1.1 Policy
It is the policy of the Department that all transportation improvement projects under its jurisdiction shall be evaluated to determine if they warrant a hazardous materials investigation. The goal is to discover all contamination as early as possible in the facilities development process to permit the timely consideration of options for avoidance or remediation. Early discovery also allows responsible parties time to remediate contamination prior to construction. It may be in the best interests of the state to avoid all involvement with contaminated parcels. When avoidance is not appropriate, early discovery will allow for efficient and environmentally sound remediation of the contamination.

1.2 Definitions
Region Environmental Staff - Region staff within the Technical Services Section (typically an Environmental Coordinator, Hazardous Materials Engineer, or Hydrogeologist) who work closely with the Bureau of Technical Services, Environmental Services Section (ESS) to ensure projects meet the criteria set out in the environmental documentation process. Specialists in areas such as hazardous materials engineering, hydrogeology, erosion control, stormwater management, or noise and air quality, depending on the region, may supplement these staff. The environmental coordinator, hydrogeologist, or hazardous materials engineer may assist in the project screening and may provide guidance on what level of investigation should be performed on a given site.

Design Consultant - The consultant with whom the Department contracts to develop a facility design project. They are responsible for performing all necessary initial phases of contaminated site assessment or else subcontract for this work with an environmental consultant. Sometimes a design consultant cannot assume responsibility for contaminated site assessment/remediation activities (e.g., there may be a conflict of interest). If a region is considering exempting a design consultant from these responsibilities for a project, they shall consult with ESS prior to initiation of the consultant design contract. The region shall request ESS approval for having these services provided by an environmental consultant under contract to the Department.

Environmental Consultant - A consulting firm that has special expertise to conduct all of the phases of contaminated site assessment and remediation. Design consultants with this expertise can perform phase 1 and 2 work.

Hazardous Materials - Material that can be harmful to the environment but does not require long-term monitoring and documentation of its handling and disposal.

Petroleum (including used oil) is an example of a hazardous material. Two exceptions are the sludge at the bottom of an Underground Storage Tank (UST), and petroleum in an Above Ground Storage Tank (AST). Both are considered hazardous waste.

Hazardous Waste - Waste that exhibits certain hazardous characteristics and for which the law requires "cradle-to-grave" documentation of its handling. The following characteristics can define waste as hazardous:

- **ignitable**: flash point is less than 60°C or 140°F. Examples are acetone and isopropyl alcohol.
- **corrosive**: pH is less than 2 or greater than 12.5 Examples are lime kiln dust and metal plating pickling solutions.
- **reactive**: explosive or reacts violently with air or water. Examples are trinitro compounds or potassium nitrate.
- **toxic**: carcinogens and other specifically identified chemicals. Examples are benzene and dry cleaning solvents.

Other categories of hazardous wastes are known as Listed Wastes. Federal law defines hazardous wastes. A complete list can be found in 40 CFR, Part 261.

Hazardous Waste Contractor - The business hired by the Department of Administration to transport and dispose of hazardous waste for all state agencies.

Minimal Excavation – excavation of 2 feet or less below current ground surface.

Responsible Party (RP) - The person or organization that is legally obligated to clean up a contaminated site.
Normally this is the owner or controller of the site or the source of contamination.

1.3 Overview
This manual addresses procedures for dealing with hazardous materials and hazardous waste.

This procedure applies to all State Trunk Highway System projects and those secondary road projects awarded state or federal funds in their design or construction. The primary responsibility for the activities addressed in this procedure lies with the Transportation Region Office (sometimes through contract specifications with design consultants) for STH projects or with the project sponsor (e.g. municipality) for those non-STH projects that receive federal or state funds. The Bureau of Technical Services, Environmental Services Section (ESS) will be available to provide assistance and guidance to the regions and will be responsible for scheduling the environmental consultants under Department contract.

1.3.1 Process Phases
See Attachment 1.1 for a summary of the Hazardous Materials Program Process.

The first step is to determine if a given project requires a Hazardous Materials Assessment. In general, projects that involve right-of-way acquisition or more than minimal excavation also require following this process. See the section on “Potentially Exempt Projects” for a list of projects that normally do not require this assessment.

Site assessment and remediation is divided into five phases. Each of the first four phases ends with a report recommending whether there is a need for further action.

- Phase 1 - Hazardous Materials Assessment
- Phase 2 - Subsurface Investigation
- Phase 2.5 - Additional Subsurface Investigation and Definition of Extent of Contamination within the Right of Way
- Phase 3 - Defining extent of Contamination and Remediation Planning
- Phase 4 - Remediation

Phase 1 uses field observations, interviews and records searches to identify sites that have a high likelihood of contamination. See FDM 21-35-5 for a more detailed description. If the Phase 1 reveals no evidence of potential contamination then the assessment process is completed. If there is evidence of potential contamination, the project can either be redesigned to avoid it or a Phase 2 is initiated.

Phase 2 Subsurface Investigation, is a process to determine if contamination is actually present. It is conducted by the environmental consultant and involves the collection of soil or water samples near potential sources of contamination to confirm or refute the presence of contamination in that localized area. See FDM 21-35-10 for a more complete discussion of the Phase 2 investigation. This phase commonly requires subsurface exploration using a drill rig, geoprobe or hand operated augers.

- If no contamination is discovered then the process is complete. If contamination is discovered, the designer may choose to either redesign the project to avoid it or else perform one of the next two steps

Phase 2.5 Additional Subsurface Investigation and Definition of Extent of Contamination within the Right of Way- is conducted when the source of the contamination is located off Department property but the contamination extends into the project limits. It is performed by an environmental consultant under contract to the Department. This investigation is used to determine how much contamination will need to be removed prior to or in conjunction with construction. A Phase 2.5 investigation will include the writing of remediation plans or construction special provisions for dealing with the contaminated material within the construction zone.

Phase 3 Definition of Extent of Contamination and Remediation Planning is conducted in any of the following situations.

- When the contamination source is within the WisDOT right-of-way.
- When WisDOT proposes to acquire an entire property that contains the source of contamination or that portion of a property that contains the contamination source.
- When the Department is acting as an agent for the property owner under the PECFA program.

Phase 3s are also conducted by the environmental consultant and require a complete determination of the nature and extent of the contamination and development of a remediation plan that includes the estimated costs of remediation. See FDM 21-35-15 for the discussion of the Phase 3 Investigation.

Normally, Phases 2.5 and 3 involve developing remediation plans. If, however, the cost of remediation is too high, the designer can still choose to redesign the project to avoid the contamination.
Phase 4 is the actual remediation of the contamination on the site or within the construction zone when WisDOT is not the responsible party. This phase should be completed prior to construction wherever possible to avoid excessive cost due to construction delay. If the remediation cannot take place prior to construction, or if there are significant benefits to conducting remediation during construction, the special provisions of the construction contract must address the contamination and the proposed remediation plan (See FDM 19-15-85).

Although the process is defined in five phases, it is not always necessary to perform these phases in sequence. In certain cases phases are skipped or combined depending on project needs. This should be done only after consulting with ESS or the region environmental staff.

Attachment 1.2 shows the timing relationship between the phases and the PS&E due date.

1.4 Federal Participation

Federal participation in project remediation costs is dependent on whether or not the involvement with contamination is avoidable. Generally, the FHWA will not participate in remediation costs that were practical and feasible to avoid nor will they participate if contamination is found during the construction phase of a project that was not properly investigated. Incomplete or insufficient efforts to manage a contaminated site may impact a project causing delays and cost overruns. On the other hand, some risk must be taken to control costs and time required for investigation.

When contamination, containers, hazardous waste, or underground storage tanks are discovered during construction operations, the work in the immediate area must be suspended until appropriate safety precautions are taken and a qualified environmental consultant completes an assessment of the problem. Procedures for dealing with contamination during construction are prescribed in the Construction and Materials Manual CMM 1-30.2. All contamination, discovered during construction, will be dealt with by ESS environmental consultants.

1.5 Potentially Exempt Projects

Projects or sites which do not require new right of way and which have no significant roadway or utility excavation generally do not present much risk of involvement with contaminated sites. Therefore, hazardous materials investigations normally will not be required for them. Projects or those portions of projects limited to the following types of work within existing right of way would generally fall into this category.

A. Pavement reconstruction, resurfacing, and pavement rehabilitation.
B. Addition of lanes in the median of a divided highway.
C. Repair and maintenance of the highway and appurtenant facilities.
D. Pavement marking and signing.
E. Landscaping within the right of way (No or minimal excavation).
F. Bridge maintenance painting when performed in conformance with the requirements of air and water pollution control agencies.
G. Abandonment, removal, reconstruction or alteration of railroad grade crossings and protection.
H. Addition or replacement of median barrier, fencing, guard rail, safety barriers and impact attenuators.
I. Installation of noise barriers.
J. Safety improvement projects within the right of way.
K. Modification of features such as curbs, dikes, headwalls, slopes, ditches, etc. which exist within the right of way and involve minimal excavation.
L. Minor widening of less than a lane width and/or the addition of paved shoulders which involve no or minimal excavation or acquisition.
M. Minor operational improvements, such as median and side ditch paving, and drainage facilities that require only minimal excavation.
N. Installation or modification of traffic control systems and devices including addition of new elements, such as signs, signals, controllers, etc.
O. Addition of auxiliary lanes within existing right of way that does not require excavation or the excavation is minimal.
P. Minor alteration or widening of existing grade separation structures.

All other projects will require some degree of hazardous materials investigation. The likelihood and possible extent of utility relocations, storm sewer and curb & gutter excavation should be considered in evaluating the
need for investigation. Chapter 292 of Wis. Statutes requires that, if hazardous materials, hazardous waste, or leaking underground storage tanks are known to exist on state right of way, they must be addressed immediately regardless of the type of project. Underground storage tanks that are known to exist were required by federal law to have been in compliance with leak protection regulations by 1990. Any tanks known to be on the right of way will be removed (or in compliance with leak protection if in use) regardless of the type of project.

Hazardous waste or hazardous material known to be in the right of way shall also be reported to the Department of Natural Resources as required by law (generally it is required to report within 24 hours). Remediation of such sites will be addressed on a case-by-case basis.

LIST OF ATTACHMENTS

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FDM 21-35-5 Phase 1 Hazardous Material Assessments December 22, 2011

5.1 Introduction

Phase 1 Hazardous Material Assessments are completed to satisfy environmental documentation requirements, to limit WisDOT’s environmental liabilities, avoid costly construction emergencies and delays, and address worker safety during construction. Either the region, a design consultant or an environmental consultant, can do a Phase 1.

A Phase 1 includes the research and documentation of sites exhibiting potential hazardous material threats to WisDOT project operations mainly right-of-way (R/W) acquisition and excavation requirements. Phase 1 activity addresses project design scope and should yield results that will help deliver projects in both a cost efficient and environmentally-friendly manner. A complete Phase 1:

- Provides information required to determine the potential for contamination within the proposed WisDOT project limits,
- Addresses potential environmental liability, and
- Evaluates the need for both further environmental investigation and the incorporation of special provisions into the construction contract.

The Phase 1 is typically prepared in conjunction with early project processes. Some assessment may be done during project scoping; although most will be completed during early design phases when preliminary planning information regarding acquisition and excavation requirements becomes available. **If the project plans are to be shelved for a significant length of time (more than one year) after the assessments have been completed, the assessments should be updated to reflect current conditions prior to letting the project.**

Contact the regional environmental coordinator or hazardous materials staff if you have questions regarding Phase 1 Hazardous Materials Assessments. A list of contact numbers can be found in **FDM 21-35 Attachment 30.4.**

5.2 Conducting a Phase 1 Assessment

First determine if a Phase 1 Hazardous Materials Assessment is required. Phase 1 is required for projects that include the acquisition of new R/W or those that include significant roadway or utility excavation (greater than two feet below grade). This includes municipal utility projects conducted in conjunction with WisDOT projects. Projects or sites that do not require R/W acquisition or significant excavation will not typically require a Phase 1 investigation (Refer to **FDM 21-35-1 Potentially Exempt Projects**). The Phase 1 should include the entire project corridor unless the work proposed at portions of the project falls under the exemption. Document in the Phase 1 report those portions of the project exempted from Phase 1 investigation.

Those conducting the Phase 1 are encouraged to work closely with the design engineer as well as the WisDOT regional environmental, hazardous materials, and real estate staff; and involved municipalities to ensure a satisfactory investigation is completed. The assessment process may begin during early project scoping; however, as the project circumstances change, this phase may need to be repeated. As a result, project operations, specifically, R/W needs and excavation requirements, may be further refined and so require a revaluation of the Phase 1 results.

