Guidance

Heating Oil Tank Cleanup Guidance for Homeowners

State of Oregon Department of Environmental Quality

Oregon Administrative Rules Chapter 340 – Division 177

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Disclaimer

If, after reviewing all applicable laws and rules, you plan to proceed with your own heating oil tank cleanup, DEQ offers this guidance to complete your job. However, by offering this guidance, DEQ assumes no liability for the safe and successful completion of your heating oil tank cleanup. A simplified guide as presented below cannot substitute for a full and complete understanding of applicable local, state and federal laws and rules and knowledge gained through experience.

General Discussion

Homeowners occasionally ask DEQ if they can clean up contamination from a heating oil tank release. It is legal for homeowners to clean up soil and groundwater contamination from a HOT release, assuming they perform the work themselves and comply with all applicable local, state and federal rules. It is not legal to complete the work by serving as a general contractor and hiring subcontractors to complete portions of the job. To do so transfers liability for improper work by the subcontractors to the homeowner.

Homeowners who plan to contract the cleanup work out must use a licensed HOT service provider to ensure the contractor's compliance with the HOT service provider law and rules in Oregon Revised Statutes 466.862 and Oregon Administrative Rules Chapter 340 – Division 163.

In addition to knowing the environmental laws and rules that regulate contractors offering tank services and those relating to the cleanup of heating oil releases, homeowners must know the following:

- The toxic characteristics of heating oil, potential health and environmental effects from exposure to those toxic substances, and possible ways that people or the environment may be exposed to these toxic substances.
- If any local planning, building or fire codes apply to the cleanup
- Safe methods for excavating contaminated soil from an open pit.
- Requirements for the treatment and/or disposal of contaminated soils – on or off site or at authorized facilities.
- Requirements for transporting contaminated soils on public roads.
- Proper and environmentally safe methods to decontaminate equipment.
- Proper methods to collect, store and transport soil and, if necessary, groundwater samples.
- How to interpret laboratory soil and groundwater sample results.
- How to write up the cleanup results to obtain DEQ's registration and file closure letter for a heating oil tank cleanup project.

In addition to obtaining the requisite knowledge, typical equipment needed to clean up a contaminated site includes:

- A backhoe to dig down to the top of the tank or to excavate contaminated soil. A shovel may also work, but that is a physically demanding and time-consuming way to complete the job.
- A truck and/or trailer to haul contaminated soils to an authorized treatment or disposal facility.
- A pump, hose and storage tank or tanker truck to remove contaminated water from a tank pit if groundwater is encountered
- An auger or other tools to collect soil samples.
- If groundwater is present, equipment to collect groundwater samples.

Laws and Rules

Oregon laws covering the cleanup of heating oil tank releases and licensing of HOT contractors are found in Oregon Revised Statutes Chapters 465 and 466. Oregon rules covering the cleanup of HOT releases are found in Oregon Administrative Rules Chapter 340 – Division 177 and, by reference, OAR Chapter 340 – Division 122. Oregon rules covering contractors offering heating oil tank services are found in OAR Chapter 340 – Division 163. Oregon rules administered by the Water Resources Department covering the construction, maintenance and abandonment of monitoring wells, geotechnical holes and other holes are in OAR Chapter 690 – Division 240.

Some Oregon cities, fire districts or counties may have local building, zoning or permitting requirements that apply to the cleanup of contaminated soils and groundwater. Before starting work, please contact the building, planning and fire agencies in your area to find out about any applicable local requirements.

Finally, before digging into the ground in or near any public or private utility easement, or if you don't know if there's a public utility on or near your property, please contact the Oregon Utility Notification Center or call 1-800-332-2344 for information on this important safety program. For a copy of the "call before you dig" rules, please contact the notification center.

HOT Cleanups – General Considerations

Project closure goals

For DEQ's purposes, the ultimate goal of a heating oil tank cleanup is to have enough information to be able to make a project closure determination that a site is clean enough so it doesn't present any unacceptable public health or environmental risk. Property owners have additional interests in seeing that any residual heating oil contamination doesn't limit current or future use, or affect future sale of the property.

The term "cleanup" implies that treatment or removal of heating oil contamination is always required. However, as outlined in the guidance below, treatment or removal of heating oil contamination is not always required to reach a site closure determination. In some cases, the amount and level of heating oil contamination is such that environmental standards are met and no actual soil removal is needed.

