



Odorant Equipment Decommissioning

WGMSC
May 6, 2026
Wesley Lucas, Sales Director
Midland Resource Recovery, Inc.



Audit your contractor

- In person audit
 - Either direct or contracted
- Check permits
- Authorization by State
 - (DEP/EPA/DEM/DEQ etc.)
- Letter of destruction
- Pictures
- Data plate



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K6H 5T1
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Why decommission and dispose?

Natural Gas industry is a fast growing segment of our energy industry and there is a need to keep the operations safe and environmentally friendly. Obsolete odorization equipment needs to be removed and disposed of in an environmentally sound and odor-free manner in order to avoid business disruption or potential liquid/vapor odorant leaks from obsolete equipment.

Drivers:

- Modernization due to aging equipment
- Upgrade to more reliable/precise equipment
- Changing natural gas odorization requirements (population density, record keeping)
- Abandonment
- Maintenance of odorization equipment
- Underground tanks
- Odorizer failures
- Expiration of DOT tanks

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Removal of underground sweep or bulk tanks



Underground Storage Vessels (UST)...

Tank Age: With an average non-leaking lifespan of about 15-17 years (U.S. EPA 1986), many of the tank systems (tanks plus piping) that were installed during the growth decades of the 1950s and '60s have now reached or exceeded the end of their serviceable lives.

Underground odorant tanks were used mostly because of temperature control of odorant. (seep tanks or storage tanks)

Liability: As an increasing number of court cases has shown, tank owners remain financially liable for damages resulting from spills or releases from their facilities. Liability is reduced or often eliminated if tanks are removed and properly disposed of off-site.

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Station shutdown



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Unsafe installation



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Unsafe installation additional examples



Switch from bypass to injection



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Switch from bypass to injection



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Operator error



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Operator error



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Natural Disasters Lightning Strike / Fire



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Natural Disasters Lightning Strike / Fire



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Natural Disasters – Hurricane Ike



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Odorant tank that floated away...



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Decommissioning steps

1. Isolate system from live gas
2. Depressurize
 - flare, if allowed, or filter
3. Empty the tank completely
 - insert dip tube all the way to the bottom of the tank
 - filter/transfer (1st choice) or dispose of odorant
4. Excavate tank (if underground)
 - hydro-vac (preferred) or back-hoe
 - Remove tank and send for proprietary molecular desorption treatment to destroy residual mercaptan.
5. After treatment, metal is scrapped and recycled

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Waste Handling

Hazardous odorant liquid waste is RCRA (Resource Conservation and Recovery Act) classified and must be;

- 1) "manifested", that is, accompanied by an EPA document that verifies proper transport and disposal;
- 2) transported only by a company in possession of an EPA identification number;
- 3) treated and disposed of only at a facility also specifically permitted for hazardous waste management.

Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA, or Superfund), holds:

- 1) tank owners, as the "generators" of the waste,
- 2) They are responsible for any environmental damage caused by toxic residues

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Waste Handling

- Odorant tanks free of liquid, depressurized, under inert gas are transported as non-hazardous materials.
- Other mercaptan contaminated materials (pumps, piping, etc) are transported as non-hazardous materials in DOT drums.
- Option to transport all material in sealed containers

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Residual odorant can be drummed off for disposal/incineration, or it can be filtered for reuse and transported as product to an alternate site or tank.



Use only appropriate equipment for odorant transport



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Case 1: Decommissioning of 2000-gallon tank



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Case 1: Decommissioning of 2000-gallon tank cont. – Odorant Removal



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Case 1: Decommissioning of 2000-gallon tank cont. - Moving



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Case 1: Decommissioning of 2000-gallon tank cont. – Tank Removal



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Case 1: Decommissioning of 2000-gallon tank cont. – Removal



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Case 1: Decommissioning of 2000-gallon tank – Loading



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Case 2: On Site Treatment of an Underground Storage Tank



Case 2: On Site Treatment



Post treatment and tank cut



Transportation of cut up tanks to Philippi, WV treatment center



Case 3: Decommissioning of Underground 1675-gallon odorant storage tank



Obstacles with tank:

- Buried tank close proximity to building – hydrovac excavation was necessary
- Buried electrical lines above tank
- Removal of residual odorant

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Case 3: Decommissioning of Underground odorant storage tank cont.



