



State of Oregon  
Department of  
Environmental  
Quality

**SOLID WASTE DISPOSAL SITE PERMIT  
Municipal Solid Waste Landfill**

Oregon Department of Environmental Quality  
400 E Scenic Drive, Suite 307  
The Dalles, OR 97058  
Telephone: 541-298-7255

Issued in accordance with the provisions of ORS Chapter 459 and  
subject to the land use compatibility statement referenced below.


<b>ISSUED TO:</b>	<b>FACILITY NAME AND LOCATION:</b>
Deschutes County Dept. of Solid Waste 61050 SE 27 <sup>th</sup> Street Bend, Oregon 97702	Knott Landfill 61050 SE 27 <sup>th</sup> Street, Bend, Oregon Section 14, T18S, R12E, W.M. Latitude: N44° 00' 43" Longitude: W121° 15' 13" Deschutes County Tax Lots 500, 503, & SM-zoned portion of Tax Lot 100.
<b>OWNER:</b>	<b>OPERATOR:</b>
Deschutes County	Deschutes County Dept. of Solid Waste Telephone: (541) 317-3163 Fax: (541) 317-3959 Email: chad.centola@deschutes.org

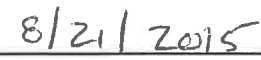
**ISSUED IN RESPONSE TO:**

- a solid waste permit renewal application dated February 12, 2010; and
- a Land Use Compatibility Statement from Deschutes County dated January 30, 2012.

The determination to issue this permit is based on findings and technical information included in the permit record.

**ISSUED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY**

  
\_\_\_\_\_  
Elizabeth Druback  
Solid Waste Manager  
DEQ Eastern Region

  
\_\_\_\_\_  
Date

**Permitted Activities**

Until this permit expires or is modified or revoked, the permittee is authorized to establish, operate, and maintain a solid waste land disposal site in conformance with the requirements, limitations, and conditions set forth in this document, including all attachments.

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**Introduction.** This document is a solid waste permit issued by the Oregon Department of Environmental Quality in accordance with Oregon Revised Statutes (ORS) 459 and Oregon Administrative Rules (OAR), Chapter 340.

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## PERMIT ADMINISTRATION

**1.0 PERMIT ISSUANCE.** This section describes the following parameters surrounding permit issuance.

**1.1 Permittee.** This permit is issued to Deschutes County Dept. of Solid Waste.

**1.2 Permit number.** This permit will be referred to as Solid Waste Permit Number 6.

**1.3 Permit term.** The permit is issued on the date it is signed. The permit's expiration date is September 1, 2022.

**1.4 Facility type.** The facility is permitted as a municipal solid waste landfill.

**1.5 Facility owner/operator.**

The owner of this facility is Deschutes County.

The operator of this facility is: Deschutes County Dept. of Solid Waste  
Telephone: (541) 317-3163  
Fax: (541) 317-3959  
Email: chad.centola@deschutes.org

**1.6 Basis for permit issuance.** This permit is issued based upon the following documents submitted by the permittee:

- a solid waste permit renewal application dated February 12, 2010; and
- a Land Use Compatibility Statement from Deschutes County dated January 30, 2012.

**1.7 Definitions.** Unless otherwise specified, all terms are as defined in OAR 340-093-0030.

**1.8 Legal control of property.** The permittee shall at all times maintain legal control of the disposal site property, including maintaining a current permit, contract, or agreement that allows the operation of the facility if the site is not owned by the permittee.

**1.9 Submittal & notification address.** Unless otherwise specified, all submittals and notifications to DEQ under this permit must be sent to:

**Oregon Department of Environmental Quality  
Manager, Solid Waste Program  
400 E. Scenic Drive, Suite 307  
The Dalles, OR 97058  
Phone: (541) 298-7255  
Fax: (541) 298-7330**

All submittals must include, at a minimum, one (1) paper copy and one (1) electronic copy in a format that is approved by the DEQ project manager. Note that some submittals may require more paper copies. Therefore, the permittee must confirm with the permit manager how many copies are necessary prior to submittal of a document.

Note: Whenever possible, the permittee must submit two-sided paper copies of all reports. DEQ may accept electronic submittals for portions of some reports, as approved in the Environmental Monitoring Plan or by DEQ.

**2.0 DISCLAIMERS.** This section describes DEQ disclaimer information.

**2.1 Property rights.** The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights.

**2.2 DEQ liability.** DEQ, its officers, agents, or employees do not sustain any liability on account of the issuance of this permit or on account of the construction, maintenance, or operation of facilities pursuant to this permit.

**3.0 AUTHORITY.** This section describes DEQ's authority to issue this permit.

**3.1 Permit duration.** This permit is issued for up to ten (10) years as authorized by Oregon Revised Statutes 459.245(2).

**3.2 Documents superseded.** This document is the primary solid waste permit for the facility, superseding all previous solid waste permits and permit addenda issued for the Knott Landfill by DEQ.

**3.3 Permittee responsibility and liability.** Conditions of this permit are binding upon the permittee. The permittee must conduct all facility activities in compliance with the provisions of this permit. The permittee is liable for all acts and omissions of the permittee's contractors and agents in carrying out the operations and other responsibilities pursuant to this permit.

**3.4 Other compliance.** This permit's issuance does not relieve the permittee from the responsibility to comply with all other applicable federal, state, or local laws or regulations, including the following solid waste requirements, and any future updates or additions to these requirements:

- Solid waste permit renewal application dated February 12, 2010;
- Oregon Revised Statutes (ORS), Chapters 459 and 459A;
- Oregon Administrative Rules (OAR) Chapter 340; and
- Any documents submitted by the permittee and approved by DEQ.

**3.5 DEQ access to disposal site.** The permittee shall allow representatives of the DEQ access to the disposal facility at all reasonable times for the purpose of making inspections, surveys, collecting samples, obtaining data and carrying out other necessary functions related to this permit.

Reference: OAR 340-093-0050(6)

**3.6 Penalties.** Violation of permit conditions will subject the permittee to civil penalties of up to \$25,000 for each day of each violation.

Reference: ORS 459.995(1)(a)

- 4.0 PERMIT MODIFICATION.** This section provides information and requirements for permit modification.
- 4.1 Five year review.** In the permit's fifth (5th) year, the DEQ may review the permit and amend it if necessary. DEQ will consider the following factors in making this determination:
- Compliance history of the facility;
  - Changes in volume, waste composition, or operations at the facility;
  - Changes in state or federal rules which should be incorporated into the permit;
  - A significant release of leachate or landfill gas to the environment from the facility;
  - Significant changes to a DEQ-approved site development plan, and/or conceptual design; and
  - Other significant information or events.
- 4.2 Permit modification.** DEQ or the permittee may, at any time during the permit's term, propose to change the permit.
- 4.3 Modification and revocation by DEQ.** The DEQ Director may, at any time before the expiration date, modify, suspend, or revoke this permit in whole or in part, in accordance with Oregon Revised Statutes 459.255, for reasons including but not limited to the following:
- Violation of any terms or conditions of this permit or any applicable statute, rule, standard, or order of the Environmental Quality Commission;
  - Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
  - A significant change in the quantity or character of solid waste received or in the operation of the disposal site.
- 4.4 Modification by permittee.** The permittee must apply for a modification to this permit if there is a significant change in facility operations or a deviation from permitted activities.
- 4.5 Public participation.** DEQ will issue a public notice to inform the public of any significant changes to the permit. DEQ may also provide public notice and opportunity for review of permit-required plans.
- 4.6 Changes in ownership or address.** The permittee must report to DEQ any change in the facility's ownership, the permittee's or operator's name and/or address at least ten (10) days prior to the change.

Reference: OAR 340-093-0070(6)(a)(A)

## ALLOWABLE ACTIVITIES

- 5.0 AUTHORIZATIONS.** This section describes the activities the permittee is authorized to conduct.
- 5.1 Authorization of activities.** The permittee must conduct all facility activities in accordance with the provisions of this permit. All plans required by this permit become part of the permit by reference once approved by DEQ. Any conditions of the approval are also incorporated into this permit unless contested by the permittee within 30 days of the receipt of a conditional approval.

