



Disposal of Special Wastes Associated with the Development of Oil, Gas, and Geothermal Resources

This document provides recommendations for the management of special wastes associated with the exploration, development, or production of oil, gas, or geothermal resources that are regulated by the Railroad Commission of Texas (RRCT) and that are being disposed of in landfills permitted by the Municipal Solid Waste (MSW) Permits Section of the

Texas Commission on Environmental Quality (TCEQ) in accordance with Title 16, Texas Administrative Code, Section 3.30, and 30 TAC 330.3(148)(P). Some of the special wastes listed below require written authorization for disposal. Column 5 details the requirements for special waste disposal.

| Description of Waste Items | RCRA Exempt per 40 CFR Part 261.4(b)(5) (see Note 1) | RRCT Authority Required for Disposal in TCEQ Landfill? | Treatment or Testing Recommended (see Note 2) | TCEQ Approval Required Prior to Disposal / Other Options |
|---|--|--|--|--|
| Asbestos-containing material | No Subject to specific regulations | Yes | Comply with Federal & State regulations for removal & disposal | No per §330.171(c) |
| Bags (empty), paper | No | No | None | No |
| Brush & vegetation from clearing land, uncontaminated | No | No | None | No / Disposal in Type IV landfill, compost facility |
| Buckets, detergent (empty) | No | No | None | No / Recycle |
| Buckets, grease (empty) | No | No | None | No / Recycle |
| Concrete, contaminated from compressor stations, oil, or gas facilities | No | Yes | Test for COCs on a case-by-case basis | Yes |
| Concrete, uncontaminated | No | No | None | No / Disposal in Type IV landfill |
| Containers (empty) | No | No | None | No / Recycle |
| Drill cuttings | Yes | Yes | Test for COCs on a case-by-case basis | Yes |
| Barrels, drums, 5-gallon buckets (empty) | No | No | None | No / Recycle |
| Fiberglass tanks & pipe (empty) | No | No | Clean, cut or shred | No |
| Filters—amine, dehydration, glycol | Yes | Yes | Drain, air dry for 48 hrs., test for TPH & benzene | Yes |
| Filters—cooling tower | Yes (No, if generated in transportation) | Yes | Drain, air dry for 48 hrs., test for chromium | Yes |
| Filters—saltwater | Yes | Yes | Drain, air dry for 48 hrs., test for pH, TPH, & chlorides | Yes |
| Filters— waste oil (1) entire unit is inside | No | Yes | Separate parts, recycle oil & metal parts | Yes |

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|--|--|--|---|--|
| metal container | | | | |
| (2) replaceable fiber or paper filter inside unit | No | Yes | Drain for at least 24 hrs., recycle, waste-to-energy, test for lead & benzene | Yes |
| Iron sponge | Yes | Yes | Allow to oxidize completely to prevent combustion | Yes |
| Office trash, routine | No | No | None | No / Recycle |
| Metal plates, pipes, cable | No | No | None | No / Recycle |
| Molecular sieves | Yes | Yes | Cool in non-hydrocarbon, inert atmosphere; hydrate in ambient air for 24 hrs., test for TPH & benzene | Yes |
| Muds—drilling | Yes | Yes | Test for barium, TPH, & BTEX; treatment to reduce hydrocarbons may be required | Yes |
| Muds—sacks of unused drilling mud | No | Yes | Return to vendor, use at other sites | Yes |
| Muds—unused additives | No | Yes | MSDS, test for barium | Yes |
| “Pigging waste” from gathering lines in primary field operations | Yes | Yes | MSDS for corrosion inhibitors, test for TPH, benzene, RCRA metals, & NORM | Yes |
| “Pigging waste” from transmission lines | No | Yes | MSDS for corrosion inhibitors, TPH, benzene, & arsenic | Yes |
| Pipe scale & other deposits removed from piping & equipment | Yes (No, if generated in transportation) | Yes | Test for TPH, RCRA metals, & NORM | Yes |
| Pipe dope, unused | No | Yes | MSDS (may contain lead), re-use if possible | Yes |
| Plastic pit liners | Yes | Yes | Decontaminate | No |
| Pumps, valves, etc. | No | No | Test for NORM | No / Recycle |
| Rags & gloves, soiled | No | No | None | No |
| Sand—produced during exploration | Yes | Yes | Test for TPH, benzene, & NORM | Yes |
| Soil—containing crude oil hydrocarbon | Yes (No, if generated in transportation) | Yes | Test for TPH & benzene | Yes |
| Soil—containing lube oil hydrocarbons | No | Yes | Test for cadmium, chromium, lead, TPH, benzene, PCBs | Yes |
| Sulfur—ferrous elemental sulfur & soil contaminated with sulfur | No | Yes | Recover sulfur | Yes |
| Sorbent pads—crude oil & other exempt wastes | Yes | Yes | Test for TPH & benzene | Yes |
| Sorbent pads—lube oil & other nonexempt wastes | No | Yes | Test for TPH & benzene | Yes |
| Tank seals—rubber | No | Yes | Allow to drain | Yes / Recycle |