The key is to have adequate information about the contamination and site to be able to evaluate public health and environmental risks. Compilation of adequate information about the contamination and site, along with removal when necessary, will result in DEQ registering a homeowner's self-certified final HOT cleanup report and issuing a file closure letter.

Safety precautions

Accidents from fire, explosion, excavation cave-in, accidental contact with overhead or underground power lines and other hazards can occur during heating oil tank cleanups.

All persons doing cleanup work should know and adhere to all applicable environmental, fire, health and safety rules and practices; proper procedures for operating equipment, testing for combustible vapors, and the proper handling and disposal of wastes likely to be encountered.

The following safety and health hazards are of particular concern:

Open Flames and Sparks - Open flames, including oxygen/acetylene torches, matches, cigar and cigarette lighters, candles, burning tobacco, etc., should not be present near any heating oil-contaminated excavation. Electrical switches, equipment and electrical motors used near any heating oil-contaminated excavation should meet the National Electrical Code's explosion-proof requirement.

Static Electricity - Electrically ground all tools, piping and electrical equipment used in the vicinity of heating oil contamination to prevent ignition of heating oil vapors by static electricity.

Exposure to Petroleum Products – Exercise care to minimize exposure to heating oil as well as soil and water contaminated with these products. Avoid inhaling heating oil vapors and exposing skin to direct contact with heating oil when conducting a cleanup. For information about possible health effects from exposure to heating oil, read the following facts sheets of the federal Agency for Toxic Substances and Disease Registry:

- *Frequently Asked Questions about Hazardous Materials*

- *Benzene*
- *Fuel oils*
- *Total Petroleum Hydrocarbons*

In addition, the American Conference of Governmental Industrial Hygienists recently published an occupational exposure standard for persons coming in contact with diesel fuel, which includes exposure to heating oil. Information on buying copies of this standard is available in the "Additional Guidance and Reference Documents" section.

HOT Cleanups - Where to Start?

Reporting a heating oil tank release

If for any reason the HOT release has not been reported to DEQ, please report the release as soon as possible, but in any case within 72 hours as required by OAR 340-177-0055 (1). A homeowner must report a confirmed release by:

- Calling DEQ at 503-229-6170 if a HOT release is confirmed ***in the Portland*** area Monday through Friday.
- Calling DEQ at 800-742-7878 if a HOT release is confirmed ***outside of the Portland area*** Monday through Friday.
- Submitting a report by fax to 503-229-6945 using the *Heating Oil Release Reporting Form*. (see page 13 for list of forms)
- Calling the Oregon Emergency Response System toll-free at 800-452-0311 if a HOT release happens on a weekend or if there's a release from an above-ground heating oil tank.

Once a release is reported, DEQ will assign a unique site identification or log number to each release site, which will serve as confirmation of reporting. Any letters, reports or other documents submitted to DEQ regarding this cleanup should be marked with this log number to insure they're assigned to the correct file.

Submitting initial heating oil cleanup report

OAR 340-177-0055 (5) requires that a written initial cleanup report be submitted to DEQ within 45 days of a reported release if any of the following conditions exist at a cleanup site:

- If groundwater is encountered at any time during investigation or cleanup activities
- If any fire or safety hazards posed by vapors or free product haven't been eliminated
- If cleanup at the site is not expected to begin until 45 days after the release is reported

DEQ prefers the initial reporting requirement be met by using the *Initial Heating Oil Cleanup Report Form* (see page 13). You may also submit a narrative report that meets all the requirements of OAR 340-177-0055 (5).

HOT Cleanup Options

Cleanup to soil matrix standards

Soil matrix cleanup standards (OAR 340-177-0065 (1) (a)) are the most conservative set of heating oil tank cleanup standards. They're specifically designed to be protective of public health and the environment under all conditions and exposure pathways, be it direct contact, breathing of vapors or leaching of contaminants to groundwater. There are three cleanup levels (Level I, II and III) based on an evaluation of five site criteria, including: depth to groundwater, rainfall amounts, soil type, use of the uppermost aquifer, and proximity to receptors. If soil matrix standards are met, no restrictions are placed on current or future uses of the property.