Hydrovac excavation



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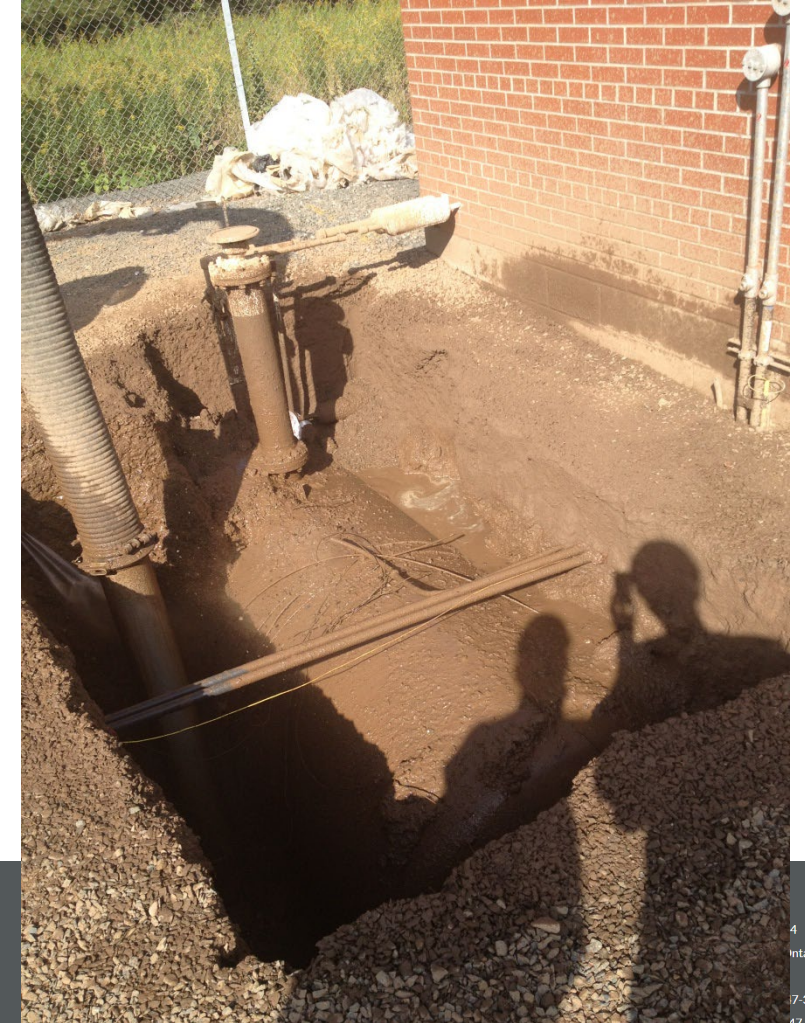
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Case 3: Decommissioning of Underground odorant storage tank cont.



Hydrovac excavation
cont.



Case 3: Decommissioning of Underground odorant storage tank cont.



Draining odorant
from the tank



Case 3: Decommissioning of Underground Odorant Storage Tank – the Lift

The lift



Cut - ready for recycle

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Another Hydrovac Example – Unknown volume tank same client



Obstacles with tank:

- Tank volume unknown
- Not on any drawings
- Residual odorant volume unknown

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Unknown Tank: The Lift



Case 3: Tank Loading



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Case 4: Decommissioning of 4000-gallon Tank, Rail Car Loading Rack and Truck Loading Rack

Problems with system:

- System shutdown approx. 1998
 - No records on shutdown procedure
- Bottom Feed Tank
- No Secondary Containment



Case 4: Decommissioning of 4000-gallon Tank, Rail Car Loading Rack and Truck Loading Rack Cont.



