



Fact Sheet: Compliance Management Practices at Construction and Demolition (C&D) Landfills in Indian Country Region 5 (This fact sheet provides a summary of the document: “Compliance Management Practices at C&D Landfills in Indian Country Region 5, April 2007 [draft final])

Introduction: C&D landfills in Indian Country are subject to the federal solid waste management regulations under 40 Code of Federal Regulations Part 257 (40 C.F.R. Part 257). Landfills which fail to meet the aforementioned requirements would be considered an “open dump”. The purpose of this document is to provide assistance to solid waste management staff including owners, and operators of Construction & Demolition (C&D) landfills in Indian Country in Region 5. Management practices provided in this document are intended to help the aforementioned to manage, develop, and operate their C&D landfills in a manner that is protective of human health and the environment in compliance with applicable federal regulations.

Federal Regulations: C&D landfills in Indian Country are subject to federal regulations under 40 C.F.R. Part 257 Subpart A. **C&D landfills in Indian Country must comply with requirements regarding: Floodplains, Endangered Species, Surface Water, Groundwater ,Disease Vector Controls** (such as periodic cover), **Air** (no open burning), & **Safety** (for explosive gases, fires, bird hazards, & access). Note: *Acceptance and disposal of hazardous waste from small quantity generators and large quantity generators are prohibited at C&D landfills. However, C&D landfills are allowed to accept and dispose of hazardous waste from conditionally-except small quantity generator hazardous. When these wastes are accepted, additional requirements found in 40 C.F.R. Part 257 Subpart B apply. These additional requirements will not be addressed in this document.*

The federal requirements and the recommended compliance management practices are summarized in the following table:

40 C.F.R. Part 257 Subpart A. Requirements	Compliance Management Practices
40 C.F.R. Part 257.3-1(a) Floodplains: Landfills shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in washout of solid waste, so as to pose a hazard to human life, wildlife, or land or water resources.	1) Ban location in floodplains; 2) Implement Engineering Considerations (i.e. C&D landfill designed to prevent the washout of solid waste during the expected flood event and that such measures do not pose a hazard to human health and the environment.)
40 C.F.R. Part 257.3-2(a) & (b) Endangered Species Act : Landfills shall not cause or contribute to the taking of any endangered species of plants, fish, or wildlife; or result in the destruction or adverse modification of critical habitat or endangered or threatened species.	Consult with the U.S. Fish & Wildlife Service liaison to ensure compliance.
40 C.F.R. Part 257.3-3(a), (b) and (c): Surface Water – Landfills shall not cause a discharge in violation of Clean Water Act Sections 402, 404, 208	<u>Section 402:</u> Comply with NPDES permit, Run on and run-off control system, berms, swales Run-on water from outside the landfill that runs toward the landfill should be prevented from entering the containment area through ditches, dikes, and culverts; <u>Section 404:</u> Comply with 404 Permit; <u>Section 208:</u> Correcting and prevent applicable non-point source problems as described in the tribe’s EPA approved nonpoint source management plan.
40 C.F.R. Part 257.3-4(a) Groundwater: Landfills shall not contaminate an underground drinking water source beyond the boundary of the facility.	Location restrictions which do not allow C&D landfills within specific distance of any public or private water supply well. Control storm water to prevent ponding; Identification and Screening of Hazardous Waste; Groundwater monitoring and corrective action program as per 40 C.F.R. 257 Subpart B
40 C.F.R. Part 257.3-6(a) Disease Vector Controls	Application of six inches of soil compacted on the water generally is

