

**NATIONAL WEATHER SERVICE MANUAL 50-5116**  
**JULY 4, 2018**

*Safety and Environmental  
Environmental Compliance NWSPD 50-51  
ENVIRONMENTAL MANAGEMENT*

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**SUMMARY OF REVISIONS:** This manual supersedes NWSM 50-5116, *Environmental Management*, dated May 23, 2016.

The changes are as follows:

Introduction: No changes.

Section 1, Hazardous Material Storage: Revised Clean Air Act (CAA) requirements for Title V Permitting and added a reference to Section 8 of NWSM 50-1115 (1.4.1b). Added a definition of “navigable waters” and clarified state reporting requirements in the Note (1.5). Added a Note about the removal of the term “combustible liquids” per 2012 revision of Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (1.7.1). Added a clarification that at facilities leased by NWS/NOAA, the station manager or other presiding official should review the lease agreement to ensure responsibility for the Spill Prevention, Control, and Countermeasure (SPCC) Plan is addressed (1.8.1d). Added OSHA’s interpretation on incidental releases and Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training (1.8.1). Revised the information to be included in SPCC Plan to explain why visual inspections of the shop-built double-walled tanks suffice and added a guidance for Aboveground Storage Tanks (AST) markings (1.8.2). Added a definition of “facility” and clarification of contiguous or adjacent properties (1.8.4a). Added a link to state-specific battery recycling requirements (1.9.5). Removed Attachment B (Tier II Reporting Form) since state-specific online form needs to be used for submission.

Section 2, Management of Waste: Replaced Conditionally Exempt Small Quantity Generator with Very Small Quantity Generator, per new Environmental Protection Agency (EPA) Hazardous Waste regulations (Checklist). Added a question regarding development of procedures for Small Quantity Generator emergency response to hazardous waste incidents (Checklist). Added clarification regarding RCRA authorization by states and a link to state-specific hazardous waste generators programs (2.9.2). Replaced Conditionally Exempt Small Quantity Generator with Very Small Quantity Generator (2.9.5a, 2.9.6). Updated Table 1, Comparison of Hazardous Waste Generator Requirements for Different Types of Waste Generators, based on the latest EPA information (2.9.6). Removed references to state

requirements since manifest system is uniform (2.9.7a). Added a link to state-specific universal waste requirements (2.10). Added a link to State Universal Programs (2.10.1). Clarified universal waste shipment requirements for small quantity handlers of Universal Waste (2.10.1a(6)). Expanded information on state-specific program for pesticides disposal (2.11.5). Removed inactive EPA link to information related to the antifreeze (2.11.2). Removed inactive links and added a statement to check state-specific requirements for recycling and disposal of Cathode Ray Tubes (CRTs) (2.11.3a(1)). Updated web links related to recycling of e-waste (2.11.3c). Removed outdated paragraph related to pending Rule to regulate lead-based paint residue under Toxic Substances Control Act (TSCA) (2.11.5c). Added EPA web link related to disposal of solvent contaminated wipes (2.11.8). Updated 40 CFR 262 references per revised regulations (2.13.1).

Section 3, Transportation of Hazardous Materials and Waste: No changes.

Section 4, Emergency Reporting: Added a reference to SPCC plan emergency procedures for releases of petroleum products (4.4.3).

Section 5, Drinking Water: No changes.

Section 6, Pollution Prevention: Made revisions to discuss Executive Order 13693 (Planning for Federal Sustainability in the Next Decade) that superseded previously referenced Executive Orders (6.5). Updated a list of references to Executive Orders (6.9).

Section 7, Water Discharge and Wetlands: Removed the reference to radiosonde water activated batteries since they are no longer in use (7.5.4). Added web links to EPA storm water management resources (7.7.2).

Section 8, Air Discharge: Revised Implementation Requirements section to include National Emission Standards Hazardous Air Pollutants (NESHAP) requirements for emergency generators and boilers usage and permits for any renovation or demolition work that involves asbestos containing material. Added a question related to compliance with NESHAP and New Source Performance Standards (NSPS) stationary generators requirements (Checklist). Added a question related to operation of boilers (Checklist). Added a definition of “major source” (8.2). Added reference to operation of boiler to “NWS Application” section (8.5.1). Updated a reference to Executive Order 13693 (8.5.2). Deleted section “Ozone Depleting Substances” since the phase out of Class I substances ended in 2005 (8.5.2). Updated EPA web link to ozone depleting refrigerants information (8.5.4). Updated a link to Radon maps (8.6). Added CAA Stationary Generators NESHAP and NSPS compliance requirements (8.7). Added a section on NESHAP for Industrial, Commercial and Institutional Area Source Boilers (8.7.2). Added a section on NESHAP for Asbestos Containing Materials (8.7.3). Updated a list of references to EPA regulations (8.9.1).

Section 9, Procurement: Updated reference to the Executive Order 13693 and revised a list of Commerce Acquisition Manual (CAM) sections (9.4.3). Removed information on obsolete Executive Orders (9.5.1, 9.5.2). Updated a list of applicable Parts of Federal Acquisition Regulations (FAR) and references to Executive Orders (9.9.1).

Section 10, Pesticides: No changes.

Section 11, Asbestos Management: No changes.

Section 12, Polychlorinated Biphenyls (PCBs): Revised state-specific requirements for manifest submissions (12.8). Revised PCB spill reporting requirements (12.10.2). Revised the statement related to disposal of PCB waste at concentrations between 50-500 ppm (Attachment D).

Section 13, Lead Based Paint: Added latest requirements regarding EPA notification of any lead abatement activities in residential properties (13.5.4). Removed outdated reference and web link (13.8.1)

Section 14, Implementation of National Environmental Policy Act (NEPA): Updated references to NOAA policies and Executives Orders and added web links for reference (14.4.3). Added reference to Categorical Exclusions (CEs) in NAO 216-6A Companion Manual (14.5.1). Updated references to new NAO 216-6A and its Companion Manual (14.7).

Section 15, Past Site Contamination and Real Property Acquisition: No changes.

Section 16, Training: Revised checklist questions and added references to specific paragraphs. Removed acronym for Material Safety Data Sheet (MSDS) and added an acronym for Safety Data Sheet (SDS). Revised NOAA Training Programs to remove reference to Designated Responsible Official (DRO) training (16.5). Revised categories of hazardous waste generators in accordance with latest Resource Conservation and Recovery Act (RCRA) regulations (16.6.1). Removed reference to combustible materials per 2012 revision of OSHA Hazard Communication Standard (16.6.8). Added OSHA interpretation for First Responder - Operations Level training requirements (16.6.9).

Appendices A, B, C and D: No changes.

Signed  
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Deirdre R. Jones  
Director, Office of Facilities

June 20, 2018  
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Date

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## INTRODUCTION

### 1. PURPOSE AND SCOPE

National Weather Service Environmental Manual (NWSM 50-5116) implements the elements of the National Weather Service (NWS) Environmental Compliance Program defined in the National Weather Service Policy Directive 50-51, Environmental Compliance.

This manual was developed in accordance with Environmental Protection Agency (EPA), Department of Commerce, NOAA and other Federal agency's environmental standards (e.g., Department of Transportation (DOT) and Occupational Safety and Health Administration (OSHA)). In the absence of any published standards, guidance was developed to govern unique NWS activities.

These sections are applicable to NWS facilities, operations and personnel (e.g., employees, contractors, visitors) and will be implemented as directed by NWS PD 50-51. When NWS operations are conducted at another organization's site (e.g., Government agency, university) NWS environmental requirements and procedures shall be followed unless the hosting organization's requirements and procedures pre-empt as determined in the lease agreement, Memorandum of Understanding, etc.

### 2. DEFINITIONS

<b>Designated Responsible Official</b>	The Designated Responsible Official (DRO) at every NOAA facility is the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.
<b>Facility Environmental Coordinator</b>	The Facility Environmental Coordinator (FEC) is responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations.
<b>Memorandum of Understanding (MOU)</b>	A written agreement between two governmental organizations which defines each organization's responsibilities and duties.
<b>Station Manager</b>	The Station Manager shall be either the NWS Regional Director; Directors of Centers under National Centers for Environmental Prediction (NCEP) (Aviation Weather Center, NP6; Storm Prediction Center, NP7; and Tropical Prediction Center, NP8), Directors of the National Data Buoy Center (NDBC), National Weather Service Training Center (NWSTC), and Chiefs of National Reconditioning Center (NRC), Radar Operations Center (ROC); or Meteorologist-in-Charge (MIC), Hydrologist-in-Charge (HIC) or Official-in-Charge (OIC).

### 3. LIST OF ABBREVIATIONS AND ACRONYMS

The abbreviations and acronyms used in this document are as follows:

AA	Assistant Administrator	CPG	Comprehensive Procurement Guidelines
ACM	Asbestos-Containing Material	CPSC	Consumer Product Safety Commission
AHERA	Asbestos Hazard Emergency Response Act	CRT	Cathode Ray Tube
ARI	Air Conditioning and Refrigeration Institute	CWA	Clean Water Act
ASOS	Automated Surface Observation System	CZMA	Coastal Zone Management Act
AUL	Authorized Use List	DAA	Deputy Assistant Administrator
BMP	Best Management Practices	DCP	Data Collection Platform
CAA	Clean Air Act	DDS	Draft Data Set
CDL	Commercial Driver's License	DLA	Defense Logistics Agency
CE	Categorical Exclusion	DOC	Department of Commerce
CERCLA	Comprehensive Environmental Response Compensation Liability Act	DOT	Department of Transportation
CESQG	Conditionally Exempt Small Quantity Generator	DRO	Designated Responsible Official
CFC	Chlorofluorocarbons	EA	Environmental Assessment
CFR	Code of Federal Regulations	EHS	Extremely Hazardous Substance
CHEMTEC	Chemical Manufacturers Transportation Emergency Center	EIS	Environmental Impact Statement
CIH	Certified Industrial Hygienist	EPA	Environmental Protection Agency
CONUS	Continental United States	EPCRA	Emergency Planning and Community Right-to-Know Act
COTR	Contracting Officer's Technical Representative	ERG	Emergency Response Guidebook

ESA	Endangered Species Act	HMTUSA	Hazardous Materials Transportation Uniform Safety Act
ET	Electronic Technician		
FAR	Federal Acquisition Regulations	HS	Hazardous Substance
		HSWA	Hazardous and Solid Waste Amendments
FET	Facility Engineering Technician	HUD	Department of Housing and Urban Development
FEE	Federal Environmental Executive	HVAC	Heating, Ventilation and Air Conditioning Equipment
FIFRA	Federal Insecticide, Fungicide, Rodenticide Act	HW	Hazardous Waste
FONSI	Finding of No Significant Impact	JWOD	Javits-Wagner-O=Day Program
FSS	Federal Supply Service	LARC	Limited Access Remote Collector
GSA	General Services Administration	LBP	Lead- Based Paint
HAP	Hazardous Air Pollutant	LEL	lower explosive limit
HAZCOM	Hazard Communication	LEPC	Local Emergency Planning Committee
HAZMAT	Hazardous Material	LQG	Large Quantity Generator
HAZWOPER	Hazardous Waste Operations and Emergency Response	MAP	Model Accreditation Plan
HC	Hazardous Chemical	MCE	Mercury Containing Equipment
HIC	Hydrologist- In-Charge	MIC	Meteorologist- in- Charge
HM	Hazardous Material	MOU	Memorandum of Understanding
HMR	Hazardous Materials Regulations	MPRSA	Marine Protection, Research and Sanctuaries Act
HMT	Hazardous Materials Table	MS4	Municipal Separate Storm Sewer System
HMTA	Hazardous Materials Transportation Act	MSDS	Material Safety Data Sheet

n.o.s.	not otherwise specified	ORM	Other Regulated Material
NAO	NOAA Administrative Order	OSH Act	Occupational Safety and Health Act
NASA	National Aeronautical and Space Administration	OSHA	Occupational Safety & Health Act or Occupational Safety & Health Administration
NCEP	National Center for Environmental Prediction	P.E.	Professional Engineer
NDBC	National Data Buoy Center	P2	Pollution Prevention
NECSAS	NOAA Environmental Compliance and Safety Assessment System	PACM	Presumed Asbestos Containing Materials
NEPA	National Environmental Policy Act	PCB	Polychlorinated Biphenyl
NESHAP	National Emissions Standards for Hazardous Air Pollutants	pCi/L	Picocuries per liter
NFPA	National Fire Protection Association	PEL	permissible exposure limit
NHPA	National Historic Preservation Act	PfDs	Proof Data Set
NLIC	National Lead Information Clearinghouse	PPA	Pollution Prevention Act
NOAA	National Oceanic and Atmospheric Administration	PPE	personal protective equipment
NOI	Notice of Intent	ppm	parts per million
NPDES	National Pollutant Discharge Elimination System	PRP	Principal Responsible Party
NWS	National Weather Service	PTE	potential to emit
NWSH	National Weather Service Headquarters	PVQ	Pre-Visit Questionnaire
OIC	Official- in- Charge	RAC	Risk Assessment Code
		RACM	Regulated Asbestos Containing Material
		RCRA	Resource Conservation and Recovery Act
		RDA	Radar Data Acquisition

RMAN	Recovered Materials Advisory Notices	TRE	toxicity reduction evaluation
ROC	Radar Operations Center	TSCA	Toxic Substances Control Act
RQ	Reportable Quantity	TSDF	Treatment, Storage or Disposal Facility
SARA	Superfund Amendments and Reauthorization Act	TSI	Thermal System Insulation
SDWA	Safe Drinking Water Act	UEL	upper explosive limit
		UL	Underwriters Laboratories
SERC	State Emergency Response Commission	UN/NA	United Nations/North American
SECO	NOAA Safety and Environmental Compliance Office	UST	Underground Storage Tank
SIP	State Implementation Plan	VOC	Volatile Organic Compounds
sp.gr.	specific gravity	WQA	Water Quality Act
SPCC	Spill Prevention Control and Countermeasures	WSOM	Weather Service Operations Manual
SQG	Small Quantity Generator	WSR	Waste Shipment Record
SFSC	Sterling Field Support Center	XRF	X-ray Spectrophotometer
SWDA	Solid Waste Disposal Act		
TCLP	Toxicity Characteristic Leaching Procedure		
TPQ	Threshold Planning Quantity		

#### 4. Glossary

Accumulation - the storage of hazardous waste by the generator without a permit if certain requirements for volume and time limits are met.

Acquisition - the acquiring by contract with appropriated funds for supplies or services (including construction) by and for the use of the Federal Government through purchase or lease.

Bulk Packaging - a packaging, other than a vessel or barge, including a transport vehicle or freight container in which hazardous materials are loaded with no intermediate form of containment and which has a maximum capacity greater than 450 L (119-gal.) as a receptacle for a liquid; a maximum net mass greater than 400 kg (882-pounds) and a maximum capacity greater than 450 L (119-gal.) as a receptacle for a solid; or a water capacity greater than 454 kg (1,000 lbs.) as a receptacle for a gas.

Categorical Exclusion (CE) - an action which the agency has determined will not have any significant environmental effect and hence will not require application of the NEPA process.

Characteristic Waste - a hazardous waste that meets one of the characteristics of a hazardous waste in Subpart C of 40 CFR Part 261. These wastes are ignitable, corrosive, reactive or toxic and are identified with the alphabetical letter "D".

Comprehensive Procurement Guidelines (CPG) - the mechanism through which EPA designates items as containing recycled content, for purchase by Federal, State and local agencies or by government contractors using appropriated Federal funds.

Conditionally-Exempt Small Quantity Generator (CESQG) - produces less than 100 kilograms (220-pounds) of hazardous waste and no more than 1 kilogram (2.2 pounds) of acute hazardous waste per month.

Contiguous Zone - the zone established by the United States under article 24 of the Convention of the Territorial Sea and Contiguous Zone, that is contiguous to the territorial sea and that extends nine miles seaward from the outer limit of the territorial area.

Department of Transportation (DOT) - governmental agency responsible for the transportation of materials via roads, air and sea.

Designated Person - an NWS employee designated by the Facility Manager to coordinate the compliance efforts for a specific environmental program.

Designated Responsible Official (DRO) - the senior NWS official on-site. This official has authority over operations or activities which are subject to environmental statutes. The DRO could be the MIC, OIC or HIC. The Designated Responsible Official (DRO) at every NOAA facility is the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed. For the NWS, the DRO could be: the Assistant Administrator (AA), the Deputy Assistant Administration (DAA), the Regional/Center/Office Director, the Meteorologist-in-Charge (MIC), Hydrologist-in-Charge (HIC) or Official-in-Charge (OIC).

Electronic Waste - discarded computers, cathode ray tubes (CRTs), cell phones, fax machines, electronic instrumentation.

Emergency Coordinator - The person in charge of the NWS site during an emergency. This may be the Designated Official or someone appointed by the Designated Official to fulfill the functions of this position.

Environmental Protection Agency (EPA) - governmental agency responsible for the protection of our nation's environmental resources.

Environmentally Preferable - products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services.

EPA ID Number - a unique number assigned by the EPA or authorized State to each generator, transporter and treatment, storage or disposal facility.

Extremely Hazardous Substance (EHS) - any material listed in 40 CFR 355.

Facility Environmental Coordinator - a NOAA employee who is responsible for ensuring activities carried out at a facility are conducted in accordance with Federal, State and local environmental regulations. In the NWS, the FEC is typically referred to as the "Environmental Focal Point."

Field Office - a Field Office may include the following: Weather Forecast Office (WFO), River Forecast Center (RFC), Weather Service Office (WSO), and a Data Collection Office (DCO).

Finding of No Significant Impact (FONSI) - the determination that a proposed action will not adversely impact the environment.

Flashpoint - the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid.

Generator - any person (i.e. an individual, trust, firm, joint stock company, Federal Agency, corporation, partnership, association, State, municipality, commission, political subdivision of a State or any interstate body) by site, whose act or process produces hazardous waste identified or listed in 40 CFR Part 261 or whose act first causes a hazardous waste to become subject to regulation, and "Generator" produces 1,000 kilograms (2,200-pounds) per month of hazardous waste or 1 kg of acutely hazardous waste.

Hazard Communication Standard - is also known as "the worker right-to-know" program and is required by 29 CFR 1910.1200.

Hazardous Chemical (HC) - a substance regulated by the OSHA Hazard Communication Standard in 29 CFR 1910.1200.

Hazardous Material (HM) - means a substance or material which has been designated by the DOT as being capable of posing an unreasonable risk to health, safety and property when transported in commerce. The term includes hazardous substances, hazardous wastes, marine

pollutants and elevated temperature materials.

Hazardous Material Regulations (HMR) - regulations promulgated by the Department of Transportation to affect the safe shipment and transport of hazardous materials. HMR are found in 49 CFR Parts 171-180.

Hazardous Material Table (HMT) - an alphabetical listing of hazardous materials regulated in transport by the Department of Transportation found in 49 CFR 172.101.

Hazardous Substance (HS) - any material listed in 40 CFR 302.4.

Hazardous Waste (HW) - a solid waste which (1) is not excluded by 40 CFR 261.4(b) and (2) it meets the characteristic of a hazardous waste in Subpart C or (3) is listed in Subpart D of 40 CFR 261 or, is a mixture of a solid waste and a hazardous waste.

Land Disposal Notice - a certification signed by the generator that a hazardous waste either needs further treatment or has been treated to meet EPA standards for land disposal.

Lead-Based Paint - Lead-Based paint, as defined by the EPA in 40 CFR 745.103 (2) - paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight. It was manufactured prior to 1978.

Life Cycle Assessment - the comprehensive examination of a product's environmental and economic aspects and potential impacts throughout its lifetime, including raw material extraction, transportation, manufacturing, use and disposal.

Life Cycle Cost - the amortized annual cost of a product, including capital costs, installation costs, operating costs, maintenance costs and disposal costs discounted over the lifetime of the product.

Limited Quantities - the maximum amounts of a hazardous material for which there is a specific labeling or packaging exception.

Listed Waste - a hazardous waste that meets the listing in Subpart D of 40 CFR 261. These wastes are identified with the alphabetical letters "F", "K", "U" or "P".

Liquified Petroleum Gas - Any material which is composed predominantly of any of the following hydrocarbons, or mixtures of them: propane, propylene, butane (normal butane or isobutane), and butylene, made liquid by pressure.

Lower Explosive Limit - the minimum concentration of a vapor or gas in air below which it is not possible to ignite the vapors with a proper ignition source.

Manifest - a shipping document originated by the generator of a hazardous waste in accord with the requirements in 40 CFR 262.

Mitigation System - Any system or steps designed to reduce radon concentrations in the indoor air of a building.

Non-Bulk Packaging - a packaging which has a maximum capacity of 450 L (119-gal.) or less as a receptacle for a liquid; a maximum net mass of 400 kg (882-pounds) or less and a maximum capacity of 450 L (119-gal.) or less as a receptacle for a solid; or a water capacity of 454 kg (1,000 lbs.) or less as a receptacle for a gas.

Occupied Building - A building occupied more than 4 hours per day.

Operating Unit - includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).

ORM-D - a material other than a regulated quantity which presents a limited hazard during transportation due to its form, quantity and packaging.

pH - a measure of the acidity or alkalinity of an aqueous (water) solution. If less than 7.0, the solution is acidic. If greater than 7.0, the solution is alkaline or basic.

Phase I Property Investigation - the study of a piece of property to determine the potential that it might be contaminated.

Picocuries - A unit of measurement used to describe certain types of nuclear radiation. A curie is the amount of any radionuclide that undergoes exactly  $3.7 \times 10^{10}$  radioactive disintegrations per second. A picocurie is one trillionth ( $10^{-12}$ ) of a curie, or 0.037 radioactive disintegrations per second.

Picocurie per liter (pCi/L) - A common unit of measurement of the concentration of radioactivity in a fluid (liquid or gas). A picocurie per liter corresponds to 0.037 radioactive disintegrations per second in every liter of fluid.

Pollution Prevention - a continual process to use materials, processes or practices that reduce or eliminate the creation of pollutants or waste at the source. It includes practices that reduce the use of hazardous materials, energy, water or other resources and practices that protect natural resources through conservation or more efficient use.

POTW - Publicly-Owned Treatment Works otherwise known as a sewage treatment plant.

Qualified Person - A person qualified by education, training and experience to estimate employee exposures to hazardous materials and work conditions.

Radon - A colorless, odorless, radioactive gas formed by the decay of radium. Radon exists in

soils, rocks and some groundwater supplies. It can infiltrate into buildings.

Recovered Materials Advisory Notice (RMAN) - Periodically updated purchasing guidelines issued by the EPA. RMANs recommend recycled-content levels and/or ranges to look for when purchasing products and materials.

Recyclables - Solid wastes which can be treated or processed to allow direct reuse or introduction into new products.

Release - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, ingesting, escaping, leaching, dumping or disposing into the environment as defined in 40 CFR Part 302.4.

Reportable Quantity (RQ) - the amount of a hazardous substance as set forth in 40 CFR 302.4, which when released into the environment within any 24-hour period, requires an immediate report to the National Response Center - AND/OR - the amount of an extremely hazardous substance as established in 40 CFR 355, which when released off-site, requires an immediate report to the Community Emergency Coordinator for the Local Emergency Planning Committee (LEPC).

Small Quantity Generator (SQG) - produces more than 100 kilograms (220-pounds) but less than 1,000 kilograms of waste per month.

Solid Waste - A term used to describe garbage. The EPA defines it as any discarded material that is not excluded from regulation by 40 CFR 261.4(a) or that is not excluded by a variance granted in 40 CFR 260.30 and 260.31.

Specific Gravity - is the weight of a solid or liquid as compared to the weight of an equal volume of water.

Spill Prevention Control and Countermeasures (SPCC) Plan - a formal plan prepared by a Professional Engineer which describes the procedures and equipment needed to prevent a release from a storage tank or area as well as the procedures to be used should a release occur.

Station Manager - For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; and Tropical Prediction Center, NP8), Directors of the NDBC, NWSTC, and Chiefs of NRC and ROC; or Meteorologist-in-Charge (MIC), Hydrologist-in-Charge (HIC) or Official-in-Charge (OIC).

Threshold Limit Value (TLV) - published by the American Conference of Governmental Industrial Hygienists (ACGIH) which represents conditions under which it is believed that nearly all workers may be repeatedly exposed to day after day without adverse health effects.

Threshold Planning Quantity (TPQ) - the quantity of an extremely hazardous substance as listed in 40 CFR 355 that, if stored at any time at a facility, requires the facility to comply with the

EPCRA reporting requirements.

Tier II Form - provides information about a specific hazardous material stored at a site. Tier II form is required under Section 312 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). The purpose of this form is to provide State and local officials and the public with information on the general hazard types and locations of hazardous chemicals present at your facility during the previous calendar year.

Underground Storage Tank (UST) - a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground that stores petroleum or any hazardous substance listed in 40 CFR 302.4.

Universal Wastes - hazardous wastes that are subject to significantly reduced regulatory requirements if recycled (40 CFR Part 273). These wastes include batteries, fluorescent bulbs, mercury-containing thermostats and pesticides.

Upper Explosive Limit - the maximum concentration of vapors or gas in the air above which it is not possible to cause ignition of the vapors with a proper ignition source.

Xeriscaping - landscaping technique which minimizes the use of water.

## 5. Manual Organization

Each section of the manual consists of a table of contents, one-page summary (synopsis), a checklist, the full text of the program requirements and copies and/or sources of the references. The summary highlights the most important aspects of the program and may be used by Station Managers as an overview for program implementation. The checklist should be used initially to determine facility/work site compliance with the requirements of the section then at least annually or, as needed, to ensure for compliance.

There is a special note concerning these checklists. Each question on the checklist has three possible answers - YES, NO or NOT APPLICABLE (NA). Typically, three underlined spaces have been provided for the answer. For some questions, the underlined space has been replaced by an empty rectangle or “box.” These boxes indicate that special action is required. If the answer is placed in a box, the NWS Regional Environmental/Safety Coordinator or the NWS Headquarters Environmental and Safety staff must be contacted as soon as possible. The manual also includes a glossary which contains the definitions for keywords used in the manual and a list of acronyms used in the text.

## 6. NOAA Titles

In NOAA Administrative Order (NAO) 216-17, NOAA Environmental Compliance Program uses certain terms to define personnel who have roles in environmental compliance matters. However, the same terms are not used by each Line Office within NOAA. There are two terms which have a direct application to NWS personnel:

a. Designated Responsible Official

The Designated Responsible Official (DRO) at every NOAA facility is the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed. For the NWS, the DRO could be: the Assistant Administrator (AA), the Deputy Assistant Administration (DAA), the Regional/Center/Office Director, the Meteorologist-in-Charge (MIC), Hydrologist-in-Charge (HIC) or Official-in-Charge (OIC).

According to NOAA, the DRO is assigned the following duties and responsibilities:

- 1) Ensuring that facility operations and activities are conducted in compliance with environmental and occupational safety/health requirements.
- 2) Ensure that all areas and operations of each workplace, including office operations, under the DRO jurisdiction, are locally inspected (i.e., assessed, surveyed, audit, etc.) at least annually.
- 3) Ensuring that all environmental and occupational safety/health assessment or survey findings are corrected within the recommended abatement period.
- 4) Ensuring that on-site personnel are aware of environmental and occupational safety/health requirements and are properly trained and equipped.

- 5) Elevating environmental and/or occupational safety/health compliance issues to senior management with recommendations for resolution as necessary to ensure compliance.
- b. Facility Environmental Coordinator

The Facility Environmental Coordinator (FEC) is responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. For the NWS, the FEC is identified as the Environmental Focal Point. While at some NOAA facilities the FEC will also be responsible for compliance with occupational safety and health requirements, this role can be assigned to another employee.

## 7. References

A list of specific references to regulations, standards and guidelines used to implement the program is included at the end of each section. The following websites can be used to reference Federal regulatory citations referenced throughout this document.

These websites can be used for reference to any Title within the Code of Federal Regulations (CFR).

- <http://www.access.gpo.gov>
- <http://www.firstgov.gov>

Specific reference to the Environmental Protection Agency (EPA) regulations and program information:

- <http://www.epa.gov> (click on “Laws, Regulations and Dockets” on left side of page).

Specific Web sites for the Department of Transportation (DOT) regulations and information:

- <http://www.dot.gov>

In addition, *Appendix A* to this manual provides a summary of the laws that created the national environmental program as well as a cross reference to the regulations promulgated as a result of these laws.

*Appendix B* is a combination of the list of chemicals identified by the EPA as “hazardous substances” (HS) and their reportable quantities as published in 40 CFR 302.4 and the list of chemicals identified as “extremely hazardous substances” (EHS) and their threshold planning quantities as published in 40 CFR 355.

*Appendix C* is a listing of the State Environmental Agencies web sites.

*Appendix D-1* and *Appendix D-2* include a hazardous waste Labeling/Marking Microsoft Word freeware and instructions for its use.

## SECTION 1 - HAZARDOUS MATERIALS STORAGE

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## Synopsis

**NOTE:** This section ensures hazardous materials and equipment containing these materials are properly stored at NWS locations. It applies to all NWS facilities and work sites that store corrosive, flammable, combustible, toxic, or reactive materials.

### Initial Implementation Requirements:

- Designate an Individual to Coordinate the Hazardous Material Storage Efforts
- Compare Site/Facility Operations with the Requirements of this Section

For materials stored in small quantities (1.7):

- Identify materials that are:
  - flammable
  - combustible
  - corrosive
  - reactive
- Ensure flammables are stored in appropriate storage lockers (1.7.1)
- Ensure corrosives are stored compatibly (1.7.2)
- Ensure reactive materials are stored compatibly (1.7.3)
- Ensure janitorial supplies are properly stored (1.7.4)
- For Storage in large quantities:
  - If aboveground storage containers are used for petroleum products, determine if a Spill Prevention Control and Countermeasures (SPCC) plan is required (1.8.2)
  - If a Spill Prevention Control and Countermeasures (SPCC) Plan is required (1.8.1), review it to ensure:
    - It has been reviewed at least every 5 years or when changes to equipment or operations occur (1.8.1)
    - No identified spill containment structures have been modified (1.8.1)
    - All identified spill response equipment is available and operational (1.8.1)
    - All NWS personnel who maintain the spill containment structures or are responsible for spill response have been trained (1.8.1)
  - If a SPCC Plan is not required, ensure that Best Management Practices (BMP) plan been adopted in accordance with the Attachment A (1.8.1)
  - If an underground storage tank is used, ensure:
    - The tank is registered with the State (1.8.3 a)
    - The tank meets the Environmental Protection Agency (EPA) design standards (1.8.3 b)
    - If the tank was an existing tank, it was upgraded to meet the EPA design standards (1.8.3c)
    - The tank has an operating leak detection system (1.8.3 d.1)
    - The tank has monthly monitoring (1.8.3 d.2)
  - Determine if the facility has hazardous chemicals or extremely hazardous chemicals on hand in a quantity that equals or exceeds the regulatory limits. If so, submit the required Tier II report to the Local Emergency Planning Committee (LEPC), SERS, or Fire Department (1.8.4)

### Recurring and Annual Task Requirements:

- Review the SPCC Plan annually to determine if any changes to emergency contacts,

- equipment and/or operations occurred. (1.8.1)
- Review and self-certify the SPCC Plan every 5 years by a facility manager or PE (when required) or when changes to equipment or operations occur (1.8.1)
- Periodically inspect the facility to ensure small quantities of hazardous materials are properly stored (1.7)

<b>Hazardous Materials Storage Checklist</b>		<b>YES</b>	<b>NO</b>	<b>NA</b>
1. Has a Designated Person responsible for the day-to-day implementation of the hazardous material storage program been appointed? (1.6.1)		—	—	—
<b>Hazardous Materials Storage</b>				
2. Does the facility/work site use or store OSHA hazardous materials or hazardous substances? (1.6.2)		—	—	—
a. If yes, has an MSDS/SDS for each regulated material been submitted to the local Fire Department and/or Local Emergency Planning Committee or the State Emergency Response Commission? (1.8.4b)		—	—	—
b. Has a Tier II form been filed with the Local Emergency Planning Committee, State Response Emergency Committee or Fire Department annually before March 1? (1.8.4)		—	—	—
3. Does the storage of small quantities of flammable materials comply with Procedure 16 of NWSM 50-1115? (1.7.1)		—	—	—
4. Are appropriate eyewash/drenching facilities available to personnel working with corrosive material (1.7.2)?		—	—	—
Is the eyewash/drenching facility:		—	—	—
a. Available within 10 seconds?		—	—	—
b. Capable of 15 minutes of continuous flushing at 0.4 gpm? (1.7.2)		—	—	—
5. Are materials stored in a compatible manner? (1.7.2, 1.7.3, 1.7.4)		—	—	—
<b>Petroleum Storage (1.8.1)</b>				
1. Does the facility/work site store more than a total of 1,320-gallons of petroleum product in containers that are 55-gallons or larger and is there a potential that a discharge can reach the U.S. navigable waterways?		—	—	—
a. If so, does the facility have an SPCC Plan?		—	—	—
b. If so, is the site attended more than 4-hours per day?		—	—	—
• If so, is the SPCC Plan on-site?		—	—	—
• Does the associated field office have a copy readily available for personnel and regulators?		—	—	—
c. Has the SPCC Plan been thoroughly reviewed at least every 5-years or when major changes to equipment or operations occur? Has the SPCC Plan been reviewed and self-certified by the facility when technical amendments are required, unless PE certification is required (e.g., when alternative methods for environmental protection are included in the Plan or tank(s) total capacity exceeds 10,000 Gallons)?		—	—	—
d. Has the SPCC Plan been reviewed annually to verify that non-technical information (e.g., names, addresses, and phone numbers) is up-to-date?		—	—	—

e. If an SPCC Plan is not required, has a Best Management Plan (BMP) been prepared?	—	—	—
2. Has a Spill Coordinator been appointed? (1.8.1)	—	—	—
3. Have facility/work site personnel received the required training? (1.8.1)	—	—	—
4. Are discharge prevention briefings conducted annually? (1.8.1)			
5. If the petroleum product is stored in an aboveground tank, has the tank undergone visual integrity inspections on a regular schedule and when repairs are done? (1.8.2)			
6. Are records of monthly and annual inspections kept on-site for at least 3 years? (1.8.1a)			
<b>Underground Storage Tanks</b>			
1. Does the facility/work site store petroleum in a container that meets the definition of an “underground storage tank”? (1.8.3)	—	—	—
2. If yes, is the UST registered with the State? (1.8.3a)	—	—	—
3. Does the UST meet the design standards in 40 CFR 280.20 or State equivalent? (1.8.3b)	—	—	—
4. Is release detection performed on a periodic basis to detect leaks (1.8.3 d.1)?	—	—	—
5. Are proper spill response procedures in place (1.8.3)?	—	—	—
6. If a release has occurred in the past, was corrective action performed (1.8.3)?	—	—	—
<b>Emergency Planning and Community Right to Know Act</b>			
1. Does the facility or work site store 10,000 pounds or more of an OSHA-defined hazardous substance at any time? (1.8.4a)	—	—	—
• If yes, has an MSDS/SDS for each regulated material been submitted to the local Fire Department or the Local Emergency Planning Committee or the State Emergency Response Commission? (1.8.4b)	—	—	—
2. Does the facility store any extremely hazardous substance (EHS), as defined in 40 CFR 355, in a quantity equal to or greater than 500- pounds or the threshold planning quantity (TPQ) listed in 40 CFR 355 for that (EHS) (whichever is less)? (1.8.4a)	—	—	—
a. If yes, has an MSDS/SDS for each regulated material been submitted to the local Fire Department or Local Emergency Planning Committee? (1.8.4b)	—	—	—
b. Has the Tier II been re-submitted annually? (1.8.4)	—	—	—
<b>Gasoline Storage</b>			
Does the storage of gasoline in small containers comply with Section 16 of NWSM 50-1115 - Occupational Safety & Health? (1.9.1a)	—	—	—

<b>Unused Oil</b>			
7. Is unused oil stored in the original container away from food and beverages? (1.9.2a)	—	—	—
8. Are transfer containers labeled to identify the contents? (1.9.2a)	—	—	—
<b>Used Oil</b>			
1. Is used oil stored in DOT- approved containers? (1.9.2b)	—	—	—
2. Is spill response equipment readily available? (1.9.2b)	—	—	—
<b>Ethylene Glycol Based Antifreeze (1.9.3)</b>			
1. Is <u>unused</u> antifreeze stored in the original container away from food and beverages and in an area that provides containment in the event of a leak or spill? (1.9.3a)	—	—	—
2. Are transfer containers labeled to identify the contents? (1.9.3a)	—	—	—
3. Is the <u>used</u> antifreeze stored in DOT-approved containers? (1.9.3b)	—	—	—
4. Are the containers in good condition, labeled “antifreeze/water mixture” and stored to prevent a release or spill? (1.9.3b)	—	—	—
<b>Propylene Glycol from Rain Gauges and AWPAG (1.9.4)</b>			
Does the facility currently collect oil/propylene glycol/water mixtures from the rain gauges?	—	—	—
a. If yes, is the material separated into oil and propylene glycol/water solution?	—	—	—
b. Is the container in good condition and labeled “Oil/Propylene Glycol/Water Mixture - DO NOT DRINK!”?	—	—	—
c. Has the local POTW been contacted to determine if the propylene glycol/water mixture can be discharged into the sewer system?	—	—	—
d. Has the used oil contractor been contacted to prior to mixing with the used oil to determine if this procedure will create any problems in recycling the oil?	—	—	—
<b>Universal Wastes</b>			
Does the facility or work site recycle batteries (1.9.5) and fluorescent tubes (1.9.6)?	—	—	—
a. Are the stored universal wastes protected from damage and closed when not actively filled? (1.9.5, 1.9.6)	—	—	—
b. Are the storage/accumulation containers clearly identified and marked with the date the accumulation began (1.9.5, 1.9.6)?	—	—	—
<b>Paints (1.9.8)</b>			
Does the facility or work site store flammable paints in accordance with NWSM 50-1115 - Occupational Safety & Health Procedure 16 - Flammable and Combustible Storage?	—	—	—
<b>Compressed Gas Cylinders (1.9.9)</b>			

Does the facility/work site store compressed gas cylinders in accordance with NWSM 50-1115 Occupational Safety & Health Procedure 9 - Compressed Gas Safety?	-	-	-
<b>Mercury Containing Equipment (1.9.11)</b>			
Has the facility surveyed for the devices or part of the devices that could contain elementary mercury? Some of the various types of MCE are:	-	-	-
<ul style="list-style-type: none"> <li>● High Intensity Discharge Lamps</li> <li>● Mercury Containing Switches - furnace controls, HVAC controls, laboratory and industrial equipment</li> <li>● Mercury Thermostats</li> <li>● Silent Wall Switches (Prior to 1991)</li> <li>● Freezer and Flame Sensors - gas fired devices and pilot lights.</li> <li>● Manometers/Barometers/Thermometers.</li> <li>● Float Switches - sump pumps and septic tanks</li> <li>● Mercury regulators</li> </ul>			

## SECTION 1 - HAZARDOUS MATERIALS STORAGE

### 1.1 Purpose and Scope

To perform its mission, National Weather Service (NWS) facilities and work sites must store and use hazardous materials such as diesel, propane and other fuels, as well as oils, batteries, paints, solvents, and mercury containing equipment. This procedure has been promulgated to ensure these materials are safely stored and managed.

### 1.2 Definitions

<b>Container</b>	An object used for storage. It may be a drum, aboveground tank, or other storage receptacle.
<b>Designated Person</b>	An NWS employee designated by the Station Manager who is responsible for ensuring all hazardous materials at the work site are stored in accordance with Federal, State and local regulations.
<b>Facility</b>	For purposes of the Emergency Planning and Community Right-to-Know Act (EPCRA), all buildings, equipment, structures and other stationary items that are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by or under common control with, such person). Facility will include man-made structures as well as all natural structures in which chemicals are purposefully placed or removed through human means such that it functions as a containment structure for human use. For purposes of emergency release notification, the term includes motor vehicles, rolling stock and aircraft.
<b>Hazardous Air Pollutants</b>	Chemicals which can cause adverse effects to human health or the environment. A list of chemicals that EPA has identified as airborne containments that are known to be hazardous to human health. There are currently 188 listed chemicals (See Appendix B of this manual).
<b>Leak Detection</b>	A system used to determine if an underground or aboveground tank is leaking.
<b>Liquefied Petroleum Gas</b>	Any material which is composed predominantly of any of the following hydrocarbons, or mixtures of them: propane, propylene, butane (normal butane or isobutane), and butylene, made liquid by pressure.
<b>Mercury Containing Equipment</b>	A device or part of a device that contains elementary mercury integral to its function. It can be managed as a universal waste. If the mercury is in the device accidentally (the device does not contain mercury in its regular use), or the device has been contaminated by an external source of mercury, the device cannot be managed as universal waste.
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).

<b>Publicly-Owned Treatment Works (POTW)</b>	A municipal sewage treatment plant.
<b>Reportable Quantity (RQ)</b>	<p>The amount of a hazardous substance as set forth in 40 CFR 302.4, which requires an immediate report to the National Response Center if released into the environment within any 24-hour period</p> <p>-AND/OR -</p> <p>The amount of an extremely hazardous substance, as established in 40 CFR 355, which, when released off-site, requires an immediate report to the Community Emergency Coordinator for the Local Emergency Planning Committee (LEPC).</p>
<b>Secondary Containment</b>	Use of a device or technique such as a berm, dike, culvert, diversion pond, etc. that is designed to prevent the spread of a spill or release of a regulated material.
<b>Spill Coordinator</b>	An individual designated within the SPCC Plan who will be accountable for oil discharge prevention. This individual is responsible for ensuring required maintenance is performed on equipment and structures, response procedures are appropriate, response supplies are on hand, and personnel are trained to prevent and respond to releases.
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).
<b>Threshold Planning Quantity (TPQ)</b>	The quantity of an extremely hazardous substance as identified in 40 CFR 355.
<b>Tier II Form</b>	A reporting form required under the Emergency Planning and Community Right-to-Know Act which reports information on specific hazardous chemicals present at a facility above the threshold levels established by the EPA in 40 CFR 370.20. This form is found in 40 CFR 370.41 and is available on-line as explained in Attachment B to this section.
<b>Underground Storage Tank (UST)</b>	A tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground and stores either a petroleum product or any hazardous substance listed on the list generated under the Comprehensive Environmental Response, Compensation Liability Act (CERCLA) or Superfund, and published in 40 CFR 302.4.

### 1.3 Acronyms Employed in This Section

AWPAG	All Weather Precipitation Accumulation Gauge
ASTM	American Society for Testing and Materials
BMP	Best Management Practices
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOT	Department of Transportation
EHS	Extremely Hazardous Substance
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
HAP	Hazardous Air Pollutant
HC	Hazardous Chemical
HSWA	Hazardous and Solid Waste Amendments
HVAC	Heating, Ventilation and Air Conditioning
gpm	Gallon per Minute
LEL	Lower Explosive Limit
LEPC	Local Emergency Planning Committee
MCE	Mercury Containing Equipment
MSDS/SDS	Material Safety Data Sheet/Safety Data Sheet
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
SECO	NOAA Safety and Environmental Compliance Office
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
OSHA	Occupational Safety and Health Administration
OSH Act	Occupational Safety and Health Act
PE	Professional Engineer
POTW	Publicly Owned Treatment Works
RQ	Reportable Quantity
SERC	State Emergency Response Commission
SPCC	Spill Prevention Control and Countermeasures
sp.gr.	specific gravity
TPQ	Threshold Planning Quantity
TCLP	Toxicity Characteristic Leaching Procedure
UEL	Upper Explosive Limit
UST	Underground Storage Tank

### 1.4 Regulatory Requirements

Because of overlapping concerns, storage of hazardous materials is regulated under environmental, worker safety, and transportation regulations. The National Fire Protection Association (NFPA) has created the “Flammable and Combustible Liquids Code” (NFPA 30) and “Liquefied Petroleum Gas Code” (NFPA 58) which are the national standards (incorporated by reference in OSHA standards) for the storage of these materials.

### 1.4.1 Federal

#### a. Clean Water Act

The Clean Water Act regulates the storage of oil and petroleum products to prevent their release into the waters of the United States and ensure a proper response should a release occur.

For the storage of larger quantities of petroleum, the regulations require the creation and implementation of facility-specific Spill Prevention, Control, and Countermeasure (SPCC) Plans. The rules can be found in 40 CFR 112. To ensure spills of hazardous materials are reported and properly managed, the EPA has also created a list of regulated materials and has assigned each a “reportable quantity (RQ).” This list, found in 40 CFR 302.4, requires spills that are larger than the RQ to be reported to the National Response Center and has been incorporated in this section (see Appendix B of the Manual).

#### b. Clean Air Act

The Clean Air Act requires facilities that store large quantities of petroleum products or volatile organic liquids to obtain permits as stationary emission sources. Facilities are required to obtain Title V Operating Permit if they are considered a “major source”:

- A major source has actual or potential emissions at or above the major source threshold for any “air pollutant.”
- The major source threshold for any air pollutant is 100 tons/year (this is the “default value”).
- Lower thresholds apply in non-attainment areas (but only for the pollutant that are in non-attainment). (See Table below).
- The EPA generally has not required non-major sources to get permits.

For additional information on CAA requirements, refer to Section 8 of NWSM 50-1115.

#### c. The Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Superfund was created in 1980 to address the problem of old hazardous waste dump sites. In establishing the regulatory program under this law, the Environmental Protection Agency (EPA) promulgated a series of regulations that established, among other things, the requirement for the reporting to the National Response Center of all spills, leaks or “releases” into the environment in excess of a “reportable quantity” or RQ for chemicals that were deemed “hazardous substances.”

#### d. Hazardous and Solid Waste Amendments

The Hazardous and Solid Waste Amendments (HSWA) were enacted in 1984. Subtitle I of the law required the EPA to regulate underground storage tanks that contained the EPA-defined hazardous substances that were created as a result of CERCLA.

#### e. Emergency Planning and Community Right-to-Know Act (EPCRA)

EPCRA was created to ensure local response personnel know what they might be facing when responding to an emergency. The law requires facilities that use and/or store Extremely Hazardous Substance (EHS) to notify the Local Emergency Planning

Committee (LEPC) of the hazard presence, location, and quantity of each EHS on an annual basis. The list of EHSs is found in 40 CFR Part 355.

If an NWS facility stores at any time any EHS in a quantity greater than the Threshold Planning Quantity (TPQ), it will be regulated under EPCRA (see Appendix B to this manual).

For example, an NWS facility will be regulated, if it stores a total of:

- 1) 500 pounds or more of battery acid - because battery acid is listed as an EHS (total of 500 pounds or the TPQ, whichever is less), or
- 2) 10,000 pounds of diesel fuel, heating oil or gasoline - about 1,300-1,500-gallons, because these are OSHA hazardous substances, or
- 3) 10,000 pounds of propane - about 2,500-gallons, or
- 4) 10,000 pounds of hydrogen.

If the TPQ for any EHS is exceeded, a number of reports must be filed in preparation for an emergency event. Section 1.8.4 explains the EPCRA reporting requirements in detail.

f. Occupational Safety & Health Act

The Occupational Safety & Health Act (OSH Act) has empowered the Occupational Safety and Health Administration (OSHA) to create regulations for the storage of hazardous chemicals. The rules cover broad classes of chemicals such as flammable or corrosive, as well as many specific chemicals. These rules are found in 29 CFR 1910.

g. Hazardous Materials Transportation Act

Although the Hazardous Materials Transportation Act legally deals with hazardous materials while in transport by specifying containers, markings and labels, the regulations in 49 CFR 172 have the additional effect of specifying containers, markings and labels that should be used while in storage.

#### 1.4.2 National Fire Code

The National Fire Protection Association (NFPA) has created “Flammable and Combustible Liquids Code” (NFPA 30) and “Liquefied Petroleum Gas Code” (NFPA 58) which are the national standards (incorporated by reference by OSHA) for the storage of these materials.

#### 1.5 Spill Reports

Because the amount of a hazardous material or extremely hazardous material that is spilled or released will often determine the risks to human health and the environment, the EPA has created two separate lists of these materials and assigned each a “Reportable Quantity” or RQ. Should a hazardous material be spilled or released into the environment in an amount equal or greater than the RQ, a report must be filed with the National Response Center.

If an extremely hazardous substance is released and the amount that goes off-site is equal to or greater than the RQ in 40 CFR 355, the Community Emergency Coordinator for the Local Emergency Planning Committee must be notified immediately.

The RQs range from 1 pound to 5,000 pounds depending on the dangers presented by the released material. The list of hazardous materials and their RQs are found in 40 CFR 302.4, and the list of extremely hazardous substances and their RQs are found in 40 CFR 355 which are reproduced in Appendix B to this Manual as the List of Hazardous and Extremely Hazardous Substances. A detailed discussion on the procedure for the reporting of spills or releases of hazardous materials is found in Section 4 of this Manual.

Although diesel or lubricating oils are not found on the list of hazardous substances in Table 302.4, the EPA does require the reporting of spills of petroleum products. For these spills, the National Response Center must be notified if the release or discharge may violate applicable water quality standards or may cause a film, sheen, or discoloration of the surface of the water, or the formation of sludge below the surface of the water.

If the facility is regulated under the SPCC rule and has a reportable discharge according to EPA regulations, it must be reported to both NRC and EPA. Normally a discharge must be reported to EPA Regional Administrator when there is a discharge of:

- More than 1,000 gallons of oil in a single discharge into or upon navigable waters or adjoining shorelines, or
- More than 42 gallons of oil in each of two discharges into navigable waters or adjoining shorelines within any 12-month period.

Per 40 CFR 112.2 *Navigable waters* means waters of the United States, including the territorial seas.

(1) For purposes of the Clean Water Act, 33 U.S.C. 1251 *et seq.* and implementing regulations, subject to the exclusions in paragraph (2) of this definition, the term “waters of the United States” means:

- (i) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (ii) All interstate waters, including interstate wetlands;
- (iii) The territorial seas;
- (iv) All impoundments of waters otherwise identified as waters of the United States under this section;
- (v) All tributaries, as defined in paragraph (3)(iii) of this definition, of waters identified in paragraphs (1)(i) through (iii) of this definition;
- (vi) All waters adjacent to a water identified in paragraphs (1)(i) through (v) of this definition, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters

It is important to note that some states have their own reporting requirements for oil and hazardous materials. The SPCC plan should be checked for respective state requirements.

**NOTE:** Some states 'reporting threshold' is over 25 gallons or over 42 gallons of oil spilled on the surface of the land and any quantity spilled into the waters that would produce visible oil slick, oil solids, or coat aquatic life, habitat or property with oil.

Appendix C is a listing of the websites of state environmental agencies. It can be used to determine state-specific requirements. If this information is not available on-line, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator, and/or the NWSH environmental and safety staff to determine if state or local requirements exist.

## 1.6 Implementation of a Storage Program for Hazardous Materials

### 1.6.1 The Station Manager

Appoints an individual who will be responsible for the day-to-day implementation of the hazardous material storage program.

### 1.6.2 The Designated Person

The designated person is responsible for reviewing the list of hazardous materials and the associated SDSs used at the facility or work site. This list is required as part of NWSM 50-1115, Procedure 7 - Hazard Communication Standard. The purpose of this review is to identify and quantify the materials considered flammable, combustible, corrosive, and/or reactive.

The Designated Person reviews Appendix B to this Manual to determine:

- If the materials are considered a hazardous substance under 40 CFR 302.4 or an EHS under 40 CFR 355 or both, and
- The reportable quantity for each substance, and
- The threshold planning quantity (TPQ) if the material is considered an extremely hazardous substance.

The Designated Person also determines the type and size of storage container(s) used for each hazardous material and/or petroleum product as well as the typical and maximum volume stored at any one time.

## 1.7 Storage of Small Quantities of Hazardous Materials

Because even small quantities (i.e., less than 55-gallons) of hazardous materials can create major problems, they must be stored to minimize their hazards. Flammable and combustible materials must be isolated from ignition sources. Corrosives must be containerized to prevent reaction and incompatibles must be kept separated.

### 1.7.1 Storage of Flammable Liquids

The Designated Person will review Procedure 16 - Flammable Liquid Storage in NWSM 50-1115. This procedure describes the equipment and techniques required to safely store flammable materials including:

- Storing
- Using
- Controlling sources of ignition
- Grounding

- Housekeeping

For materials designated as flammable, the Designated Person will ensure appropriate storage space is available. If the volume of current material on-hand exceeds on-site capacity, additional storage cabinets must be obtained or the inventory must be reduced. The storage of flammable materials in areas not in conformity with NWSM 50-1115 will not be allowed.

**Note:** OSHA removed the use of the term combustible liquid from its standards on hazardous materials concurrent with its 2012 revision of the Hazard Communication standard.

### 1.7.2 Corrosive Materials

The term corrosive is applied to any material that dissolves or destroys metal or human skin. Normally, the pH scale is used to describe a corrosive material. If the pH is less than 7.0, the material is deemed acidic. If the pH is greater than 7.0, the material is deemed alkaline or basic. In addition to the need to use the appropriate personal protective equipment (i.e., gloves, aprons, goggles, etc.) when handling these materials, all corrosive materials also must be stored so as not to react. While the need to keep acids and bases separated is widely understood, it is also important to use a compatibility system to determine if two acidic or two alkaline materials can be stored together.

As a rule, because of its ability to react with a large number of other materials, a common NWS corrosive material, battery acid (sulfuric acid), must be kept segregated from all other acids. In addition, ANSI Standard Z358.1- 2009 requires an eyewash/drenching facility be available to personnel working with corrosive materials that are capable of providing 15-minutes of continuous flushing at 0.4 gpm. The facilities will be available within 10 seconds of unobstructed travel time from point of use or storage.

### 1.7.3 Storage of Reactive Materials

Because commercial products containing hazardous materials are normally composed of several different chemicals, the potential for a chemical reaction when two or more products are commingled (for example, when the shelving collapses in a fire or earthquake) can be high. To minimize the potential for adverse incompatible reactions, all NWS facilities and work sites must segregate hazardous materials into appropriate categories.

#### a. Compatibility Systems

Several compatibility systems are available in the literature and on-line. One widely used system is the NOAA Reactivity Worksheet, a free software program that can be used to find out about the chemical reactivity of thousands of common hazardous chemicals. This software program is available on-line at:

<http://response.restoration.noaa.gov/chemaids/react.html>. Once downloaded and installed, this worksheet determines the potential for reaction when different materials combine.

#### b. Storage Techniques for Reactive Materials

To prevent incompatible materials from adversely reacting, two techniques - distance and containerization - are normally employed.

*Distance* is based on the assumption that if two materials are kept apart, it is unlikely they

will commingle and react. Using this principle, incompatible hazardous materials are stored in different storage areas or are widely separated within an area. For example, because battery acid (sulfuric acid) tends to react with many other materials, it must be stored away from all other chemicals - especially cleaning solvents.

*Containerization* attempts to isolate reactive materials by placing them into secondary containment units. For example, a quart bottle can be placed into a wide-mouth gallon jar and the top secured or, a number of small containers of compatible material can be placed into a plastic dish pan to prevent contact with other materials stored in the same cabinet.

#### 1.7.4 Storage of Janitorial Supplies

Whether purchased by the NWS, lessor or a contractor, all janitorial supplies must be stored in accordance with this section. These products are often flammable, combustible, reactive, or corrosive, hence, proper storage is important to the safety of all facility or work site personnel.

**NOTE:** If NWS employees have access to janitorial supplies provided by a contractor or lessor, the contractor or lessor must make copies of the MSDS/SDS for each product available to the facility. The Designated Person will use these sheets to determine the hazards presented by these supplies.

#### 1.8 Large Quantity Storage

The requirements for the storage of large quantities of hazardous materials depend on the material (i.e., hazardous substance, an extremely hazardous substance or a petroleum product), the quantity stored (i.e., more than 1,320-gallons), the type of container and its design (55-gallon drum, aboveground tank or underground storage tank), and the location of the facility.

A Spill Prevention, Control, and Countermeasures Plan (SPCC) will be required (see Section 1.8.1) if:

- a. The hazardous material is a petroleum product
- b. More than a total of 1,320-gallons is stored in 55-gallon containers or larger
- c. A release of oil could reach the navigable waters of the U.S. or adjoining shorelines or the waters of the contiguous zone (defined as nine miles seaward from U.S. borders) or natural resources.
- If the material is a petroleum product or an extremely hazardous substance as listed in 40 CFR Part 355 (See Appendix B), and the quantity at any time exceeds the threshold planning quantity, a notification to the LEPC will be required under EPCRA (see Section 1.8.4).
- If the material is stored in an aboveground tank (i.e., the ConVault fuel tank), the tank must be operated and maintained in accordance with the requirements of 40 CFR Part 112 (see Section 1.8.3).
- If the material is stored in an underground tank or an aboveground tank that has 10% of its total volume underground (including all attached piping), the tank must be registered with the state and operated in accordance with the requirements of 40 CFR Part 280 (see Section 1.8.2).

### 1.8.1 Spill Prevention, Control, and Countermeasure (SPCC) Plan

To prevent the discharge of petroleum products into the environment, an SPCC Plan may need to be prepared to meet regulatory requirements set forth at 40 CFR 112, Oil Pollution Prevention. The SPCC Plan can be self-certified by the facility owner or operator (e.g., Station Manager) if the facility:

- has an aggregate aboveground storage capacity of 10,000 gallons or less, and
- has had no single discharge exceeding 1,000 U.S. gallons or no two discharges each exceeding 42 U.S. gallons within any 12 months period in the three years prior to SPCC self-certification date.

If the owner and operator chooses to self-certify the Plan, the following requirements must be met:

- a. She/he is familiar with the requirements of the SPCC regulations (40 CFR 112) and has visited and examined facility.
- b. The Plan has been prepared in accordance with accepted and sound industry practices and standards.
- c. The Plan is being fully implemented.
- d. The Plan and individual(s) responsible for implementing the Plan have the full approval of management, and the facility owner and operator have committed the necessary resources to fully implement the Plan. (Note: NWS/NOAA operates under a variety of occupancy conditions. At facilities leased by NWS/NOAA, the Station Manager or other presiding official should review the lease agreement to ensure responsibility for the SPCC Plan is addressed).

**NOTE:** A self-certified Plan may not include alternative methods which provide environmental equivalency unless each alternative method has been reviewed and certified in writing by the Professional Engineer (PE). Any determinations that secondary containment is impracticable and alternative provisions must be reviewed and certified by PE.

PE certification is required if:

- Facility has an aggregate aboveground storage capacity more than 10,000 gallons and/or
- Facility has aggregate capacity of 10,000 gallons or less and alternative measures for environmental protection are included in the Plan. PE must describe the reason for nonconformance and describe the alternative method and how it provides equivalent environmental protection.

**NOTE:** The SPCC regulations allow an agent of the PE to inspect the facility in place of the PE, but the PE must review the agent's work, and certify the Plan.

Those NWS facilities or work sites that store more than a total of 1,320-gallons in containers that are 55-gallons or larger and are entirely above ground and could have a discharge into or onto the waters of the U.S. or a resource under the authority of the U.S. are required to have a SPCC Plan in accordance with 40 CFR 112 (Oil Pollution Prevention). In calculating the volume

stored on-site, the definition of a container includes drums, tanks or other storage devices that are 55-gallons or more. If the site is attended at least 4-hours per day, a copy of the Plan must be on-site and the associated field office should have a copy readily accessible to personnel or regulators.

The Station Manager has overall responsibility for ensuring that the procedures, equipment and structures specified in the SPCC Plan are maintained and operational. He/she will ensure that the plan is reviewed annually to determine if any changes to emergency contacts, equipment and/or operations occurred. The SPCC Plan review page should be updated with document review dates. Otherwise, the Plan must be thoroughly reviewed and amended, if necessary, at least once every five (5) years by a facility or PE (for facilities with total aboveground oil storage capacity more than 10,000 gallons or when alternative methods for environmental protection are used) to include more effective prevention and control, if applicable. The Plan must also be reviewed and amended within 6 months when major changes to equipment or operations occur. Completion of the review must be documented by signing a statement as to whether the Plan needs to be amended. When technical amendments are required, the Plan can be self-certified unless PE certification is required as described in paragraphs above. Examples of changes that may require technical amendment of the Plan include, but are not limited to: commissioning or decommissioning tanks; replacement, reconstruction, or movement of tanks; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures at a facility.

If needed, the Regional//Operating Unit Environmental/Safety Coordinator, NWSH environmental and safety staff should be contacted for assistance in securing the services of a registered PE or to address any technical issues and questions.

Under SPCC regulations, the EPA requires the designation of a person at the facility who will be accountable for oil discharge prevention (a Spill Coordinator). The Spill Coordinator will be assigned and report to the Station Manager. He/she is required to arrange for the required maintenance on the equipment and structures specified in the SPCC Plan, as well as ensure all specified response procedures are appropriate and that the spill response supplies are on-hand. The Spill Coordinator is also responsible for ensuring all NWS employees that handle oil have received training in:

- Operation and maintenance of the equipment to prevent discharges
- Applicable pollution control laws, rules and regulations
- General facility operations
- The contents of the SPCC Plan
- Their role in the event of a release

The discharge prevention briefings will be conducted once a year to assure adequate understanding of SPCC Plan. Such briefings must highlight and discuss known spills, discharges, or malfunctioning equipment, and any recently developed precautionary measures. A SPCC plan training template is provided on OPS1 web site under “Environmental Compliance - Guidance” [https://www.ops1.nws.noaa.gov/Secure/env\\_new.htm](https://www.ops1.nws.noaa.gov/Secure/env_new.htm).

OSHA also has a training requirement for NWS employees who respond to releases of petroleum products under the Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements in 29 CFR 1910.120q. Per [OSHA Interpretation](#), incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of the release by employees in the immediate release area, or by maintenance personnel, are not considered to be emergency responses within the scope of the standard 29 CFR 1910.120q.

**NOTE:** For NWS employees who only respond to incidental releases of diesel oil, First Responder Operations Level training would not be required. Incidental releases are limited in quantity, exposure potential, or toxicity and present minor safety or health hazards to employees in the immediate work area or those assigned to clean them up. Procedures for incidental release of diesel, are covered in the SPCC Plan and SPCC training.

Operating personnel must frequently inspect the outside of the “containers” for signs of deterioration, leaks, or accumulation of oil inside diked areas. Inspection checklists are included in the SPCC Plan for monthly and yearly inspections. The EPA requires these records be maintained for **at least three years**.

Before August 16, 2002, the EPA required an SPCC Plan if facility or work site had 660-gallons or more of oil in one container. Although under current EPA regulations, the SPCC Plan is not required if the total volume stored in above ground containers is less than 1,320-gallons, these NWS facilities should adopt a Best Management Practices (BMP) plan in accordance with the Attachment A to this section, as an alternative. Facilities that store other materials over the reportable quantity (see Appendix B of this Manual) should develop the BMP plan to communicate emergency responsiveness to possible spills (e.g., mercury spill exceeding one pound).

### 1.8.2 Aboveground Storage Tanks

Aboveground storage tanks that store petroleum or a hazardous substance are regulated by the Oil Pollution Prevention requirements in 40 CFR Part 112 and/or State equivalent. For NWS facilities, some of the techniques allowed to contain a spilled material from an aboveground tank include:

- Dikes, berms, or retaining walls
- Curbing
- Culverts, gutters or other drainage systems
- Weirs, booms or other barriers
- Spill diversion ponds
- Retention ponds
- Sorbant materials
- Tank spill and overflow devices.

The following tank markings need to be used for diesel and propane storage tanks:

- Diesel tanks must have NFPA diamond, DOT flammable and "Danger - Diesel Fuel - No Smoking" labels placed on the tank.
- Propane tanks must have NFPA diamond, DOT flammable and "Danger - Propane - No Smoking" labels placed on the tank.

Aboveground tanks and containers that are required to have a SPCC Plan must undergo integrity testing on a regular schedule and whenever material repairs are done. Although EPA requires combining visual inspection with non-destructive testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, etc., the EPA allows visual integrity inspection for shop-built tanks with shell capacity less than 30,000 gallons. The EPA recommends that the SPCC Plan explains why the visual integrity inspection is sufficient. The following should be included:

- A statement that the tank is built to ASTM Standards
- A statement that the tank is visible on all sides
- A description of the visual inspection, frequency and recordkeeping requirements
- Monthly and annual AST visual inspection checklists developed in accordance with STI SP001 standard
- A statement that facility personnel are regularly trained in pollution prevention and tank inspection requirements.

To explain equivalent environmental protection, the following should be included:

*For single-walled tanks:*

- The tank is single-walled,
- The tank has secondary containment and is visible on all sides, and
- There is an on-going monitoring of the tank.

*For double-walled tanks:*

- The tank is double-walled
- There is on-going monitoring of the tank (interstitial monitoring for leaks and visual inspection)

To assist in determining what and how to inspect, the EPA has created a set of reduced testing requirements for shop-built double walled tanks. For these tanks, the EPA recommends the inspection to include:

- Visual inspection of outer walls for signs of deterioration, discharges or accumulation of oil inside the dike area,
- Visual inspection of the inner wall and interstitial spaces (EPA understands that this is not possible with ConVault tank design),
- An operational check on all automatic devices that monitor the interstitial space,
- Visual check of all piping, equipment and connected devices to ensure they are not leaking.

**NOTE:** If visual inspection indicates that tank is leaking or has otherwise failed, the facility should preferably replace the tank. If tank repairs are conducted instead, non-destructive integrity testing will be conducted to verify that repairs were completed properly.

Some States require annual testing of AST leak detection device (e.g., State of Florida). Additionally, initial tank(s) registration and permit application submission may be required by some States/Counties. State and County-specific requirements need to be verified during the SPCC Plan development or update. For the aboveground tanks that do not require an SPCC Plan, visual inspections should be included in the BMP plan.

### 1.8.3 Underground Storage Tanks (USTs)

With the modernization of the NWS, it has been assumed that all underground tanks have been located and moved. However, this may not be the case. The definition of an underground storage tank is “a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground that stores either petroleum or any hazardous substance listed on the list generated under CERCLA (or Superfund) and published in 40 CFR 302.4.”

The definition does not include:

- Tanks used for storing heating oil for consumptive use on the premises where stored
- Septic tanks
- Surface impoundment, pit, pond or lagoon
- Storm water or wastewater collection systems, or
- A storage tank located in an underground area (such as a basement, cellar or mine) if the tank is situated upon or above the surface of the floor

Based on this definition, a petroleum tank that is entirely aboveground but has an extensive underground piping system may meet the legal definition of an underground tank and be subject to the EPA and State regulations.

Should a previously unknown UST be discovered, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and NWSH environmental and safety staff for assistance in establishing the UST compliance program.

If an NWS facility or work site uses an UST, or an aboveground tank is found to meet the definition of an UST because of buried piping, or an old, forgotten tank is uncovered, the Facility Manager must:

- Ensure it is registered with the appropriate State authority
- Ensure the tank meets the design standards in 40 CFR 280.20 or State equivalent standards
- Perform release detection to determine if it is leaking
- Ensure there is a proper response to any spills
- Perform corrective action (clean-up) if a release has occurred
- Properly close when taken out of service
- Maintain UST-required records
  - a. UST Registration

As required by the Hazardous and Solid Waste Amendments, owners or operators of USTs that were in existence on or after January 1, 1974 were required to document the existence and location of the tank as well as its contents by notifying the State or local agency designated to manage this program. Because this notification was due in 1985, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH environmental and safety staff before contacting the State.

#### b. Design Standards for new USTs

The EPA design standards for USTs and their associated piping are found in 40 CFR Part 280.20. These regulations require:

- 1) The material of construction must be:

- a. Fiberglass-reinforced plastic, or
  - b. Cathodically-protected steel, or
  - c. Steel-fiberglass-reinforced plastic composite, or
  - d. Metal without corrosion protection if a corrosion expert determines the site is not corrosive enough to cause the tank to have a leak during its operating life and the tank is maintained as required by the corrosion expert.
  - e. The tank construction and corrosion protection is determined by the implementing agency to be appropriate.
- 2) The piping must be designed, constructed, and protected to prevent releases
  - 3) The tank has spill and overflow prevention equipment
  - 4) The installation must be certified by the installer or a Registered Professional Engineer
- c. Upgrading Existing USTs

By December 22, 1998, all existing USTs were required to be upgraded to meet the design standards for new USTs. If it is determined that an existing tank has not been upgraded, contact the NWS Environmental/Safety Coordinator and/or NOAA environmental personnel immediately.

d. Operation of a UST

1) Release (leak) Detection

As required by 40 CFR 280.40(a), every UST must have a release detection system that can detect a leak from any part of the tank or its piping that routinely contains petroleum. This system must be installed, calibrated, operated, and maintained in accord with the manufacturer's specifications. In 40 CFR 280.43, the EPA defines several methods for release detection and the requirements for each. Some of the acceptable methods include inventory control, manual gauging, tank tightness testing, automatic tank gauging, vapor monitoring, groundwater monitoring, and interstitial monitoring of the space between the double walls.

2) Monthly Monitoring

Every UST must be inspected monthly using at least one of the methods below:

- a. Monitoring the interstitial space between the inner and outer tank walls (interstitial monitoring)
- b. Using a device to continuously monitor the level of the liquid in the tank (automatic tank gauging)
- c. Using sensors to monitor the soil surrounding the tank for petroleum vapors
- d. Using a system to sample and check the groundwater downstream of the tank
- e. Using a statistical program to reconcile the inventory
- f. Or any method approved by the regulatory agency (usually the State)

### 1.8.4 EPCRA Reporting Requirements

- a. Determine the list of regulated materials

EPCRA requires community notification if any Hazardous Chemical (HC) regulated by the OSHA Hazard Communication Standard in 29 CFR 1910.1200 (requiring Safety Data Sheet) is present at any one time in a quantity equal to or greater than 10,000 pounds. Some States have more stringent HC reporting requirements. Consult specific State requirements on <https://www.epa.gov/epcra/state-tier-ii-reporting-requirements-and-procedures>). Notification is also required when an Extremely Hazardous Substance (EHS) identified in 40 CFR Part 355 is present in a quantity equal to or greater than 500 pounds or the Threshold Planning Quantity (TPQ), whichever is less.

The EPCRA rules regulate the amount of OSHA-defined HC or EHS that is present at a facility. While the definition of a facility can vary from state-to-state, in 40 CFR 370.20, the EPA defines the term “facility” to mean all buildings, equipment, structures and other stationary items that are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by or under common control with, such person). The term facility includes manmade structures as well as all natural structures in which chemicals are purposefully placed or removed through human means such that it functions as a containment structure for human use. For purposes of emergency release notification, the term includes motor vehicles, rolling stock and aircraft.

By definition, a “facility” must be “located on a single site or on contiguous or adjacent sites.” EPA Section 313 Industry Guidance (dated January 1999) further clarifies definition of facility for the purpose of EPCRA Tier II reporting. It states that if two establishments owned or operated by the same company or have the same parent company and are connected to each other by a piece of property that is owned by one of the establishments or the same parent corporation, or if they are separated by an easement (e.g., railroad tracks, public road, public catchment basin), they are still considered to be contiguous or adjacent and are therefore part of the same facility.

Per 23 USCS § 101 (27) [Title 23. Highways; Chapter 1. Federal-Aid Highways], the term public road means “any road or street under the jurisdiction of and maintained by a public authority and open to public travel.” Public authority is defined as a Federal, State, county, town, or township, Indian tribe, municipal or other local government or instrumentality with authority to finance, build, operate, or maintain toll or toll-free facilities.

To determine the HCs used at the facility, review the site-specific inventory of hazardous chemicals prepared in accordance with Procedure 7 of NWSM 50-1115 “Occupational Safety and Health Manual”

To determine the EHS used at the facility, review Appendix B to this manual, “The List of Hazardous and Extremely Hazardous Substances.” The EHS can be identified by entries under the column heading “40 CFR 355 EHS RQ” and/or “40 CFR 355 EHS TPQ.”

**NOTE:** To determine the total amount of a chemical on-site, find the specific gravity (sp.gr.) listed on the SDS for the product. Multiply the sp.gr. by 8.345 pounds per gallon to obtain the weight per gallon of the HC or EHS. Divide the appropriate quantity limitation (10,000 pounds for an HC; the TPQ or 500 pounds for an EHS) by the weight per gallon of the HC or EHS. The result is the maximum amount of the material, in gallons, that the facility can store and that is not be regulated under EPCRA.

- b. For each regulated material, a copy of the SDS must be sent within 3 months of the facility becoming active to the local Fire Department and/or the Local Emergency Planning Committee (LEPC) or the State Emergency Response Commission (SERC) - whichever has jurisdiction over the facility. It should also be provided upon request from a Fire Department, LEPC, or SERC.

**NOTE:** Contact the NWS Regional/Operating Unit Environmental/Safety Coordinator or NWSH environmental/safety personnel to determine which agency has jurisdiction.

In lieu of a SDS for each EHS, the NWS facility may submit:

- 1) A list of hazardous chemicals for which a MSDS/SDS is required
- 2) The chemical or common name of each hazardous chemical
- 3) Hazardous components of each hazardous chemical

If a NWS facility is regulated by EPCRA, as required by 40 CFR 355.30(c), the Station Manager needs to appoint a representative to serve on the LEPC.

**NOTE:** Even if a NWS facility is not required to join the LEPC, it is highly recommended that each facility sends a representative. In the event of an emergency involving a hazardous material (i.e. fire, explosion, release, etc.), the LEPC will usually call the NWS to obtain pertinent weather information. Each NWS facility should work with the LEPC to ensure the needed information is provided without delays. The LEPC is comprised of local experts in the management of hazardous materials, substances or wastes - experts who are often willing to provide assistance to the NWS at no charge.

Under EPCRA, NWS facilities must submit Tier II inventory report to the LEPC, SERC, or Fire Department that has jurisdiction over the facility

The SERC, LEPC or Fire Department can request a Tier II report at any time. If requested, the NWS facility must submit the required form within 30-days.

Submit the Tier II form annually **on or before March 1** of each year to the SERC, LEPC, or Fire Department that has jurisdiction over the NWS facility.

Additional information on State specific EPCRA reporting requirements, including submittal of information to LEPC and Fire Departments, can be found at the following link:

<https://www.epa.gov/epcra/state-tier-ii-reporting-requirements-and-procedures>

## 1.9 Storage of Specific Materials Used by the NWS

### 1.9.1 Gasoline

#### a. Small Quantities

Gasoline is a Category 1 flammable liquid. Small quantities of gasoline must be stored in accordance with Section 16 of NWSM 50-1115 - Occupational Safety & Health manual that details the specific requirements for flammable and combustible liquid storage. This section details the containers, storage cabinets, locations, and procedures that must be used.

#### b. Large Quantities

NWS facilities do not typically store large amounts of gasoline in tanks. If the storage of more than 55 gallons of gasoline is contemplated, consult with the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH environmental and safety staff.

### 1.9.2 Oil

NWS facilities and work sites store two types of oil:

- New, unused oil
- Spent, used oil

Although the hazards of new and used oil are the same, used oil is regulated by the EPA and the States differently from the unused oil - hence the two are stored differently.

#### a. Unused Oil

While there are no EPA rules for the storage of small quantities of unused oil (less than 1,320-gallons), to minimize the possibility of a spill, best management practices require that unused oil be stored in the original container. It must be stored away from food and beverages and the storage location must provide containment to minimize the potential release to the environment in the event of a leak or spill. If the oil is transferred to another container to be used at the work site, the container must be labeled to identify the contents as oil.

#### b. Used Oil

Because the used oil requirements vary from state-to-state, the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NOAA environmental personnel should be contacted to determine if specific rules exist. To meet the EPA requirements, used oil generated from the maintenance of the emergency generator and other NWS equipment must be stored in DOT-approved containers (typically 5, 10 or 55-gallon drums - but not a gasoline can) that are:

- a. In good condition (no dents or rust)
- b. Labeled "Used oil" or equivalent (i.e., used dielectric fluid)

Note: State-specific requirements for labeling used oil containers need to be confirmed.

- c. Stored in a contained area that will prevent any releases or spills from reaching

the “waters of the U.S.”

- d. Dated to show when the oil was placed in the container

Spill response equipment such as spill sorbant, booms or pillows, shovels, plastic tarps and bags must be readily available and NWS personnel must be trained in how to respond.

### 1.9.3 Ethylene Glycol Based Antifreeze

Ethylene glycol based products (commonly known as “antifreeze”) are used in diesel emergency generators and other engine cooling systems. Ethylene glycol is toxic to humans and animals. Because states have the authority to regulate antifreeze use, the rules for storage of used antifreeze can vary significantly from the requirements for unused antifreeze.

