



# Heating Oil Tank Program

## Cleanup Guidance for Homeowners

(OAR Chapter 340 – Division 177)

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Heating Oil Tank Program  
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Department of Environmental Quality  
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# Heating Oil Tank (HOT) Program Cleanup Guidance for Homeowners

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## Disclaimer

If after reviewing all applicable laws and rules you are determined to proceed with your own HOT cleanup, DEQ offers the following guidance to complete your job. However, by offering this guidance, DEQ assumes no liability for the safe and successful completion of your HOT 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 the knowledge gained through experience.

## General Discussion

Homeowners occasionally ask DEQ if they can clean up contamination from a HOT 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.

Further, homeowners who plan to contract the cleanup work out must contract with a licensed HOT Tank Services Provider so the contractor is complying with the HOT Tank Service Provider law and rules found in Oregon Revised Statutes (ORS) 466.862 and Oregon Administrative Rules (OAR) 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 will need to have or learn at a minimum:

- An understanding of 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 HOT 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 the laboratory soil and groundwater sample results.
- How to write up the cleanup results to obtain DEQ's registration and file closure letter for a HOT cleanup project.

In addition to obtaining the requisite knowledge, typical equipment needed to clean up a heating oil-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 HOT releases and licensing of HOT contractors are found in ORS Chapters 465 and 466. Oregon rules covering the cleanup of HOT releases are found in OAR Chapter 340 – Division 177, and by reference, OAR Chapter 340 – Division 122. Oregon rules covering contractors offering HOT 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 found 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 is a public utility on or near your property, please contact the Utility Notification Center Serving Oregon 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 Oregon Utility Notification Center.

## HOT Cleanups – General Considerations

### Project Closure Goals

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

The term "cleanup" implies that treatment or removal of heating oil contamination is always required. However, as will be discussed 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 the 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 HOT cleanups.

All persons doing HOT 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 explosion proof requirement of the National Electrical Code.

**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** - Care should be exercised 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 HOT cleanup. For information about possible health effects from exposure to heating oil, consult the following facts sheets posted by the federal Agency for Toxic Substances and Disease Registry (ATSDR):

- Frequently Asked Questions About Hazardous Materials
- Benzene
- Fuel oils
- Total Petroleum Hydrocarbons.

In addition, the American Conference of Governmental Industrial Hygienists (ACGIH) 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 their standard is available in the section entitled "Additional Guidance and Reference Documents" near the end of this document.

## **HOT Cleanups - Where to Start?**

### **Reporting a HOT Release**

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

- Calling DEQ at 503-667-8414 ext 55026 if a HOT release is confirmed **in the Portland** area during the work week.
- Calling DEQ at 800-742-7878 if a HOT release is confirmed **outside of the Portland area** during the work week.
- Submitting a report by fax to 503-674-5148 using the *Heating Oil Release Reporting Form*.

- Calling Oregon Emergency Response System (OERS) toll-free at 800-452-0311 if a HOT emergency release happens on a weekend or if there is a release from an above-ground heating oil tank.

Once a HOT 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 HOT cleanup should be marked with this log number to insure they are 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 HOT 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 have not yet been eliminated, or
- 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*. 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**

The Soil Matrix cleanup standards (OAR 340-177-0065 (1) (a)) are the most conservative set of HOT cleanup standards. They were 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 actually three cleanup levels (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 the Soil Matrix standards are met, no restrictions are placed on the current or future uses of the property.

Meeting a Soil Matrix standard almost always involves excavation, temporary storage and disposal of petroleum-contaminated soil (PCS). 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 (TPH) by DEQ Method NWTPH – Dx.

A more detailed discussion of the Soil Matrix cleanup option is found in the *UST Cleanup Manual* (December 2000).

## 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 (ppm).

The first step in applying the Generic Remedy standards is to make sure the site meets 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 contamination 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 risk-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* (January 24, 2000) and the *UST Cleanup Manual* (December 2000).

## Cleanup to Risk-Based Standards

**NOTE:** It is DEQ's opinion that specific training and experience are required to apply the risk-based standards correctly. It is DEQ's further opinion 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 does not have sufficient staffing to be able to provide hands-on guidance to homeowners to walk them through a risk-based cleanup.

