

RemedX Class II Landfill Waste Acceptance Protocol

RemedX wants to make your job as easy as possible and we will be glad to help with the classification of your waste material. The following general guidelines provide a basic understanding of the wastes accepted at our facilities and the analysis to be undertaken to ensure quick and simple acceptance of your waste material for secure disposal at our waste management facilities

PROHIBITED WASTES

Our Class II Oilfield Landfills cannot accept wastes listed below:

1. Free liquids
2. Hazardous waste as defined in the Waste Control Regulation, 1996 or the Alberta User Guide for Waste Managers, 1996
3. Radioactive materials
4. Reactive materials
5. Explosives
6. Ozone depleting substances
7. Biological wastes
8. Biomedical and/or pathological wastes
9. Municipal solid wastes

LANDFILL DISPOSAL CRITERIA

The following list of disposal criteria that may be based on the description, origin and history of the waste:

- Analytical data provided must support the non-hazardous solid waste classification
- Analytical data provided must be current (not older than one (1) calendar year)
- It is the responsibility of the waste generator to determine the characteristics of the waste

Constituents	Regulatory Limit	Constituents	Regulatory Limit
BTEX:		Leachable Metals:	
Total combined BTEX	1,000.0 mg/kg	Antimony	500.0 mg/L
Benzene	0.5 mg/L	Arsenic	5.0 mg/L
Toluene	0.5 mg/L	Barium	100.0 mg/L
Ethylbenzene	0.5 mg/L	Beryllium	5.0 mg/L
Xylenes	0.5 mg/L	Boron	500.0 mg/L
Halogenated Organic Compounds:		Cadmium	1.0 mg/L
Extractable Organic Halides (EOX)	100.0 mg/kg (total)	Chromium	5.0 mg/L
Tetrachloroethylene	500.0 mg/kg	Cobalt	100.0 mg/L
Volatile Organic Compounds (VOC):		Copper	100.0 mg/L
Discrete compound limits		Iron	1,000.0 mg/L
Naphthalene	0.5 mg/L	Lead	5.0 mg/L
PCB	50.0 mg/kg	Mercury	0.2 mg/L
Methanol	Flash Point > 60.5 °C	Nickel	5.0 mg/L
		Selenium	1.0 mg/L
		Silver	5.0 mg/L
		Thallium	5.0 mg/L
		Uranium	2.0 mg/L
		Vanadium	100.0 mg/L
		Zinc	500.0 mg/L
		Zirconium	500.0 mg/L
Others:			

All waste must meet all the following requirements:

- $2.0 \leq \text{pH} \leq 12.5$
- **Flash Point** > 60.5 °C
- **No Free Liquids**

Note(s): Not all regulated compounds are listed above. Please refer to the **Alberta Users Guide for Waste Managers (AEP, 1996)** for the complete list. Waste containing elemental Sulphur and Sulphides ≥ 500.0 mg/kg is deemed Sulphur Waste (S-Waste). Refer to the Guidelines for Landfill Disposal of Sulphur Waste and Remediation of Sulphur Containing Soils (AEP, 2011).

ANALYTICAL TESTING PARAMETERS

Basic Parameters

The following testing is required for all wastes regardless of composition:

FP – Flash point for solid samples
pH – pH of solid waste material
LBTEX – Leachable BTEX (TCLP)
LMETALS – Leachable metals (TCLP)
PFT – Paint Filter Test
Supplemental – Waste Specific Parameters

Additional Parameters

The following additional analysis MAY be required depending on the waste description and/or type (refer to guidance below). Additional analysis may be requested depending on waste and source of generation.

Sol Scan – Landfill Solvent Screen in solid waste EPA 8240
PCB – Polychlorinated Biphenyls
PAH – Polycyclic Aromatic Hydrocarbons
EOX – Extractable Halogenated Organic Compounds (TCLP)
VOC – Volatile Organic Compounds (TCLP)
Spontaneous Combustion (Self-Heating)
Sulphur – Elemental Sulphur (S^0) and Sulphides (S^{2-})
Water Reactivity (ΔT)
% ANC – % Acid Neutralizing Capacity – Additional testing recommended for Sulphur impacted wastes
% CCE – % Calcium Carbonate Equivalent – Additional testing recommended for Sulphur impacted wastes

WASTE SPECIFIC ANALYTICAL REQUIREMENTS

Waste Description	Analytical Requirements
1. Activated Carbon	Basic and Spontaneous Combustion (Self-Heating)*
2. Cement (non-contaminated crushed, dry returns)	Completion Cement, SDS (if available)
3. Catalyst (Sulphur)	Basic, Elemental Sulphur and Sulphides, Spontaneous Combustion* and SDS (if available)
4. Catalyst (non-sulphur)	Basic, Spontaneous Combustion* and SDS (if available)
5. Desiccant(s)/Molecular Sieve(s)	Basic, Water Reactivity (ΔT)* and SDS (if available)
6. Contaminated debris and soil with:	
• Chemical/Solvent	Basic, Sol Scan* and SDS (if available)
• Methanol	Basic
• Crude Oil/Condensate	Basic
• Refined Fuel(s)	Basic
• Mercury/Metals	Basic
• Produced/Salt Water	Basic
• Sulphur	Basic, Elemental Sulphur and Sulphides
• Industrial Chemicals/Dry Cleaner	Basic and Additional Analysis*
7. Frac Sand (non-radioactive)	Basic
8. Incinerator ash	Basic
9. Sand – produced	Basic
10. Sludge – no free liquid (solids only) from:	
• Flare pit	Basic, Sol Scan*, PAH*, PCB* and EOX*
• Hydrocarbon	Basic
• Lime	Basic
• Process	Basic and Sol Scan*
• Sulphur	Basic, Elemental Sulphur and Sulphides
11. Drilling mud/cuttings	Basic

*Please contact us to discuss the requirements of these parameters.

Note: RemedX may request additional analytical requirements for waste approval. Please contact us if the waste does not fall into the categories described above.