

“RIGHT SIZE” your Hazardous Material Analysis Report

Save time and the tax payers dollars by right sizing Analysis Reportsⁱ. Reduce the unwieldy size of reports and avoid the over emphasis of compiling information. Instead, focus the body of the report on the analysis of relevant information. The Hazardous Materials (HazMat) Analysis Report must effectively communicate to agency decision makers and allow them to make informed decisions regarding the selection of alternatives, mitigation measures and/or the necessity of initiating early coordination with relevant regulatory agencies.

The level of detail necessary for HazMat Analysis Reports is based on the complexity and size of the project, severity of potential contaminants, and other project specific needs. All reports, regardless of report format or a projects classification (EIS, EA or DCE), must identify and evaluate known or potentially contaminated sites that may

- 1) affect the environment during construction,
- 2) create significant construction impacts, and/or
- 3) incur cleanup liability to the agency.

All reports must conclude that all potentially significant impacts have been considered and the report documents conditions that may present a significant unavoidable adverse impact that cannot be reasonably mitigated for.

A project classified as an EIS or EA does not necessarily require a full-scale HazMat Analysis Report. Acquisition plans, project location, and the type of work influences the potential risks for impacts to the environment and construction project. General conditions regarding varying degrees of documentation are provided below.

A full-scale HazMat Analysis Report is typically necessary when a project:

- requires large portions of permanent or temporary property acquisition
- has large amounts of excavation below existing grade
- is primarily located in a developed area, where current and past land use is industrial, commercial and residential

A lesser level of evaluation and documentation may be appropriate when a project:

- requires minor amounts of temporary or permanent acquisition of property
- involves minor amounts of excavation below existing grade (e.g., guardrail installation, utilities, and illumination bases)
- is located in a primarily residential or undeveloped area

No formal documentation may be appropriate in some instances. The sole documentation can be the Environmental Classification (ECS) form which is completed by the WSDOT Regional Environmental office. This is typical for projects classified as a Documented Categorical

Exclusion (DCE). The decision not to produce a report should be made in consultation with the Hazardous Materials Program and the rationale must be documented in the project file on the ECS form. A report may not be needed when the project:

- does not require new acquisition of land, and
- does not require excavation below the existing ground surface, and/or
- is located in a completely undeveloped area (i.e., no buildings, parking or storage areas, & agriculture (other than grazing), based on historical research.

Guidance for how to complete a full scale report is provided in on the Hazardous Materials Program Web page. Guidance for [how to complete the HazMat sections of an ECS/ERS form](#) is available to WSDOT staff.

Below you will read additional guidance and example outlines for varying degrees of Hazardous Materials Discipline Reports. [WSDOT Hazardous Material Specialists](#) are available to help “right size” discipline reports.

