technically an acceptable practice; as a practical matter it makes this document impossible to review. For future iterations of this document, please include all the named worksheets as an appendix, or include the original QAPP.*

Response: For ease of review, the original UFP-QAPP has been included as Appendix A (and the existing appendices re-lettered accordingly).

*EPA ESC Comment 1: [**General**] a) The document refers to "TAL" to describe what inorganic analytes the project is concerned with. It is assumed by the reviewer that TAL is from the Superfund contract abbreviation for Target Analyte List. This particular plan seems to also have its own subset of SW-846 metals: so the TAL abbreviation is not sufficient to define the analytes needed for this sampling event. If you wish to use the Superfund Contract Laboratory Program (CLP) protocols, please refer to the specific contract which has the parameters needed for this event. For example, CLP contract SOW 5.4 specifies the analyte suite and other method parameters needed. Alternatively, the text can identify SAP Worksheet #15-1 as identifying the TAL list for this project.*

Response: For this project, the SW-846 methods, not CLP, will be used, as indicated by the last bullet on page 29 of 58 (Worksheet 11). Reference to Worksheet #15-1 was added to this bullet.

b) The data validation protocol is referenced to a second document. The validation should address 100% of data generated and be consistent with those specified in the documents ARegion III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis,@ April 1993. Validation should be performed by an independent third party, and the third party validators should be named prior to sampling. All data packet and electronic tapes should be accessible to the EPA upon request. Please state the validation level, personnel, their affiliations, and Data Validation guidance documents to be used in validation.

Response: The validation will address 100% of the data generated and will be consistent with those specified in the documents referenced above. The SAP Worksheets 34-36 have been revised to provide this detail, rather than just reference the original QAPP (copy of revised worksheet is provided). The validator, CH2M HILL, has been named prior to sampling. According to the DoD Quality Systems Manual

(QSM) Version 4.2 (dated 10/25/2010), third-party is defined as "from outside the laboratory" or data generator. Additionally, Part 2B of the UFP-QAPP Compendium (March 2005) gives the following guidance on validation, which is similar to the DoD QSM in regards to validation of the analytical data:

> **Step II (validation):** Step IIa (Compliance with Methods, Procedures, and Contracts). Validation associated with Step IIa should be conducted by an entity *at least one step removed from the entity that generated the data* (field or analytical). In general, this will mean that validation Step IIa of analytical data will be conducted outside the laboratory, while the validation of the field sampling activities will be conducted by entities working for the prime contractor who are not responsible for the field sampling activities.

While CH2M HILL will collect the samples, they are not the entity that generates the data, that entity is the laboratory specified in the SAP. CH2M HILL has a team of chemists that completes the data validation and is not associated with the project in any other fashion, is 100% completely removed from the sample collection and data generation, and is located in CH's Gainesville, FL office. The group consists of chemists with decades of laboratory and data validation experience. CH2M HILL has performed data validation for projects on several Region 3 Navy bases for a few years now and with no issues. All data packet and electronic files are accessible to EPA upon request. The use of CH2M HILL to perform data validation is a Partnering Team decision. No changes were made to the SAP.

*EPA ESC Comment 2: [**SAP Worksheet #11, page 30]** The use of four data quality levels as referenced has been superseded. Currently there are two levels:*

> *i) definitive data, and*
> *ii) screening data*

The requirement should state that all definitive data submitted to EPA Region 3, must have a full CLP like deliverable package.

<u>Response</u>: On SAP Worksheet #11 (page 30 of 58), it does state "The data report will include a Contract Laboratory Program (CLP) Level IV-equivalent package" (refer to the second bullet from the bottom of the page). No changes were made to the SAP.

*EPA ESC Comment 3: [**SAP Worksheet #1, page 29**] This section states that having an accredited laboratory ensures the quality of the analytical results. Accreditation does not establish anything about the quality of the current analysis being performed. The quality of the analysis is demonstrated by the individual sample delivery group's (SDG) adherence to the QC protocols; and the documentation for that SDG which supports the Precision, Accuracy, Representativeness, Completeness parameters, performance on evaluation samples, and audits. As this project references SW-846, the quality of the data necessary for this site's environmental decision will be determined by the quality control parameters used in the analysis. As ATest Methods for Evaluating Solid Waste,@ SW-846 is a guidance document; all analytical parameters have to be specified when using this document; which is what establishes the quality of the analytical results. Parameters which need to be specified include; the specific analytes, (including their CAS numbers,) their required detection limits, the calibration precision requirements, the percentage deviation and the matrix spike matrix spike duplicate, the extraction or workup method...the entire analytical suite needs to be defined when utilizing most methods in SW-846.*

<u>Response</u>: The parameters cited are already specified within the SAP Addendum on the following worksheets:

Worksheets 15-1 and 15-2 (for pH) - *the specific analytes, (including their CAS numbers,)* and *their required detection limits*

Worksheet 24 - *the calibration precision requirements*

Worksheets 28-1 and 28-2 - *the percentage deviation and the matrix spike matrix spike duplicate and the extraction or workup method*

In addition, the original UFP-QAPP is now included as Appendix A.

*EPA ESC Comment 4: [**SAP Worksheet #10 page 28**] More detail is needed in this section. Particular emphasis needs to be placed on the decision threshold. The sampling event has delineated its objectives as:*

i. "Confirm whether a release of inorganic constituents from the waste slag pile has occurred."

ii. "Determine if further investigation, remedial/removal action, or control mechanism are warranted."