5.3 Phase 1 Scope and Organization

The following provides the standard scope of a typical Phase 1 Hazardous Materials Assessment for a WisDOT project. Following the detailed standards below will result in a complete Phase 1. The items are presented in a recommended chronological schedule of Phase 1 activities. By the nature of the assessment process, the
findings of preceding tasks should lead and direct the investigation to subsequent tasks. Recognize this is an iterative process through project planning, design, and real estate acquisition. As project requirements are developed and refined, the Phase 1 scope, schedule, and organization may be revised as well.

1. Data Collection and Review
A Phase 1 assessment begins with collecting pertinent project information and available existing data concerning hazardous material issues throughout the project corridor.

A. Preliminary Project Information and Construction Requirements
- Obtain project description with location, street names, addresses
- Collect any preliminary design plans and develop base map/plan
- Identify locations where property acquisition will be necessary for completion of the project
- Determine the location and depth of any proposed excavation. Remember to include municipal utility work in addition to work planned by WisDOT.
- Determine potential dewatering requirements
- Obtain a USGS 7.5 minute quadrangle map of the corridor

B. Environmental Database Review
Searches should include all sites within one-quarter mile of the project corridor. Environmental service database reports are not always comprehensive and may need to be cross checked with the following databases marked with an asterisk (*). Note: several of these databases can be found at the following internet site.

http://dnr.wi.gov/topic/brownfields/brownfields.html
- DNR Bureau for Remediation and Redevelopment Tracking System (BRRTS)*
  - DNR Leaking Underground Storage Tanks (LUST)*
  - DNR Spills*
  - DNR Environmental Repair Program (ERP)*
- Superfund sites in Wisconsin
- DNR Registry of Waste Disposal Sites, RR108
- DNR List of Licensed Solid Waste Landfills
- DNR Bureau of Remediation and Redevelopment GIS Registry for contaminated site closures*
- Wisconsin Dept. of Safety and Professional Services (DSPS) Storage Tank Database (state registry of underground storage tanks [USTs] and above ground storage tanks [ASTs])*.
- DSPS contaminated sites database located at:
- Other state and federal databases
- For projects in rural/agricultural areas or projects that have farm co-ops, feed mills or other businesses that store, mix or handle agricultural chemicals, contact the Wisconsin Department of Agriculture, Trade & Consumer Protection (DATCP) to learn if there have been any reported spills, and determine the status of any cleanups in the area.

C. Historical Land Use Information
These records provide critical information regarding former industrial, agricultural, or residential, etc., practices at sites throughout the project corridor.
- Review WisDOT historical Plan Sets - these often show UST, AST and dispenser island locations, as well as descriptive names for commercial properties (these include as-built plans and plats, and may be available from the regional Plat Coordinator or Records Coordinator).

- Review WisDOT historical aerial photography available from WisDOT Surveying & Mapping Section (608) 246-5392 or
- Review other available aerial photos from municipal and county records and the UW Madison
D. Hydrogeology - Soils and Groundwater information

Soil types, soil properties including hydraulic conductivities, groundwater elevation, and groundwater flow direction are of primary concern when considering hazardous material issues.

- Review hazardous material investigation reports previously completed for sites nearby (LUST, ERP, and other investigation or remedial action report files)
- Reference Wisconsin Geological and Natural History Survey (WGNHS) publications and well logs. Call (608) 262-1705 or http://wisconsingeologicalsurvey.org/
- Reference USDA County Soil Survey Books (some may also indicate mine tailings sites, tanks, landfills and disturbed soils) or the online Web Soil Survey at http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.
- Review subsurface reports in the plans for bridge structures in the immediate area, if available, for preliminary soils and depth to groundwater information

E. Interviews

Interviews often reveal former land use practices that are not recorded by sources described above. Furthermore, actual locations of contaminant sources (USTs, sludge pits, etc.) may only be available through an interview. Interviews should be documented.

- Interview the current and past property owners regarding current and past land use.
- Interview business owners, neighbors, and local historians and long-term residents
- Obtain additional information from public officials
  - Fire Department (tank and spill recorders)
  - Town Clerk or Chairperson
  - Health Department
  - Zoning and Building Inspection
  - Municipal or County Public Works Department including utility personnel
  - Municipal or County R/W permit coordinators

F. Regulatory Agency Files

Previously published site investigation and remedial action reports for sites having hazardous material concerns within the project corridor provide valuable environmental documentation. These should be reviewed in detail for any site that might impact R/W acquisition or excavation. They are available at the appropriate DNR or Department of Safety and Professional Services region offices. Site file information needs to be duplicated and submitted with the Phase 1 report including:

- Site plans showing former and current contaminant source locations (i.e. tanks, petroleum product dispensers, imported fill, etc.)
- Figures showing the location of exploration boreholes, monitoring wells, and remediation systems
- Figures depicting the shallow potentiometric surface and groundwater flow direction
- Borehole logs for boreholes located within or adjacent to the proposed ROW and proposed excavations
- Figures indicating the horizontal extent of soil and groundwater contamination and completed remedial action
- Geologic cross-sections indicating the vertical extent of contamination and groundwater elevation.
- Borehole logs or tables summarizing the soil sample field screening (PID) results
- Tables of soil and groundwater laboratory data (including borehole, excavation floor and sidewall, and monitoring well samples) with figure showing sample locations
- Summaries and conclusions

2. Field Reconnaissance
A thorough field reconnaissance is critical to a complete Phase 1 Hazardous Materials Assessment. The field reconnaissance, or site inspection, should include all portions of the project requiring a Phase 1 assessment and may focus on sites identified during initial data collection as outlined above.

A. Walk the project corridor and document all sites posing a potential hazardous material concern to WisDOT operations. Suspicious sites of concern should be noted and located on a project base map. Photograph and sketch sites with hazardous material concerns. Some common sites or items indicating hazardous material concerns include the following (realize this is only an abbreviated list and the investigation should consider additional hazardous material sources as well):
- Potential contaminant sources such as USTs, associated piping and dispensers, ASTs, drums
- Industry or evidence of former commerce with potential to release hazardous substances
  Examples are gas stations, automobile repair facilities, dry cleaners, foundries, salvage yards, bulk chemical plants, agricultural chemical facilities
- Signs of ongoing remedial investigation or action including soil boreholes, monitoring wells, former excavations, stockpiled soils
- Landfills
- Abandoned properties with suspicious fill areas
- Stained soils or stressed vegetation
- Railroad ties and other creosote treated timbers should be noted and recommendations should include that this material is required to be handled as a solid waste.
- River sediments require a specific determination by the DNR region environmental liaison on what special handling and analytical requirements will be required.

B. Interview the owners or operators of the properties of concern. Names and telephone numbers of these and others who may be referenced as sources of information should be documented and followed up with contacts. Ask those interviewed for names, addresses, and telephone numbers of any long term residents who might share information regarding past land use activities in the project area.

3. Data Evaluation
Analyze information gathered during previous tasks to determine which sites of concern have the potential to affect R/W acquisition or excavation activities.
- Determine the potential for proposed acquisition parcels to contain a contaminant source and associated liabilities for investigation and remediation
- Consider the depth of the contamination, site soil types, and the water table depth in relation to the depth of proposed excavations (e.g., storm sewer trenches or utility excavations).
- Follow up with additional data review and evaluation to determine project impacts for sites of concern.
  - Evaluate or refine the project design to better determine specific potential acquisition, excavation, and dewatering requirements adjacent to the sites of concern
  - Where sites of concern have the potential to impact R/W acquisition or excavation activities, conduct further research in the form of interviews or supplemental regulatory file review
- Determine if the existing site data documentation will allow preparation of any required project special provisions

4. Conclusions and Recommendations Preparation
A complete Phase 1 concludes with the documentation and investigation of all hazardous material concerns throughout the project corridor. Conclusions and project recommendations are prepared based on the Phase 1 findings.

A. Conclusions
- Complete a WisDOT Phase 1 Assessment Site Summary for all sites of potential hazardous materials concern (see Attachment 5.1).
- Note where sites of concern have the potential to affect project activities (acquisition, excavation, dewatering) and refer to specific project station locations, locating on plan sheets
and base map

B. Recommendations are made regarding the following:
- The need for subsurface investigation (Phase 2, 2.5 or 3,) and notation of likely targets:
  - R/W acquisition areas
  - Areas of significant excavation
  - Grading areas
  - Potential contaminant sources
- The need for let contract special provisions and whether they can be written with information from the Phase 1
- Acquisition liability considerations:
  - Address the potential for acquisition to include contaminant sources
  - Recommend if WisDOT should acquire as a highway easement in lieu of fee title in order to reduce liability exposure.
- Determine if the site is PECFA eligible with an identified responsible party and remedial action plan (These conditions may allow WisDOT to purchase without special Exemption Committee approval). A link for WisDOT employees https://wisconsindot.gov/dtsdManuals/re/repmchap9/chapter9.pdf (for WisDOT employees) or on the extranet at: https://wisconsindot.gov/dtsdManuals/re/repmchap9/chapter9.pdf
  - If the site is PECFA eligible, determine if the proposed remediation plan will address areas of contamination within the proposed zone of construction.
  - If there is contamination within the existing or proposed R/W, determine if that contamination would be eligible for PECFA reimbursement if unearthed for WisDOT work.
- For any sites with groundwater monitoring wells within the existing or within the proposed R/W, recommend updating the survey and plotting their locations on the highway project design plans. The RP for the site should be notified by the region project manager that wells within the construction zone should be removed prior to construction.
  - For projects that require removal of river sediments, determine whether the excavated sediments will require handling as a solid waste. Contact the DNR region environmental liaison for this determination.
  - Railroad ties and other creosote treated timbers will require handling as a regulated solid waste. Re-use of these materials on a project will require demonstration to DNR that the addition of the creosote treated material to the fill will not create a new hazard to the environment.

5. Report Format
The completed Phase 1 Hazardous Materials Assessment will be finalized in a bound report compiling all pertinent information. The report should be presented in a professional manner and written concisely to facilitate an efficient review by all interested parties. A final report consistent with and containing the items outlined in the description below successfully fulfills the requirement of a complete Phase 1. All report pages, including figures, must include the report date and the WisDOT project ID.

A. Cover
- Project Identification: WisDOT Project ID, Highway/Street, Project Limits, Municipality, and County
- Report Title (i.e., Phase 1 Hazardous Material Assessment)
- Report Date
- Consultant, Address, Phone, Fax, and Email Address
- If an environmental subconsultant to the prime design consultant is responsible for the Phase 1 investigation, include the address, phone, fax, and email address of both the prime design consultant and the environmental subconsultant.

B. Executive Summary
- Describe the highway project
- Summarize the assessment findings
- Summarize hazardous material and real estate recommendations for the project corridor
C. Project Corridor Information
- Identify the unit of government responsible for project and local jurisdictions included within the project corridor.
- Describe the limits and nature of the project corridor, e.g., urban, residential, industrial.
- Describe the general land use history of the project corridor.
- Describe the general surficial hydrogeology of the project corridor including soil types, expected depth to groundwater, and direction of groundwater flow.
- Document sites/areas of the project exempted from investigation.
- Summarize all sites posing hazardous material concerns to the WisDOT project. Provide information regarding the site specific name, location, hydrogeology, R/W acquisition and excavation requirements, and the nature and extent of the subject contaminants.

D. Conclusions and Recommendations
- Identify the sites with potential hazardous material concerns for the project corridor and state the construction or real estate interests in the property. Use a site summary table with the following information.
  - Name, address, and station location of site
  - Acquisition requirements
  - Excavation requirements
  - Contaminants of concern
  - Database records referenced (UST, LUST, etc.)
  - Need for additional investigation
  - Need for let contract special provisions
- Recommend one of the following for each property with potential hazardous material concerns:
  - Neither additional hazardous materials investigation nor special standard provisions are warranted
  - No additional hazardous materials investigation warranted, but special standard provisions are needed for the highway contract
  - Additional hazardous materials investigation is warranted, i.e., Phase 2, Phase 2.5, Phase 3, or Phase 4
  - Need to acquire as highway easement in lieu of fee title

E. Figures (some of these figures may be included in the specific site appendix)
- All figures need to be clearly readable with scale, north arrow, and DOT Project ID and date.
- Include the relevant portion of a USGS 7½ minute topographic map with all contours reproduced (color reproduction preferred). This map should contain a sidebar showing the location within the state. The map should also include quadrangle name, township, range, section and date of USGS topographic map.
- Project plan sheets with date
- A project corridor base map must be included showing:
  - all named side streets
  - relevant landmarks
  - current and proposed ROW boundaries
  - project construction boundaries
  - acquisition boundaries
  - potential hazardous materials sites (clearly indicated) and site features including former dispenser islands, tank beds, etc.
  - monitoring wells,
  - water supply wells in proposed acquisition areas.
- A cross-section diagram of the alignment\(^1\) showing:
  - water table depth in relation to depth of proposed excavations
  - known vertical extent of contamination in relation to depth and location of proposed

\(^1\) In highway terms this is a profile view of the alignment
excavations
- Historical Sanborn Fire Insurance Maps (if coverage is available)
- Historical aerial photographs, if available
- Highway as-built plans and plats

F. Appendices
- Copy of the Environmental Service Database Report, if applicable
- There should be a separate appendix for each site with hazardous material concerns. Each appendix should include the following:
  - The completed WisDOT Hazardous Materials Assessment Site Summary (see Attachment 5.1)
  - A discussion of the site’s hazardous material concerns and how they relate to the real estate interests and/or construction requirements for the project
  - A detailed figure showing the location of the site, the location of any pertinent hazardous material features (e.g., former UST, residual contamination, monitoring wells), the proposed and current ROW, property limits, the real estate interest, and the location of any proposed excavation, storm sewers or utilities
  - Relevant figures, data, text, and correspondence copied from the DNR, DSPS, and/or DATCP files
  - Documentation of interviews conducted with individuals having knowledge of the property
  - Color photos of the site showing specific hazardous material features.