- 5.2 Authorized landfill area.** This permit authorizes 147 acres to be developed for landfill disposal in compliance with the conditions of this permit. The limits of waste disposal on the site property are defined by the Conditional Use Permits issued by Deschutes County, and the DEQ-approved Site Development Plan and approved amendments to that plan as referenced in Subsection 10.2 of this permit.
- 5.3 Wastes authorized for receipt.** This permit authorizes the facility to accept solid wastes as defined in ORS 459.005, subject to their management and disposal in accordance with the DEQ-approved Operations Plan, and applicable conditions of this permit. The following specific solid wastes are included in this authorization:
- **Domestic solid waste** as defined in OAR 340-093-0030;
  - **Construction and demolition waste** as defined in OAR 340-093-0030;
  - **Agricultural waste** as defined in OAR 340-093-0030;
  - **Industrial solid waste** as defined in OAR 340-093-0030;
  - **Asbestos-containing solid waste** if managed and disposed in accordance with Subsection 9.8 of this permit;
  - **Waste tires** for disposal in accordance with Subsection 9.9 of this permit;
  - **Cleanup materials contaminated by hazardous substances** as defined in OAR 340-093-0030, and if managed and disposed as specified in a DEQ-approved Special Waste Management Plan (SWMP) and in compliance with OAR 340-093-0170;
  - **Polychlorinated biphenyls (PCB) containing solid waste** that: is exempt from regulation under the Toxic Substances Control Act (TSCA); contains PCBs in concentrations statistically less than 50 parts per million (ppm); and is managed and disposed as specified in a DEQ-approved SWMP; and
  - **Empty, rigid pesticide containers** that have been decontaminated, verified, and altered as required by OAR 340-109-0020; and
  - **Infectious waste sharps** may be received and disposed in accordance with Subsection 9.10 of this permit.
- 5.4 Authorization of other wastes.** DEQ may authorize the permittee to accept other compatible wastes for disposal if:
- The permittee develops a Special Waste Management Plan (SWMP) and submits it to DEQ for review and approval;
  - DEQ approves the SWMP; and
  - The permittee can demonstrate that the proposed waste is not hazardous or prohibited waste (as defined by this permit, and state and federal regulations), or otherwise a threat to human health or waters of the state.
- 5.5 Recirculation of leachate & condensate.** Landfill leachate and gas condensate removed from the on-site landfill disposal units may be recirculated into lined portions of the landfill as specified in the DEQ-approved Operations Plan, and provided that the leachate/condensate recirculation design and operation will:
- enhance leachate evaporation and absorption into the waste mass; and
  - not return appreciable amounts of recirculated leachate back to the leachate collection system.
- 5.6 Salvaging and recycling.** This permit authorizes the permittee to conduct salvaging and recycling in a controlled and orderly manner. The permittee must notify DEQ prior to changing salvaging and recycling operations.

- 5.7 Composting.** Composting activities may be conducted on the Knott Landfill site in compliance with DEQ Solid Waste Compost Registration Permit No. 1477.
- 6.0 PROHIBITIONS:** This section describes specific activities the permittee is prohibited from conducting.
- 6.1 Prohibition on waste acceptance.** The permittee must not accept the following:
- **Hazardous waste** as defined in ORS 466.005 and OAR 340 Division 101 and 40 Code of Federal Regulations (CFR) 258.20(b);
  - **Explosives;** and
  - **Radioactive material** as defined in temporary provisions compiled as notes preceding ORS 459.376. entitled "Limitation on Disposal of Certain Radioactive Materials"
- 6.2 Prohibition on waste disposal.** The permittee must not landfill or knowingly accept for landfill disposal the following:
- **Source separated recyclable material** except if it is unusable or not recyclable it may be landfilled. DEQ must agree to such disposal and pre-approve the identified sources of unusable source separated material prior to its disposal;
  - **Covered electronic devices** as defined in ORS 459A.305 which consist of the following: computer monitors or televisions having a viewable area greater than four (4) inches diagonally, and all desktop or portable computers;
  - **Liquid waste** except for DEQ-authorized recirculation of landfill leachate/condensate collected and removed from on-site landfill disposal units. *Definition:* Liquid wastes are wastes that do not pass the *Paint Filter Liquids Test* performed in accordance with EPA Method 9095B;
  - **Discarded or abandoned motor vehicles;**
  - **Discarded large home or industrial appliances** such as refrigerators, washers, stoves, water heaters, heaters or furnaces;
  - **Whole tires** meeting the definition in OAR 340-064-0010(26);
  - **Lead-acid batteries;**
  - **Used oil;**
  - **Infectious waste** as defined ORS 459.386(2), except if it has been properly sterilized or containerized (only applicable to "sharps"), and is managed and disposed as specified in a DEQ-approved Special Waste Management Plan in compliance with OAR 340-093-0190(1)(d); and
  - Any other waste that is not authorized for disposal under Section 5 of this permit.
- 6.3 Open burning.** The permittee must not conduct any open burning at the site.

## OPERATIONS AND DESIGN

- 7.0 OPERATIONS PLAN.** This section describes the requirements associated with the facility Operations Plan.
- 7.1 Operations Plan submittal.** Within 270 days of the permit issue date, the permittee must prepare and submit an updated site Operations Plan to DEQ for review and approval. The updated plan must be consistent with the conditions of this permit, and accurately reflect current site operations, including implementation of all relevant operations-related plans approved by

DEQ. Upon written approval by DEQ, this updated plan will be incorporated into this permit by reference.

**7.2 Operations Plan content.** The Operations Plan must describe the operation of the disposal site in accordance with all applicable regulatory and permit requirements, and related plan approvals including the following:

General Topics	Describe plans or procedures for:
General operations	<ul style="list-style-type: none"> <li>• Screening incoming waste to detect unauthorized or prohibited waste as required by 40 CFR 258.20(a);</li> <li>• Handling and removing unauthorized wastes discovered at the facility;</li> <li>• Managing landfill gas;</li> <li>• Managing landfill leachate in compliance with Subsection 9.15;</li> <li>• Recirculating landfill leachate &amp; gas condensate in compliance with Subsections 5.5 and 9.15;</li> <li>• Designing surface water and erosion control structures; and</li> <li>• Responding to non-compliance events or situations.</li> </ul>
Disposal operations	<ul style="list-style-type: none"> <li>• Waste unloading and handling;</li> <li>• Detecting and preventing the disposal of regulated hazardous waste, and any other DEQ-prohibited waste;</li> <li>• Disposing of special wastes;</li> <li>• Disposing of putrescible wastes;</li> <li>• Placing daily and interim cover;</li> <li>• Using, stockpiling, and tracking the receipt &amp; use of waste approved for use as alternative daily cover (ADC);</li> <li>• Reducing and controlling the risk of a landfill fire; and</li> <li>• Fill progression and phasing, consistent with DEQ-approved fill plan, and that takes into account other operational considerations such as leachate recirculation, landfill gas management, etc.</li> </ul>
Special Waste Management Plan (SWMP)	<ul style="list-style-type: none"> <li>• Identifying and characterizing special wastes (i.e., wastes which require special management or waste streams not otherwise authorized by this permit);</li> <li>• Identifying the source of all special wastes;</li> <li>• Determining appropriate handling and disposal procedures; and</li> <li>• Documenting SWMP implementation, including waste characterization and location of waste disposition.</li> </ul> <p>References: OAR 340-093-0190, OAR 340-094-0040[11][b][J]</p>
Ancillary operations	<ul style="list-style-type: none"> <li>• Placing and maintaining interim cover over inactive landfill areas;</li> <li>• Managing transfer containers.</li> </ul>
Inspection and maintenance	<ul style="list-style-type: none"> <li>• Washing equipment;</li> <li>• Maintaining leachate and gas collection systems;</li> <li>• Maintaining monitoring stations and devices;</li> <li>• Periodically inspecting the continuity and integrity of primary leachate collection pipes;</li> <li>• Maintaining surface water control structures.</li> </ul>



General Topics	Describe plans or procedures for:
Operating record	<ul style="list-style-type: none"> <li>• Establishing and maintaining the operating record.</li> </ul>
Contingency	<ul style="list-style-type: none"> <li>• Backup methods for storing and/or disposing of leachate;</li> <li>• Providing fire protection equipment, and arrangements made with local fire control agency; and</li> <li>• Notifying DEQ about emergencies and fires.</li> </ul>

Reference: OAR 340-094-0040 describes requirements for preparing an Operations Plan.

**7.3 Operations and Maintenance Manual.** Within 120 days after DEQ’s approval of the updated Operations Plan, required by Subsection 7.1 of this permit, the permittee must prepare an updated Operations and Maintenance (O&M) Manual which describes specific procedures for conducting routine and emergency operations at the site. The O&M Manual is an internal working document designed to functionally translate the DEQ-approved Operations Plan, and effectively communicate any other pertinent operational requirements to landfill personnel. The O&M Manual should provide management direction, guidance, and commitment to landfill personnel that will help them to operate a safe, compliant, and successful disposal facility. The permittee must keep a copy of the O&M Manual with the Operating Record, readily available for DEQ inspection and review.

**7.4 Plan and Manual updates.** The permittee must update and revise both the Operations Plan and the O&M Manual as necessary to reflect actual facility conditions and procedures.

The permittee must submit any associated revisions or updates of the Operations Plan to DEQ for review and approval.

**7.5 Plan compliance.** The permittee must operate the facility in accordance with the DEQ-approved Operations Plan and any amendments to that plan.

**8.0 RECORDKEEPING AND REPORTING – OPERATIONS:** This section describes required recordkeeping and reporting of operation information for the facility.

**8.1 Non-compliance reporting.** The permittee must take immediate corrective action for any violations of permit conditions or DEQ rules and promptly notify DEQ’s Eastern Region Bend Office at :

**(541) 388-6146**

DEQ response: DEQ may investigate the nature and extent of the compliance problem and evaluate the adequacy of the permittee’s corrective action plans.

**8.2 Permit display.** The permittee must display a copy of this permit where operating personnel can easily refer to it.

