



Hazardous Material Assessment Handbook

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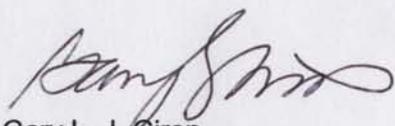
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FOREWORD

The Hazardous Material Assessment Handbook has been prepared by the Environmental Geology Bureau in collaboration with users and consultants for the New Mexico Department of Transportation. The handbook is designed as a procedural guidance tool for the project development process to assess properties for environmental contamination and for HazMat concerns on NMDOT properties.

The handbook will assist the Department of Transportation, Tribal and Local governments, and their contractors in ensuring compliance with applicable State and Federal laws and regulations on the assessment, management, and handling of hazardous wastes. I have approved the directives and procedures in this handbook for the New Mexico Department of Transportation.



Gary L. J. Giron
Cabinet Secretary

03/29/10

Date



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LIST OF ACRONYMS

AAI	All Appropriate Inquiry
ACBM	Asbestos-Containing Building Materials
AD 809	NMDOT Administrative Directive 809
ACGIH	American Conference of Governmental Industrial Hygienists
CCA	Copper Chrome Arsenate
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CID	NM Construction Industries Division
CPM	Construction Project Manager
DSI	Detailed Site Investigation
EGB	Environmental Geology Bureau
EPA	US Environmental Protection Agency
H&S	Health and Safety
HASP	Health and Safety Plan
HazCat	Hazard Categorization
HMTA	Hazardous Materials Transportation Act
IDLH	Immediately Dangerous to Life and Health
ISA	Initial Site Assessment
LBP	Lead Based Paint
LDR	Land Disposal Restrictions
MSDS	Material Safety Data Sheet
MTBE	Methyl Tertiary Butyl Ether
NESHAP	National Emissions Standards for Hazardous Air Pollutants

LIST OF ACRONYMS

NIOSH	National Institute of Occupational Safety and Health
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environment Department
NMED-HWMR	New Mexico Hazardous Waste Management Regulations
NMED-PSTB	New Mexico Petroleum Storage Tank Bureau
NMED-SWR	New Mexico Solid Waste Regulations
OSHA	US Occupational Safety and Health Administration
PDE	Project Development Engineer
PEL	Permissible Exposure Limit
PLM	Polarized Light Microscopy
PPE	Personal Protective Equipment
PSI	Preliminary Site Investigation
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
ROW	Right-of-Way
TCLP	Toxicity Characteristic Leaching Procedure
TLV	Threshold Limit Value
TPH	Total Petroleum Hydrocarbons
USDOT	US Department of Transportation
USGS	US Geological Survey
WQCC	New Mexico Water Quality Control Commission

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1.0 INTRODUCTION

The primary mission of the New Mexico Department of Transportation (NMDOT) is to plan, build, and maintain a quality state-wide transportation network. In fulfilling this mission the NMDOT must also be prepared to effectively manage hazardous material issues that arise in connection with these responsibilities. This Hazardous Material Assessment Handbook, together with the appendices and referenced rules, regulations and standards, provides guidelines for the evaluation, handling and proper disposal of hazardous materials and contaminated environmental media in connection with transportation infrastructure projects. It is intended to serve as a resource for NMDOT staff, environmental and project design consultants, and contractors.

Hazardous material, as used in this handbook, is a generic term for all wastes and contaminated environmental media encountered during NMDOT projects which could be of concern from a health and safety, liability and/or regulatory point of view. The term *hazardous material* includes hazardous wastes as regulated under the federal Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Management Regulations (NMED-HWMR) as well as “unregulated hazardous wastes.” Examples of unregulated hazardous wastes include those containing petroleum hydrocarbons, other organic and inorganic contaminants, asbestos, lead based paint, or other constituents at concentrations which could trigger regulatory requirements for handling, transportation or disposal or could present a health and safety risk to project personnel or the public.

The NMDOT Environmental Geology Bureau (EGB) is responsible for the development, maintenance, and update of this Handbook. Offering expertise in the areas of hazardous material identification and characterization, environmental fate, and health and safety considerations, the EGB seeks to minimize potential health risks and financial liability to the NMDOT associated with hazardous material impacts to NMDOT property and properties considered for acquisition. This group is responsible for assessing and investigating potential contamination and hazardous material on properties of interest to or owned by the NMDOT. The EGB also provides guidance in hazardous material handling and disposal, as needed, for construction phase projects.

Hazardous material issues addressed in the Handbook arise during one of the following circumstances: (1) acquisition of known or potentially contaminated property for right of way (ROW) or structures for NMDOT facilities, (2) management of hazardous materials encountered during construction, (3) management of legacy conditions on NMDOT property, or (4) new spills or releases on ROW. The Handbook deals primarily with guidelines and procedures to assess, plan for, and remediate, if necessary, hazardous material and environmental contamination under the first two circumstances. However, many of the same guidelines also apply to the evaluation and remediation of legacy conditions on NMDOT property or property considered for acquisition. Additional guidance regarding spills or releases on NMDOT ROW is provided under Administrative Directive 809 and 815, copies of which are provided in Appendix A.

The guidelines and procedures outlined in this Handbook are subject to change as federal, state, tribal, and local requirements continue to evolve. The user is cautioned to verify the status of current environmental regulations and standards and to consider technology developments in the area of site characterization and remediation in

developing a plan to address hazardous materials and contaminated environmental media. The NMDOT assumes no liability for use of this Handbook.

The Handbook is arranged in eight sections and three appendices as follows:

- **Section 1** Introduction.
- **Section 2** outlines the strategy and sequence of actions for assessment and characterization of hazardous material and environmental contamination.
- **Section 3** provides guidelines for management of hazardous material encountered during construction.
- **Section 4** establishes the protocol for responding to releases on NMDOT property.
- **Section 5** describes the process for addressing releases in the NMDOT ROW
- **Section 6** summarizes the NMDOT's hazardous material project management structure and required staff qualifications for hazardous material activities.
- **Section 7** reviews applicable health and safety requirements for hazardous material activities.
- **Section 8** is a listing of relevant references.
- **Appendix A** includes Special Provisions and Administrative Directives applicable to specific waste types and hazardous material activities.
- **Appendix B** contains a listing of relevant agency contacts.
- **Appendix C** consists of recommended outlines for Hazardous Material Assessment Reports.

2.0 HAZARDOUS MATERIAL ASSESSMENTS

2.1 Purpose

NMDOT projects that entail property acquisition, excavation of subsurface soils, or dewatering operations must have an assessment performed to determine potential liabilities, health and safety concerns and other consequences related to the presence of hazardous material impacts. Failure to perform an adequate assessment could result in unnecessary risks to construction personnel, project delays, budget overruns, remediation costs, and damage to the NMDOT's credibility.

2.2 Overview and Goals of the Assessment Process

The assessment process described in this section consists of three distinct phases of increasing focus. These three phases include an Initial Site Assessment (ISA), Preliminary Site Investigation (PSI), and Detailed Site Investigation (DSI). The need for each subsequent phase of investigation is based on the results obtained at each step of the process compared to the specific details of the project scope. This assessment sequence is largely consistent with standard industry practice for All Appropriate Inquiry in evaluation of potential environmental liabilities related to real estate transfers. This standard industry practice is commonly referred to as Phase I, II, and III environmental site assessments.

The goals of the NMDOT's ISA/PSI/DSI process are to efficiently assess the presence or absence of environmental contamination and, where present, to provide sufficient information regarding the nature and extent of that contamination to aid the design team in minimizing the construction and liability impacts of that contamination.

2.3 Relationship to the Project Development Process

Hazardous material assessments are one small part of the complex project development process employed by the NMDOT for projects ranging from small roadway drainage improvements to the construction of new transportation corridors. Hazardous material concerns can impact storm sewer placement, excavation activities, dewatering, ROW acquisition, and alignment alternatives. For these reasons, it is critical, and required, that the assessment process be integrated into the project design process.

The ISA/PSI/DSI phases are timed to provide the level of information needed at each corresponding design stage. This relationship is illustrated in the NMDOT's PEL Design Workflow, the latest version of which is available from the Project Production and Scheduling Bureau and summarized in the table below. Engineers can utilize assessment information to evaluate possible design modifications which would reduce liability or health and safety concerns by either addressing the hazardous materials present or minimizing the disturbance of hazardous materials in or around the project site.

Table 1. Relationship between the Design Stages and Assessment Phases.

Design Stage	Assessment Phase	Comments
STIP Planning and Preliminary Project Definition	Pre-Initial Site Assessment (pISA)	The pISA alerts the design team of areas of concern that would present significant obstructions or costs to the project. Included are acquisition limitations, excavation considerations and general hazard information.
Preliminary Design (30 to 60%)	Initial Site Assessment (ISA) and Preliminary Site Investigation (PSI)	<p>The ISA is conducted at the beginning of the design phase after the conceptual design is complete and identifies areas of specific concern that could impact the project and makes recommendations for PSI activities, as appropriate.</p> <p>The PSI focuses on specific areas of potential concern, typically involving field sampling and analysis to confirm the presence and nature of hazardous material contamination within the project area. Findings are used to evaluate alternatives for project design, alignment/footprint, and ROW acquisition</p>
90% Design	Detailed Site Investigation (DSI)	The DSI targets specific environmental liabilities and determines the extent of contamination (within project limits) identified during the PSI. The data from the DSI contributes to the final design.

2.4 Pre-Initial Site Assessment (pISA)

The pISA is used to communicate with the location study team during the environmental class of action determination. Once the termini are defined, the project development engineer notifies the EGB.

The pISA process follows the same research course as an ISA to identify potential areas of concern. Data evaluation is limited to the broad impact these areas may have on project scoping. Reporting is limited to a graphical representation of the locations of the areas of concern and a broad evaluation of their significance. Absent are specific scope-related recommendations. Data collected during the pISA phase is typically expanded upon, updated, and re-evaluated during the ISA.

2.5 Initial Site Assessment (ISA)

The primary goal of the ISA is to determine the potential presence of hazardous material contamination in soils, groundwater, or structures within the existing or proposed ROW resulting from present or former property uses. Contamination may be present due to activities within the project area, or may have migrated into the project area from adjacent or nearby properties. The environmental professional must consider the nature

and scope of the NMDOT project and the degree to which recognized environmental conditions (REC) uncovered by the ISA may impact the project scope. The primary difference between the pISA and ISA is the level of effort in reporting.

The United States Environmental Protection Agency (US EPA) promulgated a rule (40 Code of Federal Regulations [CFR] Part 312) relating to the practice of due diligence in Phase I environmental site assessments (analogous to the NMDOT's ISA) and the innocent landowner defense under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Titled "Standards and Practices for All Appropriate Inquiries" (AAI) the new rule (effective November 1, 2006) establishes federal criteria for conducting environmental assessments. Under this new rule, a public or private entity may purchase property (e.g., acquire ROW) with the knowledge that the property is contaminated without being held potentially liable under CERCLA for the cleanup of the contamination, as long as that party has undertaken "all appropriate inquiries" into prior ownership and use of a property. The applicability of the AAI rule to liability under state regulations (e.g., the Water Quality Control Commission [WQCC] regulations) is untested and uncertain.

Since the early 1990s ASTM International (ASTM) has maintained a standard practice (E1527) for Phase I Environmental Site Assessments. This standard has been updated in conjunction with EPA's final rule setting for AAI. The ASTM E1527-05 Phase I Environmental Site Assessment Standard is consistent and compliant with EPA's final AAI rule. ASTM E1527-05 serves as a reference document for the NMDOT's ISA phase investigations. Not all elements of the standard will apply to each completed ISA; any deviation from the ASTM E1527-05 standard must be approved by NMDOT prior to reporting.

The ISA must include four components:

- records review
- site reconnaissance
- interviews
- report (including recommendations)

Each of these four components is summarized below. Additional detail and guidance for each component of the ISA is provided in ASTM 1527-05 and EGB-approved scope of work for each project.

2.5.1 Records Review

The records review task is initiated at the start of the ISA. Project-specific records available from the NMDOT may include maps and aerial photographs illustrating the project area and the planned improvements, as well as property ownership information. The NMDOT is a source of recent and historical low-altitude aerial photographs covering areas in proximity to state highways. ASTM E1527-05 defines approximate minimum search distances to be utilized for the records review and provides for varying the search radii in most databases.