Table 1 - OUTLINES FOR VARIED LEVELS OF WSDOT HAZARDOUS MATERIAL ENVIRONMENTAL DOCUMENTATION

Full Scale	Mid-Level	Low-Level
<p>Format: Report</p> <p>Title Page Table of Contents Executive Summary - Identify the project - Identify the purpose and objectives of the Hazardous Materials Analysis Report ⁱⁱ - Summarize</p> <ul style="list-style-type: none"> • Potentially affected environment • Project-specific environmental impacts • Project-specific acquisition impacts • Project-specific construction impacts <p>Acronyms, Abbreviations, and Glossary</p> <p>1. Introduction 1.1 Project Description (include excavation and acquisition plans) 1.2 Discipline Study Overview (purpose, objective and report layout) 1.3 Regulatory Considerations (reference appendix) 1.4 Methodology</p> <ul style="list-style-type: none"> • Geologic Review • Regulatory Database and Historical Review • Screening and Ranking Criteria ⁱⁱⁱ • Agency Website and File Review • Deviations from WSDOT Standards <p>2. Affected Environment (Existing Conditions) 2.1 Physical Environment of the Study Area 2.2 Historical Land Use of the Study Area 2.3 Summary Results of Study Area 2.4 Site-Specific Summary of Sites of Concern Table</p> <p>3. Potential Impacts 3.1 Standard Hazardous Materials Potential Impacts (Summary paragraph, actual impacts in appendix of report) 3.2 Project-Specific Environmental Impacts</p> <ul style="list-style-type: none"> • Direct Impacts • Operational Impacts (Secondary) • Cumulative Impacts <p>3.3 Project-Specific Property Acquisition Impacts 3.4 Project-Specific Construction Impacts</p> <p>4. Site Specific Mitigation Measures 4.1 Standard Hazardous Materials Mitigation Measures 4.2 Project-Specific Environmental Mitigation Measures</p> <ul style="list-style-type: none"> • Direct Mitigation Measures • Operational Mitigation Measures (Secondary) • Cumulative Mitigation Measures <p>4.3 Project-Specific Property Acquisition Mitigation Measures 4.4 Project-Specific Construction Mitigation Measures 4.5 Preliminary Estimates of Proposed Project Related Mitigation Measures</p> <p>5. Recommendations and Cost Estimates</p> <p>6. References</p> <p>7. Appendices - Site Maps & Figures - Applicable State and Federal Laws and Regulations - Standard Impacts and Mitigation Measures - Regulatory Database Report (Attached as a electronic device, not a bulky hardcopy) - Historical Resources - Copies of Ecology File Review (if useful for individual sites) - Photographs (optional)</p>	<p>Format: Report, Memo or Letter</p> <p>1. Introduction 1.1 Project Description 1.1.1 Geology and Hydrology 1.1.2 Anticipated Depth of Excavations 1.1.3 Proposed Property Acquisitions 1.1.4 Anticipated Groundwater Depth 1.2 Analysis Study Overview 1.3 Methodology</p> <ul style="list-style-type: none"> • Regulatory Database Review • Historical Research • Site Reconnaissance (Optional) • Screening • Regulatory File Review • Previous Investigations • Interviews (Optional) • Ranking <p>2. Affected Environment (aka Existing Conditions) 2.1 Summary Results</p> <ul style="list-style-type: none"> • Regulatory Agency Database Search • Historical Records Review • Regulatory File Review • Previous Investigations • Interviews (optional) • Visual Reconnaissance <p>2.2 Site Specific Summary of Hazardous Materials Sites of Concern in the Study Area</p> <p>3. Potential Impacts (aka Environmental Effects) 3.1 Standard Hazardous Materials Potential Impacts 3.2 Direct Impacts</p> <ul style="list-style-type: none"> • Environmental <ul style="list-style-type: none"> ○ Sensitive Areas requiring special protection against spills or releases ○ Potential Alternation of Contaminant Migration • Construction <ul style="list-style-type: none"> ○ Site Specific Hazardous Materials Impacts. ○ Property Acquisition <p>4. Site Specific Mitigation 4.1 Standard Hazardous Materials Mitigation Measures 4.2 Proposed Mitigation Measures</p> <ul style="list-style-type: none"> • Environmental • Construction • Property Acquisition <p>4.3 Preliminary Estimates of Proposed Mitigation</p> <p>5. Recommendations and Cost Estimates</p> <p>6. Conclusion</p> <ul style="list-style-type: none"> • Identifies Significant Unavoidable Adverse Impacts • Certification Statement <p>7. References</p> <p>8. Appendices 8.1 Site Map 8.2 Applicable Laws, Regulations and Required Permits 8.3 Standard Impacts and Mitigation Measures Table 8.4 EDR Report - attached as a CD 8.5 Photographs (optional)</p>	<p>Format: Memo or Letter</p> <p>1. Introduction 2. Project Description 2.1 Geology and Hydrology 2.2 Anticipated Depth of Excavations 2.3 Proposed Property Acquisitions 2.4 Anticipated Groundwater Depth</p> <p>3. Research Methodology & Summary Findings. 3.1 Regulatory Database (EDR reports typically not necessary) 3.2.1 Summary Findings 3.3 Regulatory File Review (Moderate – High Risk Sites) 3.3.1 Summary Findings 3.4 Previous Investigations (Optional) 3.4.1 Summary Findings</p> <p>4. Sites of Concern</p> <p>5. Conclusions</p> <ul style="list-style-type: none"> • Identifies Significant Unavoidable Adverse Impacts • Certification Statement <p>6. Recommendations</p> <p>7. Limitations</p>

