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LABORATORIES AND QUANTITATION LIMITS

Laboratory Methods & Analysis

This notice is to make you aware of some recent findings observed by LUST staff regarding laboratory analytical methods and reporting that may have consequential results for site classifications. Knowing these matters up front can assist you in planning and avoiding costly errors and duplicate work down the road.

Missing Information:

A number of RBCA reports recently received were missing required documentation from laboratories for the samples analyzed. While it is the lab's responsibility to generate and provide documentation, it equally is the responsibility of the Certified Groundwater Professional to ensure this information is included in RBCA reports. Copies of all laboratory analytical reports are required to be submitted with Tier 1 Reports (IAC 567-135.9(3)l) and Tier 2 Reports (Section 1.5 of the Tier 2 Guidance). Please also review IAC 567-135.16(2) on Laboratory analytical methods for petroleum contamination, and what information must be documented and provided in a laboratory report. Of specific note:

135.16(2)r. Laboratory reports required by this chapter for tank closure investigations under 567—135.15(455B) and site checks under 135.6(3) or Tier 1 or Tier 2 assessments under 567—135.9(455B) to 567—135.11(455B) must include a copy of the chromatograms and associated quantitation reports for the waste oil, diesel and gasoline standard used by the laboratory in analyzing submitted samples. The laboratory analytical report for each sample must state whether the sample tested matches the laboratory standard for waste oil, diesel or gasoline or that the sample cannot be reliably matched with any of these standards. A copy of the chromatograms and associated quantitation reports for only the soil and groundwater samples with the maximum concentrations of BTEX and TEH must be included.

Quantitation Limits/Reporting Limits:

The Department has also noted a number of issues regarding the quantitation limits/ reporting limits from some labs for TEH samples. If the quantitation limit reported by a particular lab is not sufficiently low enough to adequately evaluate a pathway, the report may be rejected and resampling/analysis may be warranted. Specifically, when evaluating drinking water wells at bedrock sites where TEH-waste oil is the chemical of concern, the analytical method for *the sample collected from the drinking water well* must be able to detect a level of 160 ppb TEHwo (40% of the target level at the DWW receptor (40% of 400 ppb)). If the lab report shows TEHwo as <380 ppb, this is insufficient to use in classifying the DWW receptor. Therefore, if you are submitting a drinking water well sample to a lab for TEHwo analysis (to determine risk at a nongranular bedrock site per IAC 567-135.10(3)g(5)), either instruct the lab on the

quantitation limits that must be met or submit the sample to a certified laboratory that you know routinely meets these reporting limits.

Other Observations:

Additionally, the Department has seen TEH lab results with flags or qualifiers such as ‘poor chromatographic match to standard’, TEH results attributed to outside interferences (e.g., adhesives in sample bottle cap liners), and even TEH concentrations found in the blank samples. If TEH results are questionable as to the compounds detected or are seemingly ‘false positives’ and this could result in an inaccurate site classification or prompt more investigation or cleanup efforts which may be unnecessary, it is recommended that you contact the lab for further explanation. You may also want to have the sample reanalyzed or collect a new sample and have it analyzed at a different laboratory.

A list of laboratories certified to complete analyses for the UST Program, as well as the analytical methods can be found at the following link:

<http://www.iowadnr.gov/InsideDNR/RegulatoryLand/UndergroundStorageTanks/LeakingUndergroundTanks/CertifiedLabsMethods.aspx>