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| Tower packing | No | Yes | Test for chromium | Yes / Recycle |
| Water-treatment backwash solids | Yes | Yes | Test for RCRA metals & NORM | Yes |
| Wooden pallets, uncontaminated | No | No | None | No / Disposal in Type IV landfill |

- The scope of the RCRA exemption for oil and gas wastes is limited to drilling fluid and cuttings, produced water, and other waste unique or intrinsic to exploration and production in "primary field operations." Guidance for determining whether an oil and gas waste is exempt or nonexempt, including the definition of "primary field operations," is available in the Railroad Commission's manual, *Interim Guidance for Statewide Rule 98* (available online at <www.rrc.state.tx.us/divisions/og/swr98/index.html>). Oil and gas waste is always nonexempt when generated in transportation operations (i.e., downstream of primary field operations).
- A less expensive alternative to the toxicity characteristic leaching procedure (TCLP) analysis is a total constituent analysis. If a total (i.e., total lead, total benzene, etc.) exceeds the example limits listed below or exceeds 20 times the TCLP limit for a Class 2-like waste, then the TCLP must be performed and the TCLP results must not exceed the stated limits for disposal in a standard MSW Type I landfill unit. For TCLP results that exceed the example limits listed below but do not exceed a hazardous limit, the waste may be authorized for disposal into an MSW Type I landfill with a Class 1 industrial waste unit. More TCLP limits can be found on Table 1, Appendix 1 of 30 TAC 335 Subchapter R:

| Constituent | Total Limit (mg/kg) | MSW Type I TCLP Limit (mg/L) | Hazardous Waste TCLP Limit (mg/L) |
|-------------|---------------------|------------------------------|-----------------------------------|
| Benzene | 10 | 0.5 | 0.5 |
| Arsenic | 36 | 1.8 | 5.0 |
| Barium | 2,000 | 100 | 100 |
| Cadmium | 10 | 0.5 | 1.0 |
| Chromium | 100 | 5.0 | 5.0 |
| Lead | 30 | 1.5 | 5.0 |
| Mercury | 4 | 0.2 | 0.2 |
| Selenium | 20 | 1.0 | 1.0 |
| Silver | 100 | 5.0 | 5.0 |

There are additional constituent analyses that can limit the options for disposal into an MSW Type I landfill unit:

- TPH < 1,500 mg/kg may be disposed of in a standard MSW Type I landfill unit.
- TPH ≥ 1,500 mg/kg may be disposed of in an MSW Type I landfill with a Class 1 industrial unit as specified in 30 TAC 330.171(b)(4).
- PCBs ≥ 50 mg/kg may not be disposed of in an MSW Type I landfill unit, unless authorized by the USEPA as specified in 40 Code of Federal Regulations Part 761.
- NORM concentrations must be below 30 picocuries per gram for disposal in an MSW Type I landfill unit as specified in 25 TAC 289.259(d)(1)(A).

Explanation of Acronyms:

BTEX benzene, toluene, ethylbenzene, and xylene
 COC constituents of concern
 MSDS material safety data sheet
 MSW municipal solid waste
 NORM naturally occurring radioactive materials
 PCBs polychlorinated biphenyls

RCRA Resource Conservation and Recovery Act
 RRCT Railroad Commission of Texas
 TCEQ Texas Commission on Environmental Quality
 TCLP Toxicity Characteristic Leaching Procedure
 TPH total petroleum hydrocarbons

Regulatory References:

16 TAC 3.30

30 TAC 330.3(148) and 330.171

30 TAC 335.505(1) and 335.521(a)(1)

40 CFR 261.4(b)(5)