Heating oil is a complex blend of organic hydrocarbons. The makeup of heating oil can vary significantly based on the crude oil from which it is derived and the 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 TPH, it is necessary to also measure for 16 individual constituents of heating oil such as benzene, toluene, pyrene, chrysene, etc.

Applying risk-based standards to a heating oil site generally minimizes the soil removal required, hence minimizes 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 (BTEX) and the 12 polynuclear aromatic hydrocarbons (PAHs) is required. In addition to gathering constituent data, information is gathered to complete a Conceptual Site Model (CSM) that evaluates exposure pathways and potential receptors. 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. Potential receptors include residents, groundwater, and critical habitats such as creeks, lakes or wetlands.

Once enough information is collected so the 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).

A more detailed discussion of the Risk-Based cleanup option is found in *Developing Risk-Based Standards for Residential Heating Oil Tank Sites* (September 1999), *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (September 22, 2003) and the *UST Cleanup Manual* (December 2000).

## **Cleanup Groundwater**

**NOTE:** It is DEQ's opinion that specific training and experience are required to apply the groundwater requirements correctly. It is DEQ's further opinion that rather than attempt to apply the groundwater rules, homeowners should hire a HOT contractor to take over management of the cleanup site. Neither DEQ nor the Oregon State Water Resources Department (WRD) has sufficient staff to be able to provide hands-on guidance to homeowners to walk them through a groundwater cleanup.

In the course of digging up the HOT or collecting soil samples, groundwater may be encountered. Any time groundwater is encountered in the tank pit or soil sampling hole, DEQ needs to be contacted immediately by calling 503-667-8414 ext 55019 or 503-667-8414 ext 55026. Dealing with groundwater contamination is another complex situation similar to the application of risk-based cleanup standards. Several additional sets of rules apply, including ones by DEQ relating to monitoring and cleanup requirements and ones by the Water Resources Department relating to constructing, maintaining and abandoning geotechnical holes.

A more detailed discussion of groundwater sampling and cleanup is found in the *UST Cleanup Manual* (December 2000), *Developing Risk-Based Standards for Residential Heating Oil Tank Sites* (September 1999) and *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (September 22, 2003).

### Sampling and Analysis

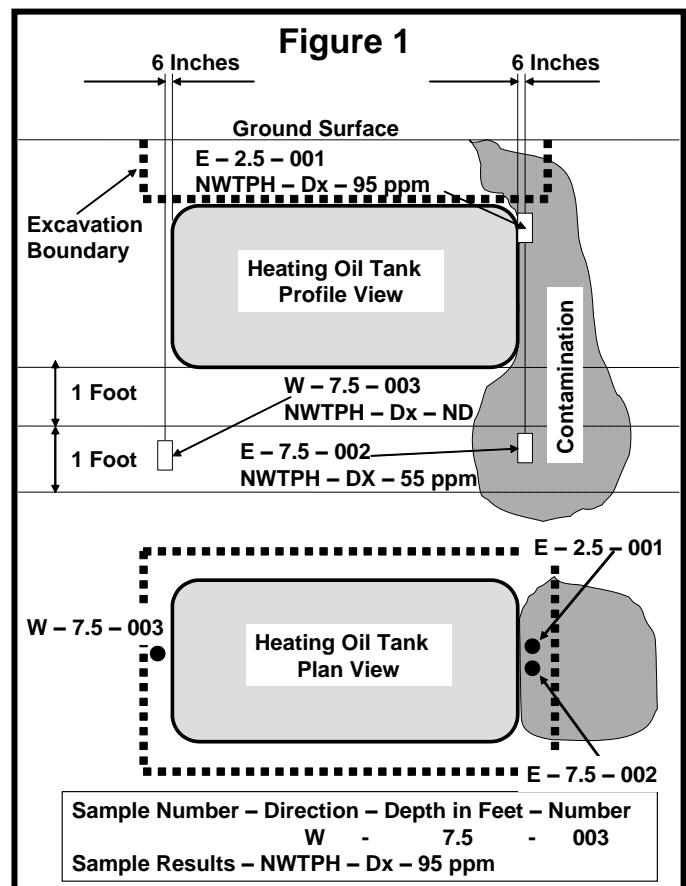
Locating, collecting, analyzing and interpreting the results from soil, and if necessary, groundwater samples, is likely the most important step that a homeowner performs in conducting a heating oil cleanup. It is through the sample results that the homeowner determines compliance with a cleanup option. For homeowners unfamiliar with environmental sample collection procedures DEQ recommends reading 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 the sample results exceed 2,500 parts per million (ppm), then testing for benzene is necessary. If the sample results exceed 10,000 ppm, then additional testing for BTEX and Polynuclear Aromatic Hydrocarbons (PAHs) is necessary.

