

# Solid Waste Internal Management Directive

## **Wood Waste and Industrial Waste Landfills: Evaluating Groundwater and Surface Water at Existing Facilities; Phasing out of Wood Waste Landfill Permit Classification; and Identifying the Department's Preference for Liners at New Industrial Waste Landfills or for Significant Expansions\* at Existing Facilities**

Approved by: \_\_\_\_\_

*Alan D. Kibart*

Date: \_\_\_\_\_

*11/16/07*

### **Scope:**

This Solid Waste Internal Management Directive:

- ◆ Guides Oregon Department of Environmental Quality (Department) permit staff on how to initiate and carry out evaluations of groundwater (GW) and surface water (SW) for all unmonitored and/or unlined Wood Waste (WW) and Industrial Waste (IW) Landfills, either open or closed;
- ◆ Describes the Department process for phasing out the WW Landfill permit classification; and
- ◆ Identifies the Department's preference for liners as the "highest and best practical method" that can be used for preventing the movement of pollutants to groundwater at new IW Landfills or for significant expansions at existing IW Landfills.

This Internal Management Directive may also be consulted by permittees and permit applicants for planning purposes and to help guide the collection and preparation of information for submittal to the Department, but it does not create rights or obligations on the part of the public or regulated entities.

### **Purpose/Need:**

This Internal Management Directive is needed in order to clarify how Department permit staff should renew the permits of WW and IW Landfills, change existing WW Landfill permits to IW Landfill permits, and explain the Department position on liners when permitting new IW Landfills or significant expansions of existing IW Landfills. Past guidance does not adequately address these needs.

Three fundamental changes regarding WW and IW Landfill operations and environmental protection have occurred over the past decade. These changes are:

- 1) An increase in the ash volume disposed at WW Landfills;
- 2) An expansion in the Department's protection of surface water through mechanisms such as Total Maximum Daily Loads (TMDLs) and water quality standards; and
- 3) A Department shift toward a more holistic beneficial use approach for GW and SW protection, which includes protection of SW through GW/SW interactions.

\*"Significant Expansion" of an existing authorized landfill means expanding laterally or vertically into areas which are not specifically authorized by the existing permit, and for which detailed plans and specifications have not been approved by DEQ (Definitions, Page iv, Part 6, Landfill Permit Application Instructions, May 1990).

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The increase in the volume of ash being landfilled at WW Landfills has changed the nature of these landfills. Guidance that was written 16 – 17 years ago which applied to WW Landfills is not fully applicable now to large volume ash disposal sites.

The expansion in SW protection and the shift in GW and SW protection to a more holistic beneficial use approach has changed the Department's perspective about WW and IW Landfills.

### Legal Authority:

#### Oregon Revised Statute (ORS) 459.045(1a)

- (1) *The Environmental Quality Commission [EQC] shall adopt reasonable and necessary solid waste management rules [Note: These are the Oregon Administrative Rules] governing the:*
  - (a) *Accumulation, storage, collection, transportation and disposal of solid wastes to prevent vector production and sustenance, transmission of diseases to humans or animals, air pollution, pollution of surface or ground waters, and hazards to service or disposal workers or to the public.*

#### Oregon Administrative Rule (OAR) 340-095-0020(1, 5, 6a, 6b, 7a and 7b)

- (1) *Except as otherwise provided in OAR Chapter 340 Division 95, any person who maintains or operates any non-municipal land disposal site [Note: Includes wood waste landfills] must do so in conformance with the operating requirements of this rule.*
- (5) *Leachate. Any person designing or constructing a non-municipal land disposal site shall ensure that leachate production is minimized. Where required by the Department, leachate shall be collected and treated or otherwise controlled in a manner approved by the Department.*
- (6) *Surface Water:*
  - (a) *No person shall cause a discharge of pollutants from a non-municipal land disposal site into public waters including wetlands, in violation of any applicable state or federal water quality rules or regulations;*
  - (b) *Each non-municipal land disposal site permittee shall ensure that surface runoff and leachate seeps are controlled so as to minimize discharges of pollutants into public waters.*
- (7) *Surface Drainage Control. Each permittee shall ensure that:*
  - (a) *The non-municipal land disposal site is maintained so that drainage will be diverted around or away from active and completed operational areas;*
  - (b) *The surface contours of the non-municipal land disposal site are maintained such that ponding of surface water is minimized.*

