Anchor Environmental, L.L.C.
6650 SW Redwood Lane, Suite 333
Portland, OR 97224
Phone 503.670.1108
Fax 503.670.1128

Memorandum

To: Sean Sheldrake – USEPA

From: Ben Hung - Anchor Environmental, L.L.C.

CC: Ken Fellows – Parametrix; Nicole LaFranchise and Krista Koehl - Port of Portland; Tom Schadt, John Verduin and Elizabeth Appy- Anchor Environmental, L.L.C.

Date: August 5, 2008

Re: *Water Quality Monitoring and Compliance Conditions Plan for Port of Portland Terminal 4 Non-Time Critical Removal Action Abatement Measures, Phase I*: Comments

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On July 18, 2008, the Water Quality Monitoring and Compliance Conditions Plan for Port of Portland Terminal 4 Non-Time Critical Removal Action Abatement Measures, Phase I (WQMCCP) dated July 2, 2008, was provided to the Port of Portland (Port) by USEPA. Prior to July 18, 2008, the USEPA approved the Water Quality Monitoring Plan (WQMP) provided by the Port as Appendix B of the DAR (Anchor 2008a), as well as the WQMP provided by the Port as Appendix H of the RAWP (Anchor 2008b). Some terms and conditions specified in the approved Appendix B and Appendix H WQMPs differ from what is specified in the WQMCCP. Because the WQMCCP is the controlling document for the project and there are terms and conditions that differ from the already approved WQMPs, the Port is providing this memorandum to document the discrepancies and propose a protocol to perform during construction.

The intent of this document is to clarify what procedures will be followed in the field by:

- Identifying where the WQMCCP differs from the already approved WQMPs; and,
- Summarizing the water quality monitoring protocols the Port proposes to perform in each instance.

The remainder of this memorandum details comparisons of the requirements in both documents, as well as a summary of what protocols the Port proposes to perform during construction.

Water Quality Monitoring Depths

Section 4.2.3.3 of the WQMCCP specifies that top and bottom samples will be taken 1 foot below the surface and above the mudline, respectively. The approved WQMP specifies that top and bottom samples will be taken 3 feet below the surface and above the mudline, respectively.

Proposed Protocol: Take top and bottom samples 3 feet below the surface and 3 feet above the mudline, respectively. The 3-foot offset specification has already been used during the pre-construction background water quality monitoring events.

Water Quality Frequency

Section 4.2.3.4 of the WQMCCP specifies a water quality monitoring frequency that is consistent with what is described as the Tier I schedule in the WQMP. The WQMCCP does not describe the Tier II schedule. Section 2.5 and Table 3 of the WQMP describe a Tier 2 schedule of reduced monitoring that, with EPA approval, would occur if results indicate no exceedances of chronic or acute criteria for 3 consecutive days. According to the Tier II schedule, field parameter measurements may be reduced to once per day, and chemistry samples may be reduced to once per week. In addition, according to the Tier II schedule a single chemistry sample will be composited from the surface, middle, and bottom depths at the selected station.

Proposed Protocols: The requirements in the WQMP are followed such that monitoring will be reduced to a Tier II schedule (with EPA approval) as described in the WQMP.

Background Water Quality Monitoring

Section 4.2.3.5 of the WQMCCP specifies background monitoring requirements that differ from the WQMP. The specifications include a minimum of seven independent measurements over the course of a two-day period just prior to construction initiation. For each parameter the 90th percentile upper confidence limit on the mean will be used to represent the initial background conditions. During construction, background sampling will consist of one upstream event during the first sampling day. Additional samples may be collected if different upstream conditions are observed during the construction period.

Section 2.2.1 of the WQMP specifies a much more comprehensive background survey consisting of three sampling events prior to the start of in-water work. Water samples for analytical parameters are specified in addition to the collection of field parameter data. With three events

and four monitoring stations, the background survey was intended to generate 36 measurements of field parameters and 12 analysis of water samples for project COPCs. The three background water quality events have already occurred and will be reported in the *Terminal 4 Phase I Removal Action Background Water Quality Monitoring Report*.

Proposed Protocol: The requirements in the WQMP are followed such that background monitoring that has already been performed will be adequate with respect to the WQMCCP.

Section 2.4 of the WQMP specifies the collection of surface, middle, and bottom chemistry samples at the background location during each daily sampling event under the Tier I schedule. It all specifies that given USEPA approval, under the Tier II schedule a single chemistry sample will be composited from the surface, middle and bottom depths. The WQMCCP specifies the collection of water samples at all three depths during the first sampling day only with additional background samples being collected if different upstream conditions are observed during the construction period.

Proposed Protocol: The Port proposes to collect samples at the surface, middle, and bottom on the first day of monitoring. After the first day of monitoring, the Port will collect one sample at the depth with the highest turbidity reading for chemistry analysis at the background station each day monitoring occurs.

Water Quality Monitoring Locations

Section 4.2.3.2 of the WQMCCP specifies that water quality monitoring locations will occur at one upstream location and three downstream locations in accordance with the points of compliance listed in Section 4.2.4, however there is no Section 4.2.4. The section further specifies that if flow reversal occurs, the sampling stations will be reversed to continue the down-current and up-current (for background conditions) pattern as appropriate. The WQMP (and the figure attached to the WQMCCP) shows monitoring locations at Terminal 4 in an arc around the compliance boundary as shown on Figure 3 of the WQMP and the attached figure in the WQMCCP. These stations are configured to capture flow reversals when they occur. A background location is specified approximately 300 meters upstream of all construction activities.

Proposed Protocol: Use the monitoring station locations shown on Figure 3 of the WQMP and in Appendix A of the WQMCCP at Terminal 4, which occur in an arc around the compliance boundary configured to capture flow reversals when they occur.

Please note that in the second paragraph of Section 4.2.3.2 (Water Quality Monitoring Locations), there is another referenced Section (4.2.5.2) that is missing in the PDF version that was transmitted to the Port. In addition, in the first paragraph of Section 4.2.3.5 (Background Water Quality Monitoring) there is a reference to Section 4.2.5.2 which is also missing.

References

Anchor Environmental, L.L.C. (Anchor). 2008a. Final Design Analysis Report, Terminal 4 Phase I Removal Action, Port of Portland, Portland, Oregon. Prepared by Anchor Environmental for Port of Portland. June 2008.

Anchor Environmental, LLC (Anchor). 2008b. Draft Removal Action Work Plan, Terminal 4 Phase I Removal Action, Port of Portland, Oregon. Prepared by Anchor Environmental for the Port of Portland. July 2008.