EPA Comments on Depth of Contamination Characterization Addendum, Gasco Sediments Site Dated January 13, 2023

Comments dated February 16, 2023

The following are the U.S. Environmental Protection Agency's (EPA's) comments on the Additional Depth of Contamination Characterization Addendum within the Gasco Sediment Site project Area (DOC Addendum), prepared by Anchor QEA, LLC (Anchor) on behalf of NW Natural and dated January 13, 2023. The DOC Addendum is a supplement to the Revised Pre-Remedial Design Data Gaps Work Plan (DGWP; Anchor QEA 2019). The DOC Addendum has been prepared under the Administrative Settlement Agreement and Order on Consent (ASAOC; Docket No. CERCLA 10-2009-0255) and Statement of Work – Gasco Sediments Site (EPA 2009).

General Comments on DOC Addendum:

1. **Sediment Management Area (SMA) Uncertainty Evaluation:** A SMA uncertainty evaluation for the Gasco Project Area has not been provided for EPA review at this time. Therefore, it is possible that additional sampling to address data gaps identified by the uncertainty analysis may be required at a later date.

2. **Data Replacement:** The DOC Addendum proposes "data replacement" for three geobprobe cores: GP25, GP26, and GP28. The main objective of these cores is to confirm the DOC at these locations due to the concerns with the geoprobe samples discussed in the DOC Addendum. EPA does not consider this to be data replacement and maintains that only surface sediment data replacement is allowed due to potentially changing surface conditions. However, similar to EPA's guidelines for surface sediment data replacement (Remedial Design Guidelines and Considerations, Appendix B, Topic 10), arguments that lead to dramatically smaller remediation volumes would require higher data densities. Additionally, it is noted that the rationale provided for data replacement at GP25, GP26, and GP28 is focused primarily on speculation about sampling issues with these geoprobe cores. The DOC Addendum should be revised as follows:

    a. Revise the text and tables to identify the objectives of these cores to data confirmation. Any modifications to the remedial design dataset can be discussed with EPA after the new data becomes available.

    b. Revise the rationale provided to include additional discussion of the quality of data compared to other cores in the area and site-specific conceptual site model based rationale (e.g., the anticipated DOC based on site operations and data from surrounding areas). In addition, a full comparison of the lines of evidence used to question the validity of data from GP25, GP26, and GP28 should be applied to all the historical geoprobe cores. This would allow for a determination whether any or all of these attributes apply to other geoprobe cores not proposed for resampling.

    c. Collect at least three cores at each of the three locations requiring DOC confirmation (i.e., GP25, GP26, and GP28) so that a statistically significant number of samples can be

used to verify the subsurface conditions at these locations. Each of the new cores should sample the depth consistent with DOC identified in historical cores.

3. **Contingency Cores:** The intended purpose of the contingency coring locations PDI-212 and PDI-213 included in Figure 2, Figure A-2, and Table A-1 should be discussed in the main DOC Addendum text, along with the criteria to be used to trigger sampling at these locations.

4. **Visual/Olfactory Signs of Contamination:** Visual and olfactory signs of contaminations used to identify samples to be analyzed should include observations of any material meeting the ASOAC definition of 'substantial product' (e.g., immobile tar deposit) as it is expected that substantial product will be included within the in situ stabilization and solidification (ISS) treatment prism. Field observations recorded in core logs should specifically identify the presence of substantial product as defined by in the ASAOC as well as mobile PTW-NAPL defined in Section 3.1.

Specific Comments on DOC Addendum:

1. **Introduction, page 2:** NW Natural proposes collecting a subsurface sediment core in close proximity to cores SC-S113 (collected in 2018 as part of the Pre-Remedial Design Group's harbor-wide baseline sampling) and PDI-029 (collected in 2019 as part of the Gasco Pre-Design Investigation (PDI) sampling). The DOC at cores SC-S113 and PDI-029 was 13 feet and 2 feet, respectively, despite the cores being only several feet apart. The DOC Addendum does not specify how a third DOC determined by the proposed core would be used relative to the existing DOCs. Revise the DOC Addendum to clarify how the collective DOCs identified by the proposed additional core, SC-S113 and PDI-029, will be used to determine the DOC to be applied to this portion of the project area during remedial design. Also see general comment 2 regarding data replacement.

2. **Subsurface Sediment and Riverbank Soils Characterization Locations and Sampling Technologies, pages 2 and 3:** In addition to the sampling scheme shown in Figure 3, core intervals corresponding to the DOC in historical cores GP25, GP26, and GP28 should also be submitted for analysis. Additionally, because NW Natural is proposing to confirm the DOC at these locations based on newer data, additional cores in the vicinity of these locations should be considered to confirm lateral distribution of contamination in these areas (see general comment 2c).

