INTRODUCTION

1. Purpose and Scope

The NOAA Environmental Manual implements the elements of the NOAA Environmental Compliance Program.

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.

2. Definitions

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.

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.

Memorandum of Understanding (MOU) - a written agreement between two governmental organizations which defines each organization's responsibilities and duties.

Station Manager - For the National Weather Service, 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) and Sterling Research & Development Center (SR & DC) facilities; or Meteorologist-in-Charge (MIC), Hydrologist-in-Charge (HIC) or Official-in-Charge (OIC).

3. Acronyms Employed in this Section

AA	-	Assistant Administrator
BMP	-	Best Management Practices
DAA	-	Deputy Assistant Administrator
DOC	-	Department of Commerce

DOT	-	Department of Transportation
DRO	-	Designated Responsible Official
EHS	-	Extremely Hazardous Substance
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
HS	-	Hazardous Substance
HIC	-	Hydrologist-in-Charge
MIC	-	Meteorologist-in-Charge
MOU	-	Memorandum of Understanding
NAO	-	NOAA Administrative Order
NCEP	-	National Centers for Environmental Prediction
NWS	-	National Weather Service
OIC	-	Official-in-Charge
OSHA	-	Occupational Safety & Health Act
RECO	-	Regional Environmental Compliance Officer
WSOM	-	Weather Service Operations Manual

4. Applicability

These sections are applicable to NOAA facilities, operations and personnel (e.g., employees, contractors, visitors) and will be implemented as directed by NOAA policy. When NOAA operations are conducted at another organization's site (e.g., Government agency, university) NOAA 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.

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 correct answer is placed in a box, the NWS Regional Environmental Coordinator or the NOAA Regional Environmental Compliance Officer (RECO) 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 must be understood by all involved with environmental compliance:

6.1 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). **(other line office titles?)**

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

a. Ensuring that facility operations and activities are conducted in compliance with environmental and occupational safety/health requirements.

b. 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.

c. Ensuring that all environmental and occupational safety/health assessment or survey findings are corrected within the recommended abatement period.

d. Ensuring that on-site personnel are aware of environmental and occupational safety/health requirements and are properly trained and equipped.

e. Elevating environmental and/or occupational safety/health compliance issues to senior management with recommendations for resolution as necessary to ensure compliance.

6.2 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. **(other line office titles?)**

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/ecfr
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 websites for the Department of Transportation (DOT) regulations and information:

http://www.text-trieve.com/dotrspa/dotbody.asp
http://www.hazmat.dot.gov/rules.htm
http://www.hazmat.dot.gov/gydebook.htm
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 department's websites.

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http://www.epa.gov/ceppo/tier2.htm

1 HAZARDOUS MATERIALS STORAGE

Synopsis
This section is promulgated to ensure hazardous chemicals and materials and equipment containing these materials are properly stored at NOAA locations.

The section applies to all NOAA facilities and work sites that store corrosive, flammable, combustible, toxic or reactive materials.

<u>Initial Implementation Requirements:</u>

- **Designate an Individual to Coordinate the Hazardous Material Storage Efforts** (1.6.1)
- **Compare Site/Facility Operations with the Requirements of this Section**
  - For materials stored in small quantities:
    - Identify materials that are:
      - flammable
      - combustible
      - corrosive
      - reactive(1.6.2)
    - Ensure flammables and combustibles are stored in appropriate storage lockers (1.7.1)
    - Ensure corrosives are stored compatibly (1.7.2)
    - Ensure reactives are stored compatibly (1.7.3)
    - Ensure janitorial supplies are properly stored (1.7.4)

  - For Storage in large quantities:
    - If a SPCC Plan is required, (1.8.1) review it to ensure:
      -it has been reviewed by a professional engineer within the last 5 years (1.8.1a.)
      -all identified spill containment structures have not been modified (1.8.1a)
      -all identified spill response equipment is available and operational(1.8.1a)
      -all NOAA personnel who maintain the spill containment structures or are responsible for spill response have been trained (1.8.1a)
      -if a SPCC Plan is not required, adopt the NOAA BMP plan in accord with Attachment A (1.8.1a)
    - If an aboveground storage tank is used, ensure:
      -the SPCC plan or BMP plan exists and is operational (1.8.2)
    - If an underground storage tank is used, ensure:
      -the tank is registered with the State (1.8.3 a)
      -the tank meets the 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)
      -the tank has monthly monitoring (1.8.3 d)

- 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 I or Tier II reports to the LEPC (1.8.4)

Recurring and Annual Task Requirements:

- **Have a Professional Engineer review the SPCC Plan every 5 years (1.8.1a)**
- **Periodically inspect the facility to ensure small quantities of hazardous materials are properly stored (1.7)**

Checklist

1 Materials Storage	YES	NO	N/A
Hazardous Substance Storage 1. Has a Designated Person been appointed? (1.6.1)	_____	_____	____
2. Does the facility/work site use or store OSHA hazardous materials (1.6.2) or hazardous substances? (1.6.3)	_____	_____	____
3. Does the storage of small quantities of flammable or combustible materials comply with Procedure 16 of the NOAA Occupational Safety & Health manual (1.7.1)	_____	_____	____
4. Are appropriate eyewash/drenching facilities available to personnel working with corrosive material?	_____	_____	____
a. is the eyewash/drenching facility:			
- available within 10 seconds?	_____	_____	_____
- capable of 15 minutes of 0.4 gpm? (1.7.2)	_____	_____	_____
5. Are materials stored in a compatible manner? (1.7.2, 1.7.3, 1.7.4)	_____	_____	_____
Petroleum Storage (1.8.1a) 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?	_____	_____	_____
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?	_____	_____	_____
c. Has the SPCC Plan been reviewed by a Professional Engineer (P.E.) within 5-years?	_____	_____	____
d. If an SPCC Plan is not required, has a Best Management Plan (BMP) been completed?	_____	_____	____

	YES	NO	N/A
2. Have all tanks been inventoried by the RECO?	_____	_____	_____
3. Has a Spills Coordinator been appointed? (1.8.1a)	_____	_____	_____
4. Have facility/work site personnel received the required training? (1.8.1a)	_____	_____	_____
5. Has refresher training been presented annually? (1.8.1a)	_____	_____	_____
6. If the petroleum product is stored in an aboveground tank, has the tank undergone integrity testing on a regular schedule and when repairs are done? (1.8.1a)	_____	_____	_____
7. Are records of this testing maintained on-site? (1.8.1a)	_____	_____	_____
Underground Storage Tanks 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? (1.8.3d)	_____	_____	_____
5. Is there a formal spill response plan?	_____	_____	_____
6. If a release has occurred in the past, was corrective action performed?	_____	☐	_____

	YES	NO	N/A
Clean Air Act			
1. Does the facility or work site store more than 10,000-gallons of petroleum products? (1.4.1b)	☐	_____	_____
Emergency Planning and Community Right-to-Know Act			
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)	_____	_____	_____
a. If yes, has an MSDS for each regulated material been submitted to the local Fire Department or the Local Emergency Planning Committee?(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 for each regulated material been submitted to the local Fire Department or Local Emergency Planning Committee?(1.8.4a)	_____	_____	_____
b. Has a Tier I form been filed with the Local Emergency Planning Committee? (1.8.5)	_____	_____	_____
c. Has the Tier II been submitted annually? (1.8.5)	_____	_____	_____
Gasoline Storage			
1. Does the storage of gasoline in small containers comply with Section 16 of the NOAA Occupational Safety & Health manual? (1.9.1a)	_____	_____	_____
Unused Oil			
1. Is unused oil stored in the original container away from food and beverages? (1.9.2a)	_____	_____	_____
2. Are transfer containers labeled to identify the contents? (1.9.2a)	_____	_____	_____

	YES	NO	N/A
Used Oil 1. Is used oil stored in DOT-approved containers? (1.9.2b)	_____	_____	_____
2. Is spill response equipment readily available? (1.9.2b)	_____	_____	_____
Unused Antifreeze 1. Is unused 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)	_____	_____	_____
Used Antifreeze 1. Is the used antifreeze stored in DOT-approved containers? (1.9.3b)	_____	_____	_____
2. Are the containers in good condition, labeled "antifreeze/water mixture" and stored to prevent a release or spill? (1.9.3b)	_____	_____	_____
Rain Gauge Antifreeze/Oil/Water Mixtures (1.9.4) 1. Does the facility currently collect antifreeze/oil/water mixtures from the rain gauges?	_____	_____	_____
a. If yes, is the material separated into oil and antifreeze/water layers?	_____	_____	_____
b. Is the container in good condition; labeled "Oil/Water Mixture-Do Not Drink!"?	_____	_____	_____
c. Has the local POTW been contacted to determine if the antifreeze/water mixture can be discharged to the sewer system?	_____	_____	_____
d. If no, has the used oil contractor been contacted to determine potential for mixing with used oil?	_____	_____	_____

	YES	NO	N/A
Universal Wastes			
1. Does the facility or work site recycle batteries (1.9.6), fluorescent tubes (1.9.7), pesticides (1.9.8)?	_____	_____	_____
a. are the stored wastes protected from damage? (1.9.6, 1.9.7, 1.9.8)	_____	_____	_____
b. are the storage/accumulation containers clearly identified?	_____	_____	_____
Paint			
1. Does the facility or work site store flammable or combustible paint in accord with the NOAA Occupational Safety & Health manual Procedure 16 - Flammable and Combustible Storage? (1.9.9)	_____	_____	_____
Compressed Gas Cylinders			
1. Does the facility/work site store compressed gas cylinders in accord with Procedure 9 of the NOAA Occupational Safety & Health Manual-Compressed Gas Safety?(1.9.10)	_____	_____	_____

1 HAZARDOUS MATERIALS STORAGE

1.1 Purpose and Scope

To perform its mission, National Oceanic and Atmospheric Administration (NOAA) facilities and work sites must store and use hazardous materials such as gasoline, propane and other fuels as well as a variety of laboratory chemicals and reagents, oils, batteries, paints and solvents. To ensure these materials are safely stored and managed, this procedure has been promulgated.

1.2 Definitions

Container - a device used for storage. It may be a drum, aboveground tank or other storage device. For the purpose of calculating storage capacity on-site, only containers with a capacity of 55-gallons or more are counted.

Designated Person - a NOAA employee designated by the Designated Responsible Official (DRO) or Facility Manager who is responsible for ensuring all hazardous materials are stored at the work site in accordance with Federal, State and local regulations. This person need not be the Facility Environmental Coordinator

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility - For purposes of EPCRA, all buildings, equipment, structure 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 shall include 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.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as Environmental and/or Safety Focal Point.

Leak Detection - a system used to determine if an underground tank is leaking.

Publicly-owned Treatment Works (POTW) - a municipal sewage treatment plant.

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).

Secondary Containment - use of a device or technique such as a berm, dike, culvert, diversion pond, etc. which is designed to prevent the spread of a spill or release of a regulated material.

Spills Coordinator - 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.

Threshold Planning Quantity (TPQ) - the quantity of an Extremely Hazardous Substance identified in 40 CFR 355.

Underground Storage Tank - a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground that 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

BMP	-	Best Management Practices
CAA	-	Clean Air Act
CERCLA	-	Comprehensive Environmental Response, Compensation, Liability Act
CFR	-	Code of Federal Regulations
DOT	-	Department of Transportation
DRO	-	Designated Responsible Official
EHS	-	Extremely Hazardous Substance
EPA	-	Environmental Protection Agency
EPCRA	-	Emergency Planning and Community Right-to-Know Act
FEC	-	Facility Environmental Coordinator
HC	-	Hazardous Chemical
HSWA	-	Hazardous and Solid Waste Amendments
LEPC	-	Local Emergency Planning Committee

MSDS	-	Material Safety Data Sheet
NFPA	-	National Fire Protection Association
NOAA	-	National Oceanic and Atmospheric Administration
NWS	-	National Weather Service
OSHA	-	Occupational Safety and Health Act - or - Occupational Safety and Health Administration
P.E.	-	Professional Engineer
POTW	-	Publicly-Owned Treatment Works
RECO	-	Regional Environmental Compliance Officer
RQ	-	Reportable Quantity
SECO	-	Safety/Environmental Coordinator
SERC	-	State Emergency Response Commission
SPCC	-	Spill Prevention Control and Countermeasures
sp.gr.	-	specific gravity
TPQ	-	Threshold Planning Quantity
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. Additionally, the National Fire Protection Association (NFPA) has created guidance to assist in proper storage of flammable and combustible materials.

1.4.1 Federal

a. Clean Water Act

The Clean Water Act CWA) 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, the regulations require the creation and implementation of facility-specific Spill Control and Countermeasures (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 (NRC).

b. Clean Air Act

The Clean Air Act (CAA) requires facilities that store large quantities of petroleum products or volatile organic liquids to obtain permits as stationary emission sources. Because most NOAA facilities:

- store only 1,000 or 2,000-gallons of diesel oil
- do not store gasoline in tank quantities
- do not store other volatile organic liquids in tanks

They are not regulated by Title V of the Clean Air Act.

Facilities that store these commodities in tanks with capacities of 10,000-gallons or more must contact the Regional Environmental Coordinator or the Safety and Environmental Coordinator (SECO) (if applicable) and/or the NOAA Environmental Compliance Officer (RECO) for guidance.

c. Comprehensive Environmental Response, Compensation, Liability Act

The Comprehensive Environmental Response, Compensation, 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 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 was created as a result of CERCLA.

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

The Emergency Planning and Community Right-to-Know Act (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 substances" (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 extremely hazardous substances is found in 40 CFR Part 355. If a NOAA facility stores at any time any EHS in a quantity greater than the Threshold Planning Quantity (TPQ) (see Appendix B to this manual) - it will be regulated under EPCRA.

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

- 1,000 pounds of battery acid - the contents of about 185 batteries, because it is listed as an EHS, or

- 10,000 pounds of diesel fuel, heating oil or gasoline - about 1,300-1,500-gallons, because these are OSHA hazardous substances, or
- 10,000 pounds of propane - about 2,500-gallons, or
- 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.

f. Occupational Safety & Health Act

The Occupational Safety & Health Act (OSHA) 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 “The National Fire Code, Flammable and Combustible Liquids NFPA 30" which is the national standard 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 to 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 and 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 on 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 or sheen or discoloration of the surface of the water, or the formation of a 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 25-gallons of oil in an uncontained area will necessitate a call to the National Response Center, however, it is important to note that some States have reporting requirements for oil and hazardous materials at higher or lower levels. Appendix C is a listing of the websites of the State environmental agencies. It can be used to determine who needs to be called and when. If this information is not available on-line, contact the Regional Environmental Coordinator or the Safety/Environmental Coordinator, if applicable, and/or the NOAA Regional Environmental Compliance Officer (RECO) to determine if state or local requirements exist. Section 4 of this manual provides a detailed discussion for the reporting of oil spills.

1.6 Implementation of a Storage Program for Hazardous Materials

1.6.1 The DRO 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 reviews the list of hazardous materials and the associated Material Safety Data Sheets (MSDSs) used at the facility or work site. This list is required as part of implementation of the Hazard Communication Standard. The purpose of this review will be to identify and quantify the materials considered to be flammable, combustible, corrosive and/or reactive.

1.6.3 The Designated Person reviews Appendix B to Section 4 to this manual to determine:

- if the materials are considered a hazardous substance under 40 CFR 302.4 or an extremely hazardous substance 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.

1.6.4 The Designated Person 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 and Combustible

The Designated Person will review Procedure 16 - Flammable and Combustible Liquid Storage in the NOAA Health and Safety manual. This procedure describes the equipment and techniques required to safely store flammable and combustible materials including:

a. storage
b. use
c. control of sources of ignition
d. grounding
e. housekeeping

For these materials designated as flammable or combustible, 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 or combustible materials in areas not in conformity with the NOAA Health and Safety Manual will not be allowed.

1.7.2 Corrosive Materials

There is no universal definition for the term “corrosive.” Usually, this term is applied to any material that dissolves or destroys metal or human tissue. The EPA for example, defines a corrosive hazardous waste as a discarded material that has a pH that is less than 2.0 or greater than 12.5. The DOT defines a material as corrosive for purposes of transportation if it “causes full thickness destruction of human skin at the site of contact within a specified period of time.” While most agree that materials that meet the EPA definition are considered corrosive, materials that are outside the regulatory range (ie., have a pH *greater* than 2.0 or *less* than 12.5) can also do serious damage to human tissue, especially sensitive tissue like the eyes. Unfortunately, the testing required for the DOT definition cannot easily be performed. Thus, for the purposes of properly storing corrosive materials, this section deems a material as acidic if the pH is less than 7.0 and alkaline or basic if the pH is greater than 7.0. In either case, acidic and alkaline materials are considered corrosive.

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 general rule, because of its ability to react with a large number of other materials, battery acid (sulfuric acid) - a common NOAA corrosive material - must be kept segregated from all other acids.

In addition, ANSI Standard 2358.1 - 1998 Standard requires an eyewash/drenching facility be available to personnel working with corrosive materials that is capable of providing 15-minutes of continuous flushing at 0.4 gpm. The facilities shall be available within 10 seconds of unobstructed travel time distance from point of storage.

1.7.3 Storage of Reactives

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 comingled (for example, when the shelving collapses in a fire or earthquake) can be high. To minimize the potential for adverse incompatible reactions, all NOAA 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 EPA/NOAA Reactivity Worksheet. This system 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. Because the database includes over 6,600 different chemical records, it usually contains data on common materials used by NOAA.

b. Storage Techniques for Reactives

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 co-mingle 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 NOAA, a 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.

A special note: If NOAA employees have access to janitorial supplies provided by a lessor or a contractor, the lessor or contractor must make copies of the Material Safety Data Sheets (MSDS) for each product available to the facility. The Designated Person will use these sheets to determine the hazards presented by these supplies. In turn, if a contractor's employees may come in contact with NOAA owned hazardous chemicals while working at the facility (ie., cleaning of a laboratory), NOAA must make its copies of the Material Safety Data Sheets for these materials available to the contractor.