- a. Unused Antifreeze

Like unused oil, best management practices require that unused antifreeze be stored in its original container in a location away from food and beverages and if possible, the storage location must provide containment of the antifreeze in the event of a spill or leak. If antifreeze is transferred to another container for use at the work site, the transfer container must be labeled to identify the contents.

- c. Used Antifreeze Solution (Antifreeze/Water Mixture)

A used antifreeze and water solution is generated from the maintenance of the emergency generators and other NWS equipment. It must be stored in the Department of Transportation (DOT)-approved containers (typically 5, 10 or 55-gallon drums) which are:

- In good condition
- Labeled “Antifreeze/Water Mixture”
- Stored in a contained area that will prevent any release or spills from entering the soil or water

Spill response kits must be readily available and NWS personnel must be trained in their use.

### 1.9.4 Propylene Glycol from Rain Gauges and AWPAG.

Only technical, food grade propylene glycol must be used in NWS rain gauges and All Weather Precipitation Accumulation Gauge (AWPAG). To prevent evaporation, a small amount of oil is added to rain gauges. The oil blankets the collected rainwater from the air and hence minimizes the evaporation loss. Likewise, in colder climates, a small amount of propylene glycol is also added to the rain gauge and AWPAG to prevent the collected water from freezing. The result is that the collected rainwater is a mixture of oil/propylene glycol/water or propylene glycol/water.

- a. Unused Propylene Glycol

Best management practices require that unused propylene glycol is stored in its original container in a location away from food and beverages. The storage location must provide containment of the propylene glycol in the event of a spill or leak.

b. Used Oil/ Water/Propylene Glycol Mixture

Because the collected rainwater can either be disposed as a mixture of oil/propylene glycol/water or separated into oil and propylene glycol/water solution, storage options can vary. If the mixture is to be disposed as a oil/propylene glycol/water solution, it normally can be added to the used oil drum. The used oil contractor must be contacted prior to mixing with the used oil to determine if this procedure would create any problems in recycling the oil.

If the mixture is to be separated, it can be temporarily stored in a collection vessel with a bottom valve (such as a plastic picnic jug). The vessel must be clearly marked with the words “Oil/Propylene Glycol/Water Mixture - DO NOT DRINK!”

Periodically empty the vessel using the bottom valve to drain off the water/propylene glycol mixture and discharge to the sewer system , if allowed by the Publicly Owned Treatment Works (POTW). If this solution cannot be discharged to the sewer system, add to the antifreeze/water mixture collected from servicing the diesel generator.

As the oil layer drains from the collection vessel, either:

- Filter it using a paper towel or coffee filter and funnel and collect for reuse in the rain gauges, or
- Collect it and add to the used oil collected from servicing the diesel generator.

c. Used Propylene Glycol/Water Mixture

A used propylene glycol and water solution generated from AWPAG can be stored in plastic containers and labeled: “Propylene Glycol/Water Mixture - DO NOT DRINK!”

More information about disposal of ethylene and propylene glycol and their solutions can be found in 2.11.2

### 1.9.5 Batteries

Typically, NWS work sites will employ a contractor to service the lead acid batteries. As a result, the vendor will bring in new batteries as needed and immediately remove the spent batteries, eliminating the need to store these batteries. Some work sites cannot use a contractor and thus must create a storage area for both new and used batteries. Battery recycling laws by State can be found on: <https://www.call2recycle.org/recycling-laws-by-state/>

a. Lead Acid Batteries

Whether new or spent, the storage of lead acid batteries is the same. Because they contain sulfuric acid, these batteries must be stored so that:

- 4) They are protected from physical damage to the casing
- 5) Spills and other releases will be contained
- 6) Contact with other materials is minimized
- 7) Temperature variation is controlled

To ensure all leaks are contained, lead acid batteries should be stored on a battery tray.

b. Alkaline/Nickel Cadmium/Lithium Batteries

Depending on the recycling vendor selected, storage of smaller batteries (A, C, D, AA, AAA, 6V, etc.) may vary. Some battery recyclers prefer the nickel cadmium batteries to be segregated from all others but this is not a universal rule. While any non-conductive container can be used, it is recommended that a plastic tub with an easily removable lid be used to collect these batteries. The container must be marked "Used Batteries for Recycling" and be located in an area accessible to facility employees to encourage its use.

Additionally, the marking must include a point of contact (in case there are questions or problems) and the accumulation start date (which begins when the first battery is placed into the container). There is a one-year on-site storage limit from the accumulation start date.

The Department of Transportation adjusted its shipping rules for lithium batteries, including lithium metal and lithium ion chemistries, effective August 2015 in response to several serious incidents that occurred as a result of the transportation of lithium and lithium ion batteries. The NWS uses and ships lithium and/or lithium ion batteries in various equipment including computer equipment, signal processing systems and cell phones.

All lithium batteries or equipment containing lithium batteries must be packed to prevent short circuits, accidental activation of equipment or movement within the outer packaging. Batteries packed with, but not contained in, equipment or separate batteries must be individually packed within non-metallic inner packaging and the packaging must be able to withstand a 1.2 meter drop test.

Except for a package containing button cell batteries installed in equipment, outer packaging must have a lithium ion or lithium metal battery handling label affixed to it and the shipment must be accompanied by a document stating:

- 1) The package must be handled with care because a fire hazard exists if it is damaged,
- 2) Special procedures must be followed if the package is damaged, including inspection and repacking if necessary, and;
- 3) A telephone number to call for more information regarding the contents of the package

Batteries to be shipped by ground transportation to a permitted storage or disposal facility or for the purposes of recycling need only meet the requirements described above as long as they are below 5g lithium content for a lithium metal cell, 25g for a lithium metal battery, 60Wh for a lithium ion cell or 300 Wh for a lithium ion battery. Batteries over these sizes are regulated as hazardous materials when shipped for disposal or recycling.

Quantity, weight and size of batteries, as well as the method of shipping, can all change the requirements of how a package of new batteries and equipment containing batteries are labelled and any documentation or manifest requirements. Generally the requirements for ground shipping are less stringent than those for shipping by air, however, depending on the factors described above, either type of shipment may be regulated as Class 9 Hazardous Material. Please see the National Weather Service Guidance Document on Shipping Lithium Batteries

posted on NWS Environmental and Safety web page for additional information:  
[https://www.ops1.nws.noaa.gov/Secure/SAFETY/Lithium\\_batteries.pdf](https://www.ops1.nws.noaa.gov/Secure/SAFETY/Lithium_batteries.pdf)

### 1.9.6 Fluorescent Tubes

Most NWS facilities generate used fluorescent bulbs. Because these tubes normally contain enough mercury to fail the EPA Toxicity Characteristic Leaching Procedure (TCLP) test for mercury, the bulbs are hazardous waste unless recycled.

The General Electric (GE) fluorescent tubes with green ends (Ecolux) can be disposed in the garbage. These tubes have over 85% less mercury than the standard tubes and as a result, they pass the EPA TCLP for mercury. The test results can be found at  
[http://www.geconsumerandindustrial.com/environmentalinfo/regulations\\_resources/tclp\\_test\\_results.htm](http://www.geconsumerandindustrial.com/environmentalinfo/regulations_resources/tclp_test_results.htm)

**NOTE:** GE warns that although these tubes pass the Federal TCLP test, State and/or local regulations may still regulate their disposal. GE has posted the state regulations and a list of recyclers at [www.lamprecycle.org](http://www.lamprecycle.org)

As the spent tubes are accumulated, the outer box should be marked with the words “Spent Fluorescent Tubes” or “Universal Wastes - Fluorescent Tubes” as well as the accumulation start date. Remember that these tubes can only be kept on-site for one year from the accumulation start date.

### 1.9.7 Pesticides

Typically, NWS facilities or work sites have the contract with a vendor to apply pesticides around the property. These vendors normally bring to the site the pesticides they are going to use and take all residual materials when they leave. Some facilities, however, augment these applications with the use of commercially available ant or wasp killing agents on a spot basis. Although these commercial containers are relatively small in volume, they can represent a serious health threat to NWS employees, if not stored and used properly.

Small, Over-the-Counter Containers must be stored:

- a. Away from food or beverage handling areas
- b. Near a ventilation system which could remove vapors, if necessary
- c. Near personal protective gear and spill kits.

Larger Containers

For NWS facilities or work sites that mix and use pesticides for use at the facility or work site, the requirements of Section 10 of this Manual must be reviewed. The pesticides must be stored:

- a. In the original container if possible or if mixed for use, in a container labeled to identify the contents
- b. In a well-ventilated area if possible
- c. Near personal protective gear and spill kits
- d. Near an emergency shower or eyewash station.

If larger containers are used, the storage area must be inspected quarterly by a certified applicator.

### **1.9.8 Paints**

While latex paint poses little or no threat to human health or the environment, oil-based paint and spray cans present a different level of risk and must be stored appropriately.

Most oil-based paints and spray paints are flammable material as defined in NWSM 50-1115 - Occupational Safety and Health Manual, Procedure 16, Flammable Liquid Storage. As a result, these materials must be stored in accordance with section Procedure 16 that describes storage considerations for these materials.

In general, paint containers must be kept closed and stored away from high temperatures. Original labels must be maintained if possible or the container clearly marked to identify the contents.

### **1.9.9 Compressed Gas Cylinders**

The safe storage of compressed gas cylinders is described in NWSM 50-1115 Occupational Safety and Health, Procedure 9 - Compressed Gas Safety.

The section details general storage rules in 9.3.1 for all compressed gases but also provides specific rules for:

- Oxygen in 9.3.2
- Acetylene in 9.3.3
- Liquefied Petroleum Gas in 9.3.4
- Hydrogen in 9.3.5.

### **1.9.10 Cleaning Solvents and Degreasers**

While many cleaning solvents and degreasers used by the NWS previously contained chlorinated solvents, international agreements to reduce the damage to the ozone layer have greatly decreased the production and use of these materials. Chlorinated solvents are usually toxic and harmful, are heavily regulated by environmental agencies. Never mix chlorine bleach and ammonia together since toxic fumes and potentially lethal vapors can be produced as a result. Current cleaning materials tend to be either flammable materials or corrosives.

To determine the appropriate storage method, review the /SDS for each material and its flash point. If the solvent or degreaser has a flash point less than 199.4°F, it is considered a flammable material. The requirements for storage in Procedure 16 of NWSM 50-1115 would then apply.

If the material has a pH below 6.0 or above 8.0, it is considered corrosive. This will require the use of plastic containers (such as a dishpan or trays) to maintain proper segregation from other materials and provide secondary containment in the event of a leak.

### **1.9.11 Mercury Containing Equipment (MCE)**

While the NWS has reduced or eliminated the use of thermometers, barometers, sling psychrometers and thermometers that contain elemental mercury at most facilities, these devices may still be used or stored in historic displays. Additionally, facilities use mercury switches to

control the operation of certain Heating, Ventilation, Air Conditioning (HVAC) systems and electrical equipment. If these devices are discarded, they are classified as hazardous waste due to the mercury content and must be sent to a permitted hazardous waste facility for treatment, disposal or recycling. EPA has included MCE in 40 CFR 273.4 (Applicability – Mercury Containing Equipment) as part of standards for the Universal Waste Management. If the state where the NWS facility is located has adopted the rule, the accumulation, packaging, labeling, manifesting of these wastes will be easier if managed as universal waste.

Prior to disposal, it is necessary to check with the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH environmental and safety staff to determine if there are any State-specific requirements.

Mercury-containing equipment has been used in hundreds of devices at levels ranging from less than a gram up to several pounds. Some of the various types of MCE are:

- High Intensity Discharge Lamps
- Mercury Containing Switches - furnace controls, HVAC controls, laboratory and industrial equipment
- Mercury Thermostats
- Silent Wall Switches (Prior to 1991)
- Freezer and Flame Sensors - gas fired devices and pilot lights.
- Manometers/Barometers/Thermometers.
- Float Switches - sump pumps and septic tanks
- Mercury regulators

Each field office should assess the facility and equipment to determine if they are likely to contain mercury. See Section 2.10.4 for MCE management. All MCE to be discarded should be placed inside a larger container with a tight fitting lid that is designed to prevent the escape mercury into the environment during storage and transport. For example, secure the device in a container with electrician's tape or place MCE product in sealed zipper storage bag and then in a secondary container. Kitty litter or oil-absorbent material should be placed around the sealed MCE product to protect it from breaking or sudden shocks.

Each MCE device or container of devices should be marked with one of the following phrases, as appropriate:

- Universal Waste – Mercury Containing Equipment
- Waste – Mercury Containing Equipment
- Used Mercury Thermostats
- Waste Mercury Thermostats
- Universal waste – Mercury thermostats

It is recommended to add additional label to storage container: "Mercury-DO NOT OPEN." MCE can be stored on site only for one year from the date the MCE was discarded. For transportation requirements, see Section 3.11.9.

### **1.9.12 Electronic Equipment**

In electronic equipment, such as Computers and Monitors, Cathode Ray Tubes (CRT) glass typically contains enough lead to be classified as hazardous waste when it is being recycled or disposed of. In addition, circuit boards can contain many heavy metals used in the manufacture

of the boards. These items cannot be placed in ordinary solid waste disposal. More information about electronic equipment disposal can be found in section 2.11.3. The following link contains resources available to recycle electronic equipment by Responsible Recycling (R2) and e-stewards:

<http://www.epa.gov/osw/conserve/materials/ecycling/certification.htm>

## **1.10 Responsibilities**

### **1.10.1 NWS Headquarters (NWSH)**

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

### **1.10.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- a. Will ensure that applicable procedures are implemented at Regional Headquarters or Operating Unit facilities to ensure compliance with requirements of this section.
- d. Will ensure flammable, combustible, corrosive, and reactive liquids, used and stored at Regional Headquarters or Operating Unit facilities, are compliant with the requirements of this section.
- e. Will assist in procuring the services of a Professional Engineer to review facility or work site SPCC Plans (only when required).

### **1.10.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will ensure flammable, combustible, corrosive and reactive liquids are used and stored according to the requirements of this section.
- d. Will ensure that procedures are implemented for reporting releases and compatible storage of flammable, combustible or corrosive liquids.
- e. Will ensure the SPCC Plan is reviewed at least annually to determine if any changes to emergency contacts, equipment and/or operations occurred. In addition, Station Manager will ensure that the Plan is thoroughly reviewed, amended (if necessary), and self-certified every five (5) years by a facility manager or re-certified by Professional Engineer if total aboveground oil storage capacity of diesel is more than 10,000 gallons or when alternative methods for environmental protection are added to include more effective prevention and control.

- f. Will ensure the Tier II report is submitted to the SERC, LEPC or local Fire Department on an annual basis (if applicable).
- g. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

#### **1.10.4 Environmental or Environmental/Safety Focal Point or Designated Person**

- a. Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.
- b. Will ensure a reporting procedure is in place for reporting all of hazardous substance releases in excess of the Reportable Quantities. For petroleum products (e.g., diesel) reporting will be done in accordance with requirements described in the facility's SPCC or BMP plan.

#### **1.10.5 Employees**

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental or Environmental/Safety Focal Point.
- c. Report all spills or releases to their supervisor or Environmental or Environmental/Safety Focal Point.

### **1.11 References**

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

#### **American National Standards Institute**

ANSI, Z358.1	<i>Emergency Eyewash and Shower Equipment</i>
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#### **National Fire Protection Association**

NFPA 30	<i>Flammable and Combustible Liquids Code</i>
NFPA 58	<i>Liquefied Petroleum Gas Code</i>

#### **NWS**

50-1115, Occupational Safety and Health Manual	Procedure 7	<i>Hazard Communication</i>
	Procedure 9	<i>Compressed Gas Safety</i>
	Procedure 16	<i>Flammable and Combustible Liquids.</i>

#### **U.S. Department of Labor, Occupational Safety and Health Administration**

29 CFR 1910.106	<i>Flammable and Combustible Liquids</i>
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## U.S. Department of Transportation

49 CFR	172	<i>Hazardous Materials Table, Special Provisions, Hazardous Materials Communication Emergency Response Information, and Training Requirements</i>
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## U.S. Environmental Protection Agency

40 CFR	273	<i>Standards for Universal Waste Management</i>
	279	<i>Standards for the Management of Used Oil</i>
	280	<i>Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (USTs)</i>
	302.4	<i>Designation of Hazardous Substances</i>
	355	<i>Emergency Planning and Notification</i>
	370.41	<i>Tier II Emergency and Hazardous Chemical Inventory Form</i> <a href="http://www.epa.gov">http://www.epa.gov</a>

**ATTACHMENT A**

**SPILL PREVENTION, CONTROL AND COUNTERMEASURES BEST  
MANAGEMENT PRACTICES (BMP) PLAN**

Facility Name and Address:

NOAA NATIONAL WEATHER SERVICE

[Type Name and Address here]

This Plan is developed strictly as a Best Management Plan. The determination is based on:

- Facility does not exceed capacity (total AST capacity is less than 1320 gallons).
- Facility meets capacity requirements (more than 1320 gallons) but, a discharge will not reach navigable waterways.

Designated Person Responsible for Spill Prevention - Designated Responsible Official (DRO):

**DRO Printed Name:**

**DRO Signature:**

**Date:**

**Telephone #:**

Facility Environmental or Environmental/Safety (E/S) Focal Point:

**Environmental or E/S Focal Point Printed Name:**

**Environmental or E/S Focal Point Signature:**

**PART I - GENERAL INFORMATION**

**A. GENERAL**

This section of the Best Management Practices plan provides general information about the facility.

1. Name:

National Weather Service (NWS) Weather Forecast Office (WFO)

2. Date of Initial Operation:

3. Location:

Street:

City:

State/Zip Code:

Latitude:

Longitude:

4. Name and phone number of Owner (POC)

5. Facility Contacts (e.g., Environmental/Safety or Environmental Focal Point, Station Manager)

Name:

Title/Role:

Telephone Number:

**B. SITE DESCRIPTION AND OPERATIONS**

The facility is located in \_\_\_\_\_ County, State of \_\_\_\_\_, approximately \_\_\_\_\_ miles \_\_\_\_\_ (cardinal direction) of \_\_\_\_\_ (list major city). The Aboveground Storage Tanks (AST) are used to store diesel fuel for generators used for emergency backup power to the WFO. This Facility has \_\_\_\_\_ (specify number) (specify capacity) generator tank(s) and \_\_\_\_\_ (specify capacity) day tank.

Fuel usage for the facility is estimated at \_\_\_\_\_ gallons per month based on fuel records for a 6-month period. Facility generator is tested \_\_\_\_\_ (specify frequency). Fuel consumption would increase based on the frequency and duration of any power outages.

## PART II - SPILL COUNTERMEASURES AND REPORTING

### A. SPILL COUNTERMEASURES

This section presents countermeasures to contain, clean up, and mitigate the effects of an oil spill that impacts navigable waters or adjacent shorelines.

A spill containment and cleanup activity will never take precedence over the safety of personnel. No countermeasures will be undertaken until conditions are safe for workers. The **SWIMS** procedure should be implemented as countermeasures:

**S** - Stop the leak and eliminate ignition sources.

- 1) Attempt to seal or somehow stop leak if it can be done safely.
- 2) Attempt to divert flow away from the drainage ditch with a spill barrier or the contents of spill kit. The spill kit is located at \_\_\_\_\_.
- 3) Eliminate all ignition sources in the immediate area.

**W** - Warn others.

- 1) Yell out "SPILL." Inform the person in charge at your facility.
- 2) Account for all personnel and ensure their safety.
- 3) Notify contacts and emergency response contractor as described in the following section for assistance in control and cleanup.

**I** - Isolate the area.

- Rope off the area

**M** - Minimize your exposures. Stay upwind

**S** - Standby to assist the emergency response contractor.

**D. SPILL REPORTING**

**General Notification Procedures For All Spills**

The Station Manager is charged with reporting all oil spills that result from facility operations. When petroleum product is released, a number of notifications will be required. These notifications are usually made in the following order:

- Local responder (Usually a “911” call) for offsite release, fire or medical emergency.
- Spill Contractor:
- Station Manager (if not on site when release occurred):
- National Response Center (if required) – see instructions below.
- NOAA Safety and Environmental Compliance Office (SECO) at (301) 713-2870.
- NWS Regional/Operating Unit Environmental/ Safety Coordinator:
- NWS HQ Environmental and Safety Office at (301) 427-9763.

**National Response Center (NRC) Notification:**

The Federal Clean Water Act, as described in Title 40 CFR Part 110.6, requires notifying the U.S. Environmental Protection Agency’s (EPA) National Response Center (or the U.S. Coast Guard [USCG]) as soon as anyone has knowledge of any discharges of oil in quantities that may be harmful. Title 40 CFR Part 110.3 defines may be harmful as a discharge that:

- Violates applicable water quality standards, or
- Causes a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

If either of these criteria is met contact the National Response Center online:

<http://www.nrc.uscg.mil/nrchp.html> or by phone: **(800) 424-8802**.

**E. Spill Report**

Complete a spill report form using the format provided in Appendix C. Send this report to the NOAA SECO and NWS HQ Environmental and Safety Office.

**F. Training**

The Environmental/Safety or Environmental Focal Point and an alternate should be trained in spill countermeasures. The alternate should be designated in case the primary person is offsite at the time of a spill.

**G. Attachments**

APPENDIX A-1	TANK ULLAGE AND FUELING LOG
APPENDIX A-2	FUEL UNLOADING PROCEDURE CHECKLIST
APPENDIX B-1	MONTHLY INSPECTION CHECKLIST
APPENDIX B-2	ANNUAL INSPECTION CHECKLIST
APPENDIX C	SPILL REPORTING FORM

## APPENDIX A-1 TANK ULLAGE AND FUELING LOG

Tank Capacity \_\_\_\_\_ gallons

<sup>1</sup> From gauge reading

<sup>2</sup> Available capacity = tank capacity - initial volume of fuel in tank

**APPENDIX A-2 FUEL UNLOADING PROCEDURE CHECKLIST**

Date: \_\_\_\_\_

Tank: \_\_\_\_\_

NWS Representative: \_\_\_\_\_

Supplier: \_\_\_\_\_

✓	ITEM	DESCRIPTION	COMMENT
<b>The following six items must be completed prior to fuel unloading:</b>			
		Move spill containment equipment, such as booms or spill barriers, into the unloading area.	
		Ensure the automatic shutoff valve is functioning properly (if applicable).	
		Determine the available capacity (ullage) of the tank by converting the reading on the fuel gauge to gallons (see Appendix A-1). The ullage should then be marked in the fueling log and communicated to the tank truck unloading contractor.	
		Block the wheels of the tank truck.	
		Place drip pans under all pump hose fittings (if applicable) after the hose is hooked up to the tank and before unloading.	
		Ensure the fill nozzle is placed in the appropriate tank appurtenance.	
<b>During unloading</b>			
		Ensure that the NWS representative and the tank truck operator remain with the vehicle at all times during unloading.	
		Monitor the gauges on the tank continuously to ensure the ullage is not exceeded. (Truck operator will monitor the truck gauge).	
<b>After fuel unloading is completed</b>			
		Record the amount of fuel unloaded in the log (Appendix A-1).	
		Before removing the fill hose from the tank, ensure that it is drained and that all drain valves are closed (if applicable).	
		Any fuel accumulated in the drip pans or spill container on the fill pipe should be poured into the tank (if it has the capacity) or disposed of appropriately (describe how it was disposed of, if applicable).	
		Inspect the tank truck before removing the blocks to ensure the lines have been disconnected from the tank.	
		Remove the blocks from the tank truck wheels.	
		Place a copy of this fuel unloading procedure checklist in the Best Management Plan.	

## APPENDIX B-1 MONTHLY INSPECTION CHECKLIST

Date of Inspection:	Retain Until Date:	(36months from inspection date)	
Tank Name or No.:	Date of Last Inspection:		
Inspected by:	Signature:		
<b>Inspection Guidance:</b> <ul style="list-style-type: none"> <li>• For equipment not included in this standard, follow the manufacturer recommended inspection/testing schedules and procedures.</li> <li>• The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a certified inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.</li> <li>• Upon discovery of water in the primary tank, secondary containment area, interstice, or spill container, remove promptly or take other corrective action. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.</li> <li>• (*) designates an item in a non-conformance status. This indicates that action is required to address a problem.</li> <li>• Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a certified inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.</li> <li>• Retain the completed checklists for 36 months.</li> <li>• <b>In the event of severe weather (snow, ice, wind storms) or maintenance (such as painting) that could affect the operation of critical components (normal and emergency vents, valves), an inspection of these components is required immediately following the event.</b></li> </ul>			
<b>A. TANKS</b>		YES*	NO*
1. Are tanks marked properly?			
2. Is area atop and around tank and within berm, free of combustible materials, debris, and stains?			
3. Is there any oil on the ground, concrete, or asphalt around the tank?			
4. Are there any visible cracks or indications of corrosion on the tank, at fittings, joints, seals, or attached ladder/platform (such as paint peeling or rust spots)?			
5. Are there any raised spots, dents, or cracks on the tank?			
6. Does it appear that the foundation has shifted or settled?			
7. Is the fuel gauge working properly?			
8. Are all vents clear so they may properly operate?			
9. If rainwater is present within containment, does capacity remain for spill control (if applicable)?			
10. Are all alarms and automatic shutoff devices working properly?			
11. Is interstitial monitor functioning properly (if applicable)?			
<b>B. PIPING</b>			
1. Is there any oil on the outside of or under any aboveground piping, hoses, fittings, or valves?			
2. Are aboveground piping, hoses, fittings, or valves in good working condition?			
<b>C. SECURITY/SAFETY/SPILL COUNTERMEASURES</b>			
1. Are lights working properly to detect a spill at night?			
2. Are all locks in the "lock" position?			
3. Are all warning signs properly posted and readable?			
4. Are vehicle guard posts in place and properly secured (if applicable)?			
5. Are spill kits easily accessible, protected from the weather, complete, and replenished if necessary?			
<b>D. CORRECTIVE ACTION REQUIRED:</b>			

## APPENDIX B-2 ANNUAL INSPECTION CHECKLIST

Date of Inspection:	Retain Until Date:	(36months from inspection date)	
Tank Name or No.:	Date of Last Inspection:		
Inspected by:	Signature:		
Inspection Guidance:			
<ul style="list-style-type: none"> <li>For equipment not included in this standard, follow the manufacturer recommended inspection/testing schedules and procedures.</li> <li>The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a certified inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.</li> <li>Inspect the AST shell and associated piping, valves, and pumps including inspection of the coating for Paint Failure. Inspect: <ul style="list-style-type: none"> <li>1. Earthen containment structures including examination for holes, washout, and cracking in addition to liner degradation and tank settling.</li> <li>2. Concrete containment structures and tank foundations/supports including examination for holes, washout, settling, paint failure, in addition to examination for corrosion and leakage.</li> <li>3. Steel containment structures and tank foundations/supports including examination for washout, settling, cracking, and for paint failure, in addition to examination for corrosion and leakage.</li> </ul> </li> <li>Inspection of cathodic protection system, if applicable, includes the wire connections for galvanic systems and visual inspection of the operational components (power switch, meters, and alarms) of impressed current systems.</li> <li>Remove promptly upon discovery standing water or liquid in the primary tank, secondary containment area, interstice, or spill container. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.</li> <li>In order to comply with EPA SPCC (Spill Prevention, Control and Countermeasure) rules, a facility must regularly test liquid level sensing devices to ensure proper operation (40 CFR 112.8(c)(8)(v)).</li> <li>(*) designates an item in a non-conformance status. This indicates that action is required to address a problem.</li> <li>Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a certified inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.</li> <li>Retain the completed checklists for 36 months.</li> <li>Complete this checklist on an annual basis supplemental to the owner monthly-performed inspection checklists.</li> <li><b>Note: If a change has occurred to the tank system or containment that may affect the SPCC plan, the condition should be evaluated against the current plan requirement by a Professional Engineer knowledgeable in SPCC development and implementation.</b></li> </ul>			
A. MONTHLY CHECKLIST	YES*	NO*	NOTES
1. Have monthly inspection checklists been completed?			
B. TANKS			
1. Are all alarms and automatic shutoff devices working properly?			
2. Is interstitial monitor functioning properly (if applicable)?			
C. TANK CONTAINMENT			
1. Containment structure in satisfactory condition?			
2. Drainage pipes/valves fit for continued service?			
D. TANK FOUNDATION AND SUPPORTS			
1. Evidence of tank settlement or foundation washout?			
2. Cracking or spalling of concrete pad or ring wall?			
3. Tank supports in satisfactory condition?			
4. Water able to drain away from tank?			
5. Grounding strap secured and in good condition?			
E. TANK EXTERNAL COATING			
1. Evidence of paint failure?			
F. LEVEL & OVERFILL PREVENTION INSTRUMENTATION			
1. Has the tank liquid level sensing device been tested to ensure proper operation?			
2. Does the tank liquid level sensing device operate as required?			
3. Are overfill prevention devices in proper working condition?			
G. ELECTRICAL EQUIPMENT			
1. Are tank grounding lines in good condition?			
2. Is electrical wiring for control boxes/lights in good condition?			
H. CORRECTIVE ACTION REQUIRED:			

## APPENDIX C SPILL REPORTING FORM

<b>GENERAL</b>		
Name of Facility:	Address:	
Completed by:	Organization:	
Position:	Phone:	
<b>SPILL INFORMATION</b>		
Date:	Time:	
Location at Facility:	Quantity:	
Substance Spilled:	Other:	
<b>OUTSIDE NOTIFICATIONS</b>		
<b>Agencies</b>	<b>Recorder at Outside Agency</b>	<b>Date and Time</b>
Call 911 (or local emergency agency), if there is an immediate emergency.		
NOAA SECO at: (301) 713-2870 NWS Regional/ Operating Unit Environmental/ Safety Coordinator at: NWS HQ Environmental and Safety Office at (301) 427-9763		
EPA National Response Center, or U.S. Coast Guard: (800) 424-8802		
<b><u>List Additional State and Local Agencies below:</u></b>		
Department of Environmental Quality Phone #:		
Department of Emergency Management Phone #:		
Local Emergency Planning Committee (LEPC) Phone #:		
<b>INFORMATION ON SOURCE AND CAUSE:</b>		
<b>DESCRIPTION OF ENVIRONMENTAL DAMAGE:</b>		
<b>CLEANUP ACTION(S) TAKEN:</b>		
<b>CORRECTIVE ACTION(S) TO PREVENT FUTURE SPILLS:</b>		

**Note:** All information must be filled in. If something is unknown, write "unknown".  
Copies must be sent to the NWS HQ Environmental and Safety office and NOAA SECO.

## SECTION 2 - MANAGEMENT OF WASTE

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## Synopsis

**NOTE:** This section is promulgated to ensure proper management of wastes generated by NWS facilities and work sites. The section applies to all NWS facilities where garbage, recyclables, hazardous waste or excess hazardous materials are generated.

### **Initial Implementation Requirements:**

- Designate an Individual to Coordinate the Hazardous Waste Management Effort
- Compare Site/Facility Operations with the Requirements of this Procedure
- Identify the personnel impacted by this procedure
- Perform a Waste Survey (2.6)
  - Categorize the wastes as sewage, solid wastes, hazardous wastes, universal wastes (2.7, 2.8, 2.9.3, 2.10)
  - Determine the quantity of hazardous waste and universal waste generated
  - Determine the appropriate generator category (2.9.5)
  - If required, obtain EPA Identification Number for hazardous waste generation activity (2.9.6)
  - Assess storage practices (2.9.2, 2.10.1, Attachment A)
  - Establish recordkeeping system for the uniform manifest, annual/biennial report, exception reports, training records (2.9.8)
  - Train affected NWS employees [2.9.6b (1), 2.9.6c (7)]

### **Recurring and Annual Task Requirements:**

- Complete and file hazardous waste generator annual/biennial report, if required [2.9.6c(17)]
- Complete and sign manifest (2.9.7) and Land Disposal Restriction form for each hazardous waste shipment (2.9.8b)
- Continually attempt to reduce or eliminate waste generation
- Become aware of new waste recycling opportunities in the community

Management of Waste Checklist	YES	NO	NA
<b>Basic Program</b>			
1. Has an inventory of all wastes generated at the facility or work site been performed? (2.6)	—	—	—
2. Has each identified waste been reviewed to properly categorize it as sewage, solid, hazardous, universal, or specific NWS-generated waste? (2.7, 2.8, 2.9.3, 2.10, 2.11)	—	—	—
3. Has the quantity of each waste been estimated? (2.6)	—	—	—
<b>Generator Requirements</b>			
1. Based on the total quantity of waste generated, has the facility/work site determined the appropriate category of hazardous waste generator? (2.9.5)	—	—	—
2. If the facility or work site is a <b>Very Small Quantity Generator</b> (i.e., produces less than 100 kilograms (220 pounds) of hazardous waste per month) (2.9.6a)	—	—	—
a. Are all wastes sent to an EPA/State-approved hazardous waste facility, a State-approved solid waste facility or a recycling facility? [2.9.6.a.(4)]	—	—	—
b. Are procedures in place to ensure the accumulation or stored waste never exceeds 1,000 kg? [2.9.6.a(7)]	—	—	—
c. Are affected personnel trained to ensure they know how to manage the waste and respond to emergencies? [2.9.6a(5)]	—	—	—
3. If the facility or work site is a <b>Small Quantity Generator</b> (i.e., produces more than 100 kg/mo but less than 1,000 kg/mo less of hazardous waste per month) (2.9.6.b)	—	—	—
a. As a Best Management Practice, are affected personnel trained to ensure they know how to manage the waste and respond to emergencies? [2.9.6b(1)]	—	—	—
b. Are procedures in place to ensure hazardous wastes are not stored or accumulated for more than 180-days or 270-days if the waste is transported more than 200-miles to a TSD facility)? [2.9.6b(3)]	—	—	—
c. Are procedures in place to ensure the accumulated waste never exceeds 6,000 kg? [2.9.6b(4)]	—	—	—
d. Are procedures developed for emergency response to hazardous waste incidents and included in Occupant Emergency Plan [2.9.6b(8)]?	—	—	—
e. Are selected personnel trained in how to complete the Manifest and	—	—	—

Management of Waste Checklist	YES	NO	NA
Land Disposal Form? [2.9.6b(1)]			
4. If the facility or work site is a <b>Large Quantity Generator</b> , (i.e. produces 1,000 kilograms or more of hazardous waste per month or one kilogram or more of acutely hazardous waste per month) [2.9.6c]:	—	—	—
a. Has it applied and received an EPA ID number? [2.9.6c(2)]	—	—	—
b. Are procedures in place to ensure hazardous wastes are not stored or accumulated more than 90-days? [2.9.6c(3)(a)]	—	—	—
c. - If the facility/work site is a Large Quantity Generator , does the facility Occupant Emergency Plan incorporate emergency procedures for hazardous waste incidents? [2.9.6c(5)] - If the facility/work site is a Large Quantity Generator (storage longer than 90 days) does the facility have a Contingency Plan for hazardous waste incidents? [2.9.6c(5)]	—	—	—
d. Are facility personnel trained in hazardous waste management and how to respond to emergencies? [2.9.6c(7)]	—	—	—
e. Are selected personnel trained in how to complete the Manifest and Land Disposal Restriction Form? [2.9.6c(8) & (9)]	—	—	—
f. Are all wastes packaged, labeled and marked in accord with U.S. DOT regulations? [2.9.6c(10) & (11)]	—	—	—
g. Does the facility/work site ensure the transporter has the appropriate placards? [2.9.6c(12)]	—	—	—
h. Are all Manifests and Land Disposal notices retained for at least 3-years from date of shipment? [2.9.6c(13)]	—	—	—
i. If wastes are shipped outside the United States, has the facility/work site notified the U.S. EPA and received an approval? [2.9.6c(16)]	—	—	—
j. Are the containers of hazardous waste in the accumulation area:			
1) In good condition? [2.9.6c(3)(b)(1)]	—	—	—
2) Properly marked with the words "Hazardous Waste," the identity of the contents, hazards associated with the contents and the date accumulation began? [2.9.6c(3)(e)]	—	—	—
3) Closed? [2.9.6c(3)(b)(4)]	—	—	—
4) Stored compatibly? [2.9.6c(3)(c)]	—	—	—
5) Stored with adequate aisle space? [2.9.6c(4)(e)]	—	—	—
6) Not stacked over 2 drums high?	—	—	—
7) Inspected weekly? [2.9.6c(3)(b)(6)]	—	—	—

<b>Management of Waste Checklist</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>
k. Does the accumulation area:			
1) Have a telephone or two-way radio accessible? [2.9.6c(4)(b)]	—	—	—
2) Have appropriate type and number of fire extinguishers? [2.9.6c(4)(b)]	—	—	—
3) Have spill control equipment? [2.9.6c(4)(b)]	—	—	—
4) Have decontamination equipment? [2.9.6c(4)(b)]			
5) Have an adequate source of water/foam for fires? [2.9.6c(4)(b)]	—	—	—
<b>Satellite Accumulation</b>			
1. Does the facility or work site use satellite accumulation areas? (2.9.6d)	—	—	—
2. Are procedures in-place to ensure the total amount of waste accumulated is less than 55-gallons of hazardous waste or 1-quart of acutely hazardous waste? [2.9.6d(1)]	—	—	—
3. Is the area at or near the point of generation? [2.9.6d(2)]	—	—	—
4. Are the containers in good condition? [2.9.6d(3)]	—	—	—
5. Are the containers kept closed except when adding or removing wastes? [2.9.6d(4)]	—	—	—
6. Are all containers marked with the hazards associated with the contents and the words “Hazardous Waste” or other words to identify the contents? [2.9.6d(5)]	—	—	—
<b>Universal Waste</b>			
1. Does the facility generate and/or store universal wastes (batteries, pesticides, fluorescent bulbs, mercury-containing thermostats or other EPA/State-identified universal wastes)? (2.10)	—	—	—
2. Has the facility/work site trained all personnel regarding the legal status of universal wastes to ensure these wastes are not disposed with the trash or other solid wastes? [2.10.1a(4)]	—	—	—
3. Does the facility/work site segregate and properly store these wastes prior to shipment to a recycling facility? [2.10.1a(1)]	—	—	—
4. If the facility/work site stores <5,000 kg of universal waste (i.e., is a small quantity handler), are procedures in place to ensure:	—	—	—
a. The wastes are managed to prevent leakage? [2.10.1a(1)]	—	—	—
b. The container is properly labeled with the identity of the contents and the date storage began? [2.10.1a(2) and (3)]	—	—	—
c. The wastes are not stored or accumulated for longer than one year? [2.10.1a(3)]	—	—	—

Management of Waste Checklist	YES	NO	NA
d. Personnel are trained to respond to emergencies? [2.10.1a(4)(5)]	—	—	—
5. If the facility stores $\geq$ 5,000 kg universal waste (i.e., is a Large Quantity Handler):	—	—	—
a. Has it received an EPA Hazardous Waste Generator Number? [2.10.1b (3)]	—	—	—
b. Are procedures in place to ensure the universal wastes are properly segregated and stored? [2.10.1b(4)]	—	—	—
c. Has an internal inventory system been established and implemented to ensure these wastes are not stored more than one year? [2.10.1b(5)(d)]	—	—	—

## SECTION 2 - MANAGEMENT OF WASTE

### 2.1 Purpose and Scope

In performing its mission, National Weather Service (NWS) facilities and work locations generate several types of waste materials. These wastes include sewage, food scraps and other garbage (known as “solid waste”), recyclables such as oils, batteries, etc., hazardous wastes and excess materials that must be disposed. To ensure these wastes are properly managed, this section has been promulgated. The section applies to all NWS facilities and work sites where waste is generated.

### 2.2 Definitions

<b>Designated Person</b>	An NWS employee assigned the task of coordinating the waste management effort. This role is normally assigned to the Environmental Focal Point, but may be assigned to another NWS employee.
<b>Electronic Waste</b>	Discarded computers, cathode ray tubes (CRTs), cell phones, fax machines, or electronic instrumentation.
<b>Generator</b>	Any person (i.e. an individual, trust, firm, joint stock company, Federal Agency, corporation, partnership, association, State, municipality, commission, political subdivision of a State or any interstate body) by site, whose act or process produces hazardous waste identified or listed in 40 CFR Part 261 or whose act first causes a hazardous waste to become subject to regulation.
<b>Hazardous Waste</b>	A solid waste that (1) is not excluded by 40 CFR 261.4(b) and (2) meets the characteristic of a hazardous waste in Subpart C or (3) is listed in Subpart D of 40 CFR 261 or, is a mixture of a solid waste and a hazardous waste.
<b>Mercury Containing Equipment</b>	A device or part of a device that contains elementary mercury integral to its function. It can be managed as a universal waste. If the mercury is in the device accidentally (e.g., equipment does not contain mercury in its regular use) or the device was contaminated by an external source of mercury, the device cannot be managed as universal waste.
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Pollution Prevention</b>	A continual process to use materials, processes or practices that reduce or eliminate the creation of pollutants or waste at the source. It includes practices that reduce the use of hazardous materials, energy, water or other resources and practices that protect natural resources through conservation or more efficient use.

<b>Recyclables</b>	Solid wastes that can be treated or processed to allow direct reuse or introduction into new products.
<b>Solid Waste</b>	A term used to describe garbage. The EPA defines it as any discarded material that is not excluded from regulation by 40 CFR 261.4(a) or that is not excluded by a variance granted in 40 CFR 260.30 and 260.31.
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).
<b>Universal Wastes</b>	Hazardous wastes that if recycled are subject to the universal waste requirements in 40 CFR Part 273. Wastes in this category include batteries, pesticides, thermostats, fluorescent bulbs or mercury containing equipment.

### **2.3 Acronyms Employed in this Section**

ACM	Asbestos-Containing Material
AWPAG	All Weather Precipitation Accumulation Gauge
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
COTR	Contracting Officer's Technical Representative
CPU	Central Processing Unit
CRT	Cathode Ray Tube
CWA	Clean Water Act
DOT	Department of Transportation
EPA	Environmental Protection Agency
HIC	Hydrologist-In-Charge
HUD	Housing and Urban Development
LBP	Lead-Based Paint
MIC	Meteorologist-in-Charge
MOU	Memorandum of Understanding
NCEP	National Centers for Environmental Prediction
NDBC	National Data Buoy Center

SECO	NOAA Safety and Environmental Compliance Office
NOAA	National Oceanic and Atmospheric Administration
NRC	National Reconditioning Center
NWS	National Weather Service
NWSH	National Weather Service Headquarters
OIC	Official-in-Charge
PCBs	Polychlorinated Biphenyls
POTW	Publicly Owned Treatment Works
ppm	parts per million
RCRA	Resource Conservation Recovery Act
ROC	Radar Operations Center
SFSC	Sterling Field Support Center
SQG	Small Quantity Generator
SWDA	Solid Waste Disposal Act
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
VSQG	Very Small Quantity Generator

## 2.4 Regulatory Requirements

### 2.4.1 Federal

Because the scope of waste management is so broad, this area is regulated by several Federal Laws.

- Solid waste is regulated by the Solid Waste Disposal Act of 1965 (SWDA) as amended. The regulations created under the authority of this statute can be found in 40 CFR Parts 243 to 259.
- Hazardous waste is regulated by the Resource Conservation and Recovery Act of 1976 (RCRA). The regulations created under the authority of this statute can be found in 40 CFR Parts 260 to 279.
- The discharge of sewage and other wastewater either directly into the “waters of the United States” or indirectly into a publicly owned treatment works is regulated by the Clean Water Act (CWA). The regulations created under the authority of this act can be found in 40 CFR Parts 100-140.
- Polychlorinated biphenyls (PCBs), lead-based paint (LBP) and radon are regulated under the Toxic Substances Control Act of 1976 (TSCA). This act also regulates the manufacture, production and importation of chemical substances. The regulations created under this act can be found in 40 CFR Parts 700 to 766.

#### **2.4.2 State**

Most states are authorized by the Environmental Protection Agency (EPA) to manage their own programs for solid and hazardous waste as well as wastewater discharges. Some have also created management programs for PCBs, lead-based paint and other hazardous chemicals.

#### **2.4.3 Local**

The use of septic systems is typically regulated by a local Department of Health.

### **2.5 Contracting/Contractor Considerations**

When using a contractor to transport, treat or dispose of a waste, the NWS does not transfer legal liability for improper management with the physical transfer of the waste. As a result, all new and existing contracts must be carefully scrutinized to maintain minimum liability for the NWS and its employees.

#### **2.5.1 Contract Language**

All contracts must be reviewed to assure that the contract clearly mandates that the contractor comply with the law. With the assistance of the Contracting Officer's Technical Representative (COTR), NWS facilities and personnel will review all existing contracts to ensure they include a phrase mandating the contractor to "comply with all applicable federal, state and local laws pertaining to the proper transportation, management and disposal of wastes and materials."

#### **2.5.2 Review of the Contractor**

Because the law can hold the NWS and its employees responsible for the mismanagement of NWS-generated wastes by a contractor, it is important that NWS facilities and work sites deal with responsible contractors.

Prior to using the services of a contractor, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWS Headquarters (NWSH) Environmental and Safety staff and ask them to check with the state and/or EPA to determine the compliance history of the contractor. Also, determine if there are prior citations or other legal sanctions for improper or illegal waste management practices by the contractor. If so, how have these been resolved? What is the current enforcement status of the contractor?

Also, if possible, review the financial situation of the contractor to determine if the contractor has sufficient resources and/or the necessary insurance to protect the NWS from unexpected liabilities. The NWSH Environmental and Safety staff or COTR can provide assistance in this effort.

### **2.6 The Waste Survey**

Because many of the requirements under the applicable federal and state laws are based on the type and quantity of each waste generated at a geographic location, the designated person for each NWS facility and work site must perform a waste survey to document the existence and characteristics of each waste.

The waste survey will include a list of each identified waste or type of waste generated on the site and its approximate volume in either pounds or kilograms or gallons and, if accumulated or stored prior to shipment, the type of container(s) employed, where it is stored, who transports it

off-site and where does it go for ultimate disposal. Attachment A is a Waste Survey Form that can be used to gather this information.

## **2.7 Sewage**

Because of the health threats due to improper management of sewage, the management of sewage must be reviewed for each NWS facility. Because sewage is normally treated off-site by a municipal treatment plant or on-site using a septic system, the requirements for this review will vary.

### **2.7.1 Municipal Treatment Plant**

For NWS facilities using a municipal sewage treatment facility [also known as a Publicly-Owned Treatment Works (POTW)], the Station Manager must ensure that no material that could damage the treatment plant or cause a treatment upset is released into the system from the NWS facility. Contact should be made with the POTW to obtain a list of items that are prohibited from purposeful or accidental discharge. .

All employees who work with the materials that could cause a problem if released into the system must be informed of this prohibition and provided instruction on procedures in-place to contain these materials if spilled or released.

### **2.7.2 Septic Systems**

Because of the sensitivity of septic systems to materials commonly used at NWS facilities and work sites, a list of prohibited items must be prepared. If necessary, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH Environmental and Safety staff for assistance. All employees must then be informed that a septic system is used to treat sewage and wastewater and provided with the list of personal care items (i.e., some medications) and other work-related materials (i.e., battery acid) that cannot be released into the system. Additionally, employees working with materials that could upset the septic system must be informed of the procedures to use to contain these materials if spilled or released.

## **2.8 Solid Waste**

Office trash, food scraps and other non-hazardous garbage are collectively referred to as “solid waste.” This is a legal term and does not refer to the physical form of the waste. A solid waste can be a liquid, contain gas or a solid material. This waste is regulated by State and local laws.

Solid waste must be kept segregated from “hazardous waste,” “universal waste” and other specially regulated wastes such as used oil or Polychlorinated Biphenyls (PCBs) and will be further segregated into “recyclable” and “disposable” material.

### **2.8.1 Recyclable Solid Waste**

There are several types of solid waste that should be recycled to the greatest extent possible. These wastes include:

- a. office paper, magazines, newspapers, cardboard
- b. aluminum cans
- c. glass jars, bottles and other container

- d. scrap metal
- e. wire
- f. plastic materials

Because solid waste recycling programs are normally operated by local governments, the Designated Person must check with the local officials to determine the existence and requirements for the recycling effort.

To make it as convenient as possible for all facility employees to actively participate in the program, collection facilities (i.e., individual containers) for recyclables will be established and located to allow segregation of the materials by category.

### **2.8.2 Disposable Solid Waste**

Solid waste for disposal will be removed from work areas on a scheduled basis and stored in a well-ventilated area, secure from attack by vermin, rodents or other animals. The storage area will be contained to prevent fire, safety or health hazards or inadvertent discharges to the storm water system, soil or surface water.

All facility personnel must be informed which materials are prohibited from disposal via the solid waste disposal program.

### **2.8.3 Medical Wastes**

As required by paragraph 30.3.13 of Procedure 30 (Office Safety) and 33.3.5 of Procedure 33 (Bloodborne Pathogens) of NWSM 50-1115 (Occupational Safety & Health Manual), contaminated reusable sharps and other medical wastes are required to be collected in closable, puncture-resistant, leak proof, labeled or color-coded containers. These containers must be easily accessible to facility personnel, kept upright during use, routinely replaced, and kept closed and placed in secondary containment for disposal. Contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH Environmental and Safety staff for assistance in locating a contractor. Usually these contractors are required to obtain a license from the state health or environmental department.

**NOTE:** Verify state-specific requirements for management and disposal of medical waste.

## **2.9 Hazardous Waste**

### **2.9.1 Responsibility**

Because of the special threat to human health and the environment, hazardous waste requires a greater amount of control. In the role as the Designated Responsible Official, the Station Manager bears direct legal responsibility for the proper management of these wastes.

### **2.9.2 Enforcing Agency**

Under the Resource Conservation and Recovery Act (RCRA), the states and U.S. territories can manage the hazardous waste programs within their borders if authorized by the EPA. Thus far, 48 states and Guam have received this authorization. To achieve approved program status (RCRA Authorization), a States' program must be at least as stringent as the Federal program.

State may adopt more stringent requirements. The States of Alaska and Iowa have not - nor has Puerto Rico or the other Pacific territories.

As a result, NWS facilities and/or work sites located in an authorized state or territory must review and comply with their state's or territory's regulations. NWS facilities and/or work sites located in states or territories that have not received authorization must comply with latest EPA RCRA Program requirements.

NWS facilities located in another country (i.e., in the South Pacific) must comply with that country's environmental regulations and, as a result of the NWS Policy Directive PD-50-51, Environmental Compliance, with the U.S. EPA regulations.

As a baseline, this procedure will reference EPA regulations that are found in Title 40 of the Code of Federal Regulations. State regulatory requirements for generators may be more stringent than the federal program. To help current and potential hazardous waste generators follow the regulations in their state, EPA provided a map and an alphabetically linked list of states and U.S. territories:

<https://www.epa.gov/hwgenerators/links-hazardous-waste-programs-and-us-state-environmental-agencies>

NWS facilities that have questions regarding state-specific hazardous waste generator requirements must contact the NWSH Environmental and Safety staff or NWS Regional/Operating Unit Environmental/Safety Coordinator for assistance. . Local agencies can be contacted by site personnel, if required.

**Note:** The EPA Administrator signed the final Hazardous Waste Generator Improvements Rule on October 28, 2016 and it was published in the *Federal Register* (FR) on November 28, 2016.

Examples of the significant changes are listed below:

1. Allowing Very Small Quantity Generators (VSQGs) (previously known in the federal regulations as "Conditionally Exempt Small Quantity Generators"- CESQGs) to send hazardous waste to a large quantity generator (LQG) that is under the control of the same person and consolidate it there before sending it on to management at a RCRA-designated facility, provided certain conditions are met.
2. Allowing a VSQG or a small quantity generator (SQG) to maintain its existing generator category in the case of an event in which the VSQG or SQG generates a quantity of hazardous waste in a calendar month that would otherwise bump the generator into a more stringent generator regulatory category.
3. Updating the emergency response and contingency planning provisions for SQGs and LQGs to include Local Emergency Planning Committees (LEPC) among those emergency planning organizations with which a generator may make response arrangements and to require that new and existing LQGs submit quick reference guides with the key information when they either develop or update their contingency plans to local responders for easy access during an event.
4. Requiring periodic re-notification for SQGs every four years (SQGs only notify once under the current system).

5. Revising the regulations for labeling and marking of containers and tanks to clearly indicate the hazards of the hazardous waste contained inside.

### 2.9.3 Identification of Hazardous Wastes

The hazardous waste identification procedure can become complicated. Contact the NWSH Environmental and Safety staff if assistance is required. A solid, liquid or gas that is discarded is defined as a “solid waste.” If its disposal poses a threat to human health or the environment, a solid waste may be considered a “hazardous waste.” The EPA regulations governing the hazardous waste identification process are found in [40 CFR 261](#) (To determine if a discarded material is a hazardous waste):

- a. Review 40 CFR 261.4 to determine if it is excluded. If not,
  - b. Determine if it is a listed hazardous waste and/or
  - c. Determine if it has any of the characteristics of a hazardous waste.
- 1) Excluded Wastes

In [40 CFR 261.4](#), the EPA has identified a number of wastes that are excluded from regulation as hazardous wastes because they are not legally considered “solid wastes.” Of these, NWS facilities or worksites usually only generate sewage. After reviewing the list, if there are any questions regarding waste qualification as an exempted solid waste, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH Environmental and Safety staff for guidance.

#### 2) Listed Hazardous Wastes

If a waste is not excluded from regulation by 40 CFR 261.4, then the lists of hazardous wastes in Subpart D of 40 CFR 261 (or State equivalent) must be reviewed. The EPA has created three (3) lists of solid wastes that are regulated as hazardous waste:

- a) Hazardous wastes from non-specific sources
- b) Hazardous wastes from specific sources, and
- c) Discarded commercial chemical products, off-specification species, container residues and spill residues thereof.

For NWS activities, hazardous wastes within only two of the lists must be considered. The listing of “hazardous wastes from specific sources” is only applicable to the defined industrial production activity and is not applicable to NWS operations or the wastes they generate.

#### 3) Commercial Chemical Products, Off-specification Species, Container Residues and Spill Residues Thereof

If the solid waste to be discarded is an:

- unused material,
- excess material,
- a container of material that does not meet the legal definition of “empty”

[see 2.9.3 d] or

- a residue from a spill of material,

Review the EPA lists in [40 CFR 261.33](#) or the state/territory equivalent.

If the material or its principle active ingredient is listed on either the “acute” list in 40 CFR 261.33(e) or the “toxic” list in 40 CFR 261.33(f), the waste is a hazardous waste and assigned the “P” or “U” number corresponding to its listing.

4) Hazardous Waste from Non-Specific Sources

Review the list of hazardous wastes from non-specific sources in [40 CFR 261.31](#) or the State equivalent with a focus on the listings for the spent solvents F001, F002, F003, F004 and F005. If the solid waste is listed, it is hazardous and assigned the “F” number corresponding to its description.

5) Other Hazardous Waste Lists

Some states have additional lists of hazardous waste (i.e., PCB wastes, etc.). Review these lists to ensure all solid wastes identified in the waste survey are evaluated.

d. Characteristic Wastes

Whether a waste is listed as hazardous or not, the next step is to determine if the waste meets one or more of the characteristics of a hazardous waste. The EPA has established four (4) characteristics for a hazardous waste (i.e., ignitable, corrosive, reactive or toxic). Review the descriptions in Subpart C of 40 CFR 261 (or state equivalent) and determine if any solid waste meets these criteria and assign all the appropriate “D” numbers (Note: this evaluation must be performed even if a waste is a listed waste).

e. Empty Containers

Empty containers that held hazardous waste are regulated as hazardous unless the following requirements are met:

- 1) The container’s inner liner is removed;
- 2) All wastes have been removed using common practices (such as pumping, pouring, scraping, etc.), and
  - a) for a 110-gallon or less container, no more than 2.5 centimeters (1 inch) remains on the bottom or inner liner; or
  - b) for containers larger than 110-gallons, no more than 0.3 percent of the weight of the total capacity remains;
- 3) For a compressed gas, the container is returned to atmospheric pressure;
- 4) For containers that held an acute hazardous waste from the list in 40 CFR 261.33(e), the container or inner liner has been triple rinsed with 10 percent of the capacity of the container using a suitable solvent or cleaner or some other approved cleaning technique. Please note that the solvent is now considered a hazardous waste.

#### 2.9.4 Determination of who is the “Generator”

For NWS facilities and work sites that are located on a piece of property owned by the Federal Government (but under the control of the NWS), and are separate from other federal, state and local agencies, the NWS facility is the “generator.” For NWS facilities located in leased space and/or co-located with other governmental agencies or organizations (like a state university), a determination of which entity is the “generator” will be required. This will require a review of existing Memoranda of Understanding (MOU) between all parties. This review is done by the NOAA Administrative Service Center (ASC) who is responsible for the lease. If the NWS facility is the “generator” of a multi-organization site, the NWS and the Facility Manager bear the legal responsibility for proper hazardous waste management for all parties on the site. If another agency or entity is determined to be the generator, the NWS facility must comply with the policies and programs established by the generator under the terms of the MOU.

#### 2.9.5 Type of Generator

The EPA has created three different types of hazardous waste generators based on the quantity of hazardous waste produced at a site.

Each NWS site must determine if it is:

- a. A Very Small Quantity Generator (VSQG) because it produces less than 100 kilograms (220 pounds) of hazardous waste per month and no more than one kg (2.2 pounds) is an acute hazardous waste.

**NOTE:** In a 2017 update to their hazardous waste regulations, the EPA codified the term Very Small Quantity Generator (VSQG), to replace the previously used term Conditionally Exempt Small Quantity Generator (CESQG).

- b. A Small Quantity Generator (SQG) because it produces more than 100 kg but less than 1,000 kilograms of waste per month and no more than one kg (2.2 pounds) is an acute hazardous waste.
- c. A Large Quantity Generator because it produces either 1,000 kilograms (2,200 pounds) or more per month of hazardous waste or one kilogram or more of acutely hazardous waste [wastes that are listed in 40 CFR 261.31, 261.32 or 261.33(e)].

**NOTE:** An NWS facility that produces less than 100 kilograms (220 lbs) of waste per month and is co-located on a site with another governmental agency or private organization may be regulated as a Large Quantity Generator if the aggregate of waste generated on the site by all the tenant units exceeds the 1,000 kilogram limit.

#### 2.9.6 Requirements for Generators

- a. Requirements for the Very Small Quantity Generator

Generators that produce less than 100 kg/month of hazardous waste:

- 1) Must determine which “solid wastes” are hazardous waste,

- 2) Are not required by the EPA to obtain an Identification Number (but some states may still require it and some hazardous waste transporters and disposal contractors demand it),
- 3) May maintain its status if one single event per year (e.g., a chemical clean out or spill) would cause the facility to exceed its monthly limits, also known as an episodic event
  - a. The episodic event may be planned or unplanned
  - b. The VSQG must have or obtain an EPA identification number using EPA Form 8700-12 in the event of an episodic event. For unplanned events (i.e. spills) the form can be submitted within 72 hours of the event
  - c. The VSQG must notify the EPA in the event of an episodic event
    - i. A planned event must be notified at least 30 calendar days prior using EPA Form 8700-12
    - ii. An unplanned event must be notified within 72 hours of the event via phone, email, or fax. EPA form 8700-12 must subsequently be submitted
    - iii. The notification shall include:
      1. Start and end date of the event
      2. Reason for the event
      3. Types and estimated quantities of the hazardous waste expected to be generated
      4. A facility point of contact and emergency coordinator with 24-hour telephone access
    - iv. Waste containers from the episodic event must be marked or labeled with the following:
      1. “Episodic Hazardous Waste”
      2. An indication of the hazards of the contents
      3. The date upon which the episodic event began
    - v. Waste must be managed in a manner that minimizes the possibility of a fire, explosion, or release
    - vi. Waste manifests must be used when shipping waste off site to a designated facility
    - vii. Waste from the episodic event must be manifested and shipped within 60 days of the start of the event
    - viii. Records regarding an episodic event must be maintained for three years
    - ix. A VSQG can file a petition to conduct a second episodic event in a single year provided that the second event is of a different nature than the first (i.e., where the first was planned the second is unplanned and vice versa)

- 4) Can send wastes to:
  - a) A permitted hazardous waste treatment, storage or disposal facility.
  - b) A State-approved solid waste disposal facility (this is not a permitted hazardous waste facility), or, if the local community allows, often these wastes may be taken to the local household hazardous waste collection center.

**NOTE:** If a local household hazardous waste collection center is to be used, Department of Transportation rules for the shipping of hazardous waste will still be applicable. Chapter 3 of this manual details hazardous waste shipping requirements.

- c) A facility that reuses, recycles or reclaims wastes
- d) A universal waste handler or destination facility for universal wastes
- 5) Have no special training requirements, however best management practices mandate affected personnel be trained how to properly handle the waste and respond to emergencies
- 6) Do not have to file an exception nor annual/biennial report
- 7) Are limited to 1,000 kg of waste in accumulation but have no time limit or special accumulation standards to follow. However, the OSHA HAZCOM Standard and best management practices require appropriate labeling, marking and storage techniques be employed
- 8) Are not required by the EPA to use a manifest except in the case of episodic events. However, best management practice calls for a manifest always be used to document that the wastes were properly managed.

b. Requirements for the Small Quantity Generator

Generators who produce more than 100 kg/month but less than 1,000 kg/month must comply with the same requirements as Generators who produce more than 1,000 kg/month (see 2.9.6c) except that:

- 1) The personnel training requirements are reduced to proper waste handling and emergency response procedures including completion of manifest and land disposal form
- 2) The time limit for filing the exception report has been extended to 60 days
- 3) Accumulation is extended from 90-days to 180-days or 270 days if the waste is to be shipped more than 200 miles
- 4) The amount of waste that can be accumulated is limited to 6,000 kg.

**NOTE:** If either the weight limit of 6,000 kg or the time limit (180 days or 270 days, if shipped over 200-miles) is exceeded, the EPA considers the material “in storage” (not in accumulation) and a storage permit is required.

- 5) The requirements of 40 CFR 265.173 for Generators who accumulate in containers are met (see 2.9.6c.) except the 50-foot buffer zone is not required for ignitable wastes
- 6) The requirements of Subpart J of 40 CFR 265 are met, if the waste is stored in tanks
- 7) Containers are clearly marked with the accumulation date, the words “Hazardous Waste” and the hazards of the contents of the containers
- 8) The preparedness and prevention standards in Subpart C of 40 CFR 265 are met

Note: Procedures for emergency response to hazardous waste incidents need to be developed and included in Occupant Emergency Plan.

- 9) One employee is on-site or on-call at all times to act as the Emergency Coordinator
- 10) Emergency telephone numbers are posted in convenient locations
- 11) Employees who handle hazardous waste are trained in proper waste handling protocols
- 12) The Emergency Coordinator(s) has (have) been instructed how to implement a set of pre-written responses to probable emergency scenarios.

c. Large Quantity Generators must:

- 1) Determine which “solid” wastes are hazardous wastes
- 2) Apply for and receive an EPA Identification Number prior to treating, storing, disposing or offering for transport any hazardous waste. If located in an authorized State or Territory, the Generator Identification Number will be obtained by applying to the State or Territory. Facilities in Alaska, Iowa or an unauthorized Territory must apply to the EPA by completing EPA Form 8700-12 that is submitted to the EPA Regional Office.

If assistance is needed, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator, NWS Headquarters Environmental and Safety staff, and/or the NWSH Environmental and Safety staff.

- 3) Store wastes in accordance with the “accumulation” standards in 40 CFR 262.17 prior to off-site shipment by ensuring:
  - a) All wastes are shipped off-site within 90 days of generation

**NOTE:** If the 90-day limit is exceeded, a hazardous waste facility permit will be required

b) Containers are:

- In good condition
- Non-leaking
- Compatible with the waste
- Kept closed except when adding or removing
- Managed to avoid rupture
- Inspected weekly

- c) Ignitable and reactive wastes are stored compatibly and are at least 50-feet from the property line. A waiver can be sought from the authority having jurisdiction over the fire code in the event that maintaining 50-feet from the property line is infeasible and alternative, equally protective, measures can be put in place
  - d) The containers meet the air emission standards in 40 CFR 264.1086
  - e) Containers are clearly marked with the date accumulation began, the words "Hazardous Waste" and the hazards associated with the contents
- 4) The facility has reviewed and complied with the preparedness and prevention standards in Subpart C of 40 CFR 265 that require:
- a) maintaining and operating the storage facility to minimize possible hazards of fire, explosion, unplanned release
  - b) securing all necessary emergency equipment for communication, fire, spill, etc.
  - c) testing emergency equipment on a periodic basis to ensure functionality
  - d) ensuring access to communication equipment for all emergencies
  - e) maintaining the necessary aisle space between containers
  - f) establishing an arrangement with the local response agency as per NWSM 50-1115, Procedure 25 to ensure proper response in an emergency
- 5) The facility has reviewed and complies with the requirements of Subpart D of 40 CFR 264.52/265.52 that requires establishment of a Contingency Plan and Emergency Procedures

**NOTE:** Review NWSM 50-1115, Procedure 5, Occupant Emergency Plan for guidance

- 6) The facility personnel involved in hazardous waste management have completed a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of [40 CFR 264.16/265.16](#).
- 7) Prepare a uniform manifest before transporting or allowing transport of any hazardous waste off-site.
- 8) Prepare a land disposal notice informing the disposal facility of the components of the waste and the requirements for treatment prior to land disposal
- 9) Package all wastes in accordance with the Department of Transportation (DOT) regulations in 49 CFR 173, 178, and 179.
- 10) Mark and label each package in accordance with DOT regulations in 49 CFR 172.
- 11) Ensure the initial transporter has the appropriate placards in accordance with DOT regulations in 49 CFR 172 Subpart F.
- 12) Retain each copy of the manifest and land disposal notice for at least three years from date of shipment.

**NOTE:** Because of the long-term liability of hazardous waste management actions, retention of these documents until facility's closure is recommended.

- 13) Contact the designated treatment, storage or disposal facility if a signed copy of the manifest is not received within 35 days of shipment.

**NOTE:** Some states have reduced this time limit to 15-days.

- 14) Prepare an exception report in accordance with 40 CFR 262.42 if a signed copy of the manifest is not received from the designated facility within 45-days of shipment

**NOTE:** Some states have a 20-day time limit).

- 15) Prepare an annual or biennial report summarizing the total amount of each hazardous waste shipped off-site to each permitted facility. A copy of this report will also be sent to the NWS Regional/Operating Unit Environmental/Safety Coordinator.

**NOTE:** The EPA requires this report every two (2) years, while many states require an annual submission

d. Satellite Accumulation

The original EPA hazardous waste regulations required generators to ship all hazardous waste within 90 days of generation. Since the 90 days' time clock begins when the waste is first added to the collection container, the EPA found that large numbers of partially filled containers were being shipped to disposal facilities by generators who produced waste at relatively slow rates. To correct this problem, the EPA created the concept of "Satellite Accumulation" that allows generators to "store" (accumulate) a hazardous waste until a container is filled as long as:

- 1) The total volume of the container is less than 55 gallons of hazardous waste or one quart of acutely hazardous waste (the "P" wastes)
- 2) The container is kept near the point of generation and under the control of the operator
- 3) The containers are in good condition
- 4) The containers are kept "closed" except when adding or removing waste
- 5) The containers are marked with the hazards associated with the contents and the words "Hazardous Waste" or words to identify the contents

When the satellite accumulation container is filled, it must be moved to the central accumulation area within three days.

<b>Table 1. Comparison of Hazardous Waste Generator Requirements for Different Types of Waste Generators</b>			
<b>Requirement</b>	<b>Very Small Quantity Generators</b>	<b>Small Quantity Generators</b>	<b>Large Quantity Generators</b>
<b>Quantity Limits</b> The amount of hazardous waste generated per month determines <u>how a generator is categorized</u> and what regulations must be complied with.	≤100 kg/month, and ≤1 kg/month of acute hazardous waste, and ≤100 kg/month of acute spill residue or soil §260.10	>100 and <1,000 kg/month §260.10	≥1,000 kg/month, or >1 kg/month of acute hazardous waste, or >100 kg/month of acute spill residue or soil §260.10
<b>Accumulation Requirements</b> Manage hazardous waste in compliance with certain technical standards.	None	Basic requirements with technical standards for containers, tanks, drip pads or containment buildings §§262.16(b)(2)-(5)	Full compliance for management of containers, tanks, drip pads or containment buildings §§262.17(a)(1)-(4)
<b>Accumulation Time Limits</b> Determine amount of time hazardous waste is allowed to accumulate on site.	None	≤180 days or ≤270 days (if transporting greater than 200 miles) §§262.16(b)-(d)	≤90 days §262.17(a)
<b>On-Site Accumulation Quantity</b> Determine amount of hazardous waste generators are allowed to "accumulate" on site without a permit.	≤1,000 kg or ≤1 kg acute hazardous waste or ≤100 kg of acute spill residue or soil §§262.14(a)(3) and (4)	≤6,000 kg §262.16(b)(1)	No limit
<b>EPA ID Number</b> <u>Acquire a unique EPA identification number</u> that identifies generators by site.	Not required	Required §262.18	Required §262.18
<b>Manifest</b> Tracking hazardous waste shipments using the <u>multiple-copy manifest</u> - required by the Department of Transportation (DOT) and EPA.	Not required	Required <u>Part 262 subpart B</u>	Required <u>Part 262 subpart B</u>

<b>Table 1. Comparison of Hazardous Waste Generator Requirements for Different Types of Waste Generators</b>			
<b>Requirement</b>	<b>Very Small Quantity Generators</b>	<b>Small Quantity Generators</b>	<b>Large Quantity Generators</b>
<b>Contingency Plan and Emergency Procedures</b> Develop procedures to follow during an unplanned major event.	Not required	Basic planning required §§262.16(b)(9)	Full plan required Part 262 subpart M (from §262.17(a)(6))
<b>Personnel Training</b> Ensure appropriate personnel complete classroom or on-the-job training to become familiar with proper hazardous waste management and emergency procedures for the wastes handled at the facility.	Not required	Basic training required §262.16(b)(9)(iii)	Required §262.17(a)(7)
<b>Waste Minimization</b> Certify steps taken to reduce or eliminate the generation of hazardous waste	None	Good faith effort required <u>§262.27</u>	Program in place required <u>§262.27</u>
<b>Facility Type</b> Send off-site shipments to appropriate facilities for management	Facilities noted in §§262.14(a)(5)	RCRA permitted/interim status facility <u>Parts 264/265, 266/267 and 270</u>	RCRA permitted/interim status facility <u>Parts 264/265, 266/267 and 270</u>
<b>Recordkeeping</b> Maintain records of waste testing, <u>manifests</u> , <u>biennial reports</u> and exception reports	Not required	Required (except biennial reports) §262.11(f) and §262.40(a) and (d)	Required §262.11(f) and <u>§262.40</u>
<b>Closure</b> Close equipment, structures, soils and units by meeting specified performance standards and disposal and decontamination requirements	Not required	Required for tanks, drip pads and containment buildings - Tanks only §262.16(b)(3)(vi) Unit specific Part 265, subpart W and DD for drip pads and containment buildings	Required - General §262.17(a)(8) - Unit specific Part 265, subpart W for drip pads
<b>Preparedness and Prevention</b> Develop procedures to follow	Not required	Required §262.16(b)(8)-(9)	Required Part 262 subpart M (from §262.17(a)(6))

<b>Table 1. Comparison of Hazardous Waste Generator Requirements for Different Types of Waste Generators</b>			
<b>Requirement</b>	<b>Very Small Quantity Generators</b>	<b>Small Quantity Generators</b>	<b>Large Quantity Generators</b>
in the event of an emergency.			
<b>Air Emissions</b> Control hazardous air emissions from tanks and containers	Not required	Not required	Required <u>Part 265 subparts AA, BB and CC from §262.17(a)(1) and (2)</u>
<b>Land Disposal Restrictions</b> Meet standards for placing on the land and associated requirements for certifications, notifications, and waste analysis plans	Not required	Required <u>Part 268</u> from §262.16(b)(7)	Required <u>Part 268</u> from §262.17(a)(9)
<b>Pre-Transport Requirements</b> Package and label hazardous waste for shipment off site to a RCRA facility for treatment, storage, or disposal	Only if required by the DOT or the state	Required §262.16(b)(8)-(9)	Required <u>§§262.30-262.33</u>
<b>Biennial Report</b> <u>Report data from off-site shipments</u> of waste during the previous calendar year	Not required	Not required	Required <u>§262.41</u>
<b>Exception and Additional Reporting</b> Report if any required copies of signed manifests are not received back. Provide information on quantities and disposition of wastes upon request.	Not required	Required <u>§§262.42(b) and 262.43</u>	Required <u>§§262.42 and 262.43</u>

## 2.9.7 Shipping Documents

### a. Manifest:

#### 1) Requirements

Regardless of the generator classification, prior to transporting or allowing transport of a hazardous waste off-site to a permitted hazardous waste treatment, storage or disposal facility, the generators must prepare a Hazardous Waste Manifest using EPA Form 8700-22. The manifest must include:

- a. The name, EPA ID Number and location of a designated facility where the waste is to be shipped,
- b. A 24-hour emergency contact telephone number in case of an emergency, and a signed waste minimization certificate.

**NOTE:** If a contractor completes the manifest for the NWS facility, the NWS-designated individual must sign the document and assume the liability that all information is correct.

b. Waste Minimization Certification

The manifest includes a generator certification that reads: "Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment."

By signing the manifest, the generator "certifies" a formal waste minimization program has been established. The manifest should only be signed by the Environmental Focal Point or other trained personnel designated by the Station Manager.

c. The Land Disposal Notification Form

As required by the Land Disposal Restrictions, a generator must also provide the treatment, storage or disposal facility with a notice that clearly informs the facility that the waste either does or does not meet the EPA standards for land disposal. For wastes that do not meet the standard, the generator is required to inform the facility and provide the appropriate treatment standards that must be achieved prior to land disposal. As a courtesy to their clients, this written notice is normally provided by the disposal facility for signature by the generator. The notice will include the EPA identification number, the appropriate treatment standard, the manifest number, and waste analysis data, where applicable.

## 2.9.8 Recordkeeping

- a. Generators must retain:
  - 1) The copy of the manifest and Land Disposal Notice or Certification signed by the receiving treatment, storage or disposal facility for three years from date of shipment.
  - 2) A copy of each Annual Report, Biennial Report and Exception Report for three years.
  - 3) A copy of any test results or analysis for three years after that waste was last shipped for treatment or disposal.
  - 4) All records if an enforcement action begins until the action is completed.
- b. Annual Reporting (Biennial Report):

- 1) A generator who generates over 1,000 kg/month and ships off-site must submit a Biennial Report on EPA Form 8700-13A to the Regional Administrator no later than March 1 for the preceding odd numbered calendar year.
- 2) Many states require the generator to complete an Annual Report to the state regulatory agency no later than March 1 for the preceding calendar year. If required to complete one of these reports, contact the NWSH Environmental and Safety staff for assistance.
- 3) These reports detail the amount of each hazardous waste shipped to each treatment, storage or disposal facility during the previous 12 months. A copy of the annual (or biennial) report will be sent to the NWSH Environmental and Safety staff and/or the NWS Regional/Operating Unit Environmental/Safety Coordinator for review.

## 2.10 Universal Wastes

“Universal Waste” is a solid waste that because of its chemical composition, meets the legal definition of a “hazardous waste” - but - it is recyclable - hence the EPA and most states have decided to reduce the management requirements to encourage their recycling.

If *disposed*, these wastes are “hazardous” and the disposal must comply with all the hazardous waste regulations. These wastes cannot be discarded with the facility’s solid waste or garbage.

If *recycled appropriately*, these wastes are “universal” wastes and subject to a reduced set of requirements.

Contact the NWS Regional/Operating Unit Environmental/Safety Coordinator or the NWSH Environmental and Safety staff to determine if the universal waste requirements are applicable in your state (<https://www.epa.gov/hw/universal-waste#state>).

Currently, the EPA lists the following wastes as Universal Wastes:

- a. All types of batteries including “button” or “watch” batteries
- b. Fluorescent bulbs
- c. Mercury-containing equipment (MCE)
- d. Pesticides

**Special Note:** The EPA has added “mercury containing equipment” to the Federal List of Universal Waste, effective August 5, 2005. This change added thermometers, barometers, manometers, and mercury light switches and similar items to the EPA list of Universal Wastes.

Because this rule reduces the hazardous waste management standards for these wastes, it is effective in authorized state *only* if the state adopts the change.

### 2.10.1 Requirements for Handlers of Universal Waste

In contrast to hazardous waste, the requirements for universal wastes are not based on the amount of waste generated, but rather the amount stored. As a result, the EPA regulates “handlers” of universal waste - not generators. The EPA has two types of handlers: *Small*

*Quantity Handlers* of universal waste who store less than 5,000 kg (11,000 pounds) of universal wastes and *Large Quantity Handlers* who store more than 11,000 pounds.