: landfills shall minimize the on-site population of disease vectors	sufficient to control vectors. The frequency of application varies depending on requirements from each state and site specific conditions.
40 C.F.R. Part 257.3-7(a) Air : Landfills shall not engage in open burning of residential, commercial, institutional, or industrial solid waste.	Establish and Implement a ban on open burning
40 C.F.R. Part 257.3-8 (a) Safety: Explosive Gases - explosive gases shall not exceed 25% of the lower explosive limit for the gases in facility structures (excluding gas control and recovery components) and the lower explosive limit for the gases at the property boundary.	Explosive gases: Hydrogen sulfide (H ₂ S) and methane pose the greatest potential health threat to on-site workers and residents in surrounding areas. Implement effective detection, monitoring, and control program at the facility boundary and to protect on-site workers, with a focus on H ₂ S gas and methane. Once detected, methane may be controlled by the installation of passive and/or active gas collection and treatment systems. In general, H ₂ S gas can be effectively controlled if the C&D debris containing gypsum wallboard debris is kept dry and covered. Active gas collection and recovery systems, can collect and treat the effluent gas and effectively reduce H ₂ S gas and methane emissions at C&D debris landfills
40 C.F.R. Part 257.3-8(b) Safety: Fires - Landfill shall not pose a hazard to the safety of persons or property from fires.	<p>Management practices include prevention and response actions such as: I) Prevention: Ban the practice of open burning, Exercise good compaction practices, Apply intermediate (daily, weekly, etc..) cover, Implement good procedures for screening “hot” loads, Have access to fire extinguishers other fire fighting equipment on-site to control accidental fires and arrangements made with the local fire protection agency to acquire its services when needed, Prepare a Contingency/Emergency Plan ;</p> <p>II) Response: <u>For above ground fires:</u> Immediately extinguish small fires with extinguishers, water or smother with dirt; Immediately isolate burning materials, if possible, with dirt berms or other suitable fire break; Carefully dig (excavate) burning areas out, if possible. Extinguish by smothering with soil or water; Wet down areas adjacent to the fire; Smother larger fires with dirt. Be prepared to haul large quantities of dirt; Keep working until fire is completely extinguished; Monitor for evidences of sub-surface fires; Notify local fire department and local solid waste authorities; Do not break cover for 10 days after fire is extinguished; Implement Contingency/Emergency plan as appropriate.</p> <p><u>For below ground fires:</u> Watch for rapid surface subsidence and smoke vents; Isolate burning area, if possible; Cut out avenues for air to enter the landfill, wet down cover, patch washouts and cover active face, use relatively tight soils; If authorized, inject water into the fire zone; Call for help and notify authorities, implement contingency/emergency plan as appropriate.</p>
40 C.F.R. Part 257.3-8 (c) Safety: Bird hazards Landfill that dispose of putrescible wastes that may attract birds and which occurs within 10,000 feet of any airport runway used by only piston-type aircraft shall not pose a bird hazard to aircraft.	Owner/operators may consider locating the C&D landfill (that dispose of putrescible wastes) beyond 10,000 feet from any airport runway. C&D landfills which do not accept putrescible wastes do not have to comply with this requirement.
40 C.F.R. Part 257.3-8 9(d) Safety: Access Landfill shall not allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site.	Owners and operations may use gates, fences, trees, hedges, berms, ditches, and embankments. Chain link, barbed wire added to chain link, and open farm-type fencing are examples of fencing that may be used. Access to facilities may be controlled through gates that can be locked when the site is unsupervised. Gates may be the only additional measure needed at remote facilities.

Waste Screening at C&D Landfills

Purpose of Waste Screening: EPA regulations pertaining to C&D landfills do not have specific requirements for waste screening. EPA left it up to owners and operators of C&D landfills to assure that the facility is not accepting waste that is not allowed for disposal. EPA encourages owners and operators to work with their state agency to learn that state's screening procedures as guidance for their facility.

Solid waste arriving at the C&D landfill, should be screened to: 1) ensure that it is appropriate for disposal at the facility; 2) ensure safety; 3) prohibit hazardous waste disposal; 4) facilitate reuse/recycling; 5) ensure that hot loads which may start a landfill fire are detected before they are disposed of in the active cell of the C&D landfill.
(Ref. 9)

Procedures for Screening Waste at the C&D Landfill: To have a successful waste screening program, the C&D landfill facility should develop a solid waste management plan that includes:

- List of wastes that will not be accepted;
- the reasons for accepting/rejecting certain wastes;
- procedure to evaluate a waste; &
- How to inspect incoming waste and record violations.

