



Department of Environmental Quality




To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

Memorandum

To: Interested Parties
From: LeRoy C. Feusner, P.E., BCEE 
Administrator, Solid and Hazardous Waste Division
Wyoming Department of Environmental Quality

Date: 24 August 2007

Reference: Screening criteria for operation of unlined construction/demolition disposal facilities

Introduction

The Wyoming Department of Environmental Quality, Solid and Hazardous Waste Division (Department), has received several inquiries regarding siting and operation of unlined construction/demolition (C/D) disposal facilities. The purpose of this memorandum is to clarify the location standard in Solid Waste Rules and Regulations (SWRR), Chapter 4, Section 3(m) Hydrogeologic Conditions, which states:

Facilities shall not be located in an area where the department, after investigation by the applicant, finds that there is reasonable probability that solid waste disposal will have a detrimental affect on surface water or groundwater quality.

Available data indicate that C/D wastes and leachate from C/D landfills are not environmentally benign (EPA, 1995; Maine DEP, 2005; Martin, Jeff, 2005; Townsend, 2000). However, available data indicate C/D leachate has less capacity to cause environmental impacts, when improperly managed, than municipal solid waste (MSW) leachate. Because of this, a relatively limited site evaluation may provide adequate site specific data for purposes of determining a site's suitability for use as an unlined C/D landfill.

Evaluation of Site Conditions

With the site-specific information listed below, the department can make a preliminary determination as to the potential for an unlined C/D landfill to impact groundwater at a given site. If the site-specific conditions are met, the facility will not need to be lined, and no additional site-characterization data will need to be provided (assuming an



adequate groundwater monitoring network exists). If the site criteria are not met, additional discussions will be required with the Department. These discussions may determine that additional site characterization may be required in order to assess the need for an engineered containment system.

Please note that obtaining and providing the site specific information below may adequately address the location standard for hydrogeologic conditions cited previously, but does not address the other location standards or criteria that must be met in order to acquire and maintain an operating permit for a C/D landfill, as described in SWRR Chapters 1 and 4. The site specific conditions that must be demonstrated are the shallowest depth to seasonally high groundwater and ambient groundwater chemistry.

Under the following conditions, the Department does not believe that a properly operated unlined C/D landfill will have a detrimental affect on groundwater quality.

1. The seasonally high groundwater level is at least 20 feet below the base of waste.
2. Subsurface materials are not composed of gravel or fractured consolidated rock.
3. Ambient groundwater quality, as determined by the Department, is greater than or equal to Class III groundwater (not Class I or II).

Depending on site specific conditions, operation of an unlined C/D landfill in areas with Class I or II groundwater may be acceptable. However, as noted above, this will require additional discussion with the Department on a site by site basis.

Be advised that while the Department may agree that operation of an unlined C/D landfill is appropriate in a given location, if groundwater impacts are subsequently detected, appropriate action will need to be taken. This may include a change or cessation of operations and corrective action to address groundwater impacts.

Groundwater Monitoring

As previously stated, C/D waste is not environmentally benign. While the Department believes that groundwater will not be impacted under the above conditions, groundwater monitoring will likely be required at C/D landfills, as provided for in SW Chapter 4 Section 6 (b).

Acceptable and Unacceptable Wastes for Disposal in Unlined C/D Landfills

A C/D landfill is defined in SWRR Chapter 1 Section 1 (e) as:

a solid waste management facility that accepts only inert construction waste, demolition waste, street sweepings and/or brush. This does not include garbage, liquids, sludges, paints, solvents, putrescibles, dead animals, friable asbestos, and hazardous or toxic

wastes.

SWRR Chapter 1, Section 1(e), also defines construction/demolition waste:

includes, but is not limited to stone, wood, concrete, asphaltic concrete, cinder blocks, brick, plaster and metal.

Because the definition for C/D waste is non-specific, the following additional information regarding items that may be included in the definition of C/D waste, and of wastes that are, and are not, acceptable in unlined C/D landfills is being provided. Table 1 provides a list of C/D wastes **acceptable** for disposal in unlined C/D landfills. Table 2 provides a list of C/D wastes **unacceptable** for disposal in unlined C/D landfills. Some materials in C/D waste may be recyclable. Recycling of these wastes is strongly encouraged whenever practicable.

Note that the following tables are for illustration purposes only, and they are not intended to be all inclusive. If an operator has any question regarding the acceptability of a particular waste type, please contact Department staff listed at the end of this memorandum.

Waste types that may be disposed in an unlined C/D landfill are limited. Rigorous, routine waste screening will be required so that disposal of any prohibited wastes is prevented. Permittees' failure to strictly comply with waste screening requirements, including failure to refuse prohibited wastes, may result in enforcement action by the Department, including potential revocation of the operating permit as set forth in SWRR Chapter 1, Section 4(b).

Table 1. Wastes Acceptable for Disposal in an Un-lined C/D Landfill.

All wastes must pass the paint filter liquid test prior to acceptance.

