



# Oregon

John A. Kitzhaber, MD, Governor

## Department of Environmental Quality

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March 18, 2014

Frank H. Willman, PE  
Waste Management  
271 Madison Ave S Suite 201  
Bainbridge Island WA 98110

RE: 2013 Riverbend Environmental Monitoring  
Plan, Yamhill County SWDP #345

Dear Mr. Willman:

We have reviewed the 2013 Environmental Monitoring Plan (EMP) for the Riverbend Landfill, which was received on July 30, 2013. This EMP was prepared by SCS Engineers (SCS) for Waste Management of Oregon, Inc., and addresses the requirements for environmental monitoring at the Riverbend Landfill. DEQ has completed its review of this document.

This plan was an update of the existing EMP, and accurately documents the approaches specified in recent letters from DEQ, the Solid Waste permit, and lines up with DEQ's requirements for the long term monitoring of Subtitle D landfills. In this plan, modifications of the 2007 EMP include:

- The installation of piezometers P-05A and P-06A in the North Poplar Field, and P-07A upgradient of the leachate lagoon.
- The installation of wells MW-22A/B, MW-23A/B, MW24-A, and piezometers GT10-1, GT10-11, GT10-12, SA-BH-1, SA-BH-3, SA-BH-5, SA-BH-6 on the west side of the site.
- The decommissioning of monitoring wells MW7A/B to allow for the construction of Module 8D, and of piezometers P-04A/B to make way for the MSE Berm.

This plan proposes a monitoring strategy that includes collection and analysis of groundwater, leachate lagoon and the lagoon secondary collection system on a semi-annual basis, surface water and leachate collection system and secondary liners once a year. Landfill gas monitoring at 14 probes and a number of structures will be conducted on a quarterly basis. Surface water sampling is not required by DEQ, however Riverbend Landfill will collect samples of the Yamhill River from upstream and downstream locations on an annual basis.

Concentration limits, including permit-specific concentration limits, action limits and site-specific limits, were included in this plan for compliance wells MW-12A/B, MW-14A/B, MW-15 A/B, MW-16 A/B, and MW-21 A/B.

We appreciate the quality work that went into this document, and with a couple of minor edits, we approve this plan. You may immediately use the process laid out in this plan, and can submit revised pages to address the comments below.

### **Comments on the Plan**

We offer the following comments and requests for further clarification:

Page 1 – The size of the landfill is mentioned to be approximately 87 acres; and in Appendix B it is noted that the landfill was approximately 86 acres.

Page 3- Last Paragraph: The intent of this paragraph is to ensure that an outlier is not included in future statistical evaluations. Thus, if the resampling event does not confirm the atypical (outlier) result, then the original data (outlier) will be flagged in the database, and not incorporated into future statistical analyses. The resample data can be used in place of the outlier data.

Page 6 – The depth to bedrock is stated to range from 39.5 feet to 54 feet. However, the well logs in Appendix A do not always confirm this statement.

Examples:

Log for MW-10B: bedrock is not encountered over the 69-foot depth.

Log for MW-4B: bedrock is encountered at 61.8 feet.

Page 18: Although not included in the final selection of parameters for developing concentration limits, barium in the deeper compliance wells also exhibited sufficient contrast between leachate and background water quality. This is not a request to include barium, rather a note reflecting on the text.

Page 29 – Please add in the following language after the bullets:

“In addition to these inspections, landfill personnel should inspect the entire perimeter of the landfill daily for leachate seeps. Particular attention is essential during periods of heavy or prolonged precipitation.”

Page 41 - Instead of sending three copies of the annual environmental monitoring report to The Dalles, please send one copy to Audrey Eldridge in DEQ’s Medford office, one copy to Bob Schwarz in The Dalles office and one copy to Holly Pence in our Northwest Region office.

Table 3-1: There are discrepancies between Table 3-1 (well construction details) and Appendix A (well/piezometer logs and construction details) regarding boring depths:

<b>Boring</b>	<b>Table 3-1</b>	<b>App A</b>
18A	24	26
18B	53	62
19A	28.5	30
20B	95.3	40
21B	27	34
22A	21	22.5
GT10-01	65	66.5
GT110-11	60	61
SA-BH-3	25	26.5

Please clarify.

*Appendix C Sampling and Analysis Plan*

Section 2.4.2.2 Low-Flow Purge Sampling Method should include a statement that indicated the field parameter measurements will be taken at intervals that assures that the water in the flow cell has been completely exchanged with fresh water from the well. The interval between measurements is dependent on the volume of the flow cell and the pumping rate.

*Appendix D Test America Lab Accreditation and Quality Assurance Manual*

- Holding times for biological oxygen demand, nitrate and orthophosphate should be listed as 48 hours.
- The Quality Control section should include a discussion on laboratory control samples (LCS.)
- Test America should verify that they can quantify results that are no greater than 10% of the concentration limits in this plan, with the exception of volatile organic compounds that are using the PQL as the concentration limit. The PQL for volatile organic compounds should still be no more than 10% of any relevant standard.

Please provide a table that lists the practical quantitation limits (limits of quantification) for all the volatile organic compounds included in groundwater and surface water sampling.

And finally, we have a historic question relative to piezometers P-05 and P-06. In the update synopsis at the beginning of the report, these are listed as modifications to the groundwater monitoring network. As these were installed in October 2005, we are curious why they were not mentioned in the 2007 environmental monitoring plan.

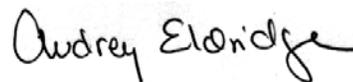
**Effect of this letter**

With the inclusion of the above changes, and the submittal of information to address DEQ's comments, this Environmental Monitoring Plan is approved.

In the near future, DEQ will be proposing a permit modification to include the concentration limits contained in this plan. Because of the nature of calculating predication limits from intrawell data (effect from natural variations of water quality; long-term effect on facility-wide false positive/false negative rates; etc.), DEQ will be open to updates of these limits within reasonable timeframes (i.e., 4-5 years from establishment.)

And if you have any questions regarding the information contained in this letter, please contact me at (541)776-6029, or via e-mail at [eldridge.audrey@deq.state.or.us](mailto:eldridge.audrey@deq.state.or.us).

Sincerely,



Audrey Eldridge  
Senior Hydrogeologist  
Solid Waste Program

Cc: Bob Schwarz, ER-The Dalles  
Jim Obereiner, WM  
Louis Caruso, SCS  
Holly Pence, NWR  
Liz Clark, ER