**Note:** State Universal Waste Programs can be found on the following EPA web page:  
<https://www.epa.gov/hwgenerators/links-hazardous-waste-programs-and-us-state-environmental-agencies>

a. Small Quantity Handlers

NWS facilities that store less than 5,000 kg of universal waste must:

- 1) Segregate and manage them to prevent leakage or release of electrolytes,
- 2) Label and mark containers with one of the following phrases:
  - a. Waste Batteries (or pesticide, etc.)
  - b. Used Batteries (or pesticide, etc.)
  - c. Universal Waste - Batteries (or pesticide, etc.)
- 3) Mark the date when the container first received waste and limit accumulation to **one year**
- 4) Train employees
- 5) Contain all releases
- 6) Ship to another universal waste handler or a universal waste destination facility.

No manifest or other tracking document is required by the EPA - BUT - best management practices mandate that some paperwork documenting the transfer to be maintained.

b. Large Quantity Handlers

NWS facilities that store more than 5,000 kg of universal waste must meet the standards in Subpart C of 40 CFR 273. These handlers:

- 1) Cannot dispose of the universal waste (they must recycle),
- 2) Cannot dilute or treat the universal waste, except in a response to a spill
- 3) Must notify the EPA or State if previous notification as a hazardous waste generator has not been submitted and receive an EPA Identification Number
- 4) Must comply with specific management standards for each waste stored
- 5) Must label and mark containers with one of the following phrases:
  - a. Waste Batteries (or pesticide, etc.)
  - b. Used Batteries (or pesticide, etc.)
  - c. Universal Waste - Batteries (or pesticide, etc.)
- 6) Can store universal wastes up to one year, but must maintain an inventory system that can document the time limit is not exceeded
- 7) Must ensure employees are trained in proper waste handling and emergency response

- 8) Must have an emergency response plan for releases
- 9) Must retain for three years, a record of each shipment of universal waste received or shipped. This record can be a log, invoice, manifest, bill of lading or other shipping document that includes the name and address of the originating universal waste handler or the foreign shipper, the quantity of each type of universal waste and the date of receipt.

### **2.10.2 Batteries**

According to 40 CFR Part 273.2(b), "a used battery becomes a waste on the date it is discarded and an unused battery becomes a waste on the date the handler decides to discard it." It is important to note that because of their chemical components, most batteries (alkaline, lead acid, lithium hydride, etc.) are either a hazardous waste, if disposed of, or a universal waste if recycled. These batteries are **NOT** solid wastes that can be discarded in the trash.

#### **a. Lead Acid Batteries**

NWS facilities and work sites that generate spent lead acid batteries can manage them either as:

- 1) An exempted hazardous waste under Subpart G of 40 CFR Part 266, or
- 2) A universal waste.

If managed as an exempted hazardous waste, the NWS facility or work site must perform a hazardous waste determination and follow the U.S. Department of Transportation rules regarding shipment of a hazardous material. See Section 3.11.4 of this Manual for specific information regarding DOT-required marking and labeling.

If these batteries are managed as a universal waste, the appropriate universal waste handler standards (Paragraph 2.10.1 a. or b.) must be followed.

Note that the universal waste rule is less complicated.

#### **b. Other Batteries**

All batteries that are destined for recycling are managed as universal wastes; otherwise, they are hazardous wastes and bear full regulation. NWS facilities and work sites that store less than 5,000 kg total of universal waste must comply with the standards for Small Quantity Handlers in Paragraph 2.10.1 a.

Facilities that store more than 5,000 kg of batteries must comply with the standards in paragraph 2.10.1 b for Large Quantity Handlers of Universal Waste. In addition, these handlers must comply with the EPA or State- specific standards for management of waste batteries (see 40 CFR 273.33).

### **2.10.3 Fluorescent Bulbs**

Most NWS facilities generate used fluorescent bulbs. Because these tubes normally contain enough mercury to fail the test for the toxicity characteristic for hazardous waste" or "meet the characteristic definition of a toxic hazardous waste, the bulbs are hazardous waste unless

recycled. As a general rule, recyclers will only accept unbroken tubes and hence broken tubes are usually managed as hazardous waste.

The GE fluorescent tubes with green ends (Ecolux) can be disposed in the garbage. These tubes have over 85% less mercury than the standard tubes and as a result, they pass the EPA Toxicity Characteristic Leaching Procedure for mercury. The test results can be found at <http://www.gelighting.com/LightingWeb/na/resources/environmental-center/reference-data/>.

**NOTE:** GE warns that although these tubes pass the Federal TCLP test, state and/or local regulations may still regulate their disposal. GE has posted the state regulations and a list of recyclers at:

<http://www.lamprecycle.org/comm-statelaws.shtml>

<http://www.lamprecycle.org/Recyclers.php>

Appendix D to this Manual is a freeware software program that allows the user to print the necessary labels and markings. If help is needed, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH Environmental and Safety staff and request assistance with locating fluorescent bulb recyclers.

#### 2.10.4 Mercury Containing Equipment

Some NWS programs such as the Cooperative Observer Program (COOP) still use mercury thermometers. Mercurial barometers used in the past were decommissioned and replaced with electronic pressure instruments, however, they can still be found in historic displays.

Additionally, mercury thermostats, mercury switches or other mercury containing devices can be used at NWS facilities. If these devices are discarded, they are classified as hazardous waste due to the mercury content and must be sent to a permitted hazardous waste facility for treatment, disposal or recycling.

EPA finalized the modification of the Hazardous Waste Program, Mercury Containing Equipment (MCE) on Aug 5, 2005 and included spent MCE in the Universal Waste Rule. The following link provides information on the State-specific Universal Rule requirements:

<http://www.epa.gov/epawaste/hazard/wastetypes/universal/statespf.htm#links>

NWS facilities and work sites that generate spent mercury contained equipment or non-contained elemental mercury, can manage them as:

- a. Hazardous waste under Subpart G of 40 CFR part 260-272
- b. An universal waste when destined for recycling

If managed as hazardous waste, the NWS facility or work site must follow hazardous waste regulations and DOT rules regarding the shipment of hazardous materials. See section 3.11.4 for specific information regarding marking and labeling.

If managed as a universal waste, the appropriate universal waste standard (Paragraph 2.10.1a or b) must be followed.

Mercury containing equipment has been used in hundreds of devices at levels ranging from less than a gram up to several pounds.

Some of the various types of MCE are:

- 1) High Intensity Discharge Lamps
- 2) Mercury Containing Switches – furnace controls, HVAC controls, laboratory and industrial equipment
- 3) Mercury Thermostats
- 4) Silent Wall Switches (Prior to 1991)
- 5) Freezer and Flame Sensors - gas fired devices and pilot lights.
- 6) Manometers/Barometers/Thermometers.
- 7) Float Switches - sump pumps and septic tanks
- 8) Mercury regulators

Each field office should assess their facility and equipment for MCE presence. Both used and unused MCE become wastes on the day when facility decides to discard them. Prior to disposal, it is necessary to check with the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH Environmental and Safety staff to determine if there are any State-specific requirements.

Used MCE can be placed in container with non-contained elemental mercury or MCE that is damaged or can cause leakage. The container must be closed and must prevent escape of mercury into the environment or by volatilization or other means.

The universal waste rules allow removal of mercury containing ampoules from the MCE when all precautions are taken – ampoules are removed over/or in a containment device and any spills from broken ampoules are contained. This is usually done by universal waste handlers and is not recommended for NWS facilities.

Other types of MCE with “open mercury housing,” such as barometers and manometers must be managed with more caution. The housing is open on one end and may allow escape of mercury, unless sealed before discarded. (Note: Some devices, such as barometers, are designed to be sealed before transportation). The open housing can be removed from MCE, sealed airtight and managed as ampoules. If not removed, the housing should be sealed prior to transport and the whole device should be placed in a closed container. If this type of MCE cannot be sealed in such a way to prevent release of mercury to the environment, during accumulation and transportation, it is not eligible to be managed under Universal Waste rules.

Examples of methods that would be effective to prevent releases from a smaller device are placing the housing in containers with electrician’s tape or placing the housing in sealed zipper storage bag and then in a secondary container.

Each MCE or container of devices should be marked with one of the following phrases:

- Universal Waste - Mercury Containing Equipment
- Waste - Mercury Containing Equipment
- Used Mercury - Thermostats
- Waste Mercury - Thermostats
- Universal waste - Mercury Thermostats

The collection container or individual device should be marked with the first date of accumulation. MCE can be kept on site only for **one year** from the date they are generated.

All facilities and work locations where mercury containing products are used must have a mercury spill up kit available and train employees on how to respond and use the clean-up kit.

## 2.10.5 Pesticides

Many states sponsor collection programs for unwanted pesticides. Eligibility rules vary from state to state. Collection programs are usually free, but not all materials are accepted. The pesticide must be in a clearly labeled, structurally sound, commercial container. For more information on available programs, visit the link to Pesticide Stewardship Alliance [state pesticide disposal map](#). In some states, it may be necessary to find a commercial disposal company with a permit from the U.S. EPA to dispose of pesticide wastes in accordance with the Resource Conservation and Recovery Act (RCRA). The Universal Waste regulations ease requirements for certain hazardous wastes, including pesticides, for those who generate and transport them. If a recycling facility can be located, NWS facilities and work sites would be required to comply with the appropriate Universal Waste handlers standard (see Paragraph 2.10.1 a. or b.) and the requirements imposed by the recycler.

## 2.11 Specific NWS-Generated Wastes

In performing its mission, the NWS typically generates several specific wastes. These include:

- Used oil from the back-up diesel generator, NEXRAD gear box and maintenance on other equipment
- An ethylene glycol based antifreeze/water mixture from the emergency generator
- A propylene glycol/water mixture from the rain gauges
- Computers and other electronic equipment
- PCBs in old fluorescent light ballasts
- Asbestos in gaskets, floor tile, adhesives, and insulation
- Lead-based paints
- Excess paint

### 2.11.1 Used Oil

Fearing that used oil would be improperly disposed if designated as a hazardous waste, the EPA created a separate management system for used oil under 40 CFR Part 279. **Because most, but not all of the states have adopted the EPA rules, NWS facilities will need to verify state-specific rules** and contact the NWS Regional/Operating Unit Environmental/Safety Coordinator or NWSH Environmental and Safety staff, if assistance is needed.

#### a. Definition of Used Oil

While most of the used oil generated by NWS facilities is regulated under the EPA rules for used oil, the following materials are not used oil and are regulated differently:

- 1) Mixtures of used oil and listed hazardous waste and mixtures where concentrations of halogenated solvents exceed 1,000 ppm. These are regulated as hazardous waste.
- 2) Mixtures of used oil and hazardous waste which exhibit characteristics of Subpart C of 40 CFR 261 (ignitable, corrosive, reactive and toxic). These are also regulated as hazardous waste, except if the mixture only has the characteristic of ignitability - then it is regulated as used oil.

- 3) Mixtures of used oil and diesel fuel mixed on-site by the generator for use in the generator's vehicle. This mixture is not regulated by the EPA. Prior to mixing, however, the oil is subject to the used oil generator standards.
- 4) Materials that are beneficially used and/or derived from used oil not burned for energy recovery. These materials are not solid wastes and hence not regulated as hazardous waste either.
- 5) Wastewater containing "very small quantities of used oil from small spills, leaks or drippings from pumps, machinery, etc. This wastewater is not regulated.
- 6) Oil introduced into crude oil and natural gas pipelines. Again, this oil is only regulated prior to introduction into the pipeline.
- 7) Oil contaminated with PCBs. These are regulated under 40 CFR 761 as PCBs.
- 8) Oil on vessels. This oil becomes regulated as used oil when it is transferred to a shore facility.

b. Rebuttable Presumption

NWS facilities, such as the National Data Buoy Center, that can generate spent oil that is contaminated with salt water must understand a rule called the "rebuttable presumption." Under this rule, the EPA assumes that any used oil that contains 1,000 parts per million (ppm) total halogens (i.e. chlorine, fluorine, bromine or iodine) has been contaminated with a halogenated solvent and hence is a hazardous waste. If a generator can prove the halogens are not due to organic solvents, but are from the salt in seawater, the oil can be handled as non-hazardous. This is a "rebuttal" to the EPA assumption that the waste is hazardous and hence the term "rebuttable presumption." If the halogen content exceeds 4,000 ppm however, the oil is assumed hazardous and the testing will not change this conclusion. Chemical testing may be required to document the type of halogen present (if applicable) in your waste oil.

c. Used Oil Generator Requirements

NWS facilities and work sites that generate used oil will:

- 1) Not mix hazardous waste with used oil,
- 2) Store used oil in tanks or containers that meet the criteria for hazardous waste storage:
- 3) Ensure that containers are in good condition and not leaking
- 4) Ensure that containers are marked with the words "**Used Oil**"

**NOTE:** Appendices D-1 and D-2 to this Manual contain instructions and a link to the Microsoft Word program that can be used to print the necessary marking.

- 5) Ensure that aboveground ancillary equipment handling used oil are marked with the words "**Used Oil**"
- 6) If used oil is released from a container, proper clean-up and reporting are necessary, and

If the total combined quantity of used, unused and in-use oil on-site exceeds 1,320-

gallons, including 55 gallon containers, a Spill Prevention Control, and Countermeasures (SPCC) Plan will be required.

d. Transport

Unlike hazardous waste, NWS facilities are allowed to transport used oil without an EPA Identification Number if:

- 1) The oil is transported in a vehicle owned by the government,
- 2) Not more than 55-gallons is transported at one time,
- 3) The oil is transported to a facility that is registered, licensed, permitted or recognized by a state/county/municipal government to manage used oil, or
- 4) The oil is transported from a remote site to a NWS facility to be accumulated for later disposal.

If the oil is to be transported off-site for recycling or disposal by a contractor, a transporter who has an EPA Identification Number must be used. Refer to Section 3.11.2 for the DOT marking and labeling requirements.

e. Recycle/Disposal

If possible, used oil should be recycled. Contact the NWS Regional/Operating Unit Environmental/ Safety Coordinator and/or the NWSH Environmental and Safety staff if assistance is needed to locate a local contractor.

Normally, contractors that recycle used oil also take used antifreeze.

**SPECIAL NOTE:**

The EPA allows the use of used oil as fuel in a used oil space heater if:

- (1) The heater uses oil generated by the NWS,
- (2) The heater is designed to have a maximum capacity of 0.5 million BTU per hour, and
- (3) The combustion gases are vented to the ambient air.

## **2.11.2 Used Antifreeze (Ethylene Glycol Based) and Propylene Glycol Solutions**

a. Emergency Generator

Ethylene glycol based antifreeze solutions are used in diesel emergency generators and other engine cooling systems. Used antifreeze solutions are not EPA hazardous wastes. These wastes are not “listed wastes” nor do they meet any of the four hazardous waste characteristics. Because of the inherent toxicity of these mixtures (they may contain heavy metals such as lead, cadmium, and chromium - only if used in engines), most states regulate disposal of these wastes usually in conjunction with their used oil rules. Offices should not dump spent antifreeze on land or discharge it into a sanitary sewer, storm drain, ditch, dry well, or septic system. Dumping antifreeze can cause serious water quality problems and might harm people, pets, or wildlife. While most states and the EPA do not regulate ethylene glycol based antifreeze solutions as hazardous waste, some have special programs for used antifreeze. Spent antifreeze should be properly disposed of in accordance with state rules or recycled. To determine the requirements for a specific NWS facility or work site contact the NWS Regional/Operating Unit

Environmental/Safety Coordinator or NWSH Environmental and Safety staff. Typically, the used oil contractor will also take used antifreeze/water solutions.

b. Rain Gauge and All Weather Precipitation Accumulation Gauge (AWPAG)

To minimize evaporation, a small amount of oil is normally added to an empty rain gauge and AWPAG. In colder climates technical (food) grade propylene glycol is also added to prevent freezing. Used propylene glycol solutions are not EPA hazardous wastes. The bi-layered liquid cannot be poured onto the ground. It must be collected and properly managed. Most municipal Publicly Owned Treatment Works (POTW) will readily accept this wastewater (but check before using this disposal procedure). To separate the mixture layers, use a device with a bottom drain, such as a picnic jug. The container must be clearly marked "**Oil/Propylene Glycol/Water.**" Appendices D-1 and D-2 to this manual contain instructions and link to Microsoft Word freeware software program that allows the user to print the necessary marking.

The rain gauge liquid can be collected over a period of time at one site or from several sites. After allowing time to separate, drain the bottom water layer of the device and discharge to the sewer. Collect the remaining small oil layer and add it to the used oil containers. For NWS facilities serviced by a septic system, the only disposal option will probably be shipment of the propylene glycol/water mixture off-site - usually by the used oil contractor (Note: Check local requirements).

### 2.11.3 Computers and Other Electronic Wastes

a. Current Status:

Used electronic products are the most rapidly growing problem in waste stream due to their quantity and toxicity. Electronic wastes (E-waste), such as televisions, computers and computer monitors, contain toxic substances, including lead, mercury, cadmium, lithium, brominated flame retardants, phosphorous coatings, and PVC plastics that create dioxins when burned. Although these devices are safe to use, when thrown away they can release these toxics, posing a threat to human health and the environment. If improperly disposed, these materials can release metals which contaminate groundwater. The E-waste management hierarchy is:

- Reusing
  - Recycling
  - Disposal
- 1) Some E-wastes may be regulated as hazardous waste such as cathode ray tubes (CRTs), mercury lamps, circuit boards. To minimize the amount of these items sent to solid waste landfills, on June 12, 2002, the EPA proposed excluding cathode ray tubes (CRTs) or computer monitors from regulation as a hazardous waste if the CRTs are packaged, labeled and stored in accordance with a special set of rules ([40 CFR 261.39](#)).

If a CRT becomes severely damaged and a recycling option is not available, it should be disposed of as a hazardous waste with the EPA Waste ID Number D008.

Several states have also begun modifying how they regulate this waste. While some

regulate it as scrap metal if recycled, some are considering regulating it as universal waste. As a result, the requirements for management and disposal and even the paperwork required for transportation can vary significantly. For example, if a CRT is considered a hazardous waste, a hazardous waste manifest is required. If it is a universal waste, a shipping paper will be required for a large quantity universal waste handler but no paperwork will be required from a small quantity universal waste handler or a scrap metal recycler. Check the state-specific requirements for the recycling or disposal of these items.

b. Scrap Solder and Circuit Boards

Depending on where and when it was manufactured, solder used in electronic circuit boards and other electrical applications may or may not contain lead. If the solder contains lead, it will normally fail the EPA toxicity test for lead and be legally classified as a hazardous waste (D008). If the solder does not contain lead (i.e. lead-free), it is a solid waste (garbage) when disposed. Unfortunately, unless labeled as lead-free, testing is the only way to determine if solder and/or soldered connections contain lead. This normally leaves three options for the disposal of excess solder or electronic equipment containing soldered connections that is not identified as lead-free:

- Dispose as hazardous waste,
- Test for lead and dispose as hazardous if it fails the EPA toxicity test or dispose as a solid waste if it passes the EPA toxicity test,
- Recycle using a recognized recycler. It is recommended to use recyclers that are the third party certified.

c. Current Strategy

To stay in compliance while the EPA and State rules may be changing, never discard any electronic equipment or e-wastes as solid waste. Field offices must follow DOC and NOAA procedures for electronic equipment disposal. Every effort shall be made to reuse or donate electronic equipment. Donation to a third party is possible, but check with the property manager and/or the NOAA personal property handbook:

[http://www.pps.noaa.gov/personal\\_property\\_policies\\_procedures/](http://www.pps.noaa.gov/personal_property_policies_procedures/)

Excess electronic equipment is normally handled through GSA. This usually relieves field offices from handling the computer equipment as E-waste. Documentation of the equipment transfer should be kept in accordance with the personal property excess rules and at least for three years. Information about disposal can be found in the NOAA personal property handbook.

**Special Note:** When disposal through GSA is not feasible, NWS Environmental Focal Points or Personal Property Managers should look for third party certified recyclers (if feasible). Available recyclers can be located:

<http://www.recycleforbreastcancer.org>

<http://www.maine.gov/dep/waste/ewaste/>

<http://www.ecyclingcentral.com>

<http://www.unicor.gov/Recycling.aspx>

## 2.11.4 PCBs

Older NWS facilities built prior to July 2, 1979 may contain ballasts in fluorescent light fixtures and transformers that contain PCBs.

### a. Ballasts

After 1979, fluorescent light ballasts were prohibited from containing PCBs and were to be clearly marked “No PCBs.” Although EPA rules allow unmarked ballasts that are assumed to contain PCBs to be disposed in a municipal landfill if they are not leaking, EPA policy recommends these ballasts be disposed at a facility permitted by the EPA to recycle, landfill, or incinerate PCBs. As a result, state rules must be checked prior to disposing of PCB ballasts into a municipal landfill. Some states still regulate these ballasts as listed hazardous waste that would prohibit this disposal option.

### b. Transformers

Transformers containing a dielectric fluid that contain 500 ppm or more of PCBs are deemed a “PCB transformer” and are regulated by the EPA according to 40 CFR 761. See Section 12 - Polychlorinated Biphenyls for more detailed information regarding the management of PCB transformers.

While in use, PCB transformers:

- 1) Must be equipped with electrical protection to prevent overload or removed from service
- 2) Must be registered with fire response personnel if in use “in or near a commercial building”
- 3) Must have all combustible materials removed from the PCB transformer
- 4) Must be visually inspected quarterly
- 5) Must be visually inspected for leaks daily
- 6) Must be clearly labeled that they contain PCBs
- 7) When taken out of service, PCB transformers:
  - a. Can be stored for up to 30-days on pallets
  - b. Must be incinerated or drained, flushed and then disposed in an EPA-permitted landfill. (Note: this can only be done at an EPA-permitted facility.)

## 2.11.5 Asbestos

NWS facilities that were constructed prior to 1981 may contain asbestos and/or asbestos-containing materials (ACM). While the EPA has determined that, in general, the prevailing asbestos levels in buildings and the levels of employee exposure appear to be very low, Procedure 31 - Asbestos Safety in NWSM 50-1115 applies.

**NOTE:** Since the EPA's total ban on asbestos products was vacated by the 5th Circuit Federal Court of Appeals, numerous products are being made and put into building materials such as asbestos-cement corrugated sheet, asbestos-cement flat sheet, asbestos clothing, pipeline wrap, roofing felt, vinyl-asbestos floor tile, asbestos-cement shingle, millboard, asbestos-cement pipe, automatic transmission components, clutch facings, friction materials, disc brake pads, drum brake linings, brake blocks, gaskets, non-roofing coatings, and roof coatings .

Generally these materials are being imported from Canada and Mexico and therefore, examination of materials being purchased and MSDS review should be made to ensure no asbestos materials are being put into NWS facilities.

If asbestos is suspected to be present in a NOAA facility, the NWSH Environmental and Safety staff should be contacted. Where the presence of asbestos is confirmed in a NWS facility, an Asbestos Control Program is required.

Should work be required to be performed on a non-NWS facility (i.e. CO-OP housing) that will disturb asbestos siding, either the NWS employee performing the work must be trained as a Class II Asbestos Worker (see Section 17.6.5c) or the work must be done by an approved contractor.

Because the management, control, abatement and disposal of asbestos is regulated by both the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) on the federal level and the state worker safety and environmental agencies as well as local municipalities, NWSH Environmental and Safety staff and the NWS Regional/Operating Unit Environmental/Safety Coordinators should be consulted.

## **2.11.6 Lead-Based Paint**

NWS facilities built before 1978 may have one or more coatings of lead-based paint (LBP). The existence of this paint in employee housing and the removal from these and all other facilities is regulated by the EPA, OSHA and Housing and Urban Development (HUD).

### a. Lead-Based Paint in Housing and Child Occupied Areas

The Real Estate Notification and Disclosure Rule became effective September 6, 1996. The rule requires realtors and landlords of housing to provide purchasers and tenants with information regarding lead-based paints in homes built before 1978. Sellers, landlords and agents must provide purchasers and tenants with an EPA-approved lead hazard information pamphlet. Purchasers are allowed a 10-day period to inspect the housing unit for lead-based paint.

For NWS facilities that incorporate housing units, the NWS Regional/Operating Unit Environmental/Safety Coordinator should be contacted for assistance in identifying the presence of lead-based paint. If confirmed, a lead-based paint awareness program (in which residents must be notified of where the lead-based paint is located) will be established and copies of the EPA-approved pamphlet obtained for distribution to affected employees. The pamphlet includes instructions on what to do if the lead-based paint becomes damaged or peels.

If a NOAA facility has a daycare or public area that children will occupy, the NWSH Environmental and Safety staff should be contacted to assist with determination if lead-based paint is present.

b. Lead-Based Paint in Other Facilities

For NWS facilities other than housing that may contain lead-based paint (LBP), the Regional/Operating Unit Environmental/Safety Coordinator or NWSH Environmental and Safety staff should be contacted prior to any remodeling or renovation project to assist in determining the presence of the lead-based paint and, if removal is deemed appropriate, assistance in securing the qualified contractors.

c. Lead-Based Paint Removal and Disposal

The removal of lead-based paint (LBP) may only be performed by personnel who have successfully attended an EPA-certified training course for lead-based paint removal. Contractors must document and/or verify that personnel used for this effort have the EPA-certified training prior to the initiation of the removal effort.

If lead-based paint residue is generated in the removal of lead-based paint from housing, the “household hazardous waste exemption” in 40 CFR 261.4(b) (1) applies. The residue is not considered a hazardous waste and can be disposed as a solid waste.

If lead-based paint residue is generated in the removal of lead-based paint from an NWS facility that is not considered a housing unit, representative samples of the residue must be tested using the Toxicity Characteristic Leaching Procedure (TCLP) test methodology for the characteristic of lead (D008). If the residue exceeds the regulatory limit for lead, it must be managed as a hazardous waste.

NWS facilities should contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH Environmental and Safety staff to determine if there are any state modifications to the EPA rules. Information on EPA standards related to lead in paint can be found on: <https://www.epa.gov/lead/hazard-standards-lead-paint-dust-and-soil-tsca-section-403>.

## 2.11.7 Excess Paint

a. Latex Paint

Prior to disposing of any excess latex paint, check the label and/or the Material Safety Data Sheet regarding the components of the paint. Latex paint manufactured prior to 1988 may contain a mercury compound as a fungicide. As a result, excess supplies of this paint usually require disposal as a hazardous waste (D009).

Unless it contains a toxic metal as a pigment, latex paints manufactured after 1988 typically do not meet any of the criteria of a hazardous waste nor are they listed. As a result, excess latex paint does not need to be managed as a hazardous waste. While this paint can be disposed as solid waste (i.e. garbage), it is highly recommended that the following protocol be used:

- 1) Find something to paint and use up the excess, or

- 2) If the state allows, open the container(s) and allow the paint to harden prior to disposal. Note that this option depends on state regulations and the Regional/Operating Unit Environmental/Safety Coordinator or NWSH Environmental and Safety staff should be consulted.

b. Oil-Based Paint

Depending on the solvents used in its manufacture, excess oil-based paint may be regulated as a hazardous waste if:

- 1) It contains a toxic metal listed in Table 1 of 40 CFR 261.24, the toxicity characteristic. The metals of concern include: Barium, Cadmium, Chromium and Lead. If any of these metals are present in an amount that would exceed the maximum concentration allowed in an extract of the paint, the paint must be managed as a hazardous waste.
- 2) It has a flash point below 140°F. If the material safety data sheet or label does not provide this information, a sample may have to be sent to a laboratory for analysis. Contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH Environmental and Safety staff for assistance in securing the services of a qualified laboratory.

If the oil-based paint does not have a flash point below 140°F nor contain a toxic metal as a pigment, it can be managed as a solid waste (i.e. garbage). Again, it is recommended that the paint be used to paint something or the container(s) left open until the paint hardens prior to disposal.

While state regulations vary significantly, in general, if the oil-based paint does not have a flash point below 140°F nor contain a toxic metal as a pigment, it can be managed as a solid waste (i.e. garbage). Again, it is recommended that the paint be used to paint something or the container(s) left open until the paint hardens prior to disposal. Check with the Regional/Operating Unit Environmental/Safety Coordinator or the NWSH Environmental and Safety staff to determine if the State has any special provisions for excess paint disposal.

## 2.11.8 Rags

In 2014 the EPA changed the regulations regarding solvent contaminated wipes. Wipes including rags used with flammable solvents other than trichloroethylene that would meet the ignitability characteristic for hazardous waste do not need to be treated as hazardous waste provided they contain no free liquids as measured by the EPA's Paint Filter Liquids Test. Essentially this means the rags cannot drip liquid.

Solvent wipes may be accumulated for up 180 days in a closed container labelled "Excluded Solvent-Contaminated Wipes." They may be sent to an EPA approved handling facility including an industrial laundry, a municipal solid waste landfill that meets the design criteria in 40 CFR Part 258.40, a municipal waste combustor regulated under section 129 of the Clean Air Act or a hazardous waste facility. Any free liquid that accumulates in the container due to percolation or compression of the wipes must be separated from the wipes and handled as hazardous waste.

**Note:** Not all states have adopted this EPA regulation so some field offices may still need to dispose of their solvent contaminated wipes as hazardous waste. A listing of adoption of solvent wipes regulation by state can be found here:

<https://www.epa.gov/hwggenerators/where-solvent-contaminated-wipes-final-rule-effect>

Wipes used with trichloroethylene or to clean other types of hazardous material such as toxics, corrosives or reactives are still considered hazardous waste and must be disposed of as such with the proper characterization, labelling, and marking. These wipes must be identified with the same EPA hazardous waste number as the hazardous material cleaned.

## 2.11.9 Aerosol Cans

If empty, the EPA does not regulate aerosol cans as hazardous waste. If a can is not empty because the contents are no longer needed or the spray mechanism is defective - AND - the contents are a listed or characteristic hazardous waste, the aerosol will be managed as a hazardous waste. Some states have interpreted the EPA definition for a reactive waste in 40 CFR 261.23(6), that is, "It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement" to include aerosol cans as "reactive" because they "explode" when placed in a fire. The EPA has explained that they do not consider aerosol cans as "reactive" since when placed in a fire, the contents of most cans do not detonate nor undergo an explosive reaction and hence the can does not "explode." The aerosol can is under pressure and will rupture in a fire due to vapor build-up from liquids and gases under containment.

If a NWS facility generates aerosol cans identified by the EPA or state as hazardous, they must be managed and shipped off-site as hazardous waste - or punctured using a commercially-available device to remove the contents and vent the propellant. Normally these devices collect the liquid for later disposal as a hazardous waste and trap the propellant in activated carbon. The punctured, empty can is now regulated as a solid waste (i.e. garbage).

## 2.12 Responsibilities

### 2.12.1 NWS Headquarters (NWSH)

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with SECO, as necessary, regarding compliance issues related to this section.

### 2.12.2 Regional or Operating Unit Environmental/Safety Coordinator

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will ensure that procedures are implemented at Regional Headquarters or Operating Unit facilities to properly manage waste.

### 2.12.3 Station Manager

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will ensure that procedures are developed at NWS field offices for proper management of all wastes generated.
- d. Will ensure NWS employees follow the requirements of this section.
- e. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### 2.12.4 Environmental or Environmental/Safety Focal Point or Designated Person

Will ensure that any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.

### 2.12.5 Employees

- a. Individual employees affected by this section are required to read, understand and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

## 2.13 References

### Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

### 2.13.1 U.S. Environmental Protection Agency

40 CFR 260	Hazardous Waste Management System
40 CFR 261	Identification and Listing of Hazardous Wastes
.4	Exclusions
.7	Residue of hazardous waste in empty containers
.9	Requirements for Universal Wastes
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
.11	Hazardous waste determination
.13	Generator category determination
.14	Conditions for exemption for a very small quantity generator
.15	Satellite accumulation area regulations for small and large quantity

	generators
.16	Conditions for exemption for a small quantity generator
.17	Conditions for exemption for a large quantity generator
.23	Use of the manifest
.40	Recordkeeping
.41	Biennial report
.42	Exception reporting
50-	Exports of Hazardous Waste
.58	
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
.1086	Air Emission Standards for Containers
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
.16	Personnel Training
.173	Management of Containers
40 CFR 273	Standards for Universal Waste Management
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions

### 2.13.2 National Weather Service

Manual 50-1115	Occupational Safety and Health	Procedure 30 - "Office Safety"
Policy Directive 50-51	Environmental Compliance (September 5, 2002)	

### 2.13.3 U.S. Department of Transportation

49 CFR 172	Hazardous Materials Table, Special Provisions, "Hazardous Materials Communications, Emergency Response Information and Training Requirements"
173	Shippers - General Requirements for Shipments and Packaging
178	Specifications for Packaging
179	Specifications for Tank Cars

## ATTACHMENT A - WASTE SURVEY FORM

## 1. Facility Identification

Facility Name/Type \_\_\_\_\_ Facility POC \_\_\_\_\_

Address \_\_\_\_\_ Date \_\_\_\_\_

## 2. Basic Waste Information

Name of Waste \_\_\_\_\_

Generated When/By \_\_\_\_\_

The waste is  spent (used)  unused virgin material (excess)  off spec product stored less than 90-days  stored over 90-days  treated  disposed on this siteQuantity Generated  per month  per year  one time

## 3. Waste Description:

CIRCLE APPROPRIATE BLOCKS					
PHYSICAL STATE @ 70°F			VISCOSITY @ 70°F		
SOLID	LIQUID	SEMISOLID	LOW	MEDIUM	HIGH
LAYERING			APPROXIMATE % LAYERING BY VOLUME		
			_____ % TOP,	_____ %,	
NONE	BILAYERED	MULTILAYERED	_____ %,	_____ % BOTTOM	
SUSPENDED SOLIDS			DISSOLVED SOLIDS BY WEIGHT		
<5%	5-20%	>20%	WEIGHT or VOLUME	<5%	5-20%
SPECIFIC GRAVITY @ 60°F			OTHER INFORMATION:		
<0.8%	0.8-1.0	1.0-1.2	1.2-1.4	1.4-1.7	>1.7

## 4. Waste Composition

Known Constituents \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

5. Waste Hazards

Is this waste:

\_\_\_\_\_ ignitable? (Flash point less than 140°F, flammable solid, ignitable compressed gas)

\_\_\_\_\_ corrosive? (pH less than 2.0 or greater than 12.5)

\_\_\_\_\_ reactive? (Unstable, reacts violently or creates explosive vapors with water, generates toxic gases, detonates, or is a forbidden explosive)

\_\_\_\_\_ toxic? (Contains arsenic, benzene, cadmium, lead, mercury, silver, or other contaminant listed in Table 1 in 40 CFR 261.24)

\_\_\_\_\_ a spent solvent?

\_\_\_\_\_ infectious? (sewage, biomedical)

\_\_\_\_\_ radioactive?

\_\_\_\_\_ a universal waste? (Battery, fluorescent bulb, unused pesticide)

Does the waste contain      asbestos      PCBs      Lead-based paint?

6. Storage Data

Storage Container       Drum       Bulk

Material of Construction of Container \_\_\_\_\_

Storage Location \_\_\_\_\_

How Long is it Stored (Max) days? \_\_\_\_\_

7. Shipping Data

Shipping Container       drum       bulk

Material of Construction of Container \_\_\_\_\_

Which Label(s) are Applied? \_\_\_\_\_

Which Markings are Applied? \_\_\_\_\_

Are Placards Provided?       Yes       No If so, which?

Current Hauler \_\_\_\_\_ Cost \_\_\_\_\_

Hauler's Address \_\_\_\_\_

Phone Number \_\_\_\_\_ Hauler EPA ID No. \_\_\_\_\_

**8. Treatment/Disposal Information**

Current Disposal Method \_\_\_\_\_

Is This Waste Treated/Disposed \_\_\_\_\_ On-site \_\_\_\_\_ Off-site

If Off-site, it is Treated/Disposed by \_\_\_\_\_

Location of Treatment/Disposal Facility \_\_\_\_\_

Cost \_\_\_\_\_ Facility EPA ID No. \_\_\_\_\_

**9. Assessment**

Is This Waste       a Solid Waste       a Hazardous Waste       a PCB Waste  
 an Asbestos-containing Waste       a Universal Waste

Is More Information Required?       Yes       No

Is Testing Required?       Yes       No

The Assigned EPA Hazardous Waste No. \_\_\_\_\_

**10. Completed By**

Name \_\_\_\_\_ Title \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

## SECTION 3 TRANSPORTATION OF HAZARDOUS MATERIALS AND WASTE

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## Synopsis

**NOTE:** The purpose of this section is to provide information regarding the application of the Department of Transportation (DOT) regulations to hazardous materials transported by or offered by NWS personnel. The section applies to all NWS facilities, work sites, and employees.

### **Initial Implementation Requirements:**

- Appoint a Designated Person to coordinate hazardous material transportation (3.6)
- Identify Scope of Applicability at Site/Facility Operations with the Requirements of this Section
  - Identify all hazardous materials transported by NWS employees (3.6)
  - Identify all hazardous materials and wastes transported by a contracted service provider (3.6)
  - Prepare a “short list” of site-specific hazardous material and hazardous waste shipping descriptions using 3.7.2 and 3.11

### **Recurring and Annual Task Requirements:**

- Meet with Transporter to Identify and Verify Shipping Descriptions, Labeling and Marking to be used on Containers and Shipping Documents during Length of Contract.
- Periodically (at least semi-annually), Inventory Types and Quantities of Hazardous Materials Transported Off-site by NWS Personnel for Use at Remote Work Locations (3.6)
- Train Affected Personnel in Their Role of Ensuring Compliance with DOT and EPA Transportation Requirements (3.6, 3.10)
- Inspect Labeling, Marking and Paperwork Prepared by Transportation Service Provider Prior to Signing Shipping Document and Releasing Hazardous Materials/Hazardous Waste for Transportation (3.6)
- Ensure Signed Copy of Hazardous Waste Manifest is Returned From the Treatment, Storage and Disposal Facility (TSDF) Within 45-Days

Transportation of Hazardous Materials and Waste Checklist	YES	NO	NA
1. Has the work site identified all the hazardous materials regulated by the U.S. Department of Transportation (DOT) that are transported by NWS employees? (3.6)	—	—	—
2. Have all NWS employees who transport these hazardous materials received instruction on proper labeling and marking as well as methods to secure these materials during transport? (3.6, 3.10)	—	—	—
3. Have all DOT hazardous materials that are transported from the facility or work site by a contracted hauler been identified? (3.6)	—	—	—
4. Has a listing been prepared for each DOT hazardous material identifying the material, its proper shipping name, the appropriate markings, and allowable shipping containers to be used?	—	—	—

## SECTION 3 - TRANSPORTATION OF HAZARDOUS MATERIALS AND WASTE

### 3.1 Purpose and Scope

National Weather Service (NWS) operations utilize many different hazardous materials, both at NWS facilities and/or at remote locations. Because these materials are transported by NWS personnel when specific maintenance activities are undertaken, the Department of Transportation (DOT) Hazardous Material Regulations (HMR) must be considered to assure safe transport. This section addresses the application of these rules to NWS facilities and personnel and provides specific guidance for typically transported hazardous materials.

### 3.2 Definitions

<b>Labeling</b>	The application of hazard warning labels as prescribed in the Hazardous Materials Table.
<b>Marking</b>	The descriptive name, instructions and cautions designated for a hazardous material in 49 CFR 172.300. Marking includes the proper shipping name, the identification number, other regulated material (ORM) designations, internal packaging, and specific requirements for various types of tanks.
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Placarding</b>	The application of DOT-designed hazard warning sign(s) to the outside of the shipping vehicle.
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### 3.3 Acronyms Employed in This Section

ASOS	Automated Surface Observation System
CERCLA	Comprehensive Environmental Response and Compensation Liability Act
CFR	Code of Federal Regulations
CHEMTREC	Chemical Manufacturers Transportation Emergency Center
CONUS	Continental United States
COTR	Contracting Officer's Technical Representative

DOT	Department of Transportation
EPA	Environmental Protection Agency
ERG	Emergency Response Guidebook
HM	Hazardous Material
HMR	Hazardous Materials Regulations
HMT	Hazardous Materials Table
HMTA	Hazardous Materials Transportation Act
HMTUSA	Hazardous Materials Transportation Uniform Safety Act
LARC	Limited Access Remote Collector
MCE	Mercury Containing Equipment
SECO	NOAA Environmental Compliance and Safety Office
NOAA	National Oceanic & Atmospheric Administration
n.o.s.	not otherwise specified
N/A	Not Applicable
NWS	National Weather Service
NWSH	National Weather Service Headquarters
ORM	Other Regulated Material
PG	Packaging Group
RCRA	Resource Conservation and Recovery Act
RDA	Radar Data Acquisition
RQ	Reportable Quantity
TSDF	Treatment, Storage, and Disposal Facility
UN/NA	United Nations/North American (numbering system)

### 3.4 Regulatory Requirements

#### 3.4.1 Federal Legislation

- a. The Hazardous Materials Transportation Act (HMTA) of 1974 required the Department of Transportation (DOT) to identify hazardous materials, which would pose a danger to health and safety while in transit, and to specify identification, labeling, packaging and placarding requirements as a means of managing these hazards during transportation. The Hazardous Material Regulations (HMR) are found in 49 CFR Parts 171-180.
- b. The Hazardous Materials Transportation Uniform Safety Act (HMTUSA) of 1990 amends the HMTA with additional requirements.
- c. The Resource Conservation and Recovery Act (RCRA) regulates the storage, transportation, and disposal of hazardous waste. While maintaining specific requirements

for waste transporters, the Environmental Protection Agency (EPA) expressly adopts the DOT regulations for the transportation of hazardous waste. These regulations specify the requirements for labeling, marking, placarding, use of proper containers, and reporting of discharges. The adoption of the DOT rules to hazardous waste shipments ensures consistency and avoids duplication of conflicting transportation requirements. Both EPA and DOT have enforcement authority over hazardous waste shipments regardless of the other agency's enforcement action (or inaction).

### 3.5 Application to the NWS

#### 3.5.1 Exemption for Federal Government

The HMTA and HMTUSA apply to "any person" who transports hazardous materials in commerce. The NWS, as an organization within the Federal Government, is included as a "person" and thereby subject to the DOT Hazardous Materials Regulations (HMR). The term "commerce" means transport within state, or across state lines. An exemption to the HMR applies for federal employees transporting hazardous materials in a government vehicle when undertaken solely for a governmental function versus a commercial activity. (See 49 CFR 171.1(d)(5), transportation of a hazardous material in a motor vehicle, aircraft, or vessel operated by a Federal, state, or local government employee solely for noncommercial Federal, state, or local government purposes is a function not subject to the requirements of the HMR). DOT has defined government activity to be commercial whenever it furthers a commercial enterprise, replaces a commercial enterprise or is in competition with the private sector.

**NOTE:** Although the DOT does not regulate the transportation of Hazardous Materials when done by NWS employees in a NWS (or government) vehicle for a governmental purpose, the NWS recognizes the DOT rules are designed to facilitate the safe transport of these materials. To ensure employee safety and facilitate appropriate response in the event of an accident, NWS policy requires NWS personnel to apply the DOT rules for packaging, labeling and marking of containers. Although this policy does not require the use of DOT shipping papers, a list of hazardous materials and the quantity being transported shall accompany the material transport. Furthermore, it is recommended that MSDSs/ SDSs for transported hazardous materials are available for use in case of emergency.

How does this affect the NWS?

- a. The HMR **do not** apply to the transportation of operationally necessary hazardous materials from NWS facilities transported in government vehicles, by NWS employees to NWS remote work sites/locations.
- b. The HMR **do not** apply to the transportation of operationally necessary hazardous materials and hazardous waste used and/or generated at the remote work site/locations for transport back to a NWS facility as long as it is undertaken by NWS personnel using a government vehicle.
- c. The HMR **do apply** to any entity **contracted** by NWS personnel to transport a hazardous material or waste either to or from a NWS facility or remote work site/location.

**NOTE:** In this circumstance, it is the use of the contractor's employees and/or its vehicle (i.e. including vessel and aircraft) that defines the transport as "furthering a commercial enterprise." This transport is not covered as a governmental activity and the transporter must comply with the HMR.

- d. The HMR *do apply* to the transportation of hazardous waste to a treatment, storage or disposal facility by NWS personnel, using a government or private vehicle. According to the Environmental Protection Agency (EPA) regulations for hazardous waste in 40 CFR Parts 262 (Standards Applicable to Generators) and 263 (Standards Applicable to Transporters) HW transporters must have an EPA Identification Number. Because it is not in the mission of the NWS scope of responsibilities to transport hazardous waste and due to the legal consequences potentially associated with this activity, the transportation of hazardous wastes to permitted treatment and disposal facilities by NWS personnel is prohibited.

**NOTE:** With the growing awareness of the hazardous nature of the garbage being disposed in local garbage landfills, many communities have set-up periodic "household hazardous waste" collection days to segregate and/or recycle certain types of waste. Depending upon the requirements established by the community, NWS facilities *may* be able to participate. Before transporting *any* waste generated at an NWS facility or work location, contact the local program officials to determine whether the NWS facility, as a Federal government activity and generator of hazardous waste, can participate and if there are any special requirements regarding the transportation of the waste to the collection site (needed documents, permits, etc.).

- e. The HMR *may* apply to the transportation of computer central processing units (CPUs) and cathode ray tubes (CRTs) or monitors. Currently the EPA regulates them as hazardous wastes and hence they can only be transported by a registered hauler. Because the EPA is proposing to regulate these as universal wastes, as some States currently are doing, they are regulated under the DOT rules. Some States are regulating them as controlled scrap metal for recycling and as a result, requiring a registered hauler be used.
- f. The HMR are issued for the safe transportation of hazardous materials in intrastate, interstate and foreign commerce with applicability in the United States, District of Columbia, Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Virgin Islands, American Samoa, Guam and any other possession so designated.

This means that NWS facilities and work locations in any of these foreign countries must apply the same interpretation of "government activity versus furthering a commercial enterprise" when transporting hazardous materials and/or waste. It is NWS policy that all NWS activities including facilities in other than the Continental United States (CONUS) locations ensure, to the best of their ability that contracted transportation services comply with all applicable HMR. Consult with the NWS Regional/Operating Unit Environmental/Safety Coordinator or NWSH Environmental and Safety staff for additional advice.

### 3.6 NWS Implementation

The first task is to assign a Designated Person to coordinate the hazardous materials transportation effort. This role is normally tasked to the Environmental Focal Point, but may be assigned to another NWS employee. To help coordinate the implementation at NWS work sites, an inventory must be taken to identify all hazardous materials transported by NWS employees. Additionally, another inventory will be generated of all hazardous materials and wastes transported by contracted service providers. These inventories will help identify the level of effort necessary and additional site personnel requiring training.

The DOT regulations affect any person who offers a hazardous material for transportation, each carrier who transports a hazardous material and anyone else who performs a packaging, labeling or marking function.

Typically, contractors are used by the NWS to either deliver needed hazardous materials or to pick up waste for disposal or recycling. As a result, the involvement of NWS employees with the DOT rules can appear minimal because the contractor usually “prepares” the shipping document/manifest, ensures proper packaging are used and even attaches DOT labels.

But, because the DOT identifies the “offeror,” the “transporter” and “others” whose role can affect the transported material, the NWS and its employees at most locations are still bound by these rules.

The Environmental Focal Point or Designated Person must ensure that all work performed by the contracted provider be checked periodically to ensure compliance with applicable rules because by signing the prepared shipping paper, the NWS representative is certifying that the shipment has been prepared in accordance with the DOT rules and as a result, the NWS assumes liability for compliance.

#### 3.6.1 Contract Language

When using a contractor to transport, treat, or dispose of a hazardous waste, the NWS does not transfer legal liability for improper management with the physical transfer of the waste. The NWS remains liable long after the waste is gone. As a result, all new and existing contracts must be carefully scrutinized to maintain minimum liability for the NWS and its employees. All contracts must be reviewed to assure that the contract clearly mandates that the contractor comply with the law. With the assistance of the Contracting Officer’s Technical Representative (COTR), review all existing contracts to ensure they include a phrase mandating the contractor to “comply with all applicable Federal, State, and local laws pertaining to the proper transportation, management, and disposal of wastes and materials.”

#### 3.6.2 Review of the Transportation Contractor (Hauler)

Before using the services of a transportation contractor, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator or NWSH Environmental and Safety staff to determine if the hauler is registered to transport hazardous materials and/or waste and to determine the hauler’s compliance history.

Also, determine if there are pending citations or other legal sanctions for improper or illegal transportation practices by the hauler. If so, how have these been resolved? What is the current enforcement status of the hauler?

In addition, in the investigatory interview, a determination must be made as to whether the hauler has sufficient resources and/or the necessary insurance to protect the NWS from unexpected liabilities if accidents or mishandling occurs during transportation. Again, the COTR can provide assistance in this effort.

### **3.7 Transportation of Hazardous Materials**

#### **3.7.1 Hazardous Material Table**

The DOT designates materials as hazardous by listing them upon the Hazardous Materials Table (HMT). The HMT is an alphabetical list of commodities or items that identifies:

- a. The material's hazard class or that the material is forbidden in transportation
- b. The proper shipping name or direction to the preferred proper shipping name
- c. Specific references or references to requirements in the HMR pertaining to labeling, packaging, quantity limits aboard aircraft and stowage of hazardous materials aboard vessels.

The HMT consists of ten (10) columns of information that is used to fulfill the requirements for a given shipment. The HMT is found in [49 CFR 172.101](#). Due to its length and on-going potential for revision, reference a current copy at [DOT HMT](#).

Appendix A to the HMT is the List of Hazardous Substances and Reportable Quantities. The Appendix lists materials and their corresponding reportable quantities (RQs) that are designated as "hazardous substances" by CERCLA. It is used to determine the need for additional information to be provided on shipping documents and containers. Because the EPA has the legal responsibility to determine the reportable quantities for the DOT, these RQs can be found in Appendix B to this manual.

#### **3.7.2 Shipping Papers**

Anyone who offers a hazardous material for transportation is required to describe the material on a shipping paper as specified in [49 CFR 172.200-204](#). This document accompanies the shipment to its destination and serves as a record of the shipment, the transporter used and final disposition of the hazardous materials shipped from NWS facilities and work locations.

##### **a. General Entries**

While non-regulated items may be included on the same shipping paper as regulated hazardous materials, the hazardous material entries must be identified as denoted in §172.201(a)(1).

##### **b. Contents**

- 1) All copies of shipping papers must be legible and printed (mechanically or manually) in English.
- 2) Unless allowed, no abbreviations may be used in the description.
- 3) Additional information about the material may be added, but it must be placed after the "basic description."

- 4) If more than one sheet is necessary, ensure that it is sequentially numbered indicating the number of pages (i.e., 1 of 4 pages).
- c. Emergency Response Telephone Number

A 24-hour emergency response telephone number for use in the event of an emergency involving the shipped hazardous material must be provided on the shipping paper. The number must have immediate access to a person who is knowledgeable of the material and emergency response mitigation information for the material

**NOTE:** DOT shipping papers are not required for transportation of hazardous materials in government vehicles. However, a list of hazardous materials and the quantity being transported shall accompany the material transport. Furthermore, it is recommended that MSDSs/SDSs for transported hazardous materials are available for use in case of emergency.

- d. Description of Hazardous Material on Shipping Papers

The “shipping description” of a hazardous material on shipping papers must include the following items in the following order:

- 1) The proper shipping name as prescribed in column 2 of the HMT
- 2) The hazard class or division prescribed in column 3 of the HMT
- 3) The identification number prescribed in column 4 of the HMT
- 4) The packaging group in roman numerals prescribed (if any) in column 5 of the HMT, preceded by “PG”
- 5) The total quantity, by net or gross mass, capacity or other appropriate units (use of abbreviations is allowed).

As an example, the proper shipping description for 25-gallons of gasoline would be: “Gasoline, 3, UN 1203, PG II, 25 gals.”

- e. Additional Description Requirements

The following additional requirements found in 49 CFR 172.203 may apply when describing a hazardous material.

- 1) Exemptions - when a shipment is made under an exemption, it must bear the notation “DOT-E” followed by the exemption number.
- 2) Limited Quantities - if an item meets the requirements for a limited quantity, the words “Limited Quantity” or “Ltd Qty” must follow the basic description.
- 3) Hazardous Substances - if a hazardous substance description does not identify the substance by name (i.e. flammable liquid, not otherwise specified (n.o.s.)), the name of the hazardous substance will be entered in parentheses in association with the basic description.
  - a) For mixtures of hazardous materials containing two or more hazardous substances, the name of the two hazardous substances with the lowest RQs must be identified.

- b) For hazardous waste streams, the waste code (e.g. D001) may be used to identify the waste.

The letters "RQ" (for reportable quantity) must be noted before or after the basic description if the material/waste is listed on Appendix A to the HMT and the quantity in an individual package contains an amount equal to or greater than the RQ listed for the material.

- 4) Radioactive material - additional notations are required in 49 CFR 172.203(d).
- 5) Empty packaging - a description for a packaging containing the residue of a hazardous material may include "Residue: Last Contained" in association with the basic description of the hazardous material last contained in the package.
- 6) Transport by air - additional notations as required by 49 CFR 172.203(f).
- 7) Transport by rail - additional notations as required by 49 CFR 172.203(g).
- 8) Transport by highway - additional notations as required by 49 CFR 172.203(h) for shipments of anhydrous ammonia and liquefied petroleum gas.
- 9) Transport by water - additional notations as required by 49 CFR 172.203(i).
- 10) Technical names for not otherwise specified or "n.o.s." descriptions - if one of the proper shipping names shown on the HMT with a "G" in column 1 is utilized, the technical name of the hazardous material must be entered in parentheses in association with the basic description (i.e. Corrosive liquid, n.o.s., (sodium hydroxide) 8, UN 1760, PG II).
- 11) Marine pollutants listed on Appendix B to the HMT have special considerations. Where the proper shipping name does not identify by name the component that makes the material a marine pollutant, the name of the marine pollutant must be entered in parentheses in association to the basic description. If a mixture contains two or more marine pollutants, the names of at least two most predominately contributing to the marine pollutant designation must appear in parentheses.
  - a) The words "Marine Pollutant" shall be designated in association to the basic description that is a marine pollutant.
  - b) Except for transport by vessel, this requirement does not apply to oil (as designated in 49 CFR 130) as long as the proper shipping name identifies the material as such.
- 12) Poisonous material - regardless of the hazard class to which a material is assigned, the following requirements apply to poisonous materials:
  - a) If a Division 6.1, PG I or II solid or liquid material whose shipping name or class does not disclose that it is a poison, the words "Poison" or "Toxic" must be entered on the shipping paper in association with the description.
  - b) Materials poisonous by inhalation must be marked "Poison-Inhalation Hazard" or "Toxic Inhalation Hazard." Additionally, if a gas, "Zone A, or B, or C, or D" shall be entered following the shipping description. If a liquid, "Zone A or B" as appropriate.

- 13) Elevated temperature materials - the word "HOT" must be noted preceding the proper shipping name if a liquid material meets the definition in §171.8.
- 14) Organic peroxides (Class 5.2) and self-reactive (Class 4.1) materials must include additional information as required by 49 CFR 172.203(o).
- f. Each shipping document must contain a certification as specified in 49 CFR 172.204 to assure that the described materials have in all respects met the applicable requirements of the DOT. Additional certification requirements are specified for transport by cargo and passenger aircraft and for radioactive materials.

### 3.7.3 Marking and Labeling

When a material is offered for shipment, each container must be properly marked and labeled. While one often assumes these terms have the same meaning, the DOT specifies two distinct regulatory programs to accomplish the identification of hazardous materials.

**Marking** is defined by the DOT as the application of the descriptive name, instructions and cautions designated in 49 CFR 172.300. Marking includes the proper shipping name, the identification number, ORM designations, internal packaging, and specific requirements for portable tanks, cargo tanks, tank cars, and radioactive materials. This information may be applied directly to the container with paint, marker, etc. or on an adhesive-backed sticker.

**Labeling** requirements are found in 49 CFR 172.400 and specify the application of hazard warning labels prescribed in the HMT. Additional labeling requirements are specified for radioactive materials and multiple hazard materials and packaging.

In general, labeling is the application of the DOT hazard warning labels specified in the HMT and marking is the application of other required information on the container.

**NOTE:** Appendix D to this Manual is a freeware program entitled "Hazardous Waste Labels." This is a WORD document, which can be used to print many of the markings and labels required for typical wastes generated by the NWS.

#### a. Marking

Anyone who offers a hazardous material for transport must mark each package, freight container and transport vehicle containing a hazardous material according to 49 CFR 172 Parts 300-338.

The following summary identifies selected markings for hazardous materials in non-bulk packaging:

- 1) The proper shipping name as it appears in the DOT HMT column 2 (49 CFR 172.301).
- 2) The identification number as it appears in column 4 of the DOT HMT. The number is not required on packages of "limited quantities" or ORM-D material.
- 3) The proper shipping name for a hazardous waste is not required to include the word "waste" if the package bears the EPA marking as required by 40 CFR 262.32.
- 4) The technical chemical name of the hazardous material or substance must be marked

- in parentheses if column 1 of the HMT indicates a “G”, and/or the selected shipping name does not otherwise identify the chemical/material (49 CFR 172.301 and 172.324).
- 5) Packages containing inner containers of liquid hazardous material must be marked with the “this end up” arrow designation. There are numerous exceptions to this requirement (see 49 CFR 172.312).
  - 6) The words “Inhalation Hazard” must be marked on packages of poisonous inhalation materials (49 CFR 172.313).
  - 7) Materials classified as a consumer commodity must be marked ORM-D or ORM-D-Air if being transported by air (49 CFR 172.316).
  - 8) Marine pollutants shipped by vessel and/or in bulk quantities must be marked as specified (49 CFR 172.322).
  - 9) The letters “RQ” (for reportable quantity) must be displayed in association with the proper shipping description for each package containing the reportable quantity of a hazardous substance (49 CFR 172.313).

The required markings must be:

- Durable
- In English
- Printed or affixed to the surface of a package or a label, tag or sign
- Displayed on a background of a contrasting color
- Unobstructed by labels or attachments
- Located away from any other marking (i.e. advertising) that could substantially reduce its effectiveness.

b. Labeling

Each person who offers for transport or transports a hazardous material in a non-bulk package, a bulk packaging or over pack with a capacity less than 640 cubic feet or portable tank with a capacity of less than 1,000 gallons must label the hazardous material as required in column 6 of the HMT. Labeling requirements are found in 49 CFR 172 Parts 400-450.

The following summary identifies selected labeling requirements.

- 1) Packages must be labeled with the proper DOT label as shown in column 6 of the HMT (49 CFR 172.400).
- 2) Subsidiary Hazard Labels. Some substances have more than one hazardous characteristic. The DOT regulations require that some of these materials be labeled with more than one label to reflect the additional hazard. Column 6 specifies the required labels (49 CFR 172.402).
- 3) Radioactive materials that also meet the definition of one or more additional hazards must be labeled as radioactive material as well as for each additional hazard (49 CFR 172.403).
- 4) Mixed Packaging. When hazardous materials having different hazard classes are

packed in the same container or overpack, the outside packaging must be labeled for each hazard class of the hazardous material in the container (49 CFR 172.404).

- 5) Consolidated Packaging. When two or more packages containing compatible HM are placed within the same outside container or overpack, the outside container or overpack must be labeled for each hazard class of the HM contained therein (49 CFR 172.404).
- 6) Labels may not be modified unless authorized in 49 CFR 172.405.
- 7) Labels must be printed on or affixed to the surface of the package near the proper shipping name (49 CFR 172.406).
- 8) DOT labels must meet the criteria listed in 49 CFR 172.407.
- 9) The word “toxic” can be used in lieu of the word “poison” on the Poison label.
- 10) Labeling exemptions exist for numerous materials and packages.  
See 49 CFR 172.400a.

Labels must be:

- a) Printed or affixed to a surface (other than the bottom) of the package
- b) Placed near the proper shipping name marking
- c) When a subsidiary label or multiple labels are required, it must be placed within 6-inches of the primary hazard label
- d) Clearly visible and may not be obscured by markings.

#### 3.7.4 Placarding

The DOT regulations require placarding of shipments of hazardous materials depending on the hazard class and quantity. Hazardous material placards look very much like hazardous material warning labels in terms of shape, color, and design. Placards are used to alert people of the potential dangers associated with the type of hazardous material being transported in a motor vehicle, railcar, freight container, cargo tank, or portable tank. They also guide emergency personnel in their response to spills or accidents involving the hazardous material.

- a. Each person who offers for transportation or transports any hazardous material must utilize the appropriate placards. 40 CFR 262.33 requires a generator of hazardous waste to placard or offer the initial transporter the appropriate placards.
- b. A hazardous material must be placarded as specified in Tables 1 and 2 of 49 CFR 172.504.
  - 1) Table 1 - Hazard classes identified on Table 1 are required to be placarded whenever any quantity is transported. While contract haulers normally have the placards for the transport vehicle, the NWS must ensure the correct placard is used.
  - 2) Table 2 - Hazard classes identified on Table 2 are exempted from placarding requirements when less than 454 kg (1,001 pounds) aggregate gross weight of hazardous material are being transported.

- c. Dangerous placard. When a transport vehicle (et.al.) contains non-bulk packages with two or more different hazard categories of materials that would otherwise require different placards specified in Table 2, the “Dangerous” placard may be applied instead of the hazard-specific placards. If any hazard class category exceeds 1,000 kg (2,205 pounds) aggregate gross weight (loaded at one facility), then the individual placard for the hazard category must be applied.
- d. Exception for less than 454 kg (1,001 pounds). When non-bulk packages that contain less than 454 kg (1,001 pounds) aggregate gross weight of HM covered in Table 2 are transported by highway, no placard is required.
- e. Hazardous material placards must be displayed on each end and each side of a motor vehicle or other transport vehicle and be readily visible.
- f. Placarding requirements may vary according to the mode of transport (highway, rail, water, air) and the type of transport vehicle or container.
- g. Hazardous materials that possess a subsidiary hazard as described in 49 CFR 172.505 must apply additional placarding to the vehicle.
- h. Placarding exceptions are specified in 49 CFR 172.504(d) (f).

**Table 1. Placarding Requirements by Category**

<b>Category of material (Hazard class or division number and additional description, as appropriate)</b>	<b>Placard name</b>
1.1	EXPLOSIVES 1.1
1.2	EXPLOSIVES 1.2
1.3	EXPLOSIVES 1.3
2.3	POISON GAS
4.3	DANGEROUS WHEN WET
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled)	ORGANIC PEROXIDE
6.1 (inhalation hazard, Zone A or B)	POISON INHALATION HAZARD
7 (Radioactive Yellow III label only)	RADIOACTIVE <sup>1</sup>

**Table 2. Placarding Requirements by Category**

<b>Category of material (Hazard class or division number and additional description, as appropriate)</b>	<b>Placard name</b>
1.4	EXPLOSIVES 1.4
1.5	EXPLOSIVES 1.5

<sup>1</sup> RADIOACTIVE placard also required for exclusive use shipments of low specific activity material and surface contaminated objects transported in accordance with §173.427(a) of this sub chapter.

1.6	EXPLOSIVES 1.6
2.1	FLAMMABLE GAS
2.2	NON-FLAMMABLE GAS
3	FLAMMABLE
Combustible liquid	COMBUSTIBLE
4.1	FLAMMABLE SOLID
4.2	SPONTANEOUSLY COMBUSTIBLE
5.1	OXIDIZER
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled)	ORGANIC PEROXIDE
6.1 (inhalation hazard, Zone A or B)	POISON
6.2	(None)
8	CORROSIVE
9	CLASS 9 [SEE §172.504(f)(9)]
ORM-D	(None)

### 3.8 Transportation of Hazardous Waste

The EPA mandates the requirements for generators of hazardous waste in 40 CFR 262. When a generator transports or offers for transportation a hazardous waste, the EPA specifies a number of requirements to be fulfilled in order to ensure appropriate management and protection of health, safety and the environment.

#### 3.8.1 Hazardous Waste Manifest

The key to the RCRA Hazardous Waste Management Program is the use of the manifest. This document is designed to record the movement of hazardous waste from the generator through the transporter(s) and any intermediate storage sites, to the site where it is to be treated or disposed.

##### a. General Requirements

The manifest must be prepared by the generator prior to transporting the waste off-site. Since the generator must designate on the manifest the permitted facility to which the waste is to be delivered, prior contact with the treatment, storage, and disposal facility (TSDF) will be required in most cases. The generator can also specify an alternate TSDF to which the transporter can deliver the waste in case of an emergency.

If, for some reason, the transporter is unable to deliver the hazardous waste to either the designated or alternate facility, the transporter must contact the generator. The generator, in turn, must either designate another facility or instruct the transporter to return the waste.

Under this system, the transporter can only deliver the waste where the generator has instructed.

##### b. Information Required on the Manifest

**Due to an overhaul of the manifest program (40 CFR 262.23 and 40 CFR 262 Appendix) which occurred on September 5, 2006 (40 CFR 262- 263) the manifest has been standardized and all State-modified manifests have been eliminated.**

The EPA specifies that the manifest contain the following information:

- 1) A manifest document number preprinted by the printer.
- 2) The name, address, telephone number, and EPA or State identification number of the generator.
- 3) The Emergency Response phone number for the generator - only if one number is applicable to the entire shipment. If different for specific materials, the number is entered after each DOT description.
- 4) The name and EPA identification number of each transporter. If more than two, use the Manifest Continuation Sheet to document.
- 5) The name, address, and EPA identification number of the designated TSDF and the alternate, if any.
- 6) The DOT description (including proper shipping name, hazard class or division, identification number and packing group) as per 49 CFR 172.
- 7) The number and type of containers for each waste.
- 8) The total quantity of waste with units indicated.
- 9) The waste code or codes applicable to the waste.
- 10) The signature of the Generator/Offeror to certify that the shipment is properly prepared and in proper condition for transport. In addition, the generator is certifying the waste minimization certification.

The generator's certification is found in 40 CFR 262.27 and reads:

“I am a large quantity generator. I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment”

OR,

“I am a small quantity generator. I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.”

By signing this document, generators of over 1,000 kg/month affirm that they have a program of waste minimization in place. Generators of between 100 and 1,000 kg/month merely affirm that they have made a “good faith effort” to minimize their waste generation. The EPA clarified this “good faith effort” to mean that these generators need only “consider” the waste minimization options available to them.

Although small quantity and very small quantity generators are not legally bound by this statement, when signing the manifest, best management practices require they also comply with these conditions.

When a party other than the generator prepares the shipment for transportation, this party may also sign the shipper's certification statement as the offeror of the shipment.

The words “On behalf of” in the signature block (handwritten or preprinted) indicate that the individual signs as the employee or agent of the named principal.

c. Obtaining the Manifest.

To ensure standardization and consistency of the printed manifest, the EPA has established a “*Manifest Registry*” to provide oversight for the document.

Anyone (i.e., businesses, individuals, or agencies) wishing to print the manifest must secure EPA approval. Registrants submitting an application and form samples for EPA evaluation must obtain EPA approval prior to distribution and/or use.

A generator must obtain and use a manifest that has been procured from an approved, registered printer.

A table of “*Approved Registered Printers for the Manifest*” can be found at <http://www.epa.gov/epawaste/hazard/transportation/manifest/registry/printers.htm>

d. Number of Copies

The manifest is designed to provide enough copies so that the generator, each transporter, and the TSDF will each have one copy with an additional copy to be returned to the generator by the TSDF. This usually means at least a 4-part form is required. If more than one transporter is used, the number of copies must increase accordingly.

Some State agencies also require copies of the manifest - potentially two copies for the generator’s State agency and the disposer’s State agency.

e. Use of the Manifest

During its use, the uniform manifest must accompany the waste shipment from the generator, through each transporter to the designated TSDF.

The generator:

- 1) Signs the manifest
- 2) Has the transporter sign and date upon pickup of the hazardous waste
- 3) Removes one copy for his records
- 4) Gives the remaining copies to the next transporter or the designated facility.
- 5) When the signed copy is returned by the designated facility, it can be added with or replace the original copy signed only by the generator and transporter.

The transporter will then:

- 1) Have either the next transporter or the designated facility (whichever is applicable) sign and date the manifest upon receipt of the waste shipment
- 2) Retain a copy for his or her records
- 3) Give the remaining copies to the next transporter or the designated facility.

The designated facility will:

- 1) Retain a copy of the manifest for its records

- 2) Return a copy of the completed, signed manifest to the generator to acknowledge receipt of the shipment.

For shipments within the United States that are solely by rail or bulk shipments solely by water, the generator sends three copies of the manifest directly to the TSDF. Copies of the manifest are not required for each transporter for these shipments.

f. Pre-Transport Requirements

Before a shipment of hazardous waste is transported off-site, the EPA requires the generator to comply with the DOT regulations regarding packaging, labeling, marking and placarding (as specified in 3.7 - Transportation of Hazardous Materials).

- 1) Packaging - all packaging used for off-site shipment of hazardous wastes must conform to the DOT regulations found in 49 CFR 173, 178 and 179.
- 2) Labeling - each package of hazardous waste must be labeled in accordance with DOT regulations for hazardous materials under 49 CFR 172 (i.e. flammable gas, oxidizer, corrosive material, etc.).
- 3) Marking - each package of hazardous waste must be marked in accordance with the DOT regulations for hazardous materials under 40 CFR 172. At a minimum, the proper DOT shipping name (which includes the hazard class and UN/NA number) must be clearly marked on each container. In addition, the EPA requires that each container under 119-gallons in capacity must have the EPA-mandated marking that says:

<b>HAZARDOUS WASTE</b>
<p>Federal Law Prohibits Improper Disposal. If Found,</p> <p>Contact the nearest police or public safety authority</p> <p>Or the U.S. Environmental Protection Agency.</p> <p>Generator's Name and Address _____</p> <p>Generator's EPA Identification Number _____</p> <p>Manifest Tracking Number _____</p>

**NOTE:** Within the DOT system, this is not a "label." It is a "marking." Several companies supply adhesive-backed EPA Hazardous Waste markings which usually contain spaces for additional information that is not required by the EPA.

- 4) Placarding - prior to transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must placard or offer the initial transporter the appropriate DOT placard.

### 3.9 Emergency Response Communication Standards

In an effort to improve the communication of emergency response information for hazardous materials transported in commerce, the DOT requires that certain information be provided and maintained by the shipper.

#### a. Emergency Response Information (49 CFR 172.602)

Emergency response information that can be used in the mitigation of an incident involving hazardous materials must be maintained by carriers and facility operators who receive, store or handle hazardous materials during transportation.

At a minimum, the information must include the DOT description of the hazardous material, information on immediate hazards to health, risks of fire or explosion, immediate precautions and methods for handling spills, leaks or fires and preliminary first aid measures.

Facilities must maintain the information whenever the hazardous material is present and the information must be immediately accessible to personnel and available for use away from the package containing the material.

The information may be presented on the shipping paper or referenced to another document that contains the required information (i.e. the Emergency Response Guidebook); aboard aircraft, the International Civil Aviation Organization (ICAO) “Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods” and aboard vessels, the International Maritime Organization (IMO) “Emergency Procedures for Ships Carrying Dangerous Cargo”).

If the DOT Emergency Response Guidebook (ERG) is used as reference for the required information, use of the initials “ERG” followed by the appropriately assigned guidance number can be used to cross-reference the required information. The cross-reference citation should be placed in conjunction with the material it applies to.

#### b. Telephone Contact for Emergency Response Information (49 CFR 172.604)

A 24-hour emergency response telephone number is required on most shipping documents describing hazardous materials. Only “limited quantities” and specific commodities are exempt from this requirement. The telephone number must either contact a person knowledgeable of the hazards, characteristics, and mitigation information of the shipped commodity or one who has immediate access to someone who does.

**NOTE:** DOT shipping papers are not required for transportation of hazardous materials in government vehicles. However, a list of hazardous materials and the quantity being transported shall accompany the material transport. Furthermore, it is recommended that MSDSs/SDSs for transported hazardous materials are available for use in case of emergency.

The emergency telephone number is to be accessible on a 24-hour basis. The number is to be placed on the shipping paper, immediately following the description. If designated by the person offering the shipment, the telephone number may be to another organization that has accepted responsibility for providing the detailed information.

### 3.10 Hazmat Employee Training

Each “hazmat employer” is required to train “hazmat employees” (e.g., NWS Environmental Focal Point and others) regarding safe loading, unloading, handling, storing and transporting of hazardous materials as well as emergency procedures for responding to accidents/incidents involving the transportation of hazardous materials. The purpose of the DOT requirements in 49 CFR 172.700 is to increase a hazmat employee’s awareness of safety considerations and regulatory requirements in order to reduce the occurrence of hazardous material incidents caused by human error.

To achieve this goal, there are four training requirements that apply to all modes of transportation. The four requirements are:

- a. General Awareness/Familiarization Training (i.e. HM regulations, hazard recognition)
- b. Function-Specific Training (i.e. skills, knowledge to perform job related to DOT-specified requirements or ICAO Technical instruction or IMDG-Code as applicable)
- c. Safety Training (i.e. material hazards, personal protection, handling procedures, remedial actions)
- d. Security Awareness Training (i.e. for those who affect transportation safety - an awareness of security risks associated with hazmat transport).

Section 16.6 provides details on what is required by each of these requirements.

The employer must certify that each employee received training and was tested on appropriate areas of responsibility. New employees and those who change job functions must receive training within 90-days of employment or after changing jobs. Recurrent training is required at least once every three years. A training record must be kept during the employment term plus 90-days after for each employee who completes the training.

### 3.11 Transportation of Specific Materials

The following section has been included to provide guidance to NWS personnel who transport or offer to contracted transporters hazardous materials and/or waste from NWS facilities and work sites. Notwithstanding the exemption provided to the Federal Government when undertaking the transportation of hazardous materials - by governmental employees, in government vehicles, for a governmental purpose - the use of the appropriate DOT shipping/marketing/labeling information by NWS personnel is strongly encouraged. At a minimum, the generation of a shipping document listing the hazardous materials being carried is suggested for all hazardous material transportation.

**Caution:** The information provided is based on “typical” materials in use at NWS facilities and “typical” wastes generated. If the material or waste varies in any way from the descriptive discussion provided, the use of the DOT shipping name, markings, and label assigned herein may be inappropriate or illegal. Consult with the NWS Regional/Operating Unit Environmental/Safety Coordinator or NWSH Environmental and Safety staff for assistance.

The following terms used in the DOT information section are defined as follows:

**Used** - means spent, contaminated or unusable, to be discarded; a “waste.”

**Unused** - means “new,” not contaminated, used, spent or a waste.

**Used-for disposal** - means the material is used and is being sent for disposal.

**Used-for recycling** - means the material is used and is being sent to a recycling facility.

**Waste** - see “used.”

**Shipping Document** - the type of document required for documenting the transportation or final disposition of an item.

### 3.11.1 Gasoline

Gasoline may be present at NWS facilities in quantities necessary to fuel mechanical equipment used on-site or at remote work locations (i.e. lawnmower, weed-whacker, snow blower, trencher, emergency pump or small generator, chain saw, snowmobile, snow cat, boat motor, etc.). The following descriptions are applicable when gasoline is transported in containers, not when it is within the gas tanks of the previously described types of equipment.

a. Unused gasoline

Proper Shipping Name:	Gasoline
Hazard Class:	3
Identification Number:	UN 1203
Packaging Group:	II
Additional Information:	N/A
Label:	3 (Flammable Liquid)
EPA Hazardous Waste ID Number:	N/A

b. Waste Gasoline

Gasoline may become a regulated hazardous waste if it is mixed with some other commodity that would prohibit its use as a fuel (becomes contaminated). Gasoline, other than being ignitable, also contains lead (even unleaded gasoline contains lead). If mixed with oil (used or unused), it is still regulated as a hazardous waste due to its low flash point and the lead. Other hazardous materials that come to be mixed into the gasoline may require identification for purposes of disposal, not necessarily for transportation (i.e. a mix of used lacquer thinner and gasoline would be “flammable” for a transportation hazard, but EPA would require indication of its chemical components for disposal and/or treatment).

Proper Shipping Name:	Waste Gasoline
Hazard Class:	3
Identification Number:	UN 1203
Packaging Group:	II
Additional Information:	N/A
Label:	3 (Flammable liquid)
EPA Hazardous Waste ID Number:	D001 (ignitability), D008 (lead) and additional ID numbers to indicate other EPA-regulated

contaminants (see Section 2 - Management of Waste)

### 3.11.2 Oil

Oil, including motor oils, lubricating oils, mineral oils and hydraulic oils are used in the operation and maintenance of mechanical equipment, i.e. backup diesel generator and other gasoline-powered equipment and the rain gauges, etc.