3. **Subsurface Sediment and Riverbank Soils Characterization Locations and Sampling Technologies, pages 2-4:** EPA has the following comments on this section and the text should be revised accordingly:

    a. The hypothesis presented in the first bullet point is unsupported. Chemical analysis of samples at the historical DOC in each of the three cores should be conducted to evaluate this hypothesis.

    b. Add a bullet point to clarify that these cores were not sampled for chemical analysis throughout the length of the core as evidenced by the sample depths shown on Table 3a.

    c. Revise the text to clarify that the 25 locations that are to be reoccupied and sampled in 1-foot intervals will not replace the existing sediment cores except to delineate DOC based

on two consecutive 1-ft intervals. Data from both historical and newly collected subsurface samples will be used for remedial design purposes.

d. The first sentence of the last paragraph on page 3 states: "At an additional four locations, the DOC is vertically bounded by only a single 1-foot interval, which is inconsistent with EPA's RDGC (EPA 2021)." Add the following to the end of the sentence: "which defines the boundary as two consecutive clean 1-foot intervals."

e. **Footnote 2:** Clarify whether the locations where DOC is not determined using vibracoring will be revisited under the currently proposed Sonic drilling deployment or at a later date.

f. See EPA general comment 2 on data replacement.

4. **Sample Collection, Processing and Handling Procedures, Top of Riverbank Angled Borings, page 5:** EPA has the following comments on this section and the text should be revised accordingly:

   a. Clarify the target depth for angled riverbank borings. EPA assumes the deepest adjacent sediment remedial action level/principal threat waste exceedance will be targeted like previous riverbank angles borings.

   b. **Bullet point 2:** Revise the text to justify the exclusion of record of decision Table 17 analytes for riverbank sampling, especially as it relates to the proposed ISS remedial technology.

5. **Laboratory Analyses, Scenario 2, page 6:** In the case of vertically bounded locations without two consecutive 1-foot intervals, the previous DOC sample interval should also be submitted for analysis.

6. **Laboratory Analyses, At Vertically Unbounded Locations with Historical Geoprobe Borings, Step 1 pages 7 and 8:** The sample intervals from the DOC identified by the historical geoprobe samples should be submitted for analysis regardless of depth or visual/olfactory signs of contamination.

7. **Table 3a:** Table 3a should be revised to show all of the analyzed COCs (VOCs and SVOCs).

Specific Comments on DOC Addendum Appendix A (Pre-Remedial Design Data Gaps Field Sampling Plan Addendum):

1. **Purpose and Objectives of the Field Sampling Plan Addendum, Section 1.1, page 1:** this section notes that the Field Sampling Plan (FSP) Addendum has been slightly modified from the EPA-approved Pre-Remedial Design Data Gaps FSP submitted as Appendix A of the DGWP (Anchor QEA 2019). This section should specify the nature of the modifications.

2. **Riverbank Angled Borings Sampling Plan, Section 3.2.1, pages 3 and 4:** Revise the text to include information on the target sample interval depth the proposed angled borings intend to achieve. The DGWP FSP previously included depth of boring information.

3. **Soil Logging and Processing Procedures, Section 3.2.3, pages 4 and 5:** EPA has the following comments on this section and the text should be revised accordingly:

    a. Clarify whether AutoCAD calculations to correct vertical sample depth are based on the same equation provided in Section 3.3.3, Appendix A of the DGWP.

    b. Revise the text to include information on the target depth of the proposed sampling intervals as previously included in the corresponding section of the DGWP FSP.

4. **Vibratory Core Sampling, Section 3.3.2.1, pages 7 and 8:** Revise the following text to include the option for utilizing sonic drilling methods as previously discussed in the section when refusal or poor recovery impacts the ability to identify the DOC: "If multiple core rejections (three attempts) occur within a 20-foot radius of the planned location, the core with the best recovery will be deemed acceptable and processed. If moving a core location (location X) due to refusal, low recovery, or obstruction results in that location being collected within 50 feet of another proposed core location (location Y), then the second proposed location (location Y) may not be collected."

5. **Subsurface Sediment Core Logging and Processing Procedures, Section 3.3.3, pages 8 and 9:** EPA has the following comments on this section and the text should be revised accordingly:

    a. Core processing procedures should include the use of a sediment/water shake test when visually assessing for the presence of PTW-NAPL to be in agreement with ASTM standards.

    b. Revise the text to include information on sampling intervals as previously included in the corresponding section of the DGWP FSP.

6. **Chemical and Physical Testing, Section 5, page 17/Table A-1:** The text states that "the anticipated sampling intervals for the chemical and physical testing are shown in Table A-1". Table A-1 does not include this information, revise Table A-1 to include the anticipated sampling intervals for the chemical and physical testing.

7. **Table A-2:** The corresponding version of Table A-2 from the DGWP FSP included information on depth intervals. Revise Table A-2 to include the depth information.

To Be Considered Comments on DOC Addendum Appendix A (Pre-Remedial Design Data Gaps Field Sampling Plan Addendum):

1. **Table A-1:** Table A-1 provides the locations and proposed coring technology for each proposed sampling location. It would be helpful for this table to identify the undelineated DOC observed at the nearest historical core and the target penetration depth for each location.

References

Anchor QEA, 2019. Revised Pre-Remedial Design Data Gaps Work Plan. Gasco Sediments Cleanup Action. Prepared for U.S. Environmental Protection Agency, Region 10. Prepared on behalf of NW Natural. September 11, 2019.

EPA, 2021. Remedial Design Guidelines and Considerations, Portland Harbor Superfund Site, Portland, Oregon. April 23, 2021.