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Oregon Administrative Rule (OAR) 340-040-0020(3, 11 and 12)

- (3) *All groundwaters of the state shall be protected from pollution that could impair existing or potential beneficial uses for which the natural water quality of the groundwater is adequate. Among the recognized beneficial uses of groundwater, domestic water supply is recognized as being the use that would usually require the highest level of water quality. Existing high quality groundwaters which exceed those levels necessary to support recognized and legitimate beneficial uses shall be maintained except as provided for in these rules.*
  
- (11) *In order to minimize groundwater quality degradation potentially resulting from point source activities, point sources shall employ the highest and best practicable methods to prevent the movement of pollutants to groundwater. Among other factors, available technologies for treatment and waste reduction, cost effectiveness, site characteristics, pollutant toxicity and persistence, and state and federal regulations shall be considered in arriving at a case-by-case determination of highest and best practicable methods that protect public health and the environment.*
  
- (12) *In regulating point source activities that could result in the disposal of wastes onto or into the ground in a manner which allows potential movement of pollutants to groundwater, the Department shall utilize all available and appropriate statutory and administrative authorities, including but not limited to: permits, fines, EQC orders, compliance schedules, moratoriums, Department orders, and geographic area rules. Groundwater quality protection requirements shall be implemented through the Department's Water Pollution Control Program, Solid Waste Disposal Program, On-Site Sewage Disposal System Construction Program, Hazardous Waste Facility (RCRA) Program, Underground Injection Control Program, Emergency Spill Response Program, or other programs, whichever is appropriate.*

Oregon Administrative Rule (OAR) 340-095-0040(1a, 1aA, 1aB, 2a, 2b, 2c, and 2d)

- (1) *Groundwater:*
  - (a) *Each non-municipal land disposal site permittee shall ensure that:*
    - (A) *The introduction of any substance from the land disposal site into an underground drinking water source does not result in a violation of any applicable federal or state drinking water rules or regulations beyond the solid waste boundary of the land disposal site or an alternative boundary specified by the Department;*
    - (B) *The introduction of any substance from the land disposal site into an aquifer does not impair the aquifer's recognized beneficial uses, beyond the solid waste boundary of the land disposal site or an alternative boundary specified by the Department, consistent with OAR Chapter 340, Division 40 and any applicable federal or state rules or regulations.*
  
- 2) *Monitoring:*
  - (a) *Where the Department finds that a non-municipal land disposal site's location and*

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*geophysical condition indicate that there is a reasonable probability of potential adverse effects on public health or the environment, the Department may require a permittee to provide monitoring wells at Department-approved locations and depths to determine the effects of the non-municipal land disposal site on groundwater;*

- (b) *If the Department determines that monitoring wells are required at a non-municipal land disposal site, the permittee shall provide and maintain the wells at the locations specified by the Department and shall submit a copy of the geologic log and record of well construction to the Department within 30 days of completion of construction;*
- (c) *Where the Department determines that self-monitoring is practicable, the Department may require that the permittee collect and analyze samples of surface water and/or groundwater, at intervals specified and in a manner approved by the Department, and submit the results in a format and within a time frame specified by the Department;*
- (d) *The Department may require permittees who do self-monitoring to periodically split samples with the Department for the purpose of quality control.*

**Past Department Guidance:**

Past Department guidance for the regulation of WW and IW Landfills consisted of two (2) memoranda and one (1) set of instructions (copies attached):

- 1) Memorandum from Steve Greenwood, Manager, Solid Waste Permits and Compliance Section, "Interim Implementation of Groundwater Quality Protection Rules (OAR Chapter 340 Division 40) in relation to wood waste landfills," dated October 22, 1990.

This memo from 1990 states that (Page 1, Paragraph 3): *"Consistent with the GWQPR [Groundwater Quality Protection Rules] implementation guidance, the Solid Waste Section has classified wood waste landfills (i.e., landfills containing only chemically untreated wood waste such as log yard cleanup waste) as low risk industrial sites."*

(Note: *"Low-Risk Disposal Site" means a disposal site which, based upon its size, site location, and waste characteristics, the Department determines to be unlikely to adversely impact the waters of the State or public health (OAR 340-093-0030(55)).*

- 2) Memorandum from Joe Gingerich, Environmental Engineer, Solid Waste Permits and Compliance Section, "Woodwaste Disposal Policy," dated February 20, 1991.