FULL-SCALE HAZARDOUS MATERIAL ANALYSIS REPORT – EXAMPLE OUTLINE

A full-scale report is typically needed when a project must purchase large areas of property, has large amounts of excavation and/or is mostly located in a developed area with a history of industrial and commercial land use. The example outline for a full-scale Report is provided in Table 1 of this document or on page 5 in the June 2009 guidance document titled: [*Guidance & Standard Methodology for WSDOT Hazardous Materials Discipline Report*](#). The guidance document, an example Scope of Work and a report checklist is available at: <http://www.wsdot.wa.gov/NR/rdonlyres/A05B97D6-A89B-4413-8A8A-9BD7C6CA03C4/0/ExampHazMatDisciplineRptSOW.pdf>

Not sure if your project may end up requiring a full-scale report, because the project is in early development phase where many elements (i.e., design and acquisition plans or funding priorities) are subject to change? Consider phasing the work in two steps, where the first step is only identifying the existing conditions. Then the second step (later in the project schedule) evaluates the impacts based specifically on the project design plans and evaluates the mitigation options and cost estimates to gauge the significance of the impact to the environment and the project schedule and budget.

This two stage approach is discussed in further detail in the guidance document referenced above. The example SOW language also includes this two step approach. However, when considering this staged approach, keep in mind that reports older than two years should go through the first step all over again to obtain current information from regulatory database listings.

“RIGHT SIZED” HAZARDOUS MATERIAL ANALYSIS REPORT

Two example outlines are provided below; a [mid-level outline](#) for a moderate level of environmental documentation and a [low-level outline](#) for a brief bare bones document. Each outline includes an explanation to help staff determine which level of detail is appropriate for their project. Please note that during the course of the investigation, the level of report may be subject to change depending on the findings.

In each outline very basic instruction is added in *italicized blue text* to help direct report writers to understand the level of effort needed for each section. To better understand the basic blue instruction notes, please read the *Guidance & Standard Methodology for WSDOT Hazardous Materials Discipline Reports* and general information about “right sizing” provided in the Environmental Procedures Manual (Chapter 411.04 and 447) and the Hazardous Materials Program Web Pages. Please feel free to contact the Hazardous Materials Program for assistance.

Mid-Level Report

A moderate level of documentation is appropriate when a project requires only minor amounts of acquisition and excavation and/or is located in an area that has been primarily residential or undeveloped. There are multiple projects with various types of work that could fit these conditions. One example would be an overpass bridge installation that included excavation of a stormwater pond that is located in an area that has been primarily residential with some commercial business over the past 50 years. Because the project area is located in one small area (i.e., ¼ mile radius) a full scale report seems unreasonable. However, because the project is located in an area that has some historic commercial property use, requires large quantities of excavation (for the stormwater pond and bridge piers) and most likely acquisition of property, a moderate level of documentation is warranted.

Another example could include a several mile project through a combination of rural, residential, commercial and industrial areas where construction work includes major utility work involving excavation for stormwater, sewer, telecommunications and power. Because the project covers a large area spanning through commercial and industrial areas and excavations may encounter contamination and unknown underground storage tanks and potentially cause preferential pathways for contaminant migration, a moderate level of documentation is warranted. A full scale report would not be necessary because utility trenching typically does not extend into groundwater or generate large volumes of material that could potentially require special disposal at an increased cost.

As you can see, various rationales are based on the different circumstances presented by each project. Thus a Hazardous Materials Specialist is available to help analyze which level of documentation is appropriate.

Mid-Level Example Outline

Simplified instructions provided in *italicized blue text*.

1. Introduction

1.1 Project Description -*Include project information relating to excavation and acquisition plans*

1.2 Discipline Study Overview -*Identify the purpose of the report, and any specific objectives.*ⁱⁱ
Also define the study area.

1.3 Methodology -*Explain the process used to identify or eliminate potential sites of concern or impacts.*

- *Regulatory Database Review -May use Ecology's Facility Site Atlas or private company.*
- *Historical Research -At the very least, must conduct historical aerial photo review. Based on observations on aerials, may need to research historical Topographic &, Sanborn maps, etc.*
- *Site Reconnaissance*
- *Screening -Describe process of eliminating sites of no concern. This is optional IF there are less than 10 identified sites in the study area.*
- *Regulatory File Review -Only for sites of concern.*
- *Previous Investigations -If available, such as Cultural Resource reports identifying land use history, or other applicable environmental investigations previously conducted.*
- *Interviews -Typically interview only fire department and county health department by telephone. Interviews are optional.*
- *Ranking -Evaluation process of establishing risk levels (i.e., low, moderate, and high).*ⁱⁱⁱ