Meeting a soil matrix standard almost always involves excavation, temporary storage and disposal of petroleum-contaminated soil. The exception to soil removal is when no contamination is discovered during a site assessment or testing after a tank removal. Because soil is removed and has to be disposed of, the costs for meeting the soil matrix standard are often the highest of the three cleanup options. On the other hand, sampling and analysis costs for this method tend to be the lowest of the three options. Typically three soil samples will need to be collected, with analysis limited to total petroleum hydrocarbons by DEQ Method NWTPH – Dx.

For a more detailed discussion of the soil matrix cleanup option, refer to the *UST Cleanup Manual,* which is available on DEQ's underground storage tank program web page.

Cleanup to generic remedy standards

The generic remedy cleanup standard (OAR 340-177-0065 (1) (c)) generally provides for less soil removal while requiring more knowledge of the amount and location of heating oil contamination being left behind. Because less soil is removed, cost savings are realized on this method of cleanup. However, sampling costs are generally higher because more samples are required to define the horizontal and vertical spread of contamination and to calculate the amount of contamination remaining with NWTPH – Dx concentrations above 500 parts per million.

The first step in applying the generic remedy standard is to make sure the site meets all five basic qualifying criteria *(no exceptions permitted)* that include:

- The release is from an underground heating oil tank.
- The only product released is heating oil or diesel #2.
- Contamination is limited to soil only with no groundwater detected in the tank pit or in any soil borings.
- No free product is present as a result of the tank leak.
- There are no ecological risks posed by the release.

If a site meets the basic qualifying criteria, then sufficient soil samples must be collected to:

- Define the highest NWTPH – Dx value in soils remaining on site. If any soil remains with levels above 10,000 ppm, it must either be removed or the site doesn't meet the generic remedy standard.
- Show if any contamination remains with levels between 2,500 ppm and 10,000 ppm. If there is, then the samples over 2,500 ppm NWTPH – DX must also be tested for benzene, ethylbenzene and naphthalene. Measured concentrations for ethylbenzene and

naphthalene in soil must not exceed the risked-based concentration in effect at the time of the cleanup project. Benzene concentrations cannot exceed 0.1 ppm.

- Define the amount of contamination in cubic yards with contamination values above 500 ppm. The allowable amount must not exceed 65 cubic yards. If the amount exceeds 65 cubic yards, more contaminated soil must be removed or the site doesn't meet the generic remedy standard.
- Show that there is no contamination within 3 feet of the ground surface.
- Show that the contamination is above the seasonal high water table (the shallowest depth from the ground surface to the water table experienced in a typical year).
- Show that surface waters (creeks, rivers, lakes, etc.) are more than 100 feet away.

A more detailed discussion of the generic remedy cleanup option is found in the *Heating Oil Tank Generic Remedy Guidance Document* and the *UST Cleanup Manual*, both available by going to DEQ's underground storage tank program web page.

Cleanup to risk-based standards

NOTE: It is DEQ's opinion that specific training and experience is required to apply the risk-based standards correctly. DEQ also believes that rather than attempt to apply the risk-based standards, homeowners should hire a contractor if it appears their site is not a candidate for a soil matrix or generic remedy cleanup. Under the current HOT self-certification program, DEQ doesn't have sufficient staffing to guide individual homeowners through a risk-based cleanup.

Heating oil is a complex blend of organic hydrocarbons. Its makeup can vary significantly based on the crude oil from which it is derived and distillation processes used to refine the crude oil. Unlike the soil matrix and generic remedy cleanup standards that measure heating oil as a single compound, the risk-based cleanup standard (OAR 340-177-0065 (1) (b)) looks at individual constituents within heating oil that present the highest risk to human health or the environment. So rather than measuring just for total petroleum hydrocarbons, it is necessary to also measure for 16 individual constituents of heating oil such as benzene, toluene, pyrene, chrysene and other substances.

Applying risk-based standards to a heating oil site generally minimizes soil removal required, hence minimizing this cost. On the other hand, sample analysis costs are higher because more samples are necessary to adequately characterize the site and testing for individual constituents such as benzene, toluene, ethylbenzene, xylenes and the 12 polynuclear aromatic hydrocarbons is required. In addition to gathering constituent data, information is gathered to complete a conceptual site model that evaluates potential contamination paths and things that may come in contact with the contamination. Possible exposure pathways include direct contact with contaminated soil, breathing heating oil vapors released from contaminated soil or groundwater, or drinking or direct exposure to contaminated groundwater. Residents, groundwater and critical habitats such as creeks, lakes or wetlands can potentially come in first contact with the contamination.