#### a. Unused Oil

Proper Shipping Name:	Petroleum Oil
Hazard Class:	3 (Flammable liquid category also covers combustible liquids)
Identification Number:	NA 1270
Packaging Group:	III
Additional Information:	N/A
Label:	3 (Flammable liquid)
EPA Hazardous Waste ID Number:	N/A

#### b. Used Oil

Used oils and waste oil mixtures identified as consisting of small quantities of gasoline and diesel fuel as well as lubricating oils, mineral oils, hydraulic oils and other similar materials are presently not regulated as hazardous wastes by EPA, but are regulated under another special set of rules. For example, waste oils must be labeled as "used oil" and sent for recycling. If they are contaminated with heavy metals or if mixed with other listed hazardous wastes, the hazardous waste rules apply. In general, waste oil, if disposed (rather than recycled), is classified as a hazardous waste if it contains Federally listed hazardous constituents or if it meets the EPA's criteria for toxicity, ignitability, corrosivity or reactivity (see Section 2.10.1).

Some States regulate used oil as a hazardous waste and nine States regulate waste oil under their solid waste regulations. Requirements may include the manifesting of any waste oil as a hazardous waste. The proper shipping name and other DOT information required on the manifest are provided below. Questions concerning state requirements should be addressed to the NWS Regional/Operating Unit Environmental/Safety Coordinator or NWSH Environmental and Safety staff.

Waste oils and waste oil mixtures:

Proper Shipping Name:	Waste Petroleum Oil
Hazard Class:	3
Identification Number:	NA 1270
Packaging Group:	III
Additional Information:	When applicable: insert technical names of at least two chemical components that most contribute to the hazard of the mixture.

Label: 3 (Flammable liquid)  
 EPA Hazardous Waste ID Number: D001 (ignitability), D008 (lead)

### 3.11.3 Propylene Glycol and Ethylene Glycol Based Antifreeze

- a. Only technical food grade propylene glycol is used as an additive to rain gauge and AWPAG collection buckets in cold climates to prevent freezing of accumulated precipitation. “Unused propylene glycol” is not listed on the Department of Transportation (DOT) hazardous material table (HMT) and thus is not regulated when transported. “Used” oil/propylene glycol/water or propylene glycol/water mixtures are also not regulated in transportation.
- b. Ethylene glycol based product (commonly known as “antifreeze”) is used in the operation of the emergency backup generators or other engine cooling systems. It is also not listed on the HMT. “Unused” ethylene glycol based antifreeze is not regulated in transportation. “Used” ethylene glycol/water mixtures similarly are not regulated in transportation.

**NOTE:** “Antifreeze” is listed on the HMT, but references users to classify/name it as a “flammable liquid.” Most antifreeze solutions have either a flashpoint above 200°F or no flashpoint at all. Therefore, “flammable liquid” cannot apply.

See Section 2.11.2 for a discussion regarding the proper management of propylene glycol/water/oil mixtures and/or ethylene glycol solutions.

### 3.11.4 Batteries

The use of batteries as a power source is a common occurrence within NWS operations. Batteries are found in the office and the Radar Data Acquisition (RDA) Emergency Power Generator Systems, in the Data Collection Platform (DCP) units at the Automated Surface Observation System (ASOS) sites, in computers, some power tools, emergency exit lighting, the Limited Access Remote Collector (LARC), flashlights, digital cameras, etc. Most of the batteries involved with the systems or equipment listed as either: lead-acid (liquid or gel cell), lithium, alkaline or nickel-cadmium rechargeable. To simplify the selection of a proper name for the batteries being transported by NWS personnel, this discussion identifies batteries as being “new” (not yet used), “used-for disposal” or “used-to be recycled.” For each scenario, the DOT information can be different.

- a. Lead- acid batteries

**Table 3. Lead-acid Batteries**

	New	Used for disposal	Used, to be recycled
Proper Shipping Name	Batteries, wet, filled with acid	Waste Batteries, wet, filled with acid	Waste Batteries, wet, filled with acid
Hazard Class	8	8	8
ID Number	UN 2794	UN 2794	UN 2794
Packaging Group	III	III	III
Label	8-Corrosive	8-Corrosive	8-Corrosive
EPA ID Number	N/A	D002, D008	None

Shipping Document	Shipping Paper/Bill of Lading	HW Manifest	None*
* For universal wastes being sent for recycling, the EPA does not require the use of a tracking document. Best management practices and common sense mandate that paperwork documenting the transfer be maintained by the shipper to record this activity.			

b. Lithium Batteries

These batteries are used by the NWS as a power source for electronic and emergency equipment. The Signal Processing System (SPS) utilizes Lithium Carbon Monofluoride Batteries. Other lithium batteries may be found in computer equipment.

The Department of Transportation adjusted its shipping rules for lithium batteries, including lithium metal and lithium ion chemistries, effective August 2015 in response to several serious incidents that occurred as a result of the transportation of lithium and lithium ion batteries. The NWS uses and ships lithium and/or lithium ion batteries in various equipment including computer equipment, signal processing systems and cell phones.

All lithium batteries or equipment containing lithium batteries must be packed to prevent short circuits, accidental activation of equipment or movement within the outer packaging. Batteries packed with, but not contained in, equipment or separate batteries must be individually packed within non-metallic inner packaging and the packaging must be able to withstand a 1.2 meter drop test.

Except for a package containing button cell batteries installed in equipment, outer packaging must have a lithium ion or lithium metal battery handling label affixed to it and the shipment must be accompanied by a document stating:

- 1) The package must be handled with care because a fire hazard exists if it is damaged,
- 2) Special procedures must be followed if the package is damaged, including inspection and repacking if necessary, and;
- 3) A telephone number to call for more information regarding the contents of the package

Batteries to be shipped by ground transportation to a permitted storage or disposal facility or for the purposes of recycling need only meet the requirements described above as long as they are below 5g lithium content for a lithium metal cell, 25g for a lithium metal battery, 60Wh for a lithium ion cell or 300 Wh for a lithium ion battery. Batteries over these sizes are regulated as hazardous materials when shipped for disposal or recycling.

Quantity, weight and size of batteries, as well as the method of shipping, can all change the requirements of how a package of new batteries and equipment containing batteries are labelled and any documentation or manifest requirements. Generally the requirements for ground shipping are less stringent than those for shipping by air, however, depending on the factors described above, either type of shipment may be

regulated as Class 9 Hazardous Material. Please see the NWS Guidance document for additional information on Shipping of Lithium Batteries:

[https://www.ops1.nws.noaa.gov/Secure/SAFETY/Batteries\\_Final.pdf](https://www.ops1.nws.noaa.gov/Secure/SAFETY/Batteries_Final.pdf)

c. Alkaline Batteries

Alkaline batteries are commonly used at NWS facilities. These batteries are found in items such as flashlights, some battery-operated smoke detectors, walkie-talkie type radios, the battery pack used in office equipment such as clocks, pencil sharpeners, and portable radios. These batteries are non-rechargeable. Alkaline batteries may be “wet” or “dry.”

**Table 4. Alkaline Batteries**

If the batteries are “dry” (see MSDS/SDS)	New	Used-for disposal	Used-to be recycled
Proper Shipping Name	Batteries, dry, containing potassium hydroxide solid	Waste Batteries, dry, containing potassium hydroxide solid	Waste Batteries, dry, containing potassium hydroxide solid
Hazard Class	8	8	8
ID Number	UN 3028	UN 3028	UN 3028
Packaging Group	III	III	III
Label	8-Corrosive	8-Corrosive	8-Corrosive
EPA ID Number	N/A	None-Dry alkali materials do not meet the legal definition of a corrosive hazardous waste. Check State Regulations.	None
Shipping Document	Shipping Paper/Bill of Lading	Shipping Paper	None*

\* For universal wastes being sent for recycling, the EPA does not require the use of a tracking document. Best management practices and common sense mandate that paperwork documenting the transfer be maintained by the shipper to record this activity.

**Table 5. Alkaline Batteries**

If the batteries are “wet” (see MSDS/SDS)	New	Used-for disposal	Used-to be recycled
Proper Shipping Name	Batteries, wet, non-spillable	Waste Batteries, wet, non-spillable	Waste Batteries, wet, non-spillable
Hazard Class	8	8	8
ID Number	UN 2800	UN 2800	UN 2800
Packaging Group	III	III	III
Label	8-Corrosive	8-Corrosive	8-Corrosive
EPA ID Number	N/A	D002	None

Shipping Document	Shipping Paper/Bill of Lading	HW Manifest	None*
* For universal wastes being sent for recycling, the EPA does not require the use of a tracking document. Best management practices and common sense mandate that paperwork documenting the transfer be maintained by the shipper to record this activity.			

d. Nickel-Cadmium (NiCad) Batteries

Nickel-Cadmium Batteries are rechargeable and are used in cordless power tools, cellular/portable phones, laptop computers, camcorders, and digital cameras. These batteries contain an alkali electrolyte solution.

**Table 6. NiCad Batteries**

	New	Used-for disposal	Used-to be recycled
Proper Shipping Name	Batteries, wet, filled with alkali	Waste Batteries, wet, filled with alkali	Waste Batteries, wet, filled with alkali
Hazard Class	8	8	8
ID Number	UN 2795	UN 2795	UN 2795
Packaging Group	III	III	III
Label	8-Corrosive	8-Corrosive	8-Corrosive
EPA ID Number	N/A	D002, D006	None
Shipping Document	Shipping Paper/Bill of Lading	HW Manifest	None*

\* For universal wastes being sent for recycling, the EPA does not require the use of a tracking document. Best management practices and common sense mandate that paperwork documenting the transfer be maintained by the shipper to record this activity.

### 3.11.5 Fluorescent Tubes

Used at most NWS offices and/or sites, most fluorescent tubes contain enough mercury to fail the EPA test for the toxicity characteristic. Some companies have started manufacture of low mercury contact tubes, but caution is advised. Some manufacturers have overstated their product's attributes. If in doubt, contact the NWSH Environmental and Safety staff for advice. See Section 2.9.3 for a discussion of management procedures if they are to be sent for recycling as a universal waste. Fluorescent tubes are not regulated by the DOT because they are not specifically listed on the HMT. When shipped for disposal, however, because EPA regulates them as hazardous wastes, the DOT must regulate them as a hazardous material.

**Table 7. Fluorescent Tubes**

	New	Used for disposal	Used, to be recycled
Proper Shipping Name	Fluorescent Tubes	Hazardous waste, solid, n.o.s. (Fluorescent tubes)	Fluorescent Tubes
Hazard Class	N/A	9	N/A
ID Number	N/A	NA 3077	N/A
Packaging Group	N/A	III	N/A
Label	N/A	9-Miscellaneous	N/A
EPA ID Number	N/A	D009	N/A

Shipping Document	None	HW Manifest	None*
* For universal wastes being sent for recycling, the EPA does not require the use of a tracking document. Best management practices and common sense mandate that paperwork documenting the transfer be maintained by the shipper to record this activity.			

### 3.11.6 Pesticides

The NWS uses pesticides to thwart the homesteading of insects on/in instrumentation and buildings. Typically, only small quantities are purchased and applied by NWS personnel. For those quantities that are not “consumed” through application or are stored so long as to be considered “out-of-date,” the pesticide is to be managed as a universal waste if recycled. Since there are few facilities that recycle these materials, the unused pesticide typically gets disposed as a hazardous waste (depending on its ingredients).

Due to the variability in the components of different products and whether they are being sent for recycling (universal waste) or for disposal as a hazardous waste, there are no “typical” pesticides. Contact your Regional/Operating Unit Environmental/Safety Coordinator or the NWSH Environmental and Safety staff for disposal and shipping description information for specific materials.

### 3.11.7 Paints

Paints, in both spray and liquid form, and related materials (such as lacquer thinner, paint remover, etc.) are found at most NWS facilities. According to DOT regulations (49 CFR 173.173), **Paint** is the proper shipping name for paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid aluminum, liquid bronze, liquid gold, liquid wood filler and liquid lacquer base. **Paint-related material** is the proper shipping name for paint thinning, drying, reducing, or removing compound.

When selecting the appropriate description, note that not only is the end use described by the shipping name from the HMT, but also different hazard classes (3 or 8) and the degree of danger presented as either great (PG I), medium (PG II) or small (PG III). In the case of paints that are flammable liquids - class 3, the following criteria in 49 CFR 173.121 should be used to determine which PG should be assigned to the paint being transported:

Table 8. Paints		
Packaging Group (PG)	Flash Point (closed-cup)	Boiling Point
I	---	≤35°C (95°F)
II	<23°C (73°F)	>35°C (95°F)
III	≥23°C, ≤60.5°C (≥73°F, ≤141°F)	---

The MSDS/SDS for the paint product should reveal the flash point and/or boiling point so that the assignment can be made.

#### a. Waste Code Assignment

The hazardous waste classification of paints, thinners, solvents and cleaners is dependent upon the identity of the solvent, the heavy metal content, pH and flash point and in some cases, whether or not a state has determined them to be “spent solvents.” Under most situations, paint waste and/or spent thinners do not qualify as a hazardous waste unless the flash point is less than 140°F or the mixture is found to contain a heavy metal such as

chromium, lead or mercury. Because lead-based paint or latex paint with mercury-based fungicides are not produced anymore, the prevalence of lead and mercury-contaminated paint is decreasing. However, be wary when removing old paint. To ensure correct identification, a representative sample should be taken and submitted to a qualified lab for analysis. Consult with the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH Environmental and Safety staff to determine if the item is regulated.

Some paints might (in rare cases) also warrant consideration due to a very high or low pH and for this reason would be classified as a hazardous waste due to corrosivity (EPA Waste Code D002).

The potential EPA Hazardous Waste Numbers/Characteristic for spent thinners and paint waste are:

D001 - ignitability  
 D002 – corrosivity  
 D007 - toxicity - chromium  
 D008 - toxicity – lead  
 D009 - toxicity - mercury  
 F002 - (spent methylene chloride, trichloroethylene, 1,1,1-trichloroethane)  
 F003 - (spent xylene, acetone, etc.)  
 F005 - (spent toluene, methyl ethyl ketone, etc.)

See Section 2 - Management of Waste for a detailed discussion of determining the assignment of hazardous waste identification numbers.

Consult with the NWS Regional/Operating Environmental/Safety Coordinator and/or NWSH Environmental and Safety staff to determine applicable requirements.

**Table 9. Paint**

	New	
Proper Shipping Name	Paint, or Paint-related material	Paint, or Paint-related material
Hazard Class	3	8
ID Number	UN 1263	UN 3066
Packaging Group	I or II or III	II or III
Label	3 Flammable Liquid	8-Corrosive
EPA ID Number	None	None
Shipping Document	Shipping Paper/Bill of Lading	Shipping Paper/Bill of Lading

**Table 10. Paint**

	Used-for Disposal	
Proper Shipping Name	Waste Paint, or Waste Paint-related material	Waste Paint, or Waste Paint-related material
Hazard Class	3-Flammable Liquid	8-Corrosive

ID Number	UN 1263	UN 3066
Packaging Group	I or II or III	II or III
Label	3-Flammable Liquid	8-Corrosive
EPA ID Number	All that apply as per 6.11.7.a.	All that apply as per 6.11.7.a.
Shipping Document	HW Manifest	HW Manifest

b. Used-to be recycled

DOT descriptive information is the same as for a shipment of “waste” paint or paint-related material. Although paints may have an opportunity to be recycled in some areas of the country, they have not been designated as a universal waste and thus when recycled, all regulated hazardous constituents must be identified when they are being sent for disposal.

### 3.11.8 Cleaners and Degreasers

While the NWS uses many different cleaning products, it is the select group of “solvent-based” cleaners that are addressed here. Examples include magnetic tape head cleaner (contains xylene, ethane, benzene) and paint stripper (xylene, hexane, naphtha). An investigation into the components in the product is the key to proper identification. In this group, there are many possible DOT descriptions and only samplings of the potential descriptions are included here.

Under the heading of “New,” the product being shipped is best described using its “name” as shown on the product label. When the product is “used and to be sent for recycling,” the DOT description will be the same as the hazardous waste description provided below under the heading “Used-for Disposal.” Solvents destined for recycling are not exempted as universal wastes and all regulated hazardous constituents must be identified as if being sent for disposal.

a. Used-for Disposal

According to DOT regulations, a liquid with a flash point at or below 141°F is classified as a flammable liquid and a liquid with a flash point above 141°F and below 200°F is classified as a combustible liquid.

- 1) A mixture of spent non-halogenated solvents containing more than one of the following: Xylene, Acetone, Ethyl ether, methyl isobutyl ketone, cyclohexanone, methanol, cresols, nitrobenzene, MEK, Toluene, Carbon disulfide, Isobutanol, etc. may be shipped using the following information:

**Table 11. Cleaners and Degreasers Used for Disposal**

Proper Shipping Name:	“Waste Flammable liquid, n.o.s.”
Hazard Class:	3
Identification Number:	UN 1993
Packaging Group:	I, II or III (see 6.11.7 for PG selection criteria in hazard class 3)
Additional Information:	(Insert technical names of at least two components that most contribute to the hazard of the mixture in parentheses after the “n.o.s.”)

<b>Table 11. Cleaners and Degreasers Used for Disposal</b>	
Label:	FLAMMABLE LIQUID
EPA Hazardous Waste ID No.:	F003, F004, F005 (depending on chemicals) See Attachment 2 to Section 2 - Management of Waste for listings of hazardous waste numbers.

- 2) Any of the previously listed non-halogenated solvents if kept segregated (not mixed) would require the specific name as found on the HMT. Information for MEK is provided as an example.

<b>Table 12. Example of Cleaner and Degreasers: MEK</b>	
Proper Shipping Name:	(as found in Column 2 of HMT) Example: "Waste Methyl ethyl ketone"
Hazard Class:	(as found in Column 3 of HMT) Example: 3
Identification Number:	(as found in Column 4 of HMT) Example: UN 1193
Packaging Group:	(as found in Column 5 of HMT) Example: II
Additional Information:	N/A
Label:	(as found in Column 6 of HMT) Example: FLAMMABLE LIQUID
EPA Hazardous Waste ID No.:	(as listed in Attachment 2 to Section 2 -Management of Waste) Example: F005 (if spent), U159 (if unused or excess material)

- 3) While solvents and cleaners containing halogenated solvents have been replaced by other less toxic chemicals, some NWS facilities and work sites may still have old stock that will require disposal. The following information is required for disposal of halogenated solvent wastes if kept segregated including Perchloroethylene, Trichloroethylene, Trichloroethane and Methylene Chloride. Information for 1,1,1-Trichloroethane is provided as an example.

<b>Table 13. Example of Cleaner and Degreasers: Trichloroethane</b>	
Proper Shipping Name:	(as found in Column 2 of HMT) Example: "Waste 1,1,1-Trichloroethane"
Hazard Class:	(as found in Column 3 of HMT) Example: 6.1
Identification Number:	(as found in Column 4 of HMT) Example: UN 2831
Packaging Group:	(as found in Column 5 of HMT) Example: III
Additional Information:	N/A
Label:	(as found in Column 6 of HMT) Example: 6.1-POISON

<b>Table 13. Example of Cleaner and Degreasers: Trichloroethane</b>	
EPA Hazardous Waste ID No.:	(as listed in Attachment 2 to Section 2 -Management of Waste) Example: F001 (if used in degreasing), U226 (if unused or excess material), F002 (if used for other than degreasing)

For Freon (chlorofluorocarbon solvents and mixtures):

<b>Table 14. Example of Cleaner and Degreasers: Freon</b>	
Proper Shipping Name:	“Hazardous waste, liquid, n.o.s.”
Hazard Class:	9
Identification Number:	NA 3082
Packaging Group:	III
Additional Information:	contains Freon
Label:	9-MISCELLANEOUS
EPA Hazardous Waste ID No.:	(as listed in Attachment 2 to Section 2 -Management of Waste) Example: F001

### 3.11.9 Mercury and Mercury-Containing Equipment (MCE)

While the NWS has reduced or eliminated the use of thermometers, barometers, sling psychrometers and thermometers that contain elemental mercury, these devices may still be used or stored or in a historic display. Additionally, facilities use mercury switches to control the operation of certain HVAC and electrical equipment. The EPA has termed many items as “Mercury-Containing Equipment (MCE)” and has chosen to regulate them under the Universal Waste Rule (specific hazardous wastes that are recyclable).

Mercury-containing equipment is in hundreds of devices at levels ranging from less than a gram up to several pounds. Some of the various types of MCE that can be used at a NWS facility are:

- High Intensity Discharge Lamps
- Mercury Containing Switches – furnace controls, HVAC controls, laboratory equipment and industrial equipment
- Mercury Thermostats
- Silent Wall Switches (Prior to 1991)
- Freezer and Flame Sensors gas fired devices and pilot lights.
- Manometers/Barometers/Thermometers.
- Float Switches - sump pumps and septic tanks
- Mercury regulators

Each field office should assess the facility and equipment to determine if they are likely to contain mercury. While the use of fluorescent tubes and mercury-containing switches and other equipment is usually easy to determine, the use of other MCE at the facility may require some investigative effort. If MCE is used at the facility, see Section 2.10.4 for MCE management.

If these devices are discarded, they are classified as hazardous waste due to the mercury content and must be sent to a permitted hazardous waste facility for treatment, disposal, or recycling.

Prior to disposal, it is necessary to check with the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH Environmental and Safety staff to determine if the State has adopted the Universal Waste rule and if there are any State-specific requirements.

b. Mercury Waste and Waste Mercury Containing Equipment (MCE) being disposed:

<b>Table 15. Mercury Waste and Waste MCE disposed</b>	
Proper Shipping Name:	Waste Mercury
Hazard Class:	8
Identification Number:	UN 2809
Packaging Group:	II
Additional Information:	N/A
Label:	8 (corrosive)
EPA Hazardous Waste ID No.:	U151
Shipping Document	Manifest

c. Mercury and Mercury Containing Equipment (MCE) shipped for recycling:

<b>Table 16. Mercury Waste and Waste MCE recycled</b>	
Proper Shipping Name:	Mercury contained in manufactured articles
Hazard Class:	8
Identification Number:	UN 2809
Packaging Group:	III
Additional Information:	8 (corrosive)
Label:	N/A
EPA Hazardous Waste ID No.:	Shipping Paper - mercury is regulated by DOT as a HM.
Shipping Document	Mercury contained in manufactured articles

In addition to the assignment of a DOT shipping description, the EPA requires that each MCE or container of devices should be marked with one of the following phrases:

- Universal Waste – Mercury Containing Equipment
- Waste - Mercury Containing Equipment
- Used Mercury Thermostats
- Waste Mercury Thermostats
- Universal waste – Mercury thermostats

### 3.12 Responsibilities

#### 3.12.1 NWS Headquarters (NWSH)

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Units, and field personnel to ensure that NWS facilities comply with this section.

- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

**3.12.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will assist, as necessary, field offices or operating unit facilities with selection of hazardous materials/waste transportation service providers and identification of training opportunities, to ensure compliance with this section.

**3.12.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will ensure that procedures are implemented at NWS field offices for proper labeling, marking, and identification of all hazardous materials/hazardous waste transported by NWS personnel and contracted service providers.
- d. Will ensure NWS employees follow the requirements of this section.
- e. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

**3.12.4 Environmental or Environmental/Safety Focal Point or Designated Person**

- a. Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.
- b. Will determine status of hazardous material/hazardous waste transportation activities at NWS facilities and work sites.
- c. Will maintain required paperwork and records.

**3.12.5 Employees**

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

**3.13 References**

Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

### 3.13.1 Research and Special Programs Administration, Department of Transportation

49 CFR Subchapter C	Hazardous Material Regulations	
	Part 171 General information, regulations and definitions	
	Part 172 Hazardous Material Tables (HMT), Special Provisions, Hazardous Materials Communications, Emergency Response Information and Training	
	.101 Purpose and Use of Hazardous Material Table	
	.200-205 Shipping Papers	
	.300-338 Marking	
	.400-450 Labeling	
	.500-560 Placarding	
	.600-606 Emergency Response Information	
	.700-704 Training	

### 3.13.2 Environmental Protection Agency

CFR Subchapter I Solid Wastes	
Part 261	Identification and Listing of Hazardous Waste
Part 262	Standards Applicable to Generators of Hazardous Waste
.20-23	The Manifest
.30-34	Pre-Transport Requirements
.40-44	Recordkeeping and Reporting

### 3.13.3 Emergency Response Guidebook

Developed jointly by Transport Canada, U.S. Department of Transportation and the Secretariat of Transport and Communications of Mexico.

## SECTION 4 - EMERGENCY REPORTING

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## Synopsis

**NOTE:** This section has been developed to ensure that, in the case of a hazardous chemical release, all necessary reports, both internal and external are completed and filed, all required contacts and notifications are made and the appropriate actions taken.

The section applies to all NWS facilities and work sites.

### **Initial Implementation Requirements:**

- Appoint an Emergency Coordinator
- Compare Site/Facility Operations with the Requirements of this Section
  - Determine the reportable quantity for each hazardous substance and extremely hazardous substance (EHS) used or stored by the facility or work site (4.5.2)
  - Prepare a list of who needs to be notified in the event of a release of a hazardous substance, EHS, or petroleum product. This list should include the name of the agency, the telephone number and what information will be required (4.7)
  - Ensure Emergency Coordinator(s) understand who they are to contact about a release (4.7)

### **Recurring and Annual Task Requirements:**

- Annually Review Inventory of Hazardous Materials, Substances and EHS Used or Stored at the Facility (4.5.1)

Emergency Reporting Checklist	YES	NO	N/A
1. Has an inventory of each hazardous substance (as listed in 40 CFR 302.4) and EHS (as listed in 40 CFR 355) that is used or stored by the facility or work site been prepared? (4.5.2)	—	—	—
2. Does the inventory indicate which hazardous substances and EHS are stored in a quantity which exceeds the reportable quantity? (4.5.2)	—	—	—
3. Has a list describing who is to be notified in the event of a release of a hazardous substance, EHS or petroleum product and the order for notification been prepared? (4.7)	—	—	—
4. Have the Emergency Coordinators identified in the facility or work site Occupant Emergency Plan been trained to ensure they understand who they are to contact in the event of a release and what information will be required? (4.7)	—	—	—

## SECTION 4 EMERGENCY REPORTING

### 4.1 Purpose and Scope

When a hazardous chemical is released into the environment, a series of required reports, both internal and external, will need to be prepared by the National Weather Service (NWS). This section has been developed to ensure NWS facilities and work sites generate the appropriate reports in a timely manner. This section applies to all NWS facilities and work sites.

### 4.2 Definitions

<b>Environment</b>	The navigable waters, the waters of the contiguous zone and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Fishery Conservation and Management Act of 1976, and any other surface water, groundwater, drinking water supply, land surface or subsurface strata or ambient air within the United States or under the jurisdiction of the United States.
	Note, that although the EPA does not include “wetlands” in the definition of the “environment” in 40 CFR 302.3, EPA does include “wetlands” in the definition of the “waters of the United States” in 40 CFR 230.3(s). Hence, any NWS facility or site that could impact a wetland needs to be aware of this and plan accordingly.
<b>Facility</b>	Any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly-owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock or aircraft or any site or area where a hazardous substance has been deposited, stored, disposed of or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.
<b>Hazardous Substance</b>	Any substance designated pursuant to 40 CFR Part 302.
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Reportable Quantity (RQ)</b>	<p>The amount of a hazardous substance as set forth in 40 CFR 302.4, which when released into the environment within any 24-hour period, requires an immediate notification of the National Response Center</p> <p>AND/OR -</p> <p>The amount of EHS as established in 40 CFR 355 which when released offsite, requires an immediate notification of the Community Emergency</p>

	Coordinator for the Local Emergency Planning Committee (LEPC) and State Emergency Regulatory Commission (SERC). See Appendix B for the list of RQ for chemicals covered under 40 CFR 302.4 and 40 CFR 355.
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).
<b>Threshold Planning Quantity (TPQ)</b>	The amount of EPA-defined EHS (in 40 CFR 355) that requires notification of the Local Emergency Planning Committee.
<b>Waters of the United States</b>	Includes navigable waters; tributaries of navigable waters, interstate waters, the oceans out to 200-miles, intrastate lakes, rivers and streams which are used by interstate travelers for recreation and other purposes, sources of fish or shellfish sold in interstate commerce and utilized for industrial purposes by agencies engaged in interstate commerce and wetlands.

#### 4.3 Acronyms Employed in This Section

BMP	Best Management Practice
EHS	Extremely Hazardous Substance
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
HS	Hazardous Substance
LEPC	Local Emergency Planning Committee
SECO	NOAA Safety and Environmental Compliance Office
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
RQ	Reportable Quantity
SERC	State Emergency Response Commission
SPCC	Spill Prevention, Control, and Countermeasure
TPQ	Threshold Planning Quantity

## 4.4 Regulatory Requirements

### 4.4.1 Federal

- a. *Clean Water Act* - The Clean Water Act empowered the EPA to protect the “waters of the United States.” As a result, the EPA has created a list of hazardous materials and assigned each a material “reportable quantity” or RQ. If a petroleum product or hazardous material is released (spilled) in a quantity that equals or exceeds the RQ within any 24-hour period, notification of the National Response Center will be provided in accordance with paragraph 4.6 of this section.
- b. *Emergency Planning and Community Right-to-Know Act* - As a response to the release of a toxic gas in Bhopal, India, Congress enacted the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). This law created four major programs:
  - 1) *Emergency Planning* – requires the States and local governments to plan for chemical emergencies.
  - 2) *Emergency Release* – requires notification to the National Response Center in the event of a release of an Extremely Hazardous Substance (EHS).
  - 3) *Community Right-to-Know* - requires organizations that use or store hazardous substances or EHS file reports detailing the quantities of these materials on hand.
  - 4) *Toxic Release Inventory* - requires operations that manufacture, process, or use more than 10,000 pounds on an annual basis of a toxic chemical listed in 40 CFR 372.65 to file an annual report detailing the amount of the material “released to the environment.” The goal of the Toxics Release Inventory Program is to provide communities with information about toxic chemical releases and waste management activities and to support informed decision making at all levels by industry, government, non-governmental organizations, and the public.

Of these programs, NWS facilities or work sites may be required to comply with:

- a) Emergency Planning as a member of the Local Emergency Planning Committee (LEPC)
- b) Emergency Release notification if the facility stores or uses a regulated amount (i.e. more than the threshold planning quantity or TPQ) of an EHS
- c) Community Right-to-Know, if the facility is required to file a Tier II Report (see Section 4.5.2).

### 4.4.2 State

Several states have enacted legislation that requires additional reporting requirements for releases. Contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH Environmental and Safety staff to determine if additional state or local requirements exist.

### 4.4.3 NWS

As required by Procedure 5, Occupant Emergency Plan (OEP), of NWSM 50-1115, Occupational Safety and Health Manual, every NWS facility and work site must have a written

OEP to address employee response to all foreseeable emergencies, including response to releases of hazardous substances. For facilities and sites that store petroleum products, the SPCC Plan or SPCC Best Management Practices Plan must address the actions to be taken if petroleum materials are released.

## 4.5 Reportable Quantity

### 4.5.1 Hazardous Substance Release

Because even small spills or releases of hazardous materials can create serious risks to human health and the environment, the EPA has created a list of hazardous substances (HS) and assigned each an RQ. The values of the RQs range depending on the dangers presented by the released material. This list of hazardous substances is found in 40 CFR 302.4 and has been incorporated into Appendix B of this Manual.

If a quantity equal to or greater than the RQ of a hazardous substance listed in 40 CFR 302.4 is spilled or released “into the environment,” the National Response Center (800-424-8802) must be notified of the start of the release immediately in accordance with paragraph 4.6 of this section.

Immediate is defined as after initial steps are taken to prevent further release, any emergency assistance (e.g., fire or rescue services) are called, and immediate first aid care is provided to injured employees.

**NOTE:** The term “into the environment” refers to releases where the material enters the air, water or land. A spill of a liquid that is completely contained on an impermeable surface and has no emissions to the air is not a “release to the environment.”

Some examples:

A release of a liquid with a low vapor pressure (like oil) into a containment area where almost all of the material is recovered - would not be reportable.

A release of a liquid with a high vapor pressure (like acetone) into a containment area where the reportable quantity “could” volatize into the environment before cleanup is accomplished - would be reportable.

Obviously, a release of a hazardous substance into an uncontained area would also be reportable.

If the amount of the release is unknown or cannot be determined within the 24-hour time limit, provide notification in accordance with paragraph 4.6 of this section. The penalties for not reporting are severe. A follow-up report can be made later if it is determined that the RQ was not released.

The designated RQ varies from one pound to 5,000 pounds depending on the material. For example,

- For mercury, the RQ is one pound.
- For parathion, the RQ is 10 pounds.
- For sulfuric acid, the RQ is 1,000 pounds.

**NOTE:** Because they have different densities, one pound of mercury is only 1.13 fluid ounces (the specific gravity is 13.59) while 10-pounds of parathion is about 1 gallon (the specific gravity is about 1.20).

If a mixture containing one or more hazardous substances is released and the concentrations of the hazardous substances are unknown, a notification to the National Response Center must be made in accordance with paragraph 4.6 of this section if the total amount of the mixture released exceeds the reportable quantity of the hazardous substance with the lowest reportable quantity. For example, a spill of two pounds of a mixture containing an unknown concentration of Polychlorinated Biphenyl (PCB) is reportable since it exceeds the PCB reportable quantity of one pound.

Although diesel or lubricating oils are not on the list of hazardous substances in Table 302.4, the EPA does require the reporting of oil spills. For oil spills, the National Response Center must be notified if the release or discharge may violate applicable water quality standards or may cause a film, sheen, or discoloration of the surface of the water, or the formation of sludge below the surface of the water. It is important to note that the oil does not have to actually contact the water to require a report to the National Response Center - it only has to be possible that it could contact water to trigger the reporting requirement. Normally, a spill of 42-gallons of oil in an uncontained area will necessitate a call to the National Response Center.

Several states have established reportable quantities for the release of petroleum products. Contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH Environmental and Safety staff for assistance in determining the existence and content of any State requirements.

#### 4.5.2 Reportable Quantity

As a result of the Emergency Planning and Community Right-to-Know Act (EPCRA), the term "reportable quantity" can have another meaning. If the term "reportable quantity" is applied to the EHS identified in 40 CFR 355 (see Appendix B to this Manual), and the EHS is not listed as a hazardous substance (HS) in 40 CFR 302.4, the reportable quantity is the amount of the EHS that has been released off-site. This release requires a report be made to the LEPC (usually the fire department) and the State Emergency Regulatory Commission (SERC). Unfortunately, this change complicates the understanding of the term "reportable quantity" and thus the following examples are included here to help clarify this term.

- a. If a chemical is only identified as a hazardous substance in 40 CFR 302.4, any release into the environment equal to or greater than the reportable quantity must be reported to the National Response Center.
- b. If a chemical is only identified as an EHS in 40 CFR 355 and is released into the environment and a quantity equal to or greater than the reportable quantity has gone off-site, the Community Emergency Coordinator for the LEPC must be notified.
- c. If a chemical is on both lists as a hazardous substance (40 CFR 302.4) and an EHS (40 CFR 355) and it is released in an amount greater than the reportable quantity:
  - The National Response Center must be notified,

- The Community Emergency Coordinator must be notified only if it goes off-site.

While most NWS facilities or work sites do not handle or manage any of the materials on EHS list, some of the commercially available pesticides are listed. Therefore, a review of the EHS list must be made by the Environmental Focal Point or designated person to determine if any of these chemicals are used or stored by the facility or work site. A one pound spill of chlordane, for example, is reportable. The list of the EHS has also been incorporated into Appendix B of this Manual.

In order to facilitate the reporting of releases of hazardous substances and/or EHS, an inventory of hazardous substances and their reportable quantities should be prepared. See Attachment A to this section for examples of materials used by NWS facilities and work locations.

#### **4.6 HS and EHS Release Reporting**

When a hazardous material, petroleum product or EHS is released in an amount that either equals or exceeds the RQ or “reasonably might be expected to exceed the RQ,” a number of notifications will be required. These notifications are usually made in the following order:

- a. Local responder (Usually a “911” call) if there is a release off site, fire or medical emergency
- b. LEPC and SERC (in most communities, the 911 call is transferred to LEPC)
- c. Spill Contractor (usually designated in the SPCC or SPCC BMP Plan)
- d. Station Manager will call the National Response Center (800-424-8802), if required (per instructions in SPCC or SPCC BMP plan)
- e. NOAA Safety and Environmental Compliance (SECO) at 301-713-2870
- f. NWS Regional/Operating Unit Environmental/Safety Coordinator
- g. NWS HQ Environmental and Safety Office at 301-427-9763.

#### **4.7 Posting of Phone Numbers**

To ensure all the required contacts and notifications are made, the designated person or Environmental Focal Point will prepare a list of those who need to be notified and in what order along with the appropriate telephone numbers. The Station Manager will be provided with a copy of the list that will then be posted in a readily accessible place. The facility/work site Emergency Coordinator(s) identified in the facility/work site Occupant Emergency Plan must then be informed of the existence of this list as well as when and how it is to be used in the event of a release. For further guidance, consult Procedure 5, Occupant Emergency Plan, of NWSM 50-1115, Occupational Safety & Health Manual.

#### **4.8 Responsibilities**

##### **4.8.1 NWS Headquarters (NWSH)**

- a. The NWSH Environmental/Safety Office will provide assistance to Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.

- b. NWSH will coordinate with SECO, as necessary, regarding compliance issues related to this section.

**4.8.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and coordinate to promote compliance with the requirements of this section for the Regional Headquarters and field offices or operating units.
- b. Will ensure that applicable procedures are implemented at Regional Headquarters or operating unit facilities to comply with requirements of this section.

**4.8.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will ensure that procedures are implemented at NWS field offices for reporting of releases of “Hazardous Substances” and “Extremely Hazardous Substances” from the facility.
- d. Will ensure the NWS is represented at meetings of the Local Emergency Planning Committee.
- e. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

**4.8.4 Environmental or Environmental/Safety Focal Point or Designated Person**

Will ensure that any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.

**4.8.5 Employees**

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

**4.9 References**

Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

**4.9.1 U.S. Environmental Protection Agency**

40 CFR 302.4	<i>Designation of Hazardous Substances</i>
	<i>355 Appendix A The List of EHSSs and Their Threshold Planning Quantities</i>

**ATTACHMENT A Examples of Hazardous Substances Potentially Found at NWS Sites**

<b>Hazardous Substances</b>	<b>302.4 RQ (lbs)</b>	<b>355 RQ (lbs)</b>	<b>355 TPQ (lbs)</b>
Acetone		5000	
Ammonia	100	100	500
Ethylene glycol	5000		
Dichloromethane (Methylene Chloride)	1000		
Mercury	1		
Methanol	5000		
Methyl ethyl ketone (MEK)	5000		
Methyl ethyl ketone peroxide	10		
Polychlorinated biphenyls	1		
Sulfuric acid (batteries)	1000	1000	1000
Potassium hydroxide	1000		
Lead	10		
Asbestos (friable)	1		
Xylene	100		
Toluene	1000		

## **SECTION 5 - DRINKING WATER**

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## Synopsis

**NOTE:** The purpose of this section is to provide information the safe drinking water use at NWS facilities and work sites.

The section applies to all NWS facilities, work sites and employees.

### **Initial Implementation Requirements:**

- Determine Source of Drinking Water - Bottled Water, Private Well or Public Water System
- If Bottled Water:
  - Attempt to learn where and when the water was bottled (5.5.1)
- If a Well:
  - Determine if the well serves more than 25 people 60 days per year (5.5.1)
    - If no, test water for nitrate and coliform bacteria, total dissolved solids, and pH (5.5.2a)
    - If yes, perform all testing as required by the Safe Drinking Water Act (5.5.1)
- Initiate Water Conservation Program (5.6)
  - Inform NWS personnel on the necessity and scope of the program.

### **Recurring and Annual Task Requirements:**

- If Water Comes from a Well:
  - Test water on an annual basis (5.5.2a)
  - Maintain the well and surrounding area (5.5.2b)
  - Provide information on the water conservation program on a periodic basis

Drinking Water Checklist	YES	NO	N/A
1. Does the facility/work site use a well that supplies more than 25 people? (5.5.2)	—	—	—
2. Does the facility/work site use a private well (supplies fewer than 25 people)? (5.5.2)	—	—	—
3. If a private well, is a test nitrate and coliform bacteria, total dissolved solids, and pH to detect contamination problems performed annually? (5.5.2a)	—	—	—
4. If the well is under the control of the NWS:	—	—	—
• Is it periodically inspected for cracked or broken casing or cap? [5.5.2b(1)(a)]	—	—	—
• Is the area surrounding the well sloped away from the well head? [5.5.2b(2)]	—	—	—
• Has a sanitary seal been applied to prevent unauthorized use or entry? [5.5.2b(3)]	—	—	—
• Are records of all well maintenance kept on-site? [5.5.2b(4)]	—	—	—
• Are chemical mixing activities performed away from the well? [5.5.2b(6)]	—	—	—
• If a septic system is also used, is the septic system pumped and inspected according to local Health Department guidelines? [5.5.2b(7)]	—	—	—
5. Has a water conservation program been implemented? (5.6)	—	—	—

## SECTION 5 – DRINKING WATER

### 5.1 Purpose and Scope

This section is promulgated to ensure all NWS personnel are provided clean, pure drinking water at all NWS facilities and work sites. The section applies to all NWS facilities and work sites.

### 5.2 Definitions

<b>Gray Water</b>	Slightly contaminated water resulting from washing/rinsing operations.
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).
<b>Xeriscaping</b>	Landscaping technique which minimizes the use of water for irrigation.

### 5.3 Acronyms

CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
SECO	NOAA Safety and Environmental Compliance Office
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
SDWA	Safe Drinking Water Act

### 5.4 Regulatory Requirements

Under the authority of the Safe Drinking Water Act (SDWA), the EPA has established the Office of Groundwater and Drinking Water that has created regulations for:

- Drinking water
- Standards for public drinking water systems
- Programs to protect groundwater supplies.

## 5.5 NWS Program

### 5.5.1 Public Water Systems

NWS facilities and work sites receive drinking water from one of three sources: bottled water, a public drinking water system, or a private well.

Of these, the EPA regulates the public water systems under the SDWA by setting and enforcing water quality standards. The local water authority or system is required to ensure the water it produces meets the EPA drinking water standards. NWS facilities or sites connected to public water systems are only required to ensure the incoming water piping system is properly installed and maintained to avoid any cross contamination with the waste or sewage drain piping system.

Normally the use of bottled water is considered a safe alternative, however, facilities using this type of drinking water must always be aware where the water is bottled and approximately when. Cases have been reported where water bottled after a major weather or natural event in the area of the bottling plant had been contaminated causing warnings to be issued.

If the drinking water for a NWS facility is supplied by a well and the well serves more than 25 people at least 60-days per year, the well is considered a public water supply and subject to all the requirements of the SDWA.

Because the requirements for public drinking water systems are very extensive and expensive, NWS facilities that meet this definition must contact the NWSH Environmental and Safety Office for assistance.

If an NWS facility uses bottled water, personnel should look at the label for bottler's certifications. Certified bottlers are preferable.

International Bottled Water Association (IBWA) is a trade organization for water bottlers. IBWA members must meet the organizations "model core" and are subject to annual inspections by an independent third party.

NSF International - Bottled water certified by NSF undergoes additional testing by unannounced annual plant inspections. NSF Certifications mean that the bottler complies with all applicable Food and Drug Administration (FDA) requirements including good manufacturer's practices.

Underwriter Laboratories (UL) is an independent accredited testing and certification organization that test bottled water to FDA, State and IBWA model core requirements.

### 5.5.2 Private Wells

Because the EPA considers water wells that supply water to fewer than 25 people to be "private wells," the agency does not regulate them or the water they produce. Some state and local governments do regulate these wells, and thus a check with the local Health Department will be necessary.

#### a. Water Testing

For NWS facilities and work sites served by a private well, maintaining the system will include testing of the water annually for nitrate and coliform bacteria, total dissolved solids, and pH to detect contamination problems. If a problem is suspected, the water

should be tested more frequently and possibly for more potential contaminants such as radon or pesticides. A list of the 80 contaminants controlled by the EPA as part of the primary drinking water standards can be found in 40 CFR Part 141.

The testing for nitrate and coliform bacteria samples will typically cost between \$10 and \$20 to perform, however, testing for pesticides and other organic chemicals and metals can exceed several thousand dollars. The funding for this testing should be part of the operational budget for the facility.

Because the states certify water testing labs, a call to the State Certification Officer can quickly provide a list of labs that are approved to perform the testing. A list of State Certification Officers is available on-line at following EPA web site:  
<http://water.epa.gov/scitech/drinkingwater/labcert/statecertification.cfm>.

If a standard is exceeded, retest immediately and contact the NWS Regional/Operating Unit Environmental/Safety Coordinator, NWSH Environmental and Safety Office, and/or the Public Health Department for assistance.

If the problem persists, bottled water will have to be brought in to keep the facility or work site operational.

EPA recommends additional testing if the following situations are present:

- 1) An employee is pregnant or nursing
- 2) There is unexplained illness/illnesses
- 3) A change is noted in water taste, odor, color or clarity
- 4) A spill of chemicals or fuels into or near a facility well
- 5) Any part of a well system was replaced or repaired

Common sources of water contamination:

- a. Agricultural – Pesticides, irrigation, and fertilizers
  - b. Commercial – Airports, construction, gas stations and storage tanks
  - c. Industrial – Asphalt, chemical storage, wastewater drainage, metal fabricators
  - d. Residential – Fuel oil, septic systems, sewer lines, household lawns
  - e. Other – Hazardous Waste and municipal landfills, storm water drains/basins and wells
- b. Well Maintenance
- If the water well is under the control of the NWS, it must be maintained and protected from contamination. This effort will include:
- 1) Periodically inspecting exposed parts of the well for problems such as:
    - a) Cracked, corroded or damaged well casings
    - b) Broken or missing well caps

- c) Settling and cracking of surface seals
- 2) Sloping the area around the well to drain surface run-off away from the well
- 3) Installing a well cap or sanitary seal to prevent unauthorized use of, or entry into, the well
- 4) Keeping accurate records of any well maintenance, such as disinfection or sediment removal, that may require the use of chemicals in the well
- 5) Hiring a certified well driller for any new well construction, modification or abandonment and closure
- 6) Avoiding mixing or using pesticides, fertilizers, herbicides, degreasers, fuels and other pollutants near the well
- 7) Pumping and inspecting the septic system as often as recommended by the local Health Department

In addition, all facility maintenance personnel must be informed that they must:

- 1) Not dispose of wastes in dry wells or in abandoned wells
- 2) Not cut off the well casing below the land surface
- 3) Never dispose of hazardous materials in a septic system

## **5.6 Water Conservation**

Regardless of whether a NWS facility or work site obtains drinking water from a municipal water system or an on-site well, the facility or work site will implement and maintain a water conservation program that acknowledges that water is a valuable resource that cannot and must not be wasted. The EPA estimates that of the 150-gallons of water each person uses every day only 1/2-gallon is used for drinking. The remaining 149-1/2 gallons are used for cooking, cleaning, flushing, watering lawns, etc.

The Conservation Program should include:

- a. Replacement or maintenance of all leaking plumbing fixtures
- b. Use of "gray water" where possible
- c. Use of pressure-reducing valves on intake water feed lines to maintain the pressure to no more than 60-pounds per square inch
- d. Use of low-flow shower heads and toilets
- e. Use of "push" knobs on faucets rather than "turn" valves
- f. Repair/replace of all leaky faucets
- g. Use of "Xeriscaping" to reduce external water use. Xeriscaping is a landscaping program that:
  - 1) Plans and designs to minimize expense and maintenance

- 2) Uses turf only where needed for functional purposes. Turf alternatives such as mulches and drought-tolerant ground covers are substituted.
- 3) Uses drought-tolerant plants and planning placement around sun exposure
- 4) Uses mulches for water retention, long-term fertilization and weed control
- 5) Efficiently irrigates through grouping plants according to water needs
- 6) Improves the soil to allow for better absorption of water
- 7) Maintains the landscape properly to save maintenance costs

## **5.7 Responsibilities**

### **5.7.1 NWSH**

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with this section.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

### **5.7.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit.
- b. Will ensure that applicable procedures are implemented at Regional Headquarters or Operating Unit facilities to ensure compliance with requirements of this section.

### **5.7.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will ensure that procedures are implemented at NWS field offices for protecting on-site well water quality.
- d. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### **5.7.4 Environmental or Environmental/Safety Focal Point or Designated Person**

- a. Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.
- b. Will ensure NWS facility/work site drinking water is tested annually if the water is derived from a private well.

### **5.7.5 Employees**

- a. Will read, understand, and comply with the requirements of this section.
- b. Will report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

## **5.8 References**

### **Incorporated References**

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

#### **5.8.1 U.S. Environmental Protection Agency**

40 CFR 141: Natural Primary Drinking Water Regulations

“Who is Responsible for Drinking Water Quality?” <http://www.epa.gov/safewater/dwh/who.html>

## SECTION 6 - POLLUTION PREVENTION

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## Synopsis

**NOTE:** This section is promulgated to ensure an effective pollution prevention program is created and implemented at all NWS facilities and work sites.

The section applies to all NWS facilities and work sites.

### **Initial Implementation Requirements:**

- Appoint a Pollution Prevention (P2) Program Coordinator (6.7)
- Compare Site/Facility Operations with the Requirements of this Section:
  - Review application of P2 approaches at facility (6.7)
  - Source reduction
    - Ensure all operating practices have been reviewed and if necessary modified to minimize pollution
  - Inventory control
    - Establish an Authorized Use List (AUL) of items necessary and environmentally appropriate for mission performance
      - Ensure waste reduction purchase policies are followed
      - Ensure review of government listings and websites providing suggestions for the purchase of environmentally preferable products and services (Section 9 - Procurement)
  - Recycling
    - Determine items and/or wastes that may be recycled and identify local recycling opportunities
    - Provide receptacles and designated area for collection of recyclables

### **Recurring and Annual Task Requirements:**

- Periodically review AUL for additions/deletions/substitutions (6.7)
- Continued efforts into the use of more efficient practices; the use of less hazardous materials and techniques to control energy and water use (6.7)

<b>Pollution Prevention Checklist</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1. Has a facility/work site Pollution Prevention (P2) Program Coordinator been appointed? (6.7)	—	—	—
2. Has an “authorized use list” been assembled? (6.7)	—	—	—
3. Have waste reduction purchase policies been followed to eliminate wasteful/unnecessary purchases? (6.7)	—	—	—
4. Have recycling opportunities been identified? (6.7)	—	—	—
➤ Are recycling centers located to enhance participation?	—	—	—

## SECTION 6 - POLLUTION PREVENTION

### 6.1 Purpose and Scope

While the NWS does not produce large quantities of waste, a comprehensive environmental management program requires consideration of the ways in which pollution can be eliminated or reduced from the activities undertaken at NWS facilities or work sites.

### 6.2 Definitions

<b>Authorized Use List</b>	A list of supplies, especially hazardous materials, approved for purchase after review of environmental, safety and health considerations
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Pollution Prevention</b>	The use of materials, processes, or practices that reduce or eliminate the creation of pollutants or waste at the source
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### 6.3 Acronyms Employed in This Section

AUL	Authorized Use List
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
HAZMAT	Hazardous Material
HSWA	Hazardous & Solid Waste Amendments
HW	Hazardous Waste
MSDS	Material Safety Data Sheet
SECO	NOAA Safety and Environmental Compliance Office
NPDES	National Pollutant Discharge Elimination System
NWS	National Weather Service
NWSH	National Weather Service Headquarters

PPA	Pollution Prevention Act
P2	Pollution Prevention
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TSDF	Treatment, Storage or Disposal Facility

#### **6.4 Regulatory Requirements**

The concept of pollution prevention has evolved from the laws that attempted to regulate hazardous waste. Soon after the Resource Conservation and Recovery Act (RCRA) was passed, it became obvious that if a waste was not created - it did not need to be disposed and the money and effort that would have been required to properly manage it would now be available for other things. The pertinent laws are:

##### The Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) includes requirements for the management of hazardous waste from the process of generation, throughout storage or accumulation and transportation to the treatment, storage, or disposal facility (TSDF). The use of pollution prevention as a “Best Management Practice” is the only alternative to this “cradle to grave” regulatory control.

Section 6002 of RCRA specifically requires Federal Agencies and their contractors to:

- Buy EPA-designated products with a recycled content if the agency or the contractor spends more than \$10,000 annually on that item.
- Purchase the highest percentage of recovered materials practicable.
- Eliminate contract language that excludes the purchase or use of recovered materials.
- Have an affirmative procurement plan for purchasing EPA-designated products

##### The Hazardous and Solid Waste Amendments

The Hazardous and Solid Waste Amendments (HSWA) requires generators of hazardous waste to certify on every hazardous waste manifest that a program is in place “to reduce the volume and toxicity of the wastes that are generated.” Additionally, the regulations require generators to report changes in volume and toxicity of waste actually achieved during the past year.

##### The Pollution Prevention Act of 1990

The Pollution Prevention Act (PPA) was passed in 1990 to legally establish the concept that “source reduction is fundamentally different and more desirable than waste management and pollution control.” The law establishes the national policy that requires all reasonable attempts be made to prevent or reduce pollution at the source whenever feasible. Pollution that cannot be prevented should be recycled in an environmentally-safe manner whenever feasible. Disposal or other release into the environment should be employed only as a last resort and must be done in an environmentally safe manner.

## 6.5 Executive Orders (EO)

Executive Order 13693, signed March 19, 2015, rescinded several previous EOs on environmental performance and expands the Federal commitment to maintain leadership with regards to sustainability. Among other aspects, the EO details pollution prevention steps that must be taken by agencies where cost-effective over the life cycle of the product or service. These required considerations include:

- Promoting sustainable acquisition by, to the maximum extent practicable:
  - Exhibiting purchase preference for recycled content products, energy and water efficient products and services and BioPreferred and biobased designated products
  - Purchasing sustainable products and services and environmentally preferable products and services. See the Green Purchase Guide for additional details (<https://www.epa.gov/greenproducts>)
  - Reducing copier and printer paper use and acquiring uncoated printing and writing paper containing a minimum of 30 percent postconsumer recycled content
- Establishing and implementing policies for duplex printing and other energy efficient or sustainable features for agency electronics
- Diverting at least 50 percent of non-hazardous solid waste from landfills or incinerators to recycling or recovery facilities annually
- Reducing the quantity of toxic and hazardous chemicals

## 6.6 Pollution Prevention Defined

In order to understand the potential for application of “pollution prevention” (P2) throughout an organization and its operations, the EPA defines pollution prevention as “the use of materials, processes or practices that reduce or eliminate the creation of pollutants or waste at the source. It includes practices that reduce the use of hazardous materials, energy, water or other resources and practices that protect natural resources through conservation or more efficient use.”

### 6.6.1 Green Procurement

All NWS offices will consider green products and/or services as the first choice in all procurements, including service contracts. Green procurement is the cornerstone of source reduction to prevent pollution.

### 6.6.2 Pollution Reduction

All NWS facilities should identify and implement source reduction opportunities to reduce releases of toxic chemicals to the environment, off-site transfer of such toxic chemicals for treatment and disposal, and generation and disposal of hazardous and non-hazardous solid wastes. Facilities should wherever feasible, utilize opportunities to substitute less hazardous chemicals and substances and attempt to increase on- and off-site recycling of hazardous and non-hazardous wastes and increase procurement of environmentally preferable products and services.

### Hazardous Materials (HAZMAT) Control

NWS facilities can reduce the amount of HAZMAT used, and hazardous waste (HW) generated through up front HAZMAT control in procurement, supply, and use by:

- a. Developing local mechanisms at facilities to identify materials in use that are hazardous and limiting quantities of HAZMAT procured and stored. Facilities will establish HAZMAT Authorized Use Lists (AULs) to control the quantity of HAZMAT procured and stored.
- b. Establishing methods for substituting a less HAZMAT or non-HAZMAT for HAZMAT, where possible.
- c. Developing and incorporating new technology or materials that have a reduced impact upon the environment, are safer and healthier, or result in reduced emissions.
- d. Developing and implementing accurate HAZMAT inventory controls to reduce the generation of waste because of shelf life expiration, when possible.
- e. Modifying units of issue to reduce the generation of waste because of unused surplus material.
- f. Reviewing local documentation that directs the use of HAZMAT to determine possible changes to minimize further the use of HAZMAT and generation of HW.
- g. Reviewing standardized documents, including specifications and standards, to identify opportunities to stop or reduce use of extremely hazardous substances and toxic chemicals, consistent with the safety and reliability requirements of its mission.
- h. Integrating environmental/safety and occupational health considerations into all acquisition and procurement actions.

### P2 Committee

P2 is a multi-disciplinary effort that requires participation from many functional areas of Department organizations to be successful. While organization environmental personnel can and should take the lead to implement P2 opportunities, successful implementation requires the participation and support of functional areas including supply, acquisition/contracts, safety, systems maintenance, public works, and operational elements. Facilities that require a permit from their State for generation and/or storage of hazardous waste are encouraged to establish a P2 committee to consult management on P2.

## **6.7 Approaches to Pollution Prevention**

Application of P2 practices on a daily basis in all areas of a facility's practices is the only sure way of affecting a successful program. Techniques for reducing waste and pollution vary in complexity, effectiveness, time and cost. Using the PPA's protocol to P2, source reduction is identified as the first and most desirable option to reduce a facility's impact on the types and amounts of pollution produced.

### Source Reduction

From an environmental standpoint, source reduction is the preferred means of minimizing waste. Source reduction reduces or eliminates the generation of pollution at the source.

Source reduction techniques include such items as the establishment of good management practices, process modifications, and material substitution. Source reduction includes any action that reduces the amount of waste left over when a job is completed.

Congress specifically stated in the PPA that “source reduction does not entail any form of waste management and excludes any practice which alters the physical, chemical or biological characteristics or volume of a hazardous substance, pollutant or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service.”

a. Operating Practices

Good management practices are procedures or administrative measures that are applied in the workplace in order to minimize pollution. Many are seen as management improvements which involve procedural or organization activities rather than technology, thus having little or no implementation cost.

1) Management and Personnel Practices

As a way to ensure the success of proposed minimization goals, employee support must be gathered. This effort can be accomplished through employee training programs, incentives and bonuses to encourage employees to conscientiously strive to reduce waste.

2) Material Handling and Maintenance

This area includes the reduction in loss of materials due to mishandling, housekeeping practices, and improper storage. Investigation of inventory management practices will help to eliminate inefficient practices and/or operations. For example, prevention of spills and leaks by using drip pans and catchment basins during storage, keeping containers of solvents or cleaners closed when not in use and ensuring equipment is maintained and operating correctly.

3) Waste Segregation

Waste segregation practices can help to reduce the volume of hazardous wastes generated by preventing the mixing of hazardous and non-hazardous wastes. As defined by the “mixture rule” in 40 CFR 261.3(a) (2) (iii) and (iv), such mixture causes the resulting mix to be regulated as a hazardous waste. If segregated, disposal costs are reduced. This action also provides an opportunity for the segregated materials to be included in recycling efforts. For example, used synthetic and petroleum lubricating oil are both recyclable. If mixed together however, they can only be treated as a waste.

4) Cost Accounting Practices

Cost accounting practices include programs to allocate the waste treatment and disposal costs directly to the areas or groups that generate the waste. This practice makes the groups more aware of the effects of their disposal practices as well as gives a financial incentive to minimize the quantities of waste produced.

## 5) Production Practices

This area reduces waste by addressing inefficient production start-up or shutdown practices, frequency of equipment cleaning as well as preventive maintenance.

### b. Inventory Control

Inventory control is one of the most effective means of controlling an organization's impact on the environment. Purchasing of supplies, especially hazardous materials, require consideration of not only cost, but also environmental, safety and health concerns. Many products used by NWS facilities have inherent properties that could be an environmental problem when they are disposed of. This could only be found by reviewing of MSDSs for the environmental recommendations. These issues can be addressed by formulating a hazardous material control program. Such a program controls the types and amounts of material utilized on-site. The program will include:

- 1) An investigation of all the HAZMAT used on-site which is needed to meet job performance requirements.
- 2) An assessment of the inventory considering environmental, health, safety, storage/handling, cost and procurement issues. The outcome of this review is an AUL identifying only those items that are to be used and brought on-site.
- 3) A person "assigned" to the purchasing of HAZMAT in conjunction with the AUL can eliminate unnecessary purchases and ensure waste reduction purchase policies are followed.

After the initial investigation and development of the AUL, it may be appropriate to substitute less hazardous materials, where feasible.

The substitution of non-hazardous materials for hazardous raw materials can greatly reduce the amount of hazardous waste produced. An overall evaluation of the raw materials should consider why an item is hazardous (i.e., it is listed as an ozone-depleting substance, or is reactive, toxic or ignitable) as well as how the product is used. Product substitutions are frequently process/job dependent. The process of substitution requires diligence to ensure that the potentially purchased non-toxic materials do not have other associated handling concerns or costs. Close control of existing inventories is also important, as it is a possible source of spills, worker exposure, and cause of excessive raw materials in stock. Excess materials present another concern - having their shelf lives expire while in storage. These materials may now need to be disposed of as waste. Oftentimes considering the available "unit-of-issue" prior to purchase will avoid this problem.

## Recycling

Recycling promotes pollution prevention by reusing or reclaiming a valuable material from a generated waste product. Recycling includes use and/or reuse of the waste as a raw material by returning it to the original or a new process.

Some commonly generated "waste" at a work site may have an opportunity to be recycled with available proven technologies. Aluminum cans, plastics, CDs, packing materials ("peanuts" and

cardboard), newspaper, white office paper, vehicle tires, and ink cartridges are a few examples. Many communities include pick-up and management of these waste streams with the regular trash pick-up. Others have drop-off centers for recyclables. The Program Coordinator will identify local recycling opportunities and initiate the collection of these recyclables at the work site. The collection points will be conveniently located and identified to ensure maximum participation by site personnel.

### Energy

Pollution prevention extends into areas well beyond the direct production and use of chemicals. It need not involve high-tech, high-cost technologies. Often, everyday common sense procedures will have a significant long-term effect.

Energy efficiency is an area that cuts across many sectors. The creation and use of energy usually entails some environmental damage. The combustion of fossil fuels by utilities/industries releases carbon dioxide, sulfur dioxide and nitrogen dioxide. Other types of pollution result from mining and transporting fossil fuel stocks and disposing of energy plant wastes.

Anyone can foster energy savings by shutting off equipment and lights when not in use, lowering thermostats, and purchasing energy-efficient products. The P2 Coordinator or other designated person will investigate energy usage at the work site and ways to increase efficiency and/or decrease or control energy consumption through appropriate/practical means.

### Water

Water conservation and efficient water use can have a positive impact on the environment. Identification and repair of leaks or dripping faucets can add up to significant savings. In applications where large quantities of water are utilized, an investigation will be undertaken to determine the feasibility of decreasing the amount needed or whether reuse may be an option.

## **6.8 Responsibilities**

### NWS Headquarters (NWSH)

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with this section.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

### Regional or Operating Unit Environmental/Safety Coordinator

- a. Will monitor and promote compliance with the requirements of this section at the Regional Headquarters and field offices or operating units
- b. Will ensure that applicable procedures are implemented at Regional Headquarters or operating unit facilities

Station Manager

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility
- b. Will ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section
- c. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

Environmental or Environmental/Safety Focal Point or Designated Person

- a. Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.
- b. Will review MSDSs for all purchased products and materials for environmental regulatory and disposal requirements.

Employees

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

**6.9 References**

<b>EPA, OSHA and DOT Regulations</b>
40 CFR 355, Regulations for Emergency Planning and Notification under CERCLA
49 CFR 173, Shippers - General Requirements for Shipments and Packaging
29 CFR 1910.1200, OSHA HAZCOM Standard
40 CFR 261, Identification and Listing of Hazardous Waste
40 CFR 302, EPA Designation, Reportable Quantities and Notification Requirements for Hazardous Substances under CERCLA
40 CFR 372, Toxic Chemical Release Reporting, Regulations
<b>Executive Orders</b>
E.O. 13693, Planning for Federal Sustainability in the Next Decade, March 19, 2015
<b>Department of Commerce and NOAA</b>
Commerce Acquisition Manual, Chapters 1323.70 and 1313.301
NOAA Energy and Environmental Management Manual

## SECTION 7 - WATER DISCHARGE AND WETLANDS

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## Synopsis

**NOTE:** This section is promulgated to ensure NWS facilities and work sites comply with the National Pollutant Discharge Elimination System (NPDES) with regard to discharges of water used by the facility or work site.

The section applies to all NWS facilities and work sites that discharge water, sewage, and/or industrial type wastewater or perform exterior renovations that may affect storm water quality or affect areas designated as “Wetlands.”

### Initial Implementation Requirements:

- Appoint a Program Coordinator
- Compare Site/Facility Operations with the Requirements of this Section
  - Determine if “Pollutants” are Discharged via a “Point Source” by the Site/Facility (7.5)
  - Determine How the Site/Facility Discharges Wastewater
    - Direct discharge
      - Obtain an individual or general NPDES Permit (7.5.3)
    - Discharge to a POTW
      - Obtain a POTW Pretreatment Permit for Industrial Wastewater Discharges if necessary (7.5.4a)
      - Obtain a special permit if required by the POTW (7.5.4b)
  - Obtain a Storm Water Permit
    - If operations are regulated by the EPA or State as “Industrial Activity.” (7.7.1)
    - If construction activity will disturb one or more acres of land (7.7.2)
- Abide by General Storm Water Permit Rules if Storm Water Discharges to Regulated Municipal Separate Storm Sewer System (MS4) (7.7.2)
- Review each NWS facility and work area to determine if activities could affect any area designated as “Wetlands”
- If you find an area where wetlands have been designated, contact NWSH environmental and Safety staff to determine the need for a Section 404 permit.

### Recurring and Annual Task Requirements:

If the facility has NPDES discharge or storm water permit

- Review conditions to ensure compliance

Water Discharge and Wetlands Checklist	YES	NO	N/A
1. Does the facility or work site discharge wastewater to the “waters of the U.S.”? (7.5)	—	—	—
2. Does the facility or work site have an NPDES permit? <ul style="list-style-type: none"> <li>• If yes, are procedures in place to assure compliance with the conditions of the permit? (7.5.2)</li> </ul>	—	—	—
3. Does the facility or work site discharge to a Publicly Owned Treatment Works (POTW)? <ul style="list-style-type: none"> <li>• If yes, does this discharge require a POTW-issued permit? (7.5.4)</li> <li>• Are procedures in place to assure compliance with the conditions of this permit? (7.5.4)</li> </ul>	—	—	—
4. Does the facility or work site discharge sewage to a Septic System? (7.6) <ul style="list-style-type: none"> <li>• If yes, have NWS employees been advised concerning the limitations of the system? (7.6.2)</li> </ul>	—	—	—
5. Does the facility or work site have a stormwater discharge permit? (7.7) <ul style="list-style-type: none"> <li>• Do NWS personnel perform construction, industrial or maintenance activities that could result in discharge of contaminated storm water? (7.7.2)</li> <li>• Are facility/work site employees prohibited from automobile maintenance activities in facility/work site parking lots? (7.7.3)</li> </ul>	—	—	—
6. Does the NWS facility or work site affect an area designated as “Wetlands”? (7.8) <ul style="list-style-type: none"> <li>• If facility or work site could affect wetlands designated areas, did the Program Coordinator contact NWSH environmental and safety staff for determination of processing Section 404 permit?</li> </ul>	—	—	—

## SECTION 7 - WATER DISCHARGE AND WETLANDS

### 7.1 Purpose and Scope

Because of its potential to carry and spread contamination throughout the environment, the discharge of wastewater used for cooling, cleaning, or sanitary purposes is regulated under a program created by the Environmental Protection Agency (EPA) called the National Pollutant Discharge Elimination System (NPDES).

Whether the wastewater flows into a sewer, septic system or is directly discharged into a body of receiving water, it may be subject to some level of regulation depending on a number of factors.

This section is designed to provide NWS employees guidance to ensure compliance with the provisions of the NPDES Program.

The section applies to all NWS facilities and work sites that discharge water directly to the waters of the U.S., to a Publicly Owned Treatment Works or to a septic system. It also applies to all NWS facilities that discharge collected precipitation to a storm water drainage system (i.e. use storm drains).

### 7.2 Definitions

<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Point Source</b>	Any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged.
<b>Pollutants</b>	Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials [except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et. seq.)], heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharged into water.
<b>Publicly-Owned Treatment Works</b>	The local sewage treatment plant.
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in

Charge (OIC).

## **Wetlands**

Generally, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (Cowardin, December 1979). Wetlands vary widely because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance.

For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

## **7.3 Acronyms Employed in This Section**

ASOS	Automated Surface Observing System
BMP	Best Management Practice
CWA	Clean Water Act
EPA	Environmental Protection Agency
MS4	Municipal Separate Storm Sewer System
NASA	National Aeronautical and Space Administration
NDBC	National Data Buoy Center
SECO	NOAA Safety and Environmental Compliance
NPDES	National Pollutant Discharge Elimination System
NOI	Notice of Intent
NWSH	National Weather Service Headquarters
POTW	Publicly Owned Treatment Works
TRE	Toxicity Reduction Evaluation
WQA	Water Quality Act

## **7.4 Regulatory Requirements**

### **7.4.1 Federal Program**

Under the Clean Water Act of 1972, which was amended in 1977 and 1982, and again by the WQA in 1987 and 1989, the EPA has created a regulatory program called NPDES. Using this program, the EPA created a permit system for controlling the discharge of water back to the environment.

### **7.4.2 State Program**

Most of the States have EPA-authorized programs to manage the NPDES within the State. NWS facilities and work sites will need to check with the NWS Regional/Operating Unit Environmental/Safety Coordinator or NWSH Environmental and Safety staff to determine State requirements.

## 7.5 Point Source Discharges

Within the NPDES Program, any point source that discharges pollutants to the “waters of the United States” is required to obtain a permit for that discharge. Permits granted under the program provide two levels of control: technology-based limits (which are based on the ability of dischargers in the same industrial category to treat wastewater) and water quality-based limits (which are used if the technology-based limits are not sufficient to protect a body of water). Understanding the meaning of the terms “point source,” “pollutant” and “Waters of the United States” is the key to the program.

The term **point source** is defined as “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged.” In other words, a point source is a place where a representative sample of the water can be taken before it mixes with the receiving water.

The definition of the term **pollutant** includes solid waste, garbage, chemical wastes, heat, rock, sand, and even cellar dirt. The term is purposely broad in scope to include anything that is added or mixed into the water.

The term “**Waters of the United States**” includes:

- a. Navigable waters
- b. Tributaries of navigable waters
- c. Interstate waters, the oceans out to 200-miles
- d. Wetlands
- e. Intrastate lakes, rivers, and streams that are:
  - 1) Used by interstate travelers for recreation and other purposes
  - 2) Sources of fish or shellfish sold in interstate commerce or
  - 3) Used for industrial purposes by agencies engaged in interstate commerce

### 7.5.1 Possible NWS Point Sources

Within an NWS facility or work site, there may be several “point sources” that discharge “pollutants,” hence the need to review how they are regulated under the NPDES Program.

Some typical point source discharges at NWS facilities include:

- a. Treated sanitary wastes
- b. Roof drains
- c. Drains from secondary containment areas
- d. Sump pump discharges
- e. Storm and parking lot drainage systems
- f. Boiler blowdown water

While discharges of sewage, industrial wastes and other pollutants into a POTW (i.e. local sewage treatment plant) is excluded from regulation by the EPA and most States, these discharges are normally regulated by the POTW which is, in-turn, regulated by the EPA or State under the terms of its permit to discharge to the “waters of the U.S.” Depending on the type of process the POTW employs, permission or a permit from the POTW may be required for the discharge of materials like the propylene glycol-water mixtures from the rain gauge, clean-up solvents or flushes of spills of corrosive materials.

### **7.5.2 NPDES Discharge Permits for NWS Facilities**

Most NWS facilities and work sites do not require permits under the NPDES Program since they only discharge sewage to a local POTW. A permit is also not required for NWS facilities that use a septic system approved by a local authority (i.e., the Health Department) and only discharge sewage to this system. If a facility discharges wastewater or has a treatment system and discharges the treated sewage directly to a stream, lake, river, pond or other collection of water, the NWS Regional/Operating Unit Environmental/Safety Coordinator and the NWSH Environmental and Safety staff must be contacted to determine if a permit is required and if so, advice on how to prepare the permit application. NWS facilities/work sites with a NPDES Permit must carefully observe all restrictions and/or conditions imposed by the permit.

### **7.5.3 NPDES Permits**

A permit is typically a license for a facility to discharge a specified amount of a pollutant into receiving water under certain conditions; however, permits may also authorize a POTW to process, incinerate, landfill, or beneficially use sewage sludge. The two basic types of NPDES permits issued are individual and general permits.

An *individual permit* is a permit specifically tailored to an individual facility. Once a facility submits the appropriate application(s), the permitting authority develops a permit for that particular facility based on the information contained in the permit application (e.g., type of activity, nature of discharge, receiving water quality). The authority issues the permit to the facility for a specific period (not to exceed five years) with a requirement that the facility re-apply prior to the expiration date.

A *general permit* covers multiple facilities within a specific category. According to the NPDES regulations in 40 CFR Part 122.28, general permits may be written to cover categories of point sources having common elements, such as:

- a. Storm water point sources;
- b. Facilities that involve the same or substantially similar types of operations;
- c. Facilities that discharge the same types of wastes or engage in the same types of sludge use or disposal practices;
- d. Facilities that require the same effluent limits, operating conditions, or standards for sewage sludge use or disposal; and
- e. Facilities that require the same or similar monitoring.

General permits may be issued to dischargers within a specific geographical area such as city, county, or State political boundaries; designated planning areas; sewer districts or sewer

authorities; State highway systems; standard metropolitan statistical areas; or urbanized areas. NWS facilities or work sites may be part of a general permit that is granted to an airport, university campus, or other multiple agency sites or facility where the NWS facility or work site is one of many operations on the site. If a general permit is granted to a site on which a NWS facility or work site is located, the conditions of the permit are binding on all organizations involved - including the NWS.

### Major Components of a Permit

All NPDES permits, at a minimum, consist of five general sections:

- a. *Cover Page* -Typically contains the name and location of the permittee, a statement authorizing the discharge, and the specific locations for which a discharge is authorized.
- b. *Effluent Limits* -The primary mechanism for controlling discharges of pollutants to receiving waters. Permit writers spend the majority of their time deriving appropriate effluent limits based on applicable technology-based and water quality-based standards.
- c. *Monitoring and Reporting Requirements* - Used to characterize waste streams and receiving waters, evaluate wastewater treatment efficiency, and determine compliance with permit conditions.
- d. *Special Conditions* - Conditions developed to supplement effluent limit guidelines. Examples include: BMPs, additional monitoring activities, ambient stream surveys, and TRE.
- e. *Standard Conditions* - Pre-established conditions that apply to all NPDES permits and delineate the legal, administrative, and procedural requirements of the permit.

Every permit contains these five basic sections, but the contents of sections will vary depending on whether the permit is issued to a municipal or industrial facility and whether the permit will be issued to an individual facility or to multiple dischargers (i.e., a general permit).

### Overview of the Permitting Process

While the limits and conditions in an individual NPDES permit are unique to the permittee, the process used to develop the limits and conditions and then issue the permit generally follows a common set of steps. The order of these steps may vary depending on whether the permit is an individual or general permit. A general description of the permitting process for individual and general permits is presented below.

#### a. Individual Permits

As specified in 40 CFR Part 124, the major steps for a permit writer to develop and issue an individual NPDES permit are:

- 1) Receive application from permittee
- 2) Review application for completeness and accuracy
- 3) Request additional information as necessary
- 4) Develop technology-based effluent limits using application data and other sources

- 5) Develop water quality-based effluent limits using application data and other sources
- 6) Compare water quality-based effluent limits with technology-based effluent limits and choose the more stringent of the two as the effluent limits for the permit
- 7) Develop monitoring requirements for each pollutant
- 8) Develop special conditions
- 9) Develop standard conditions
- 10) Consider variances and other applicable regulations
- 11) Prepare the fact sheet, summarizing the principal facts and the significant factual legal, methodological and policy questions considered in preparing the draft permit including public notice of the draft permit, and other supporting documentation
- 12) Complete the review and issuance process
- 13) Issue the final permit
- 14) Ensure permit requirements are implemented

The NPDES permitting process begins when the operator of the facility (permittee) submits an application. After receiving the application and making a decision to proceed with the permit, the permit writer reviews the application for completeness and accuracy. The permit writer then begins to develop the draft permit and the justification for the permit conditions.