The intent of this 1991 Woodwaste Disposal Policy was to make it a Department goal to permit WW Landfills that were designed and operated in a manner that both protected the "beneficial use" of groundwater (Sections 2.3 and 3.4 of the Policy), and the quality of surface water (Sections 2.4 and 3.5 of the Policy).

The Policy states (Section 3.3.3): *"NOTE: Woodwaste landfills are often used to codispose of ash generated from burning hog-fuel for energy recovery. Codisposal of woodwaste and ash is not*

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*expected to increase human health or environmental risks associated with a woodwaste landfill provided: (a) the annual ash disposal does not exceed ten percent of the total annual disposal volume; (b) the ash is distributed throughout the landfill; and (c) the ash results solely from burning materials defined as 'woodwaste.' Except for small amounts of woodwaste ash as defined above, codisposal of other solid waste or large amounts of ash into a woodwaste landfill may result in the landfill no longer qualifying as a woodwaste landfill."*

- 3) "Landfill Permit Application Instructions," Solid Waste Permits and Compliance Section, dated May 1990.

These Permit Application Instructions (hereinafter Instructions) were developed by the Department's Solid Waste Program and have been used in conjunction with the above two memoranda. All non-municipal solid waste disposal sites were covered by these Instructions, including WW and IW Landfills.

These Instructions were meant to serve as a guide for the landfill permit application process so that the content of the finished application would facilitate Department review. This guidance applied to all persons that proposed to landfill solid waste and that were required to obtain a solid waste disposal permit.

When these Instructions were superceded for municipal solid waste landfills in 1996 (Oregon Department of Environmental Quality Solid Waste Guidance, Municipal Solid Waste Landfills, September 1, 1996), the Department, according to Joe Gingerich (conversation with Bruce Lumper on 8/30/07), also intended to develop new and updated Instructions for non-municipal solid waste landfills, including WW and IW Landfills. This non-municipal guidance was never developed.

### **Current Department View:**

With the Department's increased awareness of the role of GW quality with respect to protecting SW quality and sensitive aquatic species, the Department now includes the interactions of GW and SW in the evaluation of whether landfills could affect in-stream water quality standards and TMDL requirements. This approach is supported by OAR 340-040-0020(3) which requires the Department to protect GW from pollution that could impair existing or potential beneficial uses, including SW, for which the natural water quality of the GW is adequate. This is especially important for those landfills located near SW bodies and where landfill leachate has the potential to affect the existing natural GW quality that discharges to the SW body.

### **Directive Intent:**

1. Provide internal guidance for the evaluation of potential GW and SW impacts at existing WW and IW Landfills;
2. Phase out the WW Landfill permit classification due to the changing nature of WW Landfills; and
3. Identify the Department's preference for liners to meet the "highest and best practical methods" requirement of OAR 340-040-0020(11) to prevent the movement of pollutants to groundwater and protect the environment.

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## **Solid Waste Internal Management Directive:**

### **1) Evaluation of Groundwater and Surface Water at Existing WW and IW Landfills:**

At the time of the permit renewal, or permit review, Department Staff will add a Phase II Site Characterization section (see attached language) to WW and IW Landfill permits in order to describe the process permittees will need to undertake at these facilities in order for GW and SW conditions to be evaluated.

Each required evaluation will be tailored to meet site specific conditions. This tailoring will occur through interaction between the permittee, and the Department-assigned project manager and hydrogeologist for the site. Once the new permit is issued, a first step in this evaluation process will be for Department staff to ask permittees to submit a draft scope of work prior to the preparation and submittal of the Phase II Site Characterization work plan

If GW or SW impacts, or potential impacts, are not identified as a result of the Phase II Site Characterization process, Department staff will not ask permittees for further evaluation work. If new or previously undisclosed information becomes available to the Department, however, permittees could be asked to re-evaluate their sites for GW and/or SW impacts at the next permit renewal or permit review. Or, if the information indicates an immediate adverse impact to the beneficial user of the GW, either impacting human health or presenting an ecological risk, the Department may require further evaluation work at the time the information becomes known.

If GW or SW impacts, or potential impacts, are identified as part of the Phase II Site Characterization process, the Department's assigned project manager and hydrogeologist for a facility will work with the permittee on developing follow-up actions. These actions would likely include the development of a groundwater and surface water quality protection program (plan) and the installation and on-going operation of a permanent GW and SW monitoring system.