Depicted and discussed below are the typical samples collected and associated with several cleanup options and closure scenarios.

#### Scenario 1 – No Cleanup Required

In this scenario, three soil samples were collected during an in-place HOT 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

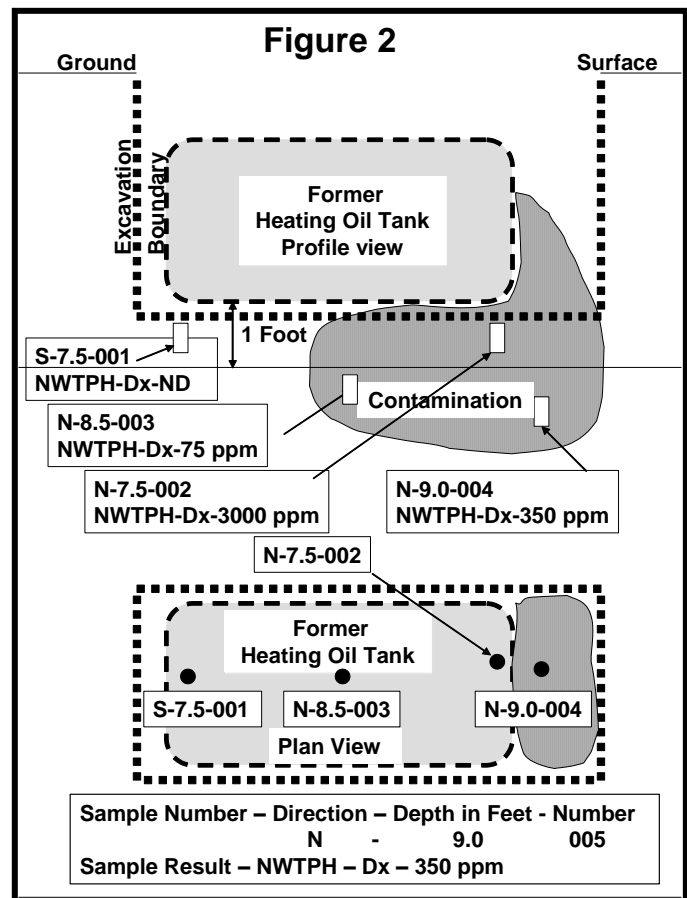


visual observations as the soil boring was advanced, a sample of the suspected worse contamination was collected at 2.5 feet below ground surface. Two additional samples were collected within 6 inches of each end of the tank and at least 1 foot, but not more than 2 feet, below the bottom of the tank. Since the 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 is concluded that the worst contamination has been identified. The results for sample W-7.5-003 were non-detect (ND). Comparing these results with the 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 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 *Model Soil Matrix Cleanup Report*. Upon an audit of the report, and assuming compliance 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 the decommissioning by removal of a HOT (see Figure 2). During the course of removing the tank, contamination from a leak in the north end of the tank was discovered. Following the HOT removal, samples S-7.5-001 and N-7.5-002 were collected below the bottom of the former tank at least 6 inches into native soil but no more than 1 foot into native soil.

