Message (Digitally Signed)

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Sent: 8/18/2021 9:28:35 PM
To: juanita.bacey@dtsc.ca.gov; Stoick, Paul T CIV USN NAVFAC SW SAN CA (USA) [paul.t.stoick.civ@us.navy.mil]
CC: Han, Terry@CDPH [terry.han@cdph.ca.gov]; Singh, Sheetal (CDPH-EMB) [sheetal.singh@cdph.ca.gov]; Johnson, Nels [Nels.Johnson@aptim.com]; Condit, Rose [rose.condit@aptim.com]; raymond.schul@aptim.com; Woo, Cynthia [cynthia.woo@aptim.com]; Praskins, Wayne [Praskins.Wayne@epa.gov]; Bercik, Lisa M. [lisa.bercik@aptim.com]; Ufuktepe, Yuksel@CDPH [Yuksel.Ufuktepe@cdph.ca.gov]; amy.mangel@aptim.com; matthew.liscio@navy.mil; terry.romanko@eurofinset.com
Subject: RE: Technical Questions on Sr Exceedance Reports and RSY Data Reports
Attachments: smime.p7s

Thank you Nina,

We are working on responses to these comments and will get a deliverable back to you shortly.

Very Respectfully,

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Sent: Friday, August 13, 2021 11:54 AM
To: Stoick, Paul T CIV USN NAVFAC SW SAN CA (USA) <paul.t.stoick.civ@us.navy.mil>
Cc: Han, Terry@CDPH <Terry.Han@cdph.ca.gov>; Singh, Sheetal@CDPH <Sheetal.Singh@cdph.ca.gov>; Johnson, Nels <Nels.Johnson@aptim.com>; Condit, Rose <rose.condit@aptim.com>; Roddy, Elizabeth A CIV USN NAVFAC SW SAN CA (USA) <elizabeth.a.roddy3.civ@us.navy.mil>; raymond.schul@aptim.com; Woo, Cynthia <cynthia.woo@aptim.com>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Bercik, Lisa M. <lisa.bercik@aptim.com>; Ufuktepe, Yuksel@CDPH <Yuksel.Ufuktepe@cdph.ca.gov>; amy.mangel@aptim.com; matthew.liscio@navy.mil; terry.romanko@eurofinset.com
Subject: [Non-DoD Source] Technical Questions on Sr Exceedance Reports and RSY Data Reports

Hi Paul,
I am sharing CDPH's technical questions/comments on the Navy's Sr Exceedance Reports and RSY Data Reports for HPNS Parcel G Rework. We hope these questions can be helpful to facilitate the technical meeting scheduled for this coming Monday.

1. **Hunters Point Naval Shipyard, PARCEL G TU79 and TU124 Report, Page 2, 4th Paragraph, Sentence 6:** "The soil at HPNS is known to be highly heterogenous." Please provide a reference or description that supports the statement above.
2. **Hunters Point Naval Shipyard, PARCEL G TU79 and TU124 Sr Exceedance Reports Page 2, 4th Paragraph, Sentence 6:** "The soil at HPNS is known to be highly heterogenous. A sample can be homogenized per the laboratory standard operating procedures and still be

heterogenous, as demonstrated from the results included in Table 2." Please explain detail steps of your laboratory standard operating procedures for homogenization of soil samples.

3. **Hunters Point Naval Shipyard, Parcel G, TU79 Analytical Report, Section: Case Narrative, Page 4 of 35**, "When taking small mass aliquots from dried/disaggregated sample, the laboratory avoids large rocks/pebbles (as well as sticks, etc) which may constitute a larger than representative portion of the aliquot. Smaller rocks may be included." Did these debris, large rocks, pebbles, or sticks, get scanned for radiation or be processed as part of the sample?
4. **Hunters Point Naval Shipyard, Parcel G, TU79 Analytical Report, Section: Case Narrative, Page 4 of 35**: "When taking small mass aliquots from dried/disaggregated sample, the laboratory avoids large rocks/pebbles (as well as sticks, etc) which may constitute a larger than representative portion of the aliquot. Smaller rocks may be included." Please provide an estimation on the size of smaller rocks and how the size was estimated or measured.
5. **Hunters Point Naval Shipyard, Parcel G, TU79 Analytical Report, Section: Case Narrative, Page 4 of 3:** "When taking small mass aliquots from dried/disaggregated sample, the laboratory avoids large rocks/pebbles (as well as sticks, etc) which may constitute a larger than representative portion of the aliquot." Please provide the typical weight of the material used before the chemical separation and the weight of the final material used for GFPC counting. If the data is available, please provide the same information in the Hunters Point Background Study (June 2020).
6. **Hunters Point Naval Shipyard, Parcel G, RSY Data Report:** According to those data shared by Navy, Sr-90 results from Parcel G soil have uncertainty values that are consistently higher than those obtained from the RBAs in HPNS Background study. Please explain the reason for the higher uncertainty from Parcel G and all possible factors, including but not limited to count time, ingrowth period, aliquot weight, etc. At the same time, please provide the equation for calculating uncertainty, including the description of all the parameters used for uncertainty calculation.
7. **Hunters Point Naval Shipyard, Parcel G, RSY Data Report:** The method blank for the 4 additional aliquots at TU79 (prep batch 495823) yielded a Sr-90 results higher than LOQ. Please provide the explanation on how the method blank samples are created and the possible reasons for elevated of Sr-90 concentration in a method blank sample.
8. **Hunters Point Naval Shipyard, Parcel G, RSY Data Report:** The method blank for the 4 additional aliquots at TU79 (prep batch 495823) yielded a Sr-90 results higher than LOQ. MARLAP states that; "Blank samples are used to determine whether any radionuclide contamination is introduced by the measurement process. Ideally, no target analytes should be present in the blank at detectable concentrations." Please describe how the method blank is used to determine if there is any QC issue of the measurement. At the same time, please explain why the Sr-90 result of the method blank in prep batch 495823 being higher than LOQ did not cause any QC concern in the measurements of the 4 additional aliquots samples.
9. **Hunters Point Naval Shipyard, Parcel G, RSY Data Report (HPPG-ESUTU79B-B-001, HPPG-ESU-TU153C-001): "**The method blank (MB) Z-score is within limits and is located in the level IV raw data. (MB 160-493207/23-A)." Please explain acceptable limits of MB Z-score, numerical value of the level IV raw data and Z-score of the method blank sample. Please also explain the reason that Z-score is only provided for these two MBs.
10. **Hunters Point Naval Shipyard, Parcel G, RSY Data Report:** Some of the calculated RER values in the analytical data reports (i.e. HPPG-ESU-TU077A-015) fail the criteria (≥ 1). Please explain how analytical data validation and duplicate sample results were assessed/flagged if RER values fail the criteria.
11. **Hunters Point Naval Shipyard, Parcel G, RSY Data Report:** A duplicate sample (DU) analysis and RER calculations for Sr-90 are included in some of the analytical results but not provided in most of the laboratory reports. According to TestAmerica SOP No. ST-RC-0050, Rev 18 provided in the Appendix B, Attachment 2, 1_TA_SOP, "*A sample batch is a maximum*