**8.3 Access to records.** DEQ must have access, when requested, to all records and reports related to the permitted facility

**8.4 Procedure.** The permittee’s record-keeping and reporting procedures are as follows:

Step	Action
1	Keep the Operating Record at the facility or at another DEQ-approved location.
2	Place information required by 40 CFR 258.29 and this permit in the Operating Record.
3	<p>During facility operations, record the daily amount of each waste type received, and ADC-qualified waste used for daily cover. Record zero (0) if the waste is not received.</p> <p><u>Identify the following waste types and categorize them as either in- or out-of-state wastes:</u></p> <ul style="list-style-type: none"> <li>• Municipal solid waste (Residential/Commercial/Construction/Demolition);</li> <li>• Industrial solid waste;</li> <li>• Contaminated cleanup material including petroleum-contaminated soil;</li> <li>• Approved alternative daily cover (ADC)-qualified waste received;</li> <li>• Asbestos; and</li> <li>• Other (i.e., specify any waste type not included in the above list).</li> </ul>
4	If applicable, every quarter, record the amount of each material recovered for recycling or other beneficial purpose.
5	<p>Submit the information collected in Step 3 above on the Solid Waste Disposal Report/Fee Calculation form provided by the DEQ.</p> <p>Pay solid waste fees as required by OAR 340-097.</p> <p><u>Date due:</u> last day of the month following the end of the calendar quarter.</p>
6	<p>Submit the information collected in Step 3 &amp; 4 above to the Wasteshed Representative on a DEQ provided or approved form.</p> <p><u>Date due:</u> January 25 of each year.</p>
7	Retain copies of all records and reports for ten (10) years after their creation.
8	Update all records to reflect current conditions at the facility.

**8.5 Submittal address.** Send submittals required by this Section of this permit to:

**Oregon Department of Environmental Quality  
 Materials Management Program  
 811 S.W. Sixth Ave.  
 Portland, OR 97204  
 Phone: (503) 229-5409**

**8.6 Complaint log.** The permittee must maintain a log recording all complaints received in writing (including email), via telephone or in person by the facility operator or staff that specifically refer to dust, odor or other nuisance conditions caused by this facility. The log must also record the permittee's actions to investigate, make a determination as to the validity of the complaint, and promptly resolve the nuisance problem.

## 9.0 SPECIFIC OPERATING CONDITIONS.

9.1 **In this section.** This section describes specific conditions to which site operations must conform, including:

- Access control;
- Landfill signs;
- Access roads;
- Discovery of prohibited waste;
- Spills Notification;
- Unloading area;
- Asbestos waste management;
- Waste tire disposal;
- Infectious waste sharps;
- Litter control;
- Vector control;
- Daily cover;
- ADC usage;
- Leachate management;
- Maximum leachate depth;
- Interim cover;
- Stormwater management;
- Surface water structures;
- Air emissions;
- Landfill gas management;
- Fire protection and reporting; and
- Water supply

9.2 **Access control.** The permittee must control public access to the landfill as necessary to prevent unauthorized entry and dumping.

9.3 **Landfill signs.** Signs which clearly indicate the disposal area rules must be posted to provide information critical to the safe and efficient operation of the facility, and to facilitate compliance with the approved site Operations Plan. A prominently displayed sign, located at the landfill entrance, or other suitable location(s) approved by DEQ, must include the following information:

- The name of facility;
- The emergency telephone number;
- The days and hours of operation;
- The authorized and prohibited wastes;
- The Solid Waste Permit number; and
- The operator's address.

9.4 **Access roads.** The permittee must provide all-weather access roads from the landfill property line to the active operational area(s) and the environmental monitoring stations, and maintain them in a manner that prevents traffic hazards, dust and mud.

The permittee must use appropriate means, including truck washing, as needed to prevent haul trucks from tracking mud onto external roadways outside the Knott Landfill and Knott Recycling and Transfer Facility boundaries. Any truck washing activities must be conducted on a hard surface and any disposal of waste water must be accomplished in a manner approved by DEQ.

**9.5 Discovery of prohibited waste.** If the permittee discovers prohibited wastes known or suspected to be hazardous, explosive, radioactive or infectious, the permittee must notify DEQ within twenty-four (24) hours, and take digital photos of the prohibited waste to document its quantity, nature, identity and source.

For prohibited waste that is hazardous or suspected to be hazardous waste, the permittee must, within twenty-four (24) hours, initiate procedures to identify and remove the waste. Hazardous waste must be removed within ninety (90) days, unless DEQ approves otherwise. The permittee's temporary storage and transportation practices for this type of waste must comply with DEQ rules.

For non-hazardous prohibited waste, the permittee must, within twenty-four (24) hours of discovery, begin to isolate or remove the waste. Within sixty (60) days, non-putrescible, non-hazardous prohibited waste must be transported to a disposal or recycling facility authorized to accept such waste, unless otherwise approved or restricted by DEQ. The permittee must obtain DEQ's written approval to store putrescible, non-hazardous prohibited waste if such waste is not promptly removed from the landfill site.

**9.6 Spills notification.** ORS 466.635 and Oil and Hazardous Materials Emergency Response Requirements, OAR 340, Division 142 require immediate notification to Oregon Emergency Response System (OERS) after taking any required emergency actions to protect human health and the environment when oil or hazardous materials are spilled. The spill must be immediately reported to OERS at 1-800-452-0311 if the spill is of a reportable quantity. Reportable quantities include:

- Any amount of oil spilled to waters of the state;
- Oil spills on land in excess of forty-two (42) gallons;
- Two hundred (200) pounds (twenty-five [25] gallons) or more of spilled pesticide residue; and
- Spills of hazardous materials that are equal to, or greater than, the quantity listed in the Code of Federal Regulations, 40 CFR Part 302 (List of Hazardous Substances and Reportable Quantities), and amendments adopted before July 1, 2002.

For a complete list of hazardous materials required to be reported, please refer to OAR 340-142-0050.

**9.7 Unloading area.** The area(s) for unloading incoming waste must be clearly defined by signs, fences, barriers or other devices/methods approved by DEQ. The size of the working face must be minimized as described in the DEQ-approved Operations Plan.

**9.8 Asbestos waste management.** The permittee must manage and dispose of asbestos-containing solid waste as specified in a DEQ-approved Special Waste Management Plan, and such that management and disposal for:

- friable asbestos-containing solid waste complies with OAR 340-248-0280 and the facility's Oregon Title V Operating Permit No. 09-0040-TV-01; and
- non-friable asbestos-containing solid waste complies with OAR 340-248-0290.

**9.9 Waste tire disposal.** Tires may be disposed in the landfill as specified in a DEQ-approved Special Waste Management Plan, and only if the tires are:

- Chipped in accordance with standards established under OAR 340-064-0052(2); or
- From vehicles not normally used on highways and the tires have been determined to be exempt from OAR 340-064-0052(1) banning whole tire disposal.

- 9.10 Infectious waste sharps.** "Sharps" are an infectious waste which may be received if they have been treated by being placed in a leak-proof, rigid, puncture-resistant, container that is taped closed or tightly lidded to prevent loss of the contents. They may be disposed of only in a segregated, dedicated, clearly marked and documented location in accordance with the approved Operations Plan. Disposal at the asbestos disposal location is acceptable practice.
- 9.11 Litter control.** The permittee must at all times minimize windblown litter and collect it promptly and effectively to prevent scattering, nuisance conditions and unsightliness.
- 9.12 Vector control.** The permittee must minimize vectors in the active disposal area, including insects, rodents, and birds.
- 9.13 Daily cover.** At the end of each working day the permittee must cover all solid wastes which are not approved for alternative daily cover (ADC) use with at least a six (6) inch-thick layer of compacted soil or with a DEQ-approved ADC.
- 9.14 ADC usage.** Alternative daily cover (ADC) usage must be measured and documented in accordance with the DEQ-approved Operations Plan. The permittee must not claim ADC usage of the greater of 10% of "Total Tons Received in Reporting Period," or 15% of "Counting Waste" (i.e., residential and commercial domestic solid waste, and construction and demolition waste) on the Solid Waste Disposal Report/Fee Calculation form without first obtaining written DEQ approval. To obtain DEQ approval, submit a detailed justification and methodology report of the facility ADC usage including: typical daily disposal cell construction dimensions, cover procedures, operational procedures for measuring and documenting daily ADC usage and conversion factors with supporting documentation.

Once DEQ has approved the justification and methodology report above, the permittee must include detailed documentation of ADC usage, including measurements and calculations with each Solid Waste Disposal Report/Fee Calculation form whenever ADC usage claims exceed the 10% or 15% limit described above.