1.8 Large Quantity Storage

The requirements for the storage of large quantities of hazardous materials depend on the material (i.e., is it a 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.

If the hazardous material is a petroleum product and more than a total of 1,320-gallons is stored in 55-gallon containers or larger and 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, a Spill Prevention Control and Countermeasures Plan will be required (see Section 1.8.1).

If the material is a petroleum product or an extremely hazardous substance as listed in 40 CFR Part 355, and the quantity at any time exceeds the threshold planning quantity, a

notification to the Local Emergency Planning Commission (LEPC) will be required under EPCRA (see Section 1.8.4).

If the material is stored in an aboveground tank (for example, the ConVault fuel tank used by the NWS), 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 Countermeasures Plan (SPCC)

To prevent the discharge of petroleum products into the environment, a Spill Prevention Control and Countermeasures Plan may be required. The SPCC plan, which must be reviewed by a Registered Professional Engineer, details the equipment and structures to prevent a release as well as the procedures that will be performed should a release occur.

a. Requirements for a SPCC Plan

Those NOAA 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 calculating the volume stored on-site, remember that 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.

The Designated Responsible Official has overall responsibility for ensuring the procedures, equipment and structures specified in the SPCC Plan are maintained and operational and that the plan is reviewed by a Professional Engineer (P.E.) every five (5) years or when major changes to equipment or operations occur. If needed, the Regional Environmental Coordinator or the Safety/Environmental Coordinator (SECO) if applicable and/or the NOAA RECO should be contacted for assistance in securing the services of a Registered Professional Engineer.

Note: NOAA personnel may not change or modify the technical design or operation of the equipment or structures described in the SPCC Plan without approval of a Professional Engineer. Names, addresses and telephone numbers can be changed as appropriate without P.E. Certification.

The EPA requires the designation of a person at the facility who will be accountable for oil discharge prevention (a "Spills Coordinator"). This person must report to the Designated Responsible Official (DRO). The Facility Environmental Coordinator is normally assigned the role of Spills Coordinator. The Spills Coordinator 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 required spill response supplies are on-hand. The Spills Coordinator is also responsible for ensuring all NOAA 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.

This training must be repeated once a year. The refresher training must highlight and discuss known spills, discharges or malfunctioning equipment.

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. Employees who only respond in a defensive fashion (i.e. use sorbant to absorb a spill) without actually trying to stop the release, are deemed "First Responder Operations Level." These employees must receive at least eight (8) hours of training or be certified by the employer (i.e. the Station Manager) that they "have sufficient experience to objectively demonstrate competency" in the following areas:

A. Knowledge of the basic hazard and risk assessment techniques.
B. Know how to select and use proper personal protective equipment provided to the first responder operational level.
C. An understanding of basic hazardous materials terms.
D. Know how to perform basic control, containment and/or confinement operations within the capabilities of the resources and personal protective equipment available with their unit.
E. Know how to implement basic decontamination procedures.
F. An understanding of the relevant standard operating procedures and termination procedures.

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.

In addition, 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 normally included in the SPCC Plan for monthly and yearly inspections. The EPA requires these records be maintained for at least three (3) years and used for comparison in future tests.

Prior to August 16, 2002, the EPA required a SPCC Plan if a facility or work site had 660-gallons or more of oil in one container. As a result, NWS facilities that have the 1,000-gallon ConVault storage tank used for storage of diesel fuel for the emergency generator were required to have a SPCC Plan. This plan was provided for each regulated facility when it was built and should be available on-site.

Although the SPCC Plan is not required unless the total volume stored in aboveground containers is more than 1,320-gallons, NOAA facilities that have an existing plan shall implement and maintain the existing plan or adopt a Best Management Plan in accord with Attachment 1 to this section as an alternative.

1.8.2 Aboveground Storage Tanks

Storage tanks that store petroleum or a hazardous substance and are aboveground are regulated by the Oil Pollution Prevention requirements in 40 CFR Part 112 and/or State equivalent.

For the NOAA 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
- sorbent materials
- tank spill and overflow devices.

Also, effective August 16, 2002, aboveground tanks and containers which are required to have a SPCC Plan must undergo integrity testing on a regular schedule and whenever material repairs are done. The specific method to be used for the integrity testing and the "regular schedule" will normally be established by the Professional Engineer in accord with EPA, State and local requirements as well as industry standards and then incorporated into the SPCC Plan. The testing must combine visual inspection with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing or other

non-destructive shell testing. NOAA facilities that are still subject to the SPCC Plan requirements will have this testing and the schedule included in the plan when it is re-certified by a Professional Engineer.

Because the ConVault tanks used by the NWS have a storage capacity of only 1000- gallons, if a facility does not store oil or other petroleum products in any other aboveground tanks or containers that are 55-gallons or larger such that the total storage on-site does not exceed 1320-gallons, the facility is not required to have a SPCC Plan nor perform these inspections. However best management practices require the integrity inspections still occur on a regular basis and whenever repairs are made to the tank or its associated piping. Because the frequency for integrity testing can be influenced by the specific location of the tank and, because a Professional Engineer will not be involved if the SPCC plan is no longer required, the NOAA Regional Environmental Coordinator or the Safety/Environmental Coordinator (SECO), if applicable, and/or the NOAA Regional Environmental Compliance Officer (RECO) should be contacted for assistance in establishing the integrity testing procedure to be used and the "regular schedule" for these inspections.

To assist in determining what and how to inspect, the EPA has created a set of reduced testing requirements for the ConVault tanks which are defined by the EPA as "shop-built, double-walled tanks." For the ConVault tanks, the EPA recommends the inspection 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,
- an operational check on all automatic devices that monitor the interstitial space, and
- in addition, all piping, equipment and connected devices should be visually checked to ensure they are not leaking.

For other aboveground tanks used by NOAA, the EPA has allowed that if these tanks:

- are smaller "shop-built" containers in which internal corrosion poses minimal risk of failure,
- have all sides visible (i.e. the container has no direct contact with the ground),
- and are inspected at least monthly,

visual integrity inspection will also suffice. For both types of tanks, the EPA recommends that the SPCC Plan explain why the visual integrity testing is sufficient. This explanation should include:

- a statement that the tank is built to ASTM Standards,
- the tank is visible on all sides,

- the SPCC Plan outlines the visual inspection and recording requirements, and
- the SPCC Plan explains that the visual integrity protocol provides equivalent environmental protection.

To meet this requirement, it is recommended that the SPCC Plan explain that:

- the tank is double-walled,
- there is on-going monitoring of the tank (interstitial monitoring for leaks and visual inspection),
- the staff is trained on a regular schedule,

OR, 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 tanks that do not require a SPCC Plan, this information should be included in the Best Management Plan for the tank.

Some States still require additional measures such as periodic testing of the wall thickness or structural integrity testing of the storage tank. It is important to check with the NOAA Regional Environmental Coordinator or the Safety/Environmental Coordinator (SECO), if applicable, and/or the NOAA RECO to determine if additional tank testing is required and how often it must be repeated. To determine the appropriate integrity inspection method and the inspection schedule for other types of tanks and containers, contact the NOAA Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), if applicable, and/or the NOAA Regional Environmental Compliance Officer (RECO) for advice.

1.8.3 Underground Storage Tanks (USTs)

Because these rules have been around since 1984, it has been assumed that all underground tanks have been located and permanently closed. Unfortunately, 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 Regional Environmental Coordinator (if available) and/or the NOAA RECO for assistance in establishing the UST compliance program.

If a NOAA facility or work site uses an UST, or an aboveground tank is found to meet the definition of an underground storage tank because of buried piping, or an old, forgotten tank is uncovered, the Designated Responsible Official 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 or upgrade or replace
- 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 NOAA RECO 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, or

(e) the tank construction and corrosion protection is determined by the implementing agency to be appropriate.

(2) the piping must be designed and 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 Regional Environmental Coordinator (if applicable) and/or NOAA RECO 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 by employing one or more of the following methods:

(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 because it is a physical or chemical hazard is present at any one time in a quantity equal to or greater than 10,000 pounds OR is an extremely hazardous substance (EHS) identified in 40 CFR Part 355 which is present at the facility in a quantity equal to or greater than 500 pounds or the threshold planning quantity (TPQ) whichever is less.

Note: The EPCRA rules regulate the amount of OSHA-defined hazardous chemical or extremely hazardous substance which 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, structure 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 shall include 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." Because a WFO facility and radar facility are normally separated by a public road, by definition, they are considered as two facilities on two distinct and separate sites. Therefore, the 10,000 lb. Rule for Tier II reporting of diesel fuel would be applicable to each of the two facilities, but their accumulative store of diesel fuel would not be considered.

To determine the HCs used at the facility, review the inventory of hazardous chemicals prepared in accordance with Procedure 7 of the NOAA Occupational Safety and Health manual.

To determine the EHSs 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 headings 40 CFR 355 EHS RQ and/or TPQ.

Note: To determine the total amount of a chemical on-site, find the specific gravity (sp.gr.) as listed on the Material Safety Data Sheet for the product. Multiply the specific gravity 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 not be regulated by EPCRA.

b. For each regulated material, obtain a copy of the Material Safety Data Sheet (MSDS) and send the MSDS 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.

Note: Contact the Regional Environmental Coordinator (if available) and/or the NOAA RECO to determine which agency has jurisdiction.

In lieu of a MSDS for each EHS, the NOAA facility may submit:

(1) a list of hazardous chemicals for which a MSDS is required
(2) the chemical or common name of each hazardous chemical
(3) any hazardous component of each hazardous chemical

(c) If a NOAA facility is regulated by EPCRA, as required by 40 CFR 355.30), the Facility Manager must appoint a representative to serve on the LEPC. To the extent practicable, each regulated NOAA facility shall provide any emergency information requested by the LEPC.

Note: Even if a NWS facility is not required to join the LEPC, it is highly recommended that each facility send 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. In return, the NWS will rapidly learn that the LEPC is comprised of local experts

in the management of hazardous materials, substances or wastes - experts who are normally more than willing to provide assistance to the NWS at no charge.

1.8.5 Submit the Tier I Form to the LEPC as soon as it is determined that a NOAA facility is regulated by EPCRA or the State Emergency Response Commission (SERC)

Under EPCRA, NOAA facilities that have a material listed on the EHS list in 40 CFR 355 in a quantity greater than 500 pounds or the TPQ (as listed on 40 CFR 355) must submit a Tier I or Tier II inventory report to the LEPC, SERC or Fire Department which has jurisdiction over the facility.

The Tier I form is a summary of the hazards present on the site. A copy of the form is found in 40 CFR 370.40 and included here as Attachment B to this section.

The Tier II form provides information about individual EHSs on-site. The Tier II form is found in 40 CFR 370.41 and included here as Attachment C to this section.

Because it is more specific, a Tier II form may be submitted in lieu of a Tier I form. Also, a SERC, LEPC or Fire Department that has jurisdiction can request a Tier II at any time, and, the NOAA facility must submit the required form within 30-days.

Note: The EPA has created an electronic versions of the Tier I and Tier II forms. The Tier I form can be found and downloaded from http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr370_00.html. If the SERC, LEPC or Fire Department that has jurisdiction over a specific NOAA facility has the capability to receive the Tier II electronically, the Tier II form can be download at http://www.epa.gov/ceppo/tier2.htm.

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

1.9 Storage of Specific Materials Used by NOAA

1.9.1 Gasoline

a. Small Quantities

Gasoline is a Class 1A flammable liquid. Small quantities must be stored in accordance with Section 16 of NOAA Occupational Safety & Health Manual which 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

NOAA 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 Regional Environmental Coordinator (if available) and/or the NOAA RECO.

1.9.2 Oil

NOAA facilities and work sites store two types of oil: unused oil and used oil. Although the hazards presented by unused and used oil are virtually the same, used oil is regulated by the EPA and the States under the waste management laws while unused oil is not - hence they have different storage requirements.

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 Regional Environmental Coordinator (if available) and/or the NOAA RECO 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 NOAA equipment must be stored in DOT-approved containers (typically 5, 10 or 55-gallon drums - but not a gasoline can) which are:

(1) in good condition (no dents or rust)
(2) labeled “Used oil” or equivalent (i.e., used dielectric fluid)
(3) stored in a contained area which will prevent any releases or spills from reaching the “waters of the U.S.”
(4) 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 NOAA personnel must be trained in how to respond.

1.9.3 Antifreeze

Antifreeze (ethylene or propylene glycol) is also usually stored in two forms - unused concentrated propylene glycol and a used mixture of propylene glycol and water. Again, because of State authority in this area, 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 as propylene glycol.

b. Used Antifreeze Solution

A used antifreeze and water mixture is generated from the maintenance of the emergency generator and other NOAA equipment and it must be stored in DOT-approved containers (typically 5, 10 or 55-gallon drums) which are:

(1) in good condition
(2) labeled “Antifreeze/Water Mixture”
(3) stored in a contained area which will prevent any release or spills from entering the soil or water.

Spill response equipment must be readily available and NOAA personnel must be trained in its use.

1.9.4 Rain Gauge Antifreeze/Oil/Water Mixtures

To prevent evaporation, a small amount of mineral oil is often added to NWS 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 to prevent the collected water from freezing. The result is that the collected rainwater is also a mixture of water, mineral oil and/or propylene glycol.

Because this mixture can be disposed either as a mixture or separated into oil and water/propylene glycol portions, storage can vary.

If the mixture is to be disposed as a mixture, 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 will 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/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 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.

1.9.5 Radiosonde Battery Activation Water

Prior to use, radiosonde batteries must be soaked in a container of water to activate the battery. In the process, small amounts of dissolved copper "leaks" from the battery into the water bath. After many battery activations, the water usually contains a small amount of copper.

Because the volume of this bath is low and the amount of contamination minimal, this water usually can be poured down the drain.

However, because copper is a biocide (it kills bacteria), this may not be a good idea if the facility uses a septic system to treat its wastewater. Additionally, some States regulate this wastewater as a hazardous waste and some publicly-owned treatment plants (POTW or sewage treatment plant) are concerned that the dissolved copper might disrupt their biological treatment systems and thus forbid or restrict its disposal into their system.

To ensure legal disposal of this fluid, site personnel need to contact the local POTW to determine how the local POTW regulates this waste.

If analytical data is required, NWS Headquarters has the results from the testing of radiosonde water which is available to all NWS sites.

It may be necessary to collect this wastewater and ship it to an off-site treatment facility.

If the POTW does not object to accepting this waste, ask for a letter from the POTW verifying this approval.

1.9.6 Batteries

Typically, NOAA work sites that use an uninterrupted power supply (UPS) will employ a contractor to service the lead acid batteries that are used to store the electricity until needed. 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. There are some work sites that cannot use a contractor and thus must create a storage area for both new and used batteries.

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:

(1) they are protected from physical damage to the casing,
(2) spills and other releases will be contained,
(3) contact with other materials is minimized, and
(4) 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" or "Universal Waste - Used Batteries" 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 1-year on-site storage limit from the accumulation start date.

An example of this label can be found at:

www.easc.gov/environ/lampsballastweb/lampentrypage_v2.htm

1.9.7 Fluorescent Tubes

Whether new or used, fluorescent tubes must be protected from breakage due to mechanical impact. As tubes are replaced, the spent tubes should be placed in the

cardboard sleeve and outer box that were used to protect the replacement tubes. They will then be properly packaged to be sent to the recycling facility.

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.

Again, an example of this label can be found at:

www.easc.gov/environ/lampsballastweb/lampentrypage_v2.htm

1.9.8 Pesticides

Typically, NOAA facilities or work sites 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 NOAA employees.

a. Small, Over-the-Counter Containers

Small containers of pesticides must be stored:

(1) away from food or beverage handling areas
(2) near a ventilation system which could remove vapors, if necessary
(3) near personal protective gear which could be used to clean-up releases or spills.

b. Larger Containers

For NOAA facilities or work sites that mix and use pesticides for use at the facility or work site, review the requirements of Section 10 of this manual. Accordingly, the pesticides must be stored:

(1) in the original container if possible or if mixed for use, in a container labeled to identify the contents
(2) in a well-ventilated area if possible
(3) near personal protective gear which could be used to clean-up releases or spills
(4) near an emergency deluge shower and eyewash station.

The storage area must be inspected quarterly by a certified applicator.

1.9.9 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 paint and spray paint are either flammable or combustible material as defined in Procedure 16, Flammable and Combustible Storage of the NOAA Occupational Safety and Health manual. As a result, these materials must be stored in accordance with 16.3.1 which 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.

1.9.10 Compressed Gas Cylinders

The safe storage of compressed gas cylinders is described in Procedure 9 - Compressed Gas Safety of the NOAA Occupational Safety and Health manual.

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
- Liquified Petroleum Gas in 9.3.4
- Hydrogen in 9.3.5.

1.9.11 Cleaning Solvents and Degreasers

While many cleaning solvents and degreasers used by the NOAA previously contained chlorinated solvents, international agreements to reduce the damage to the ozone layer have greatly decreased the production and use of these materials. Current cleaning materials tend to be either flammable materials or corrosives.

To determine the appropriate storage method, review the MSDS for each material and determine:

- does it have a flash point or
- does it have a lower explosive limit (LEL) and upper explosive limit (UEL)?

If so, the solvent or degreaser is considered either a flammable material (flash point less than 100˚F) or combustible material (flash point greater than 100˚F or there is no flash point but there is a LEL and UEL). The requirements for storage in Section 16 of the NOAA Occupational Health and Safety manual 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 dish pan or trays) to maintain proper segregation from other materials and provide secondary containment in the event of a leak.