Once enough information is collected so risk at the site is understood, management of the risk can take several forms. As with the soil matrix and generic remedy cleanups, soil removal can be used to excavate those soils presenting the highest risk. However, the risks can also be managed by applying engineering controls such as constructing a cap that prevents direct contact, or installing piping to capture vapors for treatment. Lastly, the risk can be managed by applying institutional controls that limit uses of the property (buildings can't be constructed over the contaminated area) or groundwater (wells can't be installed on the property).

More details on the risk-based cleanup option is on DEQ's website in *Developing Risk-Based Standards for Residential Heating Oil Tank Sites*, *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* and the *UST Cleanup Manual*.

Groundwater cleanup

NOTE: It is DEQ's opinion that specific training and experience is required to apply the groundwater requirements correctly. DEQ also believes that rather then attempt to apply the groundwater rules, homeowners should hire a heating oil tank contractor to manage the cleanup site. Neither DEQ nor the Oregon Water Resources Department has sufficient staff to provide hands-on guidance to homeowners to help them through a groundwater cleanup.

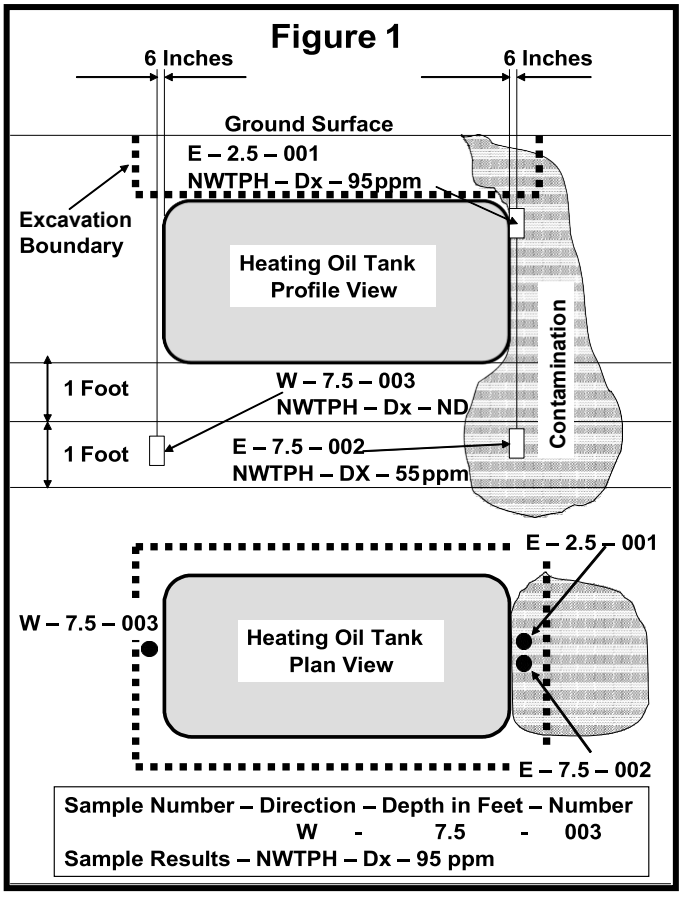
In the course of digging up the heating oil tank or collecting soil samples, groundwater may be encountered. Contact DEQ immediately at 503-229-6170 any time groundwater is encountered in the tank pit or soil sampling hole. Dealing with groundwater contamination is another complex situation similar to applying risk-based cleanup standards. Several additional sets of rules apply, including ones by DEQ relating to monitoring and cleanup requirements and ones by the Oregon Water Resources Department relating to constructing, maintaining and abandoning geotechnical holes.