- 9.15 Leachate management.** The permittee must operate and maintain, in good functioning condition, all DEQ-approved leachate containment, collection, detection, removal, storage, treatment, and recirculation systems. The permittee must maximize leachate removal from all leachate collection and removal systems (LCRSs), to minimize fluid build-up on the bottom liner and prevent the hydraulic head (fluid depth) from exceeding one (1) foot on the primary liner outside of the sump areas.
- 9.16 Maximum leachate depth.** Leachate sump pumps must be located at the accessible low point within each leachate collection and removal system (LCRS) and secondary leachate collection system (SCS) sump. DEQ shall review and approve the sump pump location within each sump, and the respective "pump-on" and "pump-off" liquid depth settings for each sump. Unless an alternative compliance procedure is approved by DEQ, the compliance elevation for maximum allowable leachate depth within a LCRS or SCS sump shall be 12 inches above the "pump-on" setting when the respective pump is located at the accessible low point within the sump. If the liquid depth within a LCRS or SCS sump exceeds 12 inches above the "pump-on" setting elevation, then the permittee must immediately report such an exceedance to DEQ.
- 9.17 Interim cover.** As specified in DEQ-approved design and operations plans, the permittee must place and maintain interim cover over fill areas that will not receive additional waste for an extended period of time (i.e., greater than one-hundred and twenty [120] days) and actively

revegetate, in a DEQ-approved manner, any interim cover that will remain exposed for more than two (2) years.

- 9.18 Stormwater management.** The permittee shall manage stormwater on-site by directing stormwater and surface water runoff to the constructed stormwater storage/evaporation ponds.
- 9.19 Surface water structures.** The permittee must maintain all stormwater drainage structures in good functional condition. Any significant malfunctions or damage must be promptly reported to DEQ, and repairs must be completed within sixty (60) days of discovery of the problem.
- 9.20 Air emissions.** Air emissions (such as dust, malodors, or air toxics) from disposal, construction, operation and all other activities at the disposal site must be controlled in compliance with the facility's Oregon Title V Operating Permit No. 09-0040-TV-01, including applicable visible emissions and nuisance requirements of OAR 340-208.
- 9.21 Landfill gas management.** The permittee must control and manage landfill gas (LFG) in compliance with the requirements of 40 CFR Parts 51, 52 and 60, OAR 340-094-0060(4), the facility's Oregon Title V Operating Permit No. 09-0040-TV-01, and this permit.

The permittee must operate and maintain the landfill gas control and monitoring systems in good functional working order as required to prevent nuisance odors, unauthorized air emissions, and LFG migration.

If critical LFG control or monitoring equipment is significantly damaged or compromised, the permittee must replace or repair that equipment, within sixty (60) days of discovering the problem, and submit a written inspection report to DEQ.

- 9.22 Fire protection and reporting.** The permittee must provide complete and sufficient protection equipment and facilities in accordance with the DEQ-approved Operations Plan.

Arrangements must be made with the local fire control agency to immediately acquire their services when needed. The permittee must implement preventative measures to ensure adequate on-site fire control, as determined by the local fire control agency. Fires must be immediately and thoroughly extinguished.

Fires must be promptly reported (within 8 hours of discovery) to DEQ's Eastern Region Bend Office at:

**(541) 388-6146**

- 9.23 Water supply.** The permittee must provide water in sufficient quantities for fire protection, dust suppression, establishment of vegetation, and other site operations requiring water.

## 10.0 SITE DEVELOPMENT AND DESIGN

**10.1 In this section.** This section describes site development and design requirements for continued use of the landfill, or any landfill expansion or new facility construction, including:

- Site Development Plan;
- Baseline design criteria;
- Design plans;
- Construction requirements;
- Construction documents;
- Construction inspection;
- Construction Certification Report submittal;
- Construction Certification Report content; and
- Approval to use a new disposal unit

**10.2 Site Development Plan.** Landfill disposal unit (cell) development and closure, including preparation of related detailed design plans, shall be guided by:

- The July 31, 2003 Site Development Plan For Knott Landfill and Recycle Center, Deschutes County, Oregon, (Site Development Plan) as conditionally approved by DEQ letter dated November 14, 2003; and
- Any subsequent and future DEQ-approved changes or amendments to the above-referenced 2003 Site Development Plan.

**10.3 Baseline design criteria.** New MSW landfill disposal units must include the following engineering controls:

- A composite liner system, including a DEQ-approved geomembrane liner (at least sixty [60] mils thick for high density polyethylene, and at least thirty [30] mils thick for approved alternative geomembranes), and at least two (2) feet of compacted soil with an in-place permeability of  $1 \times 10^{-7}$  cm/sec or less, or a DEQ-approved alternative liner pursuant to 40 CFR Part 258.40(a)(1);
- A primary leachate collection and removal system (LCRS) which fully covers the liner system and maintains a leachate depth of less than one (1) foot above the liner, per 40 CFR 258.40(a)(2). All primary leachate collection pipes must be serviceable by clean-outs;
- Unless otherwise approved by DEQ, a secondary leachate collection system (SCS) designed to: effectively monitor the overlying composite-liner system's performance; detect and collect leachate at locations of maximum leak probability; and prevent groundwater intrusion and related monitoring biases;
- Unless designed to be serviced by the sump of another disposal unit, a leachate collection sump(s) constructed with a double composite liner system, and a leak detection and removal system. Each composite liner must meet the minimum design criteria previously cited in this subsection; and
- An operations layer that covers and protects the primary LCRS and liner system from physical damage.

**10.4 Design plans.** According to a schedule approved by DEQ, or at least six (6) months prior to constructing a new disposal unit, closing an existing disposal unit, or constructing an engineered ancillary facility, the permittee must submit engineering design plans to DEQ for review and approval. The design plans must be prepared and stamped by a qualified Professional Engineer with current Oregon registration, and specify and/or provide the following:

- All applicable performance criteria, construction material properties and characteristics, dimensions, and slopes; and

- The design basis, and all relevant engineering analyses and calculations.

Reference: Follow DEQ's current *Solid Waste Guidance* to expedite DEQ review of design plans.

**10.5 Construction documents.** Prior to constructing any landfill engineering controls (e.g., final cover, new disposal unit, or other waste containment facilities or improvements), the permittee must submit complete construction documents and receive DEQ's written approval. The construction documents must:

- Be consistent with the applicable DEQ-approved design plan(s), including accurate translation of design specifications into construction requirements;
- Define the construction project team;
- Specify material and workmanship requirements to guide the Constructor in executing work and furnishing products; and
- Include a Construction Quality Assurance (CQA) plan that describes how the project team will monitor the quality of materials and Constructor's work performance, and assure compliance with project specifications and contract requirements.

Reference: Follow DEQ's current *Solid Waste Guidance* to expedite DEQ review of construction documents.

**10.6 Construction requirements.** The permittee must perform all construction in accordance with DEQ-approved plans and specifications, including all conditions of approval, and any amendments to those plans and specifications approved in writing by DEQ.

Unless otherwise approved, construction work must begin within eighteen (18) months of DEQ's approval of construction documents.

**10.7 Construction inspection.** During construction of a new landfill disposal unit, final cover system, or any other landfill controls or engineered features, the permittee must provide DEQ with a summary and schedule of planned construction activities to facilitate DEQ's inspection and oversight.

**10.8 Construction Certification Report submittal.** Within ninety (90) days of completing construction of a new landfill disposal unit, a final cover system, or other engineering controls, the permittee must submit to DEQ a Construction Certification Report prepared by a qualified independent party. The report must document and certify that the construction of all required components and structures complies with this permit and DEQ-approved design specifications.

**10.9 Construction Certification Report content.** The Construction Certification Report must include:

- An executive summary describing the construction project and any major problems encountered;
- A list of the governing construction documents;
- A summary of all construction and CQA activities;
- The manufacturer's written certifications that all geosynthetic materials conform with project specifications;
- Test data documenting that soil materials conform with project specifications;
- A summary of all CQA observations, including daily inspection records and test data sheets documenting that materials, deployment, and installation conform with project specifications;
- A description of the problems encountered and the corrective measures implemented;



- The designer's acceptance reports for errors and inconsistencies;
- A list/description of any deviations from the design and material specifications, including justification for the deviations, copies of change orders and recorded field adjustments, and copies of DEQ's written approvals for deviations and change orders;
- Signed certificates for subgrade acceptance prior to placement of soil liner and for acceptance of the soil liner prior to deployment of geomembrane liner;
- Photographs and as-constructed drawings, including record surveys of the subgrade, soil liner, granular drainage layer and protective soil layer; and
- The certification statement(s) and signatures of the CQA consultant, designer, and facility owner. At least one of these representatives must be a Professional Engineer with current Oregon registration.

**10.10 Approval to use a new disposal unit.** The permittee must not dispose of solid waste in a newly constructed disposal unit until DEQ has accepted the construction certification. If DEQ does not respond to the Construction Certification Report within thirty (30) days of its receipt, the permittee may place waste in the unit.

**11.0 RECYCLING REQUIREMENTS:** This section references the recycling operation and location for receiving source separated recyclable materials from Knott Landfill customers.

**11.1 Materials.** The permittee must provide a place for receiving the following recyclable materials:

<input checked="" type="checkbox"/> ferrous scrap metal	<input checked="" type="checkbox"/> hi-grade office paper
<input checked="" type="checkbox"/> motor oil	<input checked="" type="checkbox"/> non-ferrous scrap metal (including aluminum)
<input checked="" type="checkbox"/> newspaper	<input checked="" type="checkbox"/> corrugated cardboard and kraft paper (brown paper bags)
<input checked="" type="checkbox"/> container glass	

**11.2 Receiving location.** Due to its more convenient location, recyclable material shall be received at the Knott Recycling and Transfer Facility, located adjacent to the north side of the Knott Landfill, and regulated by DEQ Solid Waste Disposal Site Permit No. 1315.