There needs to be a numerical threshold concentration set for every analyte in this study as it pertains to the above objectives. The statement needs to be framed like: "A release will be assumed to be present if any of the constituents have a determined value above the Region 3 RSLs" or "…above background as established by the USGS", or "...above the values in Table X as established by our toxicologist." The second question also needs threshold values established with a numerically grounded format. These thresholds can then be used to determine the applicability of the proposed analytical methods and the ability to achieve the necessary sensitivity for this sampling event. These thresholds need to be established before sampling begins.

Response: This information is provided in Figure 5, the Decision Tree. Also, the referenced bullets have been revised as follows:

The objectives of the soil sampling are to:

- Confirm whether a release of inorganic constituents from the waste slag pile has occurred. A release will be assumed to be present if any of the constituents have a determined value above the Project Action Limits (PALs) presented in Worksheet 11 (i.e., background 95 percent UTLs and USEPA residential soil RLSs and SSLs and literature-based ecological screening values compiled for use at CAX). The PAL values are listed in Worksheet 15-1.
- Determine if further investigation, remedial/removal action, or control mechanism are warranted. If a release has been determined, the TM will recommend further investigation. If a release has not been determined, the TM will recommend removal of the waste slag pile and site restoration, followed by no further action.

*EPA ESC Comment 5: **[SAP Worksheet #9, page 24]** There is a lengthy discussion of previous organic testing performed at the waste slag pile, but the results of those tests are not presented or documented in any way. If the results are known, state them, and show how they support the decision to drop the organics from the analytical suite for this sampling event.*

Response: The referenced organic results have been added to the SAP as Appendix B (and the existing appendices re-lettered accordingly).

*[**SAP Worksheet #10, page 29**] There is a duplicate bulleted paragraph "A maximum…"*

Response: The referenced bullets are similar, but not duplicates. The first bullet refers to *surface* soil samples, while the second bullet refers to *subsurface* soil samples. No changes were made to the SAP.

EPA Tox Comment 1: I recommend performing chromium speciation on the five soil samples collected around and beneath the slag pile. Determining whether chromium is present in the toxic hexavalent form or the more benign trivalent form could make a difference when determining the extent of excavation.

Response: The objective of the sampling presented in this SAP is to determine if there has been a release from the waste slag pile. If a release is determined, then further investigation will be recommended, which may include chromium speciation, if chromium is identified as a COPC. The Partnering Team will discuss and decide the path forward for the site during the technical memorandum review stage of the project.

EPA RPM Comment 1: Can we add in a sentence which states what exceeded the comparison to the approved background dataset as well.

Response: Since this comment did not specify a particular section of the SAP, CH2M HILL asked the EPA RPM at the June 2012 Partnering Meeting to clarify the statement. The EPA RPM reviewed his notes and said his comment was in regards to the Executive Summary where a summary of the 1999 SI data was presented (paragraph one, last sentence). He was unsure what background criteria was exceeded. CH2M HILL informed him that the 1999 SI data was compared to site-specific background data collected as part of the SI, as referenced in the sentence. However, the newly collected data will be compared to the PALs outlined in the SAP Addendum, which includes the approved 95% UTLs. This being the case, the EPA RPM said, per this discussion, the comment has been satisfied and that no changes to the Executive Summary (or SAP) were needed to address the comment.

EPA RPM Comment 2: What if we find levels significantly exceeding the RSL in the 6-24in samples. Will we be sampling deeper or will this be addressed via confirmation samples following the removal action?

Response: The results of the sampling presented in the SAP will be presented in a technical memorandum, including recommendations for the next steps for the site. If the data indicate further investigation is warranted, that recommendation will be made. The Team will decide if any additional samples will be collected prior to or following the removal action. No changes were made to the SAP.

EPA BTAG Comment 1: Worksheet #10 on page 28 states that soil samples (co-located surface and subsurface) will be collected from one location underneath the waste slag pile and analyzed for total inorganic constituents and pH. The collection of one sample within the pile is insufficient since the distribution of contaminants is unknown, and if concentrations are heterogeneous, there is a high potential for a false negative (low metal concentrations detected even though concentrations are high within the pile). A minimum of three soil samples should be collected underneath the pile. In addition, two samples should be collected along the two long sides of the pile, and one sample should be collected along the short side of the pile. The preferential surface water migration pathways off site also need to be identified and sampled.

Response: The CAX Partnering Team discussed this comment at the June 2012 Partnering Meeting. CH2M HILL proposed keeping the perimeter sample locations at four (as presented in the SAP) and adding one additional "underneath" sample location, for a total of two underneath locations – one each at opposite ends of the pile. The EPA RPM said, since there will be post removal sampling, he would rather move one of the two underneath sample locations and add it to the locations along the perimeter

of the pile. The Team agreed with this proposal to collect soil samples (surface and subsurface) from five evenly distributed locations around the slag pile and from one location underneath the slag pile. The Team also agreed that if it is not possible to collect a soil sample from underneath the slag pile, the underneath location would be added to the number of locations around the perimeter of the slag pile; therefore, surface and subsurface samples will be collected from a total of six locations. The Team agreed this proposal is sufficient to address this comment. A summary of this discussion was added to the SAP as Worksheet # 9-E.

Regarding migration pathways off-site, the objective of the sampling presented in this SAP is to determine if there has been a release from the waste slag pile. If a release is determined, then further investigation will be recommended and migration pathways identified and sampled, as applicable. The Partnering Team will discuss and decide the path forward for the site during the technical memorandum review stage of the project.