- Over 1000' of piping
- 10 "stench" bottles

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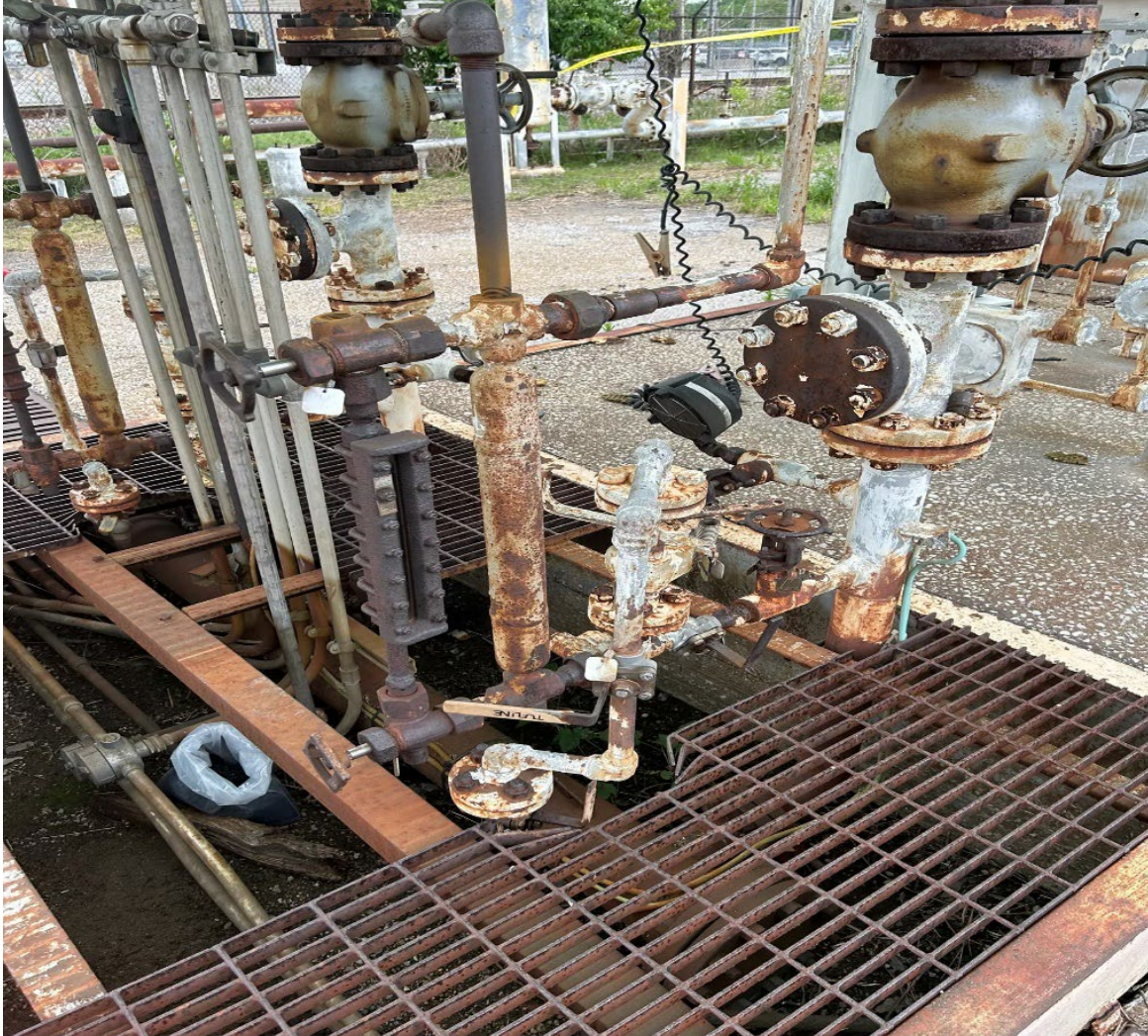
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Case 4: Rail Car Loading Rack Decom



Case 4: Tanker Truck Loading Rack Decom



Case 5: Decommissioning of 2000-gallon tank and Pulsafeeder System



Problems with tank:

- Leaky Level Gauge
- Mechanical Arm of Level Gauge interfering with Radar Level Gauge
- Bottom Feed Tank
- Porous Secondary Containment

Case 5: Decommissioning of 2000 Gallon Tank and Pulsafeeder System Cont.



Problems with pump:

- Cavitation with variable gas flow
- Many connections – potential leaks
- Home made controls – lack of uniformity

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Case 5: Installing a Temporary Odorizer and Bulk Odorant Storage Tank



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Case 5: Removing old Odorant Tank from Building



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Case 5: Placing New Odorant Tank into Building



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Installation/startup and transportation of decommissioned materials to WV treatment center



Other Considerations

- Do not take odorant tanks or odorant contaminated materials to a dump or scrap yard.



- Protect odorant contaminated from thieves
- Do not try to do more than what you are trained or capable of doing. Call in the experts.

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STATEMENT OF ENVIRONMENTAL STEWARDSHIP

MRR is originally an environmental service company, and the environment is held in high regard in everything we do. We strive to reduce our own environmental impact in parallel to helping our clients reduce theirs. The 3Rs (reduce, reuse, recycle) are an integral part of achieving sustainability goals. Here are examples of specific actions taken for each R:

Reduce

- We reduce the amount of hazardous waste by remediating odorant-contaminated equipment and disposing of it in an environmentally sound manner.
- We reduce the amount of gas vented to the atmosphere during pipe conditioning or pigging by combusting it instead.
- We reduce our paper consumption by transforming paper-centric processes to digital ones (including bookkeeping and payroll).

Reuse

- We promote the reuse (rather than the disposal) of odorant from tanks being worked on (provided it is not contaminated,) by offering the service to transfer it to other stations.
- We reuse the spent activated carbon from our carbon filters, by having the carbon reactivated.

Recycle

- We recycle all the steel from equipment remediated at our treatment facility. The steel is recycled into H-beams.

In addition to reducing our carbon footprint at the source, MRR also actively offsets part of its carbon footprint by **planting trees**. We have planted 5000 trees since 2015 in and around Lancaster, Ontario. The tree species we have planted thus far are oak, walnut, tamarack and white pine. Our next step is to plant fruit trees (apple and pear).

We also run a garlic farm, which currently has 4000 heads of garlic:



business is **beehive** hosting. Bees are essential for the pollination of most plants which produce the food we all eat; as such, they – and their habitat – need to be protected. We have been keeping beehives at our headquarters since 2017. They have been used to produce local honey as well as make products, such as candles, from natural beeswax:





MRR invests in relationships.

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