1.10 Responsibilities

1.10.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA Headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

1.10.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure flammable, combustible, corrosive and reactive liquids are used and stored according to the requirements of this section.

c. Shall assist in procuring the services of a Professional Engineer to review facility or work site SPCC Plans.

d. Shall assess the Regional Headquarter's facility or operating unit to monitor and promote compliance with this section.

e. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

1.10.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure flammable, combustible, corrosive and reactive liquids are used and stored according to the requirements of this section.

d. Shall ensure all releases of hazardous substances in excess of the reportable quantity or petroleum spills capable of causing a visible sheen or discoloration of the surface of water are immediately reported to the National Response Center and appropriate State agencies.

e. Shall ensure that procedures are developed at NOAA field offices for reporting all releases, compatibly storing all flammable, combustible or corrosive liquids.

f. Shall ensure the SPCC Plan is reviewed by a Professional Engineer every 5-years.

g. Shall ensure the Tier II report is submitted to the SERC, LEPC or local Fire Department on an annual basis (if applicable).

h. Shall ensure NOAA employees are following the requirements of this section.

i. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

1.10.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

b. Shall ensure a reporting procedure is in place for reporting all releases of a hazardous substance in excess of the Reportable Quantity or petroleum in a quantity capable of discoloring surface water.

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 Facility Environmental Coordinator.

c. Report all spills or releases to their supervisor or the Facility Environmental Coordinator.

1.11 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.

1.11.1 American National Standards Institute, ANSI, Z358.1-1998, "Emergency Eyewash and Shower Equipment."

1.11.2 National Fire Protection Association, NFPA 30, "Flammable and Combustible Liquids Code".

1.11.3 National Weather Service Manual 50-1115, Occupational Safety and Health, Procedure 7, "Hazard Communication".

1.11.4 National Weather Service Manual 50-1115, Occupational Safety and Health, Procedure 9, "Compressed Gas Safety".

1.11.5 National Weather Service Manual 50-1115, Occupational Safety and Health, Procedure 16, "Flammable and Combustible Liquids".

1.11.6 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.106, "Flammable and Combustible Liquids".

1.11.7 U.S. Department of Transportation, 49 CFR 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, and Training Requirements".

1.11.8 U.S. Environmental Protection Agency, 40 CFR 112, "Oil Pollution Prevention".

1.11.9 U.S. Environmental Protection Agency, 40 CFR 273, "Standards for Universal Waste Management".

1.11.10 U.S. Environmental Protection Agency, 40 CFR 279, "Standards for the Management of Used Oil".

1.11.11 U.S. Environmental Protection Agency, 40 CFR 280, "Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (USTs)".

1.11.12 U.S. Environmental Protection Agency, 40 CFR 302.4, "Designation of Hazardous Substances".

1.11.13 U.S. Environmental Protection Agency, 40 CFR 355, "Emergency Planning and Notification".

1.11.14 U.S. Environmental Protection Agency, 40 CFR 370.40, "Tier I Emergency and Hazardous Chemical Inventory Form", http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr370_00.html

1.11.15 U.S. Environmental Protection Agency, 40 CFR 370.41, "Tier II Emergency and Hazardous Chemical Inventory Form", http://www.epa.gov/ceppo/tier2/htm.

Attachment A

SPILL PREVENTION, CONTROL, AND COUNTERMEASURES BEST MANAGEMENT PLAN

(Facility Specific Data:
Name and Address)
Sample

N O A A
Rainbow Forecast Office
2001 Snow Road
Blizzardville, TN

Designated Person Responsible for Spill Prevention (DRO):

Printed Name:

Signature:

Date:

Telephone:

The Regional Environmental Compliance Officer (RECO) has reviewed the facility and determined that an SPCC Plan is not required per 40 CFR 112. This Plan is developed strictly as a Best Management Plan. The determination is based on :
_____ The facility does not exceed capacity.
_____ The facility meets capacity requirements but, a discharge will not reach navigable waterways.

RECO Printed Name:

RECO Signature:

Date:

PART I - GENERAL INFORMATION

A. GENERAL

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

1. Name:
   National Oceanic and Atmospheric Administration Office
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 (Environmental coordinator, Area Safety representative, Alternate, Focal Point, First responder)

Name	Title/EC Role	Telephone Number
1.		
2.		
3.		
4.		

B. SITE DESCRIPTION AND OPERATIONS

1.The facility is located in _____ County, _____(state) , approximately_____ _____miles of _____ (list major city). The Aboveground Storage Tanks (AST) are used to store diesel fuel for generators used for emergency backup power to the facility. This Facility has __ ____ (specify number) _____ (specify capacity) generator tank(s) and _____(specify capacity) day tank.

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

3. In addition to the diesel fuel used for emergency power generator, this facility also stores chemicals, e.g., paint, solvents, antifreeze, bulk mercury, and pesticides for _____e.g., O&M, Testing activities. These are stored/used in the following location(s).

Locations (Example: flammable locker next to coffee mess)

1._____
2._____
3._____

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:

1.S- Stop the leak and eliminate ignition sources.
   a. Attempt to seal or some how stop leak if it can be done safely.
   b. 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_____.
   c. Eliminate all ignition sources in the immediate area.

2.W- Warn others.
   a. Yell out "SPILL". Inform the person in-charge at your facility.
   b. Account for all personnel and ensure their safety.
   c. Notify contacts and emergency response contractor as described in the following section for assistance in control and cleanup.

3.I- Isolate the area.
   a. Rope off the area

4.M- Minimize your exposurea.Stay upwind

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

B. SPILL REPORTING

1. General Notification Procedures For All Spills
   Within 24 hours, the responsible person or designee (on this plan title page or in Part 1, A.5.) is directly charged with reporting all oil spills that result from facility operations as follows:

   a. In the event of a emergency (e.g., fire, or injury), call_____ (eg. 9-1-1)
   b. Notify the appropriate persons within your region and line office.

Regional EC Coordinator (in line office regional office or center)
Phone number: (___) ___-____ Ext. ___, _____@NOAA.GOV

c. NOAA Environmental Compliance and Safety Office Program: Pick a RECO. E-mail or call your RECO.

EASC Lynnette.J.Ansell@NOAA.GOV
(757) 441-6298
WASC Thanh.M.Trinh@NOAA.GOV(206) 526-6647
MASC Mark.George@NOAA.GOV(303) 497-3064
CASC Sherilyn.S.Villegas@NOAA.GOV
(816) 426-7267 x 263

d. LECO & RECO must determine if Federal or State notification is required and follow up accordingly.

2. Cleanup Contractor Notification
   An emergency response contractor may also be notified to assist with the clean up if necessary. NOAA (Insert your Line office) has identified and contacted the following contractors that are available for an emergency response:
   Contractor(s) Phone Number

_____
_____
_____

3. Spill Report

   Complete a spill report using the format provided in Appendix "X". Send this to Your RECO.

C. Training

The Facility Environmental Coordinator and an alternate should be trained in spill countermeasures. The alternate should be designated in case the primary person is off -site at the time of a spill.

End

Attachments/Appendix X _____

ATTACHMENT B

Tier I Reporting Form

The Tier I Form is available on-line at:

http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr261_00.html

The form is a scanned document and must be downloaded, printed and manually completed.

Unfortunately, the Tier I Form is not a form which can be completed electronically.

ATTACHMENT C

Tier II Reporting Form

The Tier II Form is available on-line at:

http://www.epa.gov/ceppo/tier2.htm

This is an electronic version of the form. If the Local Emergency Planning Committee is equipped to receive these forms electronically, a hard printed copy need not be prepared.

Issue Date	Org. Date

NATIONAL OCEANIC and ATMOSPHERIC ADMINISTRATION
Environmental Manual

NOAA		Section 02

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Section 2 MANAGEMENT OF WASTE

Synopsis

This section is promulgated to ensure proper management of wastes generated by NOAA facilities, work sites and ships. The section applies to all NOAA operations 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/Ship 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 (2.9.7)
  - Establish recordkeeping system for the uniform manifest, annual/biennial report, exception reports, training records (2.9.9)
  - Train affected NOAA employees [2.9.6b (1), 2.9.6c (4)]

Recurring and Annual Task Requirements:

- **Complete and file hazardous waste generator annual/biennial report, if required [2.9.6c(14)]**
- **Complete and sign manifest (2.9.8a) and Land Disposal Restriction form[2.9.8a(4)] for each hazardous waste shipment**
- **Continually attempt to reduce or eliminate waste generation**
- **Become aware of new waste recycling opportunities in the community**

Checklist

2 Management of Waste	YES	NO	N/A
Basic Program 1. Has an inventory of all wastes generated at the facility, work site or ship been performed? (2.6)	_____	_____	_____
2. Has each identified waste been reviewed to properly categorize it as sewage, solid, hazardous, universal, PCB or asbestos waste? (2.7, 2.8, 2.9.3, 2.10, 2.11)	_____	_____	_____
3. Has the quantity of each waste been estimated? (2.6)	_____	_____	_____
Generator Requirements 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 Conditionally Exempt Small Quantity Generator (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? [2.9.6a(3)]	_____	_____	_____
b. Are procedures in place to ensure the accumulation or stored waste never exceeds 1,000 kg? (2.9.6a(6) & 2.9.7a)	_____	_____	_____
c. Are affected personnel trained to ensure they know how to manage the waste and respond to emergencies? [2.9.6a(4)]	_____	_____	_____

	YES	NO	N/A
3. If the facility or work site is a Small Quantity Generator (i.e., produces less than 1,000 kilograms (2,200 pounds) of hazardous waste per month) (2.9.6b)			
a. 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 selected personnel trained in how to complete the Manifest and Land Disposal Form? (2.9.8a)	_____	_____	_____
4. If the facility or work site is a "Generator," (i.e. produces more than 1,000 kilograms (2,200 pounds) of hazardous waste or more per month or 1 kilogram (2.2 pounds) 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? [2.9.7c(1)(a)]	_____	_____	_____
c. Does the facility/work site or ship Emergency Action Plan incorporate hazardous waste incidents? [2.9.7c(3)]	_____	_____	_____
d. Are facility personnel trained in hazardous waste management and how to respond to emergencies? [2.9.7c(4)]	_____	_____	_____
e. Are selected personnel trained in how to complete the Manifest and Land Disposal Restriction Form? [2.9.6c(5) & (6)]	_____	_____	_____
f. Are all wastes packaged, labeled and marked in accord with U.S. DOT regulations? [2.9.6c(7) & (8)]	_____	_____	_____
g. Does the facility/work site ensure the transporter has the appropriate placards? [2.9.6c(9)]	_____	_____	_____
h. Are all Manifests and Land Disposal notices retained for at least 3-years from date of shipment? [2.9.6c(10)]	_____	_____	_____
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(13)]	_____	_____	_____

	YES	NO	N/A
j. Are the containers of hazardous waste in the accumulation area:			
- in good condition? [2.9.7c(1)(b)(1)]	_____	_____	_____
- properly marked with the words "Hazardous Waste," the identity of the contents and the date accumulation began? [2.9.7c(1)(e)]	_____	_____	_____
- closed? [2.9.7c(1)(b)(4)]	_____	_____	_____
- stored compatibly? [2.9.7c(1)(b)(3)]	_____	_____	_____
- stored with adequate aisle space? [2.9.7c(2)(e)]	_____	_____	_____
- not stacked over 2 drums high?	_____	_____	_____
- inspected weekly? [2.9.7c(1)(b)(6)]	_____	_____	_____
k. Does the accumulation area:			
- Have a telephone or two-way radio accessible? [2.9.7c(2)(d)]	_____	_____	_____
- Have appropriate type and number of fire extinguishers? [2.9.7c(2)(b)]	_____	_____	_____
- Have spill control equipment? [2.9.7c(2)(b)]	_____	_____	_____
- Have decontamination equipment? [2.9.7c(2)(b)]	_____	_____	_____
- Have an adequate source of water/foam for fires? [2.9.7c(2)(b)]	_____	_____	_____
Universal Waste			
1. Does the facility or ship 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/ship 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)	_____	_____	_____

	YES	NO	N/A
3. Does the facility/work site/ship segregate and properly store these wastes prior to shipment to a recycling facility?(2.10)	_____	_____	_____
4. If the facility/work site stores less than 5,000 kg (11,000 pounds), it is a small quantity handler of universal waste. 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)(3)]	_____	_____	_____
c. The wastes are not stored or accumulated for longer than 1-year? [2.10.1a(3)]	_____	_____	_____
d. Personnel are trained to respond to emergencies? [2.10.1a(4)(5)]	_____	_____	_____
5. If the facility stores more than 5,000 kg (11,000 pounds), it is a Large Quantity Universal Waste 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 1-year? [2.10.1b(6)]	_____	_____	_____

	YES	NO	N/A
Satellite Accumulation			
1. Does the facility or work site use satellite accumulation areas? (2.9.7d)	_____	_____	_____
2. Are procedures in-place to ensure the total amount of waste accumulated is less then 55-gallons of hazardous waste or 1-quart of acutely hazardous waste? [2.9.7d(1)]	_____	_____	_____
3. Is the area at or near the point of generation? [2.9.7d(2)]	_____	_____	_____
4. Are the containers in good condition? [2.9.7d(3)]	_____	_____	_____
5. Are the containers kept closed except when adding or removing wastes? [2.9.7d(4)]	_____	_____	_____
6. Are all containers marked with the words “Hazardous Waste” or with other words to identify the contents? [2.9.7d(5)]	_____	_____	_____

2 MANAGEMENT OF WASTE

2.1 Purpose and Scope

In performing its mission, NOAA facilities, work locations and ships 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 NOAA operations where waste is generated.

2.2 Definitions

Designated Person - a NOAA employee assigned the task of coordinating the waste management effort. This role need not be assigned to the Facility Environmental Coordinator, it may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

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

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

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. Note that because a ship is not fixed to a piece of real estate, it cannot be a "site" under the EPA definition and hence it cannot be regulated as a generator. The port facility that accepts a ship's waste becomes the generator for that waste. Some States however, have modified this definition to include ships as generators.

Hazardous Waste - 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.

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.

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

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

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.

Universal Wastes - 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 and lamps.

2.3 Acronyms Employed in this Section

ACM	-	Asbestos-Containing Material
ASC	-	Administrative Service Center
CESQG	-	Conditionally Exempt Small Quantity Generator
CIH	-	Certified Industrial Hygienist
CFR	-	Code of Federal Regulations
COTR	-	Contracting Officer's Technical Representative
CRT	-	Cathode Ray Tube
CWA	-	Clean Water Act
DOT	-	Department of Transportation
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
HIC	-	Hydrologist-in-Charge
HTIS	-	Hazardous Technical Information Service
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
NOAA	-	National Oceanic and Atmospheric Administration
NWS	-	National Weather Service
OIC	-	Official-in-Charge
PCBs	-	Polychlorinated Biphenyls
POTW	-	Publically Owned Treatment Works
ppm	-	parts per million
RCRA	-	Resource Conservation Recovery Act
RECO	-	Regional Environmental Compliance Officer
ROC	-	Radar Operations Center
RSM	-	Regional Safety Manager
SECO	-	Safety/Environmental Coordinator
SR&DC	-	Sterling Research & Development Center
SWDA	-	Solid Waste Disposal Act
TSCA	-	Toxic Substances Control Act

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. In addition to creating their own programs for these areas, some have also created management programs for PCBs, lead-based paint and other hazardous chemicals as well as special regulatory programs for ships.

2.4.3 Local

Many port authorities have established no-discharge zones and other requirements for the discharge of effluent and greywater from ships. These regulations are explained in the NOAA manual "Ship Environmental Compliance Protocol." Additionally, the local Department of Health typically regulates the use of septic systems.

2.4.4 International Agreements

NOAA ships often travel outside the territorial boundaries of the United States and are required to comply with international laws and agreements. For example, the discharge of garbage, plastics, oil, hazardous substances and sewage is regulated by the International Maritime Organization (IMO) and the International Convention for the Prevention of Pollution from Ships (MARPOL). These rules are explained in the NOAA "Ship Environmental Compliance Protocol".

2.5 Contracting/Contractor Considerations

When using a contractor to transport, treat or dispose of a waste, the NOAA 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 NOAA 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), NOAA facilities and work sites shall 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 NOAA and its employees responsible for the mismanagement of NOAA-generated wastes by a contractor, it is important that NOAA facilities and work sites deal with responsible contractors.

Prior to using the services of a contractor, contact the NOAA RECO or NWS Regional Environmental Coordinator 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 NOAA from unexpected liabilities.

Again, the RECO 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 NOAA facility, work site and ship 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 1 is a Waste Survey Form which 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 NOAA facility, work site and ship. Because sewage is normally treated off-site by a municipal treatment plant or on-site using a septic system or shipboard system, the requirements for this review will vary.

2.7.1 Municipal Treatment Plant

For facilities and stations using a municipal sewage treatment facility [also known as a Publicly-Owned Treatment Works (POTW)], the Designated Responsible Official must ensure that no material that could damage the treatment plant or cause a treatment upset is released into the system from the NOAA facility, work site or ship. Contact should be made with the POTW to obtain a list of items which are prohibited from purposeful or accidental discharge. Compile a listing of items used at the NOAA facility, work site or ship that is covered by the prohibition.

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 and Shipboard Systems

For both septic systems and shipboard systems, a list of prohibited items must be prepared. If necessary, contact the Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), if available, and/or the NOAA RECO for assistance. All employees must then be informed about the list of personal care items (i.e., some medications) and other work-related materials (i.e., acids, solvents, radiosonde activation water) which 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, contained 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 PCBs and will be further segregated into "recyclable" and "disposable" material.

2.8.1 Recyclable Solid Waste

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

(1) office paper, magazines, newspapers, cardboard
(2) aluminum cans
(3) glass jars, bottles and other containers
(4) scrap metal
(5) spent toner cartridges

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/ship 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 stormwater system, soil or surface water.

All facility, work site or ship 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) of NOAA Occupational Safety & Health Manual, contaminated reusable sharps and other medical wastes are required to be collected in closeable, puncture-resistant, leakproof, labeled or color-coded containers. These containers must be easily accessible to facility, work site or ship personnel, kept upright during use, routinely replaced, kept closed and placed in secondary containment for disposal. Contact the Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), if available, and/or the NOAA RECO for assistance in locating a contractor. Usually these contractors are required to obtain a license from the State Health or Environmental Department.

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, this individual bears direct legal responsibility for the proper management of these wastes.

2.9.2 Enforcing Agency

Under the Resource Conservation and Recovery Act, 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. The States of Alaska and Iowa have not - nor has Puerto Rico or the other Pacific territories.