The first major step in the development process is deriving technology-based effluent limits.

Following the development of effluent limits, the permit writer develops appropriate monitoring and reporting conditions, facility specific special conditions, and includes standard conditions that are the same for all permits.

After the draft permit is complete, the permitting authority provides an opportunity for public participation in the permit process. A public notice announces the permit and interested parties may submit comments regarding the draft permit. Based on the comments, the permitting authority then develops the final permit, with careful attention to documenting the process and decisions for the administrative record, and issues the final permit to the facility.

b. General Permits

The process for developing and issuing general NPDES permits is similar to the process for individual permits. However, there are certain differences in the order of events. The permitting authority first identifies the need for a general permit by collecting data demonstrating that a group, or category, of dischargers has similarities that warrant a general permit. In deciding whether to develop a general permit, permitting authorities consider the following:

- 1) Are there a large number of facilities to be covered?
- 2) Do the facilities have similar production processes or activities?

- 3) Do the facilities generate similar pollutants?
- 4) Do only a small percentage of the facilities have the potential for violations of water quality standards?

The remaining steps of the permit process are the same as for individual permits. The permitting authority develops the draft permit and fact sheet, issues a public notice, addresses public comments, documents the issues for the administrative record, and issues the final permit. After the general permit has been issued, facilities that wish to be covered under the general permit generally submit a Notice of Intent (NOI) to the permitting authority. The permitting authority may then either request additional information describing the facility, notify the facility that it is covered by the general permit, or require the facility to apply for an individual permit.

c. Who grants a NPDES to a NWS facility/work site?

EPA is authorized under the CWA to directly implement the NPDES Program. The EPA, however, may authorize States, Territories, or Tribes to implement all or parts of the national program. As a result, most of the States, Territories, or Tribes have applied for authorization to implement the base program (i.e., issue individual NPDES permits for industrial and municipal sources) and additional parts of the national program including:

- 1) Permitting of Federal facilities
- 2) Administering the National Pretreatment Program; and/or
- 3) Administering the Municipal Sewage Sludge Program

If the State, Territory, or Tribe has been granted only partial authority (e.g., only the base NPDES permits program), the EPA will implement the other program activities. For example, if a State has an approved NPDES Program, but has not received EPA approval for the State's Municipal Sewage Sludge Program, the EPA Regional Office would be responsible for ensuring conditions to implement the Standards for the Use or Disposal of Sewage Sludge (40 CFR Part 503) were included in NPDES permits issued to POTWs in that State. The EPA may issue a separate NPDES permit with the applicable sewage sludge standards and requirements, or may negotiate with the State on joint issuance of NPDES permits. The same process also applies where a State, Territory, or Tribe has not received approval for permitting Federal facilities. In this case, the EPA would grant the NPDES Permit to a NWS facility.

In general, once a State, Territory, or Tribe is authorized to issue permits or administer a part of the program, EPA no longer conducts these activities. However, EPA must have an opportunity to review each permit issued by the State, Territory, or Tribe and may formally object to elements that conflict with federal requirements. If the permitting agency does not address the objection points, EPA will issue the permit directly. Once a permit is issued through a government agency, it is enforceable by the approved State, Territorial, Tribal and Federal agencies (including EPA) with legal authority to implement and enforce the permit, and is also enforceable by private citizens (in Federal court).

If the State, Territory, or Tribe does not have approval for administering the NPDES

program, EPA will operate the NPDES program. When EPA issues the permit, Section 401(a) of the CWA requires that EPA obtain certification from the State where the discharge will occur to ensure that the discharge will be in compliance with effluent limits, the State's water quality standards, and "any other appropriate requirement of State law." Section 401(d) requires the State to list in the certification the conditions that must be included in the permit to implement the certification.

#### 7.5.4 POTW Permits for NWS Facilities

##### a. Industrial Wastewater Treatment/Pretreatment Permits

For certain industrial processes, the EPA requires the wastewater be pretreated prior to discharge to a POTW. If a NWS facility or work sites uses any of the processes regulated by the EPA as listed in 40 CFR Chapter I, Subchapter N (Parts 400-471), the facility will be required to pre-treat its wastewater and monitor the effluent to ensure it meets the effluent limitations for the regulated point source category.

##### b. Special POTW Permits/Permission for NWS Facilities

Rarely, NWS facilities that discharge to a POTW are required by the POTW to apply for, obtain, and maintain a special permit to discharge to the POTW. Often these are simply a letter of acknowledgement in which the POTW grants permission to discharge a special wastewater if the NWS facility or work site adheres to specific conditions. These documents are normally only required if an operation discharges or could discharge a pollutant that could cause an upset to the treatment process used by the POTW or otherwise cause a problem for the POTW adhering to the conditions required by its NPDES permit.

Some NWS facilities, which are located in areas where groundwater is a primary source of drinking water, are required to obtain a POTW permit for their discharge into a lift station (sewage pump) which in turn discharges into the POTW sewer pipes. The permit is designed to record the flow of wastewater into the system. If a significant decrease in flow is detected, an investigation is initiated to ensure a leak has not occurred which could contaminate the groundwater.

Most NWS facilities and work sites using a POTW will not be required to obtain a special POTW permit. However, this is a decision made by the local POTW based on the processing employed to treat the sewage.

#### 7.6 NWS Discharges to Septic Systems

Some NWS facilities and work sites use on-site septic systems to treat the sewage generated on-site. These systems are normally designed to biologically treat the sewage using an underground concrete settling tank and a leach field. The tank separates solids from liquids, allows the solids to biologically degrade into water-soluble products that then flow by gravity into the leach field with the liquid wastes, and then is allowed to seep into the ground for further biological degradation and filtration. To assist facilities that use a septic system, the EPA has produced the manual "Decentralized On-site Wastewater Treatment Systems" which is available to be viewed or downloaded from <http://water.epa.gov/infrastructure/septic/manuals.cfm>

### 7.6.1 Permits

Normally, a septic system does not require a “permit” to operate. They do, however, usually require an approval from a local health agency (e.g. the Health Department) before installation. This approval is normally based on both the engineering design of the system and the ability of the soil to handle the predicted flow of treated water from the system. To determine the porosity of the soil, a “percolation test” is typically required in areas where the soils have high clay content which would reduce or prevent water flow.

Some NWS facilities use a biological treatment system (similar to a septic tank) to treat the sewage and then use the treated water for irrigation. These facilities are required to obtain a NPDES permit for the discharge of the treated water.

### 7.6.2 Maintenance

Because septic systems rely on a biological process and porous soil, care must be taken to ensure the system does not suffer an “upset” in which the bacteria that make the system work are killed. As a result, all NWS employees using the system must be informed that:

- a. The facility/work site uses a septic system
- b. Nothing other than food scraps and human wastes are allowed to be flushed into the system.

## 7.7 NWS Storm Water Permits

To address the occasional release of pollutants into the environment due to precipitation, the EPA has expanded the NPDES permit program to include the release of harmful pollutants to the environment via storm water.

The EPA recognized that roofs can be contaminated with particles that settle out of the air or drop from an exhaust vent and parking lots are often the site of numerous oil, antifreeze, brake fluid or fuel leaks. In addition, construction activity can remove vegetation that allows the soil to be washed off. When a significant precipitation event (rain) occurs, contamination can be quickly washed off into the storm water system that eventually will lead back to the “waters of the U.S.”

Storm water systems are normally uncontrolled drainage systems designed to remove rain or melted snow off roofs and parking lot surfaces. These systems are designed to drain water off quickly but are untreated and as a result, contamination from these surfaces can degrade water quality.

### 7.7.1 EPA Storm Water Program

The EPA Storm Water Program was implemented in two phases. Phase I of the program regulated large municipal storm water systems, industrial activities, and construction activities involving more than 5 acres. As a result, only large, industrial-like facilities such as the NDBC faced possible regulation under the Storm Water Permit Program. Under Phase I, the NASA who is the “landlord” for the NDBC site, was granted a storm water permit. As a result, the NDBC must follow the NASA rules for the management of the storm water produced on-site.

### 7.7.2 Phase II

Phase II of the Federal Storm Water Program, effective March 2003, requires the NPDES permitting of MS4s. MS4s are defined to include municipalities and local sewer districts, State and Federal Departments of Transportation, universities, hospitals, and even Federal sites such as military bases and correctional facilities. Because the definition of a small MS4 excludes “separate storm sewers in very discrete areas such as individual buildings,” most NWS facilities and work sites will not require a stormwater permit. Additional information on stormwater discharges from municipal sources can be found at: <https://www.epa.gov/npdes/stormwater-discharges-municipal-sources>

Large NWS facilities or those located at a larger site such as a university campus will be regulated, however, and will be required to manage their stormwater as required by the host.

While the Phase I rules required a stormwater permit for operators of construction activities that disturb five or more acres of land, the Phase II rules changed this lower limit to one acre.

As a result, if a construction project involving one or more acres is planned, a stormwater permit to control run-off will be required and thus must be part of the early planning process. Lack of this permit can cause a project shutdown until it is obtained which could cause a significant delay.

The Stormwater Program is usually a State-managed effort that allows the States great latitude in which activities it chooses to regulate. Additional information on NPDES Stormwater Program is available on EPA web site: <https://www.epa.gov/npdes/npdes-stormwater-program>

### 7.7.3 NWS Facility/Work Site Program

In addition to ensuring the Storm Water Phase II rules are followed for construction activity, Station Managers must enact and enforce local policies that prohibit activities that can create violations of these rules. For example, employees should be prohibited from changing the oil or antifreeze in both government and personal vehicles in the facility/work site parking lot. Inadvertent spills of these materials may result in a violation of the storm water permit and a subsequent enforcement action.

## 7.8 Wetlands

Section 404 of the CWA establishes a program to regulate the discharge of materials into the waters of the United States, including **wetlands**. Section 404 requires a permit before materials may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g. certain farming and forestry activities).

The unusual fact about wetlands is that most of the year some of these designated areas may not have water. One of the most important aspects of this land is for the migrating bird population and endangered species. Any activities which could degrade this land must have a permit review process. Since even minor activities could be a problem for endangered species, all applications will be reviewed by the Corps of Engineers and the Environmental Protection Agency and could involve the Department of Interior (Fish and Wildlife).

**Note:** If NWS facilities are planning activities that could affect the wetland such as adding a new ASOS or NOAA weather radio system they should contact the NWSH Environmental and Safety staff.

## **7.9 Responsibilities**

### **7.9.1 NWS Headquarters**

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Units, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

### **7.9.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at Regional Headquarters or Operating Unit facilities to ensure compliance with requirements of this section.

### **7.9.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will ensure that applicable procedures are implemented at NWS field offices for managing and monitoring, if necessary, all discharges of water and storm water from the facility.
- d. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### **7.9.4 Environmental or Environmental/Safety Focal Point or Designated Person**

Will ensure that any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section

### **7.9.5 Employees**

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section
- b. Report all violations of the requirements of this section to their supervisor or Safety Focal Point

## 7.10 References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

### 7.10.1 U.S. Environmental Protection Agency

“Water Permitting 101,” <a href="http://www.epa.gov/npdespub/pubs/101page.pdf">http://www.epa.gov/npdespub/pubs/101page.pdf</a>		
40 CFR:	122.28	General permits
	124	Procedures for Decision making
	Subchapter N	Effluent Guidelines and Standards
	503	Standards for the Use or Disposal of Sewage Sludge
	230	Guidelines for Specification of Disposal Sites for Dredged or Fill Material

## SECTION 8 - AIR

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## Synopsis

**NOTE:** This section is promulgated to ensure National Weather Service (NWS) facilities and work sites comply with the State Implementation Plans with regard to the discharge of air pollutants by the operation of the facility or work site.

The section applies to all NWS facilities and work sites that release pollutants to the air through stationary or mobile sources.

### Initial Implementation Requirements:

- Appoint an Air Program Coordinator
- Compare Site/Facility Operations with the Requirements of this Section
  - Determine if a State Air Emission Permit is required for the diesel emergency generator (8.5.1)
  - If so, determine if the permit has been obtained and if it is current
  - Ensure requirements of the permit are enforced at the facility/work site
  - Ensure CFC equipment repair is performed by Environmental Protection Agency (EPA) certified technicians (8.5.4)
  - Perform radon testing if the facility or work site is located in a Zone 1 area on the EPA map of radon zones (8.6.1)
  - If radon is detected at a level exceeding 4 pCi/L, perform radon reduction sealing (8.6.2)
  - Ensure generator and boiler usage meets National Emission Standards Hazardous Air Pollutants (NESHAP) requirements (8.7.1).
  - Ensure new stationary generators meet New Source Performance Standards (NSPS) for Compression Ignition and Spark Ignition generators (8.7.1)
  - Ensure permits are obtained for any renovation or demolition work that involves asbestos containing material (8.7.3).

### Recurring and Annual Task Requirements:

- Ensure Generator is Properly Maintained
- If Radon Reduction Program is Enacted, Periodically Test to Determine Effectiveness

Air Checklist	YES	NO	N/A
1. Has an Air Program Coordinator been appointed? (8.5.1)	—	—	—
2. Does the facility or work site have an emergency diesel-powered generator? (8.5.1)	—	—	—
3. Does the State require the generator to have a Clean Air Permit? (8.5.1)	—	—	—
4. If so, has the facility or work site obtained the necessary permit? (8.5.1)	—	—	—
• Is it accessible?	—	—	—
• Has the generator been maintained as required by the permit?	—	—	—
5. Do NWS employees repair CFC-containing equipment?	—	—	—
• If yes, are these employees certified by the EPA? (8.5.3)	—	—	—
6. Is the facility or work site located in a Zone 1 area on the EPA map of radon zones? (8.6.1)	—	—	—
• If yes, has a radon test been performed? (8.6.1)	—	—	—
7. Does the facility meet requirements for existing and new stationary engines (emergency generators), per EPA NESHAP and NSPS regulations? (8.7.1)?	—	—	—
8. Does the facility operate a boiler?	—	—	—
• If yes, has a tune-up been performed and documented in the last 2 years? (8.7.2)	—	—	—

## SECTION 8 - AIR

### 8.1 Purpose and Scope

This section has been promulgated to ensure that in performing their mission, NWS facilities and work sites do not degrade the air in the area surrounding the site and, as a result, the section applies to all NWS facilities and work sites.

### 8.2 Definitions

<b>Area Source</b>	Area source consists of smaller-size facilities that release lesser quantities of toxic pollutants into the air. Area sources are defined as sources that emit less than 10 tons per year of a single air toxic, or less than 25 tons per year of a combination of air toxics.
<b>Hazardous Air Pollutants</b>	List of chemicals that EPA has identified as airborne containments that are known to be hazardous to human health. There are currently 188 listed chemicals. (See Appendix B of this manual).
<b>Major Source</b>	Major source emits 10 tons per year of any of the listed toxic air pollutants, or 25 tons per year of a mixture of air toxics.
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Picocurie</b>	A unit of measure used to describe certain types of nuclear radiation. A curie is the amount of any radionuclide that undergoes exactly $3.7 \times 10^{10}$ radioactive decays per second. A picocurie is one-trillionth ( $10^{12}$ ) of a curie, or 0.037 radioactive decays per second.
<b>Picocurie per liter (pCi/L)</b>	A common unit of measurement of the concentration of radioactivity in a fluid (liquid or gas). A picocurie per liter corresponds to 0.037 radioactive disintegrations per second in every liter of fluid.
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### 8.3 Acronyms Employed in This Section

ACM	Asbestos Containing Materials
ARI	Air Conditioning and Refrigeration Institute
CFCs	Chlorofluorohydrocarbons

EPA	Environmental Protection Agency
HAP	Hazardous Air Pollutants
SECO	NOAA Safety and Environmental Compliance Office
NWS	National Weather Service
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NWSH	National Weather Service Headquarters
pCi/L	Picocuries per liter
PTE	Potential to Emit
SIP	State Implementation Plan
UL	Underwriters Laboratories
VOC	Volatile Organic Compounds

## 8.4 Regulatory Requirements

### 8.4.1 Federal/State – Clean Air Act Amendment of 1970

The Clean Air Act, Section 112 identified the list of hazardous air pollutants. One of the first was asbestos in 1971 and since then 188 chemicals have been identified.

### 8.4.2 Federal/State - Clean Air Act of 1990

The Clean Air Act of 1990 created a program in which the EPA established Federal standards for air quality but allows the States to implement them under an EPA-approved State Implementation Plan (SIP). If a SIP is determined to be unacceptable to the EPA, the EPA can enforce the air program in that State.

## 8.5 The Clean Air Program

While the Federal clean air program is a very complex regulatory scheme, it relies on several key areas to ensure air quality. These areas include:

- a. Permits to control sources of air pollution
- b. Establishment of air standards along with determination of how well a geographical area meets those standards.

### 8.5.1 Permits

Anything that releases pollutants into the air can be considered a “source.” Some typical National Weather Service sources of air pollutants include the exhaust of the diesel emergency generator; exhausts of cars, vans, and trucks; gasoline-powered machinery or tools; and the facility heating and ventilation equipment.

The important concept is the ability of a facility to have the potential to emit (PTE) 100 tons of emissions or 10 tons of a single Hazardous Air Pollutant (HAP) or 25 tons of total HAPs.

The EPA/States look at worst-case operations to determine a potential to emit HAPs. They would consider any facility and its source to operate 24 hours a day, 7 days per week for 52 weeks a year. For instance, fuel usage of a WFO diesel generator is 6 gallons per hour.

7.22 lbs per gallon of diesel X 6 gallons = 43.32 pounds/hour X 24 hours = 1039.68 pounds per day X 7 days = 7,277.76 pounds per week X 52 weeks = 378,443.52 pounds or 189.22 tons of VOC per year.

It does not matter that the generator is not used this much, just that it has the potential to emit over 100 tons and must be reported as a possible source. A local or state government having jurisdiction over the facility will make determination if the subject generator will need a permit.

Sources that remain in one location (e.g. the emergency generator) are deemed stationary sources while those that move around are called mobile sources (i.e. cars and vans).

The EPA has delegated each state the authority to operate this program and in some cases local cities that have potential to be declared non-attainment have authority from the state to operate this program.

If a community is not in attainment, they may have more stringent requirements than that under the Clean Air Act.

The Environmental or Environmental/Safety Focal Point or Regional/Operating Unit Environmental Coordinator for a NWS facility with generators should check with the State to find out what their reporting requirements are related to generators and if the State has delegated this activity to the city they are located.

To prevent air quality degradation, each State, under its SIP, will grant a permit to the larger sources of air pollutants. The permit will typically include detailed information about what pollutants can be released, how much and even when. It may also include a series of requirements for the permit holder that must be achieved over a pre-set time, which are designed to eventually reduce or eliminate the emissions from the source. The permit can also include requirements for periodic monitoring of the emissions from the source to ensure the limitations set by the permit are not exceeded.

#### NWS Application

NWS facilities and work sites that employ a back-up emergency diesel-fueled generator or boiler may be required to obtain a State or local government-granted air emission permit.

To ensure compliance, the Station Manager will designate the NWS facility or work site Environmental Focal Point as the Air Program Coordinator. This individual must contact the NWS Regional/Operating Unit Environmental Coordinator and/or the NWSH Environmental and Safety staff to determine:

- Is a State permit required for the emergency generator or boiler?
- If so, has a State permit been obtained and is it current?
- If so, where is it?
- What does it require?

Based on the results of this investigation, the air compliance program for the facility or work site must be reviewed and modified if necessary to comply with the permit conditions.

### **8.5.2 Attainment of Air Standards**

As part of its role in the National Clean Air Program, the EPA has set national standards for air quality and then compared the actual air quality in various geographical areas against these standards. Note that because the air travels across State lines, some of the geographical areas encompass more than one State. Those areas that did not meet the Federal air standards are deemed “non-attainment areas” and were divided into five classes ranging from “marginal” (easy to clean-up) to extreme (very difficult to clean-up).

The EPA then established a timetable for each area to achieve compliance and usually included a series of intermediate goals that must be achieved to demonstrate progress.

To meet these standards, some State and local governments have had to search for new ways to reduce air contaminants. Some have banned or severely limited the use of common products, encouraged the reformulation of paints and inks and/or required a preset percentage of new automobiles sold in the State be powered electrically.

In some areas, wintertime air pollution from wood smoke from wood stoves has become so bad that local governments have had to curtail the use of wood stoves and fireplaces under certain weather and pollution conditions.

Efforts to clean-up the particulates (dust and soot) and other hazardous air pollutants produced by the burning of wood has led to the development of newer designs that emit lower levels of pollutants.

#### NWS Application

NWS facilities and work sites will be regulated by their State and local rules. This will include a variety of efforts including using alternative materials and equipment to modification of fueling techniques to encouraging car pooling by employees to assist the area in meeting the national air standards. Remote work sites heated by the burning of wood may require newer models of wood stoves be installed. Additionally, in accordance with Executive Order 13693, the NWS will consider the acquisition of fuel efficient and/or alternative fueled vehicles.

### **8.5.3 Use/Repair of CFC Equipment**

Under the Clean Air Act, anyone who maintains, services or repairs refrigerators, freezers, air conditioners, heat pumps, dehumidifiers, water coolers and other appliances that use refrigerant must be certified by the EPA. Depending on the equipment serviced, the EPA has created four categories Type I, Type II, Type III and Universal - Technician. Until certified, a worker is deemed an apprentice and as such, is only allowed to work on this equipment “when closely and continually supervised by a certified technician.”

#### NWS Application

No NWS employee should attempt to repair or service any equipment containing a CFC unless certified by the EPA for this work. Contractors employed by the NWS must be able to provide documentation or certification that their technicians are EPA-certified.

#### **8.5.4 Equipment containing CFCs and other ozone-depleting chemicals**

Prior to the enactment of the Clean Air Act of 1990, a number of products were sold that contained CFCs and other ozone-depleting chemicals. These items range from the spray circuit board cleaner that uses Freon or a novelty item like a glass bird that is filled with carbon tetrachloride that “sips” from a glass of water, to an old air conditioner. As they are identified, these items must be either returned for recycling or sent for proper disposal.

#### **8.5.5 CFC Recordkeeping Requirements**

a. Leaking equipment.

NWS facilities that have appliances, including comfort cooling, containing more than 50 pounds of refrigerant must have all leaks repaired if the equipment leak rate exceeds 15% in a 12 month period. Repairs must bring the annual leak rate to below 15%.

Nearly every air conditioning system meets the 50 pound threshold. Due to this change each facility should establish a threshold of 7.5 pounds recharge of a system. If a system requires more charge personnel responsible for equipment should determine if there is a leak in the system. Repair/maintenance of the system should be scheduled as soon as possible. The repairs should be coordinated with standard maintenance contacts and procedures. Facilities must repair leaks within 30 days of discovery. Exemptions to the above 30 day limit for repairs apply if, within 30 days of the discovery of the leak, the facility develops a dated one-year retrofit or replacement plan for the leaking appliance. This plan must be kept at the site where an appliance is located, must be dated and implemented within one year. The Regional Facility Manager should be contacted to assist with the plan.

b. CFC Disposal.

Refrigerant must be evacuated or removed prior to appliance disposal. The refrigerant must be transferred to a certified recovery or recycling machine. Equipment that is typically dismantled on-site before disposal (such as central air conditioners, chillers, and industrial process refrigeration) must have its refrigerant recovered in accordance with the same requirements that apply for servicing. That is, the work must be done by certified technicians, using certified recycling/recovery equipment, and it must achieve specified evacuation levels. Minimum evacuation levels must be attained prior to disposal of the appliance (see Table 1). Certified technicians must verify that the applicable level of evacuation has been reached in the appliance before it is opened.

c. Reporting and recordkeeping.

Service records for all equipment or appliances containing 50 or more pounds of refrigerant must document the date, type of service, and the quantity of refrigerant purchased and added, regardless of whether service is performed by a vendor or by NWS certified technicians. Although this record keeping requirement only applies to appliances with 50 or more pounds of refrigerant, it is recommended that the records are kept for appliances of all refrigerant capacities.

If the facility has equipment or appliances that are serviced by NWS certified

technicians, the Regional Facility Manager must certify that certified recycling or recovery equipment was acquired and that the facility is complying with EPA regulations. The EPA requires that an EPA Refrigerant Recovery or Recycling Device Acquisition Certification Form that must be completed and submitted to the EPA. A copy should be kept on file. Once the form is submitted, a new form is not needed each time recycling/recovery equipment is added to the facility inventory. If recycling or recovery equipment manufactured before November 15, 1993 is still in use, records should be kept at the appropriate location to ensure that it is capable of meeting minimum evacuation levels.

Maintain copies of technician certification cards at your facility.

Obtain from the service vendor:

- 1) A copy of the EPA Refrigerant Recovery or Recycling Device Acquisition Certification Form filed for their recovery/recycling equipment;
- 2) A copy of recycling or recovery equipment design certification (equipment must be tested and certified by the Air Conditioning and Refrigeration Institute (ARI) or Underwriters Laboratories (UL); and
- 3) Written assurances that only EPA-certified equipment and technicians will be used for work at your facility.
- 4) A copy of the certification statement that reclaimer sent certification to the EPA.

**NOTE:** If the refrigerant is sent off site for reclamation, reclaimers are required to certify to the EPA that they meet certain standards for refrigerant purity, leakage, waste disposal, etc.

- 5) Maintain records of refrigerant quantity sent offsite for reclamation, and the name and address of the reclaimer.
  - 6) All records must be retained for a minimum of three years.
- d. Release Reporting Requirements.

The intentional or unintentional release of ozone depleting chemical refrigerants to the atmosphere is prohibited and is subject to immediate release reporting requirements under state and Federal law. This prohibition applies during maintenance, repair, service, disposal or other activities.

**NOTE:** If there is a release of ozone depleting refrigerant, IMMEDIATELY NOTIFY THE NWSH ENVIRONMENTAL AND SAFETY STAFF (301-427-9763). Intentional or knowing venting of ozone depleting chemical substitutes into the atmosphere from refrigeration appliances is prohibited  
([https://www.epa.gov/sites/production/files/2015-08/documents/section\\_608\\_of\\_the\\_clean\\_air\\_act.pdf](https://www.epa.gov/sites/production/files/2015-08/documents/section_608_of_the_clean_air_act.pdf)).

Diminished amounts of refrigerants released during good faith attempts to recover, recycle, or safely dispose of refrigerants during servicing, maintenance, repair, and disposal activities conducted in compliance with Federal laws and regulations are not

subject to release reporting.

## 8.6 Radon

Radon is a radioactive gas that is produced from the natural decay of uranium that is found in nearly all soils. It has been shown to cause lung cancer. It typically moves up through the soil and releases into the air where it is normally dissipated or diluted to harmless levels.

When a building is erected, cracks and other holes in the foundation allow the radon gas to enter the structure. The structure then traps the gas allowing the concentration to build. While radon is more of a homeowner problem, it has created difficulties for at least one NWS facility and hence has been included in this section.

### 8.6.1 Radon Zones

To help identify areas with high radon potential, the EPA has developed a map of radon zones. The map can be used to identify areas that have a higher probability of radon occurring. The map is available online at <https://www.epa.gov/sites/production/files/2015-07/documents/zonemapcolor.pdf>.

Using this map, the Environmental Focal Point or Air Program Coordinator can estimate the potential need to perform radon sampling at a NWS facility or work site. Facilities in a Zone 1 Area [average indoor radon screening level greater than 4 pCi/L (picocuries per liter of air sampled)] or facilities in areas of the world not included on the map should perform a radon test to determine if a problem exists at the facility.

The EPA recommends remedial action is scheduled according to the following priority scheme:

Table 1. Remedial Action	
Radon Levels (pCi/L)	Generator
0 to 4	No action required
4 to 20	Mitigation within 5 yr.
20 to 200	Mitigation within 6 mo.
>200	Mitigation within 3 wk.

The purpose of the sampling is to determine health risk (lung cancer) from employees breathing radon gas. The appropriate sampling protocol should be the collection of one sample per 2000 square feet of occupied space. The location in the office to place dosimeters will be at height of 6 foot or the breathing zone for employees. All samples should be collected with short term (less than a year) dosimeters. The objective is to find out what the exposure of radon gas to employees while at work. Grab samples or immediate sampling will only indicate what is happening at the moment in time and will probably not represent an accurate exposure level over a long period.

## 8.6.2 Remedial Action

Should a radon level in excess of 4pCi/L be detected in a NWS facility or work sites, a variety of methods can be used to reduce the radon level. Just sealing cracks in floors and walls may help.

In other cases, a system called “sub slab depression” that uses pipes and fans may be required.

The EPA publication, “Consumer’s Guide to Radon Reduction,” available from the State Radon Office or online at <https://www.epa.gov/radon/consumers-guide-radon-reduction-how-fix-your-home> offers several suggestions and techniques. Although aimed at the homeowner, the information provided can be used by NWS facilities and work sites. Once remediation work is complete, the site must be retested on an annual basis to ensure the effectiveness of the effort.

## 8.7 National Emissions Standard for Hazardous Air Pollutants (NESHAP) Regulations

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations are a part of the Clean Air Act that govern the output of various air contaminants not covered by the National Ambient Air Quality Standards. The first NESHAP regulation concerned the release of asbestos fibers, particularly during renovation or demolition activities which may have resulted in its disturbance. Currently there are more than 180 different pollutants or groups of pollutants (e.g., radionuclides) subject to NESHAP regulation. NWS facilities are likely to only be subject to a few of these standards based on normal operations.

### 8.7.1 NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)

Stationary Reciprocating Internal Combustion Engines (RICE) are used throughout NWS facilities to ensure continuous operations during power outages. There are two basic types of RICE. Compression ignition (CI) engines are usually powered by diesel fuel and have no spark plug. Spark ignition (SI) engines have a spark plug and are often powered by natural gas.

The EPA has established a NESHAP for stationary RICE that is designed to limit the emissions of toxic air pollutants from these sources. The standard covers both major and area sources and all sizes of engines. The EPA regulates air quality requirements for stationary engines according to:

- Whether the engine is new or existing, and
- Whether the engine is located at an area source or major source and
- Whether the engine is a compression ignition or a spark ignition engine.

Most States have developed SIPs for the regulation of emissions from stationary RICE. These range from being equally as stringent as the EPA requirements to being more stringent. In addition, some States (e.g., California) have further delegated responsibility to develop and enforce air quality plans to localities or districts. Federal facilities are required to comply with all Federal, State and local regulations regarding NESHAPs.

**NOTE:** During installation of generators, appropriate paperwork must be submitted to the permitting authority (i.e., Federal, State or local) to determine if a permit is required to operate the generator. If a permit is required, conditions of that permit must be adhered to. The stationary RICE NESHAP requirements must be met if no permit is otherwise issued.

NWS facilities can research applicable stationary RICE NESHAP permitting requirements in their States and local districts (where applicable) by referring to the EPA Regional map: <https://www.epa.gov/caa-permitting>

**NOTE:** If a Notice of Violation (NOV), imposing civil monetary penalty is issued to an NWS facility by a State or local agency, the site needs to contact Nancy Briscoe at the NOAA Office of General Counsel (nancy.t.briscoe@noaa.gov) for assistance with the resolution of regulatory action and determination of if NWS facility is exempt from civil penalty.

Generators not governed by individual permits must still meet certain purchasing and operational requirements.

a. General Operational Limitations

- 1) Stationary RICE permitted unlimited use for emergencies (e.g., power outage, fire, flood)
- 2) Permitted 100 hours per year for maintenance and testing of equipment
  - a. 50 of the 100 hours may be used for non-emergency situations if no financial arrangement exists
  - b. If generators are run for the purposes of local reliability as part of a financial arrangement with another entity (i.e., the facility is paid for supplying power to the grid, contact NWSH Environmental and Safety staff for additional requirements

b. Requirements for New Generators

**NOTE:** The EPA considers generators greater than 500 horsepower (HP) at a major source new if they were installed after December 19, 2002. All other generators are considered new if they were installed after June 12, 2006. There are requirements for operating both new stationary CI internal combustion engines (i.e., diesel engines) and new stationary SI internal combustion engines (i.e., gasoline and rich burn liquified petroleum gas).

- c. Requirements for New CI Generators (NSPS Part 60 Subpart III) Purchase an engine certified to EPA conformity
- d. Install, configure, operate and maintain according to manufacturer recommendation/requirements
- e. Use ultra-low sulfur diesel fuel
- f. Conduct performance testing if >30 liters/cylinder
- g. If operated differently than manufacturer recommendation/requirements:
  - i. Conduct performance testing
  - ii. Keep a maintenance plan
  - iii. Keep records of maintenance to demonstrate compliance

3) Requirements for New SI Generators (NSPS Part 60 subpart JJJJ)

a. Certified Stationary SI Generators

i. Install, configure, operate and maintain according to manufacturer recommendation/requirements

ii. Maintain records:

1. Record of certification

2. Records of maintenance per manufacturer recommendation

iii. If operated differently than manufacturer recommendation/requirements:

1. Conduct performance testing

a.  $100 \leq HP \leq 500$  – initial test within 1 year

b.  $>500$  HP

i. Initial test

ii. Testing every 8,760 hours or 3 years, whichever is first

2. Keep a maintenance plan

3. Keep records of maintenance to demonstrate compliance

4. Operate consistent with good air pollution control practices

b. Non-Certified Stationary SI Generators

i. Conduct performance testing

1. To be conducted within 10% of peak load

2. Results required within 60 days

3.  $100 \leq HP \leq 500$  – initial test within 1 year

4.  $>500$  HP

a. Initial test

b. Testing every 8,760 hours or 3 years, whichever is first

ii. Keep a maintenance plan

iii. Keep records of maintenance to demonstrate compliance

iv. Operate consistent with good air pollution control practices

c. Requirements for Existing Generators

**NOTE:** The EPA considers generators greater than 500 horsepower (HP) at a major source existing if they were installed on or before December 19, 2002. All other generators are considered new if they were installed on or before June 12, 2006.

- 1) Change oil, oil filter and inspect hoses and belts every 500 hours of operation or annually, whichever comes first
- 2) Inspect air cleaner or spark plugs every 1,000 hours of operation or annually, whichever comes first
- 3) Operate and maintain the generator per manufacturer's instructions or owner-developer maintenance plan
- 4) Minimize time spent idle during startup and engine startup time, not to exceed 30 minutes
- 5) Install a non-resettable hour meter if one is not already installed
- 6) Retain records of hours of operation and maintenance for 5 years
- 7) There are no requirements for initial notification for existing generators

### **8.7.2 NESHAP for Industrial, Commercial and Institutional Area Source Boilers**

A fairly small number of NWS sites utilize boilers for heating. The EPA regulates boilers used at a variety of facilities, including governmental facilities, under a NESHAP. Boilers at NWS residential properties are not subject to this regulation. In addition, boilers that burn gaseous fuels or solid wastes are not within the scope of the boiler NESHAP.

Boilers with heat input capacities of less than 10 million British Thermal Units (BTU) per hour are considered small boilers. Most NWS boiler equipment will meet the definition of a small boiler. Both existing and new small boilers have requirements under this rule:

- a. Requirements for the operation of small boilers
  - 1) Submit an Initial Notification of Applicability to the delegated authority
  - 2) Perform biennial tune-ups
    - a. Inspect, clean and/or replace any burner components as needed
    - b. Adjust the the burner flame pattern to be consistent with manufacturer recommendations
    - c. Inspect and, if necessary, calibrate the system controlling the air-to-fuel ratio
    - d. Optimize total emissions of carbon monoxide consistent with the manufacturer's specification and any nitrogen oxide requirement the unit is subject to
    - e. Measure the carbon monoxide and oxygen concentrations in the effluent stream before and after adjustments are made
  - 3) Retain records for five years after the date of the recorded action
    - a. Records of tune ups:
      - i. Concentrations of carbon dioxide and oxygen before and after the tune up
      - ii. A description of any corrective actions taken

- iii. The type and amount of fuel used over the 12 months prior if the unit is capable of using more than one type of fuel
  - b. Notifications and reports
  - c. Occurrence and duration of any boiler malfunction
  - d. Records of actions taken to reduce pollution during periods of malfunction
  - e. Biennial compliance certification report containing
    - i. The company name and address
    - ii. A statement by a responsible official certifying the truth, accuracy and completeness of the notification
    - iii. A statement as to whether the source has complied with all relevant standards and requirements of the NESHAP
- 4) Notify the delegated authority in the event of physical or fuel changes that result in a different classification of the boiler under the rule, or switching out of the rule

### **8.7.3 NESHAP for Asbestos Containing Materials (ACM)**

ESHAP rules cover the management and in particular the removal and demolition of ACM from equipment and facilities. The regulations protect the public by minimizing the release of asbestos fibers during activities involving the processing, handling and disposal of ACM. NESHAP rules specify the work practices to be followed during demolition or renovations of all structures, installations and building. The primary method by which the EPA, States, and cities regulate these activities is by requiring a permit prior to demolition or renovation projects.

Demolition or renovation activities must be identified in most cases 20 days before work is to commence. Every state and some cities have different requirements that must be identified in the permit, so specific review of local ordinances or regulations prior to the removal of ACM must be made.

If NWS employees must service equipment at the facility where asbestos removal or demolition will be accomplished, NWSH Environmental and Safety staff must be contacted to ensure all applicable requirements are met.

## **8.8 Responsibilities**

### **8.8.1 NWS Headquarters**

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

### **8.8.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.

- b. Will ensure that applicable procedures are implemented at regional headquarters or operating unit facilities.

### **8.8.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. May consider testing NWS field offices if located in areas denoted by the EPA Radon Map as having an average indoor radon screening level greater than 4 pCi/L.
- d. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### **8.8.4 Environmental or Environmental/Safety Focal Point or Designated Person**

Will ensure that any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.

### **8.8.5 Employees**

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

## **8.9 References**

### Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

### **8.9.1 U.S. Environmental Protection Agency**

Map of Radon Zones, <a href="https://www.epa.gov/sites/production/files/2015-07/documents/zonemapcolor.pdf">https://www.epa.gov/sites/production/files/2015-07/documents/zonemapcolor.pdf</a>			
Consumer's Guide to Radon Reduction: <a href="http://www.epa.gov/radon/pubs/consguid.html">http://www.epa.gov/radon/pubs/consguid.html</a>			
40 CFR:	Part 60	Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
		Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
	Part 63	Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

## SECTION 9 - PROCUREMENT

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## Synopsis

**NOTE:** The purpose of this section is to provide guidelines for NWS supervisors and employees who purchase goods and services required for the operation of the facility or work site.

The section applies to all NWS facilities, work sites and employees' sites, employees, and NWS contractors who work on NWS sites.

### **Initial Implementation Requirements:**

- Determine which purchased items are listed in the Department of Commerce (DOC) Commerce Acquisition Manual 1323.70 (revised January 2014) and in the EPA Comprehensive Procurement Guidelines.
  - Ensure products purchased meet the CPG
  - Inform all affected NWS employees of the requirements and reasons for the program

### **Recurring and Annual Task Requirements:**

- Ensure all purchases comply with the CPG

<b>Procurement Checklist</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
Do facility employees purchase Green Products and services to the maximum extent practical, consistent with the requirements of Commerce Acquisition Manual (CAM) and Federal Acquisition Regulations (FAR)?	—	—	—

## SECTION 9 - PROCUREMENT

### **9.1 Purpose and Scope**

In performing its mission, the National Weather Service (NWS) requires the on-going purchase and use of many different items. From “consumables” such as office paper, printer cartridges and gasoline to items only used periodically during maintenance activities (such as paint, fluorescent bulbs, services contracted to apply pesticides, various types of oil and lubricants, etc.), the NWS must consider more than just “cost” when procuring items, materials, and services to support NWS mission functions. This section describes the basis and purchasing guidelines applicable to all NWS facilities and work sites.

### **9.2 Definitions**

<b>Comprehensive Procurement Guidelines (CPG)</b>	The mechanism through which EPA designates items as containing recycled content, for purchase by Federal, State and local agencies or by government contractors using appropriated Federal funds
<b>Designated Person</b>	An NWS employee designated by the Station Manager who is responsible for ensuring procurement activities at the facility are conducted in accordance with Federal, State and local laws as well as Presidential Executive Orders
<b>Environmental Protection Agency (EPA)</b>	Governmental agency responsible for the protection of our nation's environmental resources
<b>Recovered Materials Advisory Notices (RMAN)</b>	Periodically updated purchasing guidelines issued by the EPA. RMANs recommend recycled-content levels and/or ranges to look for when purchasing products and materials.
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### **9.3 Acronyms Employed in this Section**

<b>CPG</b>	Comprehensive Procurement Guidelines
<b>DOC</b>	Department of Commerce (DOC)

DLA	Defense Logistics Agency
EPA	Environmental Protection Agency
FAR	Federal Acquisition Regulations
FEE	Federal Environmental Executive
FSS	Federal Supply Service
GSA	General Services Administration
JWOD	Javits-Wagner-O-Day Program
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
RCRA	Resource Conservation and Recovery Act
RMAN	Recovered Materials Advisory Notices

#### 9.4 Regulatory Requirements

##### 9.4.1 Federal Legislation

Under Subtitle F - Federal Responsibilities of the RCRA "each agency must comply with the requirements set forth by the law in regard to any purchase or acquisition of a procurement item." The law advocates the designation and use of items that are or can be produced with recovered materials. To help agencies fulfill this requirement, the Comprehensive Procurement Guidelines (CPG) were developed by the EPA.

Consideration is to be given to:

- a. The availability of recovered items
- b. The impact of the procurement of recovered items by procuring agencies on the volume of solid waste which must be treated, stored, or disposed
- c. The economic and technological feasibility of producing and using other items
- d. Other uses for such recovered materials

After a recycled content product is designated by EPA, procuring agencies are required to purchase it with the highest percentage of recovered material content level practicable.

RCRA also stipulates that when procuring agencies write or review specifications for their required items, they eliminate any language that excludes recovered materials and require the use of recovered materials to the maximum extent possible.

The EPA's CPG Program goes further to recommend practices to be followed by agencies for buying these products.

##### 9.4.2 Department of Commerce (DOC) Requirements

DOC Energy and Environmental Management Manual requires that DOC employees purchase green products in accordance with the requirements and procedures listed in the Commerce

Acquisition Manual (CAM) when:

- a. Such products are cost-effective;
- b. Such products meet the technical requirements of the government; and
- c. Such products are available in the required time to meet the government's need.

For further instructions, consult CAM Chapter 1323.70 (Green Procurement) and Chapter 1313.301 (Purchase Card Program). The information is posted at DOC web site:

[http://www.osec.doc.gov/oam/acquisition\\_management/policy/commerce\\_acquisition\\_manual\\_cam/default.htm](http://www.osec.doc.gov/oam/acquisition_management/policy/commerce_acquisition_manual_cam/default.htm)

In addition, DOC has issued the Strategic Sustainability Performance Plan that is being updated on an annual basis. The latest version of the plan can be found at:

[http://www.osec.doc.gov/ofeq/OSEEP/Annual\\_Rpts\\_Scrd.html](http://www.osec.doc.gov/ofeq/OSEEP/Annual_Rpts_Scrd.html)

#### 9.4.3 Federal Acquisition Regulations

The Federal Acquisition Regulations (FAR) originally contained provisions on energy and environmental considerations in Part 23 - Environment, Energy and Water Efficiency, Renewable Energy Technologies, Occupational Safety and Drug-Free Workplace: [Part 23-Environment, Energy and Water Efficiency, Renewable Energy Technologies, Occupational Safety, and Drug-Free Workplace](#). Enhanced language and further considerations for buying energy-efficient and environmentally preferable products to implement Executive Orders 13693 have been incorporated throughout the FAR.

Additional information on FAR regulations is found in Appendix B of CAM 1323.70: [COMMERCE ACQUISITION MANUAL - 1323.70](#). The following areas within the FAR have specific provisions for environmental/ energy factors:

Part 7 - Acquisition Planning

Part 11 - Agency Needs

Part 12 - Acquisition of Commercial Items

Part 13 - Acquisition Procedures

Part 23 - Environmental and Energy

Part 52 - Contract Clauses

### **9.5 Executive Order 13693, Planning for Federal Sustainability in the Next Decade**

This Executive Order (E.O.) was signed on March 9, 2015 to maintain Federal leadership in energy, environmental water, fleet, buildings, and acquisition management. This leadership will continue to drive national greenhouse gas reductions and support preparations for the impacts of climate change. Through a combination of more efficient Federal operations outlined in this E.O., there is an opportunity to reduce agency direct greenhouse gas emissions by at least 40 percent over the next decade while at the same time fostering innovation, reducing spending, and strengthening the communities in which our Federal facilities operate. The E.O. promotes sustainable acquisition and procurement by ensuring that each of the following environmental performance and sustainability

factors are included to the maximum extent practicable for all applicable procurements in the planning, award, and execution phases of the acquisition by:

- Meeting statutory mandates that require purchase preference for:
  - (A) Recycled content products designated by EPA;
  - (B) Energy and water efficient products and services, such as ENERGY STAR qualified and Federal Energy Management Program (FEMP)-designated products, identified by EPA and the Department of Energy (DOE); and
  - (C) BioPreferred and biobased designated products designated by the United States Department of Agriculture;
- Purchasing sustainable products and services identified by EPA programs;
- Purchasing environmentally preferable products or services;
- Acting, as part of the implementation of planning requirements of section 14 of the E.O., until an agency achieves at least 95 percent compliance with the BioPreferred and biobased purchasing requirement:
  - (A) Establish an annual target for the number of contracts to be awarded with BioPreferred and biobased criteria and dollar value of BioPreferred and biobased products to be delivered and reported under those contracts in the following fiscal year. To establish this target, agencies shall consider the dollar value of designated BioPreferred and biobased products reported in previous years, the specifications reviewed and revised for inclusion of BioPreferred and biobased products, and the number of applicable product and service contracts to be awarded, including construction, operations and maintenance, food services, vehicle maintenance, and janitorial services; and
  - (B) Ensure contractors submit timely annual reports of their BioPreferred and biobased purchase.
- Reducing copier and printing paper use and acquiring uncoated printing and writing paper containing at least 30 percent postconsumer recycled content or higher.

Additionally, E.O. outlines goals to advance waste prevention and pollution prevention, implement performance contracts for Federal buildings, and promote electronics stewardship by establishing, measuring, and reporting.

Web link to E.O.: [Executive Order 13693 -- Planning for Federal Sustainability in the Next Decade](#)

## 9.6 NWS Policy

NWS employees will follow the green procurement program requirements set forth in Executive

Order 13423, Commerce Acquisition Manual, FAR, and DOC Energy and Environmental Management Manual. Green products and services will be purchased to the maximum extent practical, consistent with the requirements of CAM and FAR. NWS staff will purchase green products when:

- a. Such products are cost-effective;
- b. Such products meet the technical requirements of the government; and
- c. Such products are available in the required time to meet the government's need.

#### Comprehensive Procurement Guidelines

The Comprehensive Procurement Guidelines (CPG) Program as authorized by Congress under Section 6002 of RCRA is one of EPA's efforts to promote the use of materials recovered from solid waste. These guidelines are found in 40 CFR 247. The CPG Program is part of EPA's continuing effort to promote the use of materials recovered from solid waste. Buying recycled-content products ensures that the materials collected in recycling programs will be used again in the manufacture of new products. The following web site contains CPG resources: <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program#related>

All items must be reviewed for environmental issues. Employees should not automatically assume that if the products are purchased through GSA or other government vendors that they are safe or made of environmentally friendly materials.

For products that have been designated, agencies must buy those products that contain recycled content as long as they are available, they meet the performance needs of the agency, and they are cost-competitive.

#### 9.7 Additional Resources

The following organizations have environmentally preferable products and services referenced on their websites.

- U.S. General Services Administration. Federal Supply Service (GSA/FSS)  
<http://www.gsa.gov/portal/category/26433>

The GSA/FSS has introduced many products into its supply system that have recycled content, offer energy and/or water savings, or were to be less environmentally detrimental. This site includes product descriptions, ordering information, information for prospective vendors and more. You can also access GSA Advantage on-line ordering system to order any GSA product.

- CPG-Compliant Products and Other Recycled Content Products on-line catalog identifies CPG-compliant products available through GSA. NWS personnel who purchase these products should review this list to determine what is available.

Javits-Wagner-O'Day Program (JWOD): <http://www.abilityone.gov/index.html>. The JWOD Program supports employment opportunities for the blind or those with severe disabilities by coordinating government purchases of products and services provided by non-profit agencies

employing these individuals. JWOD is a mandatory source of supply with environmentally preferable products on their procurement list. These items are identified with a JWOD environmental logo. Certain JWOD program items are also listed in the GSA Environmental Products catalog.

- UNICOR: <http://www.unicor.gov>

The Federal Prison Industries, Inc. program employs and provides skills training to inmates confined with the Federal Bureau of Prisons. As a mandatory source of products for Federal agencies, items with environmentally preferable applicability such as furniture, toner cartridges, printing and re-manufacturing services are available through this source.

## **9.8 Responsibilities**

### **9.8.1 NWSH**

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with SECO, as necessary, regarding compliance issues related to this section.

### **9.8.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at Regional Headquarters or operating unit facilities.
- c. Will assist Regional Headquarters and field offices or operating units in locating and assessing environmentally preferable products.

### **9.8.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### **9.8.4 Environmental or Environmental/Safety Focal Point or Designated Person**

Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.

### 9.8.5 Employees

- a. Individual employees affected by this section are required to read, understand and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

## 9.9 References

### Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

#### 9.9.1 Executive Orders

Presidential Executive Order 13693, “Planning for Federal Sustainability in the Next Decade”  
March 19, 2015

#### 9.9.2 FAR

Part 7	Acquisition Planning
Part 11	Describing Agency Needs
Part 12	Acquisition of Commercial Items
Part 13	Acquisition Procedures
Part 23	Environmental and Energy
Part 52	Contract Clauses

#### 9.9.3 U.S. Environmental Protection Agency

40 CFR 247	Comprehensive procurement guideline for products containing recovered materials.  <a href="http://law.justia.com/cfr/title40/40-24.0.1.4.33.html">http://law.justia.com/cfr/title40/40-24.0.1.4.33.html</a>  <a href="http://www.epa.gov/epawaste/conserve/tools/cpg/index.htm">http://www.epa.gov/epawaste/conserve/tools/cpg/index.htm</a>
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#### 9.9.4 Department of Commerce

Commerce Acquisition Manual (CAM) 1323.70	Green Procurement Program  <a href="#"><u>Commerce Acquisition Manual (CAM) - 1323.70</u></a>
Commerce Acquisition Manual (CAM) 1313.301	Purchase Card Program  <a href="#"><u>Commerce Acquisition Manual (CAM) - 1313.301</u></a>

## SECTION 10 -PESTICIDES

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## Synopsis

**NOTE:** This section is designed to provide guidance in the use and disposal of pesticides in and around National Weather Service (NWS) facilities and work sites.

The section applies to all NWS facilities and work sites.

### **Initial Implementation Requirements:**

- Compare Site/Facility Operations with the Requirements of this Section:
  - Determine if NWS operations are regulated under State law (10.3.2)
  - Pesticides are managed in accordance with NWS requirements (10.4)
  - Provide training, if required (10.3.2 and 10.4c)

### **Recurring and Annual Task Requirements:**

- Provide refresher training for applicators, as necessary.

<b>Pesticides Checklist</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1. Do NWS personnel apply pesticides at work sites, <u>other than for personal protection</u> (e.g., use of wasp and mosquito sprays)?	—	—	—
2. Does the State regulate these applications under the State law? (10.3.2)	—	—	—
3. If so,			
a. Are all NWS employees who use the pesticides trained in accordance with the State rules? (10.3.2)	—	—	—
b. Has a Pesticide Program Coordinator been appointed?	—	—	—
c. Are only Environmental Protection Agency (EPA) approved pesticides used? (10.3.1)	—	—	—

## SECTION 10 - PESTICIDES

### 10.1 Purpose and Scope

This section is designed to provide guidance in the use and disposal of pesticides in and around National Weather Service (NWS) facilities and work sites. The section applies to all NWS facilities and work sites.

### 10.2 Acronyms Employed in This Section

<b>EPA</b>	Environmental Protection Agency
<b>FIFRA</b>	Federal Insecticide, Fungicide, Rodenticide Act
<b>SECO</b>	NOAA Safety and Environmental Compliance Office
<b>NWS</b>	National Weather Service
<b>NWSH</b>	National Weather Service Headquarters

### 10.3 Regulatory Requirements

#### 10.3.1 Federal

Under FIFRA, the EPA created a program for approving pesticides for use as well as the training and certification of pesticide applicators. While the EPA maintains the approval process for itself, it has authorized most States to create their own pesticide applicator training and certification programs.

The term “pesticides” includes pesticides, insecticides, herbicides, fungicides, rodenticides, and antimicrobials.

#### 10.3.2 State

The authorized States have a major part in compliance with FIFRA. Currently, the requirements vary significantly and as a result, the Environmental Focal Point should check the EPA website of State contacts at: [http://npic.orst.edu/reg/state\\_agencies.html](http://npic.orst.edu/reg/state_agencies.html) or the Association of American Pesticide Control Officials website at <http://www.aapco.org/resources.html>. This web site will provide information on whether a State has an authorized program and who to contact for more specific information regarding:

- a. Which NWS operations are regulated
- b. Who must be trained
- c. What training is required
- d. How the training can be obtained
- e. How trained employees become certified as pesticide applicators.

If further assistance is required, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH environmental and safety staff.

Some States require applicators of the pesticides group to have a State applicators license. For example, if an NWS employee sprays an insecticide in the Rain Gauge shelter or Automated Surface Observing System (ASOS) site, the State may require the employee have a State applicators license.

## **10.4 NWS Program**

Whether done by NWS personnel or contractor personnel, NWS facilities and work sites that use pesticides to control insects, rodents and other pests must:

- a. Ensure only EPA-approved pesticides, fungicides or rodenticides are applied.
- b. Ensure all unused materials, empty containers, washes and other wastes are disposed in accord with either the requirements on the label or the hazardous waste regulations.
- c. Ensure applicator personnel are trained according to the EPA or authorized State rules and are certified.
- d. If a contractor is used to apply pesticides, the contract must prohibit the use of facility water to mix the concentrate unless a backflow prevention valve is used.

**NOTE:** Use of insecticides for personal protection (e.g., mosquitoes, wasp sprays) is exempt from certification and training requirements.

## **10.5 Responsibilities**

### **10.5.1 NWS Headquarters (NWSH)**

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

### **10.5.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at regional headquarters or operating unit facilities.

### **10.5.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure that sufficient personnel and resources are available to comply with the requirements of this section.

- c. Will review, or delegate review, of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

**10.5.4 Environmental or Environmental/Safety Focal Point or Designated Person**

- a. Will ensure that any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.
- b. Will ensure only EPA-approved pesticides are used at the facility/work site.

**10.5.5 Employees**

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Individual employees affected by this section are required to report all violations of the requirements of this section to their supervisor or Safety Focal Point.

**10.6 References:**

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section:

**10.6.1 U.S. Environmental Protection Agency**

40 CFR Subchapter E Pesticide Programs (Parts 152-186)

## **SECTION 11 - ASBESTOS MANAGEMENT**

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## **Synopsis**

**NOTE:** The purpose of this section is to provide guidelines for employees and supervisors who work in or around asbestos-containing material or are responsible for removal and disposal of this material.

The section applies to all National Weather Service (NWS) facilities, work sites, and employees.

### **Initial Implementation Requirements:**

- Review National Weather Service Manual 50-1115 Occupational Safety and Health, Section 31 - Asbestos Safety
- Analyze Site Operations versus Requirements of the Procedure
  - Identify all sites where an asbestos hazard may be present (NWSM 50-1115, 31.3.3)
- Perform Visual Inspection and Instrumental Testing of “suspect” asbestos-containing materials (ACMs), if required. (NWSM 50-1115, 31.3.3)
- Designate Person to Administer the Asbestos Safety Procedure Requirements (if required)
- Develop/Obtain Documentation/Information Required for Site
  - Develop an Asbestos Control Program (NWSM 50-1115, 31.3.3) (if applicable)
- Provide Local Training of Site Personnel (if required)
- Provide Oversight/Coordination of Asbestos Removal Plan (if applicable)
- Contract with a State licensed Asbestos Abatement Contractor if ACM is present
- Manage the removed material per the State and Federal requirements (if applicable)

### **Recurring and Annual Task Requirements:**

- Until the ACM is removed:
  - Perform Inspection/Assessment/Testing
    - Perform Visual Inspection and Instrumental Testing of “suspect” ACMs. (NWSM 50-1115, 31.3.3), as necessary
  - Review/Update Documentation/Information required for Site
    - Maintain Asbestos Control Program. (NWSM 50-1115, 31.3.3) (if applicable)
  - Provide Refresher Training of Site Personnel (if required)

Asbestos Management Checklist	YES	NO	N/A
1. Does the facility or work site have or is it suspected to have asbestos or asbestos-containing material? (11.5.1)	—	—	—
• If yes, has testing been performed? (11.5.1)	—	—	—
2. If asbestos is found, has an Asbestos Control Program been established? (11.5.2)	—	—	—
a. Has an Asbestos Control Program Coordinator been appointed? (11.5.2)	—	—	—
b. Have all affected employees been notified in writing of the presence of asbestos? (11.5.2a)	—	—	—
c. Have “regulated areas” been established? (11.5.2d)	—	—	—
d. Is access to the regulated area restricted to only properly trained personnel? (11.5.2e)	—	—	—
e. Are there plans to manage the asbestos? (11.6)	—	—	—
f. Are abatement project notifications properly submitted to the EPA or appropriate State regulatory agency? (11.6.1)	—	—	—
g. Has a formal file to record all activities been created? (11.6.2)	—	—	—
h. Are all records pertaining to asbestos removal retained onsite for at least 2 years? (11.6.2)	—	—	—
i. Has or will the removed asbestos material be disposed at an approved landfill? (11.6.3)	—	—	—

## SECTION 11 - ASBESTOS MANAGEMENT

### 11.1 Purpose and Scope

While the National Weather Service (NWS) has attempted to remove asbestos from the workplace, because of the persistent use of this material in building construction, asbestos-containing materials (ACM) may still be found at some NWS facilities and work sites. To ensure NWS personnel are protected from this material during its use, removal, and disposal, this section has been created. It applies to all NWS facilities where asbestos or asbestos-containing material are known or assumed present.

On July 12, 1989, EPA issued a final rule banning most asbestos-containing products. In 1991, this regulation was overturned by the Fifth Circuit Court of Appeals in New Orleans. As a result of the Court's decision, the following specific asbestos-containing products remain banned: flooring felt, rollboard, and corrugated, commercial, or specialty paper. In addition, the regulation continues to ban the use of asbestos in products that have not historically contained asbestos, otherwise referred to as "new uses" of asbestos.

Asbestos-containing product categories no longer subject to the 1989 ban include: asbestos-cement corrugated sheet, asbestos-cement flat sheet, asbestos clothing, pipeline wrap, roofing felt, vinyl-asbestos floor tile, asbestos-cement shingle, millboard, asbestos-cement pipe, automatic transmission components, clutch facings, friction materials, disc brake pads, drum brake linings, brake blocks, gaskets, non-roofing coatings, and roof coatings.

**NOTE:** Most U.S. manufacturers have ceased the use of asbestos in commercial products due to liability concerns.

### 11.2 Definitions

#### Friable Asbestos

Any material that contains more than one percent of asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Examples of friable asbestos include spray-on insulation and pipe insulation.

#### Non-Friable Asbestos

A material containing more than one percent asbestos that cannot be crumbled, pulverized, or reduced to powder by hand pressure. Vinyl asbestos floor tile is an example of non-friable asbestos.

#### Operating Unit

Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).

#### Regulated Asbestos Containing Materials (RACM)

- Friable asbestos material
- Category I non-friable ACM that has become friable
- Category I non-friable ACM which has been, subjected to sanding, grinding, cutting or abrading

- Category II non-friable ACM that has a high probability of becoming friable.

### Station Manager

For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8; and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### 11.3 Acronyms Employed in This Section

ACM	Asbestos-Containing Material
CIH	Certified Industrial Hygienist
EPA	Environmental Protection Agency
DOT	Department of Transportation
NESHAP	National Emission Standards for Hazardous Air Pollutants
SECO	NOAA Safety and Environmental Compliance Office
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
OSHA	Occupational Safety and Health Administration
RACM	Regulated Asbestos-Containing Material

### 11.4 Regulatory Requirements

#### 11.4.1 Federal Laws and Regulations

##### a. Occupational Safety & Health Administration

OSHA, in 29 CFR 1910.1001 (Asbestos), regulates asbestos in all industries other than construction, ship repair, and shipbuilding. OSHA regulates asbestos in the construction industry in 29 CFR 1926.1101.

##### b. Environmental Protection Agency (EPA)

EPA regulates asbestos emissions, removal, and disposal under 40 CFR Part 61 - The National Emissions Standards for Hazardous Air Pollutants, Subpart A (40 CFR Parts 61.01 to 61.19) and Subpart M (40 CFR 140-157 and Appendix A to Subpart M).

In 1986, the [Asbestos Hazard Emergency Response Act \(AHERA\)](#) was signed into law as Title II of the Toxic Substance Control Act (TSCA). CFR 40 CFR Part 763, Subpart E, Asbestos Containing Materials in Schools, was promulgated. AHERA mandated that

EPA develop regulations to respond to asbestos in schools. This included the use of accredited laboratories and established training requirements for accredited personnel.

Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA), passed in 1990, required accreditation of personnel working on asbestos activities in schools and public and commercial buildings. Specifically, the Asbestos Model Accreditation Plan (40 CFR Part 763, Appendix C) required the use of accredited inspectors, workers, supervisors, project designers, and management planners (schools only) when conducting asbestos activities at schools and public and commercial buildings.

c. National Weather Service

The NWS Asbestos Control Program is detailed in NWSM 50-1115, Occupational Safety and Health, Section 31 - Asbestos Safety.

## **11.5 Asbestos Control Program**

### **11.5.1 Identification of Asbestos-Containing Material**

As defined in 11.2, the EPA and OSHA use two definitions of asbestos - friable and non-friable.

The EPA further divides non-friable asbestos into two categories – Category I and II.

Category I non-friable asbestos-containing material includes asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos.

Category II non-friable asbestos-containing material is any material other than a Category I ACM that contains more than one percent asbestos that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Friable ACMs are potentially more hazardous since they can release airborne fibers if damaged or disturbed.

National Weather Service Manual 50-1115, Occupational Safety and Health Section 31 - Asbestos Safety, 31.3.3, requires that NWS facilities where asbestos or ACM are potentially present (e.g. buildings and structures built before 1980), will arrange visual inspections and testing of “suspect” materials by an accredited inspector) who has completed an EPA-approved asbestos training course. This effort will be coordinated with NWSH environmental and safety staff and NWS Regional/Operating Unit Environmental/Safety Coordinators.

### **11.5.2 Establish an Asbestos Control Program**

NWSM 50-1115, 31-3.3 states that when presence of asbestos or ACM is confirmed, an Asbestos Control Program must be established and maintained. The NWSH environmental and safety personnel, and NWS Regional/Operating Unit Environmental/Safety Coordinator must be contacted as soon as presence of ACM is suspected.

This program includes:

- a. Designation of an Asbestos Control Program Coordinator by the Station Manager to coordinate the facility efforts.
- b. The notification of all affected employees of any asbestos monitoring results within 15 days of the receipt by the NWS facility or work site. This notification must be in writing and it can be made individually or by posting of the results in a location accessible to all employees.
- c. The notification of all affected employees of the procedures taken to minimize exposure.
- d. Establishment of a regulated area if airborne concentrations of asbestos or presumed asbestos material are in excess of the OSHA Permissible Exposure Limit (0.1 fibers per cubic centimeter of air as an eight (8)-hour time-weighted average (TWA)). The regulated area must be clearly demarcated and access limited.  
Persons entering the regulated area must use appropriate personal protective equipment, including respirators, and will be trained and certified in its use. All NWS employees must also complete the appropriate asbestos worker level training to enter a regulated area. Per NWSM 50-1115-31.3.3, NWS employees that work in facilities where presence of friable asbestos is confirmed must receive the asbestos awareness course, at least 2 hours long, per Asbestos Hazard Emergency Response Act (AHERA) requirements set forth in 40 CFR 763.92. Employees who provide housekeeping or maintenance activities in a building that contains ACM must also complete awareness level training. If housekeeping and maintenance staff conduct any activities that will result in disturbance of ACM, awareness training and 14 hours of additional training shall be completed per 40 CFR 763.92.
- e. All employees are prohibited from eating, drinking, smoking, chewing tobacco or gum or applying cosmetics in the regulated area.

## 11.6 Asbestos Management Plan

In consultation with the NWSH environmental and safety personnel and/or Regional/Operating Unit Environmental/Safety Coordinator, the decision will be made whether to:

- a. Implement an Operations and Maintenance (O&M) Program to manage the confirmed or suspect ACM in place.
- b. Repair, encapsulate, or enclose the ACM,
- c. Remove the ACM.

An asbestos abatement plan and notification must be prepared in accordance with 40 CFR 61.145 for any activities other than O&M. These documents are typically prepared by the state licensed asbestos abatement contractor on behalf of the building owner. The NWSH environmental and safety staff can assist in the coordination and review of the abatement plan.

### 11.6.1 Notification

Depending on the amount, type and location of the asbestos or asbestos-containing material, the EPA, or appropriate State regulatory agency, may require a notification prior to initiating the asbestos abatement activities. The EPA notification requirements are detailed at 40 CFR 61.145.

While EPA must receive notification at least 10 working days before the start of the asbestos abatement project, the State may impose different timeframe requirements. The notification usually includes a description of the analytical procedures used to identify the material, the removal techniques to be used, the location of the material, the starting and completion dates, the name, and location of the disposal site and a certification that the asbestos removal operations will be conducted by licensed contractor. Written approval for an asbestos abatement project are not generally provided by the regulatory agency, unless a variance is requested to deviate from accepted work practices (e.g., dry removal instead of wet removal). Any approval must be kept at the work site during the operation.

The EPA's Notification of Rules and Regulations Regarding the Demolition of Asbestos-Containing Structures is found at: <http://www2.epa.gov/asbestos/epas-notification-rules-and-regulations-regarding-demolition-asbestos-containing-structures>

**NOTE:** The States can impose more stringent requirements for managing, reporting, and notification of an abatement project. The NWS Regional/Operating Unit Environmental/Safety Coordinator and NWSH environmental and safety staff will assist with obtaining the specific information.

#### 11.6.2 Recordkeeping

A copy of the EPA or State notification, the EPA or State approval (variances), the waste shipment record (WSR) and the disposal site confirmation is to be forwarded to the NWS Regional/Operating Unit Environmental/Safety Coordinator and the NWSH environmental and safety staff. The EPA NESHAP regulations require that these records are kept on-site for at least two years; however, it is highly recommended that these records be kept permanently.

#### 11.6.3 Disposal

Before disposal, all asbestos and asbestos-containing materials must be wetted to minimize the release of airborne particles. The asbestos waste must be double-bagged in 6-mil plastic and packaged, and transported in accordance with OSHA, EPA, and Department of Transportation regulations.

In general, wetted, double-bagged asbestos can be disposed in a State-approved solid waste facility. Prior contact with both the disposal facility and the State by the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH environmental and safety staff will assure all local ordinances are known and followed.

In addition to the OSHA danger label (often pre-printed on the disposal bag), each bag must contain the generator's name and address. State or local regulations may require additional information, such as the date the bag was sealed.

Once the asbestos is disposed, the facility asbestos inventory must be updated.

## 11.7 Responsibilities

### 11.7.1 NWS Headquarters

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with SECO, as necessary, regarding compliance issues related to this section.

### 11.7.2 Regional or Operating Unit Environmental/Safety Coordinator

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at Regional Headquarters or Operating Unit facilities to ensure compliance with requirements of this section.

### 11.7.3 Station Manager

- a. Will have oversight over the implementation of this section and ensure that the applicable requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will ensure that an asbestos control program is developed and implemented at NWS field offices with asbestos containing materials in coordination with Regional/Operating Unit Environmental/Safety Coordinator and NWSH environmental/safety staff.
- d. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements, if applicable. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### 11.7.4 Environmental or Environmental/Safety Focal Point or Asbestos Control Program Coordinator

- Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.

### 11.7.5 Employees

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

## 11.8 References

### 11.9 Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

#### 11.9.1 Department of Labor Occupational Safety and Health Administration

29 CFR 1910.1001	Asbestos (General Industry Standard)
29 CFR 1926.1101	Asbestos (Construction Standard)

#### 11.9.2 U.S. Environmental Protection Agency

40 CFR 61	National Emission Standards for Hazardous Air Pollutants, Subpart M, "Asbestos"
40 CFR 61.145	Standard for Demolition and Renovation
40 CFR Part 763, Subpart E	Asbestos Hazard Emergency Response Act
15 USC § 2641	Asbestos School Hazard Abatement Reauthorization Act

#### 11.9.3 National Weather Service

Manual 50-1115	Occupational Health and Safety	Section 31, Asbestos Safety
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## **SECTION 12 – POLYCHLORINATED BIPHENYLS**

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## Synopsis

**NOTE:** The purpose of this section is to provide guidance relative to the management and disposal of items containing polychlorinated biphenyls (PCBs).

The section applies to all NWS facilities and work sites that have PCBs or PCB items.

### Initial Implementation Requirements:

- Designate an Individual to Coordinate the PCB Compliance Effort (12.5.2)
- Analyze Site Operations versus Requirements of this Section
  - Determine if PCBs or items containing PCBs are in use at the facility (12.5.1 & Attachment A)
- Prepare an Inventory of PCB Items Requiring Inspection (12.5.1)
- Perform Initial Inspections (12.5.1) (if applicable)
- Provide Training for Personnel (if applicable)

### Recurring and Annual Task Requirements:

- Inspect Daily, Weekly, Monthly, Quarterly or Annually, as required (12.5.3)
- Maintain Inspection Logs (12.5.5) (if required)
- Report all Spills over the Reportable Quantity (10 pounds) to the National Response Center (12.10) (if required)
- Dispose of PCBs in accord with EPA/State Regulations.
  - Maintain/inspect PCB items in temporary storage awaiting disposal (12.11.1) (if applicable)
  - Select appropriate disposal option for each PCB item (12.11.2) (if applicable)

Polychlorinated Biphenyls Checklist	YES	NO	N/A
1. Does the facility or work site have any PCBs or items containing PCBs in use or in storage? (12.5.1)	—	—	—
2. If yes, has a PCB Program Coordinator been appointed? (12.5.2)	—	—	—
3. Has a formal inventory of items requiring inspection been prepared? (12.5.1)	—	—	—
4. Are daily, weekly, monthly, and quarterly inspections performed, as required? (12.5.3)	—	—	—
5. Are all inspection logs maintained? (12.5.5)	—	—	—
6. Are all spills over the 10-pound Reportable Quantity reported to the National Response Center? (12.10.2d)	—	—	—
7. Has an inquiry been made to the State to determine if the State has different or additional requirements for the management and/or disposal of PCBs?	—	—	—
8. Are all PCB items disposed in accordance with EPA and/or State requirements? (12.11)	—	—	—

## SECTION 12 POLYCHLORINATED BIPHENYLS

### 12.1 Purpose and Scope

The purpose of this section is to provide guidance to NWS personnel in the management and disposal of PCBs and PCB items.

The section applies to all NWS facilities and work sites that use or have PCBs or PCB items such as old fluorescent ballasts or transformers. PCBs manufacture was banned in 1979 with a five year phased out requirement.

While most NWS facilities and work sites no longer have PCBs or items containing PCBs, some older facilities may still be using PCB-filled equipment and hence the guidance provided by this section will apply. On-site electrical transformers that were provided by utility companies may still have PCBs due to the length of service for these large transformers (up to 30 years). This section will also apply should the NWS move to a site or facility where PCB removal has not yet occurred.

### 12.2 Definitions

**Capacitor** Means a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Types of capacitors are as follows:

- a. *Small Capacitor* - a capacitor that contains less than 1.36 kg (3 lbs.) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid and a capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs.) of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs.).
- b. *Large High Voltage Capacitor* - a capacitor that contains 1.36 kg (3 lbs.) or more of dielectric fluid and that operates at 2,000 volts (a.c. or d.c.) or above.
- c. *Large Low Voltage Capacitor* - a capacitor that contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates below 2,000 volts (a.c. or d.c.).

**Commercial Building** A non-industrial, non-substation building. Commercial buildings are typically accessible to both members of the public and employees, and include public assembly properties, institutional properties, residential properties, stores, office buildings and transportation centers (e.g. airport terminal buildings, subway stations, bus stations or train stations).

**Enhanced** A system to avoid transformer failures caused by sustained low current

<b>Electrical Protective System</b>	faults. Examples are pressure sensors, temperature sensors, disconnect equipment.
<b>Higher Secondary Voltage</b>	The secondary voltage is equal or greater than 480 volts including 480/277 volt systems.
<b>In or Near Commercial Buildings</b>	Within the interior of, on the roof of, attached to the exterior wall of, in the parking area serving, or within 30 meters (about 98.5 feet) of a non-industrial, non-substation building.
<b>kVA</b>	Kilovolt ampere, which is a measurement of the power capacity of a transformer.
<b>Lower Secondary Voltage</b>	Means that the secondary voltage is below 480 volts including 280/120 volt systems.
<b>Marked</b>	The marking of PCB items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation or an adhesive label or by any other method that meets the requirements of these rules that states the item contains PCBs.
<b>Network PCB Transformer</b>	A PCB transformer (greater than or equal to 500 ppm PCB) in a network system, which is several transformers electrically connected in a network (Vice radial) configuration often used in vaults and buildings. A network transformer can be energized from either the primary or secondary winding. The secondary winding is the winding from which energy flows during normal operation. The primary winding can be energized from the secondary winding under abnormal conditions due to transformer interconnections. Determination of configuration can be made by an electrician using wiring diagrams.
<b>Non-PCB Transformer</b>	Any transformer containing less than 50 ppm PCBs, as determined by manufacturer certification or laboratory analysis.
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>PCBs</b>	A chemical compound composed of or containing any of the various chlorinated biphenyl molecules. Unless it is otherwise specifically provided, the term PCBs is used in this guide to refer to any chemical compound and combinations of compounds that contain 50 ppm (on a dry weight basis) or greater of PCBs, including any byproduct. Any materials that contain less than 50 ppm PCBs because of any dilution will be included as PCBs unless otherwise specifically provided. Substances that are regulated by this rule include, but are not limited to, dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids, paints, sludge, slurries, dredge spoils, soils, materials contaminated as a result of spills and other chemical substances or combination of substances, including impurities and byproducts.

<b>PCB Article</b>	Any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB Article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item, <ul style="list-style-type: none"> <li>• Which is formed to a specific shape or design during manufacture</li> <li>• Which has end use function(s) dependent in whole or in part upon its shape or design during end use</li> <li>• Which has either no change of chemical composition during its end use or only those changes of composition that have no commercial purpose separate from that of the PCB article.</li> </ul>
<b>PCB Container</b>	Means any package, can, bottle, bag, barrel, drum, tank or other device that contains PCBs or PCB Articles and whose surface has been in direct contact with PCBs.
<b>PCB-Contaminated Electrical Equipment</b>	Any electrical equipment, including but not limited to transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets and cable that contain 50 ppm or greater PCB, but less than 500 ppm PCB. Oil-filled electrical equipment other than circuit breakers, reclosers and cable whose PCB concentration is unknown are assumed to be PCB-Contaminated Electrical Equipment until proven otherwise.
<b>PCB Equipment</b>	Any manufactured item, other than a PCB Container or, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment and fluorescent light ballasts and fixtures.
<b>PCB Item</b>	Any PCB Article, PCB Container or PCB Equipment that contains or has as a part of it any PCBs at a concentration of 50 ppm or greater.
<b>PCB Transformer</b>	Any transformer that contains 500 ppm PCB or greater.
<b>ppm</b>	A concentration in parts per million expressed as milligrams per kilogram (mg/kg).
<b>Radial PCB Transformer</b>	A transformer (usually a single) in a system with the distribution lines projecting from the one major transformer. A radial transformer can be energized only from the primary winding. This determination can be made by an electrician.
<b>Reclassified</b>	A process by which the concentration of PCBs in a PCB article has been reduced by replacing the dielectric fluid or other EPA-approved technique such that it now contains less than 500 parts per million (ppm) PCBs.
<b>Restricted Access</b>	An area is fenced or walled-in to restrict public access.

**Station Manager** For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### 12.3 Acronyms Employed in This Section

CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
ET	Electronic Technician
SECO	NOAA Safety and Environmental Compliance Office
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
PCB	Polychlorinated Biphenyl
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
SFT	Sector Facility Technician
TSCA	Toxic Substance Control Act

### 12.4 Regulatory Requirements

#### 12.4.1 Federal Requirements

PCBs are regulated by the Environmental Protection Agency (EPA) under the authority of the Toxic Substance Control Act (TSCA). The EPA rules are found in 40 CFR 761.