**11.3 Material use.** All source separated recyclable materials must be reused, recycled, or recovered for energy.

## SITE CLOSURE

### 12.0 CLOSURE CONSTRUCTION AND MAINTENANCE

**12.1 In this section.** This section describes requirements for closure construction and maintenance at the facility, including:

- Worst-case closure plan development;
- Notification of plan updates;
- Closure permit;
- Closure plan approval;
- "Area A" closure;
- Closure schedule;
- Final cover;

- Vegetation;
- Final cover maintenance; and
- Deed record

**12.2 Worst-case closure plan development.** The permittee must develop a conceptual "worst-case" closure plan and a conceptual post-closure plan, obtain DEQ approval of the plans, and maintain up-to-date copies of these plans in the facility's Operating Record.

Reference: The plans must comply with 40 CFR, Part 258, Subpart F, and OAR 340-094-0110.

**12.3 Notification of plan updates.** The permittee must notify DEQ and receive DEQ approval when the conceptual "worst-case" closure and conceptual post-closure care plans are updated and placed in the Operating Record.

**12.4 Closure permit.** At least five (5) years prior to the landfill's anticipated final closure, the permittee must apply for a closure permit in accordance with OAR 340-094-0100.

**12.5 Closure plan approval.** At least six (6) months prior to final closure of any portion of the landfill, the permittee must submit detailed engineering plans, specifications, and a closure schedule to DEQ for review and approval. The design plans must be prepared and stamped by a qualified Professional Engineer with a current Oregon registration and include the following:

- Specification of all applicable performance criteria, construction material properties and characteristics, dimensions and slopes; and
- The design basis and all relevant engineering analyses and calculations.

Reference: Follow DEQ's current *Solid Waste Guidance* to expedite DEQ review of the closure plan.

**12.6 "Area A" closure.** Approximately 50 acres of the Knott Landfill site referred to as "Area A" has been closed as documented in an October 2011 Construction Quality Assurance (CQA) Report and March 6, 2012 supplemental CQA Report. The referenced CQA reports were accepted by DEQ letters dated January 5, 2012 and March 20, 2012 provided that the permittee establishes and maintains sufficient native grass and shrub vegetation to meet or exceed the assumptions used in *Section 3.2 (Water Balance Cover System Analysis)* of the February 19, 2009, Closure & End Use Plan Knott Landfill – Area A. Accordingly, the permittee must establish and maintain the desired vegetation on "Area A" to function as a water balance cover meeting the design and closure criteria approved by DEQ.

**12.7 Closure schedule.** The permittee must initiate and complete closure of each landfill disposal unit in accordance with 40 CFR 258.60(f)&(g), or an alternate schedule approved by DEQ.

**12.8 Final cover.** Final landfill cover must be designed and constructed to facilitate implementation of the DEQ-approved end use plan for the site property after final closure of the landfill.

Unless otherwise approved by the DEQ, the final landfill cover must be:

- at least three feet thick {OAR 340-094-0120(2)(a)};
- minimize infiltration of precipitation as required by 40 CFR Part 258.60, and
- graded to compensate for estimated differential settlement such that final (post-settlement) slopes will maintain positive drainage between two (2) percent and thirty (30) percent.

**12.9 Vegetation.** The permittee must establish and maintain vegetation suitable for erosion control and agricultural production over the closed areas of the disposal site consistent with DEQ-approved plans and the final end use of the site.

**12.10 Final cover maintenance.** The permittee must maintain the final surface contours of the landfill cover such that:

- erosion is minimized and ponding of water is prevented;
- the integrity and performance of the cover system is preserved in accordance with DEQ-approved plans; and
- the site is maintained suitable for the approved end use.

The permittee must reconstruct the cover system with approved materials and grade and seed all areas that have settled or where water ponds, and all areas where the cover soil has been damaged or thinned by cracking or erosion. Areas where vegetation has not been fully established shall be fertilized, re-seeded and maintained. Any damage repair or other reconstruction of a geomembrane barrier component in the final cover system shall be conducted in accordance with a construction quality assurance plan approved by DEQ.

**12.11 Deed record.** Within thirty (30) days after the disposal site's final closure, the permittee must record a notation on the deed to the facility property as required by 40 CFR 258.60(i) and OAR 340-094-0130(1)(a), and submit a copy of the notation on the deed to DEQ.

**13.0 FINANCIAL ASSURANCE:** This section describes requirements for financial assurance at the facility.

**13.1 Financial assurance required.** The permittee must comply with applicable financial assurance criteria requirements prescribed by OAR 340-094-0140. The permittee must maintain an up-to-date Financial Assurance Plan in the facility Operating Record, and provide financial assurance for landfill closure, post-closure care and, if required, corrective action. The financial assurance provided must:

- Be in the amount required by OAR 340-094-0140(5);
- Be updated, annually, in accordance with OAR 340-094-0140(6)(e); and
- Consist of a financial assurance mechanism complying with OAR 340-094-0145.

**13.2 Recertification of financial assurance.** The permittee must annually review and update their financial assurance in accordance with OAR 340-094-0140(6)(e). By June 1<sup>st</sup> of each year, a notarized annual recertification of financial assurance must be submitted to DEQ demonstrating that this review has been completed. If a discount rate is used to estimate costs, the annual update must also include the certifications listed in OAR 340-094-0140(6)(d).

**13.3 Use of financial assurance** The permittee must not use the financial assurance for any purpose other than to finance the permitted facility's approved closure, post-closure, and corrective action activities, or to guarantee that those activities will be completed.

**13.4 Long-term financial responsibility** The permittee must continuously maintain financial assurance for the facility until the permittee or other person owning or controlling the site is no longer required by the DEQ to demonstrate financial responsibility for closure, post-closure care, or corrective action.

## ENVIRONMENTAL MONITORING

- 14.0 ENVIRONMENTAL MONITORING PLAN (EMP):** This section describes requirements for an Environmental Monitoring Plan (EMP) for the facility.
- 14.1 EMP submittal.** Within 360 days of the permit issue date, the permittee must submit two hard copies and one electronic copy of an updated Environmental Monitoring Plan (EMP) to DEQ for review and approval. The plan must be prepared and stamped by a Geologist or a Certified Engineering Geologist with current Oregon registration.
- 14.2 EMP contents.** The updated EMP must establish an environmental monitoring program that will characterize potential facility impacts. At a minimum, the updated EMP should address the issues and topics found in Section 10 of DEQ's *Solid Waste Guidance*, dated September 1, 1996.
- 14.3 EMP revisions and updates.** The permittee must revise the current EMP as necessary to reflect current and future environmental conditions, facility development and regulatory requirements. For example, any new or replacement monitoring point or device must be incorporated into the EMP, and submitted to DEQ as an update to the EMP. A Geologist or Certified Engineering Geologist, with current Oregon registration, must prepare and stamp the EMP revisions.
- 14.4 Long-term groundwater monitoring.** The permittee must update the EMP to reflect the long-term groundwater monitoring program and submit the updated plan for DEQ review and approval. The permittee shall propose changes to concentration limits in an updated Environmental Monitoring Plan (EMP). Once the updated EMP is reviewed and approved by DEQ, those concentration limits become part of the permit by reference.
- 15.0 ENVIRONMENTAL SAMPLING REQUIREMENTS:** This section also describes general sampling requirements for the facility.
- 15.1 Notification of sampling events.** The permittee must notify DEQ, in writing, at least ten (10) working days prior to a scheduled sampling event.
- 15.2 Split sampling events.** The permittee must split samples with DEQ at DEQ's request, and schedule split-sampling events with DEQ's laboratory at least forty-five (45) days prior to the scheduled sampling event.

The permittee must conduct the following split sampling events with DEQ:

**Fall 2018, Fall 2022**

- 15.3 Monitoring schedule.** The permittee must refer to the approved Environmental Monitoring Plan (EMP) for environmental monitoring procedures. Quarterly monitoring benchmarks are defined below:

If sampling in the...	Schedule the sampling event	
	On, or after....	But on, or before...
Winter	January 1	February 28
Spring	April 1	May 31
Summer	July 1	August 31
Fall	October 1	November 30

**15.4 Interim monitoring.** Until superseded by an updated EMP approved by DEQ, the permittee must conduct all environmental sampling in accordance with the following document, as amended and approved by DEQ:

June 13, 2002 Environmental Monitoring Plan, Knott Landfill, Deschutes County, Oregon.

The permittee may commence semiannual groundwater sampling at those wells which have accumulated nine acceptable data points. All semiannual groundwater sampling must be conducted during the spring (April 1 - May 31) and fall (October 1 – November 30) quarters.

**15.5 Monitoring after EMP approval.** The permittee must monitor the facility in accordance with: 1) the approved EMP; 2) any conditions of DEQ’s approval; and 3) any DEQ-approved amendments and updates.