As a result, NOAA facilities and/or work sites located in an authorized State or Territory must review and comply with their State's or Territory's regulations. NOAA facilities and/or work sites located in States or Territories that have not received authorization must comply with both EPA *and* the State or Territory regulations.

NOAA facilities located in another country (i.e., in the South Pacific) must comply with that country's environmental regulations. However, as required by the NWS Environmental Compliance Directive (NWSPD 50-51), all NWS facilities in foreign countries must also comply with all applicable U.S. EPA regulations.

As a base line, this procedure will reference EPA regulations which are found in Title 40 of the Code of Federal Regulations (40 CFR) which can be referenced on-line at www.epa.gov or www.gpo.gov. NOAA facilities and work sites must contact State and/or local authorities to determine if and how these rules have been modified for their locality.

2.9.3 Identification of Hazardous Wastes

The hazardous waste identification procedure can become complicated. Contact the Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), if available, and/or the NOAA RECO if assistance is required. A solid, liquid or gas which 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 (http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr261_00.html).

To determine if a discarded material is a hazardous waste:

(1) review 40 CFR 261.4 to determine if it is excluded. If not,

(2) determine if it is a listed hazardous waste and/or

(3) determine if it has any of the characteristics of a hazardous waste.

a. Excluded Wastes

In 40 CFR 261.4, the EPA has identified a number of wastes which are excluded from regulation as hazardous wastes because they are not legally considered "solid wastes". Of these, NOAA facilities or work sites usually only generate sewage. If after reviewing the list there is any question if a waste qualifies as an exempted solid waste, contact the Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), if available, and/or the NOAA RECO for guidance.

b. Listed Hazardous Wastes

If a waste is not excluded from regulation by 40 CFR 261.4, the 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 which are regulated as hazardous waste:

(1) hazardous wastes from non-specific sources
(2) hazardous wastes from specific sources, and
(3) discarded commercial chemical products, off-specification species, container residues and spill residues thereof.

For NOAA 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 NOAA operations or the wastes they generate.

(1) Commercial Chemical Products, Off-specification Species, Container Residues, and Spill Residues thereof.

If the solid waste to be discarded is an:

(a) unused material,
(b) excess material,
(c) a container of material that does not meet the legal definition of "empty," [see 2.9.3 d] or
(d) 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.

(2) 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.

(3) 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.

c. 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).

d. Empty Containers

Empty containers that held hazardous waste are regulated as hazardous unless:

(1) the inner liner is removed;

(2) all wastes have been removed using *common practices*, 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) a compressed gas, the container is returned to atmospheric pressure;

(4) the container 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 NOAA facilities and work sites that are located on a piece of property owned by the Federal Government (but under the control of NOAA), and are separate from other Federal, State and local agencies, the NOAA facility is the "generator." For NOAA 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 NOAA facility is the "generator" of a multi-organization site, NOAA 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 NOAA facility must comply with the policies and programs established by the generator under the terms of the MOU.

Because the EPA identifies generators by "site", a NOAA ship cannot be a "generator" of hazardous waste. When the ship unloads its waste onto land at a port, the port facility becomes the "generator" and is legally responsible for proper management of the ship's waste. To address this, the State of California amended its definition of the term "generator" to include ships. As a result, NOAA vessels that visit California ports are required to comply with the generator standards.

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 NOAA site must determine if it is:

1. a ***Conditionally Exempt Small Quantity Generator*** (CESQG) because it produces less than 100 kilograms (220 pounds) of hazardous waste per month as long as no more than 1 kg (2.2 pounds) is an acute hazardous waste.
2. a ***Small Quantity Generator*** (SQG) because it produces more than 100 kg but less than 1,000 kilograms of waste per month as long as no more than 1 kg (2.2 pounds) is an acute hazardous waste.
3. a ***Generator*** because it produces either 1,000 kilograms (2,200 pounds) or more per month of hazardous waste or 1 kg or more of acutely hazardous waste [wastes which are listed in 40 CFR 261.31, 261.32 or 261.33(e)]. This generator is often called a "Large Quantity Generator" although this is not an EPA term.

Note: A NOAA facility that produces less than 100 kilograms per month which is co-located on a site with another governmental agency or private organization may be regulated as a *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 Conditionally-Exempt Small Quantity Generator

Generators that produce less than 100 kg/mo 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),

Note: If a spill or other non-repeating event or operation causes a conditionally exempt small quantity generator to exceed the 100 kg/mo limitation, a temporary EPA Identification Number can be obtained. Once the unusual event is over, the number can then be rescinded.

(3) can send wastes to 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.

(4) have no special training requirements, however best management practices mandates affected personnel be trained how to properly handle the waste and respond to emergencies

(5) do not have to file an exception nor annual/biennial report,

(6) are limited to 1,000 kg of waste in accumulation but have no time limit,

(7) are not required by the EPA to use a manifest - BUT - best management practice demands 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/mo but less than 1,000 kg/mo must comply with the same requirements as Generators who produce more than 1,000 kg/mo except that:

(1) the personnel training requirements are reduced to proper waste handling and emergency response procedures,

(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 must 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.

c. Generators that produce more than 1,000 kg/mo. 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 which is submitted to the EPA Regional Office.

If assistance is needed, contact the Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), available, and/or the NOAA Regional Environmental Officer (RECO).

(3) Ensure wastes are not stored or accumulated for more than 90-days.

(4) Provide training for facility personnel in their role in the requirements of the hazardous waste management program including the accumulation standards and their response to emergencies.

(5) Prepare a uniform manifest before transporting or allowing transport of any hazardous waste off-site.

(6) Prepare a land disposal notice informing the disposal facility of the components of the waste and the requirements for treatment prior to land disposal

(7) Package all wastes in accordance with the Department of Transportation (DOT) regulations in 49 CFR 173, 178, 179.

(8) Mark and label each package in accordance with DOT regulations in 49 CFR 172.

(9) Ensure the initial transporter has the appropriate placards in accordance with DOT regulations in 49 CFR 172 Subpart F.

(10) Retain each copy of the manifest and land disposal notice for at least three (3) years from date of shipment. (Note: because of the long-term liability of hazardous waste management actions, retention of these documents for longer than 3-years is highly recommended.)

(11) 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).

(12) 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).

(13) Comply with the requirements in 40 CFR 262.50 for shipments of waste outside the United States.

(14) Prepare an annual or biennial report summarizing the total amount of each hazardous waste shipped off-site to each permitted facility (**Note**: the EPA requires this report every two (2) years, while many states require an annual submission). A copy of this report will also be sent to the NOAA RECO.

2.9.7 Storage Requirements

a. Requirements for Conditionally-Exempt Generators

For those NOAA facilities and work sites that generate less than 100 kilograms (220 pounds) per month and accumulate or store less than 1,000 kilograms total, the accumulation is not regulated - BUT - the OSHA HAZCOM Standard and best management practices require appropriate labeling, marking and storage techniques be employed.

b. Requirements for the 100-1,000 kg/mo Generators

For those NOAA facilities who produce between 100 and 1,000 kilograms per month, storage (or accumulation) without a permit is allowed if:

(1) the wastes are shipped off-site in 180-days of generation (this is extended to 270-days if the waste must be shipped over 200 miles),
(2) the requirements of 40 CFR 265.173 for Generators who accumulate in containers are met (see 2.9.7c.) except the 50-foot buffer zone is not required for ignitable wastes,
(3) the requirements of Subpart J of 40 CFR 265 are met if the waste is stored in tanks,
(4) containers are clearly marked with the accumulation date and the words “Hazardous Waste”,
(5) the preparedness and prevention standards in Subpart C of 40 CFR 265 are met,
(6) one employee is on-site or on-call at all times to act as the Emergency Coordinator,
(7) emergency telephone numbers are posted in convenient locations,
(8) employees who handle hazardous waste are trained in proper waste handling protocols,

Table 1
Comparison of Hazardous Waste Generator Requirements for Different Types of Waste Generators

EPA Requirement	Generator	Small Quantity Generator	Conditionally-Exempt Small Quantity Generator
Identify Hazardous Waste	Yes[1]	Yes[1]	Yes[1]
Generation Limits	greater than 1,000 kg/mo (2,200 lb/mo)	more than 100 kg/mo (220 lb) but less than 1,000 kg/mo (2,200 lb)	less than 100 kg/mo (220 lb/mo)
Facility Receiving Waste	RCRA permitted facility	RCRA permitted facility	State approved or RCRA permitted
EPA Identification Number	Required	Required	Not Required[2]
Provide Personnel Training	Yes	Yes	No[3]
Comply with DOT Rules	Yes	Yes	Yes
Provide Department of Transportation Training	Yes	Yes	Yes
Exception Report	Required if over 45-days	Required if over 60-days	No
Biennial Report	Required	Not Required	Not Required
On-Site Accumulation Limits (without permit)	Any quantity	up to 6,000 kg (13,227 lb)	up to 1,000 kg (2200 lb)
Accumulation Time Limits (without permit)	90 days	180 days or 270 days (if transported over 200 mi)	None
Storage requirements	Full compliance with management of containers or tanks	Lesser requirements for containers or tanks	None
Use Manifests	Yes[4]	Yes[4]	No[5]

Notes for Table 1

[1]Authorized State or Territory requirements may be more restrictive than the EPA rules. Check all applicable State and Local rules.

[2]The EPA does not require obtaining an EPA ID Number, however most hazardous waste facilities refuse to take waste unless a generator ID number is provided.

[3]The EPA has no formal training requirement, but best management practices require that personnel are taught how to manage even small quantities of waste and how to respond in an emergency.

[4]Unless the waste is reclaimed under contractual agreement and properly marked and labeled.

[5]Not required by EPA regulation, however best management practices require each shipment of hazardous waste be accompanied by a Manifest.

c. Requirements for Generators who Generate over 1,000 kg/mo

For those NOAA facilities who generate over 1,000 kg/mo or are co-located on a site where the combined generation of the government units is over 1,000 kg/mo, accumulation of the waste is allowed if:

(1) wastes are stored prior to off-site shipment in accordance with the "accumulation" standards in 40 CFR 262.34 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:
  - (1) in good condition
  - (2) non-leaking
  - (3) compatible with the waste
  - (4) kept closed except when adding or removing
  - (5) managed to avoid rupture
  - (6) inspected weekly
- (c) ignitable and reactive wastes are stored compatibly and are at least 50-feet from the property line,
- (d) the containers meet the air emission standards in 40 CFR 264.1086,
- (e) clearly marked with the date accumulation began and the words "Hazardous Waste"

(2) the facility has reviewed and complied with the preparedness and prevention standards in Subpart C of 40 CFR 265 which require:

- (a) maintaining and operating the storage facility to minimize possible hazards of fire, explosion, unplanned release
- (b) securing all necessary emergency equipment

(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 Procedure 25 - Emergency Response Agreements of the NOAA Occupational Health and Safety Manual to ensure proper response in an emergency

(3) the facility has reviewed and complies with the requirements of Subpart D of 40 CFR Part 265 which requires establishment of a Contingency Plan and Emergency Procedures (Note: review Procedure 5 - Emergency Action Plan of the NOAA Occupational Health and Safety Manual for guidance).

(4) the facility has completed a Personnel Training Program on the requirements for accumulating hazardous waste as required by 40 CFR 265.16.

d. Satellite Accumulation

The original EPA hazardous waste regulations required generators to ship all hazardous waste within 90-days of generation. Since the 90-day 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" which 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 1 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, and,

(5) the containers are marked with the words "Hazardous Waste" or words to identify the contents.

When the container is filled, it must be moved to the accumulation area within three (3) days.

2.9.8 Shipping Documents

a. Manifest

1. Requirements

Prior to transporting or allowing transport of a hazardous waste off-site, the generator must prepare a Hazardous Waste Manifest using EPA Form 8700-22 or State-modified equivalent. 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 NOAA facility, the designated person must sign the document and assume the liability that all information is correct.

Although the Manifest was designed by the EPA and DOT, several States have modified the document to require additional information.

2. Choosing the Appropriate Manifest

In choosing the appropriate manifest, first review the requirements of the State where the waste is to be sent. If the receiving State has a State-modified version of the manifest, use that version.

If the receiving State does not have a State-modified manifest but the State where the NOAA facility is located does, use the originating State version. If neither State has a State-modified manifest, use any pre-printed version.

3. Waste Minimization Certification

The manifest includes a generator certification which 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 Facility Environmental Coordinator or other trained personnel designated by the Designated Responsible Official.

4. 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 which 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.

2.9.9 Recordkeeping

Generators must:

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

2.9.10 Annual Reporting (Biennial Report)

A generator who generates over 1,000 kg/mo and ships <u>off-site</u> must submit a <u>Biennial Report</u> on EPA Form 8700-13A to the Regional Administrator no later than March 1 for the preceding odd numbered calendar year.

Many states require the generator to complete an <u>Annual Report</u> 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 Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), (if available) and/or the NOAA RECO for assistance.

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 Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), (if available) and/or the NOAA RECO for review.

2.10 Universal Wastes

"Universal Waste" is a solid waste which 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 , work site's or ship's solid waste or garbage.

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

Contact the Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), if available, and/or the NOAA RECO to determine if the universal waste requirements are applicable in your state.

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

(1) all types of batteries including "button" or "watch" batteries
(2) fluorescent bulbs
(3) mercury-containing thermostats
(4) pesticides

Special Note:	The EPA recently proposed to add "mercury-containing equipment" to the Federal list of universal waste. When finalized, this will add thermometers, barometers, mercury light switches and similar items to the list. Because this rule reduces the hazardous waste management standards for these wastes, once this proposed change is finalized by the EPA, it is effective in an 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.

a. Small Quantity Handlers

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

(1) manage them to prevent leakage or release of electrolytes,

(2) 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.)

(3) mark the date the container first received waste and limit accumulation to 1-year,

(4) train employees,

(5) contain all releases,

(6) ship to a (1) Large Quantity Hazardous Waste Handler (usually a retail store that collects used batteries as a public interest) or (2) a permitted recycling or treatment, storage or disposal facility.

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

b. Large Quantity Handlers

NOAA 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 which 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 3-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." Usually batteries are NOT solid wastes which can be discarded in the trash. Because of their chemical components, most batteries (alkaline, lead acid, lithium hydride, etc.) are either a hazardous waste if it is disposed - or - a universal waste if recycled.

a. Lead Acid Batteries

NOAA 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) an universal waste.

If managed as an exempted hazardous waste, the NOAA facility or work site must perform a hazardous waste determination and follow the US 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. NOAA 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 which 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 NOAA facilities generate used fluorescent bulbs. Because these tubes normally contain enough mercury to fail the toxicity characteristic, 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.

For an example of how to mark these containers, visit:

www.easc.noaa.gov/environ/lampballastweb/lampentrypage_v2.htm

or, if a computer with Microsoft WORD is available, Appendix D to this manual is a freeware software program which allows the user to print the necessary labels and markings. Unfortunately, it cannot be easily converted into WordPerfect.

Spent bulbs destined for recycling should be re-inserted into the protective case that was used to ship the bulbs to the facility and marked "Universal Waste - fluorescent bulb," dated and stored separately from the new bulbs.

To locate a fluorescent tube recycler, consult Attachment B to this section or contact the Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), if available, and/or the NOAA RECO for a list of fluorescent bulb recyclers.

2.10.4 Pesticides

Excess, unused or out-of-date pesticides will be managed as universal wastes if recycled, however, there are few facilities that recycle these materials. If a recycling facility can be located, NOAA facilities and work sites would be required to comply with the appropriate handlers standard (see Paragraph 2.10.1 a or b) and the requirements imposed by the recycler.

2.11 Common Wastes Generated by NOAA Facilities

In performing its mission, NOAA facilities and work sites typically generate several specific wastes. These include:

1. Used oil from the vehicles, back-up diesel generators and maintenance on other equipment
2. Used antifreeze/water mixtures
3. Spent acid and bases
4. Aerosol cans
5 Computers and other electronic equipment
6. PCBs in old fluorescent light ballasts and old transformers taken out of service
7. Asbestos in gaskets, floor tile and adhesives, and insulation
8. Lead-based paints
9. Excess paint and paint solvents
10. Rags

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, NOAA facilities will need to determine if State-specific rules apply by contacting the NOAA RECO.

a. Definition of "Used Oil"

While most of the used oil generated by NOAA 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 or port facility.

b. Rebuttable Presumption

NOAA facilities such as the National Data Buoy Center or the NOAA Office of Marine and Aviation Operations ports in Seattle or Norfolk can generate spent oil

that is contaminated with salt water (i.e. the oily bilge water). Often this waste is subject to a rule called the "rebuttable presumption." Under this rule, the EPA assumes that any used oil which 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 is from the salt in sea water), 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 to be 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

NOAA facilities and work sites that generate used oil shall:

(1) not mix hazardous waste with used oil,

(2) store used oil in tanks or containers which meet the criteria for hazardous waste storage:

(a) containers must be in good condition and not leaking
(b) containers must be marked with the words "Used Oil," (**Note**: Appendix D to this manual is a WORD program which can be used to print the necessary marking.)
(c) aboveground ancillary equipment handling used oil must be marked with the words "Used Oil",
(d) if used oil is released from a container, proper clean-up and reporting are necessary, and
(e) if the total quantity of used oil on-site exceeds 1,320-gallons, a Spill Prevention Control and Countermeasures Plan (SPCC) will be required.

d. Transport

Unlike hazardous waste, NOAA 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 NOAA 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 NOAA RECO 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 NOAA,
(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 Solutions From Vehicles and Other Equipment

Used antifreeze solutions (usually ethylene glycol or propylene glycol and water) are not EPA hazardous wastes. They are not listed wastes nor do they meet any of the four (4) characteristics . Because of the inherent toxicity of these mixtures, most States have decided to regulate these wastes - usually in conjunction with their used oil rules. To determine the requirements for a specific NOAA facility, work site or ship, contact the NOAA RECO.

Typically, the used oil contractor will also take used antifreeze/water solutions.