2. Affected Environment (aka Existing Conditions)

2.1 Summary Results of: -*Describe summary of results in general. A table may be appropriate. Site specific details should NOT be in this section, but described below in Section 2.2.*

- *Regulatory Agency Database Search –Identify total number of sites for each database listing (i.e., There were 12 State Cleanup Sites, 4 LUST sites, and no superfund sites located within the study area).*
- *Historical Records Review –Identify what sources were reviewed.*
- *Regulatory File Review –Identify how many site files were reviewed.*
- *Previous Investigations –If available, identify which reports were reviewed.*
- *Interviews – If conducted, identify who was interviewed.*
- *Visual Reconnaissance –Note the date the reconnaissance was performed.*

2.2 Site Specific Summary of Hazardous Materials Sites of Concern in the Study Area
This section should have a description for each site. Paragraphs should be organized by Map ID# and Site Title listed in order by one end of the project to the other or Organized by risk ranking (i.e., Low to High risk sites) Detailed summary of each site should include the following site specific information:

- *Location of site relative to project boundaries (i.e., address, approximate distance from right-of-way or centerline, and whether the site is up, down or cross gradient)*
- *Planned construction activities at the site (i.e., excavation and acquisition)*^{iv}
- *Current/past land use and it's evolution over time*
- *Regulatory database listing, if any*
- *Likely/known contaminants based on land use/regulatory database listing (these details may be omitted if the site is considered a low risk)*
- *Potential distribution of contaminants based on existing physical environment (i.e., topography, groundwater depth, distance and gradient to project) and documented details*

obtained through Ecology file review (if any). Site specific details may be omitted IF preliminary evaluation (the first 4 bullets above) determines that the site is a low risk.

- *Determination of risk concerns*

Discipline writers may elect to summarize this information in a table format.

3. Potential Impacts (Emphasis: Site/Project Specific)

3.1 Standard Hazardous Materials Potential Impacts *-Short summary paragraph, with reference to standard impacts listed in the Appendix. See below in the Appendix section for additional guidance regarding the intent of the Appendix for Standard Hazardous Materials Impacts and Mitigation Measures.*

3.2 Direct Impacts *-Site-Specific analysis of project specific impacts as it relates to the following bullets below:*

- Environmental
 - Sensitive Areas requiring special protection against spills or releases *-For example, list project specific areas warranting extra precautionary measures (i.e., Stream with listed ESA fish, or seasonally dry wetland with ESA listed habitat). Only list the sites of concern and provide short explanation. Refer to other document source for additional specific information.*
 - Potential Alternation of Contaminant Migration *-Only identify specific sites of concern IF excavation or drilling is planned in a documented contaminated area. If there are no documented contaminated sites or the design plans do not provide sufficient details regarding excavation or dewatering work, then refer reader to Appendix for the Standard Hazardous Materials Impacts and Mitigation Measures. This section should not duplicate information described below in “Site Specific Hazardous Materials Impacts.”*
- Construction
 - Site Specific Hazardous Materials Impacts: *-Site specific and/or project specific uniform areas (i.e., gas pipeline spanning over multiple properties) likely to impact construction through schedule delays and increased costs.*
 - Property Acquisition *-Summary of sites planned for acquisition that poses a concern. Do not restate the standard liability impacts described in the Appendix, but discuss the level of concern/risk as it relates to site-specific information. For example, if known, describe if planned acquisition is a minor strip take, partial or full acquisition. Then state the likelihood or potential for the type of hazardous materials to exist within the proposed acquisition. If this level of detail is not known, refer reader to Appendix for the Standard Hazardous Materials Impacts and Mitigation Measures.*

4. Mitigation

4.1 Standard Hazardous Materials Mitigation Measures *-Provide summary paragraph, and reference the Standard Hazardous Materials Impacts and Mitigation Measures in the Appendix. See below in the Appendix section for additional guidance regarding the intent.*

4.2 Proposed Mitigation Measures *-Only discusses site-specific mitigation measures for impacts identified in section 3 above.*

- Environmental
- Construction
- Property Acquisition

4.3 Preliminary Estimates of Proposed Mitigation

5. Recommendations and Cost Estimates for Further Investigation

-Identify data gaps, or additional investigation needs. Include proposed timing and estimated costs.