LIST OF ATTACHMENTS

Attachment 5.1 Hazardous Materials Assessment Site Summary

FDM 21-35-10 Subsurface Investigation December 22, 2011

10.1 Introduction
Phase 2 investigations are conducted to determine if a parcel suspected of being contaminated really is. It includes soil borings within the potential areas of concern as identified in the Phase 1 investigation. The investigation provides data on the nature of contamination and may provide information for waste characterization of soil and groundwater where the limits of contamination are known, and construction excavation limits are known. The Phase 2 will provide only limited information on the extent of contamination.

10.1.1 Acquisition Considerations
If acquisition of the whole property is proposed, the project manager should determine whether it would be more cost effective to go directly to a Phase 3 investigation to define the full nature and extent of contamination and get an estimate of the cost of remediation. The results of a Phase 2 investigation should not be used as a definitive “all clear” to purchase a property in all situations. If the excavation or real estate requirements change after a Phase 2 is completed, it may be necessary to perform further investigations in the area where the changes are proposed.

If acquisition of only part of the property is proposed, a Phase 2 investigation may be appropriate when WisDOT is not proposing to acquire any known or potential source of contamination. If WisDOT is proposing to acquire a source or potential source, then perform a Phase 2.5 or 3 investigation.

If no acquisition of new property is proposed, and contamination is known or suspected to exist in WisDOT R/W from an outside source, conduct a Phase 2.5 investigation to determine the nature and extent of contamination within the proposed zone of construction.

If WisDOT owns the source of suspected contamination, then conduct a Phase 3 investigation.

10.2 Scope
The scope of a Phase 2 investigation is flexible, and is tailored to meet the needs of a project. Information on contamination gained during a Phase 2 investigation is provided to the DNR region office to allow early identification and notification of responsible parties, and provide sufficient time for responsible parties to remediate prior to project construction or coordinate remediation with construction.

Phase 2 investigations are typically conducted during the preliminary design phase of a project. If, however, there will be early or advanced acquisition of a parcel, the Phase 2 must be completed before the parcel is
acquired.

10.3 Requesting the Work
Phase 2s are conducted by environmental consultants. For in-house design projects, regions submit the following information to the Bureau of Technical Services, Environmental Services Section (ESS) to request a Phase 2 investigation:

- Completed Phase 1 assessment site summary (see FDM 21-35 Attachment 5.1) or Phase 1 report for each site for which a Phase 2 is being requested.
- Site Photos.
- Available plan & profile sheets for the site. If they are draft, mark the date of the draft and the word DRAFT on the sheets.
- Real Estate plat maps (indicate draft or final) which indicate what type of purchase (fee, easement, type of easement) is being considered for this parcel, and how much of the property is to be acquired.
- Completed cover letter requesting hazardous materials investigation (see Attachment 10.1).

Design consultants requesting the services from ESS must submit the above information. Design consultants conducting their own Phase 2 investigations will follow the scope of services outlined below. Complete the Phase 1 investigation prior to recommending any Phase 2 actions. Note that services provided by design consultants are limited to Phase 1 and 2 investigations. For Phase 2.5 - 4 investigations, an ESS consultant must be used.

10.4 Scope of Services
Give the region environmental staff the opportunity to review the scope of services prior to performing the investigation. They will follow the Right of Entry procedure in FDM 9-10-5 for notifying the property owner prior to conducting work on site. The environmental consultant must give the region project contact at least 2 weeks notice prior to the investigation to allow time for them to notify the property owner.

When an environmental consultant is scoping a work plan for a Phase 2 investigation the following items must be included in the plan.

- Map of proposed boring location showing available proposed design and acquisition elements and known utilities/facilities/municipal project elements.
- Proposed depth of borings
- Depth of samples
- Sampling parameters (including proposed locations and justification for the locations)
- Analytical Parameters (tailored to the site, and what is known from site history)
- Traffic Control
- Safety planning
- Notification to the region maintenance coordinator
- Site Inspection
- Owner Interview
- Review of Phase 1 information and further regulatory background review if needed
- Report preparation
- Contacting Diggers Hotline, and any additional necessary utility marking
- Notification of the county highway supervisor or city engineer on local road projects

The following may be included based on site history:

- Electromagnetic or Ground Penetrating Radar surveys to determine location/number of tanks abandoned in place.
- Analytical parameters outside the normal range (e.g. background lead levels, full VOCs, waste characterization parameters, metals)
- Test pits

10.5 Methodology

10.5.1 Groundwater Sampling
The goal of groundwater sampling is to obtain a representative qualitative grab sample of water quality at the site. Groundwater samples can be collected from geoprobe or from temporarily screened wells. Follow the Groundwater Sampling Guide Desk Reference (PUBL-DG-037 96,
No permanent monitoring wells are established during this phase of investigation.

10.5.2 Soil Sampling
Soil should be field screened every 2 1/2 ft. Sampling should be done in the area of the highest PID readings and in the proposed zone of excavation. Borings should extend at least 2 ft below the deepest potential for excavation for a project. At least one analytical sample should be collected from each boring. If groundwater is encountered in the boring, the boring should extend at least 2 ft below groundwater level, and soil samples should be collected at this depth.

If partial acquisition is proposed, sampling should be conducted as close to the potential source as possible.

10.5.3 Analytical Testing
If the potential contamination is suspected to be a petroleum product, consider conducting a PVOC with extended naphthalene analysis rather than the traditional DRO/GRO/PVOC suite.

If other contaminants are believed to be present, the analytical testing should be tailored to those contaminants.

10.5.4 New Information or Unexpected Conditions
If additional information is gained during field operations that would result in a change in the scope of services, consultants should check in with the region project contact while in the field to determine if the scope should be expanded or decreased at that time.

Changes in the number of borings and analytical samples can be approved with a verbal authorization. The consultant must follow up with either a fax or e-mail to the region project contact documenting the changes in scope. The project contact (for design consultant projects) or ESS representative (for ESS contracts) must approve these changes. Changes in scope which result in a change in cost must be followed up with a change order to the work order or contract. At no time can the amount invoiced on a project exceed the total upper limit of compensation for a work order or contract. Avoid unnecessary remobilization whenever possible.

10.6 Phase 2 Report Contents
A separate Phase 2 report shall be prepared for each site. Reports for different sites shall not be bound together.

A Phase 2 report includes the following:

- A cover which must include:
  - Project Identification: WisDOT Project ID, Highway/Street, Project Limits, Municipality, and County
  - Report Title (i.e., Phase 2 Subsurface Investigation)
  - Report Date
  - Consultant, Address, Phone, Fax, and Email Address, and internal tracking number for this project
  - Report prepared by: (NAME)
  - If the environmental subcontractor is responsible for the Phase 2 investigation, include the Design Consultant, Address, Phone, Fax, and Email Address

- Project Description including excavation/grading/utility activity and proposed acquisition.
- Site History
- Soils Characterization
- Map of boring locations
- Analytical results presented in a table
- Conclusions
- **Recommendations** - provide information for planning property acquisition, and determine whether an exception to the Real Estate policy is necessary. Also determine the appropriate type of acquisition (temporary or permanent easement or fee title). Provide enough information for design specifications where there is a need for items such as collars and plugs;

- **Tables should be included in the text rather than in the appendices.**

- **Figures:** (all figures should stand alone)
  - Site location map which includes information on county and location within the state
  - Boring location map showing relationship to existing and proposed right of way and improvements. Use CADD base maps provided by the region or design consultant when available.
  - Separate boring maps for soil and groundwater with analytical results that highlight the exceedences of the RCL or PAL, and distinguishes those that exceed the Enforcement Standard.
  - A table of the analytical results including the PAL, ES and RCL effective at the time of investigation.
  - Cross Sections - show proposed utility and excavations and sampling intervals and identify depth to groundwater and bedrock
  - References (e.g. NR 722.03 (2) (a), Wisconsin Department of Natural Resources, 1998)

- **Appendices**
  - Definition of acronyms (either in the appendix or on the inside front cover)
  - Table of PID readings, or show these on the boring logs
  - Boring Logs
  - Chain of Custody
  - Lab Reports
  - Sampling Methodology
  - Site photos
    - indicate boring locations with traffic cones or other highly visible means of identification
    - areas of significant staining
    - test pits
    - clean and contaminated samples
    - cultural features

- **Format** - Phase 2 reports can be submitted on paper or electronically as .pdf files. If submitting a floppy disk or compact disk, attach a cover letter with the seals/signatures of the PE or Hydrogeologist approving the report. Include an electronic signature in any documents sent via e-mail.

### 10.6.1 Distribution
Submit the Phase 2 report to the appropriate region office. Here the need for further distribution will be made. As a minimum send the DNR copies of Phase 2 reports for contaminated sites. Also, send each property owner a bound paper copy of the Phase 2 report for his or her property.

If a Phase 2 subsurface investigation confirms the presence of contamination on a site, the designer should consider alternatives that avoid the site. If the benefits of using the contaminated site still outweigh avoidance, proceed with either a Phase 2.5 or a Phase 3.

**LIST OF ATTACHMENTS**

| Attachment 10.1 | Standard Cover Letter for Requesting Contaminated Site Investigation |

**FDM 21-35 12**  
**Phase 2.5 Remediation Planning Necessary for Construction of a Highway Project**  
*December 22, 2011*

### 12.1 Purpose
When Phase 1, 2, or design review determines that there is a probability of contamination in the right of way, it is necessary to plan prior to construction for potential handling and disposal of contamination and its effect on the project. Some of the reasons for this investigation are:

- To minimize health risks to the contractor and the public.
- To prevent delay in project construction and increased project cost.
- To prevent unnecessary cost to an adjacent property owner who is responsible for eventual site clean up.
- To prevent potential litigation of penalties for causing damages or for violating state and federal law.

The Phase 2.5 is done to determine the feasibility of doing a limited clean up in the proposed or existing right of way. If the owner of the source of contamination cannot begin clean up soon enough to avoid delay of highway construction, the region may decide to remediate only the area in the right of way and let the Responsible Party clean up the source later. This alternative should be limited to situations where recontamination of the right of way can be prevented and duplication of final clean up costs with public funding is not excessive.

12.2 Overview

Phase 2.5 investigations are conducted by hazardous material consultants contracted by the Bureau of Technical Services, Environmental Services Section (ESS) including investigations for hazardous waste (as defined by RECRA and CERCLA federal law). If there is an adjacent property owner who is a Responsible Party (see FDM 21-35-1) investigating the contamination, they may provide useful information. WisDOT, however, must provide the prime contractor with the location and type of contamination and accommodations needed for construction.

12.3 Request for Phase 2.5

Regions should submit a request to ESS to begin the Phase 2.5 process. This request must be initiated a minimum of six months prior to the P. S. & E. due date in order to allow for field work, lab analysis, assessment of options, permit or prior notice approvals from DNR and/or local governments, and writing of special provisions. If design changes are an option to avoid contamination, an additional month or more lead time may be advisable.

When requesting a Phase 2.5, design plans should be forwarded along with the request in order to help develop the scope of work.

12.4 Outside Consultants

If a region wishes to use a hazardous materials consultant other than one that is already under a master contract with ESS, they must first get approval from the ESS Hydrogeologist to do so. In such cases, it is recommended that Region Environmental Coordinators or ESS staff assist in development of the Phase 2.5 scope, alternative selections, and special provisions.