2.11.3 Spent Acids and Bases

Spent acids such as acetic, hydrochloric or sulfuric and bases like sodium or potassium hydroxide or ammonium hydroxide must be carefully containerized and stored prior to shipment off-site to a treatment facility. Neutralization - with one exception - is legally defined as treatment and cannot be done unless the facility has an EPA or State granted hazardous waste treatment permit. The one exception to the treatment rule is for “elementary neutralization.” In this procedure, the EPA allows the neutralization of an acid or base that is a waste only because it is corrosive (pH below 2.5 or above 12). The acid or base cannot be hazardous for any other reason - meaning it cannot be ignitable as defined in 40 CFR 261.21, be considered reactive as defined in 40 CFR 261.23 nor contain any metals or other contaminants listed on Table 1 in 40 CFR 261.24.

2.11.4 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 can must 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."

If a NOAA 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).

2.11.5 Computers and Other Electronic Equipment

a. Current Status

Computer central processing units (CPUs) and the associated cathode ray tubes (CRTs) or monitors (i.e. e-waste) are composed of various metals, plastics and glass which contain significant amounts of lead. If improperly disposed, these materials can release metals which contaminate groundwater.

To minimize the amount of these items sent to municipal 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:

(1) the CRTs and CPUs are packaged, labeled and stored in accord with a special set of rules (40 CFR 261.39), and

(2) the CRTs and CPUs are recycled.

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 wastes. 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 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.

To help the military determine the current requirements for a specific State, the Hazardous Technical Information Service (HTIS) has created a webpage which identifies State contacts for information on how to manage this waste. The webpage is called "e-waste@HTIS" and is found at:

www.dscr.dla.mil/HTIS/ewaste1.htm.

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 doesn't 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.

The normally leaves 3 options for the disposal of excess solder or electronic equipment containing soldered connections that is not identified as lead-free:

(1) dispose as hazardous waste,
(2) 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,
(3) recycle using a recognized recycler.

c. Current Strategy

To stay in compliance while the EPA and State rules may be changing, do not discard any computers or electronic wastes as solid waste. Donation to a third-party may also be possible, but check with the property manager and/or the NOAA Personal Property handbook. All computer equipment should be excessed through GSA or sent to a recycling facility. If GSA is unable to locate another user, the equipment may have to be disposed as hazardous waste.

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

2.11.6 PCBs

Older NOAA facilities and ships 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 which 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 which would prohibit this disposal option.

b. Transformers

Transformers containing a dielectric fluid which contains 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 it contains PCBs

When taken out of service, PCB transformers:

(1) can be stored for up to 30-days on pallets

(2) 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.)

2.11.7 Asbestos

NOAA facilities and ships 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 the NOAA Occupational Safety and Health manual requires these facilities to be inspected by an accredited inspector or Certified Industrial Hygienist (CIH). If asbestos is suspected to be present in a NOAA facility, the NOAA Regional Environmental Coordinator (RECO) or Regional Safety Manager (RSM) should be contacted.

Where the presence of asbestos is confirmed in a NOAA facility, an Asbestos Control Program is required.

Should work be required to be performed on a non-NOAA facility (i.e. CO-OP housing) that will disturb asbestos siding, either the NOAA 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, removal 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, the NOAA Regional Environmental Compliance Officer (RECO) and the NOAA Regional Safety Manager (RSM) should be consulted. Section 11 of this manual describes the requirements for removing and disposing of ACM.

2.11.8 Lead-Based Paint

NOAA facilities and ships 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. The rule requires sellers, landlords and agents to provide purchasers and tenants with an EPA-approved lead hazard information pamphlet and allows purchasers a 10-day period to inspect the housing unit for lead-based paint.

For NOAA facilities that incorporate housing units, the NOAA RECO should be contacted for assistance in identifying the presence of lead-based paint. If confirmed, a lead-based paint awareness program will be established (in which residents must be notified of where the lead-based paint is located) 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 NOAA RECO should be contacted to determine if lead-based paint is present.

b. Lead-Based Paint on Ships and in Other Facilities

For NOAA facilities other than housing that may contain lead-based paint (LBP), the Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO), or NOAA RECO 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) must be done 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.

Currently, the lead-based paint (LBP) residue is a hazardous waste when disposed. On December 18, 1998, the EPA proposed to allow this waste to be regulated under Title IV of the Toxic Substance Control Act (TSCA) which would allow lessened regulation and control. This proposal has not become final.

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 <u>not</u> 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 a NOAA building, facility or ship 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.

NOAA facilities should contact the NOAA RECO to determine if there are any State modifications to the EPA rules.

2.11.9 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 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 Environmental Coordinator or Safety/Environmental Coordinator (SECO) or NOAA Regional Environmental Coordinator (RECO) 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 Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO) or the NOAA Regional Environmental Compliance Officer (RECO) for assistance in securing the services of a qualified laboratory.

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 Environmental Coordinator or Safety/Environmental Coordinator (SECO) or the NOAA Regional Environmental Compliance Officer (RECO) to determine if the State has any special provisions for excess paint disposal.

2.11.10 Rags

If a rag is used to wipe up or clean off a piece of equipment that was covered with a spent solvent or cleaner that is a hazardous waste, the rag also becomes a hazardous waste.

If sent for disposal, the rag must be managed as a hazardous waste and will be identified with the same EPA hazardous waste number as the spent solvent or cleaner.

If the rags are to be recycled (i.e. washed), many (but not all) of the States have decided to modify this rule. In some States, there is little control required but in some, all the hazardous waste rules apply. Check with the NWS Regional Environmental Coordinator and/or NOAA Regional Environmental Compliance Officer (RECO) to determine the requirements for a specific State.

2.12 Specific Wastes Generated by NOAA Laboratories

a. Excess or Old Reagents

When discarding out-of-date or excess reagents, check the list of Commercial Chemical products listed in 40 CFR 261.33(e) and (f). If the unwanted reagent is listed on one of

these lists, it is assigned the corresponding "U" or "P" Hazardous waste identification number.

There is a very special caution that must be understood when managing any acute hazardous ("P") waste. If the total weight of the acute hazardous waste exceeds 1 kilogram (2.2 pounds) including the weight of the container, the generator must meet all the requirements for a generator who produces more than 1,000 kilograms (2,200 pounds) of hazardous waste per month as detailed in section 2.9.6c and 2.9.7c of this manual even if the generator is considered a "Conditionally Exempt Small Quantity Generator" who actually produces less than 100 kilograms (220 pounds) per month. This requirement includes obtaining a hazardous waste generator number, preparing a formal hazardous waste contingency plan and presenting an employee training program which must remain in effect during the period the acute hazardous waste is present on-site.

b. Empty Reagent Bottles

Empty reagent containers are not considered hazardous waste, however, the container must meet the EPA definition for "empty." When the contents of a container is removed, review the definition of an "empty container" in section 2.9.3d of this manual. Note that if the container is rinsed out, the rinsings are considered a hazardous waste and must be managed properly.

c. Formalin Solutions

Formalin is the common name used to describe the mixture of 37% formaldehyde in water. Because formaldehyde is a listed hazardous waste if discarded (U122) because of its low flash point and toxicity, discarded, unused formalin would be managed as U122 because the formaldehyde is the "sole active ingredient."

When used in the laboratory however, the formalin is usually diluted with 9 parts water to produce a 10% formalin (3.7% formaldehyde) solution which is then used to preserve samples. When this solution is discarded, a different set of rules apply.

Since this diluted formalin is not a "commercial form" of formaldehyde and it has been "used," the U122 identification number is not appropriate. Also, because it has been diluted with water, the 10% solution no longer has a flashpoint below 140°F and hence it cannot be assigned the D001 designation for the ignitability characteristic. When discarded, the diluted formalin is not a "hazardous waste."

However, this solution still has several hazardous properties and it must not be improperly disposed. Because the formaldehyde is biodegradeable if very dilute, best management practices suggest that it be diluted with copious amounts of water and the resulting mixture flushed down the drain - but - consult with the local sewage treatment plant (Publically Owned Treatment Works or POTW) first to determine if a local ordinance would prohibit this action.

d. Spent Solvents

Solvents used in a laboratory normally are hazardous wastes when discarded because they are either listed as a non-specific listed waste (F001, F002, F003, F004 or F005) or they meet the characteristic of ignitability (flashpoint less than 140°F - D001) or toxicity (D004 through D043) due to the materials dissolved in the solvent.

2.13 Specific Wastes Generated by the National Weather Service

a. Rain Gauge Fluids

To minimize evaporation, the NWS normally adds a small amount of mineral oil to an empty rain gauge. In colder temperatures, propylene glycol (antifreeze) is also added to prevent freezing.

The bi-layered liquid cannot be poured onto the ground. It must be collected and properly managed.

Typically, the used oil contractor will take the rain gauge liquid - often requesting it be mixed with the used oil. While this reduces NWS's effort, it can increase disposal costs.

Because the water portion of this waste only contains a small volume of antifreeze, most municipal sewage treatment facilities will readily accept this wastewater (but check before using this disposal procedure).

To separate the layers, use a device with a bottom drain, such as a picnic jug. The container must be clearly marked "Antifreeze/Water" (see Section 4.6.3). 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.

2.14. Specific Wastes Generated by the Office of Marine and Aviation Operations

a. Non-Chlorinated and Chlorinated Solvents

For many years, OMAO used a number of non-chlorinated and chlorinated petroleum hydrocarbon solvents and solvent mixtures that were classified as hazardous wastes by the EPA due to their ignitability (D001) or because they are specifically listed by the EPA in both the unused and spent solvent lists due to their toxicity.

The chlorinated solvents that were used included 1,1,1-trichloroethane (U226), trichloroethylene (U228), tetrachloroethane (or perchloroethane) (U210), methylene chloride (U080), freon (U121). Depending on the identity of the solvent and how it was used, the spent solvents are identified by the EPA as F001 or F002 .

The non-chlorinated petroleum hydrocarbon solvents previously employed included methyl ethyl ketone (MEK) (U159, if unused or F003, if spent), a methyl ethyl ketone/methyl isobutyl ketone (MEK/MIBK) mixture (U159/U161 if unused or F003/F005 if spent) and toluene (U220 if unused or F005 when spent).

These solvents should have been replaced by non-hazardous substitutes. If these solvents are still in use (or storage) at a facility, remove from use and dispose of existing stocks as soon as possible.

b. Blasting Grit

The blasting of ship hulls, valves and other items protected with paints that contain heavy metals (i.e. lead, chromium) may result in production of a hazardous waste.

To ensure proper disposal of this blasting waste, representative samples of the grit and paint chips should be tested.

c. Spent acids

Spent acetic, citric, hydrochloric, sulfuric, and sulfamic acids generated aboard a ship should be containerized and stored for shore disposal if generated within 12 nautical miles (nm) off shore. If beyond the 12 nm limit, the acid should be carefully neutralized and then flushed overboard.

d. Waste water with corrosion inhibitors

Water is used aboard ships for a variety of cooling purposes. The diesel generator, diesel engine, electronics, locked in ballast and fuel ballast cooling water can contain antifreeze, and/or a variety of chemicals used to prevent corrosion of the cooling system. As a general rule, these solutions are to be containerized for shore disposal. Only the residue from the diesel engine coolant test residue which contains copper sulfate, antifreeze or Nalcool 2000 are allowed to be discharged overboard but only if the ship is beyond the 12 nautical mile limit from shore. Otherwise, these fluids must be containerized for shore disposal.

2.15 Responsibilities

2.15.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA Headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

2.15.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall assist field offices or operating units in understanding the requirements of this section and achieving compliance.

c. Shall ensure that procedures are developed at regional headquarters or operating unit facilities to properly manage waste.

d. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

e. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

2.15.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that procedures are developed at NOAA field offices for proper management of all wastes generated.

d. Shall ensure NOAA employees follow the requirements of this section.

e. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

2.15.4 Facility Environmental Coordinator or Environmental/Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

2.15.5 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.

2.16 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.

2.16.1 U.S. Environmental Protection Agency

a. 40 CFR 260 "Hazardous Waste Management System"

b. 40 CFR 261 "Identification and Listing of Hazardous Wastes"

40 CFR 261.4	Exclusions
40 CFR 261.5	Special requirements for hazardous waste generated by conditionally exempt small quantity generators
40 CFR 261.7	Residue of hazardous waste in empty containers
40 CFR 261.9	Requirements for Universal Wastes

c. 40 CFR 262 "Standards Applicable to Generators of Hazardous Waste"

40 CFR 262.11	Hazardous waste determination
40 CFR 262.23	Use of the manifest
40 CFR 262.34	Accumulation time
40 CFR 262.40	Recordkeeping
40 CFR 262.41	Biennial report
40 CFR 262.42	Exception reporting
40 CFR 262.50-.58	Exports of Hazardous Waste

d. 40 CFR 264 "Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities"

40 CFR 264.1086	Air Emission Standards for Containers

e. 40 CFR 265 "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities"

40 CFR 265.16 Personnel Training

40 CFR 265.173 Management of Containers

f. 40 CFR 273 "Standards for Universal Waste Management"

2.16.2 National Weather Service Manual 50-1115, Occupational Safety and Health, Procedure 30 - "Office Safety"

2.16.3 Office of Marine and Aviation Operations, Ship Compliance Protocol

2.16.4 U.S. Department of Transportation

a. 49 CFR 172 Hazardous Materials Table, Special Provisions, "Hazardous Materials Communications, Emergency Response Information and Training Requirements"

b. 49 CFR 173 Shippers - General Requirements for Shipments and Packagings

c. 49 CFR 178 Specifications for Packagings

d. 49 CFR 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 site

   Quantity Generated _____ ☐ per month ☐ per year ☐ one time

3. Waste Description

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

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 _____

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3 TRANSPORTATION OF HAZARDOUS MATERIALS AND WASTE

Synopsis

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 NOAA personnel. The section applies to all NOAA facilities, work sites, ships 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 NOAA 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 NOAA 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 and Section 7.6.14)**
- **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 TSDF Within 45-Days**

Checklist

3 Transportation of Hazardous Materials and Waste	YES	NO	N/A
1. Has the work site identified all the hazardous materials regulated by the U.S. Department of Transportation (DOT) that are transported by NOAA employees? (3.6)	_____	_____	_____
2. Have all NOAA 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 and Section 7.6.14)	_____	_____	_____
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?	_____	_____	_____
5. Have all NOAA employees who load, unload, mark, label, package, prepare or sign the shipping documents for DOT materials received the required DOT HazMat employee training? (3.10 and 17.6.14)	_____	_____	_____

3 TRANSPORTATION OF HAZARDOUS MATERIALS AND WASTE

3.1 Purpose and Scope

National Oceanic and Atmospheric Administration (NOAA) operations utilize many different hazardous materials, both at NOAA facilities and/or at remote locations. Because these materials are transported by NOAA 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 NOAA facilities and personnel and provides specific guidance for typically transported hazardous materials.

3.2 Definitions

Designated Person - a NOAA employee assigned the task of coordinating and reviewing the transportation of hazardous materials to and from a NOAA facility. This role need not be assigned to the Facility Environmental Coordinator, it may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

Labeling - the application of hazard warning labels as prescribed in the Hazardous Materials Table.

Marine Pollutant - a material which is listed in Appendix B to the Hazardous Materials Table.

Marking - 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 related material (ORM) designations, internal packaging and specific requirements for various types of tanks.

n.o.s. description - as defined by the DOT, a shipping description from the Hazardous Materials Table which includes n.o.s.

Placarding - the application of DOT-designed hazard warning sign(s) to the outside of the shipping vehicle.

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
CHEMTEC	-	Chemical Manufacturers Transportation Emergency Center
CONUS	-	Continental United States
COTR	-	Contracting Officer Technical Representative
DCP	-	Data Collection Platform
DOT	-	Department of Transportation
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
ERG	-	Emergency Response Guidebook
FEC	-	Facility Environmental Coordinator
HM	-	Hazardous Material
HMR	-	Hazardous Materials Regulations
HMT	-	Hazardous Materials Table
HMTA	-	Hazardous Materials Transportation Act
HMTUSA	-	Hazardous Materials Transportation Uniform Safety Act
ICAO	-	International Civil Aviation Organization
IMDG	-	International Maritime Dangerous Goods
LARC	-	Limited Access Remote Collector
NOAA	-	National Oceanic & Atmospheric Administration
n.o.s.	-	Not Otherwise Specified
NWS	-	National Weather Service
ORM	-	Other Regulated Material
RCRA	-	Resource Conservation and Recovery Act
RDA	-	Radar Data Acquisition
RECO	-	Regional Environmental Compliance Officer
RQ	-	Reportable Quantity
TSDF	-	Treatment, Storage and Disposal Facility
UN/NA	-	United Nations/North American

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 NOAA

3.5.1 Exemption for Federal Government

The HMTA and HMTUSA applies to "any person" who transports hazardous materials in commerce. The NOAA, as an organization within the Federal Government, is included as a "person" and thereby subject to the HMR. But, the action of "transporting in commerce" does not apply to the NOAA. According to a clarification letter issued by the DOT, "in commerce" means to "further a commercial enterprise" and that enterprise is "in competition with the private sector." The DOT has given the opinion that transportation undertaken by the Government is ***not*** to further a commercial enterprise specifically when it is carried out by government personnel in government vehicles (whether rented, owned or leased) and is intended for a governmental purpose.

3.5.2 How does this affect NOAA?

a. The HMR ***do not*** apply to the transportation of operationally-necessary hazardous materials from NOAA facilities transported in government vehicles, by NOAA employees to NOAA 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 NOAA facility as long as it is undertaken by NOAA personnel using a government vehicle.

c. The HMR ***do apply*** to any entity ***contracted*** by NOAA personnel to transport a hazardous material or waste either to or from a NOAA 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 NOAA 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 NOAA 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 NOAA 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, NOAA facilities ***may*** be able to participate. Before transporting ***any*** waste generated at a NOAA facility or work location, contact the local program officials to determine whether the NOAA 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 NOAA 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 NOAA policy that all NOAA activities including facilities in other than the Continental United States (CONUS) locations assure, to the best of their ability, that contracted transportation services comply with all applicable HMR. Consult with Regional Environmental/Safety Coordinator or the Safety/Environmental Coordinator, if applicable, and/or the NOAA Regional Environmental Compliance Officer (RECO) for additional advice.

