

Part 1 General

1.1 SECTION INCLUDES

- .1 Materials and procedures for the removal of underground storage tanks.

1.2 RELATED SECTIONS

- .1 Section 02066 – Contaminated Soils.
- .2 Section 02209 - Excavating, Trenching and Backfilling.

1.3 REFERENCES

- .1 Canadian Council of Ministers of the Environment (CCME).
 - .1 CCME PN1326-2003, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products.
 - .2 CCME PN1299-1999, Canadian Environmental Quality Guidelines.
 - .1 Chapter 7-Updated 2007, Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health.
- .2 Canadian Federal Legislation
 - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
 - .1 Section 53 Technical CEPA Guidelines for Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products 1995.
 - .2 Canadian Environmental Assessment Act (CEAA), 1992, c. 37.
 - .3 Canada Labour Code (R.S. 1985, c. L-2).
 - .1 Part II (Updated June 2006) - Occupational Health and Safety.
 - .4 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.
- .3 Underwriters' Laboratories of Canada (ULC).
 - .1 ULC-S603-2000, Underground Steel Tanks.
 - .2 ULC-S615-1998, Underground Reinforced Plastic Tanks.

1.4 SUBMITTALS

- .1 Submit written tank description in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide written description of tank, its former contents, location and reason for removal.
- .3 Provide the Contract Administrator and Regulator (Manitoba Conservation) with copy of vapour removal test results.
- .4 Forward affidavit of destruction of underground storage tanks to the Contract Administrator and Regulator.

1.5 QUALITY ASSURANCE

- .1 Contractor must be licensed/certified by Manitoba Conservation for removal of underground storage tanks.
 - .1 License/certificate, title and number must accompany the bid submission.
 - .2 Regulatory Requirements: Ensure Work is performed in compliance with CEPA, CEAA, TDGA and applicable Provincial regulations.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Segregate and deliver non-salvageable or non-recyclable materials, including waste liquids and sludges to a Provincially licensed waste facility.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 PREPARATION SAFETY AND SECURITY

- .1 Conform to or exceed Federal, Provincial and Territorial codes, local municipal by-laws, by-laws, and codes and regulations of utility authorities having jurisdiction.
- .2 Comply with occupational health and safety in accordance with Section 01 35 30 - Health and Safety Requirements.
- .3 Protection.
 - .1 Meet safety requirements of Occupational Safety and Health, Canada Labour Code Part II and Regulations for Construction Projects.
 - .2 Disconnect or remove source of ignition from vicinity of tank.
 - .3 Provide temporary protection for safe movement of personnel and vehicle traffic.
 - .4 Cut, braze or weld metal only in monitored areas established to be free of ignitable vapour concentrations.
 - .5 Ground and bond metal equipment, including tanks and transfer pipes, before operating equipment or transferring flammable materials.
 - .6 Use non-sparking tools and intrinsically safe electrical equipment.
 - .7 On-site smoking is not permitted at any time.

3.2 DRAINING

- .1 Drain and flush piping into tank.
- .2 Pump out liquid from tank
 - .1 Use explosion proof, air driven or hand pump.
- .3 Remove sludge from tank bottom.

- .1 Dispose of product and sludge in accordance with local, and Provincial regulations using waste disposal carrier licensed by Manitoba Conservation.

3.3 EXCAVATION TRENCHING AND BACKFILL

- .1 Do work in accordance with Section 02209 - Excavation, Trenching and Backfilling.
- .2 Provide protective material around excavation.
- .3 Provide constant supervision during excavation and backfilling.
- .4 Excavation.
 - .1 Excavate until top of tank and connections and openings are exposed. The Contractor shall contact the Contract Administrator for an inspection immediately after the tank is exposed.
 - .2 Disconnect piping.
 - .1 Remove fill tube.
 - .2 Disconnect fill gauge, product and vent lines.
 - .3 Cap or plug open ends of lines that are not to be used further.
 - .4 Remove piping from ground.
 - .3 Temporarily plug tank openings.
 - .4 Continue excavation until tank is completely exposed.
 - .5 Temporarily stockpile on site soil in vicinity of tank, until waste classification can be established by the Contract Administrator prior to final disposal.

3.4 TANK REMOVAL

- .1 Remove tank in accordance with CCME Code of Practice PN1326 and place in secure location.
- .2 Block tank to prevent movement.
- .3 Contact Contract Administrator immediately if there is evidence of contamination in tank excavation, stop Work until further notice.
- .4 Remove and replace contaminated soil and accumulated flammable or combustible liquid with clean fill common to local area in accordance with Section 02209 - Excavating, Trenching and Backfilling and Section 02066 – Contaminated Soils.

3.5 VAPOUR REMOVAL

- .1 Purging:
 - .1 Purge vapours to less than 10% of lower explosive limit (LEL).
 - .2 Verify with combustible gas metre.
- .2 Inverting:
 - .1 Displace oxygen to levels below necessary to sustain combustion.
 - .2 Verify with combustible gas metre.
- .3 Water Method:

- .1 Fill tank with water to expel vapours.
- .2 Remove and dispose of contaminated water in accordance with regulations after tank is removed from site.
- .3 Verify with combustible gas metre.
- .4 Dry Ice Method:
 - .1 Add 1.85 gm of solid carbon dioxide (dry ice) for each 100 litre capacity.
 - .2 Crush and distribute ice evenly over greatest area to secure rapid evaporation. Avoid skin contact.
 - .3 Verify dry ice has vapourized.
- .5 Air Method:
 - .1 Ventilate tank with air using small gas exhauster operated with compressed air.
 - .2 Air to enter opening at one end and to exit opening at other end to quickly remove vapour.
 - .3 Test interior of tank to determine when tank is free of vapour.

3.6 CAPPING

- .1 Plug or cap holes after tank has been freed of vapours and before tank is moved from site.
 - .1 Leave vents open.
- .2 Plug corrosion leak holes using screwed (boiler) plugs.
- .3 Leave a 3 mm vent hole in one plug to prevent tank from being subjected to excessive pressure differential caused by extreme temperature change.

3.7 SECURING AND REMOVAL FROM SITE

- .1 Check vapour levels prior to transport.
 - .1 Remove vapour if required.
- .2 Dispose of tank in accordance with local, Provincial, and Federal regulations.
- .3 Truck removal.
 - .1 Secure tank on truck for transport to disposal site.
 - .2 Cut suitable openings in tank sides to render tank unusable.
 - .3 Ensure 3 mm vent hole located at uppermost point on tank.

3.8 BACKFILLING/SITE REMEDIATION

- .1 According to Section 02066 – Contaminated Soils.
- .2 Repair/replace finish grade to match surrounding area.

3.9 WORKMANSHIP AND DISPOSAL

- .1 Tanks destined for disposal.
 - .1 Dismantle, cut sufficient openings or otherwise render unusable.

- .2 Tanks for reuse.
 - .1 Refurbish to: ULC-S603 and ULC-S615.

END OF SECTION