A more detailed discussion of groundwater sampling and cleanup is found in DEQ's *UST Cleanup Manual*, *Developing Risk-Based Standards for Residential Heating Oil Tank Sites* and *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites.*

Sampling and analysis

Locating, collecting, analyzing and interpreting results from soil and, if necessary, groundwater samples, is likely the most important step that a homeowner performs in conducting a heating oil cleanup. It is through the sample results that the homeowner determines compliance with a cleanup option. For homeowners unfamiliar with environmental sample collection procedures, see section 3.3 in the *UST Cleanup Manual* and Appendix 3 in the *HOT Generic Remedy Guidance*. Useful tips on sample collection, storage and transportation, sampling containers and chain of custody forms are generally available from the environmental lab used to analyze the samples. For labs located nearest you, look in the Yellow Pages under the heading "Laboratories – Analytical."

In most cases, the only analysis required on soil samples will be to test for total petroleum hydrocarbons by DEQ Method NWTPH-Dx. If sample results exceed 2,500 parts per million, then testing for benzene, ethylbenzene and napthalene is necessary. If sample results exceed 10,000 ppm, then testing for BTEX and polynuclear aromatic hydrocarbons is necessary.



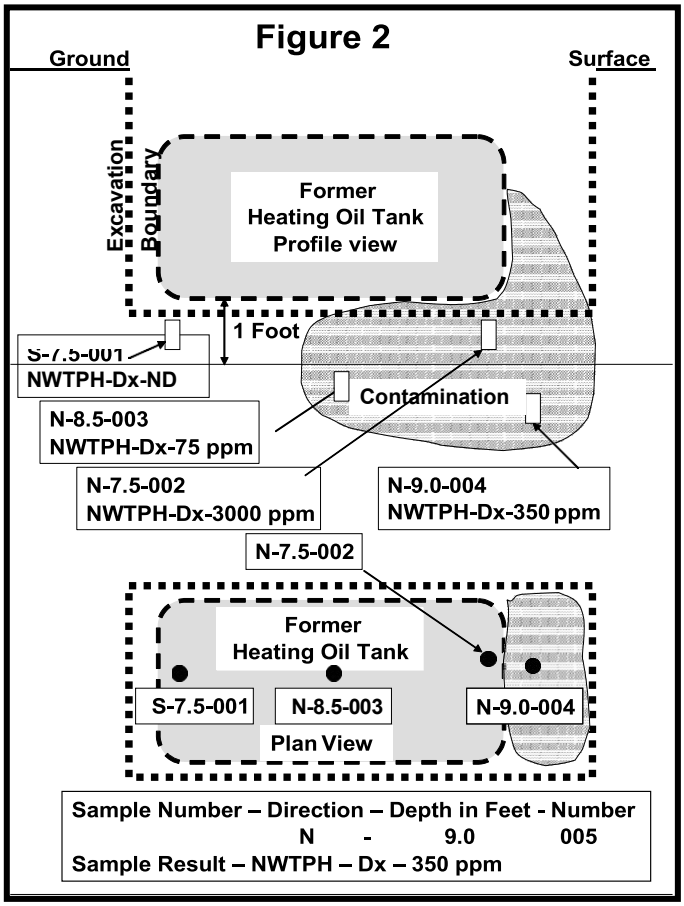
Shown below are the typical samples collected and their association with several cleanup options and closure scenarios.

Scenario 1 – no cleanup required

In this scenario, three soil samples were collected during an in-place heating oil tank decommissioning (see Figure 1). During the course of uncovering the top of the tank, contamination from a surface spill at the east end of the tank was discovered. Based on visual observations as the soil boring was advanced, a sample of the suspected worse contamination was collected at 2.5 feet below ground surface. Two additional samples were collected within six inches of each end of the tank and at least one foot, but not more than two feet, below the tank's bottom. Because results of sample E-2.5-001 (95 ppm) at 2.5 feet are greater than the results for sample E-7.5-002 (55 ppm) at 7.5 feet, it's concluded that the worst contamination has been identified. The results for sample W-7.5-003 were non-detect. Comparing these results with soil matrix cleanup standards in OAR 340-122-0335 (2) shows that both results are below the most stringent Level I cleanup standard for NWTPH – Dx of 100 ppm. As a result, even though a reportable release was discovered, no cleanup is required. At this point, you need to prepare and submit to DEQ a *Final Heating Oil Cleanup Report*, including attachments, a *Cleanup Checklist* and a *Homeowner Self-Certification of Residential Heating Oil Tank Services* form. To assist you in preparing a soil matrix cleanup report, refer to DEQ's *Soil Matrix Cleanup Report* document. Upon the soil matrix cleanup report's audit, and assuming the site complies with the rules, DEQ registers the site and issues a letter stating that the cleanup file has been closed.

