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Department of Environmental Conservation  
Waste Management & Prevention Division  
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## Linear Construction Projects Guidance Document

### I. Introduction

The Vermont Department of Environmental Conservation (VTDEC), Waste Management and Prevention Division (WMPD), Sites Management Section (SMS), developed this document to provide guidance for identification and management of contaminated soils and groundwater that may be encountered during a linear construction project.

Linear construction projects are defined in the *Investigation and Remediation of Contaminated Properties Rule (IRule)* as construction and development activities, such as waterline and sewer line improvements, that take place within a public or private roadway, railroad, utility line, or their respective rights-of-way (ROW) where contamination is encountered. The purpose of this document is to provide guidance on how to identify and appropriately manage hazardous materials encountered during construction, avoid construction delays, and to minimize the costs of managing contaminated soils and groundwater.

### II. Liability

10 V.S.A. §6617 states that any person who has knowledge of a release or a suspected release and who may be subject to liability for a release, shall immediately notify the Agency. An entity that undertakes a linear construction project may be liable for the investigation, management, and remediation of contaminated environmental media if they move, dispose, or otherwise disturb contaminated media during construction activities.

Thoughtful planning in collaboration with the Agency can result in avoiding stopping work during the course of the project to address a release discovered during construction activities. This planning includes:

- ensuring that pre-bid site characterization, including retaining an environmental consultant to identify potential contaminated areas, conducting subsurface sampling, and developing a soil management plan (SMP) or corrective action plan (CAP);
- assessing and managing any contamination which may be present within the linear project area; and
- Phase I site assessment or a desktop review of the project area which has been reviewed and approved by the SMS.

Normally, a site investigation beyond the limits of the linear project will not be required unless a new release occurs during construction activities, there is a significant worsening of site conditions, or a person associated with the linear project is also liable for a release that either originates from or





extends beyond the linear project. Failure to conduct site characterization within the project footprint may lead to a shutdown of the linear project.

### **III. Pre-bid site characterization process:**

Pre-bid identification of potential areas of contamination along the linear project area is crucial for minimizing delays during the construction project. Failure to perform adequate pre-bid environmental planning can result in the spread of contamination outside of the linear project. For many linear projects, the source of a release that enters the linear project area originated from outside the project area. However, the operator is responsible for addressing the contamination in the linear project area in accordance with the IRule.

Prior to requesting specific bids for a linear project, an evaluation of potential sources of contamination should be performed. This can be accomplished by either an ASTM Phase I Environmental Site Assessment (ESA) of the entire project area, or a thorough desktop review of the project area. A desktop review is expected to include a review of the Vermont Agency of Natural Resources Atlas ([ANR Atlas](#)), which is a map-based tool for identifying which properties are listed as hazardous sites. In addition, the online VT DEC Environmental Research Tool ([ERT](#)) provides an address-based search platform for both hazardous sites listed on the State's Waste Management Identification Database and hazardous materials spills listed on the State's Spills Database. Both the ERT and ANR Atlas are useful tools for identifying known and potential contaminant sources in the vicinity of a proposed ROW project. All other relevant records which may contain information relating to known and potential sources of contamination must be reviewed, such as RCRA records, Act 250, municipal zoning records, etc.

Other sources of historical information that should be reviewed include Sanborn Fire Insurance maps, Agency of Transportation maps, other available historical maps, aerial photographs, City directories (e.g., Mannings Directories), phone books, and town historical societies. Interviews with long-time facility employees, town officials, and town residents should be considered based on the findings of the desktop review.

If any releases or suspected releases of contamination are identified in the Phase I ESA or the desktop review, the results of this investigation must be transmitted to the SMS. When recognized environmental conditions (RECs), contamination or suspected contamination have been identified, the desktop review transmittal must include a proposed work plan for how the RECs or suspected contamination will be addressed within the linear project area. This will likely include additional environmental media sampling, and usually results in the development of a SMP or CAP, which is discussed in section IV. Should any of the RECs be from a source that is covered by the Petroleum Cleanup Fund, costs for conducting this work may be eligible for reimbursement, which is discussed in section VII.

### **IV. Management of Contaminated Media During Construction**

#### **Contaminated Soil Management:**

Contaminated soil addressed in this section refers to non-hazardous waste contaminated soil. Non-hazardous waste contaminated soil is defined as soils that are contaminated with hazardous materials at concentrations above the Vermont Soil Standards, but are not designated as hazardous wastes under the Vermont Hazardous Waste Management Rule. If contaminated soil is encountered within the project area and the linear project plans require its removal, the IRule §35-804(a)(4) allows for its management under a SMP or a CAP. The SMP or CAP



must be prepared in accordance with the IRule, § 35-804(b) and § 35-606(b), respectively, and submitted to the SMS for review and approval prior to initiating subsurface disturbance for construction in a contaminated area. The SMP or CAP may be included in the project bid documents and may include potential areas of contamination and estimated volumes of contaminated soil to be managed. In such cases, it is recommended that the SMP or CAP be submitted and approved by the SMS prior to including the plan with project bid documents. The SMS may require revisions to the plan should any proposed actions not be in accordance with standard industry practices, the IRule, or other regulations. The major differences between an SMP and a CAP is that the latter requires a public comment period and the project owner must notice the draft CAP to all adjoining property owners of any contaminated areas in the linear project. The SMS may require a CAP if the operator is also liable for a release that either originates from or extends beyond the linear project.

The SMP or CAP may consider backfilling contaminated soils during construction if the project plan allows. Contaminated soils to be backfilled should be placed at the bottom of the trench/excavation with at least 18" of uncontaminated soil (not including pipe bedding) placed above any backfilled contaminated soils to close the excavation; this thickness is reduced to 6" of uncontaminated soil if covered by an impervious surface. Contaminated soils must be backfilled above the seasonal high-water table, and clearly marked with a material that distinguishes the divide between non-hazardous contaminated soils and the clean soils. If contaminated soils are present in the project area, but are not removed, they must also be clearly marked with a material that distinguishes the divide between contaminated and clean. The re-use and management of contaminated soils in the project reach must be addressed in the SMP or CAP to be approved by the SMS.

Management of contaminated soil must be in accordance with IRule Subchapter 8.

#### **Contaminated Groundwater Management:**

If the linear project work requires dewatering to occur in order to manage contaminated soil, the dewatering and management of the groundwater should be part of the SMP or CAP. Contaminated groundwater encountered during the linear project must be sampled and treated prior to discharge. Groundwater treatment methods include re-injection through an infiltration basin, filtration through activated carbon, air stripping, or disposal to a wastewater treatment plant. Proposed groundwater treatment measures must be included in the project SMP or CAP to be approved by the SMS.

If construction dewatering will be required and groundwater contamination is present, a General Permit 3-9004 may be required by the VT DEC Wastewater Program.

#### **V. Recommended Construction Procedures**

##### **Materials upgrades within contaminated areas:**

Upgrades to project materials (piping, gaskets, etc.) may be necessary to ensure compatibility with subsurface contaminants which may be in contact with the project materials. It is the responsibility of the project design engineer to coordinate with the VT DEC Water Investment Division (WID) and Drinking Water and Groundwater Protection Division (DWGWPD) on specific materials and construction methods that are compatible with the anticipated contaminants (e.g. Viton pipe gaskets resistant to gasoline). WID or DWGWPD may recommend or require that in areas subject to contamination from likely sources (e.g., fuel stations, bulk petroleum storage



facilities, etc.) the project owner install chemical resistant gaskets or pipe material whether contamination is encountered or not.

Bentonite clay plugs should be considered for installation at both ends of utility pipeline trenches through contaminated areas if hydraulic conditions are appropriate. The purpose of these clay plugs is to prevent contaminant migration along pipe bedding material into previously uncontaminated areas.

#### **Work procedures when unexpected contamination is encountered:**

Soil and/or groundwater contamination may be encountered at an unexpected location as a result of an unknown abandoned UST, historical or current property uses, vehicle accidents, sanitary sewer line breaches, or other unsuspected sources. If unexpected contamination is found, the construction contractor and/or project engineer is required to stop work and notify the operator. Any person required by 10 V.S.A. §6617 shall immediately report to the SMS any release or suspected release per § 35-102(b) of the IRule. The operator may be required to hire an environmental consultant to characterize the contamination, and design a plan to manage the waste in accordance with the IRule if not already addressed within the project SMP. Other regulatory requirements, such as a Health and Safety Plan, may also be required at this time.

#### **VI. Post-construction**

Within 90 days of project completion and implementation of the SMP or CAP, and in accordance with the IRule (§ 35-804(d) and § 35-608, respectively), documentation (a project completion report) must be provided to the SMS that demonstrates the work was completed in accordance with the approved plan. This documentation (report) must include the location, depth, degree and extent of soil contamination encountered and the amount of contaminated soil backfilled or disposed, soil disposal documentation, all environmental sample results, consultant and/or engineer field notes, waste manifests, worker protection levels used, and any other pertinent details. The exact details of the content for a completion report are described in the IRule § 35-608 (for a CAP) and § 35-804(d) (for an SMP).

If groundwater was managed under a permit, an Application for Request for Termination of Coverage (Application) must be submitted and approved by the VT DEC Wastewater Program following completion of construction dewatering, storage, treatment, and discharge. The Application must contain the amount of contaminated groundwater treated or disposed, duration of discharge, and groundwater sample results. If groundwater was managed as part of the project, this information must be included in the appropriate project completion report.

#### **VII. Petroleum Cleanup Fund Reimbursement**

The Petroleum Cleanup Fund (PCF) may be able to reimburse costs incurred for addressing releases from eligible petroleum storage tanks. The PCF does not cover all construction costs in a contaminated area; only documentable additional costs associated with contamination from eligible sources. However, **these costs must be pre-approved by the SMS in order to receive reimbursement.** The PCF will only consider costs incurred which are an additional expense related to addressing petroleum contamination in excess of established construction costs. For example, the PCF may cover costs for the management of petroleum contaminated soil, but not for management of soil



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which needs to be removed or relocated and is not contaminated. Agreement on what costs are eligible for reimbursement and which costs are ineligible must be approved by the SMS before the work within petroleum contaminated areas of the project are initiated. The PCF Procedures, and other SMS guidance documents, may be found on the SMS website: <https://dec.vermont.gov/waste-management/contaminated-sites/guidance>.

Approved by:

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Date