Although similar to the disposal requirements for hazardous waste under the Resource Conservation and Recovery Act (RCRA), the PCB TSCA rules are *NOT* identical.

Most States do not have additional requirements for managing PCBs or PCB items, however some regulate the disposal of PCBs as hazardous waste and hence the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH environmental and safety staff should be contacted, when required, to determine if additional requirements exist.

### 12.5 Program Implementation

#### 12.5.1 Inventory of PCB/PCB Items

To determine if a NWS facility or work site is regulated by the PCB rules, the first step is to perform an inspection of the facility to determine the presence of PCBs or PCB items.

The inspection will focus on determining if the electrical facility or station transformers contain PCBs but must also include other electrical equipment, such as large capacitors (containing over 3 lbs. of fluid) and oil-filled:

- a. Voltage regulators
- b. Switches
- c. Electromagnets
- d. Circuit breakers
- e. Reclosers, and
- f. Hydraulic equipment

The inspection should include checking a sampling of the ballasts in the fluorescent fixtures if installed prior to 1980. If a ballast is not marked "No PCBs," it must be assumed to contain PCBs and its disposal - if leaking - will be regulated as a TSCA PCB waste. Personnel who service the lighting fixtures need this information.

Attachment A can be used to perform this inspection.

If a PCB transformer is identified, the transformer must be registered with the Environmental Protection Agency, National Program Chemicals Division, Office of Pollution Prevention and Toxics (7404), 401 "M" Street, SW, Washington, DC 20460. The registration must include:

- a. Facility name and address
- b. Contact name and telephone number
- c. Address where transformers are located
- d. Number of transformers and the total weight in kilograms of PCBs
- e. Whether the transformers contain flammable dielectric fluid (optional)
- f. Signature of the Station Manager

The facility/work site must retain a record of each PCB transformer registration (e.g., a copy of the registration and the return receipt signed by EPA) with the inspection and maintenance records required for each transformer.

**NOTE:** Because this notice was required to be submitted prior to December 28, 1998, the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH environmental and safety staff must be contacted prior to submitting this registration to the EPA.

#### 12.5.2 Assign a Designated Person

If a NWS facility or work site is determined to have any PCB-containing items, an NWS employee will be assigned by the Station Manager to coordinate the PCB compliance effort.

### 12.5.3 Periodic PCB Inspections

NWS facilities or work sites that have PCB items in use must perform self-inspections to ensure compliance with the regulations. In addition, the PCB inspection program is an important part of the facility or work site PCB management program as it may be the primary means of discovering a leak or spill from a PCB item. The sooner a leak or spill is discovered the sooner the problem can be corrected, thus reducing the chance of significant negative impact on human health or the environment.

The TSCA regulations require that certain PCB items and storage areas be visually inspected on a regular basis. The regulations specify the frequency of inspections required for each type of item. The inspection requirements are summarized in Table 1. These inspection requirements range from daily to annual, based on the potential risk to human health and to the environment, if a leak or spill should occur. The following explanations are provided for each requirement.

- a. Annual Inspections (yearly) are required for low risk PCB items, such as PCB transformers with one of the following risk reduction measures in place:
  - 1) PCB transformer has impervious, undrained secondary containment capacity of at least 100 percent of the total dielectric fluid volume of all transformers so contained [40 CFR 761.30(a)(1)(v)(A)].
  - 2) PCB transformer has been tested and found to contain less than 60,000 ppm PCBs (after at least 3 months of in service use if transformer has been serviced for purposes of reducing the PCB concentration) [40 CFR 761.30(a)(1)(v)(B)].
- b. Quarterly Inspections are required for PCB transformers with PCB concentration greater than 60,000 ppm (if tested) or if assumed to be PCB dielectric (askarel) based on nameplate information - that do not have sufficient secondary containment to meet reduced risk criteria (see explanation above). Quarterly inspections must be performed at least once every 3 months. These inspections must take place anytime during January - March, April - June, July - September and October - December as long as there is a minimum of 30-days between inspections.
- c. Monthly Inspections are required for all PCB items in the PCB storage facilities.
- d. Weekly Inspections are required for transformers, electromagnets, switches and voltage regulators with a PCB concentration of 500 ppm or greater that pose an exposure risk to food or feed.

**NOTE:** If still in use, call the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH environmental and safety staff immediately to arrange for removal and disposal. PCB items were prohibited from use on October 1, 1985. Weekly inspections are also required for PCB large high voltage capacitors and PCB-contaminated electrical equipment temporarily stored outside a PCB storage facility [40 CFR 761.65(c)(2)].

- e. Daily Inspections are required for all leaking transformers until the leak has been repaired and all residue cleaned up. The inspector must verify that the leak is contained and is not contaminating the surrounding area.

The regulations require these visual inspections to include an investigation for any leak of dielectric fluid on or around the transformer. The extent of the visual inspection will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected.

#### 12.5.4 Inspector Qualifications

These inspections may be performed by any personnel who understands the PCB inspection procedures and knows the proper PCB spill (or leak) reporting actions. Inspectors may be an electronic technician (ET), facility engineering technician (FET), environmental focal point, etc.

#### 12.5.5 Inspection Log

The facility or work site must keep formal records of each inspection. The records must be entered in ink. The records must include the following information [40 CFR 761.30(a)(1)(xii)]:

- a. Name and title of inspector
- b. Location and identification of PCB item
- c. Date of inspection (and date of leak or spill discovery if different from normally scheduled inspection)
- d. Location of leak or spill
- e. Estimate of amount of PCB liquid released from the leak or spill
- f. Date and description of all containment, clean-up, repair or replacement measures taken in response to the leak or spill
- g. Results of containment

Attachment B is an example of PCB inspection and servicing log format that may be used to record inspections. The first two columns give the date and inspector's initials. Columns 3-8 are to ensure that the inspector checks the problem areas on typical transformers. Column 9 is for ensuring that the spill containment equipment (beams, dikes, drip pans, etc.) are in working order. The 10th column is the result of the amendments to the regulations to prevent fires involving PCBs. The EPA regulations prohibit storing combustible materials within 5 meters (about 16.4 feet) of a PCB transformer or its enclosure. Inspectors must check to verify that combustible materials are not stored near PCB transformers. The last column is used to reference write-ups of any servicing or work done on or near transformers. A separate inspection log sheet is prepared for each PCB transformer listed on the activity PCB inventory.

The inspection records will be maintained for at least three (3) years after the PCB item is disposed. The records will be readily available for review by regulatory officials during regulatory agency TSCA inspections. If a leak or spill is discovered during an inspection or during normal operations, proper reporting and containment procedures must be followed.

<b>Table 1. SCA PCB Inspection Requirements (40 CFR 761.30)</b>	
<b>Transformers (in service or in storage for reuse)</b>	
<b>Electromagnets, Switches and Voltage Regulators</b>	
w/>500 ppm and w/food or feed risk	Weekly [40 CFR 761.30(h)(1)(ii)] Note: These items are prohibited after 1 October 1985)
Others	None
<b>Storage Areas</b>	
Items inside storage	Monthly [40 CFR 761.65(c)(5)]
Items temporarily stored outside storage area [See 40 CFR 761.65(c)(2)]	Weekly [40 CFR 761.65(c)(2)]
<b>Capacitors, Circuit Breakers, Reclosers And Electric Cable</b>	
	None

## 12.6 Elimination of PCB Transformers in or Near Buildings

On July 17, 1985, the EPA promulgated additional restrictions and conditions on the use of PCB Transformers containing 500 ppm or greater PCBs. The ruling came after a lengthy evaluation of the risks posed by the continued use of electrical transformers containing PCBs. Studies involving several major PCB transformer-related fires also greatly contributed to the EPA's evaluation and subsequent ruling. The rule prohibits:

- a. The continued use of higher secondary voltage network PCB transformers (network PCB Transformers with secondary voltages at or above 480 volts, including 480/277 volt systems) in or near commercial buildings beyond October 1, 1990.
- b. The further installation of PCB Transformers (which have been placed into storage for re-use) in or near commercial buildings.

The rule also requires:

- c. The installation of enhanced electrical protection on lower secondary-voltage network PCB Transformers and on higher secondary-voltage radial PCB Transformers (with secondary voltages at or above 480 volts, including 480/277 volt systems) used in or near commercial buildings.

The required installation must:

- 1) Allow early detection of sustained low-current faults; and
- 2) Be able to completely de-energize the transformer prior to failure.

## 12.7 Registration of Transformers

Previously, all PCB transformers were required to be registered with the local fire department response personnel by December 1, 1985. A study by EPA determined that, for the most part, this registration did not occur.

To correct this gap in knowledge, the EPA now requires a one-time registration of PCB transformers as a condition of the "authorization for continued use."

Transformers that are in use, or in storage for reuse, must be registered even if previously registered with the fire department. Persons taking possession of a registered transformer will not be required to re-register it.

Any PCB transformer not registered will not be authorized for use and must be disposed.

If a transformer is assumed to be PCB contaminated but later determined to contain more than 500 ppm PCBs, it must be registered within 30-days of the discovery if there are no other PCB transformers at the location that had been registered.

The registration requires:

- Facility name and address
- Contact name and telephone number
- Location of transformer(s) (address, or for a mobile source like a ship, the name of the ship)
- Number of PCB transformers and total weight of transformers in kilograms
- Whether any transformers contain flammable dielectric
- Signature of owner, operator, or other authorized individual.

The EPA has created EPA Form No. 7720-12 for this registration but the use of the form is optional. The deadline for the registration was December 26, 1998.

## 12.8 PCB Manifesting

On December 21, 1989, the EPA published a final rule that significantly modified the PCB management programs. The final rule applied restrictions similar to those for hazardous waste under RCRA with some significant differences. These regulations had an effective date of February 5, 1990.

### a. Definitions

The EPA created several new definitions. Among these are the following:

- 1) *Generator* -A generator of a PCB waste is “any person whose act or process produces PCBs that are regulated for disposal under TSCA.” While this definition is similar to that for a generator under RCRA, it does have one major difference - it is not site specific. The TSCA definition will allow a generator with several sites or related companies to consolidate their PCB wastes at one site prior to shipment off-site for disposal. It is important to note that there is one exception to this rule. Owners, users, or processors of PCB items who maintain their own storage facility in accord with 40 CFR 761.65(b) must submit a notification and receive a unique identification number for each storage facility.
- 2) *Commercial Storer* - A commercial storer of PCB waste is the owner or operator of a facility that is subject to the requirements of 40 CFR 761.65(b) 1 or (c)(7) or meets the criteria of §761.65(b)(2) and who engages in the storage of PCB wastes generated by others or was removed while servicing equipment owned by others and brokered for disposal. The EPA cautions that a storer need not receive compensation for this service to qualify as a commercial storer. The EPA has included a de minimus quantity standard such that a facility that stores less than 500 gallons would not be required to obtain EPA approval as required by

§761.65(d). Similarly, generators that store their own PCB waste are not required to seek EPA approval unless the waste was removed while servicing equipment owned by others. In June 1998, the EPA expanded this definition to clarify that storage by a “related company” (i.e. parent company, subsidiary, sibling, or member of a cooperative) does not require EPA approval. These facilities must still comply with the facility standards in §761.65 and the recordkeeping requirements in §761.180

- 3) *Laboratory Wastes* - Laboratory samples are regulated the same as RCRA hazardous waste samples. Samples are exempt from regulation as long as they are awaiting or undergoing analysis. Once the analysis is complete and there is no use for the sample, it becomes regulated waste. As with all PCB wastes, dilution to less than 50 ppm to escape regulation is prohibited.
- 4) *Transfer Facility* - a TSCA transfer facility is the same as a RCRA transfer facility. This is any transportation related facility where shipments of PCBs are held in the normal course of transportation. Such facilities are exempt from regulation if they store the PCBs for 10 days or less.
- 5) *Transporter* - A transporter of PCB wastes is any person engaged in the off-site transportation by air, rail, highway, or water of regulated PCB wastes, for purposes other than consolidation by a generator. This definition in the final rule specifically excludes the transportation of PCB wastes by a generator for consolidation prior to off-site disposal. This exclusion will allow the generator who has several sites to transport the PCBs and consolidate the PCBs without being considered a transporter.
- 6) *PCB Waste* - A PCB waste regulated by this rule includes those “PCBs and PCB Items that are subject to the disposal requirements of Subpart D” of Part 761. The regulated items include such things as:
  - PCBs and PCB Items that have served their intended purpose and are to be disposed,
  - Laboratory samples after they are no longer used for analytical or enforcement purposes,
  - Spill clean-up residues over 50 ppm PCBs.

The definition does not include items such as intact, non-leaking small capacitors and drained PCB contaminated transformers.

#### b. Notification

The final rule requires certain generators and all disposers, transporters, and commercial storers of PCB wastes to notify the EPA of their activity. For this effort, each notifier will receive a unique EPA identification number. If a facility notified under RCRA, the EPA ID number will be the same, but the facility must still notify again.

Generators who do not maintain storage areas that store PCBs or PCB Items with a concentration greater than 50 ppm are not subject to the §761.65 storage facility standards and hence do not have to notify. These generators, however, are required to

use the characters “40 CFR PART 761” on the manifest in lieu of a unique facility identification number.

All other generators, all disposers, transporters, and commercial storers must notify and subsequently use their specific identification number.

Effective August 18, 1998, whenever there is a change in PCB activity, the EPA must be notified within 30 days of the change.

c. Manifesting

a) Effective February 5, 1990, the shipment of all PCB wastes must be accompanied by a Uniform Hazardous Waste Manifest completed as required by the TSCA requirements in 40 CFR Part 761.207.

1) Manifest Content

The manifest must be initiated by all generators of PCB wastes at concentrations of 50 ppm or greater prior to shipment off-site to a disposal facility or PCB wastes where the concentration is below 50 ppm due to dilution. Each manifest must have:

- A manifest document number which consists of the EPA 12-digit identification number plus a unique suffix of up to 5 digits added by the generator;
- The page number and the total number of manifest pages on each sheet of the manifest; the generator's name and address; the generator's telephone number; the name and EPA identification number of each transporter; the name, site address, and EPA ID number of the disposal facility; and the number and type of containers.
- The U.S. DOT description which is either “RQ, Hazardous Substance, liquid or solid, n.o.s., ORM-E, NA 9188 (Polychlorinated biphenyls or PCBs)” or “RQ, ORM-E, liquid or solid, n.o.s., NA 9188, (Polychlorinated biphenyls or PCBs).” The letters “RQ” can be at the beginning or the end of the DOT basic description;
- Special handling instructions including the date the item was removed from service;
- A generator certification; and
- A transporter's signature.

If the State does not require use of another code, the waste code *PCB 1* should be used for PCB articles, while *PCB 2* is used for PCB containers.

When the waste is delivered to the disposal facility, the following items are to be completed on the manifest:

- Any discrepancies in the shipment
- An acknowledgment by the disposal facility that the shipment was acceptable

## 2) Manifest Use

The manifest will be initiated by the generator, who has the transporter sign upon pick-up. The generator then removes one copy and gives the remaining copies to the transporter who delivers the manifest with the waste to the disposal facility. Upon delivery, the disposer signs the manifest, provides the transporter with a copy, and mails a copy back to the generator.

Some States may require that additional copies of the document be sent to various state agencies by both the generator and the disposal facility.

## 12.9 Records

### 12.9.1 Manifests

Manifests must be retained for at least 3 years after the date of shipment.

### 12.9.2 Exception Reports

Exception reports must be filed if the disposal facility has not returned the generator's copy of the manifest. The generator is required to begin efforts to locate the manifest 35 days after shipment and file the Exception Report detailing the result of the investigation within 45 days. This report also includes a legible copy of the manifest and a cover letter explaining the generator's actions.

### 12.9.3 One-Year Exception Reports

The existing regulations limit the time PCBs can be stored prior to disposal to one year. Since generators normally store these wastes for sometime prior to shipment to a disposal facility, compliance with this requirement has always been a problem. Generators had been assumed to comply with the requirement if they shipped the waste to the facility before 9 months had passed since the PCB was removed from service.

To aid in compliance, the EPA requires the submission of one-year Exception Reports by:

- Disposers when they receive PCBs or PCB Items on a date more than 9 months after they are removed from service as indicated by the manifest or continuation sheet and because of other disposal commitments, the disposer could not dispose of the PCBs prior to one year of their removal from service.
- Generators and commercial storers of PCB waste who transfer PCBs or PCB Items to disposers when:
  - The generator or storer had transferred the PCBs prior to the expiration of 9 months from date of removal from service but had not received a Certificate of Disposal from the facility within 13 months of this removal.
  - The Certificate of Disposal indicates a date of disposal, which is more than 1 year after placement into storage or disposal.

#### 12.9.4 Certificate of Disposal

The EPA now requires the disposer to provide the generator with a certificate indicating the date of disposal.

#### 12.9.5 Discrepancy Reports

If a disposer receives a PCB waste that is different in type or quantity from the waste designated on the manifest, the disposer must attempt to reconcile the differences. If the discrepancy is not resolved within 15 days, a Discrepancy Report must be filed with the EPA.

#### 12.9.6 Unmanifested Waste Report

If a disposer receives a PCB waste without a manifest, the disposer must file an Unmanifested Waste Report within 15 days providing:

- The EPA ID number, name and address of the disposer
- The date received
- The EPA ID number, name and address of the generator and transporter, if available
- The method of storage or disposal
- A certification
- A brief explanation of why the waste was unmanifested, if known

#### 12.9.7 Annual Reports

The final rule requires owners or operators of facilities that are neither a commercial storer nor disposer to retain “records” and “annual document logs” but does not require submission of an annual report. Records are described by the EPA as manifests and certificates of disposal. The annual document log includes the facility's EPA ID number, manifest numbers of PCB wastes disposed during the year and a summary of other data.

Disposers and commercial storers will compile the annual document log as required by 40 CFR Part 761.180(b) and then prepare a brief summary for submission as the annual report.

### **12.10 Emergency Planning and Response Requirements**

There are two types of emergencies associated with PCB items: (1) leaks or spills, and (2) fires involving PCB electrical equipment. This section covers the impact of these emergencies and then covers the proper prevention and contingency procedures. Prevention procedures are those procedures and the associated equipment set up to prevent the spill or fire from occurring. Contingency procedures refer to the response to the spill or fire once it has happened. In both these cases, spills and fires, it is preferable that they never occur and so prevention planning is very important. However, if an emergency does occur, it is essential that the response plan has been formulated and that all personnel involved in the emergency know exactly how to respond.

#### 12.10.1 PCB Leak Response

EPA defines a “leak” to be any instance in which a PCB item has any PCBs on any portion of its external surface. If a PCB item is found to have a “leak,” it must be cleaned-up or contained and repaired as soon as possible. The regulations require that the work be initiated (not completed)

within 48-hours of discovery. The leaking item must be inspected daily until the leak has been repaired and cleaned-up to ensure that the leak is contained so that it does not contaminate the surrounding area. Containment of the leak can be any method, which contains the leak such as buckets, drip pans, plastic bags full of sorbant, etc.

#### 12.10.2 PCB Spills

Because PCB spills are regulated as hazardous substance spills, all responders must be specially trained. As a result, in the event of a PCB spill, NWS policy is to:

- a. Evacuate all personnel
- b. Assist injured if risks allow
- c. Call 911 or other outside response agency
- d. Contact the National Response Center at 1-800-424-8802 within 24-hours of a release if more than a total of 10 pounds of PCB-containing material is released.
- e. Contact NWS Regional/Operating Unit Environmental/Safety Coordinator
- f. Contact NWSH environmental and safety staff

Unless trained as emergency responders, NWS personnel may not attempt to respond to a spill of PCBs.

### 12.11 Disposal of PCBs

#### 12.11.1 Temporary Storage

After removal from service, PCBs and PCB items must be stored properly. In 40 CFR 761.65(c)(1), the EPA allows temporary storage for up to 30-days for:

- a. Non-leaking PCB equipment
- b. Leaking PCB items -if placed in non-leaking containers with absorbent
- c. Containers of non-liquid PCB-contaminated soil, rags or debris from PCB spill clean-up
- d. Containers with 50 to 500 ppm PCBs, however a SPCC Plan specifically addressing PCBs is required.

This storage area must have spill containment (sandbags, drip pans, etc.) In addition, stored items must be isolated from drains waterways, sewers, etc.

While in storage, all items must be marked:

- a. With the PCB marking
- b. The date placed in storage

The items in storage must be inspected weekly and the inspections recorded.

#### 12.11.2 Disposal Options

Depending on the item and the concentration of the PCBs, the disposal options vary considerably.

Attachment C summarizes the disposal options for the ballasts from fluorescent light fixtures.

Attachment D summarizes the disposal options for a variety of other PCB items.

For assistance in securing the services of a disposal facility, consult with the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH environmental and safety staff.

### 12.12 Responsibilities

#### 12.12.1 NWS Headquarters (NWSH)

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with SECO, as necessary, regarding compliance issues related to this section.

#### 12.12.2 Regional or Operating Unit Environmental/Safety Coordinator

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at regional headquarters or Operating Unit facilities.

#### 12.12.3 Station Manager

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure sufficient personnel and funding are available to enable compliance with all requirements of this section, if applicable.
- c. Will ensure that procedures are implemented at NWS field office for management of PCBs on-site, if applicable.
- d. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

#### 12.12.4 Environmental or Environmental/Safety Focal Point or Designated Person

Will ensure that any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.

**12.12.5 Employees**

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

**12.13 References**

Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

**12.13.1 U.S. Environmental Protection Agency**

40 CFR 761.	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions
.30(a)	Use in and servicing of transformers
.50 Subpart D	Storage and Disposal -Applicability
62	Disposal of PCB bulk product waste
.65	Storage for disposal

**ATTACHMENT A - PRELIMINARY PCB INVENTORY DATA  
COLLECTION FORMAT**

**A. TRANSFORMERS**

Item Identification:

Specific Location:

Manufacturer:

Other Nameplate Information:

KVA Rating:

Type of Dielectric Fluid:

Fluid Weight: pounds (kgs)

Fluid Volume:        gallons

PCB Concentration: \_\_\_\_\_ ppm

Date Tested:

      /           /

      mo           day           yr

Marked \* as PCB? **Yes/No**

Poses an Exposure Risk to Food or Feed\*? **Yes/No**

In or Near Building\* (Other than Substation)? **Yes/No**

If yes, describe building usage:

Is building commercial? **Yes/No**

Network\* Configuration? **Yes/No**

Radial\* Configuration? **Yes/No**

Higher Secondary Voltage\*? **Yes/No**

Equipped with enhanced Electrical Protection\*? **Yes/No**

If yes, describe:

Reclassified? **Yes/No**

Date Tested:

      /           /

      mo           day           yr

Describe Process:

Final PCB Concentration:    ppm

after reclassification

Date Tested:

      /           /

      mo           day           yr

**Note:** Words identified by asterisk (\*) are defined in Section 12.2 -Definitions.

## B. CAPACITORS

### Item Identification:

### Location:

Size: **small / large\***  
(Circle one)

Note: Small capacitors need not be listed.

Voltage: **high / low\***  
(Circle one)

### Number of capacitors in Equipment:

Manufacturer:

Date Manufactured: \_\_\_\_\_/\_\_\_\_\_  
mo day yr

### Other Nameplate Information:

Is location Restricted Access\*? **Yes /No**

Marked\* as PCB: Yes / No

### C. HEAT TRANSFER EQUIPMENT

### Item Identification:

Location:

### Description:

Quantity of Heat Transfer Fluid:      gallons

PCB Concentration: \_\_\_\_\_ ppm

PCB Concentration: \_\_\_\_\_ ppm  
After draining/refilling

Marked as PCB? Yes /No

Note: Words identified by asterisk (\*) are defined in Section 12.2 -Definitions.

**D. HYDRAULIC EQUIPMENT**

Item Identification:

Location:

Quantity Fluid:      gallons

Date Tested:      /      /  
                    mo      day      yr

PCB Concentration: \_\_\_\_\_ ppm

Date Drained/Refilled:      /      /  
                    mo      day      yrDate Retested:      /      /  
                    mo      day      yr

PCB Concentration: \_\_\_\_\_ ppm

After draining/refilling

Marked as PCB? **Yes /No****E. ELECTROMAGNETS, SWITCHES, VOLTAGE REGULATORS,  
CIRCUITBREAKERS, RECLOSURES, CABLE**

Item Identification:

Location:

Quantity Fluid:      gallons

PCB Concentration: \_\_\_\_\_ ppm

Date Tested:  
                    /      /  
                    mo      day      yrPoses an Exposure Risk to Food or Feed\*? **Yes /No**Marked\* as PCB? **Yes /No**Reclassified? **Yes /No**Date Tested:  
                    /      /  
                    mo      day      yr

Describe Process: \_\_\_\_\_

Final PCB Concentration: \_\_\_\_\_ ppm

Date Tested:  
                    /      /  
                    mo      day      yr

**Note:** Words identified by asterisk (\*) are defined in Section 12.2 -Definitions.

## ATTACHMENT B - PCB INSPECTION AND SERVICING LOG FORMAT

Item Location:

Item Identification:

Item Description: \_\_\_\_\_

		If over 10 lbs., spill report filed?	
		Summary of inspection/service: Description of inspections and servicing. If leaks or spills are observed, attach Spill/Leak Report Form.	
Check Each + or -*		Are combustible materials within 5 m	Spill equipment available
	Tap changes		
	Inspection ports		
	Fins		
	Valves		
	Gauges		
	Bushings		
Inspector's Name			
Date			

+ Indicates good condition; - Indicates a deficiency

**ATTACHMENT C – DISPOSAL REQUIREMENTS FOR  
FLUORESCENT LIGHT BALLASTS**

PCB Capacitor	PCB Concentration	Labeling, Transportation and Manifesting for Disposal	Disposal Reference in §761	Disposal Options*
Labeled “No PCBs”		Not regulated	N/A	Not regulated
Not labeled “No PCBs”	<50 ppm	Not regulated	N/A	Not regulated
Not labeled “No PCBs” or Intact and non-leaking	≥50 ppm	Is a PCB bulk product waste. No labeling is required. Manifesting is required for disposal in accordance with §761.62(a); is not required under §761.62(b); may be required under §761.62(c).	.50(b)(2)(ii) .62(a)-(c)	EPA-permitted Incinerator or Landfill, or EPA-approved Alternate Destruction Method, or Decontamination (§761.65(d) storage approval may be required), or Coordinated approval, State approved landfill (leach test required), or Risk-based approval.
Intact and non-leaking	<50 ppm	No labeling or manifesting required	.50(b)(2)(i) .60(b)(2)(ii)	As municipal solid waste 40 CFR 761 Subpart D options
Leaking	<50 ppm or ≥50 ppm	Disposal as PCB bulk product waste. No labeling is required. Manifesting is required for disposal in accordance with §761.62(a); may be required under §761.62(c).	.62(a) or (c)	EPA-permitted Incinerator or Landfill, or EPA-approved Alternate Destruction Method, or Decontamination (§761.65(d) storage approval may be required), or Coordinated approval, or Risk-based approval.

\*Disposal options are based on EPA regulations. State and local rules may be more stringent.

## ATTACHMENT D – EPA APPROVED DISPOSAL METHODS

Item	Method		
	Incineration	Chemical-waste Landfill	Alternative
Liquid PCBs (includes mineral-oil dielectric fluid from PCB-contaminated liquids at concentrations between 50-500 ppm)	Acceptable	Acceptable only if source is incidental and associated with PCB articles and other non-PCB waste, if information is provided showing PCB level is not above 500 ppm and the liquid is not an ignitable waste	High-efficiency boiler that meets required criteria, or alternative disposal method approved by the EPA
Liquid PCBs (concentrations above 500 ppm)	Acceptable	Not acceptable	Alternative disposal method approved by the EPA
Non-liquid PCBs (contaminated soil, rags and other debris)	Acceptable	Acceptable	None
Municipal sewage, treatment sludge and dredged materials	Acceptable	Acceptable	Alternative method approved by the EPA
PCB transformers	Acceptable	Acceptable if drained, filled with solvent, allowed to stand for 18-hours and then drained	None
Large high or low-voltage PCB capacitors	Acceptable	Not acceptable	None
Small PCB capacitors (owned by manufacturers of PCB capacitors or PCB equipment and acquired in the course of such manufacturing)	Acceptable	Not acceptable	None
Small PCB capacitors	Acceptable	Acceptable	Municipal solid waste

Item	Method		
	Incineration	Chemical-waste Landfill	Alternative
(other than the above)			
PCB hydraulic machines (if drained of free flowing-fluid)	Acceptable	Acceptable	Municipal solid waste
Other PCB articles	Acceptable	Acceptable if free-flowing liquid is drained prior to disposal	None
PCB containers (not decontaminated)	Acceptable	Acceptable if liquid PCBs are drained	None
PCB containers (containing only PCBs at concentrations below 500 ppm)	Acceptable	Acceptable	Municipal solid waste if liquid PCBs are drained
PCB containers (decontaminated)	Acceptable	Acceptable	Reuse or municipal solid waste

## **SECTION 13 - LEAD-BASED PAINT**

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## Synopsis

**NOTE:** This section is promulgated to ensure NWS personnel and their families who may use NWS-provided residences containing lead-based paint (LBP) are knowledgeable of the risks presented. It is also provided to ensure NWS personnel understand the requirements for removal of LBP from NWS facilities.

### **Initial Implementation Requirements:**

- Designate an Individual to Coordinate the Lead Based Paint Effort (13.5.1)
- Compare Site/Facility Operations with the Requirements of this Section
  - If the facility was built prior to 1978, perform a facility survey to confirm the presence or absence of lead-based paint (13.5.2).
  - If lead-based paint is present in NWS-provided housing, ensure NWS employees and their families are provided with the lead-based paint disclosure forms and the pamphlet Protect Your Family from Lead in Your Home (13.5.3).
- If Removal is Attempted:
  - Ensure contractors hired to remove lead-based paint have taken the required EPA Lead-Based Paint Removal Course (13.5.4).
  - Ensure lead-based paint residue is disposed in accord with EPA/State regulations (13.6).

### **Recurring and Annual Task Requirements:**

- Ensure all new NWS Employees and Their Families are provided with the Lead-Based Paint Disclosure forms and the Pamphlet Protect Your Family from Lead in Your Home (13.5.3) (if required).

Lead-Based Paint Checklist	YES	NO	N/A
1. Was the facility or work site built before 1978? (13.5.1)	—	—	—
2. If it was built prior to 1978, has a lead-based paint survey been performed? (13.5.2)	—	—	—
3. If yes, has a Lead-Based Paint Coordinator been appointed?	—	—	
4. If NWS provided housing, have the affected employees been notified of the presence of lead-based paint and provided the pamphlet Protect Your Family From Lead in Your Home? (13.5.3)	—	—	—
5. If removal of the lead-based paint is planned, are procedures in place to ensure:			
a. Contractor personnel have taken the required EPA Lead-Based Paint Removal Course? (13.5.4)	—	—	—
b. The residues are disposed in accord with EPA/State regulations? (13.6)	—	—	—

## SECTION 13 - LEAD-BASED PAINT

### 13.1 Purpose and Scope

Until 1978, paint formulators relied on lead oxide for the base pigment (coloring) used in paint. The purpose for this section is to ensure the NWS employees and their families who may be exposed to these coatings are protected. The section applies to all NWS facilities, work sites and employee housing where lead-based paint was applied.

Because the ban only applied to paint used in residential applications and did not include paint used in commercial applications, lead based paint is still being used in some commercial applications. For instance the walls in upper air buildings and other painted structures and equipment may have lead paint.

### 13.2 Definitions

#### **Lead-Based Paint**

Lead-Based paint, as defined by the EPA in 40 CFR 745.103 (2) - paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight. It was manufactured prior to 1978.

#### **Operating Unit**

Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).

#### **Station Manager**

For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### 13.3 Acronyms Employed in This Section

CPSC	Consumer Product Safety Commission
EPA	Environmental Protection Agency
HUD	Department of Housing and Urban Development
LBP	Lead-Based Paint
SECO	NOAA Safety and Environmental Compliance Office
NLIC	National Lead Information Clearinghouse
NOAA	National Oceanic & Atmospheric Administration

NWS	National Weather Service
NWSH	National Weather Service Headquarters
XRF	X-ray Spectrophotometer

## 13.4 Regulatory Requirements

### 13.4.1 Federal Programs

The Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as Title X, required the Department of Housing and Urban Development (HUD) and the Environmental Protection Agency (EPA) to require the disclosure of known information on lead-based paint and its hazards before the sale or lease of most housing built before 1978. For those operations that have decided to remove these coatings, the EPA has also promulgated rules governing the removal and disposal of this paint and the items it coats.

### 13.4.2 State Programs

The EPA has authorized several States to run their own lead-based paint programs based on the EPA-provided program. As a result, NWS facilities that have housing built prior to 1978 must contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH environmental and safety staff to determine if a State lead-based paint program is in effect.

### 13.4.3 National Weather Service

While the National Weather Service (NWS) does not sell or lease housing in the legal sense, it has decided to voluntarily comply with these requirements to ensure NWS personnel and their families understand the risk presented by this material.

## 13.5 Lead-Based Paint Control/Removal Program

### 13.5.1 Appoint a Coordinator

If an NWS facility has a building, structure, or worksite built before 1978, the Station Manager will appoint a Lead Based Paint Coordinator to investigate the presence of lead based paint and, if found, initiate and maintain a control program. For buildings built after this date, a lead test will be done before construction activity or if the painted surface is in poor condition.

### 13.5.2 Facility Survey

For NWS housing structures built prior to 1978, a survey must be performed to determine the presence and location of lead-based paint used within the structure(s). The individuals and firms performing this work must be certified by the EPA. To arrange for this testing, contact the NWS Regional/Operating Unit Environmental/Safety Coordinator, and/or the NWSH environmental and safety staff.

The testing can be done in two different ways. Either samples of paint (chips) can be removed and sent to a laboratory for analysis or an instrument called an X-ray Spectrophotometer (XRF) can be brought to the site to provide almost instantaneous on-the-spot measurements. The XRF

is a faster method however, because the instrument uses a low-level radioactive source, State laws governing the use and licensing of such sources must be investigated prior to use on a NWS site. If required by the State, ensure the contractor has the required license.

### **13.5.3 Lead-Based Paint Information Program**

For all housing facilities found to contain lead-based paint, the NWS Lead-Based Paint Program Coordinator must provide the tenants with information detailing the known lead-based paint hazards and a pamphlet developed by the EPA, HUD and the Consumer Product Safety Commission (CPSC) titled, “Protect Your Family from Lead in Your Home” must be provided to all NWS personnel using this housing.

**NOTE:** The sample disclosure forms and the pamphlet, “Protect Your Family from Lead in Your Home” can be obtained by calling the National Lead Information Clearinghouse (NLIC) at (800) 424-LEAD (800-424-5323) or from this link:  
<https://www.epa.gov/lead/protect-your-family-lead-your-home-real-estate-disclosure>

### **13.5.4 Lead-Based Paint Removal**

Effective August 29, 1998, the EPA required anyone who removes lead-based paint to partake in an EPA-approved lead-based paint program. The original implementation date in 1996 was delayed to allow States and Indian Tribes to apply and receive authorization to run their own programs. As a result, depending on the location of the facility where the lead-based paint is to be removed, the personnel involved in the removal process will be required to have attended either an EPA or a State-certified lead-based paint removal course.

40 CFR 747.227 details the standards required for conducting lead-based paint activities including the inspection, removal, testing and other allowed activities. The EPA is required to be notified of any abatement activities in residential properties or child-occupied facilities by the certified firm performing the work at least 5-business days prior to the commencement of the activity.

## **13.6 Residue Disposal**

The debris from the removal of lead-based paint meets the lead toxicity characteristic (D008) and therefore it should be managed as a hazardous waste. Because the EPA has found this to be an impediment for homeowners and other building owners, the EPA has tried to devise ways around this problem. If the lead-based paint residue is removed from a residence - even NWS-owned residences - the residue can be disposed as a solid waste (garbage) under the household hazardous waste exemption in 40 CFR 261.4(b) (1). However, State regulations should be checked. If the residue is removed from a building that does not meet the definition of a household, this exemption does not apply and this residue must be managed as a hazardous waste.

## **13.7 Responsibilities**

### **13.7.1 NWS Headquarters (NWSH)**

- a. NWSH will coordinate with SECO, as necessary, regarding compliance issues related to this section.
- b. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.

### **13.7.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at regional headquarters or Operating Unit facilities.

### **13.7.3 Station Manager**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility (if applicable).
- b. Will ensure sufficient personnel and funding are available to enable compliance with all requirements of this section (if applicable).
- c. Will ensure that resident lead-based paint notifications are provided to residents of NWS housing units contaminated with lead-based paint (if applicable).
- d. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### **13.7.4 Environmental or Environmental/Safety Focal Point or Designated Person**

- a. Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.
- b. Will ensure copies of the lead-based paint disclosure forms and the pamphlet “Protect Your Family from Lead in Your Home” are available and provided to new residents of NWS housing known to be contaminated with lead-based paint or built before 1978 that have not had a lead-based paint inspection indicating that lead-based paint is not present.

### **13.7.5 Employees**

- a. Individual employees affected by this section are required to read, understand and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Safety Focal Point.

## 13.8 References

### Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

#### 13.8.1 U.S. Environmental Protection Agency

40 CFR 261	Identification and Listing of Hazardous Waste
.4	Exclusions:
	Solid wastes which are not hazardous wastes
	1) Household waste

## **SECTION 14 - IMPLEMENTATION OF NEPA**

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## Synopsis

**NOTE:** This section is designed to provide guidance on the requirements of the National Environmental Policy Act (NEPA) as it impacts NWS National Weather Service (NWS) facilities or work site operations. The section applies to all NWS facilities and work sites.

### **Initial Implementation Requirements:**

- Compare Site/Facility Operations with the Requirements of this Section
  - Contact NWS Responsible Program Manager and/or NWS NEPA Coordinator to determine if the proposed action is deemed a categorical exclusion or require preparation of Environmental Assessment (EA)

### **Recurring and Annual Task Requirements:**

- Review new projects for applicability of NEPA

<b>Implementation of NEPA Checklist</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
Is the facility planning a project that qualifies for a Categorical Exclusion or Environmental Assessment?	—	—	—

## SECTION 14 - IMPLEMENTATION OF NEPA

### **14.1 Purpose and Scope**

This section provides guidance on the requirements of the National Environmental Policy Act (NEPA) as it impacts NWS facilities or work site operations. The section applies to all NWS facilities and work sites.

### **14.2 Definitions**

#### **Categorical Exclusion (CE)**

An action that the Agency has determined will not have any significant environmental effect and hence will not require application of the full NEPA process.

#### **Environmental Assessment (EA)**

A document that determines whether a proposed or planned action will significantly affect the environment.

#### **Environmental Impact Statement (EIS)**

A detailed evaluation of a proposed action and its alternatives.

#### **Operating Unit**

Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).

#### **Station Manager**

For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### **14.3 Acronyms Employed in This Section**

**CAA**      Clean Air Act

**CE**        Categorical Exclusion

**CWA**      Clean Water Act

**CZMA**     Coastal Zone Management Act

**EA**        Environmental Assessment

EIS	Environmental Impact Statement
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
MPRSA	Marine Protection, Research and Sanctuaries Act
NAO	NOAA Administrative Order
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
PPA	Pollution Prevention Act
ROD	Record of Decision
SECO	NOAA Safety and Environmental Compliance Office

## 14.4 Regulatory Requirements

### 14.4.1 Federal

Under the National Environmental Policy Act (NEPA), the EPA created a process that requires all Federal agencies to evaluate the historic, socioeconomic, and environmental consequences of “major actions” using a process that requires input from the public when environmental impacts could result. These regulations are found in 40 CFR Chapter V, Parts 1500 to 1517.

NEPA encompasses a wide variety of existing environmental legislation including, but not limited to the Clean Air Act (CAA), Clean Water Act (CWA), Coastal Zone Management Act (CZMA), National Historic Preservation Act (NHPA), Marine Protection, Research and Sanctuaries Act (MPRSA), Pollution Prevention Act (PPA), and the Endangered Species Act (ESA). NEPA directs Federal agencies to assess the environmental effects of a proposed Federal action and its alternatives on the human environment, consider any mitigation options of the proposed action, involve the public, and take the NEPA analysis, including public comments, into account in the process. Federal action is defined as an activity, such as a plan, project or program, which may be fully or partly funded, regulated, conducted, or approved by a Federal agency.

The NEPA review process could be required if an NWS facility or work site plans to:

- a. Construct, modify or rehabilitate a building or property
- b. Implement changes in facility site location or perform a significant redistribution of staff
- c. Make changes that will alter the prevailing land use

#### 14.4.2 State

Some States have enacted legislation that mirrors the Federal statutes. NWS facilities or work sites will need to contact the NWS Regional/Operating Unit Environmental/Safety Coordinator and/or the NWSH environmental and safety staff to determine the applicability of State requirements.

#### 14.4.3 NOAA Orders

The NOAA has promulgated new NOAA Administrative Order NAO 216-6A, “Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988, Floodplain Management and 13690, Establishing a Federal Flood Risk Management Standard for Federal Projects and Funding; and 11990, Protection of Wetlands” The NAO 216-6A became effective on April 22, 2016. Its Companion Manual, “Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities” was finalized by the NOAA Office of General Counsel (OGC), with effective date January 13, 2017. The NAO 216-6A and Companion Manual will be used by NOAA as the agency's policy and procedures for compliance with NEPA, the CEQ Regulations, E.O.12114 Environmental Effects Abroad of Major Federal Actions (4 January 1979), E.O. 11988 Floodplain Management (24 May 1977), as amended, E.O. 11990 Protection of Wetlands (24 May 1977) as amended, and DAO 216-12 Environmental Effects Abroad of Major Federal Actions (10 March 1983). The NOAA OGC will be working, as requested, early and often with staff in NOAA Line and Staff Offices to identify how compliance with NAO 216-6A will be met.

### 14.5 The NEPA Process

The NEPA evaluation process involves three levels of analysis:

- a. Categorical Exclusion determination
- b. Preparation of an EA and a finding of no significant impact or FONSI
- c. Preparation of an EIS

#### 14.5.1 Categorical Exclusion (CE)

CEs are found in Appendix E of the Companion Manual for Administrative Order 216-6A, which is available at this link:

<http://www.nepa.noaa.gov/docs/NOAA-NAO-216-6A-Companion-Manual-01132017.pdf>

Only CEs found in the NOAA Companion Manual can be applied to NWS activities. Actions must be considered as a whole and cannot be broken down into part that meet individual CEs. The action must also meet all of the conditions contained in the CE. Finally, the action must be evaluated for extraordinary circumstances to ensure effects on the human environment have been properly taken into account.

An NWS facility planning an action that is deemed to meet the requirements for a CE would have no further requirements under NEPA except to document the use of the CE via memorandum to the record and submit a copy to the NWSH environmental and safety staff.

#### **14.5.2 Environmental Assessment (EA)**

For some new actions, NWS may have to prepare a written EA to determine whether the planned or proposed action would significantly affect the environment. The NWSH environmental and safety staff should be contacted prior to attempting to prepare the EA. The EA will provide sufficient evidence and analysis to support either Finding of No Significant Impact (FONSI) or the determination that an EIS will be required. Further information on EAs is available in the Companion Manual to a NAO 216-6A.

#### **14.5.3 Environmental Impact Statement (EIS)**

The EIS is a detailed evaluation of the proposed action and its alternatives. The public, other agencies and other outside parties may provide input into the preparation of the EIS and then provide comments on the draft EIS. The NWSH environmental and safety staff will work with NOAA OGC to coordinate preparation of EIS, if necessary.

If an action is expected to affect the environment or be controversial, the agency may choose to skip preparation of the EA and just prepare the EIS. After the final EIS is prepared, the agency will then prepare a public record of decision (ROD) which describes how it addressed the findings of the EIS. Further information on EISs is available in the Companion Manual to a new NAO 216-6A.

### **14.6. Application to NWS**

While most routine NWS actions do not require scrutiny under the NEPA process, NWS Station Managers must be aware of this law's potential applicability, particularly to local changes in process or facility. Contact NWS Regional/Operating Unit Environmental/Safety Coordinator, and the NWSH environmental and safety staff if there is any doubt about the environmental impacts of a proposed action.

### **14.6 Responsibilities**

#### **14.6.1 NWSH**

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with SECO and NOAA OGC staff, as necessary, regarding compliance issues related to this section.

#### **14.6.2 Regional or Operating Unit Environmental/Safety Coordinator**

- a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit.

- b. Will ensure that procedures are implemented at regional headquarters or operating unit facilities to incorporate the NEPA process into the planning of “major actions.”

**14.6.3 Station Manager and NWS Program Managers**

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed.
- b. Will ensure that NEPA review of proposed actions is performed early in the planning process and is coordinated with appropriate Regional and National Headquarters Program Offices and environmental/safety personnel
- c. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.
- d. Will ensure that the NEPA process is included early in the planning of “major actions.”

**14.6.4 Environmental or Environmental/Safety Focal Point or Designated Person**

Will ensure that any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.

**14.6.5 Employees**

- a. Individual employees affected by this section are required to read, understand, and comply with the requirements of this section.
- b. Report all violations of the requirements of this section to their supervisor or Safety Focal Point.

**14.7. References**

Incorporated References

NOAA Administrative Order  
NAO 216-6A

[Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988 and 13690, Floodplain Management; and 11990, Protection of Wetlands.](#)

NAO 216-6A Companion  
Manual

[Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities](#)

## **SECTION 15 - PAST SITE CONTAMINATION AND REAL PROPERTY ACQUISITION**

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## **Synopsis**

### **Initial Implementation Requirements:**

- If a NWS facility or work site is notified that it is a Potentially Responsible Party (PRP) for the remediation of a contaminated site, contact the NOAA Safety and Environmental Compliance Office (SECO) and NWS Office of General Counsel immediately (15.5.1a).
- If attempting to acquire a piece of real estate, have a Phase I property investigation performed by a qualified contractor. (15.5.1b)
  - If contamination is found, perform a Phase II investigation or look for another site. (15.5.1b)

### **Recurring and Annual Task Requirements:**

- Continued Monitoring of a Remediated Site

<b>Past Site Contamination and Real Property Acquisition Checklist</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>
1. Has the facility or work site been notified that it is a Potentially Responsible Party for contamination of property? (15.5.1a)	—	—	—
2. If the NWS is attempting to acquire real estate, has a Phase I property investigation been performed? (15.5.1 b)	—	—	—

## SECTION 15 – PAST SITE CONTAMINATION AND REAL PROPERTY ACQUISITION

### 15.1 Purpose and Scope

This section is applicable to any National Weather Service (NWS) facility that is currently located on or attempting to acquire a site that was or may have been chemically contaminated by past activities and operations. The section applies to all NWS facilities and work sites.

### 15.2 Definitions

<b>Due Diligence</b>	The formal investigation of a piece of real estate to determine its environmental history and the potential for on-site contamination.
<b>Responsible Party</b>	Any person, organization, agency or other legal entity that is found to be responsible for any contaminants located on a piece of property.
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### 15.3 Acronyms Employed in this Section

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
SECO	NOAA Safety and Environmental Compliance Office
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
PRP	Principal Responsible Party

### 15.4 Regulatory Requirements

#### 15.4.1 Federal

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) or Superfund was created by Congress to address the environmental, social, and financial problems created by previously contaminated real estate. While the law is best known for the creation of the Superfund - a pot of money to fund clean-ups where responsible parties cannot be identified - it also established strict and lasting liability for anyone who improperly managed hazardous waste.

### 15.4.2 State

To address problems at contaminated sites that do not qualify for the Federal CERCLA program, several States have enacted similar legislation and regulatory programs. NWS Focal Points will contact the Regional/Operating Unit Environmental/Safety Coordinator, if required, to determine if the State has a similar program.

### 15.5 Requirements

CERCLA created two principals regarding property contaminated by improper waste disposal.

First, if a person, business, or governmental agency caused a piece of real estate to become contaminated by what is deemed “improper disposal” of a waste, the person, business, or governmental agency is responsible for remediation of the site.

Secondly, if a person, business or governmental agency buys or acquires a piece of real estate that is contaminated by the improper disposal of a waste by another entity - and the buyer does not perform a “due diligence search” to determine if the property is contaminated and to what extent, the buyer is responsible for remediating any and all contamination discovered on the property at a later date.

#### 15.5.1 Application to the NWS

For the NWS, these principles will apply to three activities: past disposal activities, acquiring real estate, and transferring real estate.

##### a. Past Disposal Activities

If an NWS facility or work site sent waste for treatment, storage or disposal to a solid (or garbage) or hazardous waste facility or site that is now (or could be in the future) determined to be contaminated, the NWS could be identified as a “Responsible Party,” and because the EPA (or State) need only identify one responsible party, the NWS facility could be held legally responsible for conducting and paying for the entire cost of the clean-up, even if it only sent a very small amount of waste. The NWS would then be required to sue any other potentially responsible parties (PRPs) to recover any money it was forced to pay.

When a contaminated site is identified, usually a number of PRPs are identified, contacted, and for a variety of reasons, the PRPs jointly become involved in determining the scope of the clean-up and their individual share in paying the cost. Because the potential liabilities are so high, should an NWS facility be notified by the EPA or State that it has been identified as PRP, the Station Manager must immediately contact the NWS Regional Director and/or NWSH environmental and safety staff for assistance. Copies of all the NWS correspondence must be sent to NOAA Office of General Counsel.

##### b. Acquisition of Property

Before an NWS facility or work site acquires a piece of real estate, the environmental history of the property must be investigated to determine if site contamination is present. This investigation is termed a “due diligence” or “Phase I” investigation and it must be

done in accordance with a protocol designed by the American Society for Testing and Materials (ASTM) entitled, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (ASTM 1527-05 dated November 18, 2005). A Phase I Environmental Site Assessment includes four basic components: a records review, a site reconnaissance, and interviews with current owners and occupants of the property and an evaluation and report of the findings. This investigation must be performed by a qualified environmental specialist or consultant and shall be arranged as part of the acquisition process.

A Phase II Assessment is usually initiated when more detailed or specific information is required about the property under investigation. For example, if the property was previously used as a "junkyard," an investigation into whether the soil and groundwater at the site were contaminated with oil, solvents or paints.

A Phase II can include soil and groundwater testing or even a search for underground tanks, drums or equipment using ground-penetrating radar or other investigative techniques.

If the Phase I study identifies a major environmental problem or problems with a site, the NWSH environmental/safety staff should be contacted. With NOAA Office of General Counsel (OGC) guidance, recommendations on the course of action will be developed. Possible options would be to:

- 1) Perform a Phase II Environmental Site Assessment to further characterize the site.
- 2) Pursue an alternate site location.
- 3) Pursue legal documentation which would indemnify NWS from past use site environmental liability.
- 4) Accept the problem(s) and assume the environmental liability associated with the site.

One or more of these options should be pursued prior to NWS taking control of the site.

c. Transferring Property

When an NWS facility no longer needs a piece of real property, it will often transfer the property to another agency or governmental unit. When this occurs, NWS is required to meet the requirements of CERCLA 120, subpart (h), which requires Federal agencies to disclose all known environmental contamination prior to the sale or transfer of real property. The Regional/Operating Unit Environmental/Safety Coordinator and/or NWSH environmental safety staff should be contacted to assist in determining whether the real property has the potential for environmental contamination and if necessary, to conduct an environmental survey to investigate if there is any contamination. A written disclosure of known environmental contamination will be included in the real property sale or transfer deeds.

There are additional requirements when a property is sold to a non-Federal buyer. The Real Property Management Division (RPMD), and NWSH environmental/safety staff should be contacted to assist in this effort.

## 15.6 Responsibilities

### 15.6.1 NWS Headquarters (NWSH)

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section (if applicable).
- b. NWSH will coordinate with SECO, NOAA Office of General Counsel, and RPMD as necessary, regarding compliance issues related to this section.

### 15.6.2 Regional or Operating Unit Environmental/Safety Coordinator

- a. Will monitor and promote compliance with the requirements of this section at the Regional Headquarters and field offices or Operating Unit (if necessary).
- b. Will ensure that procedures are implemented at Regional Headquarters or Operating Unit facilities to identify and report past site contamination (if applicable).

### 15.6.3 Station Manager

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility (if applicable).
- b. Will ensure that procedures are developed and implemented under NWSH, Regional and NWSH environmental and safety staff oversight at NWS field offices when chemical contamination discovered on-site.
- c. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### 15.6.4 Environmental or Environmental/Safety Focal Point or Designated Person

Will ensure that any tasks assigned by the Station Manager are implemented in accordance with this section.

## 15.7 References

### Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

### 15.7.1 American Society for Testing and Materials (ASTM)

ASTM E1527-05	“Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”
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### 15.7.2 U.S. Environmental Protection Agency

40 CFR 312	Innocent Landowner, Standards for Conducting All Appropriate Inquiries
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## **SECTION 16 - TRAINING**

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### Synopsis

**NOTE:** This section is promulgated to ensure that all National Weather Service (NWS) facilities and work sites establish and implement training programs required under environmental programs. It summarizes each applicable law and details the employee training required by the regulations promulgated under the authority of the law.

The section applies to all NWS facilities and work sites.

### Initial Implementation Requirements:

Compare Site/Facility Operations with the Requirements of this Section

- Determine which environmental programs affect operation of the facility or work site
- Determine the training required
- Provide the required training

### Recurring and Annual Task Requirements:

Provide Refresher Training, as required.

Training Checklist	YES	NO	N/A
Does the facility or work site:			
a. Generate and handle hazardous and/or Universal waste	—	—	—
b. Have a Spill Prevention, Control, and Countermeasure (SPCC) Plan	—	—	—
c. Have lead-based paint in housing units	—	—	—
d. Store flammable materials	—	—	—
e. Use aboveground storage tanks	—	—	—
f. Use an underground storage tank	—	—	—
g. Have employees who:			
• Remove lead-based paint	—	—	—
• Remove asbestos	—	—	—
• Maintain HVAC	—	—	—
• Apply pesticides	—	—	—
• Use OSHA-defined hazardous chemicals	—	—	—
• Respond to spills of hazardous materials	—	—	—
• Specify or apply labels, markings or containers for shipments of hazardous materials	—	—	—

**NOTE:** If the correct answer results in an “x” in a boxed area, specific employee training is required.

## SECTION 16 TRAINING

### 16.1 Purpose and Scope

This section is promulgated to ensure that the employee training required under numerous environmental programs is established and implemented at all NWS facilities and worksites.

### 16.2 Definitions

<b>Asbestos-Containing Material</b>	Any material that contains more than 1% asbestos.
<b>HAZMAT Employee</b>	A person who “in the course of employment, affects hazardous materials safety.”
<b>Operating Unit</b>	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
<b>Station Manager</b>	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### 16.3 Acronyms Employed in This Section

ACM	Asbestos Containing Materials
AHERA	Asbestos Hazard Emergency Response Act
CDL	Commercial Driver's License
CESQG	Conditionally Exempt Small Quantity Generator
CFC	Chlorofluorocarbons
CPSC	Consumer Product Safety Commission
DOT	Department of Transportation
DRO	Designated Responsible Official
EPA	Environmental Protection Agency
HAZCOM	Hazard Communication
HAZMAT	Hazardous Material
HAZWOPER	Hazardous Waste Operations and Emergency Response
LQG	Large Quantity Generator
SECO	NOAA Safety and Environmental Compliance Office
NLIC	National Lead Information Clearinghouse

NOAA	National Oceanic & Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NWS	National Weather Service
NWSH	National Weather Service Headquarters
PACM	Presumed Asbestos Containing Material
PEL	Permissible Exposure Limit
PPE	Personal Protective Equipment
OSHA	Occupational Safety and Health Administration
RCR	Resource Conservation and Recovery Act
SDS	Safety Data Sheet (formerly MSDS)
SPCC	Spill Prevention, Control, & Countermeasure
SQG	Small Quantity Generator
TSI	Thermal System Insulation
UST	Underground Storage Tank

## 16.4 Regulatory Requirements

### 16.4.1 Federal

Employee training for environmental programs is mandated by the Environmental Protection Agency (EPA), as well as by the Occupational Safety and Health Administration (OSHA) and the Department of Transportation (DOT).

The Federal laws, which authorize these agencies to require the training, include:

- a. **Federal Insecticide, Fungicide and Rodenticide Act of 1947** – Under this law, the EPA requires applicators be trained and certified in the proper storage, use and disposal of pesticides. While this training is usually only required for commercial applicators, some States require it for applications of over-the-counter products.
- b. **Occupational Safety and Health Act of 1970** – This law empowers OSHA to require training for employees when managing and working with hazardous chemicals. As a result, OSHA has a number of requirements for training programs, including the Hazard Communication Standard, the storage of flammable liquids, as well as those that are limited in scope, such as asbestos worker, lead-based paint worker, or confined space entry training.
- c. **Clean Water Act of 1972** – The Clean Water Act of 1972 and its amendments in 1977 and 1987 empowered the EPA to create a National Pollutant Discharge Elimination System (NPDES) Program to protect the nation's water. Under this program, the EPA required the use of Spill Prevention, Control, and Countermeasure (SPCC) plans to prevent and contain releases of petroleum products from storage tanks. The SPCC Plans rely on employees' training to ensure the structures and programs described in the SPCC Plan are operational.

In addition, because the NPDES Program requires permits be obtained for the discharge of water, additional training may be specified as part of a discharge permit.

- d. **Clean Air Act of 1990** – The Clean Air Act of 1990 authorized the EPA to create a regulatory program that includes training for and certification of all employees who repair refrigeration systems that contain chlorofluorocarbons (CFCs) as well as those who remove

asbestos or ACM. The EPA also requires training for employees who perform maintenance and repair of petroleum tank venting systems.

- e. **Hazardous Materials Transportation Uniform Safety Act of 1990** – The Hazardous Materials Transportation Uniform Safety Act of 1990 authorized the DOT to require training for all employees who affect the safety of a hazardous material while in transport. By definition, anyone who packages, labels, marks or even signs a shipping paper is a DOT HAZMAT employee and must be trained.
- f. **Toxic Substance Control Act of 1976** – The Toxic Substance Control Act of 1976 authorized the EPA to implement the Model Accreditation Plan (MAP), which set minimum training standards for personnel engaged in asbestos abatement. The EPA has also used this law to authorize required training for workers who remove lead-based paint.
- g. **Resource Conservation and Recovery Act of 1976** – The Resource Conservation and Recovery Act of 1976 authorized the EPA to create the national hazardous waste management program which included requirements for training all employees who generate, store, dispose, or otherwise manage hazardous waste.
- h. **Hazardous and Solid Waste Amendments of 1984** – The Hazardous and Solid Waste Amendments of 1984 required the EPA to establish a program to address underground storage tanks. As part of this program, the EPA required the training of employees in the use and maintenance of underground storage tanks and their protective systems.
- i. **Superfund Amendments and Reauthorization Act of 1986** – The Superfund Amendments and Reauthorization Act of 1986 required OSHA to address the topic of worker safety at Superfund sites. Because of this legislation, OSHA created the Hazardous Waste Operations and Emergency Response (HAZWOPER) program, which includes specific training requirements for employees who respond to spills of hazardous materials.

#### 16.4.2 State and Local

Because the States have been authorized by the EPA to manage many of these Federal Environmental Programs within their borders, State environmental regulations must be consulted to determine the requirements for a specific NWS facility or work site. The NWS Regional/Operating Unit Environmental Coordinator and/or NWSH environmental/safety staff should be consulted to determine if State or local rules are applicable. In addition, because many States have created programs which augment and/or replace OSHA programs, the State worker safety regulations must also be consulted.

This is not the case in the area of hazardous materials transportation. Because the States are discouraged by Congress from creating separate rules for the transportation of hazardous materials the U.S. DOT requirements are universally applied throughout the U.S. and thus the DOT regulations for training of HAZMAT employees are the only requirements for this area.

#### 16.5 NOAA Training Programs

The annual NOAA Safety, Environmental, and Sustainability Awareness course is currently required for new NOAA employees and may be used as a refresher by all other employees who previously completed the course. The course is available at:

<https://doc.csod.com/LMS/LoDetails/DetailsLo.aspx?loid=a3edc2bf-1485-4a6a-82bf-59d4c7e6af07#t=1>

## 16.6 NWS Training Programs

Based on their operations and the applicable laws and regulations, NWS facilities and work sites are required to create and implement employee training programs for the following activities, if applicable:

- a. Hazardous and Universal waste generators
- b. Spill Prevention Control and Countermeasures plan (SPCC plan) and inspection, testing and operation of aboveground storage tanks
- c. Lead-based paint in NWS housing
- d. Asbestos removal
- e. Maintenance of air conditioning systems
- f. Application of pesticides
- g. Use of hazardous chemicals (HAZCOM Standard)
- h. Storage of flammable materials
- i. Response to spills of hazardous materials (HAZWOPER Standard)
- j. Underground storage tank management
- k. DOT Hazardous Materials transportation

In addition, should an NWS facility or work site be granted a permit for air emissions or the discharge of wastewater, there may be additional training required as a permit condition.

### 16.6.1 Training Required for Hazardous Waste Generators

Employees at NWS facilities or work sites that generate and store (or accumulate) hazardous waste are required to be trained if they are involved in the generation, accumulation, packaging, labeling or transportation of the waste off-site. The amount and type of training required is in large part determined by the amount of hazardous waste generated at the site and what is done with it.

The EPA defines four types of hazardous waste generators and each has different training requirements:

- A Large Quantity Generator (LQG) produces more than 1,000 kilograms per calendar month or more than 1 kilogram per month of acutely hazardous waste.
- Small Quantity Generator (SQG) that produces less than 1,000 kilograms, but more than 100 kilograms and less than 1 kilogram per month of acutely hazardous waste.
- A Very Small Quantity Generator (VSQG) that produces less than 100 kilograms per month
- A generator that only accumulates universal wastes that are being recycled.

**NOTE:** The determination of the quantity of hazardous waste generated is based on location not organization. If a NWS facility or work site that generates less than 100 kilograms per month of hazardous waste is co-located with other agencies on a site where the aggregate of all the hazardous waste generated exceeds the 1,000-kilogram level, the NWS facility or work site is a large quantity generator.

a. Large Quantity Generator Training Requirements

Currently, the EPA regulations require a formal, written program, which is designed to ensure that all facility personnel involved in hazardous waste management are taught to perform their jobs to ensure compliance with the hazardous waste regulations. This means employees must be taught why a waste is considered “hazardous” and how to handle, label, mark and store it properly as they do their work. The training may be administered in a classroom or on-the-job.

The training program must be directed by a “person trained in hazardous waste management procedures.” The material for instruction must include those job-specific procedures that each individual needs to perform their job.

1) Minimum Requirements

The EPA requires employees who handle a hazardous waste be trained to properly manage that hazardous waste as they perform their jobs. In addition, the EPA and OSHA require the employees be taught how to prepare for and respond to emergency involving hazardous wastes. At a minimum, this training will involve a review of the pertinent sections of the facility/work site Occupant Emergency Plan developed in accordance with Procedure 5 of NWSM50-1115 - Occupational Safety and Health Manual. It must also include repair and replacement of equipment needed during emergency as well as immediate response procedures such as emergency reporting procedures, use of the alarm/communication system and employee evacuation procedures.

- 2) Compliance Dates: The training must be provided within six months of hire or promotion or transfer.
- 3) Retraining and Recordkeeping

- a) Retraining Required: annual refresher of initial training
- b) Records: the program must consist of several written records: a job title, a job description, the amount and type of training required and documentation that the training was provided.

**Job Title** - While the job titles can be those already used by an organization and/or incorporated into a collective bargaining agreement, they do not have to be. In fact, it is better if these titles only refer to a person’s specific hazardous waste duties and not to any of their other duties. For example, the hazardous waste job title “Satellite Accumulation Operator” could be given to an employee who is in charge of the satellite accumulation areas but who holds another title that describes his/her primary duty, such as the Electronics Technician or Data Acquisition Program Manager. While each of these individuals has different primary duties, for the purposes of the hazardous waste training program job titles

they would be identical.

**Job Description** - For each hazardous waste job title, a description of what is required of that individual must be prepared. Remember, only one job description is needed for each job title. The description must include the duties or responsibilities for that title and the qualifications needed to properly fulfill those responsibilities.

**Training Needed** - Based on the job description, a document must be prepared which describes the type and amount of training required to ensure they can perform their duties as detailed in the job description. These records must include the training required initially upon job assignment as well as that necessary for the annual refresher.

**Training Records** - The records documenting the fact that training was completed must be kept for 3 years after an employee leaves or is transferred.

4) Regulatory Citation

40 CFR 262.34 which references 40 CFR 265.16

29 CFR 1910.120(p) (8) (iii)

b. Small Quantity Generator Training

- 1) Generators who produce more than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month are required to provide training to "ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relevant to their responsibilities during normal facility operations and emergencies."

This training must include:

- a) Identification of hazardous wastes generated at the facility
- b) Techniques for packaging, marking, labeling
- c) Accumulation (storage) procedures
- d) Emergency response procedures involving the waste
- e) Internal notification or recordkeeping procedures, which allow accountability of the waste.

2) Compliance Dates

The EPA does not specify how long this training should take nor when it must be provided. Best management practices, however, would suggest this training be provided before an employee handles a hazardous waste.

3) Retraining

The EPA does not require retraining, but a review every two years at a minimum is suggested.

c. Very Small Quantity Generator Training Requirements

1) Requirements

For generators who produce less than 100 kg per month of hazardous waste, the EPA has no specific training requirements, however, “best management practices” require employees are provided training in:

- a) How to manage any hazardous waste they generate, transport or store
- b) How to respond to emergencies involving the hazardous waste
- 2) Compliance Dates

The EPA does not specify how long this training should take nor when it must be provided. Best management practices, however, would suggest this training be provided before an employee handles a hazardous waste.

- 3) Retraining: The EPA does not require retraining but a review every two years at a minimum is suggested.

d. A Small Quantity Universal Waste Handler

Generators of hazardous waste that meet the requirements for universal wastes if recycled are also required to provide training for their employees. The list of universal wastes includes:

- a) Batteries
- b) Pesticides
- c) Mercury-containing equipment
- d) Lamps, including fluorescent bulbs

If an NWS facility or work site only generates universal wastes and accumulates a total of less than 5,000 kilograms (11,023 pounds) of these wastes before transporting to a recycling facility, then the facility is a “small quantity handler” (SQH) of universal waste. The NWS employees who manage or store these wastes must receive training on the proper handling of the wastes and the appropriate emergency procedures to be used in the event of breakage, leak, fire or other emergency.

#### 16.6.2 Training Required by the Spill Prevention, Control, and Countermeasure (SPCC) Plan

##### I. Training Requirements

If an NWS facility is required to have an SPCC Plan, the EPA requires the training program to ensure facility personnel understand the operation and maintenance of the equipment described in the SPCC Plan to ensure discharges of oil are prevented and personnel know how to respond if a spill should occur.

OSHA has a training requirement for employees who respond to releases of petroleum products under the Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements in 29 CFR 1910.120q. Employees who only respond in a defensive fashion (i.e., use sorbent to absorb a spill) without actually trying to stop the release are deemed First Responder Operations Level. These employees must receive at least eight hours of training or be certified by the employer (i.e. the Station Manager) that they “have sufficient experience to objectively demonstrate competency.”

**NOTE:** For employees who only respond to releases of diesel oil, successful completion of the EPA-required SPCC training will allow the Station Manager to make the necessary certification negating the need for the OSHA 8-hour training course. The template for SPCC training is posted at OPS1 environmental/safety web page:

[https://www.ops1.nws.noaa.gov/Secure/env\\_new.htm](https://www.ops1.nws.noaa.gov/Secure/env_new.htm) (under “Environmental Compliance”).

Under the EPA rules for oil pollution prevention and response, all aboveground tanks used for bulk storage of petroleum products must be subject to periodic testing to ensure they are not leaking. For the ConVault tanks used by the NWS, this inspection requires the inspectors be trained in:

- What to look for when visually inspecting the outer shell and diking
- How to test the operation of the interstitial monitoring device

There is no regulatory requirement for retraining, but an annual review is recommended

b. Retraining

Discharge prevention briefings for oil-handling personnel must be conducted at least once a year to ensure adequate understanding of the SPCC Plan for the facility.

c. Regulatory Citation: 40 CFR 112.7(f)

#### 16.6.3 Lead-Based Paint (LBP) in Housing

a. For NWS employees and their families who live in NWS-provided housing containing lead-based paint, the NWS Lead-Based Paint Program Manager must provide information detailing the known lead-based paint hazards and a pamphlet developed by the EPA, U.S. Department of Housing and Urban Development (HUD), and the Consumer Product Safety Commission (CPSC) titled, “Protect Your Family From Lead in Your Home.”

**NOTE:** The sample disclosure forms and the pamphlet, “Protect Your Family From Lead in Your Home” can be obtained by calling the National Lead Information Center (NLIC) at (800) 424LEAD (800-424-5323). A request may also be made by FAX to (202) 659-1192 or by e-mail to [ehc@cais.comail](mailto:ehc@cais.comail). Forms and disclosure can also be found at this link:

<https://www.epa.gov/lead/protect-your-family-lead-your-home-real-estate-disclosure>

b. Retraining:

There is a one-time notification to each resident.

c. Regulatory Citation: 40 CFR Part 745.107

#### 16.6.4 Asbestos Training

a. General Requirements

OSHA requires asbestos training for all employees who either work with asbestos-containing material (ACM) or, because of where they work, could be exposed to a concentration of asbestos in excess of the permissible exposure limit (PEL) of 0.1 fiber per cubic centimeter in air. This training must be completed before or at the time of initial exposure and the NWS must provide written materials at no cost to the employee.

In addition to the levels of work divided by class of work, OSHA requires all employers to provide employees who perform housekeeping operations in an area which contains ACM or presumed asbestos-containing material (PACM) an asbestos awareness training course. The subject material is the same as EPA's Asbestos Hazard Emergency Response Act (AHERA) training requirements for a two hour class (40 CFR 763.92 a (1)) for custodial and maintenance employees. Since NWS employees may also perform maintenance or installation of equipment in areas where asbestos may be located, they should complete the training and topics discussed in these standards. Each such employee shall be so trained at least once a year.

OSHA divides the types of work with asbestos into four classes and requires training appropriate to each class of work. The four OSHA classes are:

- 1) **Class I asbestos work** means activities involving the removal of Thermal System Insulation (TSI) and surfacing ACM or PACM.
- 2) **Class II asbestos work** means activities involving the removal of ACM, which is not thermal system insulation, or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles and construction mastics.
- 3) **Class III asbestos work** means repair and maintenance operations where ACM, including TSI and surfacing ACM and PACM is likely to be disturbed.
- 4) **Class IV asbestos work** means maintenance and custodial activities during which employees come into contact with, but do not disturb ACM or PACM and activities to cleanup dust, waste and debris resulting from Class I, II and III activities.

**NOTE:** Under this system, the drilling into the asbestos siding on the home of a COOP to install a piece of equipment would classify as Class III work.

The OSHA regulations include a provision that if the competent person determines that much of the EPA curriculum for operation and maintenance workers is not relevant, this person may certify that training contained in CFR 1926 1101 k (9) viii is more applicable and may choose to designate this training appropriate for Class III workers. This can be done if all relevant engineering and work practice controls, other controls and "hands on training" will be adequately covered. The duration of initial training will depend on the complexity and hazards of operations, but it is likely that at least four hours will be required to cover all topics.

#### 16.6.5 Air Conditioning Systems Maintenance

NWS employees who maintain, service or repair refrigerators, freezers, air conditioners, heat pumps, dehumidifiers, water coolers and other appliances that use refrigerant must be certified by the EPA. Depending on what the employee repairs, the certification and requirements vary.

Type I	Technician	Maintains, repairs or services small appliances
Type II	Technician	Maintains, repairs or services high-pressure appliances, motor vehicles or motor vehicle-like appliances
Type III	Technician	Maintains, services, repairs or disposes of low pressure

appliances.

A Universal Technician maintains or services both high and low pressure systems.

To be certified, a technician must take and pass a test provided by the EPA for the appropriate type of technician. To take the test, the Regional EPA office must be contacted and arrangements made.

The training to obtain the certification is “hands-on” training. While an employee is undergoing training, the employee is deemed an “apprentice.” Apprentices are allowed to work on appliances as long as they are “closely and continually supervised by a certified technician while performing any maintenance, service, repair or disposal that could reasonably be expected to release refrigerant from the appliances to the environment.” Once the apprentice is trained, contact with the EPA Regional Office must be made to arrange for the certification testing.

- a. Retraining: The EPA does not require retraining, but does allow the EPA Administrator to require re-certification by placing a notice in the Federal Register.
- b. Regulatory Citation: 40 CFR Part 82.40 and 40 CFR Part 82.161

#### 16.6.6 Pesticide Applicator Training

EPA regulations require pesticide applicators to be certified as competent to apply restricted use pesticides in accordance with national standards. The actual certification of applicators, however, is done by the States, Territories and Tribes in accordance with these standards. The training covers safe pesticide use as well as environmental issues such as endangered species and water quality protection.

**NOTE:** NWS employees using off the shelf pesticides such as wasp and mosquito sprays are not required to be certified.

The EPA regulations classify applicators as either private or commercial and then promulgate separate standards for each.

A *private applicator* uses or supervises the use of restricted use pesticides for producing an agricultural commodity. This activity may occur on property owned or rented by the applicator or the applicator’s employer, or, if applied without compensation other than the trading of personal services between products of agricultural commodities, on the property of another person.

A *commercial applicator* uses or supervises the use of restricted use pesticides for any purpose or on any property not covered by private applicators.

Because State, Territory, or Tribal rules may modify these definitions, NWS facilities need to check with the NWS Regional/Operating Unit Environmental/Safety Coordinator or NWSH environmental and safety staff to determine the applicable State rules.

Under the EPA guidelines, commercial applicators must demonstrate practical knowledge of the principles and practices of pest control and the safe use of pesticides. Competence must be determined by a written exam and, as appropriate, performance testing in the following areas:

- a. Label and labeling comprehension

- b. Safety
- c. Environment
- d. Pests
- e. Pesticides
- f. Equipment
- g. Application technique
- h. Laws and regulations

In addition, tests are given on the particular category of the applicator's certification.

The EPA recognizes 10 categories of commercial applicators; however, States, Tribes, or Territories may delete a category not needed, request Administrator's approval of additional major categories, or designate subcategories within these 10 categories, as needed.

To determine the training required and the certification process, the NWS Facility/Work Site Program Coordinator will need to contact the State, Territory, or Tribe. To assist in this process, check the EPA website of State contacts at [http://npic.orst.edu/reg/state\\_agencies.html](http://npic.orst.edu/reg/state_agencies.html)

#### 16.6.7 Using Hazardous Chemicals

##### a. Requirements

All NWS personnel who use manage, or store OSHA-defined hazardous chemicals are required to be trained under the HAZCOM Standard. Procedure 7 in NWSM 50-1115 includes the HAZCOM requirements and includes templates to assist in implementation of the program.

Under the OSHA rules, personnel who work with a hazardous chemical must take training which explains:

- 1) Requirements of the HAZCOM Standard
- 2) Definitions of hazardous chemicals in the workplace
- 3) Locations of Safety Data Sheets (SDS)
- 4) Availability of SDS for employees

The employee training plan will also include an explanation of:

- 1) Methods and observations workers can use to detect the presence or release of a hazardous chemical in the work area (i.e., appearance or odor)
- 2) The physical and health hazards of the chemicals in the workplace
- 3) Measures employees can take to protect themselves from hazards, including the specific work practices and use of personal protective equipment provided by the employer
- 4) How the Hazard Communication Program is implemented in the workplace, how to read and interpret information on labels and SDSs and how employees can obtain and use the available hazard information

For those employers whose work operations involve situations where employees have only a potential to be exposed to hazardous substances (i.e., the handling of containers not intended to be opened under normal conditions), a limited set of requirements must be met.

For example, for NWS employees who only handle sealed containers in a warehouse facility, the training program must ensure that employees are provided with information and training to the extent necessary to protect them in the event of a spill or leak from a sealed container.

b. Retraining

Retraining under the HAZCOM Standard is generally not required unless new chemicals, procedures, or hazards are introduced into the workplace or employee actions demonstrate a lack of understanding of proper chemical handling techniques.

c. Regulatory Citation: 29 CFR 1910.1200

#### 16.6.8 Storage of Flammable Materials

a. All NWS personnel who use, store or handle flammable materials need to be trained in the dangers of these materials and the proper management techniques. Toward this end, Procedure 16 in NWSM 50-1115 creates a management program for these materials.