Commercial environmental database services can be utilized to acquire data from various regulatory agency databases (such as Resource Conservation and Recovery

Act or RCRA generators, CERCLA sites, registered and/or leaking petroleum storage tank sites) and historical information including United States Geological Survey (USGS) topographical maps, fire insurance maps, local street/telephone directories. Inquiries to state and local government officials are required to supplement and clarify information obtained from a commercial service. Suggested contacts include the New Mexico Environment Department (NMED), municipal and county environmental health departments, local utility authorities, and local fire departments.

The commercial database services are not to be assumed complete, best, or most recent representations of available information. Thus the Environmental Professional needs to be aware of the limitations of the information purchased from such vendors. The commercial database services provide only basic information on sites. Information such as extents of soil contamination and environmental infrastructure locations that are important to NMDOT projects are available only through a file review.

At the time of publication of this document, NMED has not provided updates from any bureau to any commercial database company since 2006. This constitutes a data gap if a commercial service is used. That data gap must be presented, discussed and bridged by the Environmental Professional.

Available information on the topographic and hydrologic conditions of the site must be reviewed to evaluate groundwater and surface water conditions and the potential for migration of hazardous materials above or below ground. Sources of information on the physical setting of the site include USGS topographical maps, geologic or hydrogeologic maps and reports, and soil surveys. These resources can be obtained from universities, the New Mexico Bureau of Geology and Mineral Resources, the USGS, USDA, and Office of the State Engineer.

If included in the scope of work, a title search can provide useful information on prior site ownership and uses, and property access and use limitations. This search can be completed by the NMDOT Right of Way Bureau, a title company or researched directly at the local county tax assessor's office.

2.5.2 Site Reconnaissance

A thorough site reconnaissance is critical to determining of the potential presence of hazardous material contamination affecting a project area. The need for access to private property for the reconnaissance is determined by the scope of the proposed project including NMDOT plans, if any, to acquire additional property or ROW. If the proposed project is to take place entirely within the existing ROW, the site reconnaissance can be performed from the public thoroughfare and any accessible areas expected to be occupied by the public. If the proposed project requires consideration of the acquisition of property or additional ROW (a "take"), especially if buildings or structures are present on the property, legal access to the property must be secured prior to entering private property. If the ISA is being conducted by a Consultant, the Consultant is responsible for securing appropriate legal access.

During the site reconnaissance, visual observations are made by qualified persons and documented in written notes and photographs. Audio or video may also be used to collect relevant information but may not be included in the final report because of difficulties in long-term data retention and retrieval. Site maps or sketches of several

scales (property, proximity, and surrounding area) should be prepared during the reconnaissance. Current use(s) of the subject property or properties adjoining the ROW must be noted and described. To the extent that past uses of properties (e.g., evidence of former USTs or dispenser pump islands or signage indicating former use) can be ascertained from observations or through interviews (described in Section 2.4.3), this information will be recorded. Current and former uses of surrounding area properties should also be noted to the extent that they might be the source of hazardous material contamination.

Potential sources of hazardous material contamination identified through the records review will be included in the reconnaissance to observe current site conditions. All suspect properties in the vicinity of the project area should be photographed for the ISA records and report.

Geologic and topographic conditions should be verified during the reconnaissance. Local drainage conditions should be noted to determine the potential for hazardous materials to migrate onto or from the property by surface flow or in the subsurface.

The presence of hazardous materials (including petroleum products), labeled or unlabeled containers or drums shall be documented both in writing and in photographs. Types of products, quantities and capacities, if discernable, should be recorded. Similarly, the presence of odors, pools of liquid, pits, ponds or lagoons, staining, corrosion, stressed vegetation, trash or debris should be recorded.

Above ground utilities, and any evidence of below ground utilities, should be noted on the site plans or sketches. Electrical transformers or other equipment present at the site should be documented. If visually observed or identified through interview, on-site potable water supply wells, irrigation wells, and other wells should be noted. Similarly, available information on the location and construction of on-site septic systems, cesspools or other liquid waste disposal systems, if present should be recorded.

If one or more structures are present on property considered for acquisition, they must be described in detail. The primary function (e.g., residence, garage, warehouse, convenience store), approximate dimensions, number of stories, construction materials and roof type should be recorded. The approximate or known age and general condition of the structure should be documented. Assuming legal access has been obtained in advance, a reconnaissance should be conducted inside the building. Relevant observations of the building interior include the potential presence of hazardous materials, petroleum products, asbestos-containing building materials (ACBM), lead-based paint (LBP), the means of heating or cooling (e.g., natural gas, heating oil, electric), and the presence of floor drains or sumps.

2.5.3 Interviews

Important information for the ISA is often obtained through the interview of present and past owners, operators, neighbors, and occupants of the property, and state and local government officials. The first interviews are conducted to verify and clarify the results of the records review and typically include NMED and municipal and county environmental health departments. Interviews for the owners, occupants or manager of Right of Way can include EGB staff, local patrol supervisors or maintenance engineers. Contact with federal environmental agencies may also be warranted. Local fire

departments can often provide data regarding past spills, releases, and emergency response within a project area. These interviews can be conducted in person or via telephone, as appropriate.

Interviews with past and present property owners, operators or occupants are conducted before, during or after the site reconnaissance as appropriate. To the extent possible, these interviews should be arranged in advance so as to confirm the availability of key site personnel (present and past). At this time, arrangements should be made to obtain copies of relevant site documents during the site reconnaissance (such as environmental permits, prior site assessment or investigation reports, tank registrations, spill plans, material safety data sheets or MSDS) if these documents are reasonably available. Owners, operators and occupants should be interviewed in accordance with ASTM Standard E1527-05 to determine current and past site uses, hazardous material handling, storage, and use practices, and any knowledge of spills, releases or other hazardous material contamination. Documentation of each interview must include the name and affiliation of both the interviewer and the interviewee, and the date and time of the interview.

2.5.4 Report

The results of the ISA records review, site reconnaissance and interviews are compiled and summarized in the ISA report. A recommended outline for the ISA report is presented in Appendix C. Deviation from this outline is discouraged, but permissible without prior approval from the EGB as long as all required report elements are present. All findings, opinions, conclusions, and recommendations presented in the report shall be supported by documentation. The environmental professional responsible for preparation of the report shall be identified and shall sign the final version of the report.

The ISA report will present the scope, findings, opinions, conclusions and recommendations related to the need for additional investigation. The ISA report shall define the scope of the assessment, as established at the beginning of the project. Any deviation from the ASTM E1527-05 standard or from the original ISA scope must be itemized. The findings are factual information about site uses, conditions, and observations that relate to potential hazardous material contamination in the project area. Opinions regarding potential impacts to NMDOT projects due to the environmental conditions identified must be clearly stated as such, with the rationale and supporting evidence described or referenced. The conclusions and recommendations section summarizes the potential for hazardous material contamination and identifies additional investigation necessary, if any. Additional investigation recommendations should focus on the site data necessary to support the NMDOT's decision-making process as the design progresses, to provide information needed to plan for the safety of site workers, and to budget and plan for the proper handling and disposal of hazardous material contamination, if any, during project construction.

The quality and accuracy of the ISA report and supporting documentation is important to clearly communicate known and suspected hazardous material contamination conditions at the site. Users of the report, including the EGB, project design staff, and/or subsequent site investigators must be able to plainly understand the information collected and reported and its impact on subsequent project work. Technical and quality control review of the ISA report is mandatory. All measurements and calculations will be

verified, and scaled site plans reviewed for clarity of presentation. The sources of all information and supporting documentation shall be provided.

2.6 Preliminary Site Investigation (PSI)

The primary goal of conducting a PSI is to further evaluate the impact the RECs identified in the ISA process may have had on the project corridor. This evaluation is designed to provide sufficient information regarding the nature and extent of contamination to assist the NMDOT in making informed decisions about ROW acquisition and/or the scope and design of the proposed project. In most cases, the confirmation of the presence or absence of contamination and preliminary data regarding the extent and magnitude of contamination in comparison with anticipated project activities is sufficient to support the NMDOT decision-making process.

The PSI typically involves intrusive investigation methods, field screening, sampling and laboratory analysis of environmental samples. For this reason, a site-specific Health and Safety Plan (HASP) must be prepared prior to conducting any field investigations. Consultant and NMDOT staff participating in the PSI field investigations must be appropriately trained and enrolled in a medical monitoring program, if appropriate. Additional information regarding health and safety requirements is provided in Section 7.0.

There are numerous guidance documents available regarding the conduct of site investigations for the characterization of environmental contamination. The ASTM standard guide for Phase II Environmental Assessments (E 1903 – 97, reapproved 2002) provides information which is relevant to the performance of PSIs. Regulatory agencies, including the EPA and the NMED, have issued numerous guidance documents describing methods for the collection and analysis of environmental data. Standard methods must be used for laboratory analysis of soils. The most common reference for these analytical methods is EPA's *Test Methods for Evaluating Solid Waste (SW-846)* which is updated on a regular basis.

The PSI consists of the following four components:

- Developing the scope of work
- Assessment activities
- Evaluation of the data
- Report of findings, conclusions, and recommendations

Each of these components is described in more detail in the following subsections.

2.6.1 PSI Scoping

The environmental conditions identified during the ISA as well as the nature of the proposed NMDOT project will direct the scope of the PSI. Data from the ISA and comparison with the project scope determines the number of RECs requiring additional investigation and will help to identify appropriate investigation techniques. The footprint and construction elements of the proposed NMDOT project will dictate the extent and depth of intrusive investigations. For example, a simple curb and gutter replacement

project may require only a shallow subsurface investigation in the ROW area to be disturbed during construction. Conversely, a road widening project with utility relocations may necessitate more extensive subsurface characterization to the predicted depth of utility excavations and evaluation of the potential impacts of RECs on soils, groundwater and/or structures on private property adjacent to the existing ROW. If the purpose of the PSI is to assist NMDOT decision makers in the planning of property acquisition, the investigation should evaluate all potential RECs on the affected properties.

Data from the ISA are used in the preliminary identification of contaminants of concern and environmental media to be evaluated during the PSI. Potential contaminants of concern can be identified based on regulatory records of hazardous material releases within the study area, interview results regarding possible environmental impacts, or information regarding former property uses. Retail gasoline vendors and automobile repair shops (service stations) are commonly identified RECs for NMDOT projects. Potential contaminants of concern at service station sites include petroleum hydrocarbons (e.g., gasoline, diesel, hydraulic and motor oils), gasoline additives (including MTBE), solvents, and metals (primarily lead). Media to be evaluated may include surface and subsurface soils, shallow groundwater (if present), and/or suspect waste materials. Agricultural properties may require sampling of the same media for pesticides, herbicides, and petroleum products. Buildings constructed prior to 1978 which may be acquired or demolished as part of the project should be evaluated for the presence of LBP and ACBM in structural or finish materials. In each case, the environmental professional responsible for PSI scoping must use professional judgment to determine the appropriate contaminants of concern and media to be evaluated for each REC.

The scope, methods and protocols of the PSI must be documented in a detailed work plan. It is advisable that the environmental professional responsible for the PSI scoping and work plan development also visit the site as part of this process. During the site visit, potential sampling locations and physical limitations (e.g., steep slopes, overhead utilities, pavement characteristics, and traffic patterns) can be assessed. The work plan must outline the planned sampling and rationale, sample collection methods, field screening methods, analytes and laboratory methods, and quality assurance/quality control methods. The work plan must be approved by the EGB prior to initiating the PSI.

2.6.2 Assessment Activities

The PSI field assessment activities will be carried out in accordance with the approved work plan. Any deviation from the work plan must be documented, and significant changes must be approved by the EGB. Standard operating procedures should be used to the maximum extent possible to achieve consistency of results and reproducibility. All environmental sampling must adhere to applicable sample preservation and handling procedures and chain of custody protocol.