6. Conclusion

- Identifies Significant Unavoidable Adverse Impacts *-Identifies sites that pose a significant impact that cannot be mitigated for or creates an excessive burden with respect to schedule delays and costs. If there are no such sites, then state "No significant, unavoidable adverse effects are expected to result from the proposed project.*
- Add Statement: Based on the judgment of _____ (*List the name of environmental professional responsible for writing or approving this document*), this report (*or technical letter or memorandum*) documents the appropriate level of investigation necessary to identify potentially contaminated sites that may affect the environment, create construction impacts, and/or incur potential cleanup liability to the department.

7. References

8. Appendices

8.1 Site Map

8.2 Applicable Laws, Regulations and Required Permits *–Include Local requirements too.*

8.3 Standard Impacts and Mitigation Measures Table *-This table includes measures that routinely apply to projects and the information in this table should not be repeated in the body of the report. The body of the report in the Impacts and Mitigation sections should focus solely on project-specific issues that are pertinent to the site of concern. The intent of this table is to limit redundancy, reduce the level of effort to compose the report (since the information is already completed for the writers), and focus the body of the report on project specifics. See the example provided in Appendix C of the [Guidance & Standard Methodology for WSDOT Hazardous Materials Discipline Reports](#), Web*

Address: <http://www.wsdot.wa.gov/Environment/HazMat/Guidance.htm>.

Standard Impacts and Mitigation Measures Table provides details on:

- Environmental Impacts
 - o Spills from Construction
 - o Soil or Groundwater Contamination
 - o Indirect Impacts
 - Spills from Traveling Public
 - Maintenance and Operations
 - o Cumulative Impacts
- Construction Impacts
 - o General
 - o Soil or Groundwater Contamination
 - o USTs
 - o Spills
 - o Demolition
 - o Worker Safety & Public Health
- Cleanup Liability
 - o Acquisition Cleanup Liability
 - o Spills
 - o Illegal Disposal

8.4 EDR Report - Only IF an EDR report was generated. Suggestion: One bound copy with printed EDR report, all other hard copies have EDR Reports attached as a CD to significantly reduce bulk, printing costs.

8.5 Photographs

Low-Level Report

A basic bare bones report may be appropriate when a project requires minor strip takes, small amounts of excavation and/or is located in an area that has historically been residential or undeveloped. This level of documentation is suitable for projects that impact a very small area, such as an intersection or projects several miles long that are only installing guardrails or a pavement overlay with little to no disturbance to soil or waterways. Another example includes utility trenching in rural, agricultural and/or undeveloped areas where the likelihood of encountering USTs or contamination is highly unlikely based on the historic land use. In addition, this level of report may be appropriate if during the course of the investigation there are minimal contaminated sites in the vicinity of the project footprint and the site does not pose a potential threat or impact to the project. For example, the depth of groundwater is 20 feet below ground surface (bgs) and the maximum depth of excavation proposed for the project is only 8 feet bgs.

The low level of investigation and documentation is adequate enough to identify potential problems (i.e., significant impacts) that may trigger the need to conduct additional investigation.

Low-Level Example Outline:

Simplified instructions provided in *italicized blue text*.

1. Introduction - *Identify the purpose of the report, and any specific objectives.*ⁱⁱ
2. Project Description –*Include brief project information relating to excavation, groundwater, and acquisition plans.*
3. Research Methodology & Summary Findings -*Describe research conducted. Define the study area. Explain the process used to identify or eliminate potential sites of concern or impacts.*
 - 3.1 Regulatory Database – *An Ecology online database review should be sufficient as the number of sites should be minimal; therefore, an EDR report is generally not required or necessary for a low-level report.*
 - 3.1.1 Summary Findings
 - 3.2 Regulatory File Review –*File reviews should be conducted on sites that have been identified as moderate to high or if requires additional investigation.*
 - 3.2.1 Summary Findings
 - 3.3 Previous Investigations –*This is optional and will be conducted if an Ecology file review is required.*
 - 3.3.1 Summary Findings
 4. Sites of Concern

This section should have a description for each site. Paragraphs should be organized by Map ID# and Site Title listed in order by one end of the project to the other or Organized by risk ranking (i.e., Low to High risk sites) Detailed summary of each site should include the following site specific information:

- Location of site relative to project boundaries (i.e., address, approximate distance from right-of-way or centerline, and whether the site is up, down or cross gradient).
- Planned construction activities at the site (i.e., excavation and acquisition).^{iv}
- Current/past land use and it's evolution over time.
- Regulatory database listing, if any.
- Likely/known contaminants based on land use/regulatory database listing (these details may be omitted if the site is considered a low risk).
- Potential distribution of contaminants based on existing physical environment (i.e., topography, groundwater depth, distance and gradient to project) and documented details obtained through Ecology file review (if any). Site specific details may be omitted IF preliminary evaluation (the first 4 bullets above) determines that the site is a low risk.
- Determination of risk concerns.

Discipline writers may elect to summarize this information in a table format.

5. Conclusions – *Required statements inserted in all reports.*

- Identifies Significant Unavoidable Adverse Impacts -Identifies sites that pose a significant impact that cannot be mitigated for or creates an excessive burden with respect to schedule delays and costs. If there are no such sites, then state “No significant, unavoidable adverse effects are expected to result from the proposed project.
- Add Statement: Based on the judgment of _____ (List the name of environmental professional responsible for writing or approving this document), this report (or technical letter or memorandum) documents the appropriate level of investigation necessary to identify potentially contaminated sites that may affect the environment, create construction impacts, and/or incur potential cleanup liability to the department.

6. Recommendations

- Identify data gaps, or additional investigation need: Include proposed timing and estimated costs. The following general recommendation can be included at the discretion of the discipline report writer:

“An amendment to this Technical Memorandum is recommended if subsequent project changes (i.e., new alignments, cut and fill areas or acquisition areas) could potentially alter the conclusion made herein. In general, hazardous material investigations older than two years should be re-examined to determine whether revisions are necessary prior to any major action, such as approval of the Design Summary, PS&E, or right-of-way purchase. The intent of these investigations is to provide the necessary level of detail to allow staff to make informed decisions and take the appropriate actions to limit/avoid excessive project delays, increase costs and cleanup liability. With respect to hazardous materials, WSDOT’s primary responsibility is to prevent contamination from spreading or causing it to become worse. For guidance please refer to WSDOT’s Environmental Procedures Manual (EPM) Chapters 447 and 620.08.”

7. Limitations

END NOTES:

ⁱ Analysis Reports are a type of environmental documentation that is prepared to satisfy NEPA/SEPA requirements for a project. The intent of NEPA is to ensure environmental costs and benefits of projects are fully considered prior to undertaking actions. It is early in the Project Scoping phase that WSDOT considers the necessary level of NEPA/SEPA documentation that may be needed for each project. As stated in 40 CFR 1502.2, “Impacts shall be discussed in proportion to their significance” and that “in a finding of no significant impact, there should be only enough discussion to show why more study is not warranted.”

Conducting hazardous material investigations allows WSDOT to make good business decisions when managing project dollars. Hazardous materials can have significant cost impacts and potential long-term liability for management and/or cleanup of contaminated properties. Thus, it is important that the Project Design and Environmental Review phase perform a valid study of hazardous material impacts and alternatives and clearly present the findings to allow transportation staff to make good business decisions before the agency commits any resources.

ⁱⁱ Explanation regarding the **purpose, objective and level of detail** of the Hazardous Materials is provided in the Introduction section of the [Guidance & Standard Methodology for WSDOT Hazardous Materials Discipline Reports](http://www.wsdot.wa.gov/Environment/HazMat/Guidance.htm), available at Address: <http://www.wsdot.wa.gov/Environment/HazMat/Guidance.htm>.

ⁱⁱⁱ Ranking and Risk Categories: A “Risk Analysis” helps prioritize sites and determine the need for avoidance, remediation, and mitigation options. Evaluating risk entails taking site specific information, making reasonable assumptions, while considering planned project design and activities and evaluating environmental effects and associated construction schedule delays, costs and agency liability. Example risk categories are provided in the guidance document reference in the footnote above.

^{iv} Sometimes specific excavation work (i.e., utilities, stormwater features, etc/) or acquisition plans have not yet been determined. In these situations, the report should warn the reader and specify that due to the certain identified property circumstances additional consideration should be made if design or acquisition plans change.