
Decommissioning, Demolition and Site Restoration SSB HQ
Southside Road, St. John's, NL
Project No. R.111146.001

2020/12/01

Section 02 65 00 – Aboveground Storage Tank Removal

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PART 1 **GENERAL**

1.1 **OUTLINE OF WORK**

- .1 Comply with the requirements of this Section when performing the following work:
 - .1 Removing Aboveground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products.
 - .2 Contractor is to account for tanks being 75% full when bidding, planning and executing the project.

1.2 **REFERENCES**

- .1 Canadian Federal Legislation
 - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
 - .1 Storage Tank System for Petroleum Products and Allied Petroleum Products Regulations, 2008, SOR/2008-197.
 - .2 Canadian Environmental Assessment Act (CEAA), 1992, c. 37.
 - .3 Canada Labour Code (R.S. 1985, c. L-2).
- .2 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act, (TDGA).
- .3 National Research Council/Institute for Research in Construction.
 - .1 NRCC 38727, National Fire Code of Canada (NFC).
- .4 Canadian Council of Ministers of the Environment (CCME).
 - .1 CCME PN 1326, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products.
 - .2 CCME PN 1299, Canadian Environmental Quality Guidelines.
- .5 Underwriters' Laboratories of Canada (ULC).
 - .1 ULC/ORD-C142.23, Aboveground Waste Oil Tanks.
 - .2 ULC-S601, Shop Fabricated Steel Aboveground Horizontal Tanks for Flammable and Combustible Liquids.
 - .3 ULC-S602, Aboveground Steel Tanks for Fuel Oil and Lubricating Oil.
 - .4 ULC-S652, Tank Assemblies for Collection of Used Oil.
- .6 Canadian Standards Association
 - .1 CSA-B139 Series: 19, Installation Code for Oil Burning Equipment.
- .7 American National Standards Institute (ANSI).
 - .1 ANSI/NFPA-329, Handling Underground Releases of Flammable and Combustible Liquids.
 - .2 ANSI/API 650, Welded Steel Tanks for Oil Storage.

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- .8 American Petroleum Institute (API).
 - .1 API STD 653, Tank Inspection, Repair, Alteration, and Reconstruction.
- .9 Province of Newfoundland and Labrador
 - .1 Storage and Handling of Gasoline and Associated Products Regulations.

1.3 SUBMITTALS

- .1 Provide Departmental Representative with documented plan for removal of tanks before executing work. Plan to conform to all jurisdictional and environmental regulations.
- .2 Provide Departmental Representative with copy of vapour removal test results in accordance with Division 01.
- .3 Provide Departmental Representative with proof of fuel/sludge disposal and tank, including photos.

1.4 QUALITY ASSURANCE

- .1 Contractor and workers must be licensed by TSSA for removal of underground storage tanks.
 - .1 Regulatory Requirements: ensure Work is performed in compliance with TDGA, the Technical Standards and Safety Act 2000, and other applicable Provincial statutes and regulations.

1.5 CONTRACTORS RESPONSIBILITY

- .1 Be familiar with the regulations, codes and standards of Federal, Provincial and local Authorities which dictate the procedures for excavating and disposing of fuel tanks, tank contents and contaminated soils and materials.
- .2 Ensure that employees and sub-contractors know and understand all governing codes and regulations prior to their start of work.
- .3 Be responsible for any actions taken by authorities to remediate conditions caused by improper procedures, including hauling and dumping.

1.6 SPILL REPORTING

- .1 Contractor must follow the site EERP (Environmental Emergency Response Plan) provided by DFO that includes spill reporting procedures specific to a federal site.
- .2 Contractor to request EERP upon award of project.
- .3 Additional guidelines to be followed which may be superseded by the EERP:

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- .1 Leaking tanks are to be treated as an emergency with the potential of fire and explosion.
- .2 Take any measures necessary and as directed by the authorities having jurisdiction to stop and contain the spill.
- .3 Notify the Departmental Representative immediately upon the discovery or suspicion of possible leakage.
- .4 Notify the authority having jurisdiction immediately and provide the information requested.
- .5 Keep a log book detailing all measures.

PART 2 **PRODUCTS NOT USED**

PART 3 **EXECUTION**

3.1 **PREPARATION SAFETY AND SECURITY**

- .1 Conform to or exceed Federal and Provincial codes, local municipal by-laws, and codes and regulations of utility authorities having jurisdiction.
- .2 Prior to commencement of tank removal work, the following shall be completed:
 - .1 Provide temporary protection for safe-movement of personnel and traffic.
 - .2 Disconnect or remove all sources of ignition near the tank.
 - .3 Cut metal only in monitored areas established to be free of ignitable vapour concentrations. Do not proceed with hot metal work without approval of Departmental Representative.
 - .4 Ground and bond metal equipment, including tanks and transfer pipes, before operating equipment or transferring flammable materials.
 - .5 Use non-sparking tools and intrinsically safe electrical equipment.
 - .6 Smoking is not permitted.
 - .7 Implement any additional precautions necessary to safeguard personnel or building users in or near the job site.

3.2 **REMOVAL OF TANK CONTENTS**

- .1 Tank and piping contents shall be removed as thoroughly as practical.
- .2 Drain and flush piping liquid into tanks and clear any product that may be left in lines. Remove tank contents and tank flush water in accordance with governing regulations.
- .3 Dispose of fuel product, waste tank water and waste tank sludge in accordance with local and provincial regulations.

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3.3 EXPLOSIVE VAPOUR REMOVAL

- .1 Use one of the following methods for purging explosive vapours from both tanks and all connected piping.
 - .1 Inversion
 - .1 Displace oxygen to levels below necessary to sustain combustion using carbon dioxide gas.
 - .2 Verify with combustible gas meter.
 - .2 Dry Ice
 - .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.
 - .4 Verify with combustible gas meter.
- .2 Combustible Vapour Target: purge vapours to less than 6% of lower explosive limit (LEL) as verified using a combustible gas meter prior to excavation.
- .3 Precautions shall be exercised with the displaced vapours to avoid ignition and to safeguard personnel in area of adverse health effects.

3.4 FUEL PRODUCT PIPING TRENCH

- .1 Remove and dispose of sacrificial anode test station and all associated wire.
- .2 Remove and dispose of any fuel product piping, including any valves and other fittings.

3.5 SECURING AND REMOVAL FROM SITE

- .1 Check explosive vapour levels in both tanks and all piping prior to transport.
 - .1 Remove explosive vapours if required.
- .2 Dispose of both tanks and all fuel piping in accordance with local, Provincial and Federal regulations.
- .3 Fuel tank removals:
 - .1 Secure tanks for disposal off the island and transport to disposal site. Where choppers are used, perform work in accordance with governing regulations.
 - .2 Cut suitable openings in both ends of both tanks to render each tank unusable.
- .4 Dispose of tanks, piping, sumps and all other tank-related appurtenances in accordance with regulations.
- .5 Report. Photograph excavation prior to backfilling and provide photographs to the Departmental Representative.

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3.6 SITE FINISHING

- .1 Contractor is responsible for the complete restoration of the site.

3.7 STORAGE TANK WITHDRAWAL FORMS

- .1 Refer to Appendix F for forms to be submitted to the Departmental Representative and the Regulators for storage tank removals from service.

END OF SECTION