Scenario 2 – soil matrix cleanup or generic-remedy cleanup

In this scenario, two soil samples were initially collected after decommissioning by removal of a heating oil tank (see Figure 2). During the course of removing the tank, contamination from a leak in the tank's north end was discovered. Following tank removal, samples S-7.5-001 and N-7.5-002 were collected below the bottom of the former tank at least six inches but no more than one foot into native soil.



Before analyzing results and discussing cleanup options for this site, note two important points at this stage of a cleanup. As shown in Figure 2, some heating oil-contaminated soil was excavated during the tank's removal. It's very important to separate this material from any clean excavated soil and to handle this contaminated soil in a manner that doesn't create a second area of contamination on your property. Typically the soil is put on and covered with heavy plastic to minimize odors and prevent runoff or leaching into the clean soil beneath the pile. For a more detailed discussion, see the section below on handling petroleum-contaminated soils. The second important point is to safely keep the tank pit open until the first sample results are back, because additional soil removal may be the most cost-effective way to reach site closure.

The soil matrix rules are in OAR 340-177-0065 (1) (a) and by reference OAR 340-122-0320 to 340-122-0360. OAR 340-122-0330 identifies five criteria including depth to groundwater,

amount of rainfall, soil type, sensitivity of the uppermost aquifer and proximity to receptors that, when scored, identify three cleanup levels. The most stringent cleanup Level I is 100 ppm, the intermediate cleanup Level II is 500 ppm and the least restrictive cleanup Level III is 1,000 ppm (see box at bottom of Figure 3).

After gathering the necessary site-specific facts and entering them onto the score sheet as shown in Figure 3, it's determined that the soil matrix Level II cleanup standard for NWTPH – Dx of 500 ppm is applicable to our example site. Sample N-7.5-002 at 3,000 ppm is significantly above the Level II cleanup standard of 500 ppm. At this point several options are available: more sampling to find out where the 500 ppm standard can be met; consideration of the site under the heating oil generic remedy guidance option; or more soil removal and additional confirmation sampling for qualification under the soil matrix option. A quick review of the generic-remedy option indicates that all five qualifying criteria can be met. Evaluating generic remedy cleanup alternatives 1 and 2, however, reveals that we don't have enough information to make a clear determination under either generic-remedy cleanup alternative. Since sample N-7.5-002 was greater than 2,500 ppm, values for the concentration of benzene, ethylbenzene and napthalene are needed. Further, both alternatives require a determination be made that no more than 65 cubic yards of soils with contamination levels above 500 ppm remain at the site.

Figure 3

MATRIX SCORE SHEET

1. Depth to Groundwater		
< 25 feet	(10)	10
25 - 50 feet	(7)	
51 - 100 feet	(4)	
> 100 feet	(1)	
2. Mean Annual Precipitation		
> 45 inches	(10)	5
20 - 45 inches	(5)	
< 20 inches	(1)	
3. Native Soil Type		
Course sands, gravels	(10)	1
Silts, fine sand s	(5)	
Clays	(1)	
4. Sensitivity of Uppermost Aquifer		
Sole Source	(10)	4
Current Potable	(7)	
Future Potable	(4)	
Non -potable	(1)	
5. Potential Receptors		
Many, near	(10)	10
Medium	(5)	
Few, far	(1)	
TOTAL SCORE	=	30

MATRIX SCORE	Cleanup Level (ppm TPH) Gasoline	Diesel
Level 1: > 40 pts.	40	100
Level 2: 25 - 40 pts.	80	500
Level 3: < 25 pts.	130	1000

Although it appears a limited amount of additional soil removal may bring the site into compliance with the soil matrix rules, at least two additional soil samples would be required to confirm that the soil matrix Level II cleanup standards have been achieved. That being the case, and considering the site meets the basic qualifying criteria for applying the generic remedy option, it may be most cost-effective to collect several more soil samples to define the magnitude and extent of contamination. Based on visual observations in the pit, it's concluded that at least two more bottom samples are needed to define where levels of contamination drop below 500 ppm around sample N-7.5-002. The location and results for the two additional samples (N-8.5-003 and N-9.0-004) are in Figure 2. In addition to testing the two new samples for NWTPH – Dx, each sample was analyzed for benzene with all results for benzene being less than 0.05 ppm. In addition, since it's the sample with the highest residual contamination, sample N-7.5-002 was also tested for benzene with the result being 0.15 ppm. With three samples located within the plume of contamination, judgments can now be made on the magnitude and extent of contamination and a calculation can be made on the amount of contamination with concentrations above 500 ppm.

