

HOOD RIVER COUNTY PUBLIC WORKS



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ANNUAL LEACHATE IRRIGATION SYSTEM REPORT HOOD RIVER COUNTY LANDFILL, PERMIT #168 2018-2019 SEASON

This report describes the 2018-2019 leachate spray irrigation season, or more specifically, the time period between August 1, 2018 and July 31, 2019.

Site Conditions

Grassy vegetation is generally well established on the landfill cover and no standing water was observed on the cover. No re-grading of the cover appears necessary at this time.

Surface runoff entering the leachate collection system has been held to its practical minimum and no failures were noted in the surface water diversion.

Signs and fencing continue to limit trespassing and vandalism, however there is evidence of prior vandalism to signs and structures in the form of graffiti. No vandalism to the spray irrigation system was observed.

Leachate Spray Irrigation

Leachate pumping started in December 2018 and continued thru June 2019. Both the landfill site and the leachate spray irrigation system were inspected regularly during normal County work hours and the system was kept and maintained in working order. Pump hour meter readings indicate that during the 2018-2019 reporting season a total of 6,308,700 gallons of leachate was collected and sprinkled, while rainfall totals measured 21.7 inches during the same period. As indicated in the chart below, annual rainfall for the season was approximately 35% less than the prior three years, however the volume of leachate pumped decreased significantly more; by approximately 60%. While this discrepancy may be attributed to a variety of factors, to minimize further discrepancies and ensure consistency with future measurements an analog flow meter was added to the sprinkler system in December, 2019. This improvement will provide a more accurate reading of the volume of leachate distributed as well as provide a secondary method of measurement.

Season	Rainfall (Inches)	Total Pumped (Million Gallons)
2010-2011	37.0	14.2
2011-2012	30.6	12.0
2012-2013	24.3	5.6
2013-2014	29.5	12.7
2014-2015	23.4	12.6
2015-2016	32.5	25.7
2016-2017	33.2	20.1
2017-2018	30.2	22.7
2018-2019	21.7	6.3

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Maintenance and Repairs

Dual pumps are in place for both the lower collection pond and the upper sprinkling system and configured so that one pump acts as a backup in the event the other fails. During normal use, the pumps alternate cycles in order to minimize wear and further extend pump life. In 2017 a pump-replacement program was also started in which one lower-pump is replaced every year so neither pump is more than two seasons old. Additionally, a spare pump is kept at the County Public Works shop in the event of an actual pump failure and is part of the scheduled pump rotations. The replacement pump is typically installed at the end of the leachate collection season and includes annual maintenance work such as cleaning the pump assembly, the lower-pump-house piping and the pond screenings.

In May 2019, a 45-degree fitting in the 6" PVC pipe conveying leachate from the lower-pumps to the upper pond began to fail and had to be repaired. While the line was out of service the 3" PVC bypass line installed in 2016 was utilized to convey leachate to the upper pond. As the failure was not immediate and discovered by "leakage" seeping out of the ground, the loss of leachate was kept to a minimum and the area was cleaned after all repairs were made.

Potential Health Risk

Groundwater samples taken from MW-3 in May 2019 indicated the presence of two VOC's above the Minimum Detection Limit (MDL) but below the Reporting Detection Limit (RDL). As these results were not consistent with prior years, samples were collected again in August 2019 to verify the results. Analysis from the re-sampling indicted no presence of VOC's and that concentrations of all Group 2 trace metals decreased to their lowest levels on record. Subsequently, the monitoring report indicates there was no significant change to groundwater quality from the previous year and concluded there are no signs of relative concern.

Leachate was sampled and, consistent with prior seasons, indicated concentrations of iron and manganese exceeding the Maximum Contaminant Level (MCL). Two VOC's were detected in concentrations exceeding the MDL and two additional VOC's were detected in concentrations exceeding the RDL. All four VOC's have been detected at similar concentrations during prior sampling events and are comparable to past results.

Methane gas detection was also consistent with previous sample years, including minor levels detected in gas probes VP-1S, VP-1D, and VP-2. Both VP-1 and VP-2 lie within the closed waste cell and no methane was detected on the east boundary of the cell or outside the cell boundary. However, probes VP-5 and VP-6 were discovered to be damaged during the November 2019 sampling and are scheduled to be repaired in 2020. Refer to the 2019 Annual Environmental Monitoring Report for specific leachate and methane test results and analysis.

The risk of exposure to leachate continues to be minimized by various security measures installed around the site. These measures include: a locked gate at the landfill entrance, the display of "Unauthorized Entry Prohibited" signage around the irrigation system and the installation of fencing around both the upper pond and across the top of the lower pond dam. Fencing at the upper pond also includes a locked gate in order to limit access to only authorized personnel.

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Landfill Closure

There has been no dumping or open burning at the site. On-site roads have been maintained to provide reasonable, all-weather vehicle access to monitoring locations and evidence of trespassing by ATV's has significantly decreased from prior years.

Landfill Budget

The County expended a total of \$20,443 on the landfill during its fiscal 2019 year (July 1, 2018 – June 30, 2019). This total included all funding expended on leachate evaluation, consultation, repair and maintenance needs, and general operations. Additional soft-cost expenses were incurred for staff time and may be identified for recovery in future budget appropriations.