3.6 NOAA Implementation

The first task is to assign a Designated Person to coordinate the hazardous materials transportation effort. This role is normally tasked to the Facility Environmental Coordinator, but may be assigned to another NOAA employee. To help coordinate the implementation at NOAA work sites, an inventory must be taken to identify all hazardous materials transported by NOAA 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 *any one else* who performs a packaging, labeling or marking function.

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

But, because the DOT identifies the "offerer," the "transporter" and "others" whose role can affect the transported material, the NOAA 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 NOAA

representative is certifying that the shipment has been prepared in accordance with the DOT rules and as a result, NOAA assumes liability for compliance.

3.6.1 Contract Language

When using a contractor to transport, treat or dispose of a hazardous waste, NOAA does not transfer legal liability for improper management with the physical transfer of the waste. NOAA 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 NOAA 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)

Prior to using the services of a transportation contractor, contact the Regional Environmental Coordinator or the Safety/Environmental Coordinator (SECO) , if applicable, and/or the NOAA Regional Environmental Compliance Officer (RECO) 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?

Also, 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 NOAA 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 (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 which 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 of the HMT at www.access.gpo.gov/nara/cfr/waisidx_01/49cfr172_01.html.

Attachment A to the HMT is the List of Hazardous Substances and Reportable Quantities. The Attachment lists materials and their corresponding reportable quantities (RQs) that are designated as "hazardous substances" by CERCLA. The Attachment 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 NOAA 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.

Prefaced by "Emergency Contact," the number(s) may be applicable to a single item or to all items on the shipping paper. The number may be to a contracted agency/group who can provide the information when needed. NOAA has contracted with the Chemical Manufacturers Association Transportation Emergency Center (CHEMTREC), 24-hour emergency response communication service to provide this information for all NOAA line offices. NOAA facilities shall include the following emergency contact telephone number on all shipping papers describing hazardous materials shipments from NOAA locations: "Emergency Contact: 1-800-424-9300."

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 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 as 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, n.o.s.), the name of the hazardous substance shall 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 packagings - 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 liquified 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 which 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 Hazardous Materials Table. Additional labeling requirements are specified for radioactive materials and multiple hazard materials and packaging.

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 NOAA. Unfortunately, because it cannot be converted to WordPerfect format, users will need to locate a computer with Microsoft WORD.

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.

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 packagings:

(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:

(a) durable
(b) in English
(c) printed or affixed to the surface of a package or a label, tag or sign
(d) displayed on a background of a contrasting color
(e) unobstructed by labels or attachments

(f) 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 overpack 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).

(4a) Mixed Packaging. When hazardous materials having <u>different</u> hazard classes are packed in the same container or overpack, the outside packaging must be labeled for <u>each</u> hazard class of the HM in the container (49 CFR 172.404).

(4b) 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 hazardous material contained therein (49 CFR172.404).

(5) Labels may not be modified unless authorized in 49 CFR 172.405.

(6) Labels must be printed on or affixed to the surface of the package near the proper shipping name (49 CFR 172.406).

(7) DOT labels must meet the criteria listed in 49 CFR 172.407.

(8) The word "toxic" can be used in lieu of the word "poison" on the Poison Label.

(9) 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. Summary of Placarding Requirements

(1) 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.

(2) A hazardous material must be placarded as specified in Tables 1 and 2 of 49 CFR 172.504.

(a) Table 1 - Hazard classes identified on Table 1 are required to be placarded whenever <u>any quantity</u> is transported. While contract haulers normally have the placards for the transport vehicle, NOAA must ensure the correct placard is used.

(b) Table 2 - Hazard classes identified on Table 2 are excepted from placarding requirements when less than 454 kg (1,001 pounds) aggregate gross weight of hazardous material are being transported.

Table 1

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name
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[1]

[1] 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 subchapter.

Table 2

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name

1.4	EXPLOSIVES 1.4
1.5	EXPLOSIVES 1.5
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) 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.

(4) Exception for less than 454 kg (1,001 pounds). When non-bulk packages which contain less than 454 kg (1,001 pounds) aggregate gross weight of hazardous material covered in Table 2 are transported by highway, no placard is required.

(5) Hazardous material placards must be displayed on each end and each side of a motor vehicle or other transport vehicle and be readily visible.

(6) Placarding requirements may vary according to the mode of transport (highway, rail, water, air) and the type of transport vehicle or container.

(7) Hazardous materials which possess a subsidiary hazard as described in 49 CFR 172.505 must apply additional placarding to the vehicle.

(8) Placarding exceptions are specified in 49 CFR 172.504(d)(f).

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 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

The EPA specifies that the manifest contain the following information:

(1) a manifest document number
(2) the name, address, telephone number and EPA identification number of the generator
(3) the name and EPA identification number of each transporter
(4) the name, address and EPA identification number of the designated and the alternate TSDF, if any
(5) the proper shipping name of the waste per DOT regulation (49 CFR 172)
(6) the total quantity of each hazardous waste and the type and number of containers in or on the transport vehicle.

Although the form of the manifest is prescribed, the states are allowed to add information to the form. The state-revised manifest may be required for all intrastate and certain interstate shipments.

To avoid confusion where transport takes place between two states each requiring use of its own version of the uniform manifest, the EPA has established the following protocol:

(1) if both the state receiving the waste and the generator's state from where the shipment of the waste is sent require use of a state-modified uniform manifest, the receiving state version must be used.

(2) if the receiving state does not require use of a state-modified uniform manifest, but the generator's state does, the generator's state-modified uniform manifest must be used.

(3) if neither state requires use of a state-modified version of the uniform manifest, any printed version of the manifest may be used.

In all cases, only one uniform manifest is to be used.

Under the authority of HSWA, the EPA amended the Generator's certification on the uniform manifest to read:

"If I am a large quantity generator, I 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 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, if 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/mo affirm that they have a program of waste minimization "in place." Generators of between 100 and 1,000 kg/mo 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 conditionally-exempt small quantity generators are not legally bound by this statement when signing the manifest, best management practices require they also comply with these conditions.

c. 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 (2) copies apiece for the generator's state agency and the disposer's state agency.

d. 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 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 (3) copies of the

manifest directly to the TSDF. Copies of the manifest are not required for each transporter for these shipments.

States that have their own state-modified uniform manifest may require a slightly different procedure. Before shipping, check with the appropriate regulatory agencies.

e. 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 - Transporting 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 110-gallons in capacity must have the EPA-mandated marking that says:

HAZARDOUS WASTE

Federal Law Prohibits Improper Disposal. If Found,
Contact the nearest police or public safety authority
Or the U.S. Environmental Protection Agency.

Generator's Name and Address _____

_____

Manifest Document Number _____

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.

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 must be maintained by carriers and facility operators who receive, store or handle hazardous materials during transportation. In the event of an emergency incident, the information must be accessible to vehicle operators and facility personnel.

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 excepted 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.

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 or, if the number applies to all materials on the shipping document, it may be entered once in a visible location. If designated by the person offering the shipment, the telephone number may be to another organization which has accepted responsibility for providing the detailed information. NOAA has contracted with CHEMTREC to provide this service. All shipping documents accompanying shipments of hazardous materials from NOAA facilities must reference "Emergency Contact: 1-800-424-9300."

3.10 Hazmat Employee Training

Each "hazmat employer" (NOAA) is required to train "hazmat employees" (NOAA 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 three training requirements that apply to all modes of transportation. The three 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)

Section 17.6.14 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 NOAA personnel who transport or offer to contracted transporters hazardous materials and/or waste from NOAA 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/marking/labeling information by NOAA 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 NOAA 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 Regional Environmental/Safety Coordinator or the Safety/Environmental Coordinator (SECO) if available, and/or the NOAA RECO 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 NOAA 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 Hazardosu 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 which 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 utilized 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 is provided below. Questions concerning state requirements should be addressed to the Regional Environmental/Safety Coordinator or the Safety/Environmental Coordinator (SECO), if applicable, and/or the NOAA Regional Environmental Compliance Officer (RECO).

Waste oils and waste oil mixtures being disposed:

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 Antifreeze (propylene glycol or ethylene glycol)

Antifreeze is used as an additive to rain gauge collection buckets in cold climates to prevent freezing of accumulated precipitation. It is also used in the operation of the emergency backup generators. Propylene glycol is not listed on the DOT hazardous material table and thus is not regulated when transported.

"Used" propylene glycol/water/mineral oil mixtures similarly are not regulated in transportation. Ethylene glycol also is not listed on the HMT. "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. Ethylene glycol is not regulated in transportation. "Used" ethylene glycol similarly is not regulated in transportation.

In regard to disposal, while most states and the EPA do not regulate this as a hazardous waste, some have special programs for used antifreeze. Contact the Regional Environmental Coordinator or the Safety/Environmental Coordinator (SECO, if applicable and/or the NOAA RECO for assistance.

See Section 2.11.2 for a discussion regarding the proper management of antifreeze/water/oil mixtures and antifreeze solutions.

3.11.4 Batteries

The use of batteries as a power source is a common occurrence within NOAA 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 are 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 NOAA 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

	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.

	New	**Used-for disposal**	**Used, to be recycled**
Proper Shipping Name	Lithium Battery	Waste Lithium Battery	Used Battery(ies) (Lithium)
Hazard Class	9	9	N/A
ID Number	UN 3090	UN 3090	N/A
Packaging Group	II	II	N/A
Label	9-Miscellaneous	9-Miscellaneous	N/A
EPA ID Number	N/A	D003	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.

c. Alkaline Batteries

Alkaline batteries are commonly used at NOAA 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."

If the batteries are "dry" (see MSDS)	**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 Regs.	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.

If the batteries are "wet" (see MSDS)	**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.

	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

Utilized at most NOAA offices and/or sites, most fluorescent tubes contain enough mercury to fail for the EPA 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 NOAA RECO 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.

	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

NOAA 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 stored so long so as to be considered "out-of-date," the pesticide is to be managed as an universal waste if recycled. Since there are few facilities which 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 Environmental Coordinator or Safety/Environmental Coordinator (SECO) if available, and/or the NOAA RECO 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 NOAA 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:

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 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 today, 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 Regional Environmental Coordinator or Safety/Environmental Coordinator (SECO) or NOAA RECO 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 Regional Environmental Coordinator or the Safety/Environmental Coordinator (SECO), if applicable, and/or the NOAA RECO to determine applicable requirements.

	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

	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 No.	All that apply as per 6.11.7.a.	All that apply as per 6.11.7.a.
Shipping Document	HW Manifest	HW Manifest

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 NOAA 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 a sampling* 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:

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.")

Label: 3-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.

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: 3-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 NOAA facilities and workstations may still have old stock that will require disposal. The following information is required for disposal of *halogenated solvent* wastes if kept segregated including Perchlorethylene, Trichloroethylene, Trichloroethane and Methylene chloride. Information for 1,1,1-Trichloroethane is provided as an example.

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
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):

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

3.12 Responsibilities

3.12.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA headquarters Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

3.12.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall assist in the investigation and selection of transportation service providers used at workstations to ensure compliance with this section.

c. Shall identify training opportunities to field offices when available.

d. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

e. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

3.12.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that procedures are developed at NOAA field offices for proper labeling, marking and identification of all hazardous material and waste transported by NOAA personnel and contracted service providers.

d. Shall ensure NOAA employees follow the requirements of this section.

e. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

3.12.4 Environmental or Environmental/Safety Focal Point or Designated Person

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

b. Shall determine status of hazardous material/hazardous waste transportation activities at NOAA facilities and workstations.

c. Shall 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

a. 49 CFR Subchapter C	Hazardous Material Regulations
(1) Part 171	"General information, regulations and definitions"
(2) Part 172	"Hazardous Material Tables (HMT), Special Provisions, Hazardous Materials Communications, Emergency Response Information and Training"
(3) Part 172.101	"Purpose and Use of Hazardous Material Table"
(4) Part 172.200-205	"Shipping Papers"

(5) Part 172.300-338 "Marking"

(5) Part 172.400-450 "Labeling"

(6) Part 172.500-560 "Placarding"

(7) Part 172.600-606 "Emergency Response Information"

(8) Part 172.700-704 "Training"

3.13.2 **Environmental Protection Agency**

a. 40 CFR Subchapter I Solid Wastes

(1) Part 261 "Identification and Listing of Hazardous Waste"

(2) Part 262 "Standards Applicable to Generators of Hazardous Waste"

(3) Part 262.20-23 "The Manifest"

(4) Part 262.30-34 "Pre-Transport Requirements"

(5) Part 262.40-44 "Recordkeeping and Reporting"

3.13.3 **Emergency Response Guidebook**

a. Developed jointly by Transport Canada, U.S. Department of Transportation and the Secretariat of Transport and Communications of Mexico.

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4 EMERGENCY REPORTING

Synopsis
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 NOAA facilities and work sites.

Initial Implementation Requirements:

- **Appoint an Emergency Planning Coordinator**
- **Compare Site/Facility Operations with the Requirements of this Section**
  - Determine the reportable quantity for each hazardous substance and extremely hazardous substance used or stored by the facility or work site (4.5.2 and 1.6.3, 1.8.4)
  - Prepare a list of who needs to be notified in the event of a release of a hazardous substance, extremely hazardous substance 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 Extremely Hazardous Substances Used or Stored at the Facility (4.5.1)**
- **Ensure the Reportable Quantity (RQ) of Each is Determined and Noted in the Emergency Response Plan (4.5.1)**

Checklist

4 Emergency Reporting	YES	NO	N/A
1. Has an inventory of each hazardous substance (as listed in 40 CFR 302.4) and extremely hazardous substance (as listed in 40 CFR 355) that is used or stored by the facility or work site been prepared? (See Attachment A)	_____	_____	_____
2. Does the inventory indicate which hazardous substances and extremely hazardous substances are stored in a quantity which exceeds the reportable quantity? (4.5)	_____	_____	_____
3. Has a list describing who is to be notified in the event of a release of a hazardous substance, extremely hazardous substance or petroleum product and the order for notification been prepared? (4.5.2)	_____	_____	_____
4. Have the Emergency Coordinators identified in the facility or work site Emergency Action 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)	_____	_____	_____

4 EMERGENCY REPORTING

4.1 Purpose and Scope

When a hazardous chemical is released to the environment, a series of reports both internal and external to the NOAA are required. This section has been developed to ensure NOAA facilities and workstations make the appropriate reports in a timely manner. This section applies to all NOAA facilities and work sites.

4.2 Definitions

Designated Person - a NOAA employee assigned the task of coordinating the emergency reporting effort. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Environment - 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, ground water, drinking water supply, land surface or subsurface strata or ambient air within the United States or under the jurisdiction of the United States.

Facility - 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.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point.

Hazardous Substance - any substance designated pursuant to 40 CFR Part 302.

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).

Waters of the United States - 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.

Threshold Planning Quantity (TPQ)- the amount of EPA-defined extremely hazardous substance (in 40 CFR 355) that requires notification of the Local Emergency Planning Committee.

4.3 Acronyms Employed in This Section

DRO	-	Designated Responsible Official
EHS	-	Extremely Hazardous Substance
EPA	-	Environmental Protection Agency
EPCRA	-	Emergency Planning and Community Right-to-Know Act
FEC	-	Facility Environmental Coordinator
HS	-	Hazardous Substance
LEPC	-	Local Emergency Planning Committee
NOAA	-	National Oceanic & Atmospheric Administration
NWS	-	National Weather Service
RECO	-	Regional Environmental Compliance Officer
RQ	-	Reportable Quantity
SECO	-	Safety/Environmental Coordinator
SPCC	-	Spill Prevention Control and Countermeasures Plan
TPQ	-	Threshold Planning Quantity

4.4 Regulatory Requirements

4.4.1 Federal

a. Clean Water Act

The Clean Water Act empowered the U.S. Environmental Protection Agency (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, a report must be filed with the National Response Center within 24-hours.

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* which requires the States and local governments to plan for chemical emergencies.

(2) *Emergency Release Notification* which requires notification to the National Response Center in the event of a release of an "extremely hazardous substance.

(3) *Community Right-to-Know* which requires organizations that use or store hazardous substances or extremely hazardous substances to file reports detailing the quantities of these materials on hand.

(4) *The Toxic Release Inventory* which requires operations that manufacture, process or use 10,000 pounds of a toxic chemical listed in 40 CFR 372.65 on an annual basis to file an annual report detailing the amount of the material "released to the environment."

Note: Sending a hazardous waste to a permitted facility is defined as a "release" under this rule.

Of these programs, NOAA 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 it stores or uses a regulated amount (i.e. more than the threshold planning quantity or TPQ) of an extremely hazardous substance

(c) Community Right-to-Know if it is required to file a Tier I or Tier II Report (see Section 1.8.4).

4.4.2 State

Several States have enacted legislation which requires additional reporting requirements for releases. Contact the Regional Environmental Coordinator or the Safety/Environmental Coordinator (SECO), if applicable, and/or the NOAA RECO to determine if additional State or local requirements exist.

4.4.3 NOAA

As required by Procedure 5 - Emergency Action Plan of the NOAA Occupational Safety and Health manual, every NOAA facility and work site must have a written Emergency Action Plan to address employee response to all foreseeable emergencies. For facilities and sites that store petroleum products or hazardous substances, the plan must address the actions to be taken in the event of a release of these materials.

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 a " Reportable Quantity" or 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" within any 24-hour period, the National Response Center (800-424-8802) must be immediately notified, in accordance with Section 4.6, upon discovery.

Special 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 into the environment."

Some examples:

A release of a liquid with a low vapor pressure (like oil) into a containment area/device 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 clean-up is accomplished *would be* reportable.

A release of a fine powder (like a pesticide) into a containment area on a windy day where the reportable quantity could be blown away before clean-up is accomplished *would* also 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 Section 4.6.