of 20 environmental samples, which are prepared together using the same process and same lot(s) of reagents." and *"For this analysis, batch QC consists of a method blank, a Laboratory Control Sample (LCS), and Sample Duplicate. In the event that there is insufficient sample to analyze a sample duplicate, an LCS Duplicate (LCSD) is prepared and analyzed."* To CDPH's understanding, SOP No. ST-RC-0050 states that a Sample Duplicate (DU) should be prepared for a batch (maximum of 20 environmental samples) that would get analyzed for Strontium concentration. In contrast, TestAmerica only created a DU for every batch (maximum of 20 environmental samples) that got analyzed for various ROCs. Since Strontium analysis is performed on only 10% of the samples that got analyzed for various ROCs, there was not a DU created for every batch, which can consist 1 to 20 samples, intended for Strontium analysis. In addition, no LCSD was created for those events that there were insufficient sample to analyze a sample duplicate. Please explain how the quality control can be measured or assessed on a batch of samples intended for the Strontium analysis that was not processed with a DU.

12. **Hunters Point Naval Shipyard, Parcel G, RSY Data Report:** "The laboratory control sample (LCS) associated with the following samples falls below the lower limit for spike criteria (recovery is 74%; criteria is 75-125%): HPPG-317364365-SU28C-001 (160-40591-1), (160-39992-A-30-C) and (160-39992-A-30-D DU)." Since a matrix spike test increases confidence in the accuracy and validity of the sample measurement process. Please explain why the recovery yield being lower than the criteria range did not raise any QC issue.
13. **Hunters Point Naval Shipyard, Parcel G, RSY Data Report:** In the HPNS Parcel G Reowrk WP, a footnote (10) in Worksheet #14 specifies that; "reported radiological results will, at a minimum, include count times, results, counting uncertainty, and total propagated uncertainty." However, the count time is not included in all the data and soil analyutical reports. Please include the count time in all the previous and future analytical data reports.
14. **PARCEL G TU 79 Report page 2, 6th Paragraph 2th Sentence: "**Following a 7-day yttrium-90 (90Y) (90Sr daughter product) ingrowth period to approach secular equilibrium with 90Sr, the 90Y is precipitated from the aliquot and plated on the planchet." Please explain why a 1-week ingrowth time period was deemed sufficient for Strontium measurement.
15. **ANALYTICAL REPORT, HPPG-ESU-TU079A-001 with 4 Additional Aliquots_TU79, Page 4:** "A sample duplicate (DU) was not reported for this batch due to the client requesting 4 replicates of this sample to be reported HPPG-ESU-TU079A-001 (160-40475-1)." Please explain, if a duplicate sample was created and measured together with 4 replicates. If so, please provide the result of this DU sample. Similarly, please explain if a duplicate sample was created and measured together with the HPPG-ESU-TU079A-001 sub-sample yielded 0.334 pCi/g, and analyzed on 12/10/2020. If so, please provide the result of the DU.
16. **ANALYTICAL REPORT, HPPG-SFU-TU107A-B-001:** "The replicate precision (RER) for Th-234/U-238 does not meet QC criteria. This appears to be random in nature, and limited deviations such as this are statistically expected when larger analyte lists are reported. Such excursions are often caused by fluctuations in Compton background, force-fitting of peaks that are not found by the software peak-search algorithm, and inclusion of inferior peak results by the software in weighted averages. The laboratory SOP allows for such statistical exceedances.(160-40595-A-5-C DU). Please provide a reference/description that supports the statement above.

Thank you.

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