

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAMS**

Technical Memorandum

Date September 1, 2005

Petroleum Hydrocarbon Cleanup for Oversize Material

PURPOSE:

The Alaska Department of Environmental Conservation (DEC) has developed cleanup levels for oil and other hazardous substances under the site cleanup rules, 18 AAC 75.325 – 18 AAC 75.390. These regulations develop tabular cleanup levels for many commonly found hazardous substances and petroleum hydrocarbons ranges (fuels), based on a matrix system (Method One) or on equations and default criteria detailed in the DEC *Cleanup Levels Guidance*, dated January 30, 2004 (Method Two). This technical memorandum provides guidance for the treatment of oversize material (> 2" diameter) that is contaminated or potentially contaminated with Gasoline Range Organics (GRO) or Diesel Range Organics (DRO).

BACKGROUND:

Under 18 AAC 75.341(a) and (b), Tables A1 and A2 provide tabular Method One soil cleanup levels for petroleum hydrocarbons. Table A1 levels are for non-Arctic zones and based on a matrix system that takes into account five separate environmental variables (Part A) to determine a cleanup level intended to be protective of groundwater (Part B). The matrix is predicated upon typical Alaskan soil types and was not designed to account for oversize material.

Table A2 provides tabular petroleum cleanup levels specific to the manmade pads and roads in the Arctic Zone. Contaminated oversized material is not typical of this matrix.

Under 18 AAC 75.341(c), Table B2 provides tabular Method Two soil cleanup levels for petroleum hydrocarbon. These levels are based on equations and default criteria detailed in the DEC *Cleanup Levels Guidance*, dated January 30, 2004 and are differentiated by zone and pathway.

Treatment procedures for oversize material should be consistent on a state-wide basis. This memorandum provides a uniform procedure to address oversize media contaminated with GRO or DRO.

Applicability

This memorandum applies to refined petroleum products that are defined in 18 AAC 75.341(a) as Gasoline Range Organics (GRO) or Diesel Range Organics (DRO). It is not applicable to Residual Range Organics (RRO). Treatment of oversize material contaminated with RRO, such as spills of crude oil, waste oil, bunker C fuel oil, etc., shall be determined on a site specific basis.

Recommendations

All Contaminated Sites Programs staff should ensure that cleanup plans, proposal, and/or remediation activities adequately address the treatment of oversize materials, specified as follows

- All material less than two inches (< 2") must be treated to meet the applicable cleanup level, based upon a department approved workplan.

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- Rock material greater than two inches (> 2") does not require remediation or testing, unless it has the potential to hold excessive amounts of contamination or contains visible petroleum product on the surface (surface stain). Materials that may hold excessive contamination may include shales, schists, limestone, pumice, or other porous types of rocks.
 - For oversized porous and/or surface stained material(s) described in the prior paragraph, the project manager shall make the final decision in regards to the treatment of the material on a site-specific basis. Per statute and regulation, the decision must ensure protection of human health and the environment.
 - Soil "clumps" greater than two inches, including but not limited to, silt/clay compounds or frozen tundra and peat material, must be treated to meet the applicable cleanup level, based on a department approved workplan.
 - Large non-rock type material, such as tree stumps, must be treated or disposed of in a manner approved by the department.
 - Untreated oversize material may be evenly mixed with treated material prior to final disposal. At the approval of the project manager, untreated material may also be used for beneficial purposes such as roadbed fill.
 - All material must be disposed of in a non-wetland and/or non-environmentally sensitive area with sufficient separation to prevent leaching or migration of petroleum contaminants to the water table.