**NOTE:** While there is no OSHA or EPA requirement to provide a formal training course, best management practices require that employees who use, store or handle these materials be provided an awareness session to ensure they understand the proper management procedures to be used.

b. Retraining: None required.

c. Regulatory Citation: 29 CFR 1910.106

#### 16.6.9 Response to Spills of Hazardous Materials

As part of the Superfund Amendments and Reauthorization Act of 1986 (SARA), OSHA was directed to establish programs to protect hazardous waste workers. The result of this effort has been termed the HAZWOPER Standards.

a. Regulated Activity

When a hazardous substance is spilled, OSHA has determined the residues from the cleanup are hazardous wastes. Thus, employees responding to a hazardous substance spill are, according to OSHA, also hazardous waste workers who are to be protected. As a result, these workers must comply with the OSHA HAZWOPER rules.

It must be noted that the list of OSHA hazardous substances is much larger than that of either the EPA or DOT. Unlike the EPA or DOT, OSHA has deemed that DOT hazardous materials are also OSHA hazardous substances. Because of this, the regulations apply to an extensive list of materials.

For example, DOT-designated hazardous materials that are deemed OSHA hazardous substances include gasoline, lighter fluid, paint, certain fertilizers, and kerosene. A spill of any of these triggers the HAZWOPER regulations.

It must also be noted that OSHA defines an “emergency response corresponding to

“emergencies” as a “response effort by employees from outside the immediate release area by designated responders...to an occurrence which results, or is likely to result in an uncontrolled release of a hazardous substance.”

**NOTE:** OSHA explains that responses to “individual releases” where the substance “can be absorbed, neutralized or otherwise controlled...by employees in the immediate release area or by maintenance personnel are not emergency responses.” In addition, responses where “there is no potential health or safety hazard” are not emergency releases. For NWS employees who only respond to incidental releases of hazardous materials, First Responder Operations Level training would not be required. Incidental releases are limited in quantity, exposure potential, or toxicity and present minor safety or health hazards to employees in the immediate work area or those assigned to clean them up. Procedures for hazardous materials incidental releases are covered in the HAZCOM and SPCC Plans and associated training.

Under the OSHA rule, there are five roles for emergency responders:

- 1) **First Responder** - Awareness Level - is the employee who releases or observes a release and whose role is only to notify “proper authorities.”
- 2) **First Responder** - Operations Level - contains a leak but does not perform an active role in stopping it.
- 3) **Hazardous Materials Technician** - active participant in the response. This individual “plugs or patches or otherwise stops the leak.”
- 4) **Hazardous Materials Specialist** - is an employee with specific knowledge about the released hazardous material who advises the response commander.
- 5) **Incident Commander** - is the employee who assumes control of the response effort.

At most NWS facilities or work sites, NWS employees will serve the role of First Responder - Awareness Level only. Their task is to report the emergency and ensure they and their co-workers are moved away from the danger area. The local response agency (usually the Fire Department) will provide all other response efforts.

Each of these responders requires different amounts and types of training.

#### **First Responder - Awareness Level**

The employee who releases or observes a release and notifies “proper authorities” needs training which includes:

- OSHA HAZCOM Standard training
- Use of the DOT Emergency Response Guidebook
- Notification procedures
- Awareness of their role in the response plan

There is no minimum time specified for this training.

**NOTE:** It is highly suggested that this training be combined with HAZCOM training, thus meeting two requirements simultaneously.

### First Responder - Operations Level

The employee who responds to a release and contains it or keeps it from spreading (but does not try to stop it) is given the title “First Responder - Operations Level.” These employees must receive 8 hours of instruction which includes:

- Hazard and risk assessment
- Personal protective equipment
- Hazardous material terms
- Control and containment techniques
- Decontamination
- Standard operating procedures

**NOTE:** OSHA allows an alternative to this training. If the employer certifies that the employee “has sufficient experience to objectively demonstrate competency” in the areas identified for the First Responder - Operations Level as well as those for the First Responder Awareness Level, the training is unnecessary.

Should these employees be involved in the post incident clean-up, the employer must ensure the following additional requirements are also met:

- §1910.38(a) which requires an emergency action plan and fire prevention plan
  - §1910.143 which details respiratory protection
  - §1910.1200 which details the hazard communication program
- b. Retraining is required as follows:
- For all Emergency Responders, retraining is required such that it is sufficient to maintain competency.
- c. Regulatory Citation: 29 CFR 1910.120(q)

#### 16.6.10 Underground Storage Tanks Management

a. Regulated Activity

NWS facilities that use a UST to store a petroleum product are required to ensure the tank and its related equipment are properly maintained so as to prevent and/or respond to releases to the environment. Although there is no formal requirement to provide employee training, in order to ensure the UST requirements are met, best management practices recommend that it is provided.

b. Required Training

NWS employees who use and/or maintain the tank must undergo training to ensure they understand:

- 1) Use and maintenance of the release detection system
- 2) Response to releases

- 3) Spill and overfill protection
  - 4) Use and maintenance of the corrosion protection system
  - 5) Inspection techniques.
- c. Retraining: No formal requirement, however, an annual refresher is recommended.
  - d. Regulatory Citation: No specific training requirement, however, the UST standards are defined in 40 CFR Part 280.

#### 16.6.11 DOT Hazardous Material Employee Training

The DOT requires HAZMAT employers to train their HAZMAT employees. According to the DOT, a HAZMAT employee is a person who “in the course of employment, affects hazardous materials safety.” The term includes persons who:

- Load, unload or handle hazardous materials
- Test, recondition, repair, modify, mark or otherwise represent containers, drums or packages as qualified for use for hazardous materials
- Prepare hazardous materials for transportation
- Are responsible for safety of hazardous materials transportation
- Operate a vehicle used to transport hazardous materials.

NWS personnel typically perform the tasks described in items 1, 3, and 4 above and hence, the DOT requires them to receive information to do these tasks correctly.

#### Required Training:

The DOT-required training consists of four categories. The first three apply to all modes of transportation while the fourth applies only to highway transportation and motor vehicle operators. The employer must certify that employees received the training and were tested on their appropriate areas of responsibility. New employees, or those who change jobs, must receive their training within 90-days of employment or change.

The four categories are:

##### a. General Awareness/Familiarization Training

The intent of the training is to provide recognition of hazardous materials through familiarization with the DOT rules. This training includes instruction in the DOT hazardous material communication system including the DOT hazard classes and the marking, labeling and placarding requirements. This training is required by all employees who are involved with DOT hazardous materials in any way. It provides the basis for understanding the DOT system.

##### b. Function - Specific Training

This is the job-specific training concerning the DOT requirements that each employee must receive in order to properly perform their duties. By nature, this is both site- and job-specific and includes NWS personnel who handle, load, unload, package or even sign the shipping papers or manifest.

##### c. Safety Training

This category includes:

- 1) Emergency response training
- 2) Personnel protective equipment and measures to protect employees from associated hazards
- 3) Methods and procedures to prevent accidents

This training is to ensure personnel understand what to do in an emergency including how to respond to accidents involving the DOT HAZMAT they handle.

d. Security Awareness Training

The DOT requires each “hazmat employee,” that is, “anyone who in the course of employment directly affects hazardous materials transportation safety,” to receive training in accord with 49 CFR 172.702. While this training is primarily directed at the drivers of vehicles that transport the hazardous materials, it is also required for those individuals who “unload or handle hazardous materials, or prepares hazardous materials for transportation” and thus involves the NWS Environmental Focal Point.

The training should include:

- 1) An awareness of the security risks associated with the hazardous materials and the methods designed to enhance transportation security (i.e. how to recognize and respond to possible security threats)
- 2) In-depth security training in the facility’s security plan (if applicable).

e. Driver Training

This training is only required of drivers of motor vehicles used to transport commercial quantities of hazardous materials. Because NWS employees do not transport commercial quantities of DOT Hazardous Materials, it is unlikely that this training will be required. (This information is included for educational purposes).

For drivers, the training includes:

- 1) Pre-trip safety inspection
- 2) Use of vehicle controls and equipment including emergency equipment
- 3) Operation of the vehicle
- 4) Procedures to navigate tunnels, bridges and railroad crossings
- 5) Requirements for attendance of vehicles, parking, smoking, routing, incident reporting
- 6) Loading and unloading including compatibility, handling and securing the load

Drivers who operate cargo tanks or a portable tank over 1,000 gallons in capacity must have the following specialized training in:

- 1) Operation of emergency controls on the tank
- 2) Special vehicle handling characteristics
- 3) Loading and unloading

- 4) Properties and hazards of materials transportation
- 5) Retesting and inspection requirements

**Special Note:** The DOT allows that training done under the OSHA HAZCOM and HAZWOPER requirements of 29 CFR 1910.20 and 29 CFR 1910.1200 as well as the EPA HAZWASTE training required by 40 CFR 311.1 fulfill this training requirement.

- f. Retraining and Recordkeeping
  - 1) Retraining required: recurrent every three years.
  - 2) Records Required:
    - Certification by employer
    - Training record that includes:
      - The employee name
      - The most recent training completion date
      - A description of the training materials or the location in which the copy is stored
      - The name and address of the trainer
      - The certification of training and testing

Records must be kept during the employment term plus 90 days after for each employee who completes the training.

- g. Regulatory Citation: 49 CFR 172 Subpart H

## 16.7 Responsibilities

### 16.7.1 NWS Headquarters

- a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with requirements of this section.
- b. NWSH will coordinate with SECO, as necessary, regarding compliance issues related to this section.

### 16.7.2 Regional or Operating Unit Environmental/Safety Coordinator

- a. Will monitor and promote compliance with the requirements of this section at the regional headquarters or Operating Unit facilities.
- b. Will identify training opportunities to field offices when available and assist in implementation.
- c. Will ensure that appropriate training program procedures are developed at regional headquarters or operating unit facilities.
- d. Will ensure that all training records are included in a transfer package when an employee is transferred to another location within the NWS.

### 16.7.3 Station Manager

- a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.
- b. Will ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.
- c. Will ensure that training programs are developed at NWS field offices and implemented for environmental and worker safety programs, as applicable.
- d. Will ensure that all NWS facility/work site personnel have received the training required to properly perform their duties in accord with environmental/worker health and safety requirements.
- e. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### 16.7.4 Environmental or Environmental/Safety Focal Point or Designated Person

- a. Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.
- b. Will determine training requirements for facility/work site personnel.
- c. Will implement required training.
- d. Will maintain training records.

### 16.7.5 Employees

Individual employees affected by this section are required to participate in training required by this section and adopt the lessons learned into performance of their jobs.

## 16.8 References

### Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

### U.S. Department of Labor Occupational Safety and Health Agency

29 CFR 1910.106	Flammable and combustible liquids
29 CFR 1910.120	Hazardous waste operations and emergency response
(p)	Certain operations conducted under the Resource Conservation and Recovery Act of 1976 (RCRA)
(p) (8)	Emergency Response Program
(p) (8) (iii)	Training
(q)	Emergency response to hazardous substance releases
29 CFR 1910.132	Personal Protective Equipment
29 CFR 1910.146	Permit required confined space

29 CFR 1910.1200	Hazard Communication Standard	
29 CFR 1926.62	Lead	
	(1)	Employee information and training
	(2)	Training Program
29 CFR 1910.1101	Asbestos	
	(k)	Communication of hazards
	(k) (9)	Employee information and training

Department of Transportation

49 CFR 172	Subpart H	Training
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U.S. Environmental Protection Agency

40 CFR 82	Protection of Stratospheric Ozone	
	.40	Technicians Training and Certification
	.161	Technician Certification
40 CFR 112	.7	Guidelines for the Preparation and Implementation of a Spill Prevention Control and Countermeasure Plan
	(e)(10)	Personnel, Training and Spill Prevention Procedures
40 CFR 265	Interim Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities	
	.16	Personnel training
40 CFR 262	Standards Applicable to Generators of Hazardous Waste	
	.34	Accumulation Time
40 CFR 280	Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (USTs)	
40 CFR 475	Lead-Based Paint Poisoning Prevention in Certain Residential Structures	
	.107	Disclosure requirements for Sellers and Lessors
	.220-239	Lead-Based Paint Activities
40 CFR 763	Subpart E	Asbestos-Containing Materials in Schools
	(a)	Training and Periodic Surveillance
	(a)(2)	Training for Custodial Staff
Appendix C	Asbestos Model Accreditation Plan	

## APPENDIX A: REGULATORY BACKGROUND

### **General**

Unlike most regulatory areas, the environmental arena does not rely on a single law, but rather a series of topic-focused legislation (i.e. Clean Air, Clean Water, Toxic Substances, etc.). The result is a complex and often seemingly contradictory system that can make compliance difficult and frustrating.

Complicating this is the creation of the process of “state authorization” in which the Environmental Protection Agency (EPA) authorizes a state to manage a specific environmental program or programs within its borders if the state has its own laws and regulations which are “essentially equivalent” to the Federal program. For some programs, local governments are allowed to modify the state program even further. The result is an environmental program that can change dramatically with a change in geography.

Also, unlike other regulatory areas, environmental laws not only prohibit certain activities after their effective date, in some cases, they create legal liability for actions occurring decades before the legislation was created. The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) or Superfund, for example, can hold organizations and/or individuals liable for improper waste management any time prior to its passage in 1980.

### **Environmental Laws**

To understand the scope of the environmental program within the United States and its territories, it is necessary to understand the various environmental statutes and the specific areas they regulate. The following is a chronological listing and a very brief summary of each pertinent law.

### **FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT**

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was enacted in 1947. The statute was originally administered by the Department of Agriculture who monitored the efficacy claims of manufacturers through a registration program. In 1970, FIFRA authority was transferred to EPA. The Act was amended in 1972 by the Federal Environmental Pesticide Control Act (FEPCA). This amendment strengthened enforcement, shifted emphasis from labeling and efficacy to health and the environment, provided greater flexibility for controlling dangerous chemicals, covered interstate registrations and specific uses, and streamlined the administrative appeals process. Congress enacted subsequent amendments in 1975, 1978, and 1988. For more information, the statute is found in 7 U.S.C. §136 et seq. The regulations addressing FIFRA are found in 40 CFR 152-186.

### **Impacts on the NWS**

FIFRA focuses its enforcement efforts on the manufacture, registration, distribution, and management of the commercial application of pesticides. While NWS personnel rarely use “restricted use” pesticides, the agency routinely contracts for pesticide application services and is ultimately responsible for the use of any pesticides on NOAA properties. In addition, NOAA

facilities may handle, store, and dispose of these pesticides. NOAA facilities are required to comply with FIFRA if they:

- Apply or contract for the application of registered or restricted pesticides on-site
- Store registered or restricted pesticides on-site
- Dispose of registered or restricted pesticides

### **Responsibilities Under FIFRA**

The NWS is responsible for ensuring that pesticide management activities under FIFRA are successfully performed (if applicable). These responsibilities include the following:

- Ensuring that NWS applicators are properly trained, certified, and use appropriate personal protective equipment.
- Properly managing storage facilities.
- Disposing of pesticide residues and waste in accordance with recommended procedures.
- Maintaining records of pesticide applications
- Ensuring contractors are required by contract to comply with all applicable Federal, State and local laws and regulations.

Section 10 describes the NWS compliance activities under the FIFRA.

### **NATIONAL ENVIRONMENTAL POLICY ACT**

The National Environmental Policy Act (NEPA) of 1969 established national environmental policy and goals for the protection, maintenance, and enhancement of the environment. NEPA requires all federal agencies to evaluate the historic, socioeconomic, and environmental consequences of “major actions” and to follow a procedural decision making process that includes public input when addressing environmental impacts. NEPA also established the President’s Council on Environmental Quality (CEQ), which reviews Federal government activities. For more information, the statute can be found in 42 U.S.C. §4321 et seq. and applicable regulations are in 40 CFR 1500-1517.

### **Impacts on the NWS**

NEPA requires all Federal agencies to use a systematic, interdisciplinary process to provide environmental impact information to Federal, state, local, Indian tribal officials, and citizens before decisions are made to take major actions that may significantly affect the environment. As a result, NOAA has promulgated NAO 216-6 “Environmental Review Procedures for the Implementation of the National Environmental Policy Act.”

### **Responsibilities Under NEPA**

NEPA is largely a procedural statute that requires Federal agencies to study, develop, and describe impacts, alternatives, and mitigation measures, and to obtain public input on projects considered major Federal actions. NEPA should be part of the planning process of all major NWS actions. The types of activities required under NEPA include the following:

- Evaluating all federal actions to determine the applicability of NEPA, as appropriate, submitting Categorical Exclusion (CX), and Findings of No Significant Impact (FONSI) documentation to denote where actions are not significant.
- Performing Environmental Assessments (EA) and preparing Environmental Impact Statements (EIS).
- Developing and submitting a Record of Decision (ROD) to address the EIS findings and provide project alternatives and mitigation measures.
- Submitting plans to state or local agencies.
- Ensuring public participation in the NEPA process.

Section 14 describes the NWS compliance activities under the NEPA.

### **CLEAN AIR ACT AND CLEAN AIR ACT AMMENDMENTS**

The Clean Air Act was enacted in 1970 and expanded in 1990 by the Clean Air Act Amendments CAAA). The 1990 statute regulates air pollution under six distinct titles:

- Title I Air Pollution Prevention and Control
- Title II - Emission Standard for Mobile Sources
- Title III Air Toxics
- Title IV - Acid Deposition Control
- Title V - Permits
- Title VI - Stratospheric Ozone Protection

Section 107 and 110 of the CAAA give the states primary authority for maintaining air quality within their borders at a level consistent with the National Ambient Air Quality Standard (NAAQS). States are required to develop State Implementation Plans (Sips) to establish specific regional requirements and emission standards. In addition, Executive Order 12843 contains "Procurement Requirements and Policies for Federal Agencies for Ozone-Depleting Substances." For more information, the statute can be found in 42 U.S.C. §7401 et seq. Regulations addressing air requirements are in 40 CFR 50-93, as well as 29 CFR 1910.119.

### **Impacts on the NWS**

Most of NWS compliance requirements will be associated with chlorofluorocarbon (CFC) and halon management, as well as state regulation of boilers, emergency generators, and fuel storage tanks. NWS facilities with large boilers may exceed emissions thresholds and may be required to obtain permits. NWS facilities are required to comply with provisions of the CAAA if they:

- Modify, construct, or add new boilers, generators, or fuel storage tanks for steam generating units with heat inputs exceeding 10 million BTU;
- Manage the removal and demolition of asbestos-containing material (ACM);
- Emit 10 or more tons per year of any hazardous air pollutant (HAP); and/or
- Service or repair CFC-containing equipment, or dispose of CFCs.

### **Responsibilities Under the CAAA**

The NWS is responsible for ensuring that management activities under the CAAA and state delegated programs are successfully completed. These responsibilities range from training

employees, and obtaining and complying with the terms of permits to manage facility construction/modifications. Specific activities required by the CAAA include:

- Obtaining necessary permits and maintaining emissions within permitted levels.
- Complying with State Implementation Plan (SIP) requirements.
- Ensuring that all CFC technicians attend EPA-certified training courses.
- Ensuring that all CFC recovery/recycling equipment is certified to EPA standards and venting prohibitions are maintained.
- Managing facilities with ACM and conducting ACM removals in conformance with the air toxics program requirements.
- Developing risk management plans where required.
- Maintaining all required records/documentation.
- Returning or disposing of all products containing ozone-depleting compounds.
- Purchasing of alternative fueled vehicles.

Section 8 describes the NWS compliance activities under the CAAA.

## **CLEAN WATER ACT**

The Clean Water Act (CWA) regulates the protection of the nation's waterways and wetlands. It was enacted in 1972, replacing the Federal Water Pollution Control Act, and was amended in 1977 and 1987. Title III of the Act established pretreatment standards for discharges to treatment facilities. Title IV of the Act established the National Pollutant Discharge Elimination System (NPDES), which provided for the permitting of point-source discharges. Section 404 established a permit program for dredge and fill operations. Storm water and non-point source discharges are also regulated under the Act. EPA, along with other federal, state, and local agencies, administer the various programs established under the CWA. For more information, the statute can be found at 33 U.S.C. §1251 et seq. Regulations addressing clean water are located in 40 CFR 122.

## **Impacts on the NWS**

Most NWS operations involve the collection and discharge of water to either a direct outfall or to a local sewage treatment facility. Additionally, NWS installations may be sited near waterways or wetlands. These facilities may be subject to CWA requirements. NWS facilities are required to comply with CWA provisions if they:

- Discharge pollutants, heat, or storm water from a point-source into the waters of the United States;
- Discharge pollutants from a point source to a publicly-owned treatment works (POTW);
- Dispose of or place fill materials into the waters of the United States, includes construction activity in the vicinity of waterways or wetlands;
- Spill or discharge harmful quantities of oil or hazardous substances into navigable waters or adjoining shorelines;
- Apply herbicides to river gauges or other instruments while in or near wetlands;
- Manage in excess of a total of 1,320-gallons of fuel and other petroleum products in aboveground storage tanks or containers larger than 55-gallons; and/or

- Manage greater than 42,000 gallons of petroleum products in underground storage tanks.

Navigable waters are defined as a body of water that may be put into public use whether it is used for commercial navigation or not. If the water body has the potential to be used in agriculture, trade, or commerce and possesses the capacity for transporting products (i.e., logs or wood) to market via floating, it makes no difference if the water body is a shallow pool, muddy lake, or marsh.

### **Responsibilities Under the CWA**

The NWS is responsible for ensuring that its activities do not negatively affect area water bodies or wetlands. Depending on the point of discharge, effluents from NWS facilities must meet either pretreatment standards or NPDES requirements. Additionally, NWS facilities must have a plan in place that assesses preventing, reporting, and responding to spills. Specific management activities required by the CWA include:

- Developing and maintaining a Spill Prevention Control and Countermeasure (SPCC) or Best Management Practices (BMP) plan for storage of petroleum products in a tank.
- Ensuring employees have required training.
- Managing discharges to a POTW in accordance with established federal, state, and local pretreatment standards.
- Maintaining storm water permits at "industrial category" sites.
- Notifying the National Response Center of harmful spills of hazardous substance to navigable waters or adjoining shorelines.
- Obtaining an NPDES permit and managing direct discharges in compliance with permit conditions.
- Properly maintaining and operating water treatment systems.
- Monitoring, recording, and reporting pollutant effluent concentrations.
- Applying for Section 404 dredge and fill permits for construction and development projects.

Sections 1 and 7 address NWS compliance activities under the CWA.

### **SAFE DRINKING WATER ACT**

The Safe Drinking Water Act (SDWA) was passed in 1974 to protect the quality of the drinking water in the U.S. The law regulates all waters actually or potentially designed for use as drinking water whether aboveground or in underground aquifers. The law authorized the EPA to create standards for safe drinking water and required the owners or operators of public water systems to comply with the health-related standards referred to as the primary standards. Currently there are over 80 contaminants, which are monitored by the primary drinking water standards. As the States became authorized by the EPA to manage the drinking water program, they encouraged the attainment of a set of nuisance-related standards called the secondary standards.

## **Impacts On the NWS**

Because most NWS facilities receive their drinking water from public water systems, they only need to ensure the system does not become contaminated due to improper plumbing or a missing or faulty back flow preventor valve.

NWS facilities that operate their own well may be fully regulated as a public water system if the well serves 25 or more people. In this case, the drinking water well would be required to meet the primary and secondary standards.

Section 5 addresses NWS compliance activities under the SDWA.

## **TOXIC SUBSTANCES CONTROL ACT**

The Toxic Substances Control Act (TSCA) was enacted in 1976 to provide for testing of potentially hazardous chemicals and, where necessary, to authorize EPA regulation of such substances. The Act requires testing and restricting the manufacture, distribution, and use, of toxic substances. It also is used to regulate the disposal of certain hazardous materials such as asbestos, polychlorinated biphenyls (PCBs), radon, and lead. Several States have their own, more stringent programs similar to TSCA, but only the federal asbestos standards and lead abatement standards can be delegated to the States. For more information, the Act can be found in 42 U.S.C. §2601 et seq. The regulations are codified in 40 CFR Parts 700 to 766, with Part 761 detailing management requirement for PCBs.

### **Impacts on the NWS**

NWS facilities and operations typically involve management of materials regulated under TSCA. Older electric equipment, such as switches, transformers, and capacitors typically contain PCBs and pre-1987 structures were often built using asbestos materials. Specific activities required by TSCA include:

- Properly maintaining or disposing of equipment containing PCBs;
- Performing asbestos surveys, abatement, or operation and maintenance activities;
- Performing or overseeing lead-based paint abatement activities; and/or
- Properly managing a location with potentially significant radon levels

### **Responsibilities Under TSCA**

Under TSCA, the NWS is responsible for ensuring compliance with the management and reporting requirements as well as conducting abatement activities in conformance with TSCA standards. Specific TSCA requirements include:

- Marking, labeling, storage, packaging, and disposal of PCBs and PCB-containing equipment.
- Preparing and submitting annual reports for facilities managing over 40 pounds of PCBs.
- Preparing and maintaining PCB disposal manifests, certificates of destruction, and exception reports.
- Implementing a Model Accreditation Plan (MAP) by setting minimum training standards for personnel engaged in asbestos abatement activities.

- Conducting lead and lead-based paint abatement projects in conformance with established standards.
- Measuring radon levels within buildings and mitigating unsafe exposure.
- Maintaining records.

Sections 2, 11, 12 and 13 describe the NWS compliance activities under TSCA.

## **RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C**

Subtitle C of the Resource Conservation and Recovery Act (RCRA) was enacted in 1976, replacing the Solid Waste Disposal Act and the Resource Recovery Act. RCRA has been amended by the Hazardous and Solid Waste Amendments (HSWA) and the Federal Facilities Compliance Act (FFCA). RCRA regulates the generation, transportation, treatment, and disposal of solid and hazardous waste. The FFCA was specifically enacted to eliminate the Federal exclusion from liability and to provide for hazardous waste management and enforcement provisions for federal facilities that are the same as the private sector. In many cases, some or all of the authority under RCRA has been delegated to qualified States. The statute can be found in 42 U.S.C. §6901 et seq. with the regulations addressing hazardous waste in 40 CFR 260. Many States have their own hazardous waste requirements that exceed federal standards.

### **Impacts on the NWS**

Because RCRA Subtitle C regulates hazardous waste from “cradle to grave,” most NWS operations and facilities are affected by the statute. NWS facilities are subject to the provisions of RCRA Subtitle C if they:

- Generate hazardous waste - many NWS facilities qualify as “conditionally exempt small quantity generators” under RCRA;
- Accumulate or store hazardous waste - generators need to properly manage satellite (e.g., temporary) and central storage units;
- Transport hazardous waste off-site for treatment and/or disposal; and
- Generate universal waste.

### **Responsibilities Under RCRA**

Under RCRA, the NWS is responsible for ensuring the proper management and disposal of all hazardous waste generated as part of its operations.

Under this law, NWS facilities are required to:

- Determine if they generate any hazardous waste
- Determine the appropriate category of generator depending on the volume of waste generated
- Comply with all appropriate generator standards
- Manage all generated waste in accord with the appropriate State and/or Federal requirements.

Section 2 describes the NWS compliance activities under RCRA.

## COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) was enacted in 1980 to provide EPA authority to respond to hazardous substance releases or threatened releases that could endanger public health or welfare or the environment. The legislation, known as Superfund, is based on the premise that those responsible for hazardous substances at a site should bear the burden of the cleanup. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986 and the Community Environmental Response Facilitation Act (CERFA) in 1992, strengthening enforcement provisions and facilitating settlement negotiations to encourage or compel responsible party (RP) cleanups. CERCLA, as amended by SARA and CERFA, requires community involvement during cleanup, reporting of spills, and performance of environmental due diligence audits (EDDA) for Federal property disposal. Many states have enacted counterparts to CERCLA. For more information, the statute can be found in 42 U.S.C. §9601 to 9675. Regulations addressing environmental cleanup and response are in 40 CFR 300, 302, 310, 355, 373.

### Impacts on the NWS

Because CERCLA regulates hazardous substance releases and environmental cleanup of past activities, some NWS operations, facilities, and programs are affected by the statute. Section 120 of CERCLA specifically addresses the responsibilities of Federal facilities. EPA can hold the NWS, as the property owner and the party responsible for hazardous substance management, liable for monetary payments (e.g., site assessment costs) or compel cleanup immediately or in the future. Additionally, SARA and CERCLA impose reporting and community involvement requirements to ensure disclosure and cleanup of hazards. NWS facilities are required to comply with provisions of CERCLA if they:

- Purchase or transfer real property;
- Own or operate a facility that is on or is being considered for the National Priorities List (NPL);
- Manage appreciable quantities of hazardous substances on-site; and/or,
- Cause a hazardous substance release in excess of the reportable quantity.

### Responsibilities Under CERCLA

The NWS responsibilities under CERCLA involve two separate but related areas:

- Releases to the environment of hazardous substances in the past, and
- Releases of hazardous substances now.

The requirements for releases of previous hazardous substances via improper disposal and/or unreported leaks/spills or other releases require the NWS to report all such events as part of a “due diligence audit” required upon property transfers.

If a cleanup is required, NWS facilities must:

- Cooperate during the cleanup effort
- Conduct a public relations program to ensure community awareness
- Comply with interagency agreements and State requirements

- Comply with HAZWOPER
- Maintain security

For present activities, NWS facilities must report all releases into the environment of an EPA-defined hazardous substance equal to the reportable quantity established under 40 CFR 302.4.

Section 15 describes the NWS compliance effort under CERCLA.

## **UNDERGROUND STORAGE TANKS, RCRA SUBTITLE I**

In 1984, Congress enacted the HSWA, adding Subtitle I to the Resource Conservation and Recovery Act (RCRA). Subtitle I was enacted to address the 500,000 underground storage tanks (USTs) in the country then estimated to be leaking. The statute requires EPA to establish standards for tanks installed both prior to and after passage of the new requirements. Such standards cover UST design, operation, cleanup, administration, and closure. The statute can be found in 42 U.S.C. §699 et seq. Federal UST regulations are in 40 CFR 280. The authority to administer the UST program has been delegated to the States. Many have issued their own UST standards, which in some cases exceed the Federal minimum and contain more stringent requirements and penalties.

### **Impacts on the NWS**

As a result of the NWS modernization program, all USTs operated by the NWS should have been removed under the provisions of HSWA and thus no NWS facility is subject to Subtitle I unless it:

- Still operates or maintains an UST containing petroleum (including diesel fuel, gasoline, and used oils, but not heating oil or propane) or a hazardous substance;
- Maintains an UST that was in place on May 8, 1986 and contained regulated substances any time since January 1, 1974 (notification required);
- Receives state or EPA direction to close and perform an assessment of the area near an UST that was closed prior to the effective date December 22, 1988;
- Maintains an above ground storage tank (AST) with 10 percent or more of the tank volume underground (including the pipe distribution network); or
- Acquires real estate that contains an UST installed and operated by the previous owner.

### **Responsibilities Under HSWA**

Under HSWA, NWS facilities must ensure all existing underground storage tanks are registered with the State, upgraded to meet the new standards and have a functioning release detection system. If these tanks ever leak, the spill must be properly addressed and appropriate corrective action performed.

Should an underground tank no longer be needed, it must be properly closed in accordance with State and/or Federal requirements.

The NWS facility must also maintain all records required under these regulations.

Section 1 includes a description of the NWS compliance effort with regard to HSWA.

## EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

The Emergency Planning and Community Right-To-Know Act (EPCRA), Title III of the SARA, was enacted in 1986. The statute contains four major components: Emergency Planning §301-303, Emergency Release Notification §304, Community Right-To-Know §§311-312, and Toxic Release Inventory §313. EPCRA requires facilities to submit information to state and local communities to enable the development of local chemical emergency preparedness programs. The original statute exempted Federal facilities from complying with Title III since they did not fall under the definition of a “person.” However, Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention requirements, issued on August 6, 1993, requires Federal facilities meeting the EPCRA definition of “facility” to comply with all provisions of EPCRA. For more information, the statute is located in 42 U.S.C. §11001 et seq. and the regulations are in 40 CFR 355 through 374.

### Impacts on the NWS

The NWS is responsible for ensuring that management activities under EPCRA and state delegated programs are successfully completed. These responsibilities range from assisting the Local Emergency Planning Committee (LEPC), designating emergency response coordinators and notifying authorities of releases to submitting Material Safety Data Sheets (MSDSs) and Tier I/Tier II forms. Specific management activities are required by EPCRA if an NWS facility:

- Has an emergency power backup system containing lead-acid or gel-cell batteries,
- Has a fuel storage tank containing at least 1,370-gallons (or 10,000 pounds) of diesel fuel, heating oil or gasoline,
- Has a fuel storage tank containing at least 2,532-gallons (or 10,000 pounds) of propane, and/or
- Stores 100 pounds of chlorine.

### Responsibilities under EPCRA

If an NWS facility stores an OSHA hazardous chemical or an EPA-identified extremely hazardous chemical in a quantity that exceeds the threshold planning quantity, the facility must:

- Notify the State Emergency Response Commission (SERC),
- Designate a representative to the Local Emergency Planning Committee (LEPC),
- Notify the SERC and LEPC of all releases of a hazardous chemical or extremely hazardous substance that exceeds the reportable quantity,
- File the annual Tier II reports,
- Submit MSDSs to the Fire Department.

These requirements are discussed in Section 4 of this manual.

## POLLUTION PREVENTION ACT

The Pollution Prevention Act of 1990 (PPA) created a national hierachal policy for the management of wastes. Simply stated, for each waste, the law requires all generators of the waste to consider:

- Waste prevention or reduction methods first, then,

- Recycling in an environmentally sound manner, and finally, if no other option can be applied
- Disposal

The law created the Office of Pollution Prevention within the Environmental Protection Agency to develop and implement a national source reduction strategy. The law was the base for Executive Order 12856 (revoked), which directed all Federal Agencies to develop pollution prevention strategies and incorporate them into facility management. A series of other Executive Orders (see E.O. 13423 and E.O. 13514) encourage the Federal government to take the lead in pollution prevention and environmental stewardship.

### **Impacts on the NWS**

The NWS utilizes materials, energy, and natural resources in addition to generating waste. The PPA and the Executive Orders it spawned requires NWS personnel to:

- Revise product specifications and procurement procedures to foster use of more environmental-friendly products,
- Set specific goals for waste prevention,
- Set specific goals for recycling efforts,
- Create steering committees to direct these efforts, and,
- Purchase printing paper with a 30% recycled content.

### **Responsibilities Under PPA**

To comply with the requirements of the PPA, NWS facilities must review their procurement procedures.

If possible, the facility should establish an authorized use list, comply with the Comprehensive Procurement Guidelines, and restrict the use of credit cards to ensure the goals of the law are met.

Sections 6 and 9 describe the NWS compliance efforts under PPA.

### **Other Laws**

There are two additional laws that have important impacts in most NWS environmental programs, the Hazardous Materials Transportation Act and the Occupational Safety and Health Act.

## **HAZARDOUS MATERIALS TRANSPORTATION ACT**

The Hazardous Materials Transportation Act (HMTA) was passed in 1974. Because the EPA requires the DOT rules be followed when transporting hazardous materials and waste, the Hazardous Materials Transportation Act has become an integral part of all environmental programs. The purpose of the law is to protect the nation against risks to life and property, which are inherent in the transportation of hazardous materials in commerce. The Department of Transportation (DOT) was given the responsibility for issuing the HMTA regulations (49 CFR 171-177). These regulations govern the packaging, marking, labeling and acceptable condition of hazardous materials offered for intrastate or interstate transportation. The law covers the

transportation procedures and specifications for motor vehicle, aircraft, railcar, and vessels carrying hazardous materials.

The 1990 *Hazardous Materials Transportation Uniform Safety Act* (HMTUSA) amended the HMTA by addressing the following specific areas:

- Highway Routing - each state and Indian tribe may establish and enforce specific highway routes for hazardous materials according to the limitations and requirements established under this law.
- Shipping Papers - the person offering a hazardous material for transportation must provide a shipping paper with information for emergency incidents.
- Training Requirements - training is required for “HAZMAT employees,” that is, individuals who affect transportation of hazardous materials including employees who handle, prepare or package hazardous materials or operate a vehicle to transport hazardous materials. These requirements are in addition to the HAZWOPER training requirements under OSHA and EPA.
- Civil and criminal penalties were revised to broaden the scope and assessment of fines for violations.

### **Impacts on the NWS**

The HMTA has spotty application to NWS activities. For example, transportation of paint thinner from a NWS office to a remote work site is not regulated by the DOT but transportation of the spent paint thinner from the NWS office to a hazardous waste disposal site is regulated. Even if NWS personnel fully understand which activities are regulated, prudence may require compliance with the DOT rules for all situations.

### **Responsibilities Under HMTUSA**

The NWS is responsible for ensuring all DOT-regulated hazardous materials are properly managed. These responsibilities include:

- Ensuring every package is properly labeled and marked,
- Accurately describing the material on shipping papers and manifests,
- Ensuring shipping vehicles have the appropriate placards, and
- Providing DOT hazardous material transportation training to appropriate personnel.

Section 3 describes the NWS compliance activities under the HMTUSA.

## **OCCUPATIONAL SAFETY AND HEALTH ACT**

The Occupational Safety and Health Act (OSHA) was signed by President Richard Nixon on December 31, 1970. Initially the act was aimed at the private sector, however, a series of Executive Orders significantly modified its application. Although OSHA is not an “environmental” law, it has served as the basis for a series of programs to protect workers who are exposed to hazardous chemicals as part of their job as well as those who respond to spills and other emergencies.

Presidential Executive Order 11612 signed on July 26, 1971 stated that the Federal government, as the nation’s largest employer, has a special obligation to set an example for safe and healthful employment. As a result, each Federal department and agency was directed to establish an

occupational safety and health program in compliance with Section 19 of the act. Section 19 required this program to be “consistent with the standards promulgated under Section 6.”

Executive Order 11807 issued in 1974 more clearly defined the scope, requirements and responsibilities of the Federal agency programs and required the Secretary of Labor to issue “guidelines.”

Executive Order 12196 signed on February 26, 1980 required each agency head to comply with all standards issued under Section 6 of the Act, except where the Secretary of Labor approves compliance with alternative standards.

### **Impacts on the NWS**

To meet these Executive Orders, the NWS has endorsed and implemented a safety and health program, which includes:

- Compliance with applicable standards
- Prompt abatement of identified hazards
- Procedures for all employees to report suspected hazards to their supervisors and/or safety and health officials without fear of reprisal
- Creation of an active Hazard Communication Standard Program for all employees working with hazardous chemicals.
- Ensuring all affected employees are trained to properly respond in an emergency involving a hazardous material.
- Appropriate OSH training for safety and health officials, all supervisory personnel and employees.
- Procedures for the review, in advance of procurement or construction, of facility, system, and subsystem design to ensure that OSH hazards are eliminated or controlled throughout the life cycle.
- A thorough accident investigation process and comprehensive OSH management information system.

### **Responsibilities under OSHA**

The NWS is responsible for evaluating workplace hazards and mitigating the risks to its employees. This requires the creation and implementation of a wide variety of programs, which include:

- Illness and injury reporting
- Assessing the need for and providing the necessary personal protective equipment
- Development of procedures for various types of emergencies
- Ensuring prompt exit from all work areas in an emergency
- Providing a “safe” workplace by implementing programs for lockout/tagout; machine guards, hand and power tool use; welding, cutting and brazing; and electrical safety.

For employees who work with hazardous substances, the NWS must provide:

- A worker right-to-know program
- Effective spill response
- Control of specific toxic substances (asbestos, lead, benzene, etc.)

- Safe work practices for handling compressed gases, flammable and combustible materials, and radioactive sources.

Section 16 describes the NWS compliance activities with the Hazard Communication Standard (HAZCOM) while NWSM 50-1115 describes all other OSHA compliance efforts.

**APPENDIX B List of Hazardous and Extremely Hazardous Substances and Their  
Reportable Quantities**

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
Acenaphthene		83-32-9	100			
Acenaphthylene		208-96-8	5,000			
Acetaldehyde	Y	75-07-0	1,000			U001
Acetaldehyde, chloro-		107-20-0	1,000			P023
Acetaldehyde, trichloro-		75-87-6	5,000			U034
Acetamide	Y	60-35-5	100			
Acetamide, N-(aminothioxomethyl)-		591-08-2	100			P002
Acetamide, N-(4-ethoxyphenyl)-		62-44-2	100			U187
Acetamide, N-9H-fluoren-2-yl		53-96-3	1			U005
Acetamide, 2-fluoro		640-19-7	100			P057
Acetic acid		64-19-7	5,000			
Acetic acid, (2,4-dichlorophenoxy)-salts&esters		94-75-7	100			U240
Acetic acid, ethyl ester		141-78-6	5,000			U1112
Acetic acid, fluoro-,sodium salt		62-74-8	10			P058
Acetic acid, lead(2+) salt		301-04-2	10			U144
Acetic acid, thallium salt		563-68-8	100			U214
Acetic acid,(2,4,5-trichlorophenoxy)-		93-76-5	1,000			F027
Acetic anhydride		108-24-7	5,000			
Acetone		67-64-1	5,000			U002
Acetone cyanohydrin		75-86-5	10	10	1,000	P069
Acetone thiosemicarbazide		1752-30-3		1,000	1,000/ 10,000	
Acetonitrile	Y	75-05-8	5,000			U003
Acetophenone	Y	98-86-2	5,000			U004
2-Acetylaminofluorene	Y	53-96-3	1			U005
Acetyl bromide		506-96-7	5,000			
Acetyl chloride		75-36-5	5,000			U006
1-Acetyl-2-thiourea		591-08-2	1,000			P002
Acrolein	Y	107-02-8	1	1	500	P003
Acrylamide	Y	79-06-1	5,000	5,000	1,000/ 10,000	U007
Acrylic acid	Y	79-10-7	5,000			U008
Acrylonitrile	Y	107-13-1	100	100	10,000	U009

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Acrylyl chloride		814-68-6		100	100	
Adipic acid		124-04-9	5,000			
Adiponitrile		111-69-3		1,000	1,000	
Aldicarb sulfone		164-68-84	1*			P203
Aldrin		309-00-2	1	1	500/ 10,000	P004
Allyl alcohol		107-18-6	100	100	1,000	P005
Allylamine		107119		500	500	
Allyl chloride	Y	107-05-1	1,000			
Aluminum phosphide		20859-73-8	100	100	500	P006
Aluminum sulfate		10043-01-3	5,000			
4-Aminobiphenyl	Y	92-67-1	1			
5-(Aminomethyl)-3-isoxazolol		2763-96-4	1,000	1,000	500/ 10,000	P007
Aminopterin		54-62-6		500	500/ 10,000	
4-Aminopyridine		504-24-5	1,000	1,000	500/ 10,000	P008
Amiton		78-53-5		500	500	
Amiton oxalate		3734-97-2		100	100/ 10,000	
Amitrole		61-82-5	10			U011
Ammonia		7664-41-7	100	100	500	
Ammonium acetate		631-61-8	5,000			
Ammonium benzoate		1863-63-4	5,000			
Ammonium bicarbonate		1066-33-7	5,000			
Ammonium bichromate		2151-16-3	10			
Ammonium bifluoride		1341-49-7	100			
Ammonium bisulfite		10192-30-0	5,000			
Ammonium carbamate		1111-78-0	5,000			
Ammonium carbonate		506-87-6	5,000			
Ammonium chloride		12125-02-9	5,000			
Ammonium chromate		7788-98-9	10			
Ammonium citrate, dibasic		3012-65-5	5,000			
Ammonium fluoborate		13826-83-0	5,000			
Ammonium fluoride		12125-01-8	100			
Ammonium hydroxide		1336-21-6	1,000			

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Ammonium oxalate		5972-73-6	5,000			
Ammonium oxalate		6009-70-7	5,000			
Ammonium oxalate		14258-49-2	5,000			
Ammonium picrate		131-74-8	10			P009
Ammonium silicofluoride		169-19-190	1,000			
Ammonium sulfamate		7773-06-0	5,000			
Ammonium sulfide		12135-76-1	100			
Ammonium tartrate		3164-29-2	5,000			
Ammonium tartrate		14307-43-8	5,000			
Ammonium thiocyanate		1762-95-4	5,000			
Ammonium vanadate		7803-55-6	1,000			P119
Amphetamine		300-62-9		1,000	1,000	
Amyl acetate		628-63-7	5,000			
iso-Amyl acetate		123-92-2	5,000			
sec-Amyl acetate		626-38-0	5,000			
tert-Amyl acetate		625-16-1	5,000			
Aniline	Y	62-53-3	5,000	5,000	1,000	U012
Aniline, 2,4,6-trimethyl-		88-05-1		500	500	
o-Anisidine	Y	90-04-0	100			
Anthracene		120-12-7	5,000			
Antimony		7440-36-0	5,000			
Antimony Compounds		N.A.	***			
Antimony pentachloride		7647-18-9	1,000			
Antimony pentafluoride		7783-70-2		500	500	
Antimony potassium tartrate		28300-74-5	100			
Antimony tribromide		7789-61-9	1,000			
Antimony trichloride		10025-91-9	1,000			
Antimony trifluoride		7783-56-4	1,000			
Antimony trioxide		1309-64-4	1,000			
Antimycin A		1397-94-0		1,000	1,000/ 10,000	
ANTU		86-88-4	100	100	500/ 10,000	P072
Argentate(1-), bis(cyano-C)-, potassium		506-61-6	1			P099

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
Aroclor 1016		12674-11-2	1			
Aroclor 1221		11104-28-2	1			
Aroclor 1232		11141-16-5	1			
Aroclor 1242		53469-21-9	1			
Aroclor 1248		12672-29-6	1			
Aroclor 1254		11097-69-1	1			
Aroclor 1260		11096-82-5	1			
Aroclors	Y	1336-36-3	1			
Arsenic		7440-38-2	1			
Arsenic acid HAsO4		7778-39-4	1			P010
Arsenic and Compounds		NA	***			
Arsenic Compounds		NA	***			
Arsenic disulfide		1303-32-8	1			
Arsenic oxide As2O3		1327-53-3	1	1	100/ 10,000	P012
Arsenic oxide As2O5		1303-28-2	1			P011
Arsenic pentoxide		1303-28-2	1	1	100/ 10,000	P011
Arsenic trichloride		7784-34-1	1	1	500	
Arsenic trioxide		1327-53-3	1	1	100/ 10,000	P012
Arsenic trisulfide		1303-33-9	1			
Arsine		7784-42-1		100	100	
Arsine, diethyl-		692-42-2	1			P038
Arsinic acid, dimethyl-		75-60-5	1			U136
Arsenous dichloride, phenyl-		696-28-6	1			P036
Asbestos ( friable )	Y	1332-21-4	1			
Auramine		492-80-8	100			U014
Azaserine		115-02-6	1			U015
Azinphos-ethyl		2642-71-9		100	100/ 10,000	
Azinphos-methyl		86-50-0	1	1	10/ 10,000	
Aziridine		151-56-4	1	1	500	P054
Aziridine, 2-methyl		75-55-8	1	1	10,000	P067
Azirino[2,3;3,4]pyrrolo[1,2-a]indol-4,7-dione, 6-amino-8-[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b- hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta, 8aalpha, 8balpha)]-		50-07-7	10			U010

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Barban		101-27-9	1*			U280
Barium cyanide		542-62-1	10			P013
Bendiocarb		22781-23-3	1*			U278
Bendiocarb phenol		22961-82-6	1*			U364
Benomyl		17804-35-2	1*			U271
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-		56-49-5	10			U157
Benz[c]acridine		225-51-4	100			U016
Benzal chloride		98-87-3	5,000	5,000	500	U017
Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl		23950-58-5	5,000			U192
Benz[a]anthracene		56-55-3	10			U018
Benz[a]anthracene, 7,12-dimethyl		57-97-6	1			U094
Benzenamine		62-53-3	5,000			U012
Benzenamine, 3-(trifluoromethyl)-		98-16-8		500	500	
Benzenamine,4,4'-carbonimidoylbis (N,N dimethyl-		492-80-8	100			U014
Benzenamine, 4-chloro-		106-47-8	1,000			P024
Benzenamine, 4-chloro-2-methyl-, hydrochloride		3165-93-3	100			U049
Benzenamine, N,N-dimethyl-4-(phenylazo)-		60-11-7	10			U093
Benzenamine, 2-methyl-		95-53-4	100			U328
Benzenamine, 4-methyl-		106-49-0	100			U353
Benzenamine, 4,4'-methylenebis (2-chloro-	Y	101-14-4	10			U158
Benzenamine, 2-methyl-,hydrochloride		636-21-5	100			U222
Benzenamine, 2-methyl-5-nitro-		99-55-8	100			U181
Benzenamine, 4-nitro-		100-01-6	5,000			P077
Benzene (including benzene from gasoline)	Y	71-43-2	10			U019
Benzeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-, ethyl ester		510-15-6	10			U038
Benzenearsonic acid		98-05-5		10	10/ 10,000	
Benzene, 1-bromo-4-phenoxy-		101-55-3	100			U030
Benzenebutanoic acid, 4-(bis(2-chloroethyl)amino)-		305-03-3	10			U035
Benzene,chloro-		108-90-7	10			U037
Benzene, (chloromethyl)-		100-44-7	10			P028
Benzene, 1-(chloromethyl)-4-nitro-		100-14-1		500	500/ 10,000	
Benzenediamine, ar-methyl-		95-80-7	10			U221

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Benzenediamine, ar-methyl-		496-72-0	10			
Benzenediamine, ar-methyl-		823-40-5	10			
Benzenediamine, ar-methyl-		25376-45-8	10			
1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester		117-81-7	100			U028
1,2-Benzenedicarboxylic acid, dibutyl ester		84-74-2	10			U069
1,2-Benzenedicarboxylic acid, diethyl ester		84-66-2	1,000			U088
1,2-Benzenedicarboxylic acid, dimethyl ester		131-11-3	5,000			U102
Benzene, 1,2-dichloro-		95-50-1	100			U070
Benzene, 1,3-dichloro-		541-73-1	100			U071
Benzene, 1,4-dichloro-		106-46-7	100			U072
Benzene, 1,1'-(2,2dichloroethylidene) bis(4-chloro-		72-54-8	1			U060
Benzene, (dichloromethyl)-		98-87-3	5,000			U017
Benzene, 1,3-diisocyanatomethyl-		91-08-7	100	100	100	U223
Benzene, 1,3-diisocyanatomethyl-		584-84-9	100	100	100	U223
Benzene, 1,3-diisocyanatomethyl-		26471-62-5	100			U223
Benzene, dimethyl-		1330-20-7	5,000			U239
1,3-Benzenediol		108-46-3	1,000			U201
1,2-Benzenediol,4-(1-hydroxy-2-(methylamino)ethyl)-		51-43-4	5,000			P042
Benzeneethanamine, alpha,alpha-dimethyl-		122-09-8	5,000			P046
Benzene, hexachloro-		118-74-1	10			U127
Benzene, hexahydro-		110-82-7	1,000			U056
Benzene, methyl-		108-88-3	1,000			U220
Benzene, 1-methyl-2,4-dinitro-		121-14-2	10			U105
Benzene, 2-methyl-1,3-dinitro-		606-20-2	100			U106
Benzene, (1-methylethyl)-		98-82-8	5,000			U055
Benzene, nitro		98-95-3	1,000			U169
Benzene, pentachloro-		608-93-5	10			U183
Benzene, pentachloronitro-		82-68-8	100			U185
Benzenesulfonic acid chloride		98-09-9	100			U020
Benzenesulfonyl chloride		98-09-9	100			U020
Benzene, 1,2,4,5-tetrachloro		95-94-3	100			U207
Benzenethiol		108-98-5	100	100	500	P014

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Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-chloro-		50-29-3	1			U061
Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-methoxy-		72-43-5	1			U247
Benzene, 1,3,5-trinitro		99-35-4	10			U234
Benzidine	Y	92-87-5	1			U021
Benzimidazole, 4,5-dichloro-2-(trifluoromethyl)-		92-87-5	1			U021
1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts		81-07-2	10			U202
1,3-Benzodioxole, 5-(1-propenyl)-1		120-58-1	100			U141
1,3-Benzodioxole, 5-(2-propenyl)-		94-59-7	100			U203
1,3-Benzodioxole, 5-propyl-		94-58-6	10			U090
1,3-Benzodioxole-4-ol, 2,2-dimethyl- (Bendiocarb phenol)		22961-82-6	1*			U364
1,3-Benzodioxole-4-ol, 2,2-dimethyl-, methyl carbamate (Bendiocarb)		22781-23-3	1*			U278
Benzo[b]fluoranthene		205-99-2	1	500	500/ 10,000	
Benzo(k)fluoranthene		207-08-9	5,000			
7-Benzofuranol, 2,3-dihydro-2,2-dimethyl- (carbofuran phenol)		1563-38-8	1*			U367
7-Benzofuranol, 2,3-dihydro-2,2-dimethyl- methyl carbamate		1563-66-2	10			P127
Benzoic acid		65-85-0	5,000			
Benzoic acid, 2-hydroxy-, compd. with (3aS-cis)-1,22,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo [2,3-b] indol-5-yl methylcarbamate ester (1:1) (Physostigmine salicylate)		57-64-7	1*			P188
Benzoic trichloride		98-07-7	10			U023
Benzonitrile		100-47-0	5,000	10	100	
Benzo[rst]pentaphene		189-55-9	10			U064
Benzo[g,h,i]perylene		191-24-2	5,000			
2H-1-Benzopyran-2-one, 4-hydroxy-4-hydroxy-3-(3-oxy-1-phenylbutyl)-, & salts		81-81-2	100			P001
Benzo[a]phenanthrene		218-01-9	100			U050
Benzo[a]pyrene		50-32-8	1			U022
3,4-Benzoapyprene		50-32-8	1			U022
p-Benzoquinone		106-51-4	10			U197
Benzotrichloride	Y	98-07-7	10			U023
Benzoyl chloride		98-88-4	1,000	10	100	
Benzyl chloride	Y	100-44-7	100			P028
Benzyl cyanide		140-29-4		100	500	

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Beryllium		7440-41-7	10	500	500	P015
BERYLLIUM AND COMPOUNDS		N.A.	1*			
Beryllium chloride		7787-47-5	1			
Beryllium Compounds		N.A.	***			
Beryllium nitrate		7787-55-5	1			
Beryllium nitrate		13597-99-4	1			
Beryllium powder		7440-41-7	10			P015
alpha-BHC		319-84-6	10			
beta-BHC		319-85-7	1			
delta-BHC		319-86-8	1			
gamma-BHC		58-89-9	1			U129
2,2'-Bioxirane		1464-53-5	10	500	500/ 10,000	U085
Biphenyl	Y	92-52-4	100	10	500	
[1,1'-Biphenyl]-4,4' diamine		92-87-5	1			U021
[1,1'-Biphenyl]-4,4' diamine,3,3'-dichloro-		91-94-1	1			U073
[1,1'-Biphenyl]-4,4' diamine,3,3'-dimethoxy-		119-90-4	100			U091
[1,1'-Biphenyl]-4,4' diamine, 3,3'-dimethyl-		119-93-7	10			U095
Bis(2-chloroethoxy) methane		111-91-1	1,000			U024
Bis(2-chloroethyl) ether		111-44-4	10			U025
Bis(chloromethyl) ether	Y	542-88-1	10	10	10,000	P016
Bis(2-chloro-1-methylethyl)ether		108-60-1	1,000	10	100	U027
Bis(chloromethyl) ketone		534-07-6	10		10/ 10,000	
Bis(2-ethylhexyl)phthalate	Y	117-81-7	100	10		U028
Bitoscanate		4044-65-9		500	500/ 10,000	
Borane, trichloro-		10294-34-5		500	500	
Borane, trifluoro-		7637-07-2		500	500	
Boron trifluoride compound with methyl ether (1:1)		353-42-4		1,000	1,000	
Bromadiolone		28772-56-7		100	100/ 10,000	
Bromine		7726-95-6		500	500	
Bromoacetone		598-31-2	1,000			P017
Bromoform	Y	75-25-2	100			U225
Bromomethane		74-83-9	1,000	1,000	1,000	U029

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4-Bromophenyl phenyl ether		101-55-3	100			U030
Brucine		357-57-3	100			P018
1,3-Butadiene	Y	106-99-0	10			
1,3-Butadiene,1,1,2,3,4,4-hexachloro-		87-68-3	1			U128
1-Butanamine, N-butyl-N-nitroso-		924-16-3	10			U172
2-Butanone		78-93-3	5,000			U159
2-Butanone, 3,3-dimethyl-1(methylthio)-, O-[(methylamino)carbonyl] oxime		39196-18-4	100			P045
2-Butanone peroxide		1338-23-4	10			U160
2-Butenal		4170-30-3	100	100	1,000	U053
2-Butenal, (e)-		123-73-9	100	100	1,000	U053
2-Butene, 1,4-dichloro-		764-41-0	1			U074
2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3- methyl-1-oxobutoxy] methyl]-23, 5,7a-tetrahydro- 1H-pyrrolizin-1-yl ester, [1S-[alpha](Z), 7(2S*,3R*), 7aalpha]]		3303-34-4	10			U143
Butyl acetate		123-86-4	5,000			
iso-Butyl acetate		110-19-0	5,000			
sec-Butyl acetate		105-46-4	5,000			
tert-Butyl acetate		540-88-5	5,000			
n-Butyl alcohol		71-36-3	5,000			U031
Butylamine		109-73-9	1,000			
iso-Butylamine		78-81-9	1,000			
sec-Butylamine		513-49-5	1,000			
sec-Butylamine		13952-84-6	1,000			
tert-Butylamine		75-64-9	1,000			
Butyl benzyl phthalate		85-68-7	100			
n-Butyl phthalate		84-74-2	10			U069
Butyric acid		107-92-6	5,000			
iso-Butyric acid		79-31-2	5,000			
Cacodylic acid		75-60-5	1			U136
Cadmium		7440-43-9	10			
Cadmium acetate		543-90-8	10			
CADMIUM AND COMPOUNDS		N.A.	1*			
Cadmium bromide		7789-42-6	10			

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Cadmium chloride		10108-64-2	10			
Cadmium Compounds		N.A.	***			
Cadmium oxide		1306-19-0		100	100/ 10,000	
Cadmium stearate		2223-93-0		1,000	1,000/ 10,000	
Calcium arsenite		52740-16-6	1			
Calcium carbide		75-20-7	10			
Calcium chromate		13765-19-0	10			U032
Calcium cyanamide	Y	156-62-7	1,000			
Calcium cyanide		592-01-8	10			P021
Calcium dodecylbenzenesulfonate		26264-06-2	1,000			
Calcium hypochlorite		7778-54-3	10			
Camphechlor		8001-35-2	1	1	500/ 10,000	P123
Camphe, octachloro-		8001-35-2	1	1	500/ 10,000	P123
Cantharidin		56-25-7		100	100/ 10,000	
Caprolactam (See modification)	Y	105602				
Captan	Y	133-06-2	10			
Carbachol chloride		51-83-2		500	500/ 10,000	
Carbamic acid, 1H-benzimidazol-2-yl, methyl ester (Carbendazim)		10605-21-7	1*			U372
Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl], methyl ester (Benomyl)		17804-35-2	1*			U271
Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester (Barban)		101-27-9	1*			U280
Carbamic acid, [(dibutylamino)thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester (Carbosulfan)		55285-14-8	1*			P189
Carbamic acid, dimethyl-,1-[(dimethylamino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester (Dimetilan)		644-64-4	1*			P191
Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-5yl ester (Isolan)		119-38-0	1*			P192
Carbamic acid, ethyl ester		51-79-6	100			U238
Carbamic acid, methyl-,3-methylphenyl ester (Metolcarb)		1129-41-5	1*			P190
Carbamic acid, methylnitroso-, ethylester		615-53-2	1*			U178
Carbamic acid, [1,2-phenylenebis (iminocarbonothiyl)] bis-, dimethyl ester (Thiophanate-methyl)		23564-05-8	1*			U409
Carbamic chloride, dimethyl-		79-44-7				U097
Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters		111-54-6	5,000			U114
Carbamic acid, methyl-, O-(((2,4-dimethyl-1,3-dithiolan-2-yl)methylene)amino)-		26419-73-8	1*	1*	100/ 10,000	P185

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Carbamothioic acid, bis(1-methylethyl)-S-(2,3-dichloro-2-propenyl)ester		2303-16-4	100			U062
Carbamothioic acid, bis(1-methylethyl)-S-(2,3,3-trichloro-2-propenyl)ester (Triallate)		233-17-5	1*			U389
Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester (Prosulfocarb)		52888-80-9	1*			U387
Carbaryl	Y	63-25-2	100			U279
Carbendazim		10605-21-7	1*			U372
Carbofuran		1563-66-2	10	10	10/ 10,000	P127
Carbofuran phenol		1563-38-8	1*			U367
Carbon disulfide	Y	75-15-0	100	100	10,000	P022
Carbonic acid, dithallium(1+)salt		6533-73-9	100			U215
Carbonic dichloride		75-44-5	10	10	10	P095
Carbonic difluoride		353-50-4	1,000			U033
Carbonochloridic acid, methylester		79-22-1	1,000	1,000	500	U156
Carbonochloridic acid, 1-methylethyl ester		108236		1,000	1,000	
Carbonochloridic acid, propylester		109615		500	500	
Carbon oxifluoride		353-50-4	1,000			U033
Carbon oxide sulfide (COS)	Y	463-58-1	100			
Carbon tetrachloride	Y	56-23-5	10			U211
Carbonyl sulfide		463-58-1	100			
Carbophenothon		786-19-6		500	500	
Carbosulfan		55285-14-8	1*			P189
Catechol	Y	120-80-9	100			
CFC-11		75-69-4	5,000			U121
CFC-12		75-71-8	5,000			U075
Chloral		75-87-6	5,000			U034
Chloramben	Y	133-90-4	100			
Chlorambucil		305-03-3	10			U035
Chlordane	Y	57-74-9	1	1	1,000	U036
Chlordane, alpha & gamma isomers		57-74-9	1	1	1,000	U036
Chlorfenvinfos		470-90-6		500	500	
Chlorinated Benzenes		N.A.	***			
Chlorinated camphene		8001-35-2	1			P123
Chlorinated Ethanes		N.A.	***			

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Chlorinated Naphthalene		N.A.	***			
Chlorinated Phenols		N.A.	***			
Chlorine	Y	7782-50-5	10	10	100	
Chlormephos		24934-91-6		500	500	
Chlormequat chloride		999-81-5		100	100/ 10,000	
Chlornaphazine		494-03-1	100			U026
Chloroacetaldehyde		107-20-0	1,000			P023
Chloroacetic acid	Y	79-11-8	100	100	100/ 10,000	
2-Chloroacetophenone	Y	532-27-4	100			
Chloroalkyl Ethers		N.A.	***			
p-Chloroaniline		106-47-8	1,000			P024
Chlorobenzene	Y	108-90-7	100			U037
Chlorobenzilate	Y	510-15-6	10			U038
2-Chloro-N-(2-chloroethyl)-N-methylethanamine		51-75-2		10	10	
p-Chloro-m-cresol		59-50-7	5,000			U039
Chlorodibromomethane		124-48-1	100			
1-Chloro-2,3-epoxypropane		106-89-8	100			U041
Chloroethane		75-00-3	100			
Chloroethanol		107-07-3		500	500	
Chloroethyl chloroformate		627-11-2		1,000	1,000	
2-Chloroethyl vinyl ether		110-75-8	1,000			U042
Chloroform	Y	67-66-3	10	10	10,000	U044
Chloromethane		74-87-3	100			U045
Chloromethyl ether		542-88-1	10	10	100	P016
Chloromethyl methyl ether	Y	107-30-2	10	10	100	U046
beta-Chloronaphthalene		91-58-7	5,000			U047
2-Chloronaphthalene		91-58-7	5,000			U047
Chlorophacinone		3691-35-8		100	100/ 10,000	
2-Chlorophenol		95-57-8	100			U048
o-Chlorophenol		95-57-8	100			U048
4-Chlorophenyl phenyl ether		7005-72-3	5,000			
1-(o-Chlorophenyl)thiourea		5344-82-1	100			P026

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Chloroprene	Y	126-99-8	100			
Chlorosulfonic acid		7790-94-5	1,000			
4-Chloro-o-toluidine, hydrochloride		3165-93-3	100			U049
Chloroxuron		1982-47-4		500	500/ 10,000	
Chlorpyrifos		2921-88-2	1			
Chlorthiophos		21923-23-9		500	500	
Chromic acetate		1066-30-4	1,000			
Chromic acid		7738-94-5	10			
Chromic acid		11115-74-5	10			
Chromic acid H <sub>2</sub> SO <sub>4</sub> , Calcium salt		13765-19-0	10			U032
Chromic chloride		10025-73-7		1	1/ 10,000	
Chromic sulfate		10101-53-8	1,000			
Chromium		7440-47-3	5,000			
Chromium Compounds		N.A.	***			
Chromium and Compounds		N.A.	***			
Chromous chloride		10049-05-5	1,000			
Chrysene		218-01-9	100			U050
C.I. Solvent Yellow 34		492-80-8	100			U014
Cobalt carbonyl		10210-68-1		10	10/ 10,000	
Cobalt Compounds		N.A.	***			
Cobalt, ((2,2'-(1,2-ethanediylbis(nitrilomethylidyne))bis(6-fluorophenylato))(2-)-N,N',O,O')-		62207-76-5		100	100/ 10,000	
Cobaltous bromide		7789-43-7	1,000			
Cobaltous formate		544-18-3	1,000			
Cobaltous sulfamate		14017-41-5	1,000			
Coke Oven Emissions		N.A.	1			
Colchicine		64-86-8		10	10/ 10,000	
Copper		7440-50-8	5,000			
Copper Compounds		N.A.	***			
Copper cyanide		544-92-3	10			P029
Coumaphos		56-72-4	10	10	100/ 10,000	
Coumatetralyl		5836-29-3		500	500/ 10,000	

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Creosote		8001-58-9	1			U051
Cresol (cresylic acid)	Y	1319-77-3	100			U052
m-Cresol	Y	108-39-4	100			U052
o-Cresol		95487				
p-Cresol	Y	106-44-5	100			U052
Cresol (mixed isomers)		1319-77-3	100			U052
Cresylic acid (isomers and mixtures)		1319-77-3	100			U052
Crimidine		535-89-7		100	100/ 10,000	
Crotonaldehyde		4170-30-3	100	100	1,000	U053
Crotonaldehyde, (E)-		123-73-9	100	100	1,000	U053
Cumene		98-82-8	5,000			U055
Cumene hydroperoxide		80-15-9	10			U096
Cupric acetate		142-71-2	100			
Cupric acetoarsenite		12002-03-8	1	1	500/ 10,000	
Cupric chloride		7447-39-4	10			
Cupric nitrate		3251-23-8	100			
Cupric oxalate		5893-66-3	100			
Cupric sulfate		7758-98-7	10			
Cupric sulfate, ammoniated		10380-29-7	100			
Cupric tartrate		815-82-7	100			
Cyanide Compounds		N.A.	***			
Cyanides (soluble salts and complexes)		N.A.	10			P030
Cyanogen		460-19-5	100			P031
Cyanogen bromide (CN)Br		506-68-3	1,000	1,000	500/ 10,000	U246
Cyanogen chloride		506-77-4	10			P033
Cyanogen chloride (CN)Cl		506-77-4	10			P033
Cyanogen iodide		506-78-5		1,000	1,000/ 10,000	
Cyanophos		2636-26-2		1,000	1,000	
Cyanuric fluoride		675-14-9		100	100	
2,5-Cyclohexadiene-1,4dione		106-51-4	10			U197
Cyclohexanamine		108-91-8		10,000	10,000	
Cyclohexane		110-82-7	1,000			U056

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Cyclohexane, 1,2,3,4,5,6-hexachloro-(1alpha, 2 alpha, 3 beta, 4 alpha, 5 alpha, 6 beta)-		58-89-9	1	1	1,000/ 10,000	U129
Cyclohexanone		108-94-1	5,000			U057
Cycloheximide		66-81-9		100	100/ 10,000	
Cyclohexylamine		108-91-8		10,000	10,000	
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-		77-47-4	10			U130
Cyclophosphamide		50-18-0	10			U058
2,4-D	Y	94-75-7	100			U240
2,4-D Acid		94-75-7	100			U240
2,4-D Esters		94-11-1	100			
2,4-D Esters		94-79-1	100			
2,4-D butyl ester		94-80-4	100			
2,4-D Esters		94-80-4	100			
2,4-D Esters		1320-18-9	100			
2,4-D Esters		1928-38-7	100			
2,4-D Esters		1928-61-6	100			
2,4-D Esters		1929-73-3	100			
2,4-D Esters		2971-38-2	100			
2,4-D Esters		25168-26-7	100			
2,4-D Esters		53467-11-1	100			
2,4-D, salts and esters		94-75-7	100			U240
Daunomycin		20830-81-3	10			U059
DBCP		96-12-8	1			U066
DDD		72-54-8	1			U060
DDE		72-55-9	1			
DDE	Y	3547-04-4	5,000			
4,4'-DDE		72-55-9	1			
DDT		50-29-3	1			U061
DDT and Metabolites		N.A.	***			
Decaborane(14)		17702-41-9		500	500/ 10,000	
DEHP		117-81-7	100			U028
Demeton		8065-48-3		500	500	

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Demeton-S-methyl		919-86-8		500	500	
Dialifor		10311-84-9		100	100/ 10,000	
Diallate		2303-16-4	100			U062
Diazinon		333-41-5	1			
Diazomethane	Y	334-88-3	100			
Dibenz[a,h]anthracene		53-70-3	1			U063
1,2:5,6-Dibenzanthracene		53-70-3	1			U063
Dibenzo[a,h]anthracene		53-70-3	1			U063
Dibenz[a,i]pyrene		189-55-9	10			U064
Dibenzofurans	Y	132649				
Diborane		19287-45-7		100	100	
1,2-Dibromo-3-chloropropane	Y	96-12-8	1			U066
1,2-Dibromoethane		106-93-4	1			U067
Dibutyl phthalate	Y	84-74-2	10			U069
Dicamba		1918-00-9	1,000			
Dichlobenil		1194-65-6	100			
Dichlone		117-80-6	1			
Dichlorobenzene		25321-22-6	100			
1,2-Dichlorobenzene		95-50-1	100			U070
1,3-Dichlorobenzene		541-73-1	100			U071
1,4-Dichlorobenzene	Y	106-46-7	100			U072
m-Dichlorobenzene		541-73-1	100			U071
o-Dichlorobenzene		95-50-1	100			U070
p-Dichlorobenzene		106-46-7	100			U072
Dichlorobenzidine		N.A.	***			
3,3'-Dichlorobenzidine	Y	91-94-1	1			U073
Dichlorobromomethane		75-27-4	5,000			
trans-1,4-Dichloro-2-butene		110-57-6		500	500	
trans-1,4-Dichlorobutene		110-57-6		500	500	
1,4-Dichloro-2-butene		764-41-0	1			U074
Dichlorodifluoromethane		75-71-8	5,000			U075
1,1-Dichloroethane		75-34-3	1,000			U076

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1,2-Dichloroethane		107-06-2	100			U077
1,1-Dichloroethylene		75-35-4	100			U078
1,2-Dichloroethylene		156-60-5	1,000			U079
Dichloroethyl ether	Y	111-44-4	10	10	10,000	U025
Dichloroisopropyl ether		108-60-1	1,000			U027
Dichloromethane	Y	75-09-2	1,000			U080
Dichloromethyl ether		542-88-1	10	10	100	P016
Dichloromethylphenylsilane		149-74-6		1,000	1,000	
2,4-Dichlorophenol		120-83-2	100			U081
2,6-Dichlorophenol		87-65-0	100			U082
Dichlorophenylarsine		696-28-6	1	1	500	P036
Dichloropropane		26638-19-7	1,000			
1,1-Dichloropropane		78-99-9	1,000			
1,3-Dichloropropane		142-28-9	5,000			
Dichloropropene		26952-23-8	100			
1,3-Dichloropropene	Y	542-75-6	100			U084
2,3-Dichloropropene		78-88-6	100			
2,2-Dichloropropionic acid		75-99-0	5,000			
1,3-Dichloropropylene		542-75-6	100			U084
Dichlorvos	Y	62-73-7	10	10	1,000	
Dicofol		115-32-2	10			
Dicrotophos		141-66-2		100	100	
Dieldrin		60-57-1	1			P037
Diepoxybutane		1464-53-5	10	10	500	U085
Diethanolamine	Y	111-42-2	100			
Diethylamine		109-89-7	100			
N,N-Diethylaniline		91-66-7	1,000			
Diethylarsine		692-42-2	1			P038
Diethyl chlorophosphate		814-49-3		500	500	
1,4 Diethyleneoxide		123-91-1	100			U108
Diethylhexyl phthalate		117-81-7	100			U028
N,N'-Diethylhydrazine		1615-80-1	10			U086

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O,O-Diethyl S-methyl dithiophosphate		3288-58-2	5,000			U087
Diethyl-p-nitrophenyl phosphate		311-45-5	100			P041
Diethyl phthalate		84-66-2	1,000			U088
O,O-Diethyl O-pyrazinyl phosphorothioate		297-97-2	100	100	500	P040
Diethylstilbestrol		56-53-1	1			U089
Diethyl sulfate	Y	64-67-5	10			
Digitoxin		71-63-6		100	100/ 10,000	
Diglycidyl ether		2238-07-5		1,000	1,000	
Digoxin		20830-75-5		10	10/ 10,000	
Dihydrosafrole		94-58-6	10			U090
Diisopropylfluorophosphate (DFP)		55-91-4	100	100	100	P043
Dimefox		115-26-4		500	500	
1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-		309-00-2	1	1	500/ 10,000	P004
2,7,3,6-Dimethanonaphth[2,3-b]oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-,(1alpha,2beta,2alpha,3alpha,6alpha,6abeta,7beta,7aalpha,)-, & metabolites		72-20-8	1			P051
Dimethoate		60-51-5	10	10	500/ 10,000	P044
3,3'-Dimethoxybenzidine	Y	119-90-4	100			U091
Dimethylamine		124-40-3	1,000			U092
4-Dimethylaminoazobenzene	Y	60-11-7	10			U093
Dimethylaminoazobenzene		60-11-7	10			U093
N,N-Dimethylaniline	Y	121-69-7	100			
7,12-Dimethylbenz[a]anthracene		57-97-6	1			U094
3,3'-Dimethylbenzidine	Y	119-93-7	10			U095
2,2-Dimethyl-1,3-benzodioxol-4-ol methylcarbamate		22781-23-3	1*			U278
alpha,alpha-Dimethylbenzylhydroperoxide		80-15-9	10			U096
Dimethylcarbamyl chloride	Y	79-44-7	1			U097
Dimethyl chlorothiophosphate		2524-03-0		500	500	
Dimethyldichlorosilane		75-78-5		500	500	
Dimethylformamide	Y	68-12-2	100			
1,1-Dimethyl hydrazine	Y	57-14-7	10	10	1,000	U098
1,2-Dimethylhydrazine		540-73-8	1			U099

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alpha, alpha-Dimethylphenylethylamine		122-09-8	5,000			P046
2,4-Dimethylphenol		105-67-9	100			U101
Dimethyl-p-phenylenediamine		99-98-9		10	10/ 10,000	
Dimethyl phosphorochloridothioate		2524-03-0		500	500	
Dimethyl phthalate	Y	131-11-3	5,000			U102
Dimethyl sulfate		77-78-1	100	100	500	U103
Dimetilan		644-64-4	1*	1*	500/ 10,000	P191
Dinitrobenzene (mixed isomers)		25154-54-5	100			
m-Dinitrobenzene		99-65-0	100			
o-Dinitrobenzene		528-29-0	100			
Dinitrobutyl phenol		88-85-7	1,000	1,000	100/ 10,000	P020
4,6-Dinitro-o-cresol and salts	Y	534-52-1	10	10	10/ 10,000	P047
Dinitrophenol		25550-58-7	10			
2,4-Dinitrophenol	Y	51-28-5	10			P048
2,5-Dinitrophenol		329-71-5	10			
2,6-Dinitrophenol		573-56-8	10			
Dinitrotoluene (mixed isomers)		25321-14-6	10			
2,4-Dinitrotoluene	Y	121-14-2	10			U105
2,6-Dinitrotoluene		606-20-2	100			U106
Dinoseb		88-85-7	1,000	1,000	100/ 10,000	P020
Dinoterb		1420-07-1		500	500/ 10,000	
Di-n-octyl phthalate		117-84-0	5,000			U107
1,4-Dioxane	Y	123-91-1	100			U108
Dioxathion		78-34-2		500	500	
Diphacinone		82-66-6		10	10/ 10,000	
Diphenylhydrazine		N.A.	***			
1,2-Diphenylhydrazine	Y	122-66-7	10			U109
Diphosphoramido, octamethyl-		152-16-9	100	100	100	P085
Diphosphoramido, tetraethyl ester		107-49-3	10			P111
Dipropylamine		142-84-7	5,000			U110
Di-n-propylnitrosamine		621-64-7	10			U111
Diquat		85-00-7	1,000			