**15.6 Changes in sampling or split sampling.** The permittee must submit a written request and obtain DEQ’s written approval before changing the sampling program, including sampling frequency, parameters, or locations. Approved changes will become an integral part of the EMP.

DEQ reserves the right to add to or delete from the list of scheduled sampling events, sampling locations, and sampling parameters, and to conduct unscheduled sampling or split sampling events.

If the split-sampling schedule changes, DEQ will try to notify the permittee at least 30 days prior to the next scheduled event.

**16.0 ESTABLISHING PERMIT-SPECIFIC CONCENTRATION LIMITS (PSCLs), ACTION LIMITS (ALs), CONCENTRATION LIMIT VARIANCES (CLVs) AND SITE-SPECIFIC LIMITS (SSLs):** This section describes requirements for establishing PSCLs, ALs, and SSLs for groundwater monitoring.

**16.1 Gathering data.** The permittee must monitor the designated background wells in accordance with the approved Environmental Monitoring Plan or propose an alternative intrawell approach. Background monitoring must continue until all necessary data sets have been collected, and PSCLs, ALs, and/or SSLs are proposed for each non-hazardous parameter of concern. The permittee then must demonstrate to DEQ’s satisfaction that the selected background-data set is valid and unaffected by facility releases.

**16.2 Statistical analysis.** To establish compliance concentration limits (PSCLs, ALs, and SSLs), the permittee must perform statistical evaluations of the monitoring results for each sampling event.

Use methods outlined in the 2009 EPA Unified Guidance: Statistical Analysis of Groundwater Monitoring Data.

- 16.3 Proposing PSCLs, ALs, and/or SSLs.** The permittee must propose for DEQ's review and approval, a PSCL, AL, or SSL pursuant to the guidelines specified in OAR 340 Div. 040. The proposal must address all required parameters. Once a statistically valid data set (at least nine [9] acceptable data points) are established from the appropriate background well(s), the permittee may generate a PSCL, AL, or SSL for each designated, long-term monitoring parameter.
- 16.4 Changing PSCLs, ALs, and/or SSLs.** If the permittee demonstrates to DEQ's satisfaction that background groundwater quality has significantly changed since the PSCL, AL, or SSL was established, and if the change is unrelated to the permitted facility's influence, the permittee can propose, to DEQ, a revised level for the affected PSCL(s), AL(s), or SSL(s). DEQ will accept a proposal to change any PSCL during the next permit renewal process.

Note: This does not apply to intrawell comparisons, only to interwell methods.

- 16.5 Establishing and changing CLVs.** The permittee should refer to DEQ's Groundwater Quality Protection Rules [OAR 340-040-0030(4)] for guidance in establishing and changing Concentration Limit Variances (CLVs).

**17.0 ENVIRONMENTAL MONITORING STANDARDS:** This section describes requirements for evaluating compliance with environmental monitoring standards, including:

- Applicable regulatory standard;
- Compliance points;
- Review of results;
- Resampling results;
- Secondary leachate collection system;
- Methane limits; and
- Methane exceedences.

- 17.1 Applicable regulatory standard.** The permittee must not allow the release of any substance from the landfill into groundwater, surface water, or any other media which will result in a violation of any applicable federal or state air or water limit, drinking water rules, or regulations, beyond the solid waste boundary of the disposal site or an alternative boundary specified by DEQ. Reference: OAR 340-094-0080.
- 17.2 Compliance points.** This permit establishes compliance points at the following groundwater monitoring locations: MW-1, MW-2, MW-3, MW-4R, MW-5, MW-6 and MW-7. Landfill Gas Probes – GP – 1A, -1B, -2A, -2B, -3A, -3B, -4A, 4B, - 6A, -6B, -7A and -7B. The location of all other environmental monitoring compliance points shall be as established in the updated EMP approved by DEQ.
- 17.3 Review of results.** After each groundwater monitoring event, the permittee must review the groundwater analytical results according to the following table.

If monitoring results are...	Then...
<p><b>Above any PSCL, CLV, or AL, or more than two SSLs (if established), or if data indicate a significant change in water quality at any monitoring point</b></p> <p><u>Note:</u> Examples of significant changes:</p> <ul style="list-style-type: none"> <li>• Detection of a VOC or other hazardous constituent that is absent in background water quality;</li> <li>• Exceedance of a Table 1 or 3 value listed in OAR 340-040 unless the background water quality is above these numerical limits;</li> <li>• Exceedance of a Safe Drinking Water Standard; or</li> <li>• Exceedance, by an order of magnitude or more, of any compound's background concentration.</li> </ul>	<p>1. Notify DEQ in writing within ten (10) days of receipt of laboratory results; and</p> <p>2. Perform resampling immediately and evaluate results as described below.</p> <p><u>Note:</u> Re-sampling is not required for a known release, previously confirmed in writing to DEQ.</p>
<p><b>None of the above</b></p>	<p>Continue groundwater monitoring with next scheduled sampling event.</p>
<p><u>Note:</u> Established PSCLs, CLVs, ALs, and SSLs are listed in the approved EMP.</p>	

**17.4 Resampling results.** The permittee must review re-sampling results according to the following table.

If resampling results ...	then ...
<p>Confirm the exceedance of at least one permit-specific concentration limit (PSCL) or a table 1 or 2 value as listed in OAR 340-040 or concentration limit variance (CLV).</p>	<p>1. Notify DEQ in writing within ten (10) days of receipt of laboratory data, or within sixty (60) days of the sample date (whichever occurs first); and</p> <p>2. Submit, within ninety (90) days of the date of re-sampling, a Remedial Investigation (RI) workplan for DEQ's review and approval. The workplan must specify how the RI will meet OAR 340-040 objectives, and may need to include provisions for monitoring Groups 4 &amp; 6* parameters in addition to routine detection monitoring.</p> <p>*See Attachment 1: Parameter Groups</p>
<p>Confirm the significant change in water quality results noted in the routine sampling event or confirm that at least one AL or more than two SSLs were exceeded.</p>	<p>1. Notify DEQ in writing within ten (10) days of receipt of laboratory data, or within sixty (60) days of the sample date (whichever occurs first); and</p> <p>2. Submit a plan for developing an assessment program to DEQ within thirty (30) days (unless another time period is authorized).</p>
<p>Do not confirm the routine sampling results.</p>	<p>1. Continue with routine monitoring; and</p> <p>2. Discuss the results of the routine sampling and resampling in the next annual environmental monitoring report.</p>

**17.5 Secondary Leachate Collection System (SCS).** If the permittee observes liquids in the SCS above levels specified in the EMP, the permittee must respond in accordance with the current approved EMP procedures for sampling, analysis and reporting. If testing confirms the possibility of significant landfill liner leakage or previously unreported impacts in the SCS, the permittee will notify DEQ and follow the procedures outlined in the approved EMP, or discuss appropriate options with DEQ.

**17.6 Methane limits.** The methane concentration must not exceed:

- Twenty-five (25) percent of methane's Lower Explosive Limit in onsite structures (excluding gas control structures or gas recovery system components); or
- Methane's Lower Explosive Limit at the facility property boundary.

Note: Methane's Lower Explosive Limit is equal to a concentration of five (5) percent by volume in air.

**17.7 Methane exceedance.** If methane levels exceed the specified limits, the permittee must:

- Take immediate steps to protect human health and safety and promptly notify DEQ;
- Within seven (7) days of detection, confirm the measures taken to protect human health and safety (unless DEQ approves an alternative schedule), and describe the methane test results and response measures in the facility operating record; and
- Within sixty (60) days of the methane exceedance, develop and implement a remediation plan, incorporate the plan into the monitoring records, and submit a progress report to DEQ.

**18.0 RECORDKEEPING AND REPORTING – ENVIRONMENTAL MONITORING:** This section describes recordkeeping and reporting requirements associated with environmental monitoring, including:

- Annual environmental monitoring report (AEMR);
- Statement of compliance;
- Annual environmental monitoring report contents;
- Split sampling submittal;
- DEQ Lab address; and
- Department response to split samples

**18.1 Annual Environmental Monitoring Report (AEMR).** By March 15 of each year, the permittee must submit to DEQ two hard copies and one electronic copy of an annual environmental monitoring report for the past year's monitoring period (January 1 to December 31). The report must conform to the approved EMP format and be prepared and stamped by a Geologist or a Certified Engineering Geologist, with current Oregon registration.

**18.2 Statement of Compliance.** The AEMR must include a brief (approximately one-page) cover letter that:

- Compares the analytical results with the relevant monitoring standards (PSCLs, CLVs, ALs, or SSLs);
- Documents any exceedances of federal or state standards for relevant media; and
- Documents any significant change in water quality, land quality, air quality or methane levels in monitored media.