Had the original two samples been below 500 ppm, the site would have been a candidate for a soil matrix closure. At that point a *Final Heating Oil Cleanup Report*, including attachments, a *Cleanup Checklist* and a *Homeowner Self-Certification of Residential Heating Oil Tank Services* form need to be prepared and submitted to DEQ. To assist you in preparing a soil matrix cleanup report, please refer to DEQ's *Soil Matrix Cleanup Report*. Upon the report's audit, and assuming

rule compliance, DEQ registers the site and issues a letter stating that the cleanup file has been closed.

Because sample N-7.5-002 had a benzene concentration of 0.15 ppm, the site doesn't meet the generic remedy standard either. However, since the other two samples meet the generic remedy standards and the amount of contamination in the pit appears limited, the most cost-effective approach at this time is some additional soil removal and one final confirmation sample for NWTPH – Dx, looking for a value less than 2,500 ppm. At this point you should prepare and submit to DEQ a *Generic Remedy Heating Oil Cleanup Report*, including attachments, a *Cleanup Checklist* and a *Homeowner Self-Certification of Residential Heating Oil Tank Services* form. To prepare a generic-remedy cleanup report, refer to DEQ's *Soil Matrix Cleanup Report*. Upon the report's audit and assuming rule compliance, DEQ registers the site and issues a letter stating that the cleanup file has been closed.

Handling petroleum-contaminated soils

At many heating oil tank cleanup sites, some petroleum-contaminated soil will be excavated and must be appropriately managed. For up to 30 days, these soils can be temporarily stored on-site as long as care is taken to avoid creating a second area of contamination (by storing it on heavy plastic sheeting) and avoiding contaminated runoff and odors (by keeping it covered and installing a berm around the area).

The two most common methods of handling heating oil petroleum-contaminated soil are hauling it to an authorized landfill or to a thermal treatment facility. If the soil is transported on public roads, it must be contained so that no leakage of heating oil or spillage of heating oil-contaminated soil occurs.

Record keeping

The property owner should document and retain permanent records of all cleanup activities including names of companies performing work related to the heating oil tank cleanup, disposal methods and locations for all contaminated soil and groundwater. Permanent records should also include:

- Photographs of the heating oil tank cleanup
- Results of all soil analyses and engineering studies
- Chain-of-custody forms for samples collected
- Paid invoices/billings
- Site maps or sample location diagrams
- Petroleum-contaminated soil disposal or thermal treatment receipts

Certified cleanup report

To ease future property transactions, homeowners should register their cleanup with DEQ. To register a cleanup, submit a certified cleanup report completed in accordance with OAR 340-177-0055 and 340-177-0095 and include a registration fee of $250 for Soil Matrix, $350 for Generic Remedy, or $450 for Risk-Based project types. The registration process is complete when DEQ issues a letter to the homeowner stating the certified report has been registered and DEQ files on the cleanup project have been closed.

For help in completing a certified cleanup report, please refer to DEQ guidance entitled: *Soil Matrix Cleanup Report.*

URL Addresses for Referenced Materials

Please note: The Internet URL addresses listed below are included as a convenience for users of this document. All URL addresses were functional at the time this publication was posted on DEQ's heating oil tank web page. Let DEQ know of any errors and it will work to correct them in a timely manner.