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Diquat		2764-72-9	1,000			
Disulfoton		298-04-4	1	1	500	P039
Dithiazanine iodide		514-73-8		500	500/ 10,000	
Dithiobiuret		541-53-7	100	100	100/ 10,000	P049
2,4-Dithiobiuret		541-53-7	100	100	100/ 10,000	P049
1,3-Dthiolane-2-carboxaldehyde, 2,4-dimethyl-O-[(methlyamino) carbonyl] oxime (Tirplate)		26419-73-8	***			P185
Diuron		330-54-1	100			
Dodecylbenzenesulfonic acid		27176-87-0	1,000			
Emetine, dihydrochloride		316-42-7		1	1/ 10,000	
Endosulfan		115-29-7	1	1	10/ 10,000	P050
alpha - Endosulfan		959-98-8	1			
beta - Endosulfan		33213-65-9	1			
Endosulfan sulfate		1031-07-8	1			
Endothall		145-73-3	1,000			P088
Endothion		2778-04-3		500	500/ 10,000	
Endrin		72-20-8	1	1	500/ 10,000	P051
Endrin aldehyde		7421-93-4	1			
Endrin and Metabolites		N.A.	***			
Endrin, & metabolites		72-20-8	1			P051
Epichlorohydrin	Y	106-89-8	100	100	1,000	U041
Epinephrine		51-43-4	1,000			P042
EPN		2104-64-5		100	100/ 10,000	
1,2-Epoxybutane	Y	106887				
Ergocalciferol		50-14-6		1,000	1,000/ 10,000	
Ergotamine tartrate		379-79-3		500	500/ 10,000	
Ethanal		75-07-0				U001
Ethanamine, N,N-diethyl-		121-44-8	5,000			U404
Ethanamine, N-ethyl-N-nitroso-		55-18-5	1			U174
1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N-(2-thienylmethyl)-		91-80-5	5,000			U155
Ethane, 1,2-dibromo-		106-93-4	1			U067
Ethane, 1,1-dichloro-		75-34-3	1,000			U076
Ethane, 1,2-dichloro-		107-06-2	100			U077

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1,2-Ethanediamine		107-15-3	5,000	5,000	10,000	
Ethanedinitrile		460-19-5	100			P031
Ethane, hexahydro-		67-72-1	100			U131
Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro		111-91-1	1,000			U024
Ethane, 1,1'-oxybis-		60-29-7	100			U117
Ethane, 1,1'-oxybis[2-chloro-		111-44-4	10			U025
Ethaneperoxic acid		79-21-0		500	500	
Ethanesulfonyl chloride, 2-chloro-		1622-32-8		500	500	
Ethane, pentachloro-		76-01-7	10			U184
Ethane, 1,1,1,2-tetrachloro-		630-20-6	100			U208
Ethane, 1,1,1,2-tetrachloro-		79-34-5	100			U209
Ethanethioamide		62-55-5	10			U218
Ethane, 1,1,1- tricloro-		71-55-6	1,000			U226
Ethane, 1,1,2- tricloro-		79-00-5	100			U227
Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester		30558-43-1	1*			U394
Ethanimidothioic acid, 2-(dimethylamino)-N-[[ (methylamino)-carbonyl]oxy]-2-oxo-, methyl ester (Oxamyl)		23135-22-0	1*			P194
Ethanimidothioic acid, N-[[methylamino)carbonyl]-, methyl ester		16752-77-5	100	100	500/ 10,000	P066
Ethanimidothioic acid, N,N'[thiobis[(methylimino) carbonyl]]bis-, dimethyl ester (Thiodicarb)		59669-26-0	1*			U410
Ethanol, 1,2-dichloro-, acetate		10140-87-1		1,000	1,000	
Ethanol, 2-ethoxy-		110-80-5	1,000			U359
Ethanol, 2,2'-(nitrosoimino)bis		1116-54-7	1			U173
Ethanol, 2,2'-oxybis-, dicarbamate (Diethylene glycol, dicarbamate)		5952-26-1	1*			U395
Ethanone, 1-phenyl-		98-86-2	5,000			U004
Ethene, chloro-		75-01-4	1			U043
Ethene, (2-chloroethoxy)-		110-75-8	1,000			U042
Ethene, 1,1-dichloro-		75-35-4	100			U078
Ethene, 1,2-dichloro-(E)		156-60-5	1,000			U079
Ethene, tetrachloro-		127-18-4	100			U210
Ethene, trichloro-		79-01-6	100			U228
Ethion		563-12-2	10	10	1,000	
Ethoprop		13194-48-4		1,000	1,000	

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Ethoprophos		13194-48-4		1,000	1,000	
2-Ethoxyethanol		110-80-5	1,000			U359
Ethyl acetate		141-78-6	5,000			U112
Ethyl acrylate	Y	140-88-5	1,000			U113
Ethylbenzene	Y	100-41-4	1,000			
Ethylbis(2-chloroethyl)amine		538-07-8		500	500	
Ethyl carbamate	Y	51-79-6	100			U238
Ethyl chloride	Y	75-00-3	100			
Ethyl cyanide		107-12-0	10	10	500	P101
Ethylenebisdithiocarbamic acid, salts & esters		111-54-6	5,000			U114
Ethylenediamine-tetraacetic acid (EDTA)		60-00-4	5,000			
Ethylene dibromide	Y	106-93-4	1			U067
Ethylene dichloride	Y	107-06-2	100			U077
Ethylene fluorohydrin		371-62-0		10	10	
Ethylene glycol	Y	107-21-1	5,000			
Ethylene glycol monomethyl ether		110-80-5	1,000			U359
Ethyleneimine	Y	151-56-4	1	1	500	P054
Ethylene oxide	Y	75-21-8	10	10	1,000	U115
Ethylene thiourea	Y	96-45-7	10			U116
Ethyleneimine		151-56-4	1			P054
Ethyl ether		60-29-7	100			U117
Ethyldene Dichloride	Y	75-34-3	1,000			U076
Ethyl methacrylate		97-63-2	1,000			U118
Ethyl methanesulfonate		62-50-0	1			U119
Ethylthiocyanate		542-90-5		10,000	10,000	
Famphur		52-85-7	1,000			P097
Fenamiphos		22224-92-6		10	10/ 10,000	
Fensulfothion		115-90-2		500	500	
Ferric ammonium citrate		1185-57-5	1,000			
Ferric ammonium oxalate		2944-67-4	1,000			
Ferric ammonium oxalate		55488-87-4	1,000			
Ferric chloride		7705-08-0	1,000			

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Ferric fluoride		7783-50-8	100			
Ferric nitrate		10421-48-4	1,000			
Ferric sulfate		10028-22-5	1,000			
Ferrous ammonium sulfate		10045-89-3	1,000			
Ferrous chloride		7758-94-3	100			
Ferrous sulfate		7720-78-7	1,000			
Ferrous sulfate		7782-63-0	1,000			
Fine mineral fibers		N.A.	***			
Fluorine		4301-50-2		100	100/ 10,000	
Fluoranthene		206-44-0	100			U120
Fluorene		86-73-7	5,000			
Fluorine		7782-41-4	10	10	500	P056
Fluoroacetamide		640-19-7	100	100	100/ 10,000	P057
Fluoroacetic acid, sodium salt		62-74-8	10	10	10/ 10,000	P058
Fluoroacetyl chloride		359-06-8		10	10	
Fluorouracil		51-21-8		500	500/ 10,000	
Fonofos		944-22-9		500	500	
Formaldehyde	Y	50-00-0	100	100	500	U122
Formaldehyde cyanohydrin		107-16-4		1,000	1,000	
Formaldehyde (solution)		50-00-0	100	100	500	U122
Formetanate hydrochloride		23422-53-9	1*	1*	500/ 10,000	P198
Formic acid		64-18-6	5,000			U123
Formothion		2540-82-1		100	100	
Formparanate		17702-57-7	1*	1*	100/ 10,000	P197
Fosthietan		21548-32-3		500	500	
Fuberidazole		3878-19-1		100	100/ 10,000	
Fulminic acid, mercury(2+)salt		628-86-4	10			P065
Fumaric acid		110-17-8	5,000			
Furan		110-00-9	100	100	500	U124
2-Furancarboxaldehyde		98-01-1	5,000			U125
2,5-Furandione		108-31-6	5,000			U147
Furan, tetrahydro-		109-99-9	1,000			U213
Furfural		98-01-1	5,000			U125

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Furfuran		110-00-9	100			U124
Gallium trichloride		13450-90-3		500	500/ 10,000	
Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido), D-		18883-66-4	1			U206
D-Glucose, 2-deoxy-2-[(methylnitrosoamino)-carbonyl]amino]-		18883-66-4	1			U206
Glycidylaldehyde		765-34-4	10			U126
Glycol Ethers		N.A.	***			
Guanidine, N-methyl-N'-nitro-N-nitroso-		70-25-7	10			U163
Guthion		86-50-0	1	1	10/ 10,000	
Haloethers		N.A.	***			
Halomethanes		N.A.	***			
Heptachlor	Y	76-44-8	1			P059
Heptachlor and Metabolites		N.A.	***			
1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene		76-44-8	1			P059
Hexachlorobenzene	Y	118-74-1	10			U127
Hexachloro-1,3-butadiene	Y	87-68-3	1			U128
Hexachlorobutadiene		87-68-3	1			U128
Hexachlorocyclohexane (all isomers)		608-73-1	***			
Hexachlorocyclohexane (gamma isomer)		58-89-9	1	1	1,000/ 10,000	U129
Hexachlorocyclopentadiene	Y	77-47-4	10	10	100	U130
Hexachloroethane	Y	67-72-1	100			U131
Hexachlorophene		70-30-4	100			U132
Hexachloropropene		1888-71-7	1,000			U243
Hexaethyl tetraphosphate		757-58-4	100			P062
Hexamethylenediamine, N,N'-dibutyl-		1072-29-6		500	500	
Hexamethylene-1,6-diisocyanate	Y	822-06-0	100			
Hexamethylphosphoramide	Y	680-31-9	1			
Hexane	Y	110-54-3	5,000			
n-Hexane		110-54-3	5,000			
Hexone		108-10-1	5,000			U161
Hydrazine	Y	302-01-2	1	1	1,000	U133
Hydrazinecarbothioamide		19-19-6	100			P116
Hydrazine, 1,2-diethyl-		1615-80-1	10			U086

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Hydrazine, 1,1-dimethyl-		57-14-7	10	10	1,000	U098
Hydrazine, 1,2-dimethyl-		540-73-8	1			U099
Hydrazine, 1,2-diphenyl-		122-66-7	10			U109
Hydrazine, methyl-		60-34-4	10	10	500	P068
Hydrazobenzene		122-66-7	10			U109
Hydrochloric acid	Y	7647-01-0	5,000			
Hydrocyanic acid		74-90-8	10	10	100	P063
Hydrofluoric acid	Y	7664-39-3	100	100	100	U134
Hydrofluoric acid (conc. 50% or greater)		7664-39-3	100	100	100	U134
Hydrogen chloride (anhydrous)		7647010	5,000	5,000	500	
Hydrogen chloride (gas only)		7647-01-0	5,000	5,000	500	
Hydrogen cyanide		74-90-8	10	10	100	P063
Hydrogen fluoride		7664-39-3	100	100	100	U134
Hydrogen fluoride (anhydrous)		7664-39-3	100	100	100	U134
Hydrogen phosphide		7803-51-2	100			P096
Hydrogen selenide	Y	7783-06-4		10	10	
Hydrogen sulfide H2S		2148-87-8	100	100	500	U135
Hydroperoxide, 1-methyl-1-phenylethyl-		80-15-9	10			U096
Hydroquinone	Y	123-31-9	100	100	500/ 10,000	
Indeno(1,2,3-cd)pyrene		193-39-5	100			U137
Iodomethane		74-88-4	100			U138
Iron, pentacarbonyl-		13463-40-6		100	100	
Isobenzan		297-78-9		100	100/ 10,000	
1,3-Isobenzofurandione		85-44-9	5,000			U190
Isobutyl alcohol		78-83-1	5,000			U140
Isobutyronitrile		78-82-0		1,000	1,000	
Isocyanic acid, 3,4-dichlorophenyl ester		102-36-3		500	500/ 10,000	
Isodrin		465-73-6	1	1	100/ 10,000	P060
Isofluorophate		55-91-4	100	100	100	P043
Isophorone	Y	78-59-1	5,000			
Isophorone diisocyanate		4098-71-9		100	100	
Isoprene		78-79-5	100			
Isopropanolamine dodecylbenzene sulfonate		42504-46-1	1,000			

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Isopropyl chloroformate		108-23-6		1,000	1,000	
Isopropylmethylpyrazolyl dimethylcarbamate		119-38-0	1*	1*	500	P192
Isosafrole		120-58-1	100			U141
Isothiocyanatomethane		556-61-6		500	500	
3(2H)-Isoxazolone,-5-(aminomethyl)-		2763-96-4	1,000			P007
Kepone		143-50-0	1			U142
Lactonitrile		78-97-7		1,000	1,000	
Lasiocarpine		303-34-4	10			U143
Lead		7439-92-1	10			
Lead acetate		301-04-2	10			U144
Lead and Compounds		N.A.	***			
Lead arsenate		7645-25-2	1			
Lead arsenate		7784-40-9	1			
Lead arsenate		10102-48-4	1			
Lead chloride		7758-95-4	10			
Lead Compounds		N.A.	***			
Lead fluoborate		13814-96-5	10			
Lead fluoride		7783-46-2	10			
Lead iodide		10101-63-0	10			
Lead nitrate		10099-74-8	10			
Lead phosphate		7446-27-7	10			U145
Lead stearate		1072-35-1	10			
Lead stearate		7428-48-0	10			
Lead stearate		52652-59-2	10			
Lead stearate		56189-09-4	10			
Lead subacetate		1335-32-6	10			U146
Lead sulfate		7446-14-2	10			
Lead sulfate		15739-80-7	10			
Lead sulfide		1314-87-0	10			
Lead thiocyanate		592-87-0	10			
Leptophos		21609-90-5		500	500/ 10,000	
Lewisite		541-25-3		10	10	

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Lindane	Y	58-89-9	1	1	1,000/ 10,000	U129
Lindane (all isomers)		58-89-9	1	1	1,000/ 10,000	U129
Lithium chromate		14307-35-8	10			
Lithium hydride		7580-67-8		100	100	
Malathion		121-75-5	100			
Maleic acid		110-16-7	5,000			
Maleic anhydride	Y	108-31-6	5,000			U147
Maleic hydrazide		123-33-1	5,000			U148
Malononitrile		109-77-3	1,000	1,000	500/ 10,000	U149
Manganese, bis(dimethylcarbamodithioato-S,S')-		15339-36-3	1*			P196
Manganese Compounds		N.A.	***			
Manganese, tricarbonyl methylcyclopentadienyl		12108-13-3		100	100	
4,4'-Methylenebis(2-chloroaniline) MBOCA		101-14-4	10			U158
MDI	Y	101-68-8	5,000			
MEK		78-93-3	5,000			U159
Melphalan		148-82-3	1			U150
Mephosfolan		950-10-7		500	500	
Mercaptodimethur		2032-65-7	10	10	500/ 10,000	P199
Mercuric acetate		1600-27-7		500	500/ 10,000	
Mercuric chloride		7487-94-7		500	500/ 10,000	
Mercuric cyanide		592-04-1	1			
Mercuric nitrate		10045-94-0	10			
Mercuric oxide		21908-53-2		500	500/ 10,000	
Mercuric sulfate		7783-35-9	10			
Mercuric thiocyanate		592-85-8	10			
Mercurous nitrate		7782-86-7	10			
Mercurous nitrate		10415-75-5	10			
Mercury		7439976	1			U151
Mercury and Compounds		N.A.	***			
Mercury, (acetato-O)phenyl		62-38-4	100			P092
Mercury Compounds		N.A.	***			
Mercury fulminate		628-86-4	10			P065

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Methacrolein diacetate		10476-95-6		1,000	1,000	
Methacrylic anhydride		760-93-0		500	500	
Methacrylonitrile		126-98-7	1,000	1,000	500	U152
Methacryloyl chloride		920-46-7		100	100	
Methacryloyloxyethyl isocyanate		30674-80-7		100	100	
Methamidophos		10265-92-6		100	100/ 10,000	
Methanamine, N-methyl-		124-40-3	1,000			U092
Methanamine, N-methyl-N-nitroso-	Y	62-75-9	10	10	1,000	P082
Methane, bromo-		74-83-9	1,000			U029
Methane, chloro-		74-87-3	100			U045
Methane, chloromethoxy-		107-30-2	10	10	100	U046
Methane, dibromo-		74-95-3	1,000			U068
Methane, dichloro-		75-09-2	1,000			U080
Methane, dichlorodifluoro-		75-71-8	5,000			U075
Methane, iodo-		74-88-4	100			U138
Methane, isocyanato-		624-83-9	10	10	500	P064
Methane, oxybis[chloro-		542-88-1	10	10	100	P016
Methanesulfonyl chloride, trichloro-		594-42-3	100	100	500	P118
Methanesulfonyl fluoride		558-25-8		1,000	1,000	
Metane, tetrachloro-		56-23-5	10			U211
Methane, tetranitro-		509-14-8	10	10	500	P112
Methanethiol		74-93-1	100	100	500	U153
Methane, tribromo-		75-25-2	100			U225
Methane, trichloro-		67-66-3	10	10	10,000	U044
Methane, trichlorofluoro-		75-69-4	5,000			U121
Methanimidamide, N,N-dimethyl-N'-[3-[(methylamino)carbonyl]oxy]phenyl]-, monohydrochloride (Formetanate hydrochloride)		23422-53-9	1*			P198
Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[(methylamino)carbonyl]oxy]phenyl]- (Formparanate)		17702-57-7	1*			P197
6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-,3-oxide		115-29-7	1			P050
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptahydro-3a,4,7,7a-tetrahydro-		76-44-8	1			P059
4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octahydro-2,3,3a,4,7,7a-hexahydro-		57-74-9	1	1	1,000	U036

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Methanol	Y	67-56-1	5,000			U154
Methaprylene		91-80-5	5,000			U155
1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-		143-50-0	1			U142
Methidathion		950-37-8		500	500/ 10,000	
Methiocarb		2032-65-7	10	10	500/ 10,000	P199
Methomyl		16752-77-5	100	100	500/ 10,000	P066
Methoxychlor	Y	72-43-5	1			U247
Methoxyethylmercuric acetate		151-38-2		500	500/ 10,000	
Methyl alcohol		67-56-1	5,000			U154
Methyl aziridine		75-55-8	1			P067
Methyl bromide	Y	74-83-9	1,000	1,000	1,000	U029
1-Methylbutadiene		504-60-9	100			U186
Methyl chloride	Y	74-87-3	100			U045
Methyl chlorocarbonate		79-22-1	1,000	1,000	500	U156
Methyl chloroform	Y	71-55-6	1,000			U226
Methyl chloroformate		79-22-1	1,000	1,000	500	U156
3-Methylcholanthrene		56-49-5	10			U157
4,4'-Methylenebis(2-chloroaniline)		101-14-04	10			U158
Methylenebis(phenylisocyanate)		101-68-8	5,000			
Methylene bromide		74-95-3	1,000			U068
Methylene chloride		75-09-2	1,000			U080
4,4'-Methylenedianiline	Y	101-77-9	10			
Methyl ethyl ketone		78-93-3	5,000			U159
Methyl ethyl ketone (MEK)		78-93-3	5,000			U159
Methyl ethyl ketone peroxide		1338-23-4	10			U160
Methyl hydrazine	Y	60-34-4	10	10	500	P068
Methyl iodide	Y	74-88-4	100			U138
Methyl isobutyl ketone	Y	108-10-1	5,000			U161
Methyl isocyanate	Y	624-83-9	10	10	500	P064
Methyl isothiocyanate		556-61-6		500	500	
2-Methylacrylonitrile		75-86-5	10	10	1,000	P069
Methyl mercaptan		74-93-1	100	100	500	U153

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Methylmercuric dicyanamide		502-39-6		500	500/ 10,000	
Methyl methacrylate	Y	80-62-6	1,000			U162
Methyl parathion		298-00-0	100	100	100/ 10,000	P071
Methyl phenkapton		3735-23-7		500	500	
Methyl phosphonic dichloride		676-97-1		100	100	
4-Methyl-2-pentanone		108-10-1	5,000			U161
2-Methylpyridine		109-06-8	5,000			U191
Methyl tert-butyl ether	Y	163-40-44	1,000			
Methyl thiocyanate		556-64-9		10,000	10,000	
Methylthiouracil		56-04-2	10			U164
Methyltrichlorosilane		75-79-6		500	500	
Methyl vinyl ketone		78-94-4		10	10	
Metolcarb		1129-41-5	1*	1*	100/ 10,000	P190
Mevinphos		7786-34-7	10	10	500	
Mexacarbate		315-18-4	1,000	1,000	500/ 10,000	P128
Mitomycin C		50-07-7	10	10	500/ 10,000	U010
MNNG		70-25-7	10			U163
Monoethylamine		75-04-7	100			
Monomethylamine		74-89-5	100			
Muscimol		2763-96-4	1,000	1,000	500/ 10,000	P007
Mustard gas		505-60-2		500	500	
Naled		300-76-5	10			
5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl) oxy-0-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)]		20830-81-3	10			U059
1-Naphthalenamine		134-32-7	100			U167
2-Naphthalenamine		91-59-8	10			U168
Naphthalenamine, N,N'-bis(2-chloroethyl)-		494-03-1	100			U026
Naphthalene	Y	91-20-3	100			U165
Naphthalene, 2-chloro		91-58-7	5,000			U047
1,4-Naphthalenedione		130-15-4	5,000			U166
2,7-Naphthalenedisulfoinic acid, 3,3'-(3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo) bis(5-amino-4-hydroxy)-tetrasodium salt		72-57-1	10			U236
1-Naphthalenol, methylcarbamate		63-25-2	100			U279

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Naphthenic acid		1338-24-5	100			
1,4-Naphthoquinone		130-15-4	5,000			U166
alpha-Naphthylamine		134-32-7	100			U167
beta-Naphthylamine		91-59-8	10			U168
alpha-Naphthylthiourea		86-88-4	100			P072
Nickel		7440-02-0	100			
Nickel ammonium sulfate		15699-18-0	100			
Nickel and Compounds		N.A.	***			
Nickel carbonyl Ni(CO <sub>4</sub> ), (T-4)		13463-39-3	10	10	1	P073
Nickel chloride		7718-54-9	100			
Nickel chloride		37211-05-5	100			
Nickel Compounds		N.A.	***			
Nickel cyanide Ni(CN) <sub>2</sub>		557-19-7	10			P074
Nickel hydroxide		12054-48-7	10			
Nickel nitrate		14216-75-2	100			
Nicotine		54-11-5	100	100	100	P075
Nicotine and salts		54-11-5	100			P075
Nicotine sulfate		65-30-5	100	100	100/ 10,000	
Nitric acid		7697-37-2	1,000	1,000	1,000	
Nitric oxide		10102-43-9	10	10	100	P076
p-Nitroaniline		100-01-6	5,000			P077
Nitrobenzene	Y	98-95-3	1,000	1,000	10,000	U169
4-Nitrobiphenyl	Y	92-93-3	10			
Nitrocyclohexane		1122-60-7		500	500	
Nitrogen dioxide		10102-44-0	10	10	100	P078
Nitrogen dioxide		10544-72-6	10			
Nitrogen oxide (NO)		10102-43-9	10	10	100	P076
Nitrogen oxide (NO) <sub>2</sub>		10102-44-0	10			P078
Nitroglycerin		55-63-0	10			P081
Nitrophenol (mixed isomers)		25154-55-6	100			
m-Nitrophenol		554-84-7	100			
p-Nitrophenol	Y	100-02-7	100			U170
2-Nitrophenol		88-75-5	100			
4-Nitrophenol		100-02-7	100			U170

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Nitrophenols		N.A.	***			
2-Nitropropane	Y	79-46-9	10			U171
Nitrosamines		N.A.	***			
N-Nitrosodi-n-butylamine		924-16-3	10			U172
N-Nitrosodiethanolamine		1116-54-7	1			U173
N-Nitrosodiethylamine		55-18-5	1			U174
N-Nitrosodimethylamine		62-75-9	10	10	1,000	P082
Nitrosodimethylamine		62-75-9	10	10	1,000	P082
N-Nitrosodiphenylamine		86-30-6	100			
N-Nitrosodi-n-propylamine		621-64-7	10			U111
N-Nitroso-N-ethylurea		759-73-9	1			U176
N-Nitroso-N-methylurea	Y	684-93-5	1			U177
N-Nitroso-N-methylurethane		615-53-2	1			U178
N-Nitrosomethylvinylamine		4549-40-0	10			P084
N-Nitrosomorpholine	Y	59-89-2	1			
N-Nitrosopiperidine		100-75-4	10			U179
Nitrotoluene		1321-12-6	1,000			
m-Nitrotoluene		99-08-1	1,000			
o-Nitrotoluene		88-72-2	1,000			
p-Nitrotoluene		99-99-0	1,000			
5-Nitro-o-toluidine		99-55-8	100			U181
Norbormide		991-42-4		100	100/ 10,000	
Octamethylpyrophosphoramide		152-16-9	100			U181
Organorhodium Complex (PMN-82-147)		0	**	10	10/ 10,000	
Osmium oxide OsO <sub>4</sub> (T-4)-		20816-12-0	1,000			P087
Osmium tetroxide		20816-12-0	1,000			P087
Ouabain		630-60-4		100	100/ 10,000	
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid		145-73-3	1,000			P088
Oxamyl		23135-22-0	1*	1*	100/ 10,000	P194
1,2-Oxathiolane, 2,2-dioxide	Y	1120-71-4	10			U193
2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide		50-18-0	10			U058
Oxetane, 3,3-bis(chloromethyl)-		78-71-7		500	500	
Oxirane		75-21-8	10	10	1,000	U115
Oxiranecarboxyaldehyde		765-34-4	10			U126

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Oxirane, (chloromethyl)-		106-89-8	100	100	1,000	U041
Oxydisulfoton		2497-07-6		500	500	
Ozone		10028-15-6		100	100	
Paraformaldehyde		30525-89-4	1,000			
Paraldehyde		123-63-7	1,000			U182
Paraquat dichloride		1910-42-5		10	10/ 10,000	
Paraquat methosulfate		2074-50-2		10	10/ 10,000	
Parathion	Y	56-38-2	10	10	100	P089
Parathion-methyl		298-00-0	100	100	100/ 10,000	P071
Paris green		12002-03-8	1	1	500/ 10,000	
PCBs		1336-36-3	1			
PCNB	Y	82-68-8	100			U185
Pentaborane		19624-22-7		500	500	
Pentachlorobenzene		608-93-5	10			U183
Pentachloroethane		76-01-7	10			U184
Pentachloronitrobenzene		82-68-8	100			U185
Pentadecylamine		2570-26-5		100	100/ 10,000	
1,3-Pentadiene		504-60-9	100			U186
Peracetic acid		79-21-0		500	500	
Perchloroethylene		127-18-4	100			U210
Perchloromethyl mercaptan		594-42-3	100	100	500	
Phenacetin		62-44-2	100			U187
Phenanthrene		85-01-8	5,000			
Phenol	Y	108-95-2	1,000	1,000	500/ 10,000	U188
Phenol, 2-chloro		95-57-8	100			U048
Phenol, 4-chloro-3-methyl		59-50-7	5,000			U039
Phenol, 2-cyclohexyl-4,6-dinitro		131-89-5	100			P034
Phenol, 2,4-dichloro		120-83-2	100			U081
Phenol, 2,6-dichloro		87-65-0	100			U082
Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl) bis-, (E)		56-53-1	1			U089
Phenol, 2,4-dimethyl		105-67-9	100			U101
Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester)		315-18-4	1,000			P128
Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate		2032-65-7	10			P199
Phenol, 2,4-dinitro-		51-28-5	10			P048

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Phenol, methyl		1319-77-3	100			U052
Phenol, 2-methyl-4,6-dinitro-, & salts		534-52-1	10			P047
Phenol, 2,2'-methylenebis[3,4,6-trichloro-		70-30-4	100			U132
Phenol, 2-(1-methylethoxy)-, methylcarbamate		114-26-1	100			U411
Phenol, 3-(1-methylethyl)-, methylcarbamate		64-00-6	1*	1*	500/ 10,000	P202
Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate (Promecarb)		2631-37-0	1*			P201
Phenol, 2-(1-methylpropyl)-4,6-dinitro-		88-85-7	1,000			P020
Phenol, 4-nitro-		100-02-7	10			U170
Phenol, pentachloro-	Y	87-86-5	10			F027
Phenol, 2,3,4,6-tetrachloro		58-90-2	10			F027
Phenol, 2,4,5-trichloro		95-95-4	10			F027
Phenol, 2,4,6-trichloro		88-06-2	10			F027
Phenol, 2,4,6-trinitro-, ammonium salt		131-74-8	10			P009
Phenoxyarsine, 10,10'-oxydi-		58-36-6		500	500/ 10,000	
L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-		148-82-3	1			U150
Phenyl dichloroarsine		696-28-6	1	1	500	P036
p-Phenylenediamine	Y	106-50-3	5,000			
Phenylhydrazine hydrochloride		59-88-1		1,000	1,000/ 10,000	
Phenylmercuric acetate		62-38-4	100	100	500/ 10,000	P092
Phenylmercury acetate		62-38-4	100	100	500/ 10,000	P092
Phenylsilatrane		2097-19-0		100	100/ 10,000	
Phenylthiourea		103-85-5	100	100	100/ 10,000	P093
Phorate		298-02-2	10	10	10	P094
Phosacetim		4104-14-7		100	100/ 10,000	
Phosfolan		947-02-4		100	100/ 10,000	
Phosgene	Y	75-44-5	10	10	10	P095
Phosmet		732-11-6		10	10/ 10,000	
Phosphamidon		13171-21-6		100	100	
Phosphine	Y	7803-51-2	100	100	500	P096
Phosphonothioic acid, methyl-, O-ethyl O-(4-(methylthio)phenyl) ester		2703-13-1		500	500	
Phosphonothioic acid, methyl-, S-(2-(bis(1-methylethyl)amino)ethyl) O-ethyl ester		50782-69-9		100	100	
Phosphonothioic acid, methyl-, O-(4-nitrophenyl) O-phenyl ester		2665-30-7		500	500	
Phosphoric acid		7664-38-2	5,000			
Phosphoric acid, diethyl 4-nitrophenyl ester		311-45-5	100			P041

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Phosphoric acid, dimethyl 4-(methylthio) phenyl ester		3254-63-5		500	500	
Phosphoric acid, lead(2+) salt (2:3)		7446-27-7	10			U145
Phosphorodithioic acid O,O-diethyl S-[2-(ethylthio)ethyl] ester		298-04-4	1			P039
Phosphorodithioic acid O,O-diethyl S-methyl ester		3288-58-2	5,000			U087
Phosphorodithioic acid O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester		60-51-5	10			P044
Phosphorofluoridic acid, bis(1-methylethylethyl) ester		55-91-4	100			P043
Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester		56-38-2	10	10	100	P089
Phosphorothioic acid, O,O-diethyl-O-pyrazinyl ester		297-97-2	100			P040
Phosphorothioic acid, O-[4-[(dimethyl amino) sulfonyl]phenyl] O,O-dimethyl ester		52-85-7	1,000			P097
Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester		298-00-0	100			P040
Phosphorothioic acid, O,O-dimethyl-5-(2-(methylthio)ethyl)ester		2587-90-8		500	500	
Phosphorus	Y	7723-14-0	1	1	100	
Phosphorus (yellow or white)		772-31-40	1	1	100	
Phosphorus oxychloride		10025-87-3	1,000	1,000	500	
Phosphorus pentachloride		10026-13-8		500	500	
Phosphorus pentasulfide		1314-80-3	100			U189
Phosphorus sulfide		1314-80-3	100			U189
Phosphorus trichloride		2125-68-3	1,000	1,000	1,000	
Phosphorus trichloride		2125-68-3	1,000	1,000	1,000	
Phosphoryl chloride		10025-87-3	1,000	1,000	500	
Phthalate Esters		N.A.	***			
Phthalic anhydride	Y	85-44-9	5,000			U190
Physostigmine		57-47-6	1*	1*	100/ 10,000	P204
Physostigmine, salicylate (1:1)		57-64-7	1*	1*	100/ 10,000	P188
2-Picoline		109-06-8	5,000			U191
Picrotoxin		124-87-8		500	500/ 10,000	
Piperidine		110-89-4		1,000	1,000	
Piperidine, 1-nitroso-		100-75-4	10			U179
Pirimifos-ethyl		23505-41-1		1,000	1,000	
Plumbane, tetraethyl-		78-00-2	10			P110
Plumbane, tetramethyl-		75-74-1		100	100	
Polychlorinated biphenyls		1336-36-3	1			
Polynuclear Aromatic Hydrocarbons		N.A.	***			
Potassium arsenate		7784-41-0	1			

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Potassium arsenite		10124-50-2	1	1	500/ 10,000	
Potassium bichromate		7778-50-9	10			
Potassium chromate		7789-00-6	10			
Potassium cyanide C(CN)		151-50-8	10	10	100	P098
Potassium hydroxide		1310-58-3	1,000			
Potassium permanganate		7722-64-7	100			
Potassium silver cyanide		506-61-6	1	1	500	P099
Promecarb		2631-37-0	1*	1*	500/ 10,000	P201
Pronamide		23950-58-5	5,000			U192
Propanal, 2-methyl-2-(methylsulfonyl)-, O-[(methylamino)carbonyl] oxime (Aldicarb sulfone)		1646-88-4	1*			P203
Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl] oxime		116-06-3	1			P070
1-Propanamine		1007-10-8	5,000			U194
1-Propanamine, N-propyl-		142-84-7	5,000			U110
1-Propanamine, N-nitroso-N-propyl-		621-64-7	10			U111
Propane 1,2-dibromo-3-chloro--		96-12-8	1			U066
Propane 1,2-dichloro-		78-87-5	1,000			U083
Propanedinitrile		109-77-3	1,000			U149
Propanenitrile		107-12-0	10	10	500	P101
Propanenitrile, 3-chloro-		542-76-7	1,000			P027
Propanenitrile, 2-hydroxy-2-methyl-		75-86-5	10			P069
Propane, 2-nitro-		79-46-9	10			U171
Propane, 2,2'-oxybis[2-chloro-		108-60-1	1,000			U027
1,3-Propane sultone		1120-71-4	10			U193
Propane sultone		1120-71-4	10			U193
1,2,3-Propanetriol, trinitrate		55-63-0	10			P081
Propanoic acid, 2-(2,4,5-trichloro phenoxy)-		93-72-1	100			F027
1-Propanol, 2,3-dibromo-, phosphate (3:1)		126-72-7	10			U235
1-Propanol, 2-methyl-		78-83-1	5,000			U140
2-Propanone		67-64-1	5,000			U002
2-Propanone, 1-bromo-		598-31-2	1,000			P017
Propargite		2312-35-8	10			
Propargyl bromide		106-96-7		10	10	
2-Propenal		107-02-8	1	1	500	P003

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2-Propenamide		79-06-1	5,000			U007
2-Propen-1-amine		107-11-9		500	500	
1-Propene, 1,3-dichloro-		542-75-6	100			U084
1-Propene, 1,1,2,3,3,3-hexachloro-		1888-71-7	1,000			U243
2-Propenenitrile		107-13-1	100	100	10,000	U009
2-Propenenitrile, 2-methyl-		126-98-7	1,000	1,000	500	U152
2-Propenoic acid		79-10-7	5,000			U0008
2-Propenoic acid, ethyl ester		140-88-5	1,000			U113
2-Propenoic acid, 2-methyl-, ethyl ester		97-63-2	1,000			U118
2-Propenoic acid, 2-methyl-,methyl ester		80-62-6	1,000			U162
2-Propen-1-ol		107-18-6	100	100	1,000	P005
Propham		122-42-9	1*			U373
beta-Propiolactone	Y	57-57-8	10	10	500	
Propionaldehyde	Y	123-38-6	1,000			
Propionic acid		79-09-4	5,000			
Propionic anhydride		123-62-6	5,000			
Propionitrile		107-12-0	10	10	500	P101
Propionitrile, 3-chloro-		542-76-7	1,000	1,000	1,000	P027
Propiophenone, 4'-amino		70-69-9		100	100/ 10,000	
Propoxur (Baygon)	Y	114-26-1	100			U411
n-Propylamine		107-10-8	5,000			U194
Propyl chloroformate		109-61-5		500	500	
Propyleneimine		75-55-8	1	1	10,000	P067
Propylene dichloride	Y	78-87-5	1,000			U083
Propylene oxide	Y	75-56-9	100	100	10,000	
1,2 Propylenimine	Y	75-55-8	1			P067
2-Propyn-1-ol		107-19-7	1,000			P102
Prothoate		2275-18-5		100	100/ 10,000	
Pyrene		129-00-0	5,000	5,000	1,000/ 10,000	
Pyrethrins		121-21-1	1			
Pyrethrins		121-29-9	1			
Pyrethrins		8003-34-7	1			
4-Pyridinamine		504-24-5	1,000			P008
Pyridine		110-86-1	1,000			U196

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Pyridine, 4-amino-		504-24-5	1,000	1,000	500/ 10,000	P008
Pyridine, 2-methyl		109-06-8	5,000			U191
Pyridine, 2-methyl-5-vinyl-		140-76-1		500	500	
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-,(S)-		54-11-5	100	100	100	P075
2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino		66-75-1	10			U237
4(1H)-Pyridinone, 2,3-dihydro-6-methyl-2-thioxo-		56-04-2	10			U164
Pyrrolidine, 1-nitroso-		930-55-2	1			U180
Pyridine, 4-nitro-, 1-oxide		1124-33-0		500	500/ 10,000	
Pyriminil		53558-25-1		100	100/ 10,000	
Pyrrolo[2,3-b] indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-,methylcarbamate (ester), (3aS-cis)-(Physostigmine)		57-47-6	1*			P204
Quinoline	Y	91-22-5	5,000			
Quinone	Y	106-51-4	10			U197
Quintobenzene		82-68-8	100			U185
Radionuclides (including radon)		N.A.	@			
Reserpine		50-55-5	5,000			U200
Resorcinol		108-46-3	5,000			U201
Saccharin and salts		81-07-2	100			U202
Safrole		94-59-7	100			U203
Selenious acid		7783-00-8	10			U204
Selenious acid, dithallium (1+) salt		12039-52-0	1,000			P114
Salcomine		14167-18-1		500	500/ 10,000	
Sarin		107-44-8		10	10	
Selenious acid		7783-00-8	10	10	1,000/ 10,000	U204
Selenious acid, dithallium(1+) salt		12039-52-0	1,000			P114
Selenium		7782-49-2	100			
Selenium and Compounds		N.A.	***			
Selenium Compounds		N.A.	***			
Selenium dioxide		7446-08-4	10			U204
Selenium oxide		7446-08-4	10			U204
Selenium sulfide SeS <sub>2</sub>		7488-56-4	10			U205
Selenourea		630-10-4	1,000			P103
Semicarbazide hydrochloride		563-41-7		1,000	1,000/ 10,000	
L-Serine, diazoacetate (ester)		115-02-6	1			U015

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
Silane, (4-aminobutyl)diethoxymethyl-		3037-72-7		1,000	1,000	
Silver		7440-22-4	1,000			
Silver Compounds		N.A.	***			
Silver cyanide Ag(CN)		506-64-9	1			P104
Silver nitrate		7761-88-8	1			
Silvex (2,4,5-TP)		93-72-1	100			
Sodium		7440-23-5	10			
Sodium arsenate		7631-89-2	1	1	1,000/ 10,000	
Sodium arsenite		7784-46-5	1	1	500/ 10,000	
Sodium azide (Na(N3))		26628-22-8	1,000	1,000	500	P105
Sodium bichromate		10588-01-9	10			
Sodium bifluoride		1333-83-1	100			
Sodium bisulfite		7631-90-5	5,000			
Sodium cacodylate		124-65-2		100	100/ 10,000	
Sodium chromate		2146108	10			
Sodium cyanide Na(CN)		143-33-9	10	10	100	P106
Sodium dodecylbenzenesulfonate		25155-30-0	1,000			
Sodium fluoride		7681-49-4	1,000			
Sodium fluoroacetate		62-74-8	10	10	10/ 10,000	P058
Sodium hydrosulfide		16721-80-5	5,000			
Sodium hydroxide		1310-73-2	1,000			
Sodium hypochlorite		7681-52-9	100			
Sodium hypochlorite		10022-70-5	100			
Sodium methylate		124-41-4	1,000			
Sodium nitrite		7632-00-0	100			
Sodium phosphate, dibasic		7558-79-4	5,000			
Sodium phosphate, dibasic		10039-32-4	5,000			
Sodium phosphate, dibasic		10140-65-5	5,000			
Sodium phosphate, tribasic		7601-54-9	5,000			
Sodium phosphate, tribasic		7758-29-4	5,000			
Sodium phosphate, tribasic		10101-89-0	5,000			
Sodium phosphate, tribasic		10124-56-8	5,000			
Sodium phosphate, tribasic		10361-89-4	5,000			
Sodium selenate		13410-01-0		100	100/ 10,000	

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
Sodium selenite		7782-82-3	100			
Sodium selenite		10102-18-8	100	100	100/ 10,000	
Sodium tellurite		10102-20-2		500	500/ 10,000	
Stannane, acetoxytriphenyl-		900-95-8		500	500/ 10,000	
Streptozotocin		18883-66-4	1			U206
Strontium chromate		7789-06-2	10			
Strychnidin-10-one & salts		57-24-9	10			P108
Strychnidin-10-one, 2,3-dimethoxy-		357-57-3	100			P018
Strychnine, and salts		57-24-9	10	10	0	P108
Strychnine, sulfate		57-24-9	10	10	100/ 10,000	P108
Styrene		100-42-5	1,000			
Styrene oxide	Y	96-09-3	100			
Sulfotep		3689-24-5	100	100	500	P109
Sulfoxide, 3-chloropropyl octyl		3569-57-1		500	500	
Sulfur dioxide		7446-09-5		500	500	
Sulfur dioxide (anhydrous)		7446-09-5		500	500	
Sulfur fluoride (SF4), (T-4)-		7783-60-0		100	100	
Sulfuric acid		7664-93-9	1,000	1,000	1,000	
Sulfuric acid		8014-95-7	1,000			
Sulfuric acid, dimethyl ester	Y	77-78-1	100			U103
Sulfuric acid, dithallium (1+)salt		7446-18-6	1,00			
Sulfur monochloride		12771-08-3	1,000			
Sulfur phosphide		1314-80-3	100			U189
Sulfur tetrafluoride		7783-60-0		100	100	
Sulfur trioxide		7446-11-9		100	100	
2,4,5-T		93-76-5	1,000			F027
2,4,5-T acid		93-76-5	1,000			F027
2,4,5-T amines		1319-72-8	5,000			
2,4,5-T amines		2008-46-0	5,000			
2,4,5-T amines		3813-14-7	5,000			
2,4,5-T amines		6369-96-6	5,000			
2,4,5-T amines		6369-97-7	5,000			
2,4,5-T esters		1928-47-8	1,000			
2,4,5-T esters		2545-59-7	1,000			

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
2,4,5-T esters		25168-15-4	1,000			
2,4,5-T esters		61792-07-2	1,000			
2,4,5-T salts		13560-99-1	1,000			
Tabun		77-81-6		10	10	
Tellurium hexafluoride		7783-80-4		100	100	
TCDD	Y	1746-01-6	1			
TDE		72-54-8	1			U060
TEPP		107-49-3	10	10	100	P111
Terbufos		13071-79-9		100	100	
1,2,4,5-Tetrachlorobenzene		95-94-3	5,000			U207
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)		1746-01-6	1			
1,1,1,2-Tetrachloroethane		630-20-6	100			U208
1,1,2,2-Tetrachloroethane	Y	79-34-5	100			U209
Tetrachloroethylene	Y	127-18-4	100			U210
2,3,4,6-Tetrachlorophenol		58-90-2	10			
Tetraethyl pyrophosphate		107-49-3	10	100	100	P111
Tetraethyl lead		78-00-2	10	10	100	P110
Tetraethylthiopyrophosphate		3689-24-5	100	100	500	P109
Tetraethyltin		597-64-8		100	100	
Tetrahydrofuran		109-99-9	1,000			U213
Tetramethyllead		75-74-1		100	100	
Tetranitromethane		509-14-8	10	10	500	P112
Tetraphosphoric acid, hexaethyl ester		757-58-4	100			P113
Thallic oxide		1314-32-5	100			P113
Thallium		7440-28-0	1,000			
Thallium and Compounds		N.A.	***			
Thallium(I) acetate		563-68-8	100			U214
Thallium(I) carbonate		6533-73-9	100	100	100/ 10,000	U215
Thallium chloride TlCl		7791-12-0	100	100	100/ 10,000	U216
Thallium(I) nitrate		10102451	100			U217
Thallium oxide Tl2O3		1314-32-5	100			P113
Thallium (I) selenite		12039-52-0	1,000			P114
Thallium(I) sulfate		7446-18-6	100	100	100/ 10,000	P115
Thallous carbonate		6533-73-9	100	100	100/ 10,000	U215

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
Thallous chloride		7791-12-0	100	100	100/ 10,000	U216
Thallous malonate		2757-18-8		100	100/ 10,000	
Thallous sulfate		7446-18-6	100	100	100/ 10,000	P115
Thioacetamide		62-55-5	10			U218
Thiocarbazide		2231-57-4		1,000	1,000/ 10,000	
Thiocyanic acid, methyl ester		556-64-9		10,000	10,000	
Thiodicarb		59669260	1*			U410
Thiodiphosphoric acid, tetraethyl ester		3689-24-5	100			P109
Thiofanox		39196-18-4	100	100	100/ 10,000	P045
Thiomidodicarbonic diamide [(H2N)C(S)] 2NH		541-53-7	100			P049
Thiomethanol		74-93-1	100	100	500	U153
Thionazin		297-97-2	100	100	500	P040
Thiophanate-methyl		23564-05-8	1*			U409
Thiophenol		108-98-5	100	100	500	P014
Thiosemicarbazide		79-19-6	100	100	100/ 10,000	P116
Thiourea		62-56-6	10	10		U219
Thiourea, (2-chlorophenyl)-		5344-82-1	100	100	100/ 10,000	P026
Thiourea, (2-methylphenyl)-		614-78-8		500	500/ 10,000	
Thiourea, 1-naphthalenyl-		86-88-4	100	100	500/ 10,000	P072
Thiourea, phenyl-		103-85-5	100			P093
Thiram		137-26-8	10			U244
Titanium chloride (TiCl4) (T-4)-	Y	7550450	1,000	1,000	100	
Titanium tetrachloride		7550-45-0	1,000	1,000	100	
Toluene	Y	108-88-3	1,000			U220
Toluenediamine	Y	95-80-7	10			U221
Toluenediamine		496-72-0	10			U221
Toluenediamine		823-40-5	10			U221
Toluenediamine		25376-45-8	10			U221
2,4-Toluene diamine		95-80-7	10			U221
2,4-Toluene diamine		496-72-0	10			U221
2,4-Toluene diamine		823-40-5	10			U221
2,4-Toluene diamine		25376-45-8	10			U221
Toluene diisocyanate		91-08-7	100	100	500	U223
Toluene diisocyanate		26471-62-5	100	100	500	U223

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
2,4-Toluene diisocyanate		91-08-7	100	100	500	U223
2,4-Toluene diisocyanate	Y	584-84-9	100	100	500	U223
2,4-Toluene diisocyanate		26471-62-5	100	100	500	U223
Toluene-2,6-diisocyanate		91-08-7	100	100	100	
o-Toluidine	Y	95-53-4	100			U328
p-Toluidine		106-49-0	100			U353
o-Toluidine hydrochloride		636-21-5	100			U222
Toxaphene	Y	8001-35-2	1	1	500/ 10,000	P123
2,4,5-TP acid		93-72-1	100			F027
2,4,5-TP esters		32534-95-5	100			
Triallate		2303-17-5	1*			U389
Triamiphos		1031-47-6		500	500/ 10,000	
Triazofos		24017-47-8		500	500	
1H-1,2,4-Triazol-3-amine		61-82-5	10			U011
Trichlorfon		52-68-6	100			
Trichloroacetyl chloride		76-02-8		500	500	
1,2,4-Trichlorobenzene	Y	120-82-1	100			
Trichloro(chloromethyl)silane		1558-25-4		100	100	
Trichloro(dichlorophenyl)silane		27137-85-5		500	500	
1,1,1-Trichloroethane		71-55-6	1,000			U226
1,1,2-Trichloroethane	Y	79-00-5	100			U227
Trichloroethylene	Y	79-01-6	100			U228
Trichloroethylsilane		115-21-9		500	500	
Trichlorofluoromethane		75-69-4	5,000			U121
Trichloromethanesulfenyl chloride		594-42-3	100	100	500	
Trichloromonofluoromethane		75-69-4	5,000			U121
Trichloronate		327-98-0		500	500	
Trichlorophenol		25167-82-2	10			
2,3,4-Trichlorophenol		15950-66-0	10			
2,3,5-Trichlorophenol		933-78-8	10			
2,3,6-Trichlorophenol		933-75-5	10			
2,4,5-Trichlorophenol	Y	95-95-4	10			
2,4,6-Trichlorophenol	Y	88-06-2	10			
3,4,5-Trichlorophenol		609198	10			

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
Trichlorophenylsilane		98-13-5		500	500	
Triethoxysilane		998-30-1		500	500	
Triethylamine	Y	121-44-8	5,000			U404
Trifluralin	Y	1582-09-8	10			
Trimethylamine		75-5-03	100			
Trimethylchlorosilane		75-77-4		1,000	1,000	
Trimethylolpropane phosphite		824-11-3		100	100/ 10,000	
2,2,4-Trimethylpentane	Y	540-84-1	1,000			
Trimethyltin chloride		1066-45-1		500	500/ 10,000	
1,3,5-Trinitrobenzene		99-35-4	10			U234
1,3,5-Trioxane, 2,4,6,-trimethyl-		123-63-7	1,000			U182
Triphenyltin chloride		639-58-7		500	500/ 10,000	
Tris(2-chloroethyl)amine		555-77-1		100	100	
Tris(2,3-dibromopropyl) phosphate		126-72-7	10			U235
Trypan blue		72-57-1	10			U236
Unlisted Hazardous Waste Characteristic of Corrosivity (D002)		N.A.	100			D002
Unlisted Hazardous Waste Characteristic of Ignitability (D001)		N.A.	100			D001
Unlisted Hazardous Waste Characteristic of Reactivity (D003)		N.A.	100			D003
Unlisted Hazardous Waste Characteristic of Toxicity:						
Arsenic (D004)		1				D004
Barium (D005)		1000				D005
Benzene (D018)		10				D018
Cadmium (D006)		10				D006
Carbon tetrachloride (D019)		10				D019
Chlordane (D020)		1				D020
Chlorobenzene (D021)		100				D021
Chloroform (D022)		10				D022
Chromium (D007)		10				D007
o-Cresol (D023)		100				D023
m-Cresol (D024)		100				D024
p-Cresol (D025)		100				D025
Cresol (D026)		100				D026
2,4-D (D016)		100				D016
1,4-Dichlorobenzene (D027)		100				D027

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
1,1-Dichloroethylene (D029)	100					D029
2,4-Dinitrotoluene (D030)	10					D030
Endrin (D012)	1					D012
Heptachlor (and epoxide (D031)	1					D031
Hexachlorobenzene (D032)	10					D032
Hexachlorobutadienene (D033)	1					D033
Hexachloroethane (D034)	100					D034
Lead (D008)	10					D008
Lindane (D013)	1					D013
Mercury (D009)	1					D009
Methoxychlor (D014)	1					D014
Methyl Ethyl Ketone (D035)	5000					D035
Nitrobenzene (D036)	1000					D036
Pentachlorophenol (D037)	10					D037
Pyridine (D038)	1000					D038
Selenium (D010)	10					D010
Silver (D011)	1					D011
Tetrachloroethylene (D039)	100					D039
Toxaphene (D015)	1					D015
Trichloroethylene (D040)	100					D040
2,4,5-Trichlorophenol (D041)	10					D041
2,4,6-Trichlorophenol (D042)	10					D042
2,4,5-TP (D017)	100					D017
Vinyl Chloride (D043)	1					D043
Uracil mustard	66-75-1	10				U237
Uranyl acetate	541-09-3	100				
Uranyl nitrate	10102-06-4	100				
Uranyl nitrate	36478-76-9	100				
Urea, N-ethyl-N-nitroso-	759-73-9	1				U176
Urea, N-methyl-N-nitroso-	684-93-5					U177
Urethane	51-79-6	100				U238
Valinomycin	2001-95-8		1,000	1,000/ 10,000		
Vanadic acid, ammonium salt	7803-55-6	1,000				P119
Vanadium oxide V2O5	1314-62-1	1,000	1,000	100/ 10,000		P120

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
Vanadyl sulfate		27774-13-6	1,000			
Vinyl acetate	Y	108-05-4	5,000	5,000	1,000	
Vinyl acetate monomer		108-05-4	5,000	5,000	1,000	
Vinyl bromide	Y	593-60-2	100			
Vinyl chloride	Y	75-01-4	1			U043
Vinylidene chloride	Y	75-35-4	100			U078
Warfarin & salts		81-81-2	100	100	500/ 10,000	P001
Warfarin sodium		129-06-6	100	100	100/ 10,000	
Xylene	Y	1330-20-7	100			U239
m-Xylene		108-38-3	1,000			U239
o-Xylene		95-47-6	1,000			U239
p-Xylene		106-42-3	100			U239
Xylene (mixed isomers)		1330-20-7	100			U239
Xylene (isomers and isomers)		1330-20-7	100			U239
Xylenol		1300-71-6	1,000			
Xylylene dichloride		28347-13-9		100	100/ 10,000	
Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-,methyl ester (3beta,16beta,17alpha,18beta,20alpha)		50-55-2	5,000			U200
Zinc		7440-66-6	1,000			
Zinc and Compounds		7440-66-6	1,000			
Zinc acetate		557-34-6	1,000			
Zinc ammonium chloride		14639-97-5	1,000			
Zinc ammonium chloride		14639-98-6	1,000			
Zinc ammonium chloride		52628-25-8	1,000			
Zinc, bis(dimethylcarbamodithioate-S,S')-, (Ziram)		137-30-4	1*			P205
Zinc borate		1332-07-6	1,000			
Zinc bromide		7699-45-8	1,000			
Zinc carbonate		3486-35-9	1,000			
Zinc chloride		7646-85-7	1,000			
Zinc cyanide Zn(CN)2		557-21-1	10			P121
Zinc, dichloro(4,4-dimethyl-5 (((methylamino)carbonyl)oxy)imino)pentanenitrile)-, (T-4)-		58270-08-9		100	100/ 10,000	
Zinc fluoride		7783-49-5	1,000			

NAME	Hazardous Air Pollutant?	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 EHS TPQ	RCRA HazWaste CODE
Zinc hydrosulfite		7779-86-4	1,000			
Zinc nitrate		7779-88-6	1,000			
Zinc phenolsulfonate		127-82-2	5,000			
Zinc phosphide Zn3P2		1314-84-7	100	100	500	P122, U249
Zinc silicofluoride		16871-71-9	5,000			
Zinc sulfate		7733-02-0	1,000			
Ziram		137-30-4	1*			P205
Zirconium nitrate		13746-89-9	5,000			
Zirconium potassium fluoride		16923-95-8	1,000			
Zirconium sulfate		14644-61-2	5,000			
Zirconium tetrachloride		10026-11-6	5,000			

## Summary of Codes:

\* RCRA carbamate waste; statutory one-pound RQ applies until RQs are adjusted.

\*\*\* Indicates that no RQ is assigned to this generic or broad class, although the class is a CERCLA hazardous substance. See 50 Federal Register 13456 (April 4 1985). Values in Section 313 column represent Category Codes for reporting under Section 313.

@ The adjusted RQs for radionuclides may be found in Appendix B to 40 CFR 302.4.

## APPENDIX C

### **State Agency Websites as of October 16, 2015**

The following alphabetical list references state and US territories environmental agency websites. From these websites, links are usually provided to specific state program requirements covering air, water, solid and hazardous waste, Aboveground Storage Tank (AST)/Underground Storage Tank (UST) programs, used oil, universal waste, pollution prevention, and other related topics. For some states, an additional link(s) is provided to facilitate quicker indexing to applicable topics.

Alabama	<a href="http://www.adem.state.al.us/">http://www.adem.state.al.us/</a>
Alaska	<a href="http://www.dnr.state.ak.us/mlw/index.htm">http://www.dnr.state.ak.us/mlw/index.htm</a>
Arizona	<a href="http://www.adeq.state.az.us/">http://www.adeq.state.az.us/</a> <a href="http://www.adeq.state.az.us/environ/waste/index.html">http://www.adeq.state.az.us/environ/waste/index.html</a>
Arkansas	<a href="http://www.adeq.state.ar.us/">http://www.adeq.state.ar.us/</a>
California	<a href="http://www.calepa.ca.gov/">http://www.calepa.ca.gov/</a> <a href="http://www.dtsc.ca.gov/">http://www.dtsc.ca.gov/</a>
Colorado	<a href="http://www.cdphe.state.co.us/index.html">http://www.cdphe.state.co.us/index.html</a>
Connecticut	<a href="http://dep.state.ct.us/index.htm">http://dep.state.ct.us/index.htm</a>
Delaware	<a href="http://www.awm.delaware.gov/">http://www.awm.delaware.gov/</a>
District of Columbia Washington, DC	<a href="http://ddoe.dc.gov/">http://ddoe.dc.gov/</a>
Florida	<a href="http://www.dep.state.fl.us/">http://www.dep.state.fl.us/</a> <a href="http://www.dep.state.fl.us/waste/Default.htm">http://www.dep.state.fl.us/waste/Default.htm</a>
Georgia	<a href="http://www.gadnr.org/">http://www.gadnr.org/</a>
Guam	<a href="http://www.govguamdocs.com/gepa/index_gepa.htm">http://www.govguamdocs.com/gepa/index_gepa.htm</a>
Hawaii	<a href="http://www.hawaii.gov/health/environmental">http://www.hawaii.gov/health/environmental</a>
Idaho	<a href="http://www.deq.idaho.gov/">http://www.deq.idaho.gov/</a>
Illinois	<a href="http://www.epa.state.il.us/">http://www.epa.state.il.us/</a>
Indiana	<a href="http://www.in.gov/idem/">http://www.in.gov/idem/</a>
Iowa	<a href="http://www.iowadnr.com/">http://www.iowadnr.com/</a>
Kansas	<a href="http://www.kdhe.state.ks.us/">http://www.kdhe.state.ks.us/</a>

Kentucky	<a href="http://www.dep.ky.gov/">http://www.dep.ky.gov/</a>
Louisiana	<a href="http://www.deq.state.la.us/">http://www.deq.state.la.us/</a>
Maine	<a href="http://www.maine.gov/dep/">http://www.maine.gov/dep/</a>
Maryland	<a href="http://www.mde.state.md.us/">http://www.mde.state.md.us/</a>
Massachusetts	<a href="http://www.mass.gov/dep">http://www.mass.gov/dep</a>
Michigan	<a href="http://www.michigan.gov/deq">http://www.michigan.gov/deq</a>
Minnesota	<a href="http://www.pca.state.mn.us/">http://www.pca.state.mn.us/</a>
Mississippi	<a href="http://www.deq.state.ms.us/MDEQ.nsf/">http://www.deq.state.ms.us/MDEQ.nsf/</a>
Missouri	<a href="http://www.dnr.mo.gov/env/esp/index.html">http://www.dnr.mo.gov/env/esp/index.html</a>
Montana	<a href="http://www.deq.mt.gov/default.mcp">http://www.deq.mt.gov/default.mcp</a>
Nebraska	<a href="http://www.deq.state.ne.us/">http://www.deq.state.ne.us/</a>
Nevada	<a href="http://ndep.nv.gov/">http://ndep.nv.gov/</a>
New Hampshire	<a href="http://www.des.state.nh.us/">http://www.des.state.nh.us/</a>
New Jersey	<a href="http://www.state.nj.us/dep/">http://www.state.nj.us/dep/</a> <a href="http://www.state.nj.us/dep/dshw/">http://www.state.nj.us/dep/dshw/</a>
New Mexico	<a href="http://www.nmenv.state.nm.us/">http://www.nmenv.state.nm.us/</a>
New York	<a href="http://www.dec.ny.gov/">http://www.dec.ny.gov/</a>
North Carolina	<a href="http://portal.ncdenr.org/web/guest">http://portal.ncdenr.org/web/guest</a>
North Dakota	<a href="http://www.health.state.nd.us/">http://www.health.state.nd.us/</a> <a href="http://www.health.state.nd.us/EHS/">http://www.health.state.nd.us/EHS/</a>
Ohio	<a href="http://www.epa.state.oh.us/">http://www.epa.state.oh.us/</a>
Oklahoma	<a href="http://www.deq.state.ok.us/">http://www.deq.state.ok.us/</a> <a href="http://www.deq.state.ok.us/LPDnew/index.htm">http://www.deq.state.ok.us/LPDnew/index.htm</a>
Oregon	<a href="http://www.deq.state.or.us/">http://www.deq.state.or.us/</a>
Pennsylvania	<a href="http://www.depweb.state.pa.us/landrecwaste/site/default.asp">http://www.depweb.state.pa.us/landrecwaste/site/default.asp</a>
Puerto Rico	<a href="http://www2.epa.gov/aboutepa/epa-puerto-rico">http://www2.epa.gov/aboutepa/epa-puerto-rico</a>
Rhode Island	<a href="http://www.dem.ri.gov/">http://www.dem.ri.gov/</a>
South Carolina	<a href="http://www.scdhec.net/environment/">http://www.scdhec.net/environment/</a>
South Dakota	<a href="http://denr.sd.gov/">http://denr.sd.gov/</a>
Tennessee	<a href="http://www.tennessee.gov/environment/">http://www.tennessee.gov/environment/</a>
Texas	<a href="http://www.tceq.texas.gov/e-services">http://www.tceq.texas.gov/e-services</a>

Utah	<a href="http://www.deq.utah.gov/">http://www.deq.utah.gov/</a>
Vermont	<a href="http://www.anr.state.vt.us/">http://www.anr.state.vt.us/</a>
	<a href="http://www.anr.state.vt.us/dec/wmd.htm">http://www.anr.state.vt.us/dec/wmd.htm</a>
Virginia	<a href="http://www.deq.state.va.us/">http://www.deq.state.va.us/</a>
	<a href="http://www.deq.state.va.us/recycle/">http://www.deq.state.va.us/recycle/</a>
Washington	<a href="http://www.ecy.wa.gov/">http://www.ecy.wa.gov/</a>
	<a href="http://www.ecy.wa.gov/programs/swfa/index.html">http://www.ecy.wa.gov/programs/swfa/index.html</a>
West Virginia	<a href="http://www.dep.wv.gov/Pages/default.aspx">http://www.dep.wv.gov/Pages/default.aspx</a>
Wisconsin	<a href="http://www.dnr.state.wi.us/">http://www.dnr.state.wi.us/</a>
Wyoming	<a href="http://deq.wyoming.gov/">http://deq.wyoming.gov/</a>

Public Domain

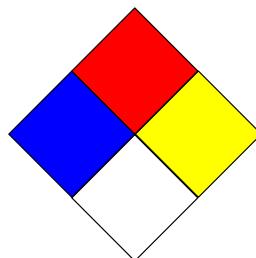
# Hazardous Waste Markings/Labels

Version 2.2

A Freeware Marking and Labeling System  
In a Word Processing Document

Compliments of:

My Own Business  
PO Box 189  
Auburn, WA 98002-0189



# Using the Hazardous Waste Markings and Labels

## Version 2.2

This document has been designed to aid hazardous waste generators in meeting marking and labeling requirements for waste accumulated at their site within the **State of Washington**. While most of the labels and markings are applicable as presented here in other States, some modification may be required. This document is free ware and is available for distribution by anyone. Please pass it along.

### **A Special Note:**

The terms “label” and “marking” have very specific meanings. These terms are **NOT** interchangeable.

A “label” is a device required by the US Department of Transportation (DOT) as part of the hazardous material regulations in 49CFR 171 through 180. The size, color, wording, and graphics are specified in 49CFR172.407. Some Common DOT labels include FLAMMABLE LIQUID, POISON, OXIDIZER and DANGEROUS WHEN WET. The use of theses labels is specified as part of the Hazardous Materials Table which can be found in 49CFR172.101.

A “marking” is the descriptive name, instructions and cautions applied to a hazardous material as defined in 49CFR172.300. Markings include the proper DOT shipping name, the 4 digit identification number specified by the DOT, the ORM designations, the name and address of the shipper and where the package is to be shipped. Several devices which are commonly called “labels” are legally defined as “markings”. These include the Environmental Protection Agency (EPA) Hazardous Waste marking which is required when shipping a hazardous waste, the markings applied to container to clearly identify the contents like those used to identify used oil or any of the universal wastes and the date accumulation began.

**Within this document, when referring to both labels and markings, we will use the terms “marking/label” or “device”.**

### **Using the Table of Contents**

The Table of Contents contains a “hyperlink” to its corresponding marking / label. Just click on the hyperlink to go to the selected device. Choose the page you want to print and send that to the printer. If you want to return to the Table of Contents, simply click the back button ( on the web toolbar.

### **Affixing a marking or label to a container:**

We recommend laminating the marking or labels then taping it to the container. Magnetic tape affixed to a laminated marking or label works very well. **HINT:** For these devices to be effective, they have to be visible and clearly legible. If a device cannot be seen, turn the container so it can. If it is not legible, replace it with a new one that is.

**You do not have to have a color printer to use these devices for hazardous waste purposes. You may simply print them in gray scale and use them. The EPA Hazardous Waste Marking, for example, does NOT have to be yellow with black border. The NFPA marking however MUST be printed in color and the DOT labels must be in color if used for shipping instead of accumulation.**

**Troubleshooting:** Word sets the pagination based on the printer you are using. This may cause the drawings to either move up or down on the pages and appear distorted. Simply put the cursor on the page title and either press enter to move it down to the top of the next page where it belongs or backspace until it gets to the top of the page.

\*\*\*\*\*

This document is not intended to be an authoritative document on proper labeling. The instructions and definitions are general and not meant to be an official guide. This document is only provided to help generators label and mark hazardous or other wastes they may have in their business. For official interpretations contact your local regulator concerning proper labeling. This document is not for sale and can not be used for commercial purposes.

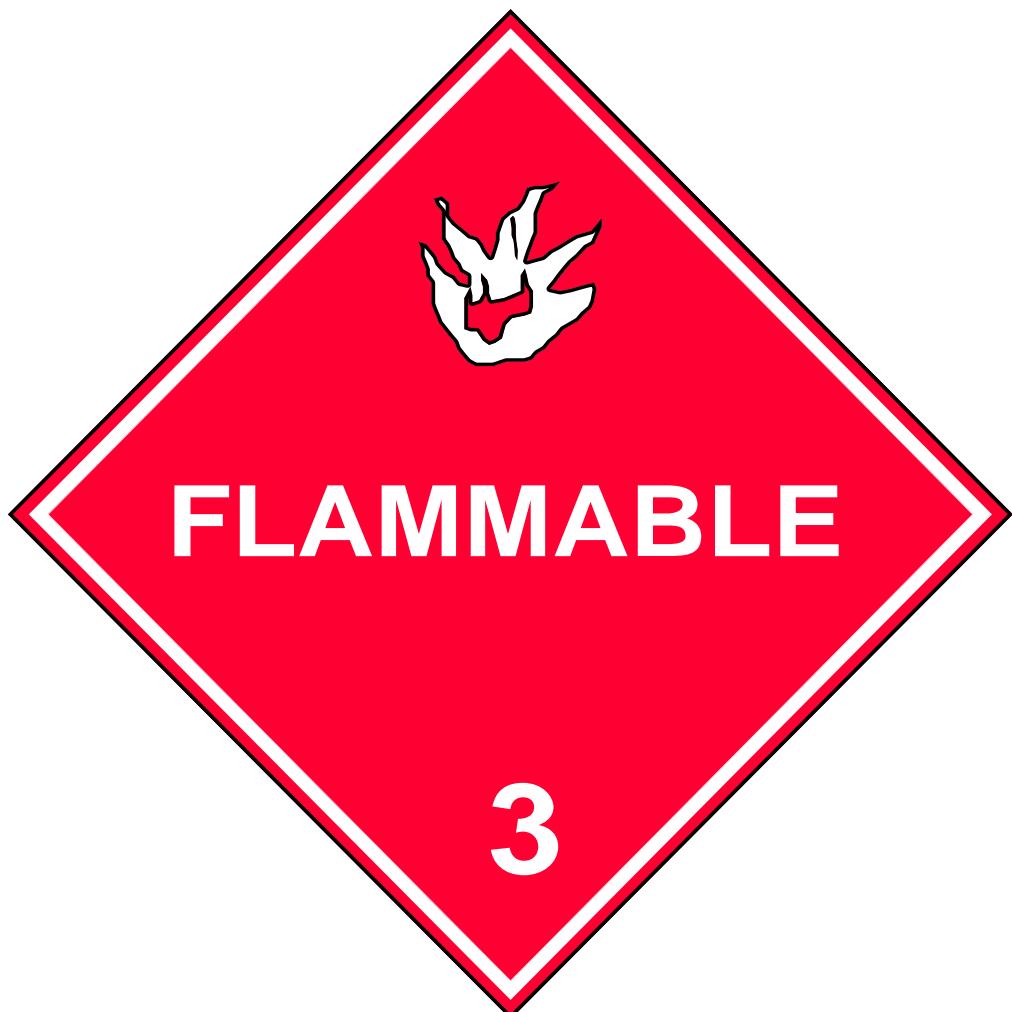
**Product**

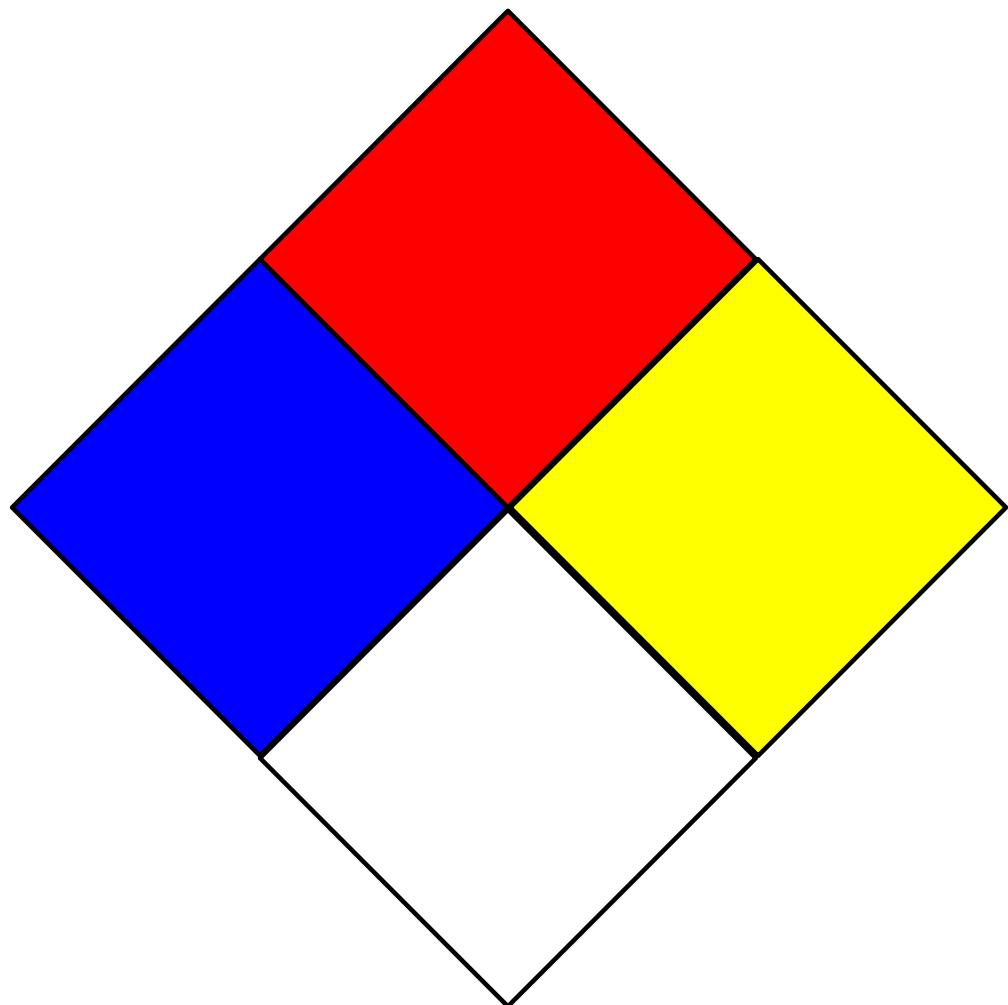
**Recycled**

**Antifreeze**

**Used  
Antifreeze  
Only**







# Combustible

# WA Persistent

For use in the State of Washington

# WA Toxic

For use in the State of Washington

**Paint Cleanup  
Water**

**Waste Paint  
(Water-Based)**

# **Waste Lacquer Thinner**

**Flammable**

**Waste  
Lacquer Paint**

**Flammable**



**Waste Paint  
Chips**

**Spent Solvent  
Rags & Wipers**

**Spent  
Solvent**

**INK SLUDGE  
ONLY**

**SILVER BEARING  
WASTE ONLY**

**WASTE FIXER  
ONLY**

# USED OIL FILTERS

**WARNING!!!!**

**ONLY USED OIL  
IN OUR RECYCLING TANK**



**DO NOT MIX WITH:**  
solvents, gasoline, engine  
degreasers, brake fluid, or  
antifreeze

# **Universal Waste- Batteries**

Accumulation Start Date \_\_\_\_\_

# **Universal Waste- Mercury Thermostats**

Accumulation Start Date \_\_\_\_\_

# **Universal Waste-** **Lamps**

Accumulation Start Date \_\_\_\_\_

**Contaminated  
Fuel**

**Flammable**



# Empty Container

Last contained : \_\_\_\_\_

Date Emptied: \_\_\_\_/\_\_\_\_/\_\_\_\_

# Storm Water Drain Sludge

**Used  
Brake Fluid**

**WA Toxic**

**For use in the State of Washington**

**Used  
Spray Cabinet  
Wash Water**

## APPENDIX D-1

### Instructions

Appendix D-2 contains a link to the freeware program which allows the user to print a variety of labels and markings used to identify, accumulate or store, and transport hazardous, non-hazardous and universal wastes. It was originally designed for hazardous waste generators in the State of Washington but it has been modified to allow its use in other States.

The freeware was prepared using Microsoft Word and attempts to convert it to Corel WordPerfect have not been successful. To use the program, the user must locate a computer that has Microsoft Word.

The software program will allow the user to print:

- The EPA Hazardous Waste Marking,
- The DOT Corrosive and Flammable labels,
- The National Fire Protection Association (NFPA) marking,
- Markings for:
  - Universal Waste,
  - Used oil
  - Antifreeze
  - Paint wastes
  - Photo wastes
  - Several miscellaneous materials.

To open the file, use a program like Microsoft Explorer and locate the folder “Appendix D Labeling Software” and click on it. When it opens, click on the file “HW Freeware.” Scroll through the list index of labels and markings in the index and locate the label or marking that is needed and then click on it. When the label or marking appears, make the necessary entries if required and then print it.

## APPENDIX D-2

### Labeling/Marking Software

This freeware software program has been prepared using Microsoft Word.

The link below is a software program that contains printable labels and markings which were originally prepared for hazardous waste Generators in the State of Washington - but, much of the work is useful in the other States and thus it has been incorporated here.

The software will allow printing of:

- The EPA Hazardous Waste marking,
- DOT Corrosive and Flammable labels,
- The NFPA Diamond marking,
- Markings for Universal Wastes,
- Markings for used oil and antifreeze,
- Markings for paint wastes,
- Markings for photo wastes, and
- Several miscellaneous markings.

The program is a freeware program which means there is no cost and may be distributed freely.

[Labeling/Marking Freeware](#)