**18.3 Annual Environmental Monitoring Report (AEMR) contents.** The AEMR must reflect the facility's current conditions, present accurate data that corresponds with the original field and lab data, and include the following elements unless otherwise approved in the EMP:



- A review of the past year's significant events at the site;
- An evaluation of the monitoring network performance and a summary of any recommended changes;
- A summary of all the past year's sampling data for, but not limited to groundwater, surface water, leachate, LFG (including any air sampling data), and soil;
- A summary of any data quality problems (such as QA/QC failures, flagged data, switched samples);
- Piezometric maps for each sampling event and each groundwater bearing zone monitored;
- Time history plots for field specific conductivity, dissolved oxygen, and all group 1b and group 2a and 2b parameters every three years;
- Box plots for field specific conductivity, dissolved oxygen, and all group 1b and group 2a and 2b parameters every three years.
- An anion-cation balance for each sampling event at all monitoring points for which there is adequate data. Include an additional explanation for any balance outside of  $\pm 10\%$  in error;
- An electronic copy of all the past year's field and lab data, including all chain of custody forms; and
- A summary of the leachate management program designed and operated to comply with Subsections 5.5 and 9.15. The summary must include: leachate and liquid volumes collected and removed from each primary and secondary leachate sump; volumes of leachate recirculated by each approved technology; and an evaluation of whether or not there is any significant landfill liner leak based on sampling and analysis of any liquids detected in the secondary leachate collection systems.

**18.4 Split sampling submittal.** Within ninety (90) days of any split sampling event, the permittee must submit the following information to DEQ and DEQ's laboratory:

- A copy of all information pertinent to the sample collection handling, transport and storage, including field notes;
- Copies of all laboratory analytical reports;
- Copies of all laboratory QA/QC reports; and
- Any other data or reports requested by DEQ.

**18.5 DEQ Lab address.** Report all split sampling information to:

**Oregon Department of Environmental Quality  
Laboratory, Groundwater Monitoring Section  
3150 NW 229th Ave., Suite 150  
Hillsboro, OR 97124  
Phone: (503) 693-5700  
Fax: (503) 693-4999**

**18.6 DEQ response to split samples.** If the permittee submits all required split sampling data and requests DEQ's results, DEQ's lab may provide, to the permittee, copies of the following information:

- DEQ's analysis of the split sample;
- The QA/QC report;
- The analytical report; and/or
- The field data sheets.

- 19.0 ENVIRONMENTAL MONITORING NETWORK:** This section describes requirements for the environmental monitoring networks.
- 19.1 Monitoring stations, devices, and equipment.** To ensure that every sample is representative of the site’s environmental conditions, the permittee must protect, operate, and maintain in good functioning condition all environmental monitoring stations, devices, and equipment in accordance with DEQ’s requirements.
- 19.2 Reporting equipment damage.** Within fourteen (14) days of discovering any damaged monitoring equipment, station, or device, the permittee must submit to DEQ a report describing the damage, the proposed repair or replacement measures, and the schedule to complete this work. Example: A well’s impaired function or altered position/location.
- 19.3 Monitoring device construction.** The permittee must complete any monitoring well or gas monitoring probe abandonment (decommissioning), replacement, repair, or installation in a manner that complies with the Water Resources Rules, OAR 690-240, and with DEQ’s *Guidelines for Groundwater Monitoring Well Drilling, Construction, and Decommissioning*, dated August 1992.
- 19.4 Reporting monitoring device construction and repairs.** The permittee must document all monitoring well or dedicated gas monitoring probe repair and construction activities, including geologic logs, well location information, and construction information in a report prepared and stamped by a Geologist or Certified Engineering Geologist, with current Oregon registration. The permittee must submit to DEQ, within thirty (30) days of the action, copies of the driller’s well reports sent to the Oregon Water Resources Department, and a final report in accordance with the approved workplan.
- 19.5 Monitoring device decommissioning or replacement.** The permittee must submit a written recommendation to DEQ prior to decommissioning or replacing any monitoring well or dedicated gas monitoring probe in a monitoring network. The permittee must decommission or replace any well or gas probe that meets any of the following criteria:
- The well or gas probe was installed in a borehole that hydraulically intersects two saturated strata;
  - The permittee lacks supporting documentation demonstrating that the well or gas probe was properly installed and constructed;
  - The well or gas probe was damaged beyond repair or destroyed; or
  - Other reasons as determined by either the permittee or DEQ.

## COMPLIANCE SCHEDULE

**20.0 SUMMARY OF DUE DATES:** The permittee must comply with the event-driven schedule shown below as well as any compliance schedules for the routine reporting requirements specified in other sections of the permit.

Due Date	Activity	See subsection...
Within 360 days of permit issuance	Submit updated Environmental Monitoring Plan (EMP)	14.1 EMP submittal

Due Date	Activity	See subsection...
Within 270 days of permit issuance	Submit updated Operations Plan	7.1 Operations Plan submittal
Within 120 days of Operations Plan approval	Update the Operations and Maintenance Manual	7.3 Operations and Maintenance Manual
<b>EMERGENT:</b>		
Immediately	OERS notification of reportable spill	9.6 Spills notification
Immediately upon methane exceedance identification	Take steps to protect human health and safety, promptly notify DEQ	17.7 Methane exceedance
Immediately when the liquid depth in a LCRS or SCS sump exceeds 12 inches above the "pump-on" setting or an alternate compliance level approved by DEQ	Notify DEQ	9.16 Maximum leachate depth
Immediately upon identification of permit violation	Take corrective action for permit condition violation and notify DEQ	8.1 Non-compliance reporting
Within 8 hours of discovering a fire	Notify DEQ and immediately and thoroughly extinguish the fire.	9.22 Fire protection and reporting
Within 24 hours of discovery of prohibited waste known or suspected to be hazardous, explosive, radioactive or infectious.	Notify DEQ of prohibited waste and take digital photos. For hazardous prohibited waste, initiate procedures to identify and remove. For non-hazardous prohibited waste, begin to isolate or remove.	9.5 Discovery of prohibited waste
Within 7 days of methane exceedance	Confirm protective measures, describe results and measures in facility operating record	17.7 Methane exceedance
Within 10 days of receipt of lab results with exceedance(s)	Notify DEQ of monitoring exceedance(s)	17.3 Review of results, 17.4 Resampling results
Within 14 days of discovery of monitoring equipment or station damage	Submit report to DEQ	19.2 Reporting equipment damage
Within 30 days of confirmed significant change in water quality results	Submit assessment plan to DEQ	17.4 Resampling results

Due Date	Activity	See subsection...
Within 60 days of methane exceedance	Develop and implement remediation plan, submit progress report to DEQ	17.7 Methane exceedance
Within 60 days of discovery of landfill gas equipment damage/compromise	Replace or repair equipment, submit written inspection report to DEQ	9.21 Landfill gas management
Within 60 days of discovery of non-hazardous prohibited waste	Transport non-hazardous prohibited waste to authorized facility	9.5 Discovery of prohibited Waste
Within 60 days of discovery of surface water structural damage/malfunction	Notify DEQ and complete repairs	9.19 Surface water structures
Within 90 days of discovery of hazardous or suspected hazardous waste	Remove hazardous waste	9.5 Discovery of prohibited waste
Within 90 days of resampling date	Submit Remedial Investigation (RI) workplan to DEQ	17.4 Resampling results
<b>RECURRENT:</b>		
Last day of month following end of calendar quarter	Submit Solid Waste Disposal Report/Fee Calculation Form to DEQ	8.4.5 Procedure
By Jan 25 for each year	Submit amount of material recovered for recycling/other beneficial purposes to DEQ Wasteshed Representative	8.4.6 Procedure
By March 15 of each year	Submit an Annual Environmental Monitoring Report (AEMR)	18.1 AEMR
By June 1 of each year	Submit annual financial assurance recertification	13.2 Recertification of financial assurance
<b>SAMPLING:</b>		
At least 10 working days prior to scheduled sampling event	Notify DEQ in writing	15.1 Notification of sampling events
At least 45 days prior to split sampling event	Schedule split sampling event with DEQ laboratory	15.2 Split sampling events
Within 90 days of split sampling event	Submit required data/documents to DEQ laboratory	18.4 Split sampling submittal

Due Date	Activity	See subsection...
<b>EVENTS:</b>		
Within 30 days of any well or gas probe construction or repair	Submit construction/repair report	19.4 Reporting monitoring devise construction and repairs
Within 90 days after completion of any major construction	Submit Construction Certification Report	10.8 Construction Certification Report submittal
At least 6 months before any new disposal unit construction, or construction of an engineered ancillary facility	Submit design plans	10.4 Design plans
At least 6 months prior to closing any portion of the landfill	Submit design plans	12.5 Closure plan approval
<b>SELDOM:</b>		
At least 10 days in advance of ownership or operator change	Notify DEQ	4.6 Changes in ownership or address
5 years prior to final closure	Submit closure permit application	12.4 Closure permit
Within 30 days of final site closure	Modify property deed record	12.11 Deed record

## ATTACHMENTS

### 21.0 ATTACHMENT: PARAMETER GROUPS

**Overview.** This attachment describes the environmental-monitoring parameter groups and associated requirements. Due to the duration of this permit, suggested analytical methods may change. If that is the case, use the most currently promulgated EPA method or DEQ-approved equivalent.  
Note: Method means EPA SW 846 Methods [suggested methods are in square brackets].

