



Fact Sheet

Analytical Methods

Leaking Underground Storage Tanks

The following is to give additional guidance on the analytical methods listed below and are not a full list of approved analytical methods.

LUST Cleanup Program Approval of a Combined BTEX + Naphthalene Analytical Method

Since the LUST cleanup program moving to risk-based corrective action (RBCA), there is now a greater emphasis on analyzing soil and groundwater samples for the specific chemical constituents that are thought to present the greatest risk to human health and the environment. For petroleum releases, these contaminants of concern are typically aromatic compounds like benzene, toluene, ethylbenzene and total xylenes (BTEX), and polynuclear aromatic hydrocarbons (PAHs) like naphthalene (N) and benzo(a)pyrene. One of the concerns, both of Oregon DEQ and of the regulated community, is that using RBCA will result in significant increases in analytical costs. After standard PAH analyses during the site investigation confirm that naphthalene is the only PAH of concern at a site, subsequent analyses could employ the combined BTEX + N method to reduce analytical costs. This is due to DEQ's experience at LUST cleanup sites has shown that in many cases the only PAH to be a contaminant of concern is naphthalene.

At the request of the tank program, DEQ's laboratory has tested the utility of BTEX analytical methodology for detecting naphthalene. Their tests confirmed that N can be analyzed to currently acceptable reporting limits with no modification to the method other than to include N on the compound list and in the composite standard. Since DEQ is allowed under OAR 340-122-242(5)(f) to approve alternative analytical methods which are applicable to the compounds of interest and which have detection limits comparable to existing methods, the LUST Cleanup Program is granting approval of the use of this modified BTEX+N method.

Parties considering the use of the BTEX+N method should be aware that DEQ does NOT consider this method to be appropriate for an initial site investigation. Sufficient data must first be collected from standard BTEX and PAH analytical methods to clearly demonstrate that naphthalene is the only PAH which is present at levels of concern. BTEX+N can then be used for subsequent monitoring. *Depending on conditions at the site, DEQ may require final confirmatory samples to be analyzed with the standard BTEX and PAH analytical methods.*

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Northwest Total Petroleum Hydrocarbon Analytical Methods

The UST Cleanup Rules ([OAR 340-122-0218\(d\)\(A\)](#)) require the use of the Northwest Total Petroleum Hydrocarbon (NWTPH) Analytical Methods for samples "used to demonstrate compliance with remediation levels." The NWTPH methods were developed to satisfy UST cleanup rules in both Oregon and Washington. These methods include:

- **NWTPH-HCID**

which is a qualitative and semi-quantitative screen to determine the presence and type of petroleum products that may exist in water or soil. This method may be used in place of the current TPH-HCID.

- **NWTPH-Gx**

which is a qualitative and quantitative method for volatile petroleum products such as aviation and automotive gasolines, mineral spirits, Stoddard solvent and naphtha. This method may be used in place of the current TPH-G.

- **NWTPH-Dx**

which is a qualitative and quantitative method for semi-volatile petroleum products such as jet fuels, kerosene, diesel oils, hydraulic fluids, mineral oils, lubricating oils and fuel oils. This method may be used in place of the current TPH-418.1 Modified or TPH-D.

For more information:

- Laboratory personnel with specific technical questions about the methods should refer to the [DEQ Laboratory Webpage](#)

Program name and contacts

For additional information, please email the [LUST info team](#) or call 503-229-5696.

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