Legal access is required for all work outside of the existing ROW. If a consultant is responsible for the performance of the PSI, the consultant is responsible for securing legal access. An access agreement for work on private property must be signed by the property owner or duly appointed representative and must describe the investigation activities to be conducted and the time period and conditions of access. If the property

is occupied by someone other than the owner, that person should be given advance notice of the planned field activities. A template is available from the EGB website.

If intrusive investigation activities are planned, buried utilities must be located immediately prior to the PSI field investigation. It is the responsibility of the Consultant performing the PSI to identify, locate and avoid damage to utilities during intrusive investigations. Most of New Mexico is covered by New Mexico One-Call System Inc. utility locating service. Some regions of the state have local utility locate services (e.g., Las Cruces – Dona Ana Utility Council or “Blue Stake”). While many operators of underground facilities are members of these state-wide or local utility locate services, New Mexico law requires only pipeline operators to participate in the one-call system. Therefore, not all utilities may be identified by these services. It is the consultant’s responsibility to ensure all utilities are located by contacting the appropriate parties (e.g., local electrical, water, sewer, phone providers). Shallow starter borings are recommended. These borings are advanced using hand tools whenever practical in order to confirm that utilities are not present at drilling sites. When drilling occurs on private property, the services of a utility location contractor may be advisable to identify service connections to the utilities that cross the investigation area.

The PSI may include the use of field screening methods and the collection of environmental samples for the characterization of contamination or the verification of field screening results. There are several considerations in the selection of field screening and sample collection methods. Investigation methods should be selected to provide samples of high integrity in a cost-effective manner while minimizing disturbance to the site, structures and utilities, personnel exposure, cross-contamination, and the generation of investigation-derived wastes. For example, when evaluating subsurface soil or shallow groundwater conditions, a direct-push sampling method will result in a smaller diameter boring than hollow stem auger or other traditional drilling methods and will result in the generation of little or no contaminated soil cuttings for disposal. However, direct push can only be used if geologic conditions permit. Field screening for volatile organic hydrocarbons using the NMED Guidelines heated headspace method allows for the pre-selection of samples for fewer expensive laboratory analysis. Similarly, when analyzing building materials for LBP the use of X-ray fluorescence equipment allows for the cost-effective collection of a large number of data points on different surfaces without the impacts of destructive sampling. It is the responsibility of the environmental professional planning the PSI to identify candidate methods and recommend the most appropriate approach to collection of the required samples and site information. Similarly, it is the responsibility of the Environmental Professional to arrange for appropriate disposal of any wastes derived from the investigation.

Site characteristics which may be relevant to the proposed project should be noted and documented during the PSI field investigation. A site map should be prepared, using a recent aerial photograph base, illustrating the site features including structures, utilities as observed and marked, underground tanks, oil/water separators, aboveground storage areas, sampling locations, staining or other evidence of hazardous material releases, and sampling locations. Water supply wells, monitoring wells, and on-site liquid waste disposal systems (septic systems) should be included on the site plan. If this information is not readily discernable, interviews with owners, occupants, and neighbors may provide relevant information.

2.6.3 Evaluation of the Data

On completion of the PSI field investigation and receipt of the laboratory analytical report, the results and findings will be compiled and evaluated for evidence of environmental contamination, and if present, compared with applicable standards. The significance of the findings must be assessed to make appropriate recommendations regarding the proposed NMDOT project or property acquisition and/or the need for additional investigation of RECs.

The analytical data report should be reviewed for its conformance to quality control standards as outlined in the work plan. Data of acceptable quality are tabulated and analyzed to determine the presence or absence of environmental contaminants. Standards for comparison include the WQCC groundwater standards and soil screening levels established by the NMED Guidance and by the New Mexico Hazardous Waste Bureau. Certain potential contaminants, most commonly metals, may occur naturally in site soils or water samples. In such cases, the concentrations detected in site samples can be compared to published regional background levels. Alternatively, if a large number of comparable samples were collected during the PSI a statistical analysis can be performed to identify sample concentrations that vary significantly from the norm.

Based on the analysis of the field and laboratory data areas of concern can be defined. Some RECs identified in the ISA may be eliminated as areas of concern if no evidence of contamination was revealed and the environmental professional writing the report believes that the data are sufficient to determine that there is no reasonable basis to assume that there has been a release of hazardous materials. In areas where evidence of contamination was observed the nature, location(s) and depth(s) of environmental impacts should be assessed to determine if the proposed construction will be impacted. Where data available are insufficient to make this determination, additional investigation may be warranted and a DSI should be recommended.

2.6.4 Report

The PSI report summarizes the results of the field investigations, evaluation of the data and presents conclusions and recommendations. A recommended outline for the PSI report is presented in Appendix C. Deviation from this outline is permissible without prior approval from the EGB as long as all required report elements are present. All findings, opinions, conclusions, and recommendations presented in the report shall be supported by documentation. The environmental professional responsible for preparation of the report shall be identified and shall sign the final version of the report.

The PSI report must outline the scope of the investigation, clearly and accurately present the data collected and findings, provide well documented conclusions and recommendations. The scope of the investigation shall be summarized with reference to the original work plan. Methods used in the investigation should be described. Any deviation from the original plan must be documented along with the rationale or conditions leading to the change. Data collected must be presented in a clear and concise fashion with tables and figures as appropriate. Voluminous reference material (e.g., laboratory analytical reports, field notes) should be included as appendices. The findings must identify areas of concern based on the data collected during the PSI. RECs identified in the ISA shall be addressed individually with evidence for environmental contamination presented for each. Limitations of the data must be stated

along with their impact on the conclusions and recommendations. Opinions must be clearly stated as such, with the rationale and supporting evidence described or referenced. Recommendations should be included regarding planning for the safety of site workers, budgeting and planning for the proper handling and disposal of hazardous material contamination which may be encountered during project construction, and other construction considerations. Additional investigation recommendations (via a DSI) should focus on collection of remaining site data necessary to support the NMDOT's decision-making process for project design or property acquisition. Technical and quality control reviews are required before submittal to the EGB.

2.7 Detailed Site Investigation (DSI)

The DSI is a more focused phase of site assessment in terms of the contaminants of concern, media being evaluated or the physical extent of the area under investigation. Situations that may necessitate performance of a DSI include the following:

- Data from the PSI document the presence of contamination associated with a REC but do not provide sufficient information on the extent or its impacts upon the project.
- The scope or footprint of the proposed NMDOT project has changed incorporating areas not assessed under the PSI.
- An unanticipated REC or contaminant of concern was identified during the PSI field investigations and the means to assess this additional concern were not available in the field.
- Additional information is needed regarding a specific REC for the planning of a safe and efficient project. (For instance, the extent of ACBM or LBP in a structure or the limits of an impacted soil plume in an area planned for excavation)

The procedures and requirements for performing a DSI are the much the same as those presented above for the PSI including scoping and the development of a work plan, assessment activities, data evaluation/interpretation, and reporting. Any variation from these procedures and requirements must be documented in an approved DSI work plan.

2.8 Building Lead Based Paint (LBP), Asbestos Containing Building Material (ACBM) and Mold Surveys

Building Surveys to identify quantities of Lead Based Paint (LBP) and Asbestos Containing Building Material (ACBM) are employed to ensure proper handling of wastes from structures demolished as part of a project or acquisition. Typical structures that may be demolished are bridges, storage structures, residences, and commercial buildings.

Mold Surveys are designed to identify areas of endemic mold growth in structures that are being considered for occupation by NMDOT staff. The survey will identify specific varieties of mold that are known to cause adverse health affects in humans. These

surveys are also useful in identifying maintenance problems associated with leaking piping or roofs in structures being considered for acquisition.

2.8.1 Survey Scoping

Suspect LBP and ACBM may be identified during the ISA. To ensure proper handling of building derived wastes, all significant painted surfaces and possible ACBM are to be sampled and/or analyzed. Mold surveys are recommended for all structures being considered for acquisition by NMDOT for staff occupancy.

2.8.2 Survey Activities

While non-destructive methods for identification of LBP are preferred, physical samples may be part of the survey activities in un-occupied structures. Areas and linear feet of suspect materials or coatings shall be recorded and presented in schematics of structures. In mold and ACBM sampling, destructive testing is required and should be taken from suspect areas.

2.8.3 Evaluation of Survey Data

Results of testing are to be presented and recommendations made for appropriate handling of LBP and ACBM as part of the total waste stream from the structure. Similarly, results of mold sampling are intended to delineate areas of concern and recommend abatement methods.

2.8.4 Survey Reporting

Reports should include figures and/or photographs of structures covered by the survey. The figures shall identify sampled materials and locations. An estimated quantity of each material shall be presented along with recommendations for appropriate handling if necessary. Three cost estimates for abatement, when recommended, are preferred. However, EGB does recognize that three bids may not be available based on building locale.

3.0 MANAGING HAZARDOUS MATERIAL DURING CONSTRUCTION

Successful completion of the Hazardous Material Assessment process will provide sufficient information on the nature and extent of hazardous materials present in the project area to support completion of project design and planning for construction. While it is preferable to minimize contact with contaminated soil or groundwater by adjusting the project alignment or modifying construction techniques, it is not always possible to avoid having to handle hazardous materials. Furthermore, even when the Hazardous Material Assessment process is planned and executed properly, certain conditions (e.g., complex geology, difficult-to-detect contaminants, and physical limitations imposed by the location of utilities and other man-made objects) can lead to the failure to detect contamination within the project area. Whether planned or unexpected, proper management of hazardous materials encountered during construction is necessary to minimize the potential for exposure to project personnel and the public, avoid the further spreading of environmental contamination, and lessen liability for the contractor and the NMDOT.

This section provides general guidance on the practices and procedures to be employed when hazardous materials are encountered during construction, and for the proper characterization, handling, disposal, and documentation of these materials. It is intended for use by NMDOT Construction Project Managers (CPM), NMDOT maintenance personnel, contractors, design consultants, and others involved in the process of managing hazardous materials during project construction activities.

3.1 Bidding and Contracting Considerations

The CPM is responsible for the safe and efficient completion of project construction activities, including properly addressing hazardous material issues. When hazardous materials impacts have been identified and will be encountered during construction, these conditions should be noted in the construction bid and contract documents. Prospective contractors must be provided with adequate information regarding hazardous materials conditions to prepare a responsive bid that considers these facets. Information that may be added to the contract documents includes the following:

- Nature and extent of hazardous material impacts, as documented in the ISA/PSI/DSI
- Any special construction practices to be implemented to minimize disturbance of contaminated materials
- NMDOT Special Provision No. 203-A (Appendix A) or other NMDOT guidance or requirements for management of hazardous materials
- Identification of minimum staff qualifications for hazardous materials operations

The contractor shall employ the information from the Assessment process to plan and budget for qualified staff or subcontractors to manage the health and safety aspects of hazardous material operations and for the proper identification, characterization, handling, transportation and disposal of these materials.

3.2 Discovery/Notifications

By the time a project reaches the stage of bidding, the Hazardous Material Assessment Process should be complete and most, if not all, of the hazardous conditions should be known. However, discovery of previously unknown hazardous material contamination during the construction phase, while unusual, may happen. When previously unknown environmental contamination is discovered during construction, the first priority is the safety of the construction personnel and the public. It is unlikely that an unprepared construction crew will have the appropriate training, qualifications, materials and equipment to address an unexpected hazardous material situation. Evidence of environmental contamination encountered during excavation could include direct observations of buried wastes, drums or tanks, stained soils, suspicious odors, or physiologic effects of exposure (e.g., dizziness, headache, a burning sensation in the eyes, throat or on skin). Work in the affected area and downwind of this area should be immediately suspended until the presence and nature of the potential contamination can be confirmed.

In the event of an injury, exposure-related medical condition, fire, continuing release of hazardous materials, or other emergency condition, immediately contact the State Police and local emergency response personnel (dial "911"). After contacting emergency responders, or in the event of a non-emergency condition, the CPM shall immediately be notified of any unknown or hazardous material discovery. The CPM should have established contacts with the contractor, State Police, EGB, and regulatory agencies as appropriate. This allows the timely development of a plan of action to establish control of emergency situations, address any hazardous working conditions and for the management of any contaminated materials which must be removed from the site to allow construction to resume. A list of relevant agency notifications and contacts is included in Appendix B of this plan.

3.3 Waste Characterization

Hazardous material must be adequately characterized to ensure proper handling, transportation and disposal. Examples of materials which may be encountered during NMDOT construction projects include contaminated soil and groundwater, building materials, pipe or insulation containing asbestos, building or structural materials finished with lead-based paint. Such materials may be categorized as solid waste, special waste, RCRA hazardous waste, asbestos waste or other waste classification and the disposal of each is subject to specific state or federal regulatory requirements. In many cases, the location or nature of the hazardous material discovery (e.g., proximity to a retail gasoline station or electrical equipment, type of container or legible labels) provides useful information regarding the contaminants likely to be present. In other cases (e.g., abandoned materials, uncontainerized buried wastes) there may be little or no information on the source or nature of the wastes. The CPM and construction contractor should consult with the EGB and relevant regulatory agencies (Appendix B) to determine the appropriate waste characterization procedures.

Comprehensive instructions for waste characterization are beyond the scope of this document. The following paragraphs provide a description of several waste types most commonly encountered during NMDOT project activities and general information about characterization requirements.

Petroleum Contaminated Soils – Most petroleum contaminated soils are characterized as “special waste” under the New Mexico Solid Waste Regulations (NMED-SWR). Characterization requirements for petroleum contaminated soils include ignitability tests and analysis of lead by the Toxicity Characteristic Leaching Procedure (TCLP) Method 1311, SW-846 (EPA) to verify acceptability as a special waste. Soils failing the ignitability or TCLP lead tests may be classified as RCRA hazardous waste. Most special waste facilities in New Mexico permitted to receive petroleum contaminated soils also require an analysis of Total Petroleum Hydrocarbons (TPH) in the gasoline, diesel and heavier oil ranges. Petroleum contaminated soils containing free liquids are not acceptable for disposal as special waste. If field observations or information about the source of contaminated soils suggest other contaminants may be present, additional analyses may be required to verify the absence of other “listed” RCRA hazardous wastes and or other RCRA hazardous waste “characteristics.” Additional information regarding the handling of petroleum contaminated soils is provided in NMDOT Special Provision 203-A included in Appendix A.

Asbestos Waste – Asbestos waste is also classified as a special waste by the NMED-SWR. Asbestos waste includes all friable asbestos-containing material with more than one percent asbestos, or non-friable materials that may become friable due to cutting, pulverizing or other means. Examples include asbestos asphalt roofing materials, asbestos floor coverings, insulation materials, and asbestos-cement (transite) panels or conduit. Asbestos waste is verified by analysis using polarized light microscopy (PLM) methods. Additional information regarding the handling of asbestos waste is provided in NMDOT Special Provision 601-A included in Appendix A and section 601 in the 2007 NMDOT standard specifications.

Lead Based Paint – LBP suspected in commercial and industrial buildings or other structures must be tested prior to disposal unless other reliable evidence exists confirming the presence of lead. If sampled, a representative sample must be taken to test the waste by TCLP methods for lead-associated hazardous characteristics. If the extract from the sample of waste contains lead at a concentration greater than 5.0 milligrams/liter, the waste is considered a RCRA hazardous waste. One of the most important yet most complex steps in conducting any hazardous waste determination is ensuring that the sample to be tested is representative of the waste. Guidance on sampling LBP-containing debris can be found in ASTM Standard E 1908-97. Steel structural items treated with LBP that are being recycled need not be tested for lead; however, the recycling facility should be notified of the known or suspected presence of LBP. Under federal law, residential LBP abatement waste does not require characterization for disposal purposes and can be disposed of in a construction and demolition (C&D) landfill without further characterization. Additional information regarding the handling of LBP on steel structures can be found in the 2007 edition of the NMDOT standard specifications (541.3.7.6 and 547.3). Structures include residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.

Treated Timbers – Wood treated with copper chrome arsenate (CCA), creosote, pentachlorophenol or other fungicide or insecticide presents another special case regarding waste characterization, handling and disposal. These wastes may require laboratory analysis for characterization (e.g., RCRA TCLP analysis) prior to disposal to determine the presence of leachable metals, primarily arsenic and copper. In most cases, functional reuse of these materials is preferable to disposal.

Unknown Wastes – In the event that the potential hazardous components of a waste material are unknown, it may be necessary to utilize an emergency response contractor to conduct hazard categorization (HazCat) testing in the field. Screening tests may include: color, phase, ignitability, density, specific gravity, pH, water reactivity, solubility, percent solids, oxidation potential, halogenated compounds, and/or regulated RCRA-8 heavy metals (Ag, As, Ba, Cd, Cr, Hg, Pb, Se). If screening shows the need for further evaluation, samples should be collected and sent to a laboratory for analysis. Testing should focus on collecting sufficient information to determine if the waste material is a “regulated waste” (RCRA hazardous waste) or unregulated, and how that waste should be handled, transported and disposed.

3.4 Waste Excavation/Segregation/Transportation/Disposal

Handling of hazardous materials during construction requires special measures and attention by the NMDOT, construction team, and contractors. Once contaminated soils or water are removed from the ground, they cannot be returned. Construction contracts and project plans must include provisions for the proper segregation, transportation and disposal of any hazardous material known to be present. Excavation, transportation and disposal of hazardous material must be conducted under the direction of an environmental professional with appropriate experience and training. Section 6 outlines the education and experience requirements for personnel who are managing or performing hazardous material activities. A site-specific HASP must be prepared for work involving hazardous materials. Additional information on the requirements for HASPs is provided in Section 7.

3.4.1 Agency Notifications

Excavation of hazardous materials requires that the NMED and EPA regulatory requirements are adhered to. If a petroleum storage tank (above- or underground) is to be removed or closed in place, the NMED-PSTB must be contacted so that an inspector can be present during the removal operation.

Contact NMED Liquid Waste Program before completing the abandonment or removal of a septic system to arrange for an inspection and verify closure requirements.

Asbestos abatement or demolition (above certain thresholds) will require a 10-day National Emissions Standards for Hazardous Air Pollutants (NESHAP) notice to the NMED Air Quality Bureau, or for projects within Bernalillo County, the Albuquerque-Bernalillo County Air Quality Control Board.

Contact numbers for these and other relevant agencies are provided in Appendix B. The contractor is responsible for ensuring that all regulatory reporting requirements, including advance notification of activities, are adhered to. EGB can provide guidance on specific notifications required.

3.4.2 Waste Segregation and Control

The establishment of procedures for waste segregation is important to avoid mixing of incompatible wastes and to minimize waste volumes to be transported and disposed. Hazardous material site control is necessary to minimize the potential for exposure or

injury to the public or spreading of hazardous material contamination. Field screening methods are typically used to segregate wastes from uncontaminated materials in the field.

All hazardous materials should be containerized, placed on and covered by plastic sheeting, or otherwise staged in a manner that protects underlying soils and prevents dispersal by wind or stormwater. Special Provision 203-A (Appendix A) provides some specific guidance on the handling of petroleum contaminated soils including field screening and segregation.

Site control could include fencing or other barriers to prevent access by the public and signage to warn of the possibility of hazardous material exposure. Site controls should remain in place until all hazardous materials have been removed from the site or until excavations which expose hazardous materials have been backfilled and closed.

3.4.3 Hazardous Material Transportation and Disposal

Transportation of hazardous materials is often strictly controlled under the requirements of RCRA as enforced by the EPA and the NMED, and by the Hazardous Materials Transportation Act (HMTA) enforced by the US Department of Transportation (USDOT) (40 CFR 263, 49 CFR 171-180). Waste that meets the definition of RCRA hazardous waste and asbestos wastes can only be transported by a licensed hazardous waste transporter, must be properly labeled or placarded, and must be accompanied by a uniform hazardous waste manifest. It is the responsibility of the “shipper” (in this case, the construction contractor) to properly identify the waste and determine the proper treatment, storage, or disposal facility to receive the wastes. In addition, the shipper must:

- Ensure the transporter and disposal facility have the proper permits and ID numbers
- Prepare and certify the shipping papers
- Select the proper shipping containers
- Mark and label containers
- Provide placards, and
- Verify receipt of the wastes at the disposal facility

Petroleum contaminated soils determined not to exhibit hazardous waste characteristics (e.g., ignitability) are regulated as a special waste under the NMED-SWR and are not subject to the hazardous waste transportation requirements. Transportation of petroleum contaminated soils does not require an EPA ID number but the NMED-SWR does require that special wastes be transported under a manifest. The shipper must ensure that the waste disposal facility is licensed to accept special wastes and must verify receipt of the wastes at the facility.

3.5 Hazardous Material Documentation

Detailed records and documentation must be maintained for all hazardous material activities. Much of this documentation is required by applicable hazardous material regulations and must be maintained on file or submitted to the appropriate agencies. Other benefits of thorough documentation include management of risk for the Contractor

or the NMDOT, verification that environmental regulations were adhered to, and planning for subsequent stages of construction. Additionally, adequate documentation is compulsory for invoicing and payment for hazardous material operations including excavation, handling, transportation and disposal.

During the field phase of hazardous material operations, complete field notes must be maintained recording site conditions, weather conditions, personnel present and nature of the activities performed. Wastes encountered must be described including information regarding quantities, location, depth, and any field screening or laboratory analytical data. When health and safety screening is performed, these data must be recorded. Any deviations from the hazardous material operations plan, special provisions, or other governing documents must be noted. Hazardous material activities should be photographed and each photograph should be logged in the field notes. All field notes should be signed and dated by the author.

Waste characterization methods and results must be well documented. In the case of potential RCRA hazardous wastes, it is required that waste determination records be maintained by the shipper or generator for 3 years. Waste characterization data (profile) will also be required by the disposal facility to determine waste acceptance.

Most waste shipments must be accompanied by a manifest. The shipper or generator must maintain a copy of each manifest for each shipment. Additional documentation is required for shipment of some wastes such as those subject to Land Disposal Restrictions (LDRs). The LDRs, are enforced under the RCRA program and are intended to ensure that certain toxic constituents present in hazardous waste are properly treated before the waste is land disposed. Waste types regulated by the LDRs include solvent and dioxin-containing wastes, PCBs, metals, and others. Contact the appropriate regulatory agency to verify the shipping documentation necessary for each waste type (Appendix B).

On receipt of hazardous waste by the designated treatment or disposal facility, the facility operator will complete the manifest and return a copy to the shipper/generator. It is the shipper's responsibility to verify receipt of this confirmation of receipt within 35 days of waste shipment. If the manifest copy is not returned within 35 days, the shipper/generator must initiate investigation into the waste shipment. After 45 days, the shipper/generator must file an exception report with the EPA in accordance with the reporting requirements of 40 CFR 262.41—262.43.

All documentation and records generated during hazardous material activities must be provided to the CPM and to the EGB. Waste determination, waste profiles, and related analytical data reports must be provided to the CPM prior to any waste shipment. Copies of manifests and other waste shipment documentation must be provided within 72 hours of waste shipment. All field records including waste screening results, health and safety screening results, field notes, photographs and other relevant documentation shall be provided at the conclusion of field activities. Some hazardous material removal activities may also require agency notification of completion.

4.0 HAZARDOUS MATERIAL RELEASES ON NMDOT PROPERTY OUTSIDE OF ROW

NMDOT operations occupy the headquarters facility in Santa Fe, six District Office complexes, Mobile Project Offices, and numerous Maintenance and Patrol Yards statewide. NMDOT personnel at these locations store and handle hazardous materials and wastes in a manner to minimize the potential for releases to the environment. However, releases can occur due to vehicle accident, equipment failure, natural disasters, vandalism, or human error. Also, environmental contamination may be discovered at NMDOT properties due to past practices or releases by the NMDOT or by prior land owners. This section describes the general procedures for response to hazardous material releases, past and present, on NMDOT property. Hazardous material releases on NMDOT ROW are discussed in Section 5.

4.1 Historical Releases

Discovery of evidence of historical or past releases of hazardous material on NMDOT property will require internal and external notifications. The foreman or manager of the NMDOT Patrol Yard, District Service Center or other impacted NMDOT property must promptly notify the Area Maintenance Supervisor (AMS) or District's Risk Management office. The AMS or Risk Management may call on the EGB to provide technical assistance. In the event of a discovery that represents an immediate threat to the health of NMDOT staff or the public, emergency notification should follow the procedures outlined in Section 4.2.

Following discovery of a historical release, the EGB will initiate discussion with the NMED regarding the appropriate assessment and corrective action, depending on the source and nature of the release. These assessment and response activities may be performed under the requirements of the Petroleum Storage Tank Regulations, WQCC Regulations, or other relevant state or federal regulations. The EGB will coordinate all assessment and response activities with the respective District Engineer. Many of the same criteria for hazardous material assessments described in Section 2 and for waste characterization, segregation, transportation, disposal and documentation outlined in Section 3 will apply to assessment and corrective actions completed by the EGB or their contractors.

4.2 Current (or new) Releases

The following paragraphs provide general description of emergency and non-emergency responses to current (or new) releases on NMDOT property.

**Emergency Situations -
Dial 911 or your local emergency dispatch if there is any
potential for human exposure or injury from a release**

If it is safe to do so, stop the release and secure the area, then notify the AMS or District Risk Management office. The AMS or Risk Management may call on the EGB to provide technical assistance.

The NMDOT is responsible for following its internal written safety directives (AD 800 series – Safety/Loss Control) and notifying the appropriate federal, state and local authorities of an accident or unauthorized discharge.

If the emergency situation requires it, and once the Department of Public Safety emergency response team arrives, it will make the determination of whether to implement the State Hazardous Materials Emergency Response Plan based on the severity of the release and the risks posed (HMER, undated). If implemented, the State or local Department of Public Safety will have primary responsibility for the management of the discharge. The NMDOT will maintain its responsibility to provide technical support to federal, state, and local emergency response personnel and shall institute and complete all actions necessary to remedy the effects of the discharge.

Non-Emergency Situations - Current releases that do not warrant an emergency response from the Department of Public Safety are nonetheless subject to adherence to the NMDOT's written safety directives and for notifying the appropriate federal, state and local authorities of the accident or unauthorized discharge.

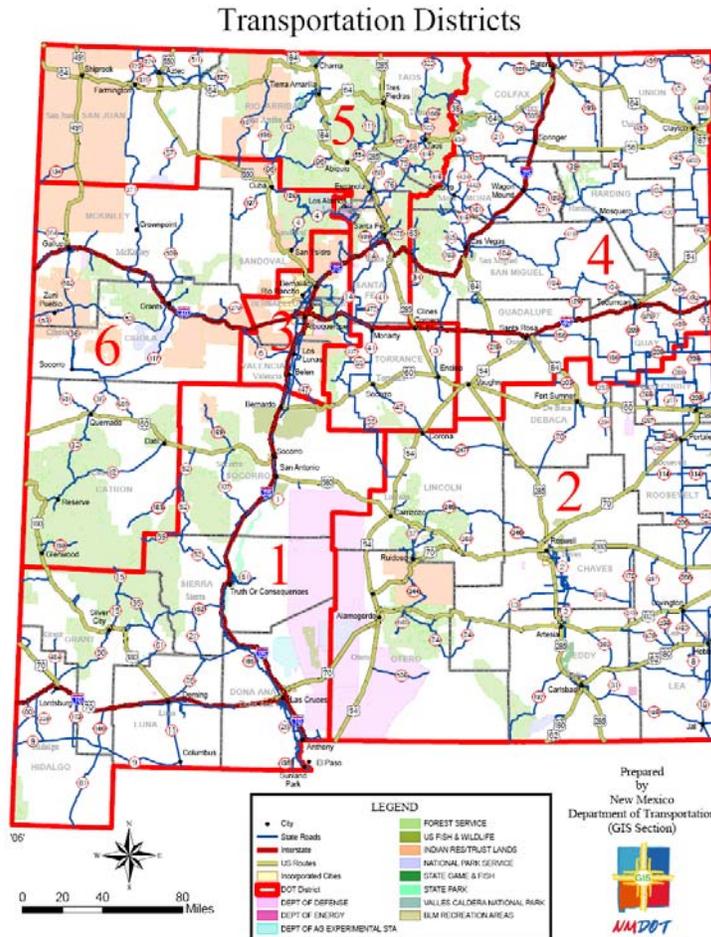
As with the discovery of historical releases, the foreman or manager of the NMDOT Patrol Yard, District Service Center or other NMDOT property must promptly notify their Area Maintenance Supervisor (AMS) or District's Risk Management office. The EGB will typically be available for assistance with the required external notifications and follow-up assessment and corrective action, as appropriate.

5.0 HAZARDOUS MATERIAL RELEASES WITHIN THE RIGHT-OF-WAY

Hazardous material releases in the NMDOT ROW could occur as the result of motor vehicle accidents, illegal dumping or abandonment of hazardous material, or spills on adjoining properties. The NMDOT's immediate response to a hazardous material release in the ROW is governed by the procedures outlined in administrative directives 809 and 815 (Appendix A).

The State Police or other local law enforcement will assume administrative control and will determine whether to implement the State's Emergency Response Plan. NMDOT staff can provide support upon request, including traffic control, advice to the On-Scene Emergency Response Officer and possibly heavy equipment operation. In most cases, the individual responsible for regulatory reporting and corrective action will be the party responsible for the hazardous material release, typically the transporter.

As a release in the ROW is damage to state property, Risk Management for the NMDOT District in which the spill occurred must be notified. The phone numbers for District offices are included in Appendix B.



Additional information regarding the emergency response program can be found in the New Mexico Department of Homeland Security and Emergency Management's All Hazard Emergency Operations Plan (revised June 2007).

6.0 PROJECT MANAGEMENT AND STAFF QUALIFICATIONS

Management and implementation of hazardous material assessments, remediation and hazardous material activities during construction requires staff with certain minimum qualifications and experience. Appropriate qualifications and experience are necessary to safely manage hazardous materials with minimal exposure to project staff, NMDOT staff, and the public at large, to ensure compliance with applicable regulatory requirements, and to manage the liability of the NMDOT and contractor. This section establishes the minimum qualifications and experience for hazardous material operations on NMDOT property or projects.

6.1 Hazardous Material Assessment Activities

Senior level environmental project experience is required to plan and manage hazardous material assessments as described in Sections 2 of this Handbook. Minimum qualifications for management of hazardous material assessment projects include a baccalaureate degree in geology, hydrogeology, environmental geology, or related earth science field and at least 10 years of full-time relevant experience related to environmental assessments and investigations. Assessment managers must also possess extensive knowledge of NMED, EPA, and all other pertinent regulations regarding hazardous material concerns. Professional registration in their field of expertise is preferred.

Staff performing pISAs and ISAs must meet the EPA's requirements for environmental professionals as described in the final rule 40 CFR Part 312. Specifically, an environmental professional must either: hold a current Professional Engineer's or Professional Geologist's license or registration from a state, tribe, or U.S. territory and have the equivalent of three (3) years of full-time relevant experience, or be licensed or certified by the federal government, a state, tribe, or U.S. territory to perform environmental inquiries as defined in § 312.21 and have the equivalent of three (3) years of full-time relevant experience; or have a Baccalaureate or higher degree from an accredited institution of higher education in science or engineering and the equivalent of five (5) years of full-time relevant experience; or have the equivalent of ten (10) years of full-time relevant experience.

Hazardous material assessments involving subsurface investigations, field screening, sampling and logging of boreholes must be performed under the direction of a field geologist with at least a baccalaureate degree in geology, hydrogeology, or environmental geology, and at least 3 years of full-time relevant experience. Extensive knowledge of NMED, EPA, and all other pertinent regulations regarding hazardous material concerns is also required.

Contractors providing services during hazardous material assessments must be appropriately licensed. Any driller responsible for the construction of monitoring wells must possess a valid New Mexico Driller's license. Similarly, land surveys conducted during the assessment must be directed by a New Mexico Professional Surveyor licensed by the New Mexico State Board of Licensure for Professional Engineers and Surveyors. Asbestos surveys may only be conducted by an accredited asbestos inspector or project designer who has successfully completed an EPA-approved training program. Lead based paint surveys must be conducted under the direction of an EPA-certified lead based paint risk assessor with certification for the state of New Mexico.

All field staff involved in hazardous material site assessments must also meet the health and safety training requirements of 29 CFR Part 1910.120 and must be enrolled in a medical monitoring program as outlined in Section 7.

6.2 Hazardous Material Construction Activities

Senior level environmental professional experience is also required to plan and manage hazardous material construction activities. Requirements are identical to those outlined for hazardous material site assessment project managers in Section 6.1. Hazardous material construction activities must be managed in the field by a construction superintendent with a minimum of three years of environmental project experience and a US Occupational Safety and Health Administration (OSHA) Competent Person for construction site safety. Field screening and segregation of waste materials can be completed by an environmental technician under the supervision of the superintendent but all waste documentation and manifests must be approved by the superintendent. All members of the construction crew involved in hazardous material activities must also meet the health and safety training requirements of 29 CFR Part 1910.120 and must be enrolled in a medical monitoring program as outlined in Section 7.

Construction contractors working on hazardous materials projects must hold a valid New Mexico Contractors License with the New Mexico Construction Industries Division with a GS-29 Soil and Groundwater Remediation specialization. Transporters of RCRA hazardous waste and asbestos must have an EPA-issued transporter identification number. Treatment or disposal facilities accepting RCRA hazardous waste must also have an EPA-issued identification number. Landfills accepting special wastes (including petroleum-contaminated soils and asbestos) must be permitted by the New Mexico Solid Waste Bureau to accept those wastes.

7.0 HEALTH AND SAFETY FOR HAZARDOUS MATERIAL ACTIVITIES

Hazardous material, as described earlier, includes material which could be a concern from a health and safety point of view. Work with hazardous materials often includes risk of exposure to substances which could lead to illness, injury or death. All personnel who work at properties where hazardous materials are likely present will conduct activities in a safe and prudent manner and in compliance with applicable OSHA regulations. Contractors who conduct intrusive hazardous material assessments for the NMDOT must have a health & safety (H&S) program in place and must prepare Site Specific (Health and Safety Plans) HASPs for each scope of work.

7.1 Roles and Responsibilities

Responsibility for health and safety is shared by all personnel involved in a particular task or scope of work. Successful implementation of a H&S program requires dedication and participation from all members of the team. In addition to NMDOT staff, all consultants, contractors and subcontractors have roles in maintaining a healthy and safe workplace. Each consultant or contractor shall designate a project manager and a site health and safety officer to provide oversight for each hazardous material activity conducted.

7.2 Regulatory Framework

Establishment of a comprehensive H&S environment is guided by federal, state and local regulations. Through oversight and coordination of all activities, the NMDOT can maintain compliance with all applicable H&S regulations. Some applicable regulations and requirements are:

- 29 CFR 1910, OSHA Safety and Health Standard for General Industry
- 29 CFR 1904, OSHA Recording and Reporting Occupational Injuries and Illnesses
- 29 CFR 1926, OSHA Safety and Health Standards for the Construction Industry
- Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health (NIOSH) Publication Number 85-115
- State and local regulations pertaining to health and safety

Personnel involved with NMDOT projects involving hazardous materials will comply with all applicable regulations. Guidance may be available from the New Mexico Occupational Safety & Health Bureau (see Appendix B).

7.3 Training and Medical Monitoring

Ensuring that personnel working on hazardous material assessment tasks have the appropriate skills and knowledge to safely perform tasks assigned to them is a key accident prevention tool. The main goals of H&S training are to train employees to be able to identify hazards correctly, to give employees the technical understanding and skills to work in a safe manner and to promote safety awareness so that employees develop a safe work attitude.

All personnel will have the training required by OSHA, based upon site specific hazards, to safely perform their work. Specific training requirements are described in the applicable OSHA Standards. Some examples of required training include the following:

- Hazardous material work – 29 CFR 1910.120
- Confined space entry - 29 CFR 1910.146
- Asbestos abatement – 29 CFR 1910, 1915 and 1926
- Respirator work – 29 CFR 1910.134
- Construction related work – 29 CFR 1926

Personnel will also have all of the applicable medical monitoring as required by the OSHA Standards.

7.4 Personnel Protective Equipment

Field activities frequently require the use of clothing and equipment that shields and/or isolates workers from chemical and physical hazards that may be encountered.

In order to prescribe personal protective equipment (PPE) requirements effectively, the nature and extent of potential chemical and physical hazards associated with various activities need to be assessed. Prior to mobilization, a detailed review of the project site should be performed. This includes a review of the site history, types and quantities of materials handled at the site, types of operations performed at the project site, and types of activities to be performed during the course of the project.

After this review, PPE should be selected based on the reasonable anticipation of exposure to the chemical and physical hazard exposure potential.

Use of PPE is required by OSHA regulations contained in 29 CFR 1910 and 29 CFR 1926, and is reinforced by EPA regulations in 40 CFR Part 300.

7.5 Health and Safety Plans

A site-specific HASP shall be prepared for each field project involving hazardous material assessment or construction activities. The complexity of each plan will vary as

to the types of operations to be conducted and the chemical and physical hazard potential associated with each project. It may be necessary to supplement the HASP form with an Activity Hazard Analysis for specific hazardous material activities.

7.5.1 Hazardous Material HASP Elements

Prior to completing the HASP, the preparer should obtain as much background information as possible about the site and planned operations. For a PSI or DSI, much of the information required for the HASP will be available from previous studies, the project work plan, and other project documents.

The HASP can be broken down into key elements. Each element of the form should be addressed as follows:

- Plan Heading/Title Page – Identify project name, location, and NMDOT District.
- Objectives of Field Work – Provide a basic statement of the objectives of the fieldwork.
- Type of Site – Identify key characteristics of the site. Are there ongoing operations present? Can the general public readily access the site? Is the site secure? Is the site a retail gasoline station, an auto recycler, or other commercial/industrial site?
- Site Description and Features – Provide a brief description of the site including features that may effect site H&S such as presence of power lines, underground utilities, steep slopes, wetlands, known poisonous plants, accessibility, drums, or tanks. Identify the land use of surrounding area.
- History – Summarize site history with focus on activities or conditions that could affect site H&S. Include a brief history of spills, releases, or previous investigations.
- Waste Types and Characteristics – Identify known or reasonably suspected characteristics of waste types anticipated at the site.
- Hazards Of Concern – Based on work activities, and surroundings, identify hazards likely to be present at the site.
- Work Zones – Describe how work zone will be established and identified at the site.
- Past and Present Disposal Methods and Practices – If applicable, describe how the facility disposed of its wastes. Were materials disposed of onsite or offsite? How were they transported? Was there a separate process waste system? Was the waste in liquid, solid, or sludge form? Was it drummed? Are there waste lagoons or pits known?
- Hazardous Material Summary – Identify the types of waste known or suspected to be present at the site. Prepare a summary table for specific contaminants. List the following data when it is available:
 - Highest concentration found from previous sample efforts and the medium it was found (soil, water)
 - The lower of the OSHA Permissible Exposure Limit (PEL) or the American Conference of Governmental Industrial Hygienists (ACGIH) – Threshold Limit Value (TLV)
 - The NIOSH value listed for “Immediately Dangerous to Life and Health” (IDLH)

- Immediately noticeable warning concentrations. (i.e., odor threshold, irritation threshold, visible cloud, etc.)
 - Summarize health effects of overexposure
 - The photo ionization potential (when applicable)
- Task Descriptions and Hazard Analysis – Project activities should be broken down into discrete tasks and the most significant hazards associated with each task identified. Typical hazards may include:
 - Significant exposure to contaminated media
 - Excavation hazards
 - Uneven terrain
 - Work near overhead wires
 - High traffic area
 - High heat stress potential
- The HASP must indicate if there is a need for any specialized training, such as:
 - Asbestos awareness
 - Fall protection
 - Confined space
 - Supplied air respiratory protection review
 - or, specialized medical surveillance due to exposure to site contaminants, such as blood lead, serum PCB, or other contaminant specific surveillance,
- Personal Protective Equipment (PPE) – For each planned task, identify the level of protection and specific primary and contingency PPE and other safety equipment to be used. The same level of PPE may be identified for multiple tasks.
- Monitoring Equipment –Identify the monitoring instrumentation to be used and actions that will be taken based on the response of specific instrumentation.
- Decontamination and Disposal – Describe decontamination procedures to be used for personnel, sampling equipment, and heavy equipment at the site. Also, describe means and methods planned to contain wastes generated and how they will be disposed of.
- Emergency Contacts – List appropriate telephone contacts, identify evacuation routes and rally locations. List local hospital or medical facility, and provide directions and attach a map to the facility.

7.5.2 Acknowledgment of Acceptance of HASP

All site personnel must understand the requirements of the HASP and agree to its provisions. The site manager shall distribute the HASP to field personnel as they are assigned to the project. Field team members must sign an acknowledgement of the HASP prior to beginning fieldwork.

8.0 REFERENCES

8.1 Guidance and Publications

American Society for the Testing of Materials (ASTM), (1997), Standard Guide for Sample Selection of Debris Waste from a Building Renovation or Lead Abatement Project for Toxicity Characteristic Leaching Procedure (TCLP) Testing for Leachable Lead (Pb) (E 1908-03), <http://www.astm.org/Standards/E1908.htm>

ASTM (2002) Standard Guide for Environmental Site Assessments: Phase II Environmental Assessment Process, (E 1903-97, reapproved 2002), <http://www.astm.org/Standards/E1903.htm>

ASTM (2005), Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, (E 1527-05), <http://www.astm.org/Standards/E1527.htm>

New Mexico Department of Homeland Security and Emergency Management, (2007), State of New Mexico All-Hazard Emergency Operations Plan (a.k.a., New Mexico Emergency Operations Plan), <http://nmdhsem.org/cms/kunde/rts/nmdhsemorg/docs/873684834-09-08-2009-16-02-24.pdf>

New Mexico Department of Transportation (NMDOT) (2007), Administrative Directive 809 - Emergency Response for Hazardous Material Spills.

NMDOT (2009), Special Provisions for Excavation of Contaminated Soil, Section 203-A

National Institute for Occupational Safety and Health (NIOSH) (1985) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Publication Number 85-115, <http://www.cdc.gov/niosh/pdfs/85-115.pdf>

United States Environmental Protection Agency (EPA), (1980, as amended), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, <http://www.epa.gov/epaoswer/hazwaste/test/main.htm>.

8.2 Federal Regulatory References

Land Disposal Restrictions Rules and Regulations; 40 CFR 268.40, 268.48, http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title40/40cfr268_main_02.tpl

Hazardous Waste Operations and Emergency Response, 29 CFR 1910.120, http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9765.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs), 40 CFR 61.0, <http://www.epa.gov/ttn/atw/eparules.html>.

Occupational Safety and Health Standard for General Industry, 29 CFR 1910,
http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1910.

OSHA Recording and Reporting Occupational Injuries and Illnesses, 29 CFR 1904,
http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_part_number=1904&p_toc_level=1.

OSHA Safety and Health Standards for the Construction Industry, 29 CFR 1926,
http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926.

Standards and Practices for All Appropriate Inquiries; Final Rule, 40 CFR Part 312,
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title40/40cfr312_main_02.tpl

8.3 State Regulatory References

New Mexico Hazardous Waste Management Regulations, 20.4.1 NMAC,
<http://www.nmcpr.state.nm.us/nmac/parts/title20/20.004.0001.htm>.

New Mexico Petroleum Storage Tank Regulations, 20.5 NMAC,
http://www.nmenv.state.nm.us/NMED_regs/ust_regs.html.

New Mexico Solid Waste Regulations, 20.9.1 NMAC,
http://www.nmenv.state.nm.us/NMED_regs/swb/20nmac9_1.html.

New Mexico Water Quality Act, 20.6.2 New Mexico Administrative Code (NMAC) and
Water Quality Control Commission [WQCC] Regulations, 20.6.3 NMAC,
<http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0003.htm>.

APPENDIX A- SPECIAL PROVISIONS and ADMINISTRATIVE DIRECTIVES

Administrative Directive 809 – Emergency Response for Hazardous Material Spills
(insert in .pdf conversion)

AD 815 – Supplement To The State's All-Hazard Emergency Operations Plan

Special Provision 203-A excavation of contaminated soil (2009)

Special Provision 601-A asbestos utilities (2008)

NEW MEXICO DEPARTMENT OF TRANSPORTATION



**AD 809
05/01/02**

EMERGENCY RESPONSE FOR HAZARDOUS MATERIAL SPILLS

Rhonda G. Faight, P.E., Cabinet Secretary

Supersedes Administrative Directive No. 809 dated September 1, 1997.

- AUTHORITY:** **1.00** Emergency Management Act Sections 74-4B-1 through 74-4B-14, NMSA 1974; New Mexico Hazardous Materials Emergency Response Plan and Procedures Handbook
- PURPOSE:** **2.00** The purpose of this Directive is to stipulate the Department's support responses to the Emergency Management Act.
- DEFINITIONS:** **3.00** N/A
- DIRECTIVE:** **4.00** In the event of a hazardous material spill, the State Police or designated Emergency Response Officer shall decide whether to implement the State Emergency Response Plan.
- 4.01** Once the Plan is implemented, the Department shall provide the following support upon request:
- 4.01a** Traffic control,
- 4.01b** Respective Area Maintenance Superintendent or designee to advise the on-scene Emergency Response Officer,
- 4.01c** Respective Area Maintenance Superintendent or designee shall ensure the roadway is in safe condition upon completion of the cleanup, and
- 4.01d** Heavy equipment with operators to contain runoff or spills by trenching and diking. Department personnel shall not trench and dike where harmful vapors or other jeopardizing exposures are present.

- 4.02** The individuals responsible for cleanup of a spill (owner-contractor) shall determine where and how the material shall be disposed or stored. Department personnel may move petroleum-based products mixed with dirt or sand to a proper disposal location and other hazardous materials when properly packaged and verified safe for transport by an appropriate expert.
- 4.03** Department facilities shall not be used for storage of any hazardous materials except for those materials owned and used by the Department.
- 4.04** Department employees shall not be requested to perform cleanup of hazardous materials unless required by the New Mexico Hazardous Materials Emergency Response Plan.
- 4.05** Department personnel shall not give statements or sign any documents on behalf of the Department, without prior approval from the District Engineer or designee.

PROCEDURES:

5.00 N/A

**CROSS
REFERENCE:**

6.00 AD 815, Supplement To The State's All-Hazard Emergency Operations Plan

NEW MEXICO DEPARTMENT OF TRANSPORTATION



**AD 815
04/01/07**

SUPPLEMENT TO THE STATE'S ALL-HAZARD EMERGENCY OPERATIONS PLAN

Rhonda G. Faught, P.E., Cabinet Secretary

Supersedes Administrative Directive No. 815 dated May 01, 2002.

- AUTHORITY:** **1.00** New Mexico "State Civil Emergency Preparedness Act" of 1974, as amended [12-10-1 through 12-10-10 NMSA 1978]; The Emergency Management Act [74-4B-1 through 74-4B-14, NMSA 1978]; New Mexico All-Hazard Emergency Operations Plan
- PURPOSE:** **2.00** The purpose of this Directive is to stipulate the Department's support responses to the State of New Mexico All-Hazard Emergency Operations Plan.
- DEFINITIONS:** **3.00** "New Mexico All-Hazard Emergency Plan" assigns functional responsibilities to state departments, agencies, boards and commissions in the event of a disaster. The Plan directs state departments and agencies to provide guidance, relief and assistance to local communities and the citizens of New Mexico. It also allows for preparation, response and recovery activities by each department or agency.
- DIRECTIVE:** **4.00** In the event of an emergency, the State Director of Emergency Management shall decide whether to implement the State's All-Hazard Emergency Operations Plan.
- 4.01** Once the Plan is implemented, the Department shall provide an Emergency Management Response Team (EMRT) at the State's designated Emergency Operations Center (EOC).
- 4.02** The EMRT Representative executes the Department's Emergency Operations Plan with the approval of the Department Secretary.

4.03 Department employees may be called upon to support the Department's Supplemental Emergency Operations Plan.

PROCEDURES:

5.00 N/A

**CROSS
REFERENCE:**

6.00 AD 809, Emergency Response for Hazardous Material Spills

NEW MEXICO DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISIONS FOR

**EXCAVATION OF CONTAMINATED SOIL
SECTION 203-A**

All provisions of the New Mexico Department Of Transportation's (NMDOT) Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

1.0 FIELD WORK DESCRIPTION.

1.1 This work shall consist of excavating, testing, sampling, transporting, handling, temporarily storing, and disposing of hydrocarbon contaminated soil to lines, grades, thicknesses, and typical cross sections shown in the contract or as required by the NMDOT Environmental Geology Bureau.

1.2 Contaminated soil shall mean soil containing regulated levels of hydrocarbon or petroleum based products.

2.0 FIELD MONITORING INSTRUMENTS.

2.1 Field monitoring instruments to be provided by the Contractor shall include a combustible gas indicator (CGI), or equivalent instrument, fitted with sensors to measure Lower Explosive Limits (LEL) and oxygen (O₂) content in the atmosphere. This instrument tests for potentially explosive levels of petroleum hydrocarbon vapors and oxygen-deficient conditions. Also required is a Photoionization Detector (PID) equipped with a lamp of suitable ionization potential (typically 10.6 eV or greater) or Flame Ionization Detector (FID) (whichever is appropriate given the known contaminant) for detection of volatile organic compounds associated with petroleum hydrocarbons. The PID/FID shall be calibrated by a two-point process using "zero gas", and then calibrated with a standard span gas having a benzene-equivalent concentration of 100 ppm. Field instrumentation shall be calibrated daily in the field in accordance with manufacturer's instructions and a log shall be kept of the field calibrations. The field log of calibrations shall be submitted in a Project Status Report (PSR) (See Section 3.11 of these Provisions for PSR description).

3.0 CONSTRUCTION REQUIREMENTS.

3.1 Construction methods and requirements shall be in conformance with the details shown in the contract or as directed by the NMDOT Project Manager.

3.2 The Contractor shall excavate, handle (separate, sample for laboratory analysis, and place in containers, or appropriately stockpile), temporarily store, transport, and dispose of hydrocarbon contaminated soil to lines, grades, thickness, and typical cross sections shown in the contract. The Contractor shall also be responsible for Environmental Construction Monitoring to ensure that all work is conducted in accordance with Occupational Safety and Health Act (OSHA)¹ and the New Mexico Environment Department regulations (Solid Waste Bureau²), and other federal, state and local regulations, as appropriate.

3.3 The Contractor shall designate an appropriately qualified Health and Safety Officer. Broadly, the Health and Safety Officer shall be responsible for monitoring the work areas (air and soil) for hazardous vapors, for developing a site specific Health and Safety Plan (HASP) for work in areas with suspected or identified contamination, and documenting all related field activities in the PSR. Prior to excavation activities, the Health and Safety Officer shall provide certification of their ability to develop and execute a HASP to the NMDOT Project Manager. The written HASP shall be read and signed by all workers performing work duties within the suspected or confirmed contaminated areas until the contaminated soil is removed. The HASP shall be submitted to the NMDOT Project Manager for review prior to excavation of contaminated soil and other related work.

3.4 Adherence to the HASP shall be supervised by the Health and Safety Officer who possesses the following qualifications and training: OSHA 40-hour Hazardous Waste Operations and Response Worker training (HAZWOPER) and OSHA 8 hour HAZWOPER Supervisor training, both in accordance with 29 CFR 1910.120. Personnel shall have a minimum of three (3) years experience in performance of hazardous material site assessments and remediation, including but not limited to: performance of heated headspace analysis of soil samples; operating field instrumentation such as a PID, FID, and CGI; environmental sampling procedures and protocol; and the excavation, separation, handling, transport, and disposal of regulated and nonregulated contaminated soil.

These personnel shall be on site during construction activities in contaminated zones, or readily available (within 1 hour) during construction activities within suspected areas of contamination as found on the project.

3.5 Construction work zones shall be monitored with the appropriate field instruments by qualified personnel as outlined in the HASP. Measurements shall be recorded at regular intervals and whenever odors or other evidence suggests compromised air quality. Data representative of breathing zone conditions will be recorded for laborers, equipment operators, and other potentially exposed job functions at the work site. The field log of monitoring data shall be included in the PSR.

¹ Questions concerning these regulations may be referred to the NMED Occupational Health & Safety Bureau, (505) 476-8700, http://www.nmenv.state.nm.us/Ohsb_Website/Compliance/index.htm

² Questions concerning these regulations or procedures may be referred to the NMED Solid Waste Bureau, (505) 827-0197, <http://www.nmenv.state.nm.us/SWB/SpecialWasteMgt.htm>.

3.6 Segregation of contaminated soil from unaffected or unimpacted soil shall be performed based on visual and olifactory evidence and confirmed with the appropriate field screening tool (e.g., PID or FID). Field screening shall be performed at a minimum frequency of every 5 cubic yards of excavated soil. A criterion of 100 parts per million (ppm) per volume of air will typically be used for segregation of contaminated materials. Samples collected for field screening purposes shall be returned to the contaminated soil stockpile for disposal. The field log of soil screening data shall be included in the PSR.

3.7 For each discrete contmainated area, representative samples shall be collected for laboratory verification, as required by the approved regulatory agency and the landfill. A minimum of two (2) samples with one (1) additional sample from every 100 cubic yards of excavated soil thereafter shall be collected during excavation and submitted for confirmation laboratory analysis. Samples shall be properly collected, preserved and transported to an independent analytical laboratory. Analytical methods should be selected based on suspected hydrocarbon contaminant (e.g., gasoline, diesel, motor oil). Laboratory results and chain of custody documents shall be included in the PSR.

3.8 If approved by the NMDOT Project Manager, contaminated soil may be temporarily placed in a level, bermed holding area on an impermeable barrier, per NMED Solid Waste Bureau regulations 20.9.8.15. For smaller quantities of contaminated soil, storage in USDOT-approved 55-gallon drums that are clearly labeled "Non-Hazardous Waste" (label completed) is permissible. All material shall be either temporarily stockpiled or drummed as described above until laboratory results are received and arrangements are made for disposal.

3.9 Soil exceeding 100 ppm TPH, 50 ppm Total Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) with Benzene less than 10 ppm is considered contminated and shall be disposed of at an NMED-approved special waste disposal facility. Each load shall be documented with bills of lading and disposal manifests. If laboratory analytical results indicate that the contaminated soil qualifies as a hazardous waste under the Resource Conservation and Recovery Act, transportation and disposal will have to be documented on a Uniform Hazardous Waste Manifest and all applicable requirements followed. Copies of all bills of lading and disposal manifests shall included in the PSR.

3.10 If during the course of construction or excavation activities, a petroleum hydrocarbon odor or any suspicious odor or appearance of contaminated soil is detected in areas not identified as a potential or known concern, monitoring and excavation procedures shall be followed as previously outlined.

3.11 Project Status Reports (PSRs) shall be prepared at regular intervals (frequency to be determined and agreed upon during the Pre-Construction Meeting) and will serve to keep the Contractor and the NMDOT informed of the status of contaminated soil excavation. The PSR shall include, at a minimum, the following elements:

- a. A description of the project segment covered by the PSR;
- b. A description of excavation activities;
- c. A sketch of the excavations showing impacted and unimpacted areas;
- d. Photographs of the excavations, recovered materials, and stockpile areas;
- e. A summary of total soil volumes excavated;
- f. Instrument calibration records;
- g. Work area air quality monitoring data;
- h. Field soil screening (headspace) results and their associated sample locations;
- i. Laboratory reports and chains of custody;
- j. Copies of transport and disposal manifests for each load.

The PSRs for each discrete excavation location and reporting interval shall be sent to the NMDOT Project Manager and to the NMDOT Environmental Geology Bureau (PO Box 1149, Room 126, Santa Fe, NM 87504-1149).

4.0 METHOD OF MEASUREMENT.

4.1 Excavation of hydrocarbon contaminated soil will be measured by the cubic yard as loaded and transported, not by in-place volumes. If weights are determined at the disposal facility, this data will also be reported. The consultant shall provide accurate quantities of material documented on waste disposal manifests.

4.2 Environmental Construction Monitoring by the Contractor will be measured as a lump sum unit.

5.0 BASIS OF PAYMENT.

5.1 Excavation of hydrocarbon contaminated soil will be paid at the contract unit price per cubic cubic yard. Excavation of hydrocarbon contaminated soil will be paid as Excavation of Contaminated Soil at the contract unit price per cubic yard. The applicable Hazardous Waste disposal manifests or transportation and disposal documentation shall be provided for verification of quantities and disposal location.

5.2 Environmental Construction Monitoring will be paid at the contract price per lump sum.

Payment will be made under the following pay units:

Pay Item	Pay Unit
Excavation of Contaminated Soil	Cubic Yard
Environmental Construction Monitoring	Lump Sum

5.3 Work Included in Payment.

The following work and items will be considered as included in the payment for Excavation of Contaminated Soil and will not be measured or paid for separately: Excavation, handling, segregation, temporary storage, transportation, and disposal of contaminated material.

The following work and items will be considered as included in the payment for Environmental Construction Monitoring and will not be measured or paid for separately: Sampling and testing (both field and independent laboratory), monitoring, field monitoring equipment and instrumentation, Project Status Reports (PSR), the HASP, Documentation including Uniform Hazardous Waste Manifest Documents, HASP Officer and OSHA HAZWOPER trained personnel.

NEW MEXICO DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR

**ASBESTOS-CONTAINING CONDUIT PIPE
SECTION 601-A**

All pertinent provisions of the New Mexico Department of Transportation's Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

1.1 This work shall consist of removing and disposing of asbestos-containing (AC) conduit pipe to the lines, grades, dimensions, details, and at the location(s) shown on the plans and as approved by the Project Manager.

1.2 The Contractor shall retain the services of a qualified asbestos abatement subcontractor who shall furnish all materials, storage, handling, tools, equipment, labor, and other appurtenances necessary to complete the work.

1.3 DEFINITIONS

Asbestos-Containing (AC) Conduit Pipe: classified as Category II non-friable asbestos (contained in the pipe structure) in an undisturbed state. Once the pipe structure is cut or broken, the asbestos becomes friable (easily broken down into smaller pieces).

Regulated Asbestos Containing Material (RACM): A composite cemented pipe structure containing a minimum of > 1% friable or non-friable asbestos.

NESHAP (National Emissions Standards for Hazardous Air Pollutants): Asbestos is defined as a NESHAP under 40 CFR 61 Subpart M (NESHAP regulations).

1.4 CONSTRUCTION REQUIREMENTS

1.41 General. _ The AC conduit pipe encountered within the project limits may not be limited to lighting or communications and water or sanitary sewer conduits. This RACM may be encountered in the sub-surfaces within the project limits or attached to the bridge structure.

All asbestos abatement work shall be performed by a qualified asbestos abatement subcontractor licensed by the New Mexico Construction Industries Division. Work shall be performed by personnel trained and certified in asbestos abatement. Certifications for subcontractor personnel performing asbestos abatement shall be made available at the project office during business hours.

1.5 DEMOLITION

1.51 Demolition of Suspected RACM. _The Contractor shall notify the Project Manager and submit to the Air Quality Bureau of the New Mexico Environment Department (NMED) (telephone 505-827-1494 or at internet address www.nmenv.state.nm.us/aqb/forms/asb.form.doc) a demolition notification form for the demolition of the RACM containing structure. The demolition notification form shall be sent by the Contractor to and be obtained from the NMED Air Quality Bureau, 2048 Galisteo St., Santa Fe, NM 87505. All notices must be postmarked a minimum of 10 working days in advance of any work that will disturb the AC conduit pipe. Faxes are not accepted. The Contractor shall notify the Project Manager 48 hours prior to demolition of the structure and provide a copy of the approved NMED demolition notification form to the Project Manager prior to the demolition, removal, and disposal of the RACM containing structure(s).

The asbestos abatement subcontractor shall provide abatement of the RACM identified in the construction plans and from the bridge structure or other locations within the project limits upon demolition and removal of the structure. The abatement shall include containment, encapsulation, packaging, labeling, transportation, and disposition of the RACM.

1.6 Removal

1.61 Removal of Pipe. The Contractor shall notify the Project Manager 48 hours before the start of the RACM removals identified in the construction plans. The Contractor shall notify the qualified asbestos abatement subcontractor to remove the RACM, which includes handling, packaging, transport, and disposal in accordance with applicable Local, State, and Federal regulations.

The RACM shall be abated in accordance with the requirements of the Environmental Protection Agency (EPA) NESHAP 40 CFR 61.140 – 156 National Emission Standard For Asbestos; (OSHA) 29 CFR 1926.1101, Safety and Health Regulations For Construction – Asbestos; New Mexico Environment Department (NMED) Air Quality Bureau regulations (20 NMAC 2.1); NMED Solid Waste Bureau regulations 20 NMAC 9.1); and all other applicable Local, State, and Federal regulations.

Removal and handling of AC conduit pipe shall be performed with the least amount of damage to the pipe. The AC conduit pipe shall be cut into lengths that easily fit into the bed of the truck transporting it. The AC conduit pipe shall be maintained in a wet (with water) condition (to prevent asbestos fiber release) and completely encapsulated in 6 mil plastic or greater prior to transport.

1.7 DISPOSAL

Disposal of AC conduit pipe shall be at a US EPA/NMED approved facility licensed to accept material of this type.

1.8 METHOD OF MEASUREMENT

The removal and disposal of RACM shall be measured as follows:

601998 - By the linear foot for sections of AC pipe consisting of one conduit.

601999 - By the linear foot for sections of AC pipe consisting of bundled conduits.

1.9 BASIS OF PAYMENT

The removal and disposal of RACM shall be paid as follows:

By the linear foot for sections of AC pipe consisting of one conduit.

By the linear foot for sections of AC pipe consisting of bundled conduits.

A certified receipt from the landfill must be provided to the Project Manager for review, approval, and payment for this work.

Payment will be under:

Pay Item	Pay Unit
Removal and Disposal of AC Conduit Pipe (single conduit)	L.F.
Removal and Disposal of AC Conduit Pipe (bundled conduit)	L.F.

APPENDIX B- AGENCY CONTACT INFORMATION

<u>Agency/Phone Number</u>	<u>Comments</u>
EMERGENCY CONTACTS:	
Emergency medical or fire response (dial 911) Not all communities may have 911 services. In these instances, call dispatch	Immediately in an emergency situation
National Response Center (800-424-8802 or 202-267-2675) http://www.nrc.uscg.mil/index.html	Immediately, but not more than 24 hours, if spill may exceed a Reportable Quantity (as defined in 40 CFR 355/40 CFR 302.4)
NMED Emergency Spill Reporting (505-827-9329) http://www.nmenv.state.nm.us/gwb/low.htm	Immediately, but not more than 24 hours, if spill may impact health or the environment
NON-EMERGENCY CONTACTS:	
New Mexico One-Call Inc. (800-321-2537) http://www.nmonecall.org/	State-wide utility locate service
Las Cruces-Dona Ana Utility Council (888-526-0400)	Utility locate service for Las Cruces/Dona Ana County Area (a.k.a., "Blue Stake")
NMDOT Environmental Geology Bureau (505-827-1715) http://www.nmshtd.state.nm.us/main.asp?secid=14483	Oversight and technical assistance for of all NMDOT-project related hazardous material issues
NMDOT State Maintenance Engineer (505-827-5176) http://www.nmshtd.state.nm.us/main.asp?secid=10998	Oversight and guidance of all NMDOT hazardous material issues on NMDOT properties
NMED Non-Emergency Spill Notification (866-428-6535) http://www.nmenv.state.nm.us/	Immediately, but not more than 24 hours, if spill may impact health or the environment
NMED Ground Water Quality Bureau (505-827-2918) http://www.nmenv.state.nm.us/gwb/qwqbhome.html	Report evidence of a spill or release which could impact ground water quality
NMED Petroleum Storage Tank Bureau (505-984-1741) http://www.nmenv.state.nm.us/ust/ustbtop.html	Report any evidence of a release from a petroleum storage tank system
NMED Hazardous Waste Bureau (505-428-2500) http://www.nmenv.state.nm.us/hwb/index.htm	Report any evidence of a release of RCRA hazardous wastes or to determine HW disposal requirements
NMED Solid Waste Bureau (505-827-0197) http://www.nmenv.state.nm.us/swb/index.htm	Contact to verify solid waste and special waste disposal requirements

<u>Agency/Phone Number</u>	<u>Comments</u>
NMED Air Quality Bureau (505-827-1494) http://www.nmenv.state.nm.us/aqb/index.html	Notice of asbestos removal or demolition, air quality implications of hazardous material excavation or handling.
NMED Liquid Waste Program (800-219-6157) http://www.nmenv.state.nm.us/fod/LiquidWaste/index.html	Verify the requirements for closure of Septic Tanks
NMED Radiation Control Bureau (505-476-3060), after hours: (505-476-3232) http://www.nmenv.state.nm.us/nmrcb/home.html	Guidance on dealing with suspected radioactive materials discovery or releases
NMED Occupational Safety & Health Bureau (505-476-8700) http://www.nmenv.state.nm.us/OHSB_Website/ohsb_home.htm	Technical support on personnel protective equipment, exposure guidelines and monitoring methods
EPA RCRA/CERCLA Hotline (800-424-9346)	Questions regarding hazardous material characterization, storage, handling, and disposal requirements
USDOT Office of Hazardous Materials (202-366-4900) http://hazmat.dot.gov/index.html	Questions about hazardous material transportation
Albuquerque-Bernalillo County Air Quality Control Board (505-768-1972) http://www.cabq.gov/airquality/	Notification of asbestos removal projects, demolition projects, disturbance of greater than ¼ acre.
NMDOT District Offices Risk Management District 1 (Deming) 544-6530 District 2 (Roswell) 637-7200 District 3 (Albuquerque) 841-2700 District 4 (Las Vegas) 454-3600 District 5 (Santa Fe) 827-9500 District 6 (Milan) 285-3200	Notification of releases in the ROW

APPENDIX C – HAZARDOUS MATERIAL ASSESSMENT REPORT OUTLINES

This section provides the EGB recommended outlines for preparation of ISA, PSI/DSI, and LBP/ACBM reports. Deviation from these outlines is permissible without prior approval from the EGB as long as all listed report elements are present.

ISA Report Outline

- Title Page
- Executive Summary
- Table of Contents
- Introduction
 - Purpose
 - Detailed Scope-of-Services
 - Scope of the NMDOT Project
 - Location of project
 - Type of project (reconstruction, ROW, etc.)
 - Elements of project (utilities, lighting, signals, sidewalks, excavations, etc.)
 - Significant Assumptions
 - Limitations and Exceptions
 - Special Terms and Conditions
 - User Reliance
- Site Description
 - Location and Legal Description
 - Site and Vicinity General Characteristics
 - USGS topographic map
 - Soil Information
 - Geology
 - Hydrology
 - Current Use of the Property Adjoining Properties
 - Descriptions of Structures, Roads, Other Improvements on the Site (including heating/cooling system, sewage disposal, source of potable water)
- User Provided Information
 - Title Records
 - Environmental Liens or Activity and Use Limitations
 - Specialized Knowledge
 - Commonly Known or Reasonably Ascertainable Information
 - Valuation Reduction due to Environmental Issues
 - Owner, Property Manager, and Occupant Information
 - Reason for Performing Phase I
 - Other
- Records Review
 - Standard Environmental Record Sources
 - Additional Environmental Record Sources
 - Physical Setting Source(s)
 - Historical Use Information on the Property
 - Historical Use Information on Adjoining Properties
- Site Reconnaissance
 - Methodology and Limiting Conditions

- General Site Setting
 - Exterior Observations
 - Interior Observations
- Interviews
 - Interview with Owner
 - Interview with Site Manager
 - Interviews with Occupants
 - Interviews with Local Government Officials
 - Interviews with Others
- Findings
- Opinions
 - Threshold for considering a finding a REC
 - Data Gaps
- Conclusions and Recommendations Relating to the NMDOT Project
- Additional Services
- References
- Signature(s) and Statement of Qualification(s) (SOQ) of Environmental Professional(s)
- Appendices
 - Site (Vicinity) Map
 - Site Plan
 - Work Plan
 - Excerpts from Project Plans, if available
 - Site Photographs
 - Historical Research Documentation (aerial photographs, fire insurance maps, historical topographical maps, etc.)
 - Regulatory Records Documentation
 - Interview Documentation
 - Special Contractual Conditions between User and Environmental Professional (Copy of Work Plan)
 - Resumes of Environmental Professional(s)

PSI and DSI Report Outline

- Title Page
- Executive Summary
- Introduction
 - Purpose
 - Scope of the NMDOT Project
 - Location of project
 - Type of project (reconstruction, ROW, etc.)
 - Elements of project (utilities, lighting, signals, sidewalks, excavations, etc.)
 - Special Terms and Conditions
 - Limitations and Exceptions of Assessment
 - Limiting Conditions and Methodology Used
- Background (may be by reference to prior environmental reports):
 - Site Description and Features
 - Physical Setting
 - Site History and Land Use
 - Adjacent Property Land Use

- Summary of Previous Assessments
- Phase II Activities
 - Scope of Assessment:
 - Supplemental Record Review
 - Conceptual Site Model and Sampling Plan
 - Chemical Testing Plan
 - Deviations from the Work Plan
 - Field Explorations and Methods
 - Test Pits
 - Test Borings
 - Monitoring Well Installations
 - Ground water elevation measurement
 - Ground water flow direction
 - Other
 - Sampling and Chemical Analyses and Methods
 - Soil
 - Ground water
 - Other
- Evaluation and Presentation of Results
 - Subsurface Conditions
 - Geologic Setting
 - Hydrogeologic Conditions
 - Verification of Conceptual Site Model
 - Analytical Data
 - Soil
 - Ground water
 - Other
- Discussion of Findings and Conclusions
 - Recognized Environmental Conditions
 - Affected Media
 - Evaluation of Media Quality
 - Other Concerns (for example, adequacy of assessment)
- Recommendations Relating to the NMDOT Project
- Signature Page
- References and Sources of Information
- List of Tables
 - Location, Depth, and Type of Soil Samples Collected
 - Summary of Analytical Results by Media
 - Other Data Requiring Summarization
- List of Figures
 - Site Location (USGS Topographic Map)
 - Site Plan and Exploration Location Plan (with laboratory results)
 - Other Figures as Necessary to Depict Site Conditions (that is, geologic cross section location plan, geologic cross sections, ground water contour plan, etc.)
- List of Appendices
 - Site Photographs
 - Subsurface Exploration Logs and Monitoring Well Construction Details
 - Laboratory Report With Quality Control Information
 - Other Appendices Necessary to Support the Report
 - Work Plan

Lead Based Paint (LBP) and Asbestos Containing Building Materials (ACBM) Survey Outline

- Title Page (including the NMDOT control number and date)
- Executive Summary
- Introduction
 - Purpose
 - Scope of the NMDOT Project
 - Location of project
 - Type of project (reconstruction, ROW acquisition, etc.)
 - Elements of project (utilities, lighting, signals, sidewalks, excavations, etc.)
 - Special Terms and Conditions
 - Limitations and Exceptions of Assessment
 - Limiting Conditions and Methodology Used
- Field Investigation
 - Scope
 - Methodology (including deviations from the work plan)
 - LP Survey
 - Numbers and locations and samples
 - Findings (field and laboratory analytical results)
 - Other
 - ACBM Survey
 - Number and location of samples
 - Findings (field and laboratory analytical results)
 - Other
- Summary and Conclusions
- Recommendations
- Signature page
- Figures
 - Vicinity Map
 - Site Plan (to include: septic system and well locations)
 - Sample Map(s) (for the sample locations)
- Tables (if not incorporated into the report body)
 - Sample type, location, volume and analytical data
- Appendices
 - Site Photographs
 - LP Analytical Laboratory report (including chain of custody documentation)
 - ACBM Analytical Laboratory report (including chain of custody documentation)
 - Access Agreements
 - HASP
 - Work Plan
 - Other appendices necessary to support the contents of the report