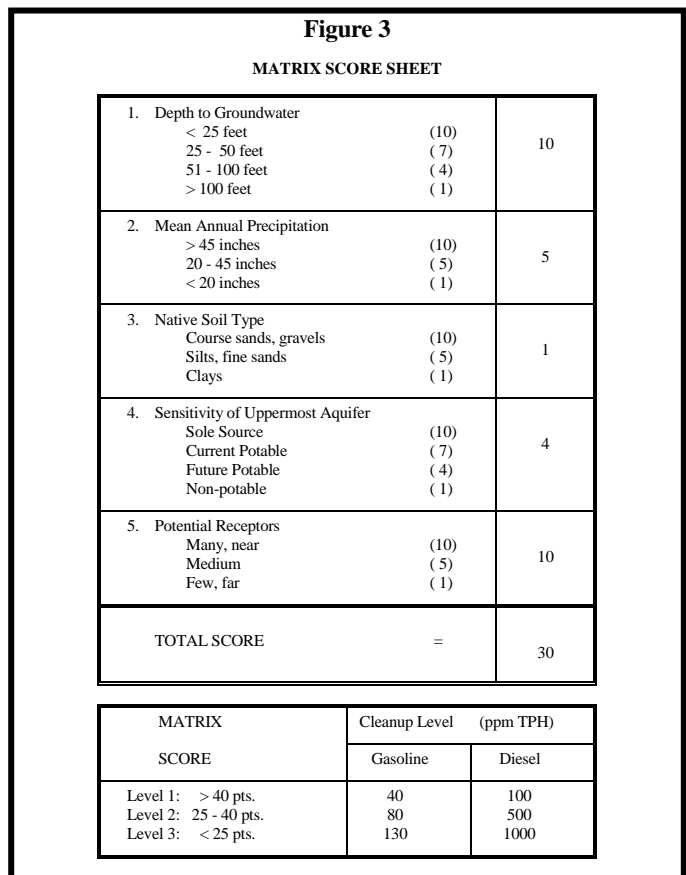
Before analyzing the results and discussing cleanup options for this site, there are two important points to note at this stage of a HOT cleanup. As shown in Figure 2, some heating oil-contaminated soil was excavated during the tank’s removal. It is very important to separate this material from any clean excavated soil and to handle this contaminated soil in such a manner so as not to 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 (PCS). 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 found in OAR 340-177-0065 (1) (a) and by reference OAR 340-122-0320 to 340-122-0360. OAR 340-122-033 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 the bottom of Figure 3).

After gathering the necessary site-specific facts and entering them onto the score sheet as shown in Figure 3, it is determined that the Soil Matrix Level II cleanup standard for NWT PH – 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 *HOT 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, a value for the concentration of benzene is needed. Further, both alternatives require a determination be made that not more than 65 cubic yards of soils with contamination levels above 500 ppm remain at the site.

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 HOT 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 is concluded that at least two more bottom samples are needed to define where the 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 shown in Figure 2. In addition to testing the two new samples for NWT PH – Dx, each sample was analyzed for benzene with all results for benzene being less than 0.05 ppm. In addition, since it is 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 as to 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 *Model Soil Matrix Cleanup Report*. Upon an audit of the report, and assuming compliance with the rules, 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 does not 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 a *Generic Remedy 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 Generic Remedy cleanup report, please refer to DEQ's *Model Soil Matrix Cleanup Report*. Upon an audit of the report, and assuming compliance with the rules, DEQ registers the site and issues a letter stating that the cleanup file has been closed.

## **Handling Petroleum-Contaminated Soils**

At many HOT cleanup sites, some petroleum-contaminated soil (PCS) will be excavated and will have to be managed appropriately. 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 handling methods of handling heating oil PCS are hauling it to an authorized landfill or to a thermal treatment facility. If PCS is transported on public roads, it must be transported in such a way 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 the names of companies performing work related to the HOT cleanup, the disposal methods and locations for all contaminated soil and groundwater. Permanent records should also include the following:

- Photographs of the HOT 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.
- PCS 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 accompanied by a \$125 registration fee (scheduled to increase to \$200 on September 1, 2007). The registration process is complete when DEQ sends out 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: *Model Soil Matrix Cleanup Report*

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**PLEASE NOTE:** The Internet URL Addresses listed below were included as a convenience for the users of this document. All URL Addresses were functional at the time this publication was posted on the HOT Webpage. We are sorry for any inconvenience that may be caused if any of these URL addresses change after we posted the document. Please let us know of any problems you encounter, and we will work to correct it in a timely manner.