Where the permittees have been monitoring GW and the monitoring includes leachate parameters associated with waste materials placed in the WW or IW Landfills, the Department may waive the Phase II Site Characterization requirement. Department Staff may, however, ask permittees to evaluate the parameters being monitored in the context of the beneficial use of the groundwater, such as drinking water, or as discharge to surface water with potential impacts to sensitive aquatic organisms.

Permittees with closed WW or IW Landfills, either capped or uncapped, or permittees that choose to cap and close their WW or IW Landfills in response to these GW and SW evaluation requirements, will still need to demonstrate to the Department, through the Phase II Site Characterization process, that there has not been, or will not be in the future, a likely adverse impact to GW or SW from leachate generated by the unlined landfill. Closed WW or IW Landfills, either capped or uncapped, will continue to be Department permitted facilities, and OAR 340-040-0030(3) will still apply to these closed sites until sufficient data indicate that no likely adverse impacts to GW or SW will occur.

Permittees will have one option to completely avoid the GW and SW evaluation requirement for their WW or IW Landfills. They will be able to do this by removing their waste, closing their facility, and terminating their landfill closure permit. This removal option process language will also be added to the closure permit (see attached).

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#### **2) Phasing out of WW Landfill Permit Classification:**

Other than the definition of a WW Landfill, per OAR 340-093-0030(96), there are no other rules which have been developed and adopted to address this type of land disposal site. Rather, WW Landfills are actually a sub-category of IW Landfills, per OAR 340-093-0030(45) and (46), and subject to the requirements of OAR 340, Division 95 – *Solid Waste: Land Disposal Sites Other Than Municipal Solid Waste Landfills*.

The WW Landfill permit classification is not supported by the adopted rules and it is clear that many of these facilities no longer meet the criteria for being categorized as "*Low-Risk Disposal Sites*."

Therefore, at the time of the permit renewal or the permit review for all permitted WW Landfills; their permit classification will be changed to: *Industrial Waste Landfill*. The permit template for WW Landfills will be removed from the Department's internal website after this Directive has been approved and signed and there will no longer be permits issued under the WW Landfill permit classification sub-category.

#### **3) Identifying the Department's Preference for Liners at New IW Landfills or for Significant Expansions at Existing Facilities:**

The Department prefers liners for meeting the highest and best practicable methods requirement of OAR 340-040-0020(11). The Department recognizes, however, that a liner may not be practical or necessary, due to site specific conditions. These site specific conditions, considered on a case-by-case basis, would include, but are not limited to, site characteristics, pollutant toxicity and persistence, waste reduction, and cost effectiveness.

It is the permittee's responsibility to demonstrate, and to provide the supporting documents, which show that a proposed alternative to a liner is the "highest and best practicable method" for protecting groundwater and the environment at their site.

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### **Implementation:**

This Internal Management Directive will become effective immediately after it has been signed and dated by the Department's Solid Waste Policy and Program Manager, and/or by the Land Quality Division Administrator.

The Regional Solid Waste Program Managers' (PMT) will make this approved Directive available to their permit staff.

Permit staff will be asked by their Solid Waste Managers to identify operating or closed, capped or uncapped, WW or IW Landfills in their regions. Permit staff will then be asked to inform these permittees that a Phase II Site Characterization will be required at the time of their next permit renewal or permit review. If a permit is for a WW Landfill, Department staff will also inform the permittee that their permit classification will be changed to an IW Landfill. This change in their WW permit classification will result in a drop of their Annual Compliance Fee from \$0.30/ton to \$0.21/ton.

Permit staff will then implement this Directive as part of the permit renewal process for the identified facilities, or as part of the permit review process. Implementation of this Directive will require additional manager and permit staff time for the identification of affected facilities and changes in the permit writing process. Implementation of this Directive will also require additional hydrogeologist and permit staff time to review scope of work documents, work plans, site characterization reports, and GW and SW monitoring reports, as part of the Phase II Site Characterization process.

If it is determined that there are GW and/or SW impacts at a facility, there will be additional Department work time required to address these impacts. This additional work time could be substantial, especially for the hydrogeologist and permit staff that are assigned to these facilities.

### **Disclaimer:**

This directive is not rulemaking by the Environmental Quality Commission and may not be relied upon to create an enforceable right or benefit.

### **Contact Person:**

Bruce Lumper, Solid Waste Program, DEQ Eastern Region, (541) 298-7255, ext. 40

### **Review Schedule:**

The periodic review schedule will apply.