- Asphalt (hardened paving and shingles)
- Brick
- Cabinets
- Cardboard
- Carpet and carpet pads
- Caulking tubes (dry)
- Ceiling tile
- Ceramics
- Cinder block
- Clean wood
- Concrete with or without rebar/wire mesh, asphaltic concrete
- Containers (empty, clean, and rinsed)
- Corrugated shipping containers
- Dirt (uncontaminated)
- Drums (empty, clean, and rinsed)
- Drywall

Electrical fixtures
Electrical wiring
Fiberboard
Fiberglass
Flashing
Flooring tiles
Furniture
Glass
Green wastes (grass, shrubs, tree limbs, etc.)
Gypsum wallboard
Hardened asphalt
Insulation (fiberglass, foam/treated cellulose/sheathing)
Lumber (painted or unpainted and untreated)
Masonite/slate
Metal (ferrous and non-ferrous, if not recycled)
Metal studs
Masonry and plaster
Mortar
Nails
Non-friable asbestos
Paper products
Packaging foam
Paint containers (dry)
Pallets/spools/reels
Paperboard
Particleboard
Pesticide and herbicide containers if triple rinsed
Plaster
Plastic pipe
Plastic sheeting
Plumbing fixtures
Porcelain/bathroom fixtures
Pressboard/chipboard
Roofing materials/roofing felt
Sheathing
Siding (does not contain friable asbestos)
Sod
Steel
Stone/rock
Street sweepings (litter must be removed, concentrations of metals, VOCs, and other compounds must be sampled and found to be below regulatory limits)
Styrofoam
Sump waste from car wash sumps (must pass the paint filter liquids test and concentrations of metals, VOCs, and other compounds must be sampled and found to be below regulatory limits)
Textiles
Tile (ceiling and ceramic)
Tires (may include wheels)

- Vinyl (doors, siding, windows, flooring)
- White goods/appliances (if refrigerants have been properly removed)
- Wire
- Wood (clean, untreated, painted or unpainted)
- Wood pallets

Table 2. Wastes Not Acceptable for Disposal in an Un-lined C/D Landfill.

- Aerosol cans containing any product
- Adhesives
- Automobiles
- Automotive cleaners, solvents, waxes
- Batteries (alkaline or rechargeable, Ni-Cd, lithium, metal hydride, etc.)
- Caulk
- Containers with liquids
- Creosote (liquid; or creosote treated wood)
- Dead animals
- Driveway sealants
- Drums and containers containing any waste
- Epoxies
- Electronic wastes
- Exit signs (lighted, from building interiors)
- Friable asbestos
- Fuel tanks
- Garbage
- Glues
- Hazardous wastes (listed or characteristic)
- Industrial wastes
- Lacquer thinners
- Lead
- Lead acid batteries
- Lead based paint, flashing, or solder
- Liquids of any type or quantity
- Medical/infectious wastes
- Mercury containing devices (switches, bulbs, thermostats, etc.)
- Mercury based paints
- Metallic pigments in unused paint containing: lead, arsenic, barium, cadmium, zinc, mercury, or chromium
- Municipal solid waste
- Oils, greases, and any petroleum contaminated
- Paints
- PCBs in ballasts, transformers and capacitors
- Petroleum contaminated soil
- Pentachlorophenol
- Pesticides
- Petroleum constituents, leachable from roofing tars

Petroleum storage tanks (unless properly decommissioned and certified clean)
Polyurethane
Putrescible wastes
Rechargeable and/or alkaline batteries
Resins
Roofing cement/sealers
Sealers
Septage
Sludges
Smoke detectors
Solvents
Stains
Thermostats and thermometers (mercury containing)
Transformers
Treated wood (e.g., pressure treated, creosote, chromated copper arsenate (green treated wood); pentachlorophenol (brown treated wood), copper naphthenate, ammoniacal copper zinc arsenate (ACZA), ammoniacal copper quarternary compound (ACQ), etc.)
Used oil and/or grease filters
Varnishes

For More Information

If you have questions regarding construction demolition landfills, please contact staff in the DEQ offices listed below.

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| Cheyenne Office (Maggie Davison) | (307) 777-7752 |
| Casper Office (Dale Anderson) | (307) 473-3450 |
| Lander Office (Patrick Troxel) | (307) 332-6924 |

References

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- U. S. Environmental Protection Agency, 1995, Construction and Demolition landfills, prepared by ICF Kaiser Incorporated, prepared for ESEPA Office of Solid Waste, Contract No. 68-W3-0008, 39 p.
- Maine Department of Environmental Protection, 2005, Report to the Joint Standing Committee on Natural Resources Concerning the Safe Management of Arsenic-Treated Wood Wastes.
- Martin, Jeff, 2005, Preliminary Evaluation of Leachate Analytical Results from Ohio C&D landfills, Interoffice Memorandum to Dan Harris, Chief, DSIWM.
- Townsend, Timothy, et. al., 2000 Continued research into the characteristics of leachate from construction/demolition Waste landfills, Florida Center for Solid and Hazardous Waste Management Report # 00-04, 71p.