The designated RQ varies from 1-pound to 5,000-pounds depending on the material. For example,

(1) for mercury, the RQ is 1 pound
(2) for parathion, the RQ is 10 pounds
(3) For formaldehyde solution, the RQ is 100 pounds
(4) 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 sp.gr is 13.59) while 10-pounds of parathion is about 1 gallon(the sp.gr.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 in accordance with Section 4.6 must be made 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 2 pounds of a mixture containing an unknown concentration of Polychlorinated Biphenyl (PCB) is reportable since it exceeds the PCB reportable quantity of 1 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 NRC must be notified if the release or discharge may violate applicable water quality standards or may cause a film or sheen or discoloration of the surface of the water, or the formation of a 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 25 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 Regional Environmental Coordinator or the Safety Environmental Coordinator (SECO), if available, and/or the NOAA RECO for assistance in determining the existence and content of any State requirements.

4.5.2 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 extremely hazardous substances (EHB) identified in 40 CFR 355 (see Appendix A to this manual), and the EHS is <u>not</u> listed as a hazardous substance (HS) in 40 CFR 302.4, the reportable quantity is the amount of the EHS that has been released <u>off-site</u>. This release requires a report be made to the Community Emergency Coordinator (usually the Fire Department) for the Local Emergency Planning Committee (LEPC). Unfortunately, this change complicates the understanding of the term "reportable quantity" and thus the following examples are included here to help clarify this term.

- ❑ 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.

- ❑ If a chemical is only identified as an extremely hazardous substance in 40 CFR 355, is released to 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.

- ❑ If a chemical is on both lists as a hazardous substance (40 CFR 302.4) and an extremely hazardous substance (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 NOAA facilities or work sites do not handle or manage any of the materials on this list, some of the commercially-available pesticides are listed and hence, a review of this list must be made by the Facility Environmental Coordinator, 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 chlorodane, a common pesticide, for example, is reportable. The list of EHS has also been incorporated into Appendix B of this manual.

In order to facilitate the reporting of releases of hazardous substances and/or extremely hazardous substances, an inventory of hazardous substances and their RQs should be prepared. See Attachment A of this section for examples of materials used by NOAA facilities and work sites.

4.6 Hazardous Substance and Extremely Hazardous Substance Release Reporting

When a hazardous material, petroleum product or extremely hazardous material is released (or suspected to have been 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)
b. Spill contractor (usually designated in the SPCC Plan)
c. the Designated Responsible Official (DRO)
d. the Regional or Operating Unit Environmental Coordinator (if applicable)
e. NOAA Regional Environmental Compliance Officer (RECO) who will call the National Response Center, if required and the State to report the release
f. NOAA HQ Environmental Office.

If the NOAA RECO cannot be contacted within 8-hours of the initiation of the release of a reportable quantity of a hazardous substance, the Regional or Operating Unit Environmental Coordinator (if applicable) or NOAA HQ Environmental Office will be responsible for calling the National Response Center and, if required, the State.

4.7 Posting of Phone Numbers

To ensure all the required contacts and notifications are made, the designated person, Facility Environmental Coordinator or Environmental Focal Point will prepare a list of who needs to be notified and in what order along with the appropriate telephone numbers. The Designated Responsible Official will be provided with a copy of the list which will then be posted in a readily accessible place. The facility/work site Emergency Coordinator(s) identified in the facility/work site Emergency Action 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 - Emergency Action Plan of the NOAA Occupational Safety & Health Manual.

4.8 Responsibilities

4.8.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA Headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

4.8.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

4.8.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that procedures are developed at NOAA field offices for reporting of releases of "hazardous substances" and "extremely hazardous substances" from the facility.

d. Shall ensure the NOAA is represented at meetings of the Local Emergency Planning Committee.

e. Shall ensure NOAA employees follow the requirements of this section.

f. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

4.8.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official 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	"Designation of Hazardous Substances"
40 CFR 355 Appendix A	"The List of Extremely Hazardous Substances and Their Threshold Planning Quantities"

Attachment A

Examples of Hazardous Substances *Potentially* Found at NOAA Sites

Hazardous Substances	302.4 RQ (in pounds)
Acetone	5000
Ammonia	100
Ethylene glycol	5000
Dichloromethane (Methylene Chloride)	1000
Formaldehyde	100
Mercury	1
Methanol	5000
Methyl ethyl Ketone (MEK)	5000
Methyl ethyl Ketone peroxide	10
Sulfuric acid (batteries)	1000
Potassium hydroxide	1000
Lead	10
Asbestos (friable)	1
Xylene	100
Toluene	1000

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5 DRINKING WATER

Synopsis
The purpose of this section is to provide information regarding the procurement and maintenance of the drinking water used at NOAA facilities and work sites. The section applies to all NOAA facilities, work sites, ships 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 (5.5.2)
  - If no, test water for at least nitrate and bacteria (5.5.2a)
  - If yes, perform all testing as required by the Safe Drinking Water Act (5.5.2)
- **Initiate Water Conservation Program** (5.7)
  - Inform NOAA personnel on the necessity and scope of the program.

Recurring and Annual Task Requirements:

- **If Water Comes from a Private 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

Checklist

5 Drinking Water for Land Based Facilities/Work Sites	YES	NO	N/A
1. Does the facility/work site use a well that supplies more than 25 people? (5.5.1)	☐	_____	_____
2. Does the facility/work site use a private well (supplies less than 25 people)? (5.5.2)	_____	_____	_____
3. If a private well, is a test for nitrate and bacteria performed annually? (5.5.2a)	_____	_____	_____
4. If the well is under the control of NOAA:			
a. is it periodically inspected for cracked or broken casing or cap? [5.5.2b(1)(a)]	_____	_____	_____
	_____	_____	_____
b. is the area surrounding the well sloped away from the well head? [5.5.2b(2)]	_____	_____	_____
c. has a sanitary seal been applied to prevent unauthorized use or entry? [5.5.2b(3)])	_____	_____	_____
	_____	_____	_____
d. are records of all well maintenance kept on-site? [5.5.2b(4)]			
e. are chemical mixing activities performed away from the well? [5.5.2b(6)]	_____	_____	_____
f. 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 investigated and implemented? (5.7)	_____	_____	_____

5 Drinking Water for Ships	YES	NO	N/A
1. Does the ship treat the drinking water for more than 25 people for 6 months or more? (5.6.2)	☐	_____	_____
2. Does the ship drinking water system only consist of storage and distribution facilities and does not have any collection and treatment facilities? (5.6.1)	_____	_____	_____
3. Are the potable water hoses used, stored, and marked in accord with NC Instruction 5100.1B? (5.6.1)	_____	_____	_____
a. are the hoses used only for transferring potable water? (5.6.1a)	_____	_____	_____
b. are the hoses properly stored in accordance with section 8-6.12 of NC instruction 5100.1B? (5.6.1a)	_____	_____	_____
c. are the hoses and storage lockers properly marked in accordance with section 8-6.13 of NC Instruction 5100.1B (stenciled in blue letters which read "Potable Water Only") (5.6.1a)	_____	_____	_____
4. Do the potable water filling lines and connections meet the requirements of NC Instruction 5100.1B? (5.6.1a)	_____	_____	_____
a. are the filling lines connected only to potable water tanks as required by NC Instruction 5100.1B? (5.6.1a)	_____	_____	_____
b. are the filling connections fitted with screw cap and keeper chain and configured and marked in accordance with section 8-6.4 of NC Instruction 5100.1B? (5.6.1a)	_____	_____	_____
5. Have the potable water tanks been opened, inspected, cleaned and, if necessary, coated every five years as required by NC Instruction 5100.1B? (5.6.1b)	_____	_____	_____

	YES	NO	N/A
6. If any portion of the potable water system has been contaminated or is opened for inspection, repairs, contents replacement, has it been cleaned, disinfected and flushed before the affected portions are placed back into service?	____	____	____
a. Has disinfection been accomplished in accordance with section 8-6.4 of NC Instruction 5100.1B? (5.6.1b)	____	____	____
7. Are potable water filling lines thoroughly flushed and disinfected before each use? (5.6.1b)	____	____	____
8. Have the US Coast Guard procedures (COMDTPUB 5090.1) been adopted?	____	____	____
a. Are the ship's personnel routinely collecting and monitoring drinking water samples (at least weekly) to ensure a measurable residual of at least 0.2 ppm free available chlorine with a pH value in the range of 6.8 to 7.8 in all parts of the distribution system? (5.6.2)	____	____	____
b. Are ship personnel routinely collecting samples for bacteriological testing (at least 4 samples per month)? (5.6.2)	____	____	____
9. Have the existing inventory of pipe, solder and flux been checked to ensure it is lead free? (5.6.1b)	____	____	____

5 DRINKING WATER

5.1 Purpose and Scope

This section is promulgated to ensure all NOAA personnel are provided clean, pure drinking water at all NOAA facilities and work sites as well as on NOAA ships. The section applies to all NOAA facilities, work sites and ships.

5.2 Definitions

Designated Person - a NOAA employee designated by the Designated Responsible Official who is responsible for ensuring the drinking water at the work site is pure and meets all Federal, State and local regulations. This person need not be the Facility Environmental Coordinator.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, State and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point.

Grey Water - slightly contaminated water resulting from washing/rinsing operations.

Xeriscaping - landscaping technique which minimizes the use of water for irrigation.

5.3 Acronyms

CFR	-	Code of Federal Regulations
EPA	-	Environmental Protection Agency
DRO	-	Designated Responsible Official
FEC	-	Facility Environmental Coordinator
NOAA	-	National Oceanic & Atmospheric Administration
NWS	-	National Weather Service
RECO	-	Regional Environmental Compliance Officer
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 which has created regulations for:

a. Drinking water
b. Standards for public drinking water systems
c. Programs to protect groundwater supplies.

5.5 NOAA Program for Land Based Facilities/Work Sites

5.5.1 Public Water Systems

Land-based NOAA facilities and work sites usually 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 SWDA by setting and enforcing water quality standards. Under this system, the local water authority or system is required to ensure the water it produces meets the EPA drinking water standards. NOAA 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.

Facilities using a private well are not regulated by the EPA.

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 nor the water they produce. Some state and local governments do regulate these wells, however, and thus a check with the local Health Department will be necessary.

If the drinking water for a NOAA 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, NOAA facilities that meet this definition must contact the NOAA Regional Environmental Officer (RECO) for assistance.

a. Water Testing

For NOAA facilities and work sites served by a private well, maintaining the system will include testing of the water annually for nitrate and coliform bacteria 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 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.

Because the states certify water testing labs, a call to the State Certification Officer can quickly provide a list of labs who are approved to perform the testing. A list of State Certification Officers is available on-line at http://www.epa.gov/safewater/faq/sco.html.

If a standard is exceeded, retest immediately and contact the Regional Environmental/Safety Coordinator (if applicable), NOAA RECO and/or the Public Health Department for assistance.

If the problem persists, bottled water shall have to be brought in to keep the facility or work site operational.

b. Well Maintenance

If the water well is under the control of NOAA, 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 NOAA Program for Ships

5.6.1. Smaller Ships

Most NOAA ships only store and distribute drinking water produced by a public water system that is owned or operated by another party and they do not sell water to any party. As a result, the ship is not subject to the SWDA. To ensure the drinking water is kept safe for NOAA personnel, NC Instruction 5100.1B, "Safety Standards for Ships of the NOAA Fleet" and Appendix D of the NOAA Fleet Medical Policy Manual "Handbook on Sanitation of Vessels in Operation" specify the procedures to be used for the marking, stowage and use of filling hoses as well as the configuration of the filling lines and connections to ensure that the drinking water in not contaminated.

a. Hoses, Filling Lines and Connections

The "Safety Standards for Ships of the NOAA Fleet" are specified in NC Instruction 5100.1B and amplified in Appendix D of the NOAA Medical Policy Manual - "Handbook on Sanitation of Vessels in Operation" which

specifies the procedures for the marking, stowage and use of filling hoses and the configuration of filling lines and connections to ensure that the ship's drinking water is not contaminated.

Potable water hoses are to be used only for transferring potable water and should be properly stored. These hoses and their storage lockers should be marked with the words "Potable Water Only." Potable water filling lines are to be connected only to the potable water tanks. The filling connections must be fitted with a screw cap and keeper chain. These must be configured and marked in accordance with Section 8-6.2.2 of the Safety Standards for Ships of the NOAA Fleet.

b. Inspection, Cleaning, Disinfection and Monitoring

The disinfection procedures for the ship's potable water system and potable water filling hoses is detailed in Safety Standards for the Ships of the NOAA Fleet and Appendix D of the NOAA Medical Policy Manual - "Handbook on Sanitation of Vessels in Operation." When opened for repair, inspection, contents replacement or contamination, the affected portion of the system must be disinfected and flushed prior to being placed back in service. The potable water filling lines must be flushed and disinfected in accordance with section 8-6.4.1 of Safety Standards for Ships of the NOAA Fleet.

Only lead free pipe, solder and flux may be used during any repairs made to the potable water system.

5.6.2 Larger Ships

Larger ships that collect and treat water onboard to at least 25 people for 6 months a year are subject to the SDWA and thus the water produced by the treatment system must be sampled and monitored as required by Subpart C of 40 CFR 141.21. A copy of the monitoring results must be reported to the appropriate State agency as well as retained on-site. At a minimum, the system must be routinely monitored (at least on a weekly basis) to maintain a measurable residual of at least 0.2 ppm free available chlorine with a pH between 6.8 and 7.8 in all parts of the distribution system. Additionally, bacteriological testing of the system must be performed using a certified laboratory or, if this is not practical, the membrane (millipore) filter technique.

Again, only lead free pipe, solder and flux may be used during any repairs made to the potable water system.

5.7 Water Conservation

Regardless of whether a NOAA facility, work site or ship obtains drinking water from a municipal water system, an on-site well or an onboard treatment system, the facility, work site or ship 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 everyday, 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 "greywater" 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 all leaky faucets
g. For the land based facilities, the use of "Xeriscaping" to reduce external water use. Xeriscaping is a landscaping program which:

    (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.

5.8 Responsibilities

5.8.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

5.8.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

5.8.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that procedures are developed at NOAA field offices for protecting on-site well water quality.

d. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

5.8.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

b. Shall ensure NOAA facility/work site drinking water is tested annually for at least nitrate and coliform if the water is derived from a private well.

5.8.5 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.

5.9 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.

5.9.1 U.S. Environmental Protection Agency

40 CFR 141 Natural Primary Drinking Water Regulations

5.9.2 U.S. Environmental Protection Agency

"Who is Responsible for Drinking Water Quality?", http://www.epa.gov/safewater/dwh/who.html

5.9.3 Office of Marine and Aviation Operations

NC Instruction 5100.1B, "Safety Standards for Ships of the NOAA Fleet"

5.9.4 NOAA Fleet Medical Policy Manual - Appendix D

"Handbook on Sanitation on Vessels in Operation"

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6 POLLUTION PREVENTION

Synopsis
This section is promulgated to ensure an effective pollution prevention program is created and implemented at all NOAA facilities and work sites.

The section applies to all NOAA facilities and work sites.

Initial Implementation Requirements:

- **Appoint a Pollution Prevention Program Coordinator** (6.7.1a)
- **Compare Site/Facility Operations with the Requirements of this Section**
  - Facility development of P2 Program (6.7)
    - specify facility management and personnel support in policy statement (6.7.1 a)
    - assemble P2 Task Group (6.7.1 b)
      - define program scope and objectives (6.7.1c)
      - determine plan of action/goals/measurable milestones (6.7.1c)
    - Perform P2 Survey (6.7.2)
      - prioritize areas/operations to assess (6.7.2b)
      - choose assessment team - internal personnel, external personnel or both (6.7.2c)
  - Review application of P2 approaches at facility
    - source reduction (6.8.1)
      - ensure all operating practices have been reviewed and if necessary modified to incorporate P2 practices (6.8.1a)
    - inventory control (6.8.1 b)
      - establish an Authorized Use List (AUL) of items necessary and environmentally appropriate for mission performance (6.8.1b.2)
      - ensure purchasing procedures control and/or eliminate wasteful/unnecessary/uncontrolled purchases (6.8.1b)
      - ensure review of government listings and websites providing suggestions for the purchase of environmentally preferable products and services (Section 9 - Procurement)
    - recycling (6.8.2)
      - determine items and/or wastes that may be recycled
      - provide receptacles and designated area for collection of recyclables
  - Ensure all facility personnel are trained in the Facility P2 Program components and their specific role in implementing it

Recurring and Annual Task Requirements:

- **Review and update written Facility P2 Program at least annually**
- **Periodically review AUL for additions/deletions/substitutions (6.8.1b)**
- **Continued investigation into the use of more efficient and less dangerous practices; the use and purchase of less hazardous materials and techniques to control energy (6.8.3) and water use (6.8.4)**

Checklist

6 Pollution Prevention	YES	NO	N/A
1. Has a facility/work site Pollution Prevention (P2) Coordinator been appointed? (6.7.1a)	_____	_____	_____
2. Has the facility/work site assembled a P2 Task Group? (6.7.1b)	_____	_____	_____
3. Has a P2 survey been completed? (6.7.2)	_____	_____	_____
4. Has an "authorized use list" been assembled? (6.8.1b.2)	_____	_____	_____
5. Have purchasing controls/procedures been prepared and implemented to eliminate wasteful/unnecessary purchases? (6.8.1b)	_____	_____	_____
6. Have recycling opportunities been identified? (6.8.2)	_____	_____	_____
a. are recycling centers located to enhance participation? (6.8.2)	_____	_____	_____
7. Have facility personnel been provided instruction on their role and impact on the P2 program?	_____	_____	_____

6 POLLUTION PREVENTION

6.1 Purpose and Scope

While NOAA 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 NOAA facilities or work sites.

6.2 Definitions

Authorized Use List - a list of supplies, especially hazardous materials, approved for purchase after review of environmental, safety and health considerations.

Designated Person - a NOAA employee assigned the task of coordinating the pollution prevention effort. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

Pollution Prevention - the use of materials, processes or practices that reduce or eliminate the creation of pollutants or waste at the source.