<b>Group 1a: Field indicators</b>	
The field indicators parameter group includes the following parameters:	
Elevation of water level pH Dissolved Oxygen	Specific Conductance Temperature Eh
With instruments calibrated to relevant standards, measure these parameters in the field when collecting samples. Acceptable methods include: <ul style="list-style-type: none"> <li>• Down-hole in situ;</li> <li>• In a flow-through well; or</li> <li>• Immediately following sample recovery.</li> </ul>	

<b>Group 1b: Leachate indicators</b>	
The <b>laboratory indicators parameter group</b> includes the following parameters:	
Hardness (as CaCO <sub>3</sub> ) Total Alkalinity (as CaCO <sub>3</sub> ) Total Organic Carbon (TOC) pH (lab) Specific Conductance (lab) [Method 9050A]	Total Dissolved Solids (TDS) Total Suspended Solids (TSS) Chemical Oxygen Demand (COD) Tannin/Lignin
Proper techniques for sample handling, preservation, and analysis are specific to each individual analyte: Follow appropriate EPA techniques or AWWA <u>Standard Methods</u> .	

Note these special considerations for <b>Total Suspended Solids</b> :	
<b>If the TSS concentration is...</b>	<b>...then analyze for:</b>
less than or equal to 100.0 mg/L in the sample	total concentrations (unfiltered)
Greater than 100.0 mg/L in the sample	both total (unfiltered) and dissolved (field-filtered)
Field-preserve samples according to standard DEQ and/or EPA guidelines and analyze by EPA Method 6010C or DEQ-approved equivalent.	

<b>Group 2a: Common anions and cations.</b> The common anions and cations parameter group includes the following parameters:	
Calcium (Ca) Sulfate (SO <sub>4</sub> ) Ammonia (NH <sub>3</sub> ) Sodium (Na) Nitrate (NO <sub>3</sub> ) Silica (SiO <sub>2</sub> ) Iron (Fe) Fluoride (F)	Manganese (Mn) Magnesium (Mg) Chloride (Cl) Carbonate (CO <sub>3</sub> ) Potassium (K) Bicarbonate (HCO <sub>3</sub> ) Ammonium (NH <sub>4</sub> )
Dissolved concentrations must be measured. Field-filter and field-preserve samples according to standard DEQ and/or EPA guidelines and analyze by appropriate EPA or AWWA <u>Standard Methods</u> techniques. Report results in mg/L and meq/L.	

<b>Group 2b: Trace Metals.</b> The trace metals parameter group includes the following parameters:		
Antimony (Sb) Arsenic (As) Barium (Ba) Beryllium (Be) Cadmium (Cd)	Chromium (Cr) Cobalt (Co) Copper (Cu) Lead (Pb) Nickel (Ni)	Selenium (Se) Silver (Ag) Thallium (Tl) Vanadium (V) Zinc (Zn)

<b>Group 3: Volatile organic constituents</b>
Analyze for all compounds detectable by EPA Method 8260B (C- other method 8/06) or EPA Method 524.2, include a library search to identify any unknown compounds present. The volatile-organic-compounds parameter group is equivalent to the EPA Method 8260B list.
DEQ must pre-approve alternative methods like EPA Method 8021B.

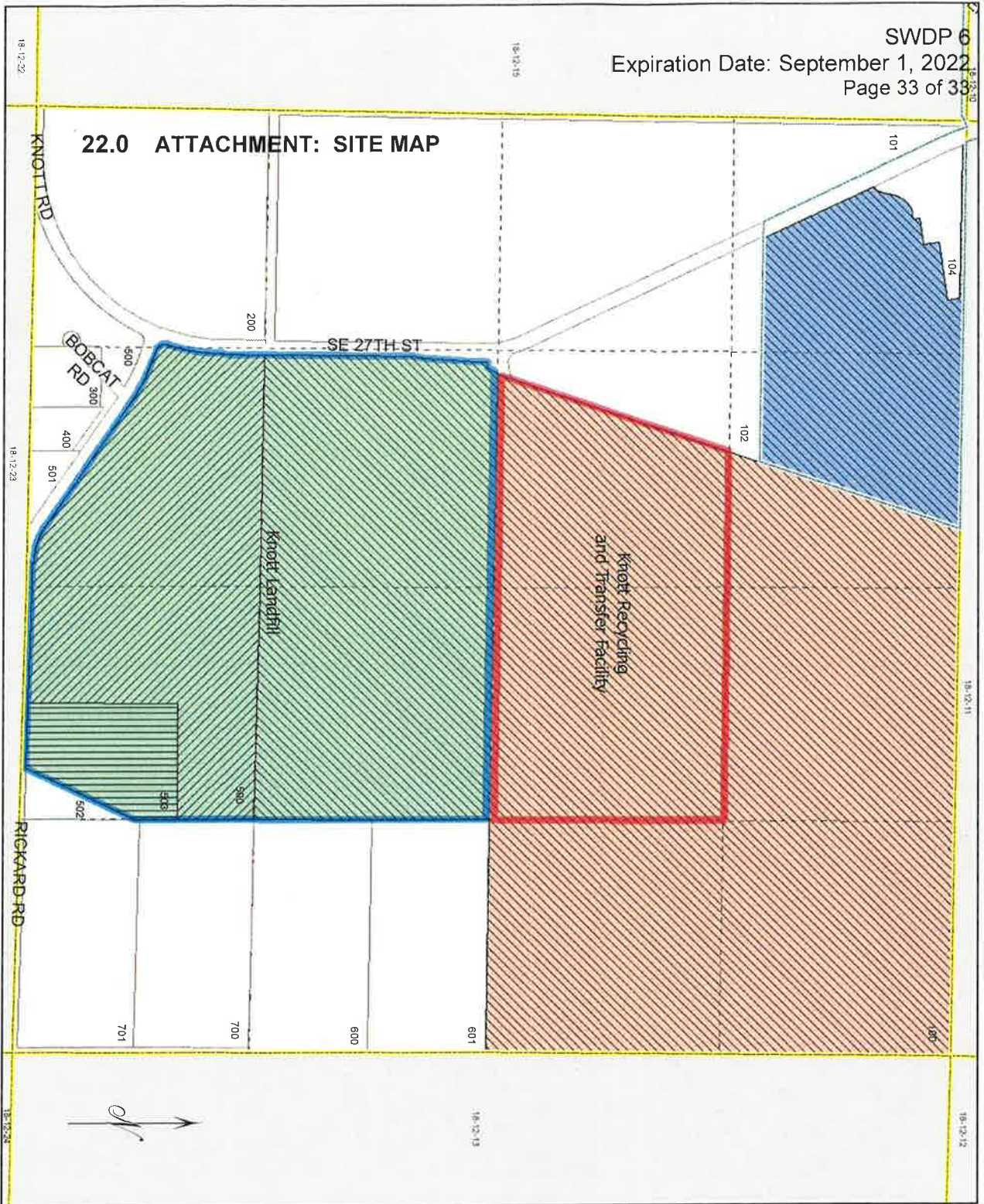
<b>Group 4: Assessment monitoring</b>
The assessment monitoring parameter group includes the following parameters:
<ul style="list-style-type: none"> <li>• Semi-volatile Organic Constituents, including Phenols, EPA Method 8270D</li> <li>• Mercury, EPA Method 7470A</li> <li>• Cyanide, EPA Method 9010C (manual distillation) or 9012B (automated distillation)</li> <li>• Nitrite</li> </ul>
All Method 8270D analyses must include a library search to identify any unknown compounds present.

<b>Group 5: Surface water and leachate.</b> The surface water parameter group includes the following parameters:	
Total Kjeldahl Nitrogen (TKN) Total Phosphorus (P) Orthophosphate (PO <sub>4</sub> ) Biological Oxygen Demand (BOD) Total Halogenated Organics (TOX) [EPA Method 9020B]	Total Coliform Bacteria [EPA Method 9131] Fecal Coliform Bacteria [EPA Method 9131] E. Coli

<b>Group 6: Other assessment parameters.</b> Additional assessment parameters include the following:
<ul style="list-style-type: none"><li>• Dioxins and Furans [EPA Methods 8280B and/or 8290A]</li><li>• Phenolics [EPA Methods 9065, 9066, and 9067]</li><li>• PCBs [EPA Methods 8082A and 8270D]</li><li>• Pesticides, Herbicides and Fungicides [EPA Methods 8081B, 8141B, 8151A, 8270D]</li></ul>



22.0 ATTACHMENT: SITE MAP



Deschutes County Bend Area  
 Solid Waste Facilities  
 Township 18S, Range 12E, Section 14, W.M.

Legend

- Landfill
- Knott Landfill
- Knott Recycling and Transfer Facility
- County Property
  - TL: 1812140000100
  - TL: 1812140000500
  - TL: 1812140000503
- Zoning
  - EF/URB - Tumalo/Redmond/Bend Subzone
  - PF - Public Facility
  - SM - Surface Mining
- Other
  - Taxlots
  - City of Bend
  - Section Lines
  - Sixteenth Section Lines



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**Map Created by**  
 Deschutes County Road Department

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