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### URL Addresses for Referenced Materials

#### **Agencies**

DEQ's HOT Program Web Page

<http://www.deq.state.or.us/lq/tanks/hot/index.htm>

Oregon State Water Resources Department

<http://www.oregon.gov/OWRD/index.shtml>

OERS (Oregon Emergency Response System)

<http://egov.oregon.gov/OOHS/OEM/index.shtml>

Utility Notification Center Serving Oregon <http://www.callbeforeyoudig.org/index.htm>

#### **Laws and Rules**

HOT laws (ORS Chapters 465 and 466) and rules (OAR Chapter 340 – Divisions 177,122 and 163)

Laws - <http://www.deq.state.or.us/regulations/statutes.htm>

Rules - <http://www.deq.state.or.us/regulations/rules.htm>

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/rules/OARS\\_600/OAR\\_690/690\\_240.html](http://arcweb.sos.state.or.us/rules/OARS_600/OAR_690/690_240.html)

Rules about calling before you dig near utilities

<http://www.callbeforeyoudig.org/law.htm>

## **Guidance Documents**

HOT Generic Remedy Guidance

<http://www.deq.state.or.us/lq/pubs/docs/tanks/hot/HOTGenericRemedyGuidance.pdf>

The UST Cleanup Manual (December 2000)

<http://www.deq.state.or.us/lq/pubs/docs/tanks/USTCleanupManual.pdf>

Developing Risk-Based Standards for Residential Heating Oil Tank Sites (September 1999)

<http://www.deq.state.or.us/lq/pubs/docs/tanks/hot/HOTRiskBasedStandards.pdf>

Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites (September 22, 2003).

<http://www.deq.state.or.us/lq/rbdm.htm>

Model Soil Matrix Cleanup Report

<http://www.deq.state.or.us/lq/tanks/hot/guidance.htm>

DEQ Method NWTPH-Dx - <http://www.deq.state.or.us/lq/tanks/lust/nwpetroleum.htm>

Frequently Asked Questions About Hazardous Materials - <http://www.atsdr.cdc.gov/toxfaq.html>

Health Information about Benzene - <http://www.atsdr.cdc.gov/tfacts3.html>

Health Information about Fuel oils - <http://www.atsdr.cdc.gov/tfacts75.html>

Health Information about Total Petroleum Hydrocarbons

<http://www.atsdr.cdc.gov/tfacts123.html>

American Conference of Governmental Industrial Hygienists (ACGIH) "Diesel Fuel: TLV<sup>®</sup> Chemical Substances 7th Edition Documentation Publication #7DOC-701"

*ACGIH documents may be purchased from the American Conference of Governmental Industrial Hygienists at 513-742-2020 or on-line at*

*<http://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 (EDB), ethylene dichloride (EDC), methyl tert-butyl ether (MTBE), naphthalene, lead, trimethylbenzene isomers, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and chrysene at 513-742-2020 or on-line at <http://www.acgih.org/store/BrowseProducts.cfm?type=cat&id=16>, or possibly viewed at a local library.

## **Forms**

List of HOT Tank Services Providers

<http://www.deq.state.or.us/lq/pubs/docs/tanks/hot/LicensedServiceProviders.pdf>

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

<http://www.deq.state.or.us/pubs/forms.htm>

Soil Matrix checklist and score sheet

<http://www.deq.state.or.us/pubs/forms.htm>

Authorized landfill or thermal treatment facility for petroleum-contaminated soil

<http://www.deq.state.or.us/lq/sw/disposal/permittedfacilities.htm>

Utility Notification Center Serving Oregon – to have utility locations marked

<http://www.callbeforeyoudig.org/index.htm>

### **For More Information**

DEQ HOT rules, guidance documents and forms can be found on the DEQ HOT Program Web Page, obtained by calling the DEQ HOT HELPLINE if inside Oregon at 1-800-742-7878 (recorder), or by calling 503-667-8414 ext 55026 in Gresham.

For more information about DEQ's Heating Oil Tank Program, please contact us at

[hotinfo@deq.state.or.us](mailto:hotinfo@deq.state.or.us)