6.3 Acronyms Employed in This Section

AUL	-	Authorized Use List
CFR	-	Code of Federal Regulations
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
HM	-	Hazardous Material
HSWA	-	Hazardous & Solid Waste Amendments
HW	-	Hazardous Waste
MSDS	-	Material Safety Data Sheet
NPDES	-	National Pollutant Discharge Elimination System
NWS	-	National Weather Service
PPA	-	Pollution Prevention Act
P2	-	Pollution Prevention
RCRA	-	Resource Conservation and Recovery Act
SARA	-	Superfund Amendments and Reauthorization Act

TSD - Treatment, Storage or Disposal

6.4 Regulatory Requirements

The concept of pollution prevention has evolved from the laws that attempted to regulate hazardous waste. Soon after RCRA was passed, it became obvious that if a waste wasn't created - it didn't 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 were:

6.4.1 The Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) specifies the management of hazardous waste from the process of generation, throughout storage or accumulation and transportation to treatment, storage or disposal (TSD). 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.

6.4.2 The Hazardous and Solid Waste Amendments

The Hazardous and Solid Waste Amendments (HSWA) require 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.

6.4.3 The Pollution Prevention Act

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. Pollution that cannot be prevented or recycled should then be treated in an environmentally-safe manner.

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

A number of executive orders specify Federal responsibilities toward environmental issues and include pollution prevention components.

Executive Order 12843 - Procurement Requirements for Federal Agencies for Ozone-Depleting Substances.

Executive Order 12844 - Federal Use of Alternative Fueled Vehicles.

Executive Order 12845 - Requiring Agencies to Purchase Energy Efficient Computer Equipment.

Executive Order 12856 - Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements.

Executive Order 13101 - Greening the Government Through Waste Prevention, Recycling and Federal Acquisition.

Executive Order 13123 - Greening the Government Through Efficient Energy Management.

Executive Order 13148 - Greening the Government Through Leadership in Environmental Management.

Executive Order 13149 - Greening the Government Through Federal Fleet and Transportation Efficiency.

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."

6.7 Establishment of a Pollution Prevention Program

In order to ensure the success of pollution prevention efforts in the workplace, a formal Pollution Prevention Program will be developed which includes the following factors:

a. Planning and Organization
b. Opportunity Assessment
c. Evaluation of Alternatives
d. Implementation

e. Evaluation of Progress

6.7.1 Planning and Organization

The planning and organization of the program involves three steps: gathering management commitment, setting program goals and organizing an assessment team.

a. Management Support

In order for a Pollution Prevention (P2) Program to work, there must be support from all levels of management. A policy statement will be released by the Designated Responsible Official which demonstrates the management commitment necessary to assure maximum facility support for this effort. The statement will reiterate the scope and objectives of the program, identify the Program Coordinator and inform personnel on the development of the P2 Management Plan. Most importantly, this policy statement will officially recognize the program and request support from all personnel.

Commitment throughout the facility or work site is necessary if a P2 program is to achieve success. Handlers and operational employees who often are involved in the use of chemicals and the generation of waste play a prominent role in the implementation of the P2 program. Bonuses, awards, plaques and other forms of recognition are often used to provide motivation and boost cooperation and participation.

b. Organizing the P2 Committee

One of the duties of the facility P2 Program Coordinator is to assemble a representative group of facility personnel involved in any activity which would influence wasteful practices or pollution generation. This group should consist of employees involved with/in the environmental, worker safety and health, supply, research and development, maintenance as well as any other operations which utilize a hazardous material or produce hazardous waste.

Once assembled, the group will serve to coordinate and brainstorm P2 ideas as well as communicate the program's progress between upper management, middle management and facility personnel.

Initially the P2 group will determine a plan of action and milestones for implementing the program. This group will:

1. designate P2 Coordinators for each operational area
2. prioritize processes/waste streams for assessment
3. select survey team members
4. establish goals using survey information
5. evaluate P2 suggestions

6. approve and implement the selected P2 measures which are demonstrated as feasible and cost-effective
7. establish a schedule for implementing P2 measures
8. identify the man-hours and funds required for the P2 Program
9. monitor, report and track P2 progress and performance.

c. Defining Program Scope and Objectives

One of the first priorities of the P2 Committee is to establish goals that are consistent with the policy statement issued by Management. To define the scope, a determination must be made as to who will be involved, as well as what types of pollution will be minimized under this program.

The defined objectives must be concise and reflect the ultimate outcome of program implementation. While pollution prevention objectives can be broad in direction such as "significantly reduce toxic emissions into the environment," it is often better to establish measurable goals that leave no question of interpretation (i.e. 2004 will reflect a 20 percent reduction in total hazardous material usage in 2003).

Although goals must be reasonable, they do not have to be 100 percent achievable. Numbers should be viewed as guidelines to strive for in order to propel the program and are in no means a direct indication of failure if not achieved.

In general, most P2 programs will have three basic objectives:

1. assess and document current conditions/practices
2. establish short and long-term goals
3. implement P2 measures

6.7.2 P2 Survey

The purpose of the assessment phase is to develop a comprehensive set of P2 initiatives and to identify the options which deserve additional, more detailed analysis. In order to develop these options, a detailed understanding of the facility's processes, operations and waste management practices is required.

The initial P2 survey will examine and document current procedures, HM/HW management practices, identify processes and characterize waste streams. The gathered information will then be analyzed for areas in which P2 measures may be implemented as well as help to establish implementation priorities.

a. Collecting Data

Prior to the actual facility inspection, some background information can be gathered. Waste stream records can provide a characterization of waste streams generated at the facility. Records such as hazardous waste manifests, permit monitoring records (i.e., NPDES and air permits), SARA

Title III reports, Material Safety Data Sheets (MSDSs) and analytical test data can be used. Flow diagrams from a process can be used to provide information and identify sources where materials are used and waste is generated. Additionally, material balances can be used as a source of start-up information for the minimization survey. Material balances represent the amount of material used in the process, the amount of "product" produced and the amount released as waste. Material balances help to identify and quantify losses or emissions. They establish baseline information from which efforts can be measured, as well as develop data needed to estimate the feasibility of equipment modifications or additions. Extra caution is advised in preparing the material balance calculations since they are not easy to perform. Accurate measurement of components is essential in order to avoid large errors.

b. Prioritizing Operations to Assess

Ideally, all operations at a facility should be assessed. However, it may be necessary due to a lack of funds or available personnel to undertake the assessment in a phased manner. An effective approach recommended by EPA is to focus on major usage, waste streams or processes rather than covering the entire facility at once. This course of action requires the setting of priorities. Numerous factors come into play when cataloging the order in which a facility's operation is assessed. Consideration must be given to: compliance with current and future regulations, the cost of management (storage, handling, disposal), potential liability, quantity sent out as waste, hazardous properties of waste and potential recovery of valuable by-products.

c. Choosing an Assessment Team

While the P2 program is concerned with the entire facility, the actual assessment process is focused on an individual operation. Because of this, assessment teams can be established with the task of concentrating on a particular waste stream or particular area of the facility. Each team will include personnel with direct responsibility and knowledge of particular wastes or processes.

Assessments can also be conducted by an independent group or consultant from outside the facility. An outside assessment team can bring in an objective viewpoint and a wide variety of experiences and expertise (especially in the area of current preventive technologies). Examples of where to find off-site teams include your State Pollution Prevention Program and A/E Contractors.

Another option is to gather an internal rotating team of personnel from throughout the facility. This process allows personnel from various areas to observe and make recommendations on other operations. This group is already familiar with the general operations and understand the current management structure.

The facility may wish to combine the last two options to form an internal team with one or two off-site representatives. This type of group retains both familiarity and objectivity during the assessment.

d. The Assessment

After the team has been organized and the specific waste stream or area selected, the assessment process gets underway. If the assessment team consists of individuals from off-site, a formal site tour may be helpful to familiarize the group.

6.8 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 effecting 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.

6.8.1 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 give 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 environmental, safety and health concerns. 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 HM used on-site 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 "Authorized Use List" (AUL) identifying only those items that are to be used and brought on-site.

3. A person "assigned" to the purchasing of HM 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. Information regarding material substitution can be found by contacting the Hazardous Technical Information Service (HTIS) at 800-848-4847. 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.

6.8.2 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.

6.8.3 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.

6.8.4 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.

6.9 Responsibilities

6.9.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

6.9.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

6.9.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

6.9.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

6.9.5 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 Environmental Focal Point.

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7 WATER DISCHARGE

Synopsis
This section is promulgated to ensure NOAA facilities/work sites and ships comply with the National Pollutant Discharge Elimination System (NPDES)and international agreements with regard to discharges of water used by the facility/work site or ship.

The section applies to all NOAA facilities, work sites and ships that discharge water, sewage and/or industrial type wastewater or perform exterior renovations that may affect storm water quality.

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 (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)
    - 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)

Recurring and Annual Task Requirements:

- **If Facility has NPDES Discharge or Storm Water Permit**
  - **Review Conditions to Ensure Compliance**
    - **perform testing as required**

Checklist

7 Water Discharge	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 a NPDES permit?	_____	_____	____
a. If yes, are procedures in place to assure compliance with the conditions of the permit? (7.5.2)	_____	_____	____
3. Does the facility or work site discharge to a Publicly-owned treatment works?	_____	_____	____
a. If yes, does this discharge require a POTW-issued permit? (7.5.4)	_____	_____	____
b. Are procedures in place to assure compliance with the conditions of this permit? (7.5.4)	_____	_____	____
4. Does the facility or work site discharge sewage to a Septic System? (7.6)	_____	_____	____
a. If yes, have NOAA employees been advised concerning the limitations of the system? (7.6.2)	_____	_____	____
5. Does the facility or work site have a storm water discharge permit? (7.7)	_____	_____	____
a. Do NOAA personnel perform construction industrial or maintenance activities that could result in discharge of contaminated storm water? (7.7.2)	_____	_____	____
b. Are facility/work site employees prohibited from automobile maintenance activities in facility/work site parking lots? (7.7.3)	_____	_____	____

7 WATER DISCHARGE

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 within the United States by a program created by the Environmental Protection Agency (EPA) called the National Pollutant Discharge Elimination System (NPDES). For discharge of wastewater from a ship, Federal, State, local and/or international agreements may dictate what, where and how this discharge may occur.

Whether wastewater flows into a sewer, septic system or is directly discharged into a body of receiving water, it usually is subject to some level of regulation depending on a number of factors.

This section is designed to provide NOAA employees guidance to ensure compliance with the provisions of the NPDES Program and, where necessary, the international requirements.

The section applies to all NOAA facilities and work sites that discharge water directly to the waters of the U.S., international waters, a publicly-owned treatment works or a septic system. It also applies to all NOAA facilities that discharge collected precipitation to a storm water drainage system (i.e. use storm drains).

7.2 Definitions

Designated Person - a NOAA employee assigned the task of coordinating the water discharge program. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) - the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

MARPOL - a commonly used term used to denote the international regulations promulgated by the International Maritime Organization (IMO). Annexes I and II deal with the Discharge of Oil and Hazardous Substances into the ocean, and Annex V deals with the Discharge of Garbage and Plastics at sea. Although the United States has not yet

adopted Annex IV which deals with the Discharge of Sewage, US vessels are subject to parallel requirements promulgated by the Coast Guard under 33 CFR 159.

Point Source - 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.

Pollutants - 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.

Publicly-Owned Treatment Works - the local sewage treatment plant.

7.3 Acronyms Employed in This Section

DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
MARPOL	-	Maritime Pollution (International Convention for the Prevention of Pollution from Ships)
MSD	-	Marine Sanitation Device
MS4	-	Municipal Separate Storm Sewer System
NPDES	-	National Pollutant Discharge Elimination System
POTW	-	Publically-Owned Treatment Works
RECO	-	Regional Environmental Compliance Officer
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 Water Quality Act (WQA) in 1987 and 1989, the EPA has created a regulatory program called the National Pollutant Discharge Elimination System (NPDES). Using this program, the EPA created a permit system for controlling the discharge of water back to the environment. In addition, to control the pollution of the waters surrounding the United States (US), the US Coast Guard has also created a set of regulations which control the discharge from ships within preset distances from the shores of the US.

7.4.2 State /Local Programs

Most of the States have EPA-authorized programs to manage the NPDES within the State. NOAA facilities and work sites will need to check with the Regional Environmental Coordinator or the Safety/Environmental Coordinator (SECO), if applicable, and/or the NOAA Regional Environmental Compliance Officer to determine State requirements. In addition, many States that border navigable water have enacted regulations governing the discharge of pollutants into the water within their jurisdiction. Some ports have also created a "no discharge zone" and other port-specific restrictions. Contact the RECO and/or Regional Environmental Coordinator or SECO for assistance in determining the applicable 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.

A ***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. intrastate lakes, rivers and streams which are:

(1) used by interstate travelers for recreation and other purposes;
(2) sources of fish or shellfish sold in interstate commerce; or
(3) utilized for industrial purposes by agencies engaged in interstate commerce.

7.5.1 Possible NOAA Point Sources

Within a NOAA facility or work site, there may be several "point sources" that discharge "pollutants," hence the need to review how they are regulated.

Some typical point source discharges at NOAA land-based 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.

Some typical point source discharges from ships include:

a. sewage and graywater
b. ballast water
c. solid waste and garbage
d. oil and oily wastes
e. runoff from hull, deck and superstructure produced during cleaning and maintenance
f. boiler blowdown water

While discharges of sewage, industrial wastes and other pollutants into a public-owned treatment works (POTW) (i.e. local sewage treatment plant) by both land-based facilities and ships 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 antifreeze-water mixtures, clean-up solvents, spent formalin or flushes of spills of corrosive materials.

7.5.2 NPDES Discharge Permits for Land-Based NOAA Facilities

Most land-based NOAA 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 NOAA 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 Regional Environmental/Safety Coordinator (if applicable)and the NOAA

Regional Environmental Compliance Officer (RECO) must be contacted to determine if a permit is required and if so, advice on how to prepare the permit application.

NOAA 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 a 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 time period (not to exceed five years) with a requirement that the facility reapply 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;
e. facilities that require the same effluent limits, operating conditions, or standards for sewage sludge use or disposal; and
f. 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. NOAA facilities or work sites may be part of a general permit which is granted to an airport, university campus or other multiple agency site or facility where the NOAA facility or work site is one of many operations on the site. If a general permit is granted to a site on which a NOAA facility or work site is located, the conditions of the permit are binding on all organizations involved - including NOAA.

. Major Components of a Permit

All NPDES permits, at a minimum, consist of five general sections:

(1) *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.

(2) *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.

(3) *Monitoring and Reporting Requirements* - Used to characterize waste streams and receiving waters, evaluate wastewater treatment efficiency and determine compliance with permit conditions.

(4) *Special Conditions* - Conditions developed to supplement effluent limit guidelines. Examples include: best management practices (BMPs), additional monitoring activities, ambient stream surveys, and toxicity reduction evaluations (TREs).

(5) *Standard Conditions* - Preestablished 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).

b. 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.

(1) 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:

(a) Receive application from permittee.

(b) Review application for completeness and accuracy.

(c) Request additional information as necessary.

(d) Develop technology-based effluent limits using application data and other sources.

(e) Develop water quality-based effluent limits using application data and other sources.

(f) 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.

(g) Develop monitoring requirements for each pollutant.

(h) Develop special conditions.

(i) Develop standard conditions.

(j) Consider variances and other applicable regulations.

(k) 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.

(l) Complete the review and issuance process.

(m) Issue the final permit.

(n) 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.

(2) 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:

(a) Are there a large number of facilities to be covered?

(b) Do the facilities have similar production processes or activities?

(c) Do the facilities generate similar pollutants?

(d) 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.

(3) Who grants a NPDES to a NOAA 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:

(a) Permitting of Federal facilities;
(b) Administering the National Pretreatment Program; and/or
(c) Administering the Municipal Sewage Sludge Program.

If the State, Territory or Tribe has been granted only partial authority (e.g., only the base NPDES permit 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 NOAA 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 NOAA Facilities

a. Industrial Wastewater Treatment/Pretreatment Permits

For certain industrial processes, the EPA requires the wastewater that results from the process to be pretreated prior to discharge to a POTW. If a NOAA facility or work site 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 pretreat 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 NOAA Facilities

Sometimes, NOAA facilities and ships that discharge to a publicly-owned treatment works (POTW) are required by the POTW to apply for, obtain and maintain a special permit to discharge to the POTW. For example, the discharge of the water from the activation of the radiosonde batteries or the spent formalin solution may require such a permit or permission. Often these are simply a letter of acknowledgement in which the POTW grants permission to discharge a special wastewater if the NOAA facility, work site or ship 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 NOAA 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 hasn't occurred which could contaminate the groundwater.

Most NOAA 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 NOAA Discharges to Septic Systems

Some NOAA 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 and allows the solids to biologically degrade into water soluble products which then flow by gravity into the leach field with the liquid wastes and then are 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 www.epa.gov/seahome/decent.htm.

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 (i.e. the Health Department) prior to 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 a high clay content which would reduce or prevent water flow.

Some NOAA 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 NOAA 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 NOAA 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. Also, construction activity can remove vegetation which 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 which 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 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 NWS National Data Buoy Center (NDBC) faced possible regulation under the Storm water Permit Program. Under Phase I, the National Aeronautical and Space Administration (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 Municipal Separate Storm Sewer Systems (or 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 NOAA facilities and work sites will not require a storm water permit.

Large NOAA facilities or those located at a larger site such as a university campus will be regulated, however, and will be required to manage their storm water as required by the host.

While the Phase I rules required a storm water 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 storm water 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 Storm Water Program is usually a State-managed effort which allows the States great latitude in which activities it chooses to regulate. As a State becomes more confident with their efforts in this program, other NOAA facilities could become targeted for regulation.

7.7.3 NOAA Facility/Work Site Program

In addition to ensuring the storm water Phase II rules are followed for construction activity, Designated Responsible Officials must enact and enforce local policies that prohibit activities that can create violations of these rules. For example, one NOAA RECO requests that employees 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 Discharge at Sea

The requirements for managing wastes while on a ship at sea are significantly different from those for land-based facilities. As a result, NOