
Chapter 1 Background and Introduction

1.1 Overview

Introduction This chapter contains the background, introduction, and environmental regulatory requirements that necessitate the preparation of this document.

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1.2 Background

Introduction The Washington State Department of Transportation (WSDOT) Materials Laboratory (Materials Lab) is an American Association of State Highway Transportation Officials (AASHTO) accredited laboratory located in Tumwater, Washington.

Linkage to Environmental Management System (EMS) An Environmental Management System (EMS) represents a comprehensive approach for addressing the environmental aspects and impacts of an organization. It includes the policies, procedures, tools, training, and auditing elements required to ensure that potential environmental impacts are effectively addressed.

Environmental Management Programs (EMPs) are being developed throughout WSDOT's operations. EMPs are key building blocks of WSDOT's EMS. Each operational area is developing its own EMP and associated environmental documentation. This manual supports the Materials Lab's EMP.

Environmental Management Program WSDOT is developing EMPs that apply to each of our various operations. The work of the Department (from highway construction, to maintaining the systems, to operating the ferries, to maintaining facilities) is so diverse that one program could not address all our needs. Each of the EMPs will address the following seven core elements:

- Legal and other requirements, including pertinent environmental laws, regulations, and agreements that apply to operations
- Written procedures that instructs staff and contractors how to conduct work operations in compliance with requirements
- Training that ensures that those conducting certain operations know how to do the work in a compliant manner
- Roles and duties that ensure WSDOT staff and contractors know what their responsibilities are under the EMP
- EMP auditing that includes recording compliance and corrective actions.
- Communication
- Performance measurements.

1.3 Introduction

Purpose The purpose of this document is to define the policies and procedures designed to safeguard personnel and the environment from deleterious effects associated with the procurement, use, and disposal of hazardous chemicals. This manual incorporates information required under the Chemical Hygiene Plan (WAC 296-62-400), Dangerous Waste Regulations (WAC 173-303), Chemical Hazard Communication (WAC 296-800-17035), and the Hazardous Materials Management Plan (HMMP) required by the International Fire Code. This manual also supports the Materials Lab’s EMP, and as a result, also addresses key items required in an EMS.

Application The Materials Lab is composed of nine individual laboratory units. As discussed below, seven of the nine laboratory units and facilities and equipment management operations are addressed within this manual.

Goals The goals of this document are as follows:

1	To provide a safe and healthful working environment by setting policies and procedures that protects workers from chemical exposures.
3	To help the Materials Lab to comply with applicable local, state, and federal waste management regulations by properly handling, transporting, storing, and disposing of regulated wastes.
4	To facilitate the operations and waste minimization efforts of the various laboratory units.
5	To train individuals and inspect work areas where hazardous materials are used.

Mission Statement The mission statement of the Materials Lab is as follows:
 “Together we support our customers and enhance construction quality by providing specialized technical expertise, materials testing, and engineering services.”

Customers The primary customer of the Materials Lab is WSDOT. Secondary customers include cities, counties, manufacturers and contractors.

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1.3 Introduction, Continued

Audience	<p>The audience for this document includes:</p> <ul style="list-style-type: none"> • Laboratory Workers • Section and Laboratory Supervisors • Chemical Hygiene Officer (Chemical Materials Engineer) • Laboratory Safety Committee • Facilities and equipment management operations staff • Laboratory Administrative Officer (Business Manager) • WSDOT Maintenance and Operations Office • WSDOT Headquarters Safety and Health Services Office • WSDOT State Materials Engineer • Executive-level Management
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Roles and Responsibilities Responsibility for compliance with the information in this manual rests at all levels, including the following:

Personnel	Responsibility
Executive-level Management	Has the ultimate responsibility for the safety and health of employees and must, with other executives, provide continuing support for WSDOT personnel safety and health.
WSDOT State Materials Engineer	<p>Is responsible for the following:</p> <ul style="list-style-type: none"> • Providing resources necessary to implement the requirements of the EMP. • Ensuring that managers, supervisors, and laboratory workers adhere to the guidance and provisions in this manual.
Safety & Health Services Office	Has the primary responsibility for the elements of this manual that are related to the Chemical Hygiene Plan and employee safety issues.

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1.3 Introduction, Continued

Roles and Responsibilities (continued)

Personnel	Responsibility
Laboratory and Section/Lab Supervisors	<p>In consultation with the Chemical Hygiene Officer and other responsible parties, are responsible for developing and implementing appropriate chemical hygiene policies and practices including, but not limited to, the following specific duties:</p> <ul style="list-style-type: none"> • Responsible for the safety of all individuals in the laboratories • Monitoring procurement, use, storage, recycling, and disposal of chemicals used in the laboratories • Determining and providing the appropriate personal protective equipment and that all laboratory equipment (e.g., fume hoods, ovens, etc.) are used in accordance with manufacturer recommendations • Seeking ways to improve safety and reduce potential environmental impacts • Ensuring that laboratory personnel know where to access Material Safety Data Sheets (MSDS), and how to use them • Ensuring that laboratory personnel are appropriately trained in the use of applicable chemicals, hazardous waste disposal, and in “hazards communications – workers right to know” • Ensuring that training for working with hazardous materials has been provided as required in WAC 296-62-400 through -40027, and other substance-specific standards contained in WAC 296-62.

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1.3 Introduction, Continued

Roles and Responsibilities (continued)

Personnel	Responsibility
Laboratory Safety Committee	Duties and responsibilities of the Safety Committee are as follows: <ul style="list-style-type: none"> • Provide input to the Section and Lab Supervisors and Executive-level Management on issues related to chemical and environmental safety, and implementation of the EMP. • Arbitrate disagreements between laboratory units regarding laboratory practices.
Chemical Hygiene Officer	In consultation with the Safety Committee and other responsible parties, is responsible for developing and implementing appropriate chemical hygiene policies and practices including, but not limited to, the following specific duties: <ul style="list-style-type: none"> • Monitoring proper disposal of chemicals and hazardous waste in the Materials Laboratory • Seeking ways to improve the chemical hygiene program • Primary hazardous chemicals/materials coordinator • Conducting formal chemical hygiene and housekeeping inspections. • Monitoring proper maintenance and updates of Material Safety Data Sheets (MSDSs).
Laboratory Administrative Officer	Is responsible for the following: <ul style="list-style-type: none"> • Maintaining and updating this manual • Hazardous waste coordination and inspection • Hazardous waste training coordination • Providing manifests and other documentation to Annual hazardous waste inspection and report • Secondary hazardous materials coordinator • Document and records control • Ecology contract

Laboratory Worker	Is responsible for the following: <ul style="list-style-type: none">• Performing work in a safe manner according to respective pre-activity safety plans and observing established safety and hygiene practices at all times• Working safely and protecting himself/herself and other employees from possible hazardous situations• Identifying potentially hazardous conditions or changes in procedures that may constitute hazardous conditions and report these conditions to the appropriate manager• Ensuring non-laboratory personnel (other co-workers, visitors, or guests) comply with the contents of this manual.
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1.3 Introduction, Continued

Documentation This Environmental Health and Safety Manual is to be controlled and kept up to date on-line. Working paper copies will be dated but uncontrolled.

Laboratory Units Addressed The laboratory units addressed in this Environmental Health and Safety Manual are listed below. The major operations conducted at each lab unit are also listed.

Laboratory Unit	Major Operations
Chemical Lab	Conducts testing of cement, joint materials, paints, fencing materials, pavement markers, epoxies, deicers.
Liquid Asphalt Lab	Conducts testing of paving asphalt materials including, binders, emulsions, adhesives, and sealants
Bituminous Mixtures Lab	Conducts testing of asphalt concrete mixtures and verification of HMA mix designs.
Physical Testing Lab	Evaluates the quality of aggregate, concrete, cement, steel, and geotextiles used in the construction of city, county, and state roads and bridges.
Soils Lab	Conducts compaction control and stiffness tests.
Geotechnical Lab	Provides full range of geotechnical engineering and engineering geology services required to support the design, construction, and maintenance needs of the state's transportation system.
Electrical and Signing Lab	Conducts full suite of tests on each traffic controller assembly submitted to confirm quality and that the equipment meets the requirements of the WSDOT Standard Specification.
Facilities and Equipment Management Operations	Conducts facilities and equipment maintenance activities within the facility.

1.3 Introduction, Continued

**Laboratory
Units Not
Addressed**

The laboratory units and their associated activities not addressed within this Environmental Health and Safety Manual are listed below.

Laboratory Unit	Rationale for Not Including in This Document
Field Geotechnical Unit	The type of work performed by the field geotechnical unit is usually site and project specific. A document that encompasses the operations performed by this unit may be created separately.
Nuclear Lab Unit	The facility used by the nuclear lab is not accessible to the rest of the laboratory work force. The operations performed by this unit are tightly regulated by the Nuclear Research Commission. In addition, the Nuclear Lab has unique requirements not applicable to the rest of the lab.

1.4 Environmental Health and Safety (EH&S) Regulatory Requirements

Background This Environmental Health and Safety Manual addresses the environmental health & safety (EH&S) regulatory requirements that apply to Materials Lab operations.

Regulatory Requirements The regulatory requirements that are applicable (but not limited to) to the Materials Lab are as follows:

Regulation	Regulatory Reference	Key Requirements
Dangerous Waste Requirements	Washington State Department of Ecology, WAC 173-303 and EPA, 40 CFR 260 to 280	<ul style="list-style-type: none"> • Hazardous waste identification • Generator requirements • Manifesting • Waste accumulation and disposal • Universal wastes • Record keeping and reporting • Emergency preparedness • Training program • Land disposal restriction notices
Hazardous Waste Transportation and Disposal	Federal Department of Transportation, 49 CFR 172, 173, 178 and 179	<ul style="list-style-type: none"> • Packaging • Labeling and marking • Manifesting • Hazardous materials (HazMat) employee training
Occupational Exposure to Hazardous Chemicals in Laboratories	State and Federal Labor and Industries WAC 296-62-400 and 29 CFR 1910	<ul style="list-style-type: none"> • Prepare chemical hygiene plan • Designate a Chemical Hygiene Officer • Develop pre-activity safety plans • MSDSs available to employees • Employee training • Develop standard operating procedures • Provision and use of personal protective equipment (PPE) and engineering controls • Medical surveillance • Labeling and marking • Proper emergency planning.
International Fire Code (IFC)	IFC Section 2701.5	The IFC requires that a facility prepare a HMMP in accordance with IFC Section 2701.5.1, when requested by the fire code official.