

PHIL-27755

April 25, 2023

Project Number 08005-WE04

Ms. Sarah Kloss (3HS11)  
U.S. Environmental Protection Agency  
Four Penn Center  
1600 John F Kennedy Boulevard  
Philadelphia, Pennsylvania 19103

Mr. Colin Wade  
Environmental Protection Specialist  
Pennsylvania Department of Environmental Protection  
Southeast Regional Office  
2 E. Main Street  
Norristown, Pennsylvania

Reference: Contract No. N6247016D9008  
Contract Task Order (CTO) No. WE04

Subject: Response to Response to Comments on Willow Grove Draft Final Technical Memorandum for Soil Sampling at the Maple Avenue Parcel, October 2022  
Former Naval Air Station Joint Reserve Base Willow Grove  
Horsham Township, Pennsylvania

Dear Ms. Kloss and Mr. Wade:

On behalf of the Navy, Tetra Tech is pleased to provide the following response to rebuttal on the Willow Grove Draft Final Technical Memorandum for Soil Sampling at the Maple Avenue Parcel, dated October 2022. In response to the EPA rebuttal submitted on February 15, 2023, the following responses are offered:

**U.S. EPA Linda Watson, Toxicologist, Comments**

**1. Rebuttal Comment #1- Background**

I accept the Navy's response. However, the response is not completely accurate since risk from arsenic was essentially subtracted at the conclusion of the risk assessment by using unacceptable background comparison test (e.g., comparing mean concentration of site to mean concentrations of background). As noted in Comment #2, the mean concentration of a contaminant is compared against a mean concentration of background. This is *not* an acceptable method of background analysis. Acceptable background analysis should employ statistical methods such as "mean population" comparative test which should be determined by using ProUCL. Acceptable statistical testing include Mann-Whitney test, Wilcoxin Rank Sum and/or graphical presentations. All which are available using ProUCL.

Although it is inappropriate to subtract risk from any contaminant at the beginning or conclusion of the risk assessment, in regards to the Maple Ave Parcel, it was not necessary to subtract out the risk from arsenic since once segregated by target organ, all risk are below the acceptable HI based on target

organ analysis even if arsenic is included. In addition, carcinogenic risk is also acceptable even with arsenic included (CR=2.0E-05).

This rebuttal comment is being offered as clarification to assure appropriate statistical analysis are performed in the future when evaluating background at all sites.

**Response:** *Noted.*

**2. Rebuttal Comment #2- Thallium**

Although I told the Navy I would be willing to accept multiple lines of qualitative analysis in respect to eliminating thallium as a COC, I also informed the Navy I was attempting to consult with someone who has more laboratory analysis experience than I. This morning, I was able to consult with Glorines Suarez Rivera from PADEP who has laboratory analysis experience and also has the same concerns regarding the rejected thallium data. Together, Ms. Rivera and I reviewed the Data Validation package and determined the highest Reporting Limit for thallium was 5.5 mg/kg. This concentration exceeds thallium screening level of 0.78 (HI=1) and yields a non-cancer HI=7.0 for the Child Resident which exceeds EPA's acceptable non-cancer risk. Although the multiple lines of evidence suggest thallium should not be a concern at the Maple Ave Parcel, it is imperative we follow proper guidance protocol to properly eliminate contaminants as COCs and since reporting limits for thallium exceed it's RSL guidance protocol recommends alternative analysis that meet or are below the respective RSL of the contaminant. Therefore, we are requesting to see the raw analytical data to properly ascertain why ALL the thallium results were rejected. Based on consultation with Ms. Rivera, alternative laboratory methods and analysis are available. Therefore, we are recommending re-sampling of thallium in soils or transfer of the property with restricted land use (e.g., no future Residential use).

Ms. Rivera and I am open to have a call with the Navy to discuss this issue further.

**Response:** *Concur. Thallium samples will be collected in both the Outside Land South and the Additional Land South areas. A Sampling and Analysis Plan is currently being drafted and will be provided to EPA for review.*

**3. Rebuttal Response to Comment #3 – Accepted.**

**Response:** *Noted.*

**4. Rebuttal to Comment #4 - Background**

Mean concentrations of SVOCS and 95% UTL concentrations for metals should NOT be used to determine if a contaminant is above or below background. See Comment #1 in respect to how to properly determine background. Although UTL' can be used as an additional tool to help determine background and more appropriately, hot-spots, comparing background UTL's alone to site concentrations is not an acceptable background test nor is comparing background mean concentrations to site mean concentrations acceptable background test.

**Response:** *Noted.*

**5. Rebuttal Response to Comment #5 – Accepted.**

**Response:** *Noted.*

## 6. Rebuttal Response to Comment #6 – Chromium

- a. Although the concentrations detected 24.7 mg/kg at Outside Land South and 35.6 mg/kg at Additional Land South visually exceed background concentrations of 15.3 mg/kg and 19.3 mg/kg, appropriate background statistical testing (ProUCL) should be used to properly eliminate contaminants as a COCs. See Comment #1. However, since the detected concentrations are typical for trivalent chromium background concentrations I am willing to accept.

**Response:** *Noted.*

- b. In the future, please make all efforts to follow the proper protocol in respect to chromium which means if chromium exceeds risk (Using hexavalent chromium toxicity levels as required by EPA guidance) then background analysis should be performed. If chromium exceeds background then hexavalent chromium speciation analysis should be performed to eliminate hex chromium as a COC. Although I have agreed to accepted hexavalent chromium results of neighboring sites, my preference is to follow guidance protocol and have hexavalent chromium results for all sites where chromium exceeds risk and exceeds background concentrations since the presence of hexavalent chromium is completely dependent on past site activities which varies from site/OU/AOC to site/OU/AOC.

Many Federal Facilities are finally responding to EPA's requirement to analyze hexavalent chromium by simply doing the hexavalent chromium analysis upfront rather than spend efforts debating, arguing, disputing and attempts to use alternative methods to eliminate hexavalent chromium seeing this is standard guidance requirement for EPA CERCLA sites. Moving forward, I respectfully request the Willow Grove site consider doing the same.

**Response:** *Noted.*

7. Finally, although not provided as a comment based on my review, Ms. Rivera and I discussed how the Draft Final Tech Memo at Maple Avenue Parcel Soil Sample, October 2022 fails to include an uncertainty section which is required when risk is evaluated. Please include an uncertainty section in the report.

**Response:** *An annotated uncertainty section will be included with the final memorandum.*

## PADEP Comments

1. The Section 5.6 summary states that the Phase II Remedial Investigation report for Site 12 South Landfill does not identify endangered species as recognized by Pa under Chapter 147, Title 58. The determination that endangered species were not identified in the Phase II Remedial Investigation report is now several years out of date. DEP recommends utilizing Pennsylvania Natural Diversity Inventory information to ensure that this information is based on current information and is accurate to ensure that species are not affected.

**Response:** *A PNDI was conducted on February 28, 2023 for the FOST 1 property and showed no species of concern (<https://conservationexplorer.dcnr.pa.gov/content/map>).*

2. The reference to Chapter 147, Title 58 appears to be in error. Current lists of Pennsylvania's Endangered, Threatened and Candidate Species are located under Title 58, Chapter 75.

**Response:** *See response to Comment #1.*



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Please do not hesitate to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Rocco Mercuri'.

Rocco Mercuri, PG  
Senior Project Manager

RM/nfs

c: Brian Helland (Navy BRAC PMOE)  
Dawn DeFreitas (Navy BRAC PMOE)  
Navy Caretaker Office  
NIRIS RDM  
Horsham Library  
File