12.5 Typical Phase 2.5 Report

Typically the Phase 2.5 report will include the following items:

A. Description of ownership and Responsible Party status for the contaminated site.

B. Nature of Contamination - Nature and extent of contamination within and near the depth of excavation must include concentrations of regulated materials and notation of how these concentrations compare to soil or groundwater regulatory standards. Nature of contamination should also include characterization of waste adequate for acceptance at WisDOT approved disposal sites. To describe contamination, a plan view should include boring or sampling locations, excavation limits required for project construction, utility locations, limits of contamination, recommended exclusion zone for non-OSHA trained personnel, and reference points that will remain undisturbed during construction. The plan should also note project stationing, north arrow, property boundaries, and structures when relevant. Depth of contamination should be shown in sectional views with both existing and proposed location of utilities, subgrade, groundwater elevations (when appropriate) and other relevant structures noted.

C. Description of PECFA eligibility status and assessment of allowable disposal options to qualify for PECFA reimbursement.

D. Options and recommendation for excavation, hauling, de-watering, disposal of contamination, methods to prevent migration onto the site after construction, methods to prevent migration off of the site (e.g., through utility trenches) and coordination with highway construction.

E. Description of local government or DNR permits or notifications required. Note: WisDOT typically does not need to get DNR water quality permits but may need to get prior approvals or give prior notice to DNR under NR 700 Investigation and Remediation of Environmental Contamination.

F. Location of monitoring wells within the zone of construction, identify wells to be abandoned during construction and wells to be protected during construction.
12.6 Phase 2.5 Process

The following steps describe the Phase 2.5 Process. The numbering corresponds to the boxes in the flow chart shown in Attachment 12.1.

1. Locations of probable contamination will generally be determined in Phase 1 or 2 or design reviews. The presence of a contaminated site adjacent to a project may indicate the need for a Phase 2.5 without having to do a Phase 2 to confirm the presence of contamination.

2. Ownership of the source of contamination must be checked by reviewing the department’s real estate files and county register of deeds offices to determine whether the department holds fee title to property where the source is located. A title search may be necessary in some cases. The region Environmental Coordinator, Real Estate staff, ESS staff, or Office of General Counsel can assist in interpreting results of this investigation.

3. If WisDOT is the owner of the source of the contamination and has accepted responsibility for remediation, a Phase 3 investigation must be done to plan for remediation for the entire site and to prepare for remediation coordination during construction when necessary. See FDM 21-35-15 and FDM 21-35-20.

4. In cases where WisDOT is not the owner of the source or not responsible for remediation, region staff can request that the owner of the source investigate on a schedule that will assist in WisDOT’s Phase 2.5 investigation. DNR may assist in expediting the owner’s action. The owner’s investigation (which will be available from DNR regional offices) may determine the extent of contamination in enough detail to assure that no contamination occurs in the excavation depth. In such a case the contractor must still be notified that contamination is present in the general area of construction. The owner’s Phase 3 investigation can also provide data on contamination that will reduce WisDOT sampling cost.

5. Designers must determine if there is any contamination within the planned excavation limits of the project. Generally, the Phase 2.5 investigation initially focuses on whether contamination is in the excavation limits of the project. However, consideration must be given to the potential that excavation may go deeper than planned because of unsuitable subgrade soils or changes in utility plans by local governments.

6. Designers should look for ways to modify the design to avoid contact with contamination. This could involve shifting the location of utilities or other features of the roadway.

7. If contact with contamination can be avoided within the excavation limits, the next step is to determine whether contamination beyond the excavation limits can be left in place while construction proceeds. Among the factors to be evaluated are: (a) Would remediation cost more after construction? (b) Would public funding (e.g., PECFA or DNR) be tapped to remediate at higher cost after construction? (c) If de-watering is necessary, will it worsen or change contaminant migration? If any of the above factors are present, designers must consider remediation despite the contamination having no direct effect on WisDOT’s project.

8. If contamination beyond the excavation can be left in place during construction, provide a notice to contractors of the location of contamination in the special provisions.

9. If remediation in or beyond the excavation zone is needed, the Phase 2.5 would proceed to assess removal and disposal options. At this point, designers should consider using PECFA funding for reimbursement of disposal costs or allowing other responsible parties (RP’s) to conduct remediation. WisDOT may coordinate disposal with other RP’s but must carefully coordinate with the owners if they are permitted to enter WisDOT right of way during construction to remediate contamination. Other RP’s would be required to submit a detailed plan for their activities and apply for permission to do work in right of way with form DT1812, “Application/Permit to Work on Highway Right of Way.” See https://wisconsindot.gov/Pages/doing-bus/real-estate/permits/default.aspx for further information on R/W permits. It is suggested that plans submitted with the DT1812 application be reviewed by the Region Environmental Coordinator or ESS staff. Local governments may carry out remediation which could eliminate the need for WisDOT remediation. WisDOT, however, will still need to approve plans which affect construction and assure that remediation is coordinated with the project.

10. Designers should consider having remediation performed prior to construction. Sometimes below ground remediation reveals unexpected complications such as hidden or abandoned underground tanks or piping or heterogeneous soil conditions which conduct contamination to unexpected locations. The frequency of these situations can justify additional cost to avoid construction interruptions.

11. If contamination is to be remediated prior to construction, request a hazardous materials consultant
and subcontractor to remove and dispose of such material before construction.

12. If remediation is to be performed during construction, there are two possible courses of action based on the quantity and quality of the contamination. Any contamination defined as a Hazardous Waste by federal law (40 CFR Part 261) must be handled by a consultant under contract to ESS.

Case 1: There is a small quantity of contamination or it is defined as “hazardous waste” by federal RECRA or CERCLA law. A small quantity means the estimated remediation cost is $75,000 or less. In either of these situations a hazardous materials consultant and subcontractor should be given the remediation work. Including remediation work costing $75,000 or less in a let contract will require approval by the Bureau of Project Development.

Case 2: There is a large volume of contamination (i.e., estimated remediation cost exceeds $75,000) and the material is not defined as “hazardous waste” by federal RECRA or CERCLA law. If both of these conditions are met then the remediation work can be incorporated into the special provisions for the let contract. Writing these special provisions requires coordination of the planned construction process and the special handling requirements of contaminated material. Sampling must be done in the Phase 2.5 to delineate the boundary of material to be removed. This avoids the need to sample soil while it is being excavated to determine its status as clean or contaminated. Sampling during excavation may result in false positive or negative readings. Field sampling can take more time than originally planned as temperature or soil moisture changes with the weather. Field meters also are frequently not consistent with laboratory results. This is important because the department may retain responsibility for soil that is removed and re-deposited under the assumption of being “clean.”

13. As part of the special provisions, the prime contractor must give 10 calendar days notice to the hazardous material consultant prior to the date of planned excavation of contaminated material. This may be reduced to three working days in those cases where the hazardous material consultant is only monitoring and is not required to mobilize subcontractors for remediation. This notice should be written to avoid disputes over delays and it may be faxed.

14. The hazardous material consultant will be expected to complete a report to DNR and WisDOT on the remediation as required by NR 700.

LIST OF ATTACHMENTS
Attachment 12.1 Phase 2.5 Flow Chart

FDM 21-35 Defining Full Extent of Contamination

December 22, 2011

All questions and comments about Phase 3 contaminated site assessments should be directed to the ESS Hydrogeologist and Contaminated Site Project Manager at (608) 266-7980 or email: robert.pearson@dot.wi.gov.

15.1 Definition
A Phase 3 Environmental Site Assessment is a thorough field investigation of a contaminated site in which the complete vertical and lateral extent of soil and groundwater contamination is fully characterized and defined. The investigation includes soil and groundwater sampling from several soil borings and groundwater monitoring wells strategically placed to define the limits of contamination. Depending on the site setting the field investigation may involve the use of drilling rigs, geoprosbes, excavators, and geophysical testing.

Chemical analysis of soil and groundwater samples will vary depending on the source of contamination (e.g., gasoline underground storage tanks, solvent tanks, waste oil storage tanks, industrial fill material, etc.).

15.2 Purpose
The purpose of a Phase 3 investigation is to:

1. characterize the extent of contamination,
2. evaluate site cleanup (remediation) alternatives,
3. develop a conceptual remediation plan, and
4. provide cost estimates for remediation alternatives.

Phase 3 investigations are also performed when trying to determine the value of a contaminated parcel for acquisition purposes.
15.3 Warranting Situations
Phase 3 Investigations are performed for the following scenarios:

15.3.1 WisDOT is Responsible Party
WisDOT owns a contaminated parcel or the source of contamination is located in right of way owned by WisDOT in fee title (e.g., former gasoline pump island area). Consequently, WisDOT may be required to cleanup the site per the State Spill Law (292.11 (3), Wis. Stats.). In these cases, WisDOT is identified as the “responsible party” (RP) by the Wisconsin Department of Natural Resources (DNR). WisDOT currently has a policy NOT to acquire any contaminated parcels. Special exceptions may be granted on a case by case basis after review by WisDOT’s Real Estate Contaminated Site Exemption Committee. Prior to this policy and procedure, numerous contaminated properties (former gas stations) were acquired for road projects. These sites are commonly referred to as WisDOT’s “Old RP Sites.”

15.3.2 WisDOT is PECFA Agent for a Responsible Party
In some unique instances WisDOT will serve as the PECFA Agent for an owner of a contaminated parcel. PECFA is the State’s petroleum environmental cleanup fund administered by the Department of Safety and Professional Services (DSPS). Consult WisDOT’s Real Estate Manual for information regarding agent criteria. As the PECFA Agent, WisDOT is not the RP, but rather coordinates the investigation and remediation of the contaminated property for the RP.

15.3.3 Extensive Contamination in Project
Situations occur when extensive soil and groundwater contamination is present throughout the highway project and beyond. WisDOT may or may not be the RP, and other nearby RPs may not respond in time to investigate or cleanup contamination before construction. So, a Phase 2.5 or Phase 3 investigation may become necessary to resolve design or construction issues. Information from the Phase 3 is important for:

1. evaluating design alternatives,
2. determining quantities of contaminated soil or groundwater to be managed during construction, and
3. developing special provisions for managing contamination in the construction contract.

The Phase 3 investigation may include areas beyond the current or proposed right of way. This differs from the Phase 2.5 because the Phase 2.5 investigation is limited to within existing or proposed ROW, and it is focused on characterizing contamination in extent of contamination.

15.4 Phase 3 Process

1. The region shall initiate the Phase 3 Process by requesting ESS to schedule a Phase 3 Investigation. The region will provide ESS with a current open and authorized project ID number. Special ID numbers are used for PECFA Agency projects and ESS project ID numbers are assigned to post construction “Old RP Sites.” If a WisDOT “Old RP Site” is discovered then ESS will initiate the Phase 3 and inform the region Environmental Coordinator or Hazardous Materials Specialist.

2. The ESS will assign an environmental consultant to do the actual investigation under a master contract with the department. The environmental consultant will work with the region and ESS during the development of the scope of work. ESS will review and approve the work order.

3. The environmental consultant conducts the investigation in accordance with the NR 700 series of the DNR Administrative Code. The consultant will also prepare a report of their findings.

15.5 Report Content
In general, the report format will follow NR 716.15 (2) reporting requirements. Site maps and cross-sections depicting the extent of contamination and contaminant concentrations are an important part of the report. Also included is a recommendation and cost estimate for the best site remediation alternative taking into account specific DOT design and construction plans. ESS and the region will determine if additional information is needed (e.g., summary of historical property ownership, discussion of remediation plan activities, recommendations for design changes, etc.).

15.6 Timing Considerations
The investigations are generally completed in 2 to 7 field days over a 3 week period. Results of the chemical analysis are available for samples submitted to a laboratory within 3 to 4 weeks of the submittal date. If an onsite portable laboratory is used for the investigation, then results are available within hours of sample collection. The final report submittal is typically 45 days after the last field day. Preliminary data is available sooner upon request. Acceleration of the project schedule is an option, but generally at higher cost.
15.7 Phase 3 Costs
The cost for a Phase 3 investigation ranges between $30,000 to $75,000 for typical sites. Cost will vary depending on hydrogeologic complexity, type of contaminant, co-mingling nature of contamination from multiple source areas, and extent of contamination.

15.8 References
Several environmental codes administered by the DNR and the Department of Safety and Professional Services are relevant when performing Phase 3 investigations:
- NR 140 - Groundwater Quality
- NR 141 - Groundwater Monitoring Well Requirements
- NR 500 - Solid and Hazardous Waste Management
- NR 600 - Hazardous Waste Management
- NR 700 - Investigation and Remediation of Environmental Contamination
- COMM 46 - Petroleum Environmental Cleanup Fund Interagency Responsibilities
- COMM 47 - Petroleum Environmental Cleanup Fund

FDM 21-35-20 Phase 4 Hazardous Material Management

20.1 Originator
The Bureau of Technical Services Environmental Services Section (ESS) developed this procedure as part of their responsibility for administering the Department’s Hazardous Material Management Program. Questions and comments about Phase 4 activities should be directed to Robert Pearson at (608) 266-7980 or robert.pearson@dot.wi.gov.

20.2 Purpose
This procedure provides general information for managing contaminated soil or groundwater per WisDOT policies and procedures. Contaminated soil, sediment, groundwater, or other hazardous materials are commonly encountered during construction projects, resulting in the need for hazardous material handling plans and specialized contractors. The plans are developed from WisDOT Phase 2, 2.5, or 3 hazardous material site assessments and other existing information. Environmental consultants and contractors are hired by ESS for the Department’s Phase 4 activities.

20.3 Definition
The term “Phase 4” Hazardous Materials Management is used to describe a task in which contaminated soil, sediment, groundwater or other hazardous material is specially handled, managed, or treated for onsite re-use or offsite re-use or restricted disposal.

Examples of Phase 4 activities include:
1. Removing known underground storage tanks (UST’s) and above ground storage tanks (AST’s) for building demolition or that are located within construction limits;
2. Removing unexpected UST’s or contaminated soil encountered during a highway or bridge construction project (known as a “hazmat construction emergency”);
3. Managing known contaminated soil required to be excavated during storm sewer, sanitary sewer, or other utility installation or replacement;
4. Managing known contamination in cut sections or EBS material;
5. Managing contaminated water and suspended solids generated during de-watering operations;
6. Completing remediation of a contaminated parcel acquired by WisDOT (known as a “DOT Responsible Party” site); and

20.4 Background
Transportation right-of-way often receives long-term or intermittent contaminant migration from off-site sources. Hazardous material disturbed during construction requires proper management per state and federal
regulations. For construction of transportation facilities this usually involves "partial remediation" or limited "waste management" of contaminated areas disturbed during construction. If a source of contamination is found in the right-of-way then complete remediation of contaminated areas may become necessary, even beyond originally planned construction limits. This happens when there is a significant threat to human health and the environment or WisDOT is identified as a "Responsible Party" for the source of contamination.

The most common hazardous material encountered during construction is petroleum-contaminated soil or groundwater originating from leaking UST’s, AST’s, fuel dispenser lines, or traffic accidents. Other contamination encountered in soils or groundwater includes heavy metal compounds (e.g., lead) and chemical solvents (e.g., trichloroethylene). River sediment near storm sewer outfalls in urban and industrialized areas are commonly inter-bedded with residuals of heavy metal compounds, PCBs, or poly-aromatic hydrocarbons (PAHs). Fill materials in urban settings or bridge approaches sometimes contain miscellaneous solid waste material, heavy metals, PAHs, and other potentially contaminated material.

WisDOT experiences 10 to 30 hazmat construction emergencies a year. Planned Phase 4 activities occur about 15 times per year in which ESS environmental consultants and subcontractors perform the work in coordination with the highway contractor. About 5 times a year special bid items for waste management tasks are included in a Let contract in which the highway contractor and subcontractors perform the work and ESS environmental consultants monitor compliance.

20.5 Implementing Phase 4

The Project Development teams should consult with the Region’s hazardous materials specialist to determine when or if Phase 4 hazardous materials management is needed.

The Department’s Environmental Consultant is responsible for coordinating or performing all Phase 4 activities for the Department. They work under contract with ESS when dealing with non-hazardous waste or petroleum contamination. This requirement is a statewide policy to reduce risk for long-term liability and legal enforcement actions. Phase 4 work shall not be performed through region design or master contracts.

Phase 4 activities performed by the Department’s Environmental Consultant include in part:

1. Preparing Hazardous Material Handling Plans;
2. Preparing Special Provisions for the Let contract and bid item quantity estimates;
3. Obtaining concurrence letters from the Wisconsin Department of Natural Resources (WDNR) for the Hazardous Material Handling Plans and/or Let contract special provisions;
4. Obtaining approvals for treatment and disposal of contaminated soil and groundwater; and
5. Implementing the plans for the management of contaminated soil and/or groundwater prior, during, or after construction (e.g., environmental field screening and compliance documentation).

Normally this work is done before the transportation construction project is begun. If Phase 4 work must be performed during the transportation construction project, then the preferred method is to provide a simple notice to the highway contractor to coordinate Phase 4 work with the Department’s ESS. The areas of special management must be described by station locations and shown on the plan and profile sheets.

Phase 4 tasks are only included as bid items in the Let Contract for select projects provided certain criteria are met (See Item A6 of the Phase 4 Hazardous Material Management Checklist in Attachment 20.1). The bid items typically include excavation and disposal of petroleum contaminated soil, construction of contamination migration barriers, or contaminated water containment, treatment and disposal. The Department’s Environmental Consultant is required to be on site to inspect, field screen, and document environmental compliance. For some projects the bid items may also include the beneficial re-use of low-level contaminated material within the construction limits or elsewhere on WisDOT right of way.

The region shall notify ESS when Phase 4 activities are necessary. The region shall request a work order 12 months prior to the PS&E. Late notification may cause project delays and reduce options for waste management alternatives.

20.6 Phase 4 and the Local Roads Program

Phase 4 hazardous materials management is often needed for urban sections of highway in the Local Roads Program. The local municipality is responsible for providing the necessary planning and completion of Phase 4 work using their environmental consultants under direct contract with them.

When unexpected hazardous material or underground storage tanks are encountered during construction on a local road project (hazmat construction emergency), the local municipality having jurisdictional control of the right-of-way is responsible for properly managing the situation.
At the request of the region, ESS and the Department’s Environmental Consultant may manage and perform Phase 4 activities for the municipality. This can be done to address project delay concerns. The cost is billed to the local municipality through the project ID.

20.7 Agreements
Written agreements for managing hazardous materials are developed between WisDOT, local governments, private property owners, DNR, and the Department of Safety and Professional Services. These agreements identify cost share, long-term liability, and how much remediation or waste management is necessary.

The Responsible Party (RP) identified by DNR should pay for remediation activities and must be listed as the generator of waste. However for some projects WisDOT or the local government will take the lead in responsibly managing contamination disturbed during construction in order to expedite a project for the least cost alternative.

Current environmental regulations allow residual contamination to be left in place. Consequently, if a WisDOT activity unearths contamination, it generally becomes a project cost. WisDOT shall not be listed as the generator of waste for a local road project.

20.8 When to Perform Phase 4
Phase 4 activities can happen before, during, or after construction. The amount of remediation varies per responsible party agreements, environmental regulations, project schedule, and imminent threats to human health and the environment (See Figure 20.1).
20.9 Indicate Phase 4 on Plan Sets

Coordination of Phase 4 work is described in the special provisions notice to the contractor. The locations for special management are also described by station designations. In addition, it is required to show areas of special management or contamination on the plan & profile sheets and cross section sheets (See Figure 20.2, Figure 20.3, and Figure 20.4).
Figure 20.2. STH 23 Dodgeville, Iowa County

Figure 20.3. STH 29 and STH 97 Interchange, Marathon County
20.10 Project Managers Checklist

Phase 4 activities are non-standard construction practices for WisDOT. Occasionally the activities are complicated from an engineering, environmental, regulatory and legal perspective. The checklist in Attachment 20.1 is provided for WisDOT project managers, engineers, consultants, environmental professionals, and individuals responsible for reviewing PS&Es. Listed are common tasks, information, and issues that must be completed, understood, or resolved to successfully accommodate Phase 4 hazardous materials management during construction projects.

LIST OF ATTACHMENTS
Attachment 20.1 Phase 4 Hazardous Material Management Checklist

FDM 21-35-25 Environmental Documentation
December 22, 2011

The environmental documentation for a project should identify and describe the areas that were investigated, the investigation methods, and the results of those investigations. It should be noted that contaminated site investigations for a project may include all of the four phases. Some of these phases would follow in the sequence shown in FDM 21-35-1 and others might involve any combination. For example, private landowners may be pulling underground tanks from their properties in response to either DOT activities or directions from the regulatory agencies. This information would be appropriately included in the project's environmental document. The environmental document should provide decision-makers with enough information upon which to base their decisions. It is important that contaminated sites be identified so the selection of an alternative and design decisions may be made.

25.1 Draft Environmental Impact Statements and Environmental Assessments

Draft Environmental Impact Statements (DEIS's) and Environmental Assessments (EA's) for a project shall contain a summary of the Reconnaissance Checklists or complete Phase I Reports for all parcels which have been determined not to require additional investigations.
If Phase 1 indicates that Phases 2 or 3 are needed, this should be documented in the DEIS or EA.

Do not disclose personally identifiable information (property owner names, business names, addresses, etc.) in the environmental document's hazmat section.

The draft environmental document shall identify and discuss as necessary and appropriate:

1. The number of parcels that had Phase 2 or Phase 3 Investigations or Phase 4 remediation, if any, and the results of those investigations or remediation.
2. The number of parcels which were not field reviewed, but are suspected of being contaminated.

**Note:** Projects which require Phase 2 Environmental Sampling may have their environmental document submitted to ESS prior to completing the Phase 2 activities. In such cases the following language should be incorporated into the environmental document:

```
Having completed a Phase 1 investigation for the improvement under consideration, the Region
has determined that further investigation of _____ sites is merited. Those investigations are in
the process of being scheduled. The DNR and possibly affected parties will be notified of the results.
The Region will work with all concerned to ensure that the disposition of any petroleum
contamination is resolved to the satisfaction of the Wisconsin DNR, WisDOT ESS, and FHWA
before acquisition of any questionable site, and before advertising the project for letting.
Non-petroleum sites will be handled on a case by case basis with detailed documentation and
coordination with FHWA as needed.
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This language commits the Department to completing Phase 2 investigations and coordinating with DNR, ESS, and FHWA where petroleum contamination is encountered prior to any acquisition or advertising for letting. Where non-petroleum contamination is encountered, the sites will be handled on a case by case basis with more detailed documentation and coordination with FHWA and DNR.

**25.2 Final Environmental Impact Statements and Findings of No Significant Impact**

Completion of Phase 2, 3 or 4 work is not required prior to submittal of the Final Environmental Impact Statement (FEIS) or the Finding of No Significant Impact (FONSI) to ESS. If, however, any Phase 2 or Phase 3 Investigations have been completed prior to the time the FEIS or FONSI is submitted to ESS, a summary of the results of these investigations shall be included in the FEIS or FONSI. Where Phase 4 Remediation is required in order to complete construction of a highway project, the FEIS or FONSI shall describe the location, effects on the highway construction project and an estimate of the cost of Phase 4 remediation for each contaminated parcel. The language shown in the box above shall be used for the FEIS or FONSI when it applies.

**25.3 Type III Environmental Reports (ER) and Programmatic ER's**

A Type III project which is documented with an Environmental Report (ER) may or may not require site investigations. It depends on whether the project calls for excavation or right of way acquisition. See FDM 21-35-3 for an explanation of when such investigations are necessary. If a Phase 1 investigation is necessary, its results should be mentioned in the ER. If Phases 2, 3 or 4 are required then the ER should include the text in the box above.

By definition a project which qualifies for a Programmatic Environmental Report (pER) does not involve the acquisition of properties with hazardous materials or waste. This, however, may require a Phase 1 investigation to determine and does not preclude involvement with existing contamination within the R/W. The results of this investigation should be kept in the project file.

**FDM 21-35-30 Disposal of Containerized Non-Hazardous Waste**

**30.1 Purpose and Scope**

This procedure covers the management of the following non-hazardous wastes generated during contaminated site investigation (hereafter referred to as materials):

- contaminated soil cuttings
- development water
- purge water
- wash water

Materials generated by environmental consultants under direct contract to the Department, as well as containers generated by consultants under sub-contract to the Department's consultants are covered by this procedure.
This procedure covers only those materials found to be non-hazardous by laboratory characterization. Materials found to be hazardous as defined by NR 605 must be disposed of following FDM 21-35-35.

Only materials generated during the course of Department managed investigations of a property for highway design, acquisition, remediation, or construction are covered. Sites for which WisDOT is acting as PECFA agent shall follow this procedure. Materials generated during investigation of a private property adjacent to a highway by the private property owner are NOT the responsibility of the Department, and are not covered by this procedure.

### 30.2 Sampling and Containment of Material

#### 30.2.1 Field Screening

All materials shall be screened in the field using a PID (photo ionization detector), FID (flame ionization detector), Portable Gas Chromatogram, or comparable field instrument. Soils that have positive readings must be containerized using a USDOT approved container. Soils which do not exhibit positive meter readings, but which exhibit either visual or olfactory evidence of contamination must be properly containerized. If soils do not exhibit, visual, olfactory, or metered evidence of contamination, they should be dispersed on site.

Groundwater shall be field screened and properly containerized if it exhibits visual, olfactory, or metered evidence of contamination. If no evidence of contamination is present, water should be disposed of into a storm sewer system or drainage ditch on site.

#### 30.2.2 Laboratory Analysis

Soils and groundwater that exhibit evidence of contamination shall be sampled and submitted to a DNR certified laboratory for analysis. If laboratory analysis indicates the presence of contamination that would cause the waste to be characterized as hazardous, the waste must be disposed of following the Safety and Health Section procedure for disposal of hazardous waste (see FDM 21-35-35).

Upon receipt of laboratory results, the environmental consultant can submit the containerized material for disposal in accordance with this procedure.

#### 30.2.3 Mixing Wastes

Soils and water shall be placed in separate containers. Each site on a project shall have its own containers. Similar wastes from multiple borings on ONE site may be containerized together (soil with soil, water with water). Soil and water shall not be mixed in one container.

### 30.3 Storage

The WisDOT project manager shall determine storage locations prior to the start of site activities. The project manager will notify the Regional Environmental Coordinator (REC) and the consultant of the storage location. The environmental coordinator shall notify the Bureau of Technical Services, Environmental Services Section (ESS) and the Regional Maintenance Supervisor.

Containers must be stored on WisDOT property within the project limits. If this is not possible, the REC or Hazardous Materials Coordinator/Engineer shall seek permission from the Area DNR SPILLS/R & R Coordinator to store wastes outside the project limits. These exceptions must be reported to ESS. Storage must take place on WisDOT property. Special exemption to store waste on county property may be granted by ESS with DNR and county approval.

Containerized material shall be placed in a secured area that will not obstruct vehicular and pedestrian traffic or vision lines. Containers shall be stored so as to be accessible by a handcart. The consultant shall provide fencing or other security measures when required by the WisDOT project manager.

### 30.4 Labeling of Material

#### 30.4.1 Labels

For containers containing non-hazardous material, only Form DT1208 should be used. See Attachment 30.1 for an example of this label. If wastes are believed to be hazardous at the time of generation (e.g. wastes from dry cleaners, body shops etc.) hazardous waste labels shall be used in addition to DT1208.

#### 30.4.2 Label Distribution

ESS will provide copies of DT1208 to the Regional Environmental Coordinators. Consultants shall obtain labels from the region or office that issued their contract. ESS will provide labels to consultants under direct contract to ESS.

The REC will distribute labels to WisDOT project managers and environmental consultants. Project managers shall be responsible for distributing labels to design consultants.
30.4.3 Unused Labels
Unused labels (DT1208) shall be returned to either the appropriate REC or the Bureau of Technical Services, Environmental Services Section (for those consultants with direct contracts with ESS), upon completion of the project.

30.4.4 Labeling Procedures
One Non-Regulated Waste label (DT1208) for each container shall be completed at the time of generation. Labels shall be completed using sunproof, waterproof, permanent markers or paint pens. The following information should be filled out for each label:
- Regional Office
- Project ID
- Site name - as shown on request for service
- Consultant's company name; contact person (field person performing work), and the contact person's phone number
- Generation date (date work was completed)
- Contents - circle whether contents are soil or water
- Number - containers must be numbered according to how many containers were generated on this site. Ex: container 1 of 3. (Total number of containers, not number of soil or number of water containers).
- Phase - circle the phase of the investigation being conducted

A corresponding Non-Hazardous Waste Container Inventory (DT1229) shall be completed for each container at the time of generation multiple containers containing the same waste stream with the same lab results can use one inventory form. The Non-Hazardous Waste Container Inventory (DT1229) shall contain information identical to that on the Non-Regulated Waste label (DT1208). Attachment 30.2 shows a properly completed Form DT1229.

30.5 Disposal of Material
Upon receipt of laboratory results, the consultant shall complete the non-hazardous waste inventory record (Form DT1229) and e-mail copies to:
- Hazardous waste disposal contractor (FDM 21-35 Attachment 30.3):
- ESS ATTN: Hazmet Specialist (sharlene.tebeest@dot.wi.gov)
- Region Contact
- Regional Environ. Coordinator/Haz. Materials Coordinator (FDM 21-35 Attachment 30.4)

The Hazardous Waste Disposal Contractor will schedule pickup of wastes and notify the following with the schedule:
- Region Contact & REC
- Consultant
- ESS

The Hazardous Waste Disposal Contractor is responsible for transportation and disposal of wastes. Costs will be charged back to the project ID.

30.6 Documentation of Material
In addition to submitting copies of the Non-Hazardous Waste Container Inventory to the REC and to ESS for scheduling of disposal, copies of the forms must be submitted in the final report for each site. The forms shall be placed in the last appendix of the report.

If no excess soils or water are generated, or if soils or water are determined to be clean and disposed of on-site at the time of the investigation, this must be documented in the last appendix of the report.

ESS’ file is complete when the following items are obtained:
- Copy of Container Inventory Form
- Copy of bill of lading or manifest
- Purchase order(s) and invoice(s)
- Certificate of destruction
30.7 Summary Responsibilities

30.7.1 ESS
- Provide Non-Regulated Waste labels (DT1208) to RECs and environmental consultants under contract to ESS.
- Collect unused labels from consultants under direct contract to ESS.
- Coordinate container pickup and disposal.
- Maintain waste tracking records
- Arrange for payment of hazardous waste contractor.
- Charges will be billed back to the project ID.

30.7.2 Regional Environmental Coordinator (REC)/Hazardous Material Coordinator
- Administer this procedure in their region. Distribute labels to environmental consultants in regions with direct contracts.
- Distribute labels to the WisDOT project manager for design consultant jobs.
- Keep a copy of the Non-Hazardous Waste Container Inventories for each site in their region.
- Notify Regional Maintenance Supervisor of container storage locations and scheduled pickups.
- Notify ESS of changes in storage locations.
- Collect unused labels from project manager upon project completion.

30.7.3 Project Manager
- Locate an appropriate storage site for containers.
- Distribute labels for design consultant projects.
- Notify REC of storage location.
- Collect unused labels from consultant upon project completion.

30.7.4 Environmental Consultant
- Complete labels and Inventory forms. Submit forms to RECs and ESS.
- Document container generation and disposal status in reports.
- Turn in unused labels to project manager upon completion of project.

30.7.5 Hazardous Waste Disposal Contractor
- Schedule waste pickup and notify ESS, REC and Project Manager of schedule
- Transport and dispose of waste
- Document transportation and disposal with manifest or bill of lading
- Submit invoice for services to ESS
- Submit certificate of destruction to ESS

LIST OF ATTACHMENTS

Attachment 30.1 Non-Regulated Waste – DT1208
Attachment 30.2 Sample - Non-Hazardous Waste Inventory - DT1229
Attachment 30.3 Hazardous Waste Disposal Contractor Contacts
Attachment 30.4 Regional Environmental or Hazmat Coordinators


35.1 Purpose
This procedure establishes rules for the proper management and disposal of wastes generated during underground and above ground storage tank (UST, AST) abandonments and wastes generated during contaminated site investigations which are determined by laboratory analysis to be hazardous waste.

These procedures utilize a mandatory statewide hazardous waste disposal contract. Standard waste profiles have been established for the various wastes encountered during tank abandonments. These profiles are presented in Attachment 35.1. It is the responsibility of the party managing the worksite to determine if the wastes generated at the site fit the established profiles.
Management of paint waste from bridges is covered in CMM 1-30.3.

35.2 Storage and Containerization

35.2.1 Storage

All wastes must be stored in USDOT approved containers. The containers must be watertight and compatible with the wastes being stored. To minimize risks to WisDOT and the public, the following procedures shall be used for container storage:

1. Containerized material shall be inventoried and labeled.
2. Containers containing hazardous waste should be stored at the site of generation, within the WisDOT project limits. If this is not possible, the Regional Environmental Coordinator (REC) shall seek permission from the DNR Remediation and Redevelopment County Contact (http://dnr.wi.gov/topic/brownfields/contact.html) to store wastes off site.
3. Containerized material shall be placed in a secured area that will not obstruct vehicular and pedestrian traffic or vision lines.
4. Containerized water shall be placed in a heated or sheltered area if feasible, as water may freeze and rupture the container.

If the waste is determined to be hazardous, the applicable temporary storage time limit begins at time of generation (180 days for 220 lbs or less per site and 90 days for 220 lbs to 2,205 lbs per site). Generation occurs on the date the first material is put into the container. A hazardous waste label shall be applied to the container if hazardous waste is suspected. Consult the WisDOT Hazardous Materials and Waste Management Program Manual for further direction.

35.2.2 Containerization

1. Keep solids and liquids separate.
2. Liquid or petroleum product may be pumped into a tanker if there is sufficient quantity, or containerized for either fuels blending or recycling.
3. Sludge must be containerized for disposal.
4. Cleaning residue must be containerized for disposal and may be mixed with sludge and/or water, depending on quantities generated.
5. Water may be pumped into a tanker if there is sufficient quantity, or containerized for disposal.

35.3 Sampling and Analytical

Generator knowledge may be sufficient for waste characterization and profiling (e.g., UST removed was known to store unleaded gasoline). If not, the following procedure should be followed:

1. One 500 ml amber sample should be collected from containers with like contents (e.g., two containers of water would require one sample).
2. Analysis requirements for hazardous waste determination:
   - Fingerprint (includes flashpoint)
   - Total Benzene and Total Lead
   - or
   - Specific Constituent suspected at site (ex. TCE, PCB)

Send sample directly to the hazardous waste contractor. Call (262) 255-6555 ext. 72634 for addressing and shipping information. Include appropriate chain of custody forms and a copy of the hazardous waste inventory.

NOTE: If container contents have already been analyzed by a DNR certified laboratory, then samples need not be sent to the hazardous waste disposal contractor. Send a copy of analytical results to the hazardous waste disposal contractor for profiling purposes.

35.4 Waste Characterization

Generator knowledge or laboratory results will indicate whether containerized materials are hazardous or non-hazardous. A profile determination should be made based on the quantities of the contents of the waste (i.e., product solids and water)

A table with the existing profiles is presented in Attachment 35.1. If no profile has been established for the type
of waste generated a new profile will be required. The contractor will work with ESS to establish a new profile.

35.5 Disposal

35.5.1 Hazardous Waste
1. The consultant shall complete the hazardous waste inventory (Form DT1231) and send copies to:
   - Hazardous waste disposal contractor
   - ESS ATTN: Hazmat Specialist
   - Region contact
   - Regional Environ. Coordinator/Haz. Materials Coordinator/Engineer (FDM 21-35 Attachment 30.2)

   Attachment 35.2 is a copy of the inventory form, DT1231.

   "E-mail is the preferred means of communication.

2. If waste cannot be profiled without analytical results, then the consultant can send samples to hazardous waste contractor. Profiling will be conducted by the hazardous waste contractor and results will be submitted to the environmental consultant and ESS.

3. If the quantity of waste generated at one UST/AST removal site is greater than 2,205 lbs, then the environmental consultant shall contact ESS to obtain an EPA identification number.

4. Upon receipt of EPA ID#, ESS will forward the number to the environmental consultant, the hazardous waste contractor and the region contact.

5. Hazardous waste contractor will complete manifests and schedule pick up of wastes. Hazardous waste contractor will notify the following with the schedule:
   - Region contact
   - Consultant
   - ESS (arrange payment)

6. Hazardous waste contractor is responsible for the transportation and disposal of wastes.

35.5.2 Non-hazardous Waste or Quantities Less Than 2,205 lbs

If the quantity generated at one UST/AST removal site is less than 2,205 lbs then an EPA ID number is not required (very small quantity exemption). The above steps shall be followed with the exception of obtaining an EPA ID number. Non-hazardous wastes generated during contaminated site investigations should be handled in accordance with FDM 21-35-30 and FDM 21-35-50.

35.6 File Documentation

See Attachment 35.3 for a sample manifest and a checklist for completing it.

Manifest copy distribution:
   - Copy 1. Generator sends to DNR
   - Copy 2. Generator retains
   - Copy 3. Disposal facility sends to DNR
   - Copy 4. Disposal facility retains
   - Copy 5. Disposal facility sends to Generator
   - Copy 6. Transporter retains

Other forms that may be included for WisDOT signature include:
   - Landban forms
   - Contractor timesheets

ESS’ file is complete when the following forms are obtained:
   - Copy 2 of manifest (WI) (Generator copy),
   - Copy 5 of manifest (WI), (Facility sends to generator)
   - Copy of Hazardous Waste Inventory, form DT1231
   - Copy of EPA ID form (if applicable)
   - Copy of Landban Form (if applicable)
   - Copy of purchase order and invoices
Consult the DOT Hazardous Materials and Waste Management Program Manual for further direction.

For each site, disposal activities shall be documented and made part of the report prepared for the appropriate phase of contaminated site investigation or remediation.

### 35.7 Payment

Costs for disposal of wastes will be billed back to the project ID. Additional charges include mobilization costs which vary depending upon the location and number of sites included in the pick-up.

#### LIST OF ATTACHMENTS

- Attachment 35.1 Generic Profiles
- Attachment 35.2 Hazardous Waste Inventory DT1231
- Attachment 35.3 Special Waste Manifest Ticket

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**FDM 21-35-40  Structure Notification**  
December 22, 2011

Sometimes, as part of WisDOT’s investigation or remediation activities, special permanent structures must be installed on a highway right-of-way. These structures can be monitoring wells, venting systems or groundwater remediation systems. When such structures are to be installed on the right-of-way, the environmental consultant shall notify the appropriate Region Planning & Operations Group Manager by submitting the information listed below. Send this notice two weeks before the proposed installation date and send copies of this notification to the region environmental coordinator and to the Bureau of Technical Services, Environmental Services Section, Attention: Hydrogeologist.

#### 40.1 Notification Contents

- A site location map. This can be either a county map or a quadrangle map.
- County, highway, project termini and project ID number.
- A site map showing the location of the proposed structures within the right-of-way. Show the approximate location of the proposed structures with reference points like buildings, edge of pavement, survey markers or some other obvious location reference. If the final location or number of structures changes from the initial notification, or if the final locations are surveyed, the environmental consultant shall provide a revised map with the new information to the Region Planning & Operations Group Manager. Send copies of this revised data to the Region Environmental Coordinator as well as to ESS, Attention: Hydrogeologist.
- A description of the structures: type, size, flush mount or above ground wells.
- Summary of purpose for installing the structure(s) such as a venting system for remediation or a well to define the down gradient extent of contamination.

The environmental consultant shall post the notification and the master contract work order signed by the Department representative on site at all times while the work is being performed.

#### 40.1.1 Notification for Temporary Structures

A temporary structure is one that will be in place one day or less as part of Phase 2, 2.5, 3 or 4 activities. The environmental consultant shall notify the Region Planning & Operations Group Manager by phone two weeks before drilling or installing a temporary monitoring well.

#### 40.2 Siting

Wells can be located anywhere within the highway right-of-way. This includes the traveled way and shoulders although this should be avoided if possible. Wells located in the traveled way, shoulders or clear zone shall be flush mounted and their covers shall be painted a highly visible color. Additional measures to make the flush mounted wells easier to find may also be employed; for example, mounting a magnet inside the well cover.

Wells located outside the clear zone should also be flush mounted. Where this is not possible, the non-flush mounted wells shall be flagged and painted in a highly visible color to provide added protection and visibility for maintenance crews. The use of non-flush mounted wells requires the approval of the Region Planning & Operations Group Manager.

#### 40.3 Notification of Removal

Notifications of removal of permanent structures shall contain the same information required for their installation. The notification shall include the date the structure will be removed. Send this written notification to the Region
Planning & Operations Group Manager, the Region environmental coordinator and the ESS Hydrogeologist. Send this notification two weeks before the structure is to be removed.

FDM 21-35-45 Asbestos

45.1 Applicability
It is the Department's policy not to use asbestos-containing materials in the construction, renovation or rehabilitation of any structure. The following procedure shall be applied to all highway bridges, structures and buildings being rehabilitated, renovated, moved or demolished as part of a federal or state funded project.

45.1.1 Background
Asbestos was once hailed as a wonder material for the construction industry because it can withstand fire, heat, and acid, has great tensile strength and acts as both an effective thermal insulator and sound-proofing material. Unfortunately, its wonder comes at a price to health. All forms of asbestos are proven human carcinogens. Most people are under the mistaken impression that asbestos is no longer in use in the US; however, that is not the case. In 1989, EPA issued a final rule banning most asbestos-containing products. However, in 1991, this regulation was overturned federal courts. As a result of the Court's decision the regulation continues to ban the use of asbestos in products that have not historically contained asbestos, otherwise referred to as "new uses" of asbestos. Asbestos-containing products continue to be imported including floor tiles, ceiling tiles, pipe, insulation, siding, joint compounds, roofing felts, cement, drywall, packing, gaskets, and brake pads.

45.1.2 Exemptions
The following projects are exempt from inspection requirements when the described work is the only work being done on the structure:

- Bridge Repainting
- Attachment of guard rail or thrie beam when the attachment does not require disturbance of bridge railings, joints, caulk or other potential ACM.
- Structures that have been previously inspected and have had no abatement, repair, or maintenance work done subsequent to inspection. (e.g. No patch repairs, no new caulk, no railing replacements, no joint sealer, no deck or parapet replacement).

45.1.3 Timing
Bridges and tender houses shall be inspected during the environmental documentation phase of a project. Bridges are inspected by an environmental consulting firm under contract to the Department’s Bureau of Technical Services, Environmental Services Section (ESS).

Buildings acquired for a project shall be inspected prior to demolition or sale and movement of the building. This means that the inspection may not take place until after the environmental document for a project is completed. Buildings which are acquired are inspected during the acquisition process by inspectors hired by the region. Regions may choose to use the consultant under contract to ESS, rather than contracting for inspections independently. See section 45.6 for the appropriate language to include in the environmental document.

45.1.4 Notification for Traffic Control - Bridge Inspections
Prior to scheduling work on any bridge asbestos inspection project or hazmat project which requires traffic control, the environmental consultant must contact the region permit coordinator to determine if there are special restrictions or conditions for performing work on that particular roadway. The current contact list can be found on the WisDOT website at:


Consultants under contract to WisDOT are not required to obtain a right-of-way permit when they are working for the department and acting as WisDOT’s agents to conduct the work.

There are restrictions on various STH, USH and local roads regarding lane closures and allowable times of work. The permit coordinators take the information you provide them regarding the work to be done and the necessity for lane closures or restrictions and communicate that to the emergency services, news outlets and law enforcement as necessary. The permit coordinators need at least one week notice in advance of any lane restrictions.

45.2 Purpose
The purpose of this procedure is to allow the Department to

- Determine if asbestos-containing material is present on or in a structure by obtaining representative
samples of suspect material for laboratory analysis;
- Report the results in a standard format;
- Include the information in the environmental document for the project; and
- Prepare special provisions for inclusion in the moving, demolition, or let contract

45.3 Definitions

Asbestos is an incombustible, chemical resistant fibrous form of magnesium silicate. When mined and processed, asbestos is typically separated into very thin bundles of fibers and then commonly mixed with a binder during processing. Asbestos can become separated from that binder and become an airborne contaminant with the potential to cause Asbestosis, Mesothelioma, and increased risk of lung cancer.

Asbestos Containing Material (ACM): Materials containing more than 1% asbestos by area as determined by Polarized Light Microscopy (PLM) [1].

Category I Non-Friable ACM: "...packings, gaskets, resilient floor covering & asphalt roofing...containing...asbestos...that...cannot be crumbled...to powder by hand pressure." Category I ACM is pliable (not brittle), breaks by tearing rather than fracturing, and does not easily release asbestos fibers upon breaking [2].

Category II Non-Friable ACM: "any material, excluding category I nonfriable ACM, containing...asbestos...that...cannot be crumbled...to powder by hand pressure." This includes rigid exterior siding and boards known by the trade name "transite". Category II ACM is not pliable, breaks by fracturing rather than tearing, and does release some asbestos fiber release upon breaking [2].

Friable ACM: "any material containing...asbestos... that...can be crumbled...to a powder by hand pressure. " Common types of friable ACM include pipe insulation and sprayed on or tiled sound insulation materials. Friable ACM has little structural strength and contains asbestos fibers that are readily released upon breaking [2].

Regulated Asbestos Containing Material (RACM)
- Friable asbestos material;
- Category I nonfriable ACM that has become friable;
- Category I nonfriable ACM that will be or has been subject to sanding, grinding, cutting, or abrading; or
- Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by NR 447, Wis. Adm. Code.

45.4 Potential Asbestos Containing Material Identification

Each structure to be moved demolished or rehabilitated shall be inspected by a licensed Asbestos Inspector to verify the locations of suspect material. The inspector will also identify and photograph all homogeneous areas of material that potentially could contain asbestos. Photographs shall be referenced by number on the inspector's Asbestos Sampling Log. The region will provide a copy of plans for existing bridges and a map showing the location of the structures to the Asbestos Inspector. Before initiating sampling, the licensed Asbestos Inspector shall review these plans to make a preliminary identification of potential asbestos-containing material.

All material sampled shall be documented with photos showing the location of the material sampled and clearly identifying the material. Photos shall include a standard 6" ruler for scale. The addition of arrows or circles or other means of identifying the material in the photo is acceptable.

If the inspector believes a material found on a bridge structure to be suspect but it is not identified in either of the lists in 45.4.1 or 45.4.2, the inspector shall sample and analyze the material using the standard sample collection and analysis techniques listed below. The inspector shall collect one additional sample of this suspect material and place it in a sealed and securely taped 50 ml clear glass jar, clearly labeled with the bridge number, project ID, description of the material sampled, and location on the bridge or structure. When the analysis results are received, the % asbestos content, and analytical method shall be added to this label. This sample shall be submitted to WisDOT BTS-ESS attn: Hazardous Materials Specialist, PO Box 7965 Room 451, Madison, WI 53707-7965, with an electronic copy of the inspection report.

45.4.1 Bridge Materials Requiring Sampling

Materials requiring sampling:
- Parapet or sidewall expansion joint caulk
- Gasket or grout material underneath guard rail or railing bolt plates
- Caulk or sealant in expansion joints
- Tar or sealant on wooden timbers
- All standards suspect building materials such as insulation, floor tile, cork, brake pads, transite siding, etc. in bridge tender houses and bridge gear units
- Paint
- Bridge deck caulk
- Inactive utility conduit - only when the owner cannot be identified. Utilities are responsible for their own inspection and abatement.

45.4.2 Bridge Tender Houses
Any suspect ACM in the bridge tender house shall be sampled. If sampling of the material would substantially affect the safe operation of the structure (for instance, taking a sample of a brake pad from the lift mechanism), then the suspect material may be assumed to be ACM. All other materials will be sampled.

45.4.3 Bridge Materials That Do Not Require Sampling:
- Rubberized expansion joint material
- Fiber mats
- Asphalt
- Waterproofing membrane
- Active utility conduit not owned by WisDOT. Utilities are responsible for their own inspection and abatement.

45.4.4 Residences and Other Buildings
Any suspect ACM in the building shall be sampled. Quantity, type and location of material will be noted and all suspect materials will be photographed for identification. If building plans are available, indicate location of samples on plan.

In buildings that are unoccupied and not scheduled to be sold and moved, leased or rented to an occupant, write the sample numbers directly on the material being sampled. (e.g., write the sample number in permanent marker on the floor tile being sampled).

Asbestos inspections of gas stations or other buildings with freestanding overhead signs or canopies or awnings should include the awning or canopy, and the mounting brackets of the overhead signs for any suspect ACM.

45.5 Sample Collection
A licensed asbestos inspector shall collect samples following standard protocols and procedures described below.

Collect a minimum of three randomly distributed samples of each type of material identified as homogeneous (same type, color, age of application). If portions of a material involved appear to have been installed at different times, each such area must be sampled. If there is any reason to suspect that materials might be different, even though they appear uniform, they should be sampled separately.

For each sample collection operation, sufficient water shall be applied before and during sample collection to prevent generation of airborne dust as a result of the scraping, chipping, prying, coring, or other methods used to remove the sample.

Samples shall be collected from suspect materials in such a way that potential surface contamination from airborne sources is not included in the sample.

Samples of caulking, grout, etc will typically be collected by hand methods using hammers, chisels, and utility knives to chip or cut material to collect representative samples.

Upon removal of the sample, each shall immediately be placed in a re-sealable plastic sample bag. For bridges, each sample bag shall be labeled with the project ID, structure number (B-XX-XXX); highway name, water body or facility crossed; and sample number as referenced in the inspector’s Asbestos Sampling Log. For buildings, signs, awnings and other structures, the sample bag shall be labeled with the project ID, structure identification, sample location on or in the structure, and sample number as referenced in the Inspector’s Asbestos Sampling log.

45.5.1 Sample analysis
Samples will be submitted to a lab certified to perform asbestos analysis. The samples will be tested using Polarized Light Microscopy (PLM).

When the results of one or more of the samples of a given material are reported to contain greater than 1%
asbestos by PLM, the material will be considered ACM.

Samples that contain 1% or less asbestos, but have some quantity greater than the PLM detection limit will be re-analyzed by point counting to determine if the material is ACM. If a sample is determined to contain more than 1% asbestos by point counting, the other samples of that material do not need to be point counted, and the material will be considered ACM.

45.5.2 Reporting

45.5.2.1 Bridge Inspection Reports
Follow the format outlined below.

- WisDOT project ID:
- Structure Number:
- Route on structure and feature structure is over:
- County
- Date of inspection
- Asbestos Inspector's Name and License number
- Inspection Firm Name (if applicable)
- Asbestos Containing Material (ACM) (IS/IS NOT) present on this structure.
- Location map.
- Results in table format in the following order:
  - Sample #
  - Description (what material was the sample taken from)
  - Sample location (where on the bridge or where in the tender house)
  - Results of Analysis (indicate analytical method for positive results)
  - Category I or Category II Non-Friable or Friable or no ACM present
  - Total amount of material (in square feet, or in linear feet for pipe insulation). If computation is necessary to determine total amount, show computation (e.g. 6” x 6” of grout/bracket = .25 ft² of grout/bracket x 24 brackets = 6 ft² of caulk).
- A disclaimer indicating that WisDOT standard sampling procedures were followed according to FDM 21-35-45. If standard procedures were not followed, describe the sampling procedures used and the reason for varying from the standard.
- A bridge plan indicating sampling locations and any ACM present.
- Photos of structure and sampling locations. Photos of sampling locations should include a 6 inch ruler for scale.
- Laboratory analytical report.

45.5.2.2 Building Inspection Reports

45.5.2.3 Report Distribution
Region: One copy will be kept with the hazardous materials file in the region office.

ESS: One electronic copy (in pdf file format) and one paper copy will be submitted to ESS.

Bureau of Structures: For non-demolition projects one electronic copy will be transmitted to the Bureau of Structures for inclusion in the Highway Structures Information System (HSIS).

Electronic copies shall be locked to prevent accidental changes. See Attachment 45.1 for an example report.

45.6 Environmental Documentation
The results of the asbestos inspection for bridge structures will be included in the Hazardous Materials section of the environmental document.

45.6.1 Standard Language to Include in the Environmental Document Hazmat Section
For bridge only:

An asbestos inspection of structure (B or P-XX-XXX) was conducted on (date) by (inspector’s name and license number).
number). Asbestos-containing material (is/is not) present on this structure.

For bridge with tender house:

An asbestos inspection of structure (B or P-XX-XXX) and its associated tender house was conducted on (date) by (inspector’s name and license number). Asbestos-containing material (is/is not) present on these structures.

For projects with expected acquisition of buildings:

Asbestos inspections of any structures acquired for this project will be conducted prior to demolition or sale and movement of the structure.

45.6.2 Standard Language to Include in the “Environmental Commitments” Section

If a project has multiple bridges, use the appropriate language for each structure.

If asbestos is present on a bridge:

Asbestos-containing material is present on structure(s) (B or P-xx-xxxx). Standard special provision (insert #) shall be included in the plans, and the contractor will be responsible for completion of the Notification of Demolition and/or Renovation (DNR form 4500-113) if required. A copy of the inspection report is available from the region office.

If no asbestos is present on a bridge:

No asbestos-containing material has been found on structure(s) (B or P-xx-xxxx). Standard special provision 107-125 shall be included in the plans. The contractor will be responsible for completion of the Notification of Demolition and/or Renovation (DNR form 4500-113) if required. A copy of the inspection report is available from the region office.

For projects with expected acquisition of building, awnings, or other structures:

Asbestos-inspections of any structure acquired for this project will be conducted prior to demolition, or sale and movement of the structure. Region Real Estate staff will be responsible for completion of this commitment.

45.7 References


LIST OF ATTACHMENTS

Attachment 45.1 Sample Asbestos Analytical Report

FDM 21-35-50 Land filling or Bioremediation of Non-Hazardous Waste December 22, 2011

50.1 Purpose and Scope

This procedure describes the use of the department’s statewide hazardous waste disposal contract for management of specific non-hazardous wastes as follows:

- Bioremediation of petroleum contaminated soil (hereafter referred to as soil);
- Direct land filling of: river sediments; miscellaneous solid wastes; materials that do not require remediation; and other soils/materials that do not meet the hazardous waste category criteria for disposal (hereafter referred to as waste).

This procedure covers soil or waste generated by environmental consultants under direct contract to the department, as well as those generated by consultants under sub-contract to the department’s consultants. This procedure does not apply to soil or waste generated by construction contractors or their subcontractors.

This procedure covers only those materials found to be non-hazardous by laboratory characterization. Materials found to be hazardous as defined by NR 605 must be disposed of in accordance with FDM 21-35-35.

Only materials generated during the course of department-managed investigations of a property are covered by this procedure. Sites for which WisDOT is acting as PECFA agent may follow this procedure. Materials generated during investigation of a private property adjacent to a highway by the private property owner are NOT the responsibility of the department and are not covered by this procedure.
50.2 Applicable Disposal Sites

This procedure applies only to disposal sites that are included in the statewide hazardous waste disposal contract. Contact the hazardous waste disposal contractor for the current list. To use an alternate disposal site, the construction contractor or environmental consultant must contract directly with the alternate disposal facility. They must pay the alternate disposal facility directly and may request reimbursement from the department as outlined in their contract or work order.

Any DNR approved bioremediation facility (http://www.dnr.state.wi.us/org/aw/wm/faclists/WisLic_SWStorProc_byCnty_withWaste.pdf) may be used for bioremediation of petroleum contaminated soil generated by WisDOT.

Any DNR approved licensed landfill (http://dnr.wi.gov/topic/Landfills/) may be used for the disposal of non-hazardous wastes such as those listed above, but requires approval from ESS.

For more information on planning a remediation project that includes waste disposal through the construction contract see FDM 21-35 Attachment 20.1.

50.3 Bioremediation

50.3.1 Process

The bioremediation process consists of the following activities.

1. Contact the hazardous waste contractor to determine which disposal site to use and the appropriate sampling protocol.
2. Conduct excavation and field screening.
3. Perform lab analysis of samples.
4. Stockpile material for suture transport or load and haul directly (choice based on project needs).

50.3.2 Field Screening

The environmental consultant shall screen all soils in the field using one of the following techniques:
- PID (photo ionization detector),
- FID (flame ionization detector),
- Portable Gas Chromatogram, or
- Comparable field instrument.

Soils that have positive readings must be segregated for treatment. Soils that do not exhibit positive meter readings, but have either visual or olfactory evidence of contamination must also be segregated for treatment.

50.3.3 Laboratory Analysis

Soils that exhibit evidence of contamination shall be sampled and submitted to a DNR certified laboratory for analysis following the acceptance limits protocols outlined in Attachment 50.1 for Veolia bioremediation projects and Attachment 50.2 for direct landfill projects. The laboratory report must include the following information:
- Sample type, description, and location
- Type of sample preservation
- Sample integrity upon receipt by the lab
- Temperature of sample when received
- The analytical methods used to analyze the sample
- Sample results
- The laboratory limit of detection,
- Date sampled, received, extracted, and analyzed
- Chain of custody information including site address

50.3.4 Analytical results must be less than one year old.

If laboratory analysis indicates the presence of contamination that would cause the waste to be characterized as hazardous, the waste must be disposed of following the procedure for disposal of hazardous waste (see FDM 21-35-35).

Once the analytical profile has been established and approved, the material can be loaded and hauled to the bioremediation facility.
50.3.5 Stockpile Location and Construction

Stockpiles of segregated soils shall be constructed in accordance with NR 718. The WisDOT project manager, in consultation with the environmental consultant, shall determine stockpile location prior to the start of site activities. The location must comply with the location restrictions in NR 718.05. The project manager will notify the Regional Environmental Coordinator or Hazardous Materials Coordinator/Engineer of the storage location. The environmental coordinator or Hazardous Materials Coordinator/Engineer shall notify ESS and the Regional Maintenance Supervisor. Stockpile location shall be noted on the map included with form DT2219.

Stockpiles must be stored on WisDOT property within the project limits. If this is not possible, the regional environmental coordinator or Hazardous Materials Coordinator/Engineer shall seek permission from the Area DNR SPILLS/R & R (http://dnr.wi.gov/topic/Brownfields>Contact.html) to stockpile soils outside the project limits. These exceptions must be reported to ESS. Storage must take place on WisDOT property. Special exemption to stockpile soils on county property may be granted by ESS with DNR and county approval.

Stockpiled material shall be placed in a secured area that will not obstruct vehicular or pedestrian traffic or vision lines. The environmental consultant shall provide fencing or other security measures when required by the WisDOT project manager.

Stockpiled material shall be bulk sampled and analyzed using the appropriate laboratory protocol. The environmental consultant will contact the Hazardous Waste Disposal Contractor to determine the appropriate number of bulk samples to collect.

50.3.6 Direct Load and Haul

Soils that are to be directly loaded and hauled to the bioremediation facility must have all analytical profiling completed prior to the start of excavation. Soils must be field screened by the environmental consultant. Direct loading and hauling will require close coordination and pre-approval from the Hazardous Waste Disposal Contractor.

50.4 Direct Land filling

The environmental consultant will contact the Hazardous Waste Disposal Contractor with information regarding the character and nature of the waste to be direct land filled.

The Hazardous Waste Disposal Contractor will determine the appropriate analytical protocols and number of samples to be collected.

The environmental consultant will collect the samples and have them analyzed (see “Laboratory Analysis” guidance under “Bioremediation”).

The Project Manager and Environmental Consultant will determine the excavation limits and estimated quantity of material.

50.5 Disposal of Material – Bioremediation and Direct Landfilling

When the analysis is complete the environmental consultant shall submit a completed form DT2219, Bioremediation and Direct Land Filling Project Request to:

DOT - ESS attn: Hazardous Material Specialist
Hill Farms State Transportation Bldg.
P.O. Box 7965, Room 451
Madison, WI 53707-7965
Fax:608-266-7818
e-mail: sharlene.tebeest@dot.wi.gov
Phone: 608-266-1476

And the Hazardous Waste Disposal Contractor: Include laboratory results and a location map FDM 21-35-30, Attachment 30.3

Region contact (The person in the region requesting the work)

Region Environmental/Hazardous Materials Coordinator/Engineer (refer to FDM 21-35-30, Attachment 30.4).

The Hazardous Waste Disposal Contractor will schedule pickup of wastes and notify the following with the schedule:
- Region Contact & Regional Environmental Coordinator or Hazardous Materials Coordinator/Engineer
- Environmental Consultant
- ESS

The Hazardous Waste Disposal Contractor is responsible for transportation and disposal of wastes, unless
otherwise specified in the construction contract. Exceptions must be noted on form DT2219. Costs will be charged back to the project ID.

50.6 Documentation of Material

ESS' file is complete when the following items are obtained:
- Copy of Bioremediation and Direct Land filling Project Request
- Copy of bills of lading or manifests
- Purchase order(s) and invoice(s)
- Certificate of destruction

50.7 Summary Responsibilities

50.7.1 ESS
- Coordinate bioremediation or land filling of material.
- Arrange for payment of hazardous waste contractor.
- Charges will be billed back to the project ID.

50.7.2 Regional Environmental Coordinator (REC)/Hazardous Material Coordinator/ Engineer (HMC/E)
- Administer this procedure in their region.
- Keep a copy of the Bioremediation and Direct Land filling Project Request (DT2219) for each site in their region.
- Notify Regional Maintenance Supervisor of stockpile locations and scheduled removal.
- Notify ESS and Regional Maintenance Supervisor of changes in stockpile locations.

50.7.3 Region Contact
- Locate an appropriate stockpile location.
- Notify REC or HMC/E of location.
- Determine excavation limits, estimate quantities.

50.7.4 Environmental Consultant
- Assist Project Manager in locating appropriate stockpile location, determining excavation limits and estimating quantities.
- Complete forms. Submit forms to Hazardous Waste Disposal Contractor, Regional Contact, REC or HMC/E and ESS.
- Collect samples for laboratory analysis and submit results to a DNR certified analytical lab for profiling.
- Conduct field screening and direct the stockpiling or loading and hauling.
- Follow up on disposal of hazardous wastes following FDM 21-35-35.

50.7.5 Hazardous Waste Disposal Contractor
- Determine disposal facility.
- Determine appropriate analytical protocol.
- Notify regional contact and REC or HMC/E with disposal schedule.
- Bill ESS.

LIST OF ATTACHMENTS

Attachment 50.1 Bioremediation Protocols
Attachment 50.2 Landfilling Protocols