Operating personnel must be trained in the above procedures and not allow unacceptable waste to enter the facility. The final decision to accept or reject a waste and the responsibility for the waste's proper handling and liability for future problems lie with the operating personnel. Therefore, they must be empowered to make the decision whether to accept or reject any incoming loads .

If unacceptable waste does enter the tribal facility, the tribe should have a procedure to remove the material. If the material is hazardous or infectious, a procedure should be in place to direct or handle any spills. Personnel must know what to do if they find unacceptable waste (i.e., who to call, how to handle it, and where to place it). Once at the landfill, the site attendant, spotter, and equipment operators should be on the lookout for prohibited materials.

Acceptable C&D Waste

A C&D landfill typically receives any one or more of the following types of solid wastes:

- roadwork material
- excavated material
- demolition waste
- construction/renovation waste
- site clearance waste.

Construction and demolition (C&D) debris consists of the materials generated during the construction, renovation, and demolition of buildings, roads, and bridges. C&D debris often contains bulky, heavy materials that include:

- concrete,
- wood (from buildings),
- asphalt (from roads and roofing shingles),
- gypsum (the main component of drywall),
- metals,
- bricks,
- glass,
- plastics,
- salvaged building components (doors, windows, and plumbing fixtures),
- trees & stumps,
- earth, and rock from clearing sites

Unacceptable Wastes: C&D landfills are not allowed to accept household wastes; and hazardous waste from small quantity or large quantity generators.

Household waste is not allowed at C&D landfills since only facilities which meet more stringent design and operating criteria such as municipal solid waste landfills are allowed to accept such waste. This is because its accelerated decomposition will lead to leachate generation which can contaminate groundwater. Likewise, liquid waste cannot be placed in any landfill because it contributes to leachate generation. Household waste means any solid waste (including household hazardous waste, garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

Hazardous wastes include:

- Ignitable wastes (flashpoint of less than 140 F) such as paint thinners, paints, paint, and varnish strippers, epoxy resins, adhesive degreasers, and spent cleaning solvents.
- Corrosive wastes (acids with pH less than 2 or bases with pH greater than 12.5) such as rust removers, cleaning fluids, and battery acids.
- Reactive wastes (can explode or violently react) such as cyanide, plating waste, bleaches, and waste oxidizers.
- Toxic wastes (meeting certain concentrations) such as materials containing metals (e.g. mercury, cadmium, or lead) or solvents (e.g. carbon tetrachloride or methyl ethyl ketone). Materials may include: adhesives, paints, coatings, polishes, varnishes, thinners, and treated woods (Photo 14).
- Spent solvents listed under RCRA (hazardous waste codes F001, F002, F003, F004, &F005).
- Discarded commercial chemical products containing listed chemicals under RCRA (hazardous waste codes P & U).
- Mercury containing wastes (e.g., fluorescent bulbs, broken mercury switches, batteries or thermostats)
- Lead-based paints (note that lead-based paint debris from homes and residences is not covered by hazardous waste requirements.)
- Used oil and hydraulic fluid
- Soil contaminated with toxic or hazardous pollutants
- PCBs
- Asbestos containing material



Toxic waste: adhesives, paints, coatings, polishes, varnishes, & thinners (Townsend 2004)



Typical Fluorescent Lamp Fixture. (Townsend 2004)

Hazardous material must be marked and/or labeled by law. However, it will most likely not be marked if it is illegally dumped. Be on guard for such material. Reject them. Get assistance for proper disposal or assistance with any contamination if the material enters your facilities.

Infectious/Medical waste : These wastes include: blood, body parts, body fluids, needles, and dressings. These materials can threaten worker safety, attract rodents and insects, and spread disease. They are required by law (U.S. Dept. of Transportation 49 C.F.R. Part 172.323) to be marked but are, again, likely to be unmarked if illegally dumped. Their sources are facilities such as hospitals, nursing homes, dental offices, clinics, veterinary offices, research labs, and mortuaries. From a C&D debris perspective, be aware of the problem when these structures are torn down, remodeled, or deconstructed.

More details are provided in the draft final document: : *“Compliance Management Practices at C&D Landfills in Indian Country Region 5, April 2007 [draft final]”*

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