Agencies

DEQ's Heating Oil Tank Program web page
https://www.oregon.gov/deq/tanks/Pages/hot.aspx

Oregon Water Resources Department
www.oregon.gov/OWRD/index.shtml

Oregon Emergency Response System
www.oregon.gov/OMD/OEM/Pages/tech_resp/oers.aspx

Oregon Utility Notification Center
www.callbeforeyoudig.org

Laws and rules

Heating oil tank laws (ORS Chapters 465)
https://www.oregonlegislature.gov/bills_laws/ors/ors465.html

Heating oil tank laws (ORS Chapters 466)
https://www.oregonlegislature.gov/bills_laws/ors/ors466.html

Heating oil tank rules (Oregon Administrative Rule Chapter 340 – Divisions 177,122 and 163)
https://secure.sos.state.or.us/oard/displayChapterRules.action?selectedChapter=80

Rules covering the construction, maintenance and abandonment of monitoring wells, geotechnical holes and other holes are found in OAR Chapter 690 – Division 240.
http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_690/690_240.html

Rules about calling before you dig near utilities
www.digsafelyoregon.com/ors-oar.asp

Guidance documents

Heating Oil Tank *Generic Remedy Guidance* (scroll down to Heating Oil Tanks Program heading)
https://www.oregon.gov/deq/FilterDocs/HOTGenericRemedyGuidance.pdf

UST Cleanup Manual (scroll down to Underground Storage Tank Program heading)
https://www.oregon.gov/deq/FilterDocs/USTCleanupManual.pd

Developing Risk-Based Standards for Residential Heating Oil Tank Sites (scroll to Heating Oil Tanks program heading)
https://www.oregon.gov/deq/FilterDocs/HOTRiskBasedStandards.pdf

Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites
https://www.oregon.gov/deq/FilterDocs/RBDMGuidance.pdf

HOT Soil Matrix Cleanup Report
https://www.oregon.gov/deq/FilterDocs/HOTSoilMatrixRep.pdf

DEQ Method NWTPH-Dx
https://www.oregon.gov/deq/tanks/Pages/UST-Analytical-Methods.aspx

Frequently Asked Questions About Hazardous Material
www.atsdr.cdc.gov/toxfaqs/index.asp

Health Information about Benzene
www.atsdr.cdc.gov/toxfaqs/tf.asp?id=38&tid=14

Health Information about Fuel Oils
www.atsdr.cdc.gov/toxfaqs/tf.asp?id=515&tid=91

Health Information about Total Petroleum Hydrocarbons
www.atsdr.cdc.gov/toxfaqs/tf.asp?id=423&tid=75

American Conference of Governmental Industrial Hygienists *Diesel Fuel: TLV® Chemical Substances 7th Edition Documentation Publication #7DOC-701*

(Note: ACGIH documents may be purchased from the American Conference of Governmental Industrial Hygienists at 513-742-2020 or online at www.acgih.org/store/ProductDetail.cfm?id=1457 or possibly viewed at a local library.

Other ACGIH chemical substance documentation publications can be purchased for gasoline, benzene, toluene, ethylbenzene, xylenes, ethylene dibromide, ethylene dichloride, methyl tert-butyl ether, naphthalene, lead, trimethylbenzene isomers, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and chrysene *at 513-742-2020 or on-line at www.acgih.org/store/BrowseProducts.cfm?type=cat&id=16, or possibly viewed at a local library.)*

Forms

Heating Oil Release Reporting Form, Initial Heating Oil Cleanup Report Form, Final Heating Oil Cleanup Report, Cleanup Checklist, Generic Remedy Heating Oil Cleanup Report, Homeowner Self-Certification of Residential Heating Oil Tank Services (scroll down to heating oil tank section)
https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

Soil Matrix checklist and score sheet (scroll down to heating oil tank section)
https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

Authorized landfill or thermal treatment facility for petroleum-contaminated soil
https://www.oregon.gov/deq/FilterDocs/PCSApprovedDisposalSites.pdf

Utility Notification Center Serving Oregon – to have utility locations marked
www.callbeforeyoudig.org/

Heating Oil Tank *Licensed Service Providers* list (scroll down to heating oil tank program)
https://www.oregon.gov/deq/FilterDocs/LicensedServiceProviders.pdf

For more information

DEQ heating oil tank rules, guidance documents and forms are on DEQ's Heating Oil Tank Program web page, obtained by calling the DEQ HOT Helpline if inside Oregon at 1-800-742-7878 (recorder), or available by calling 503-229-6170 in Portland.

For more information about DEQ's Heating Oil Tank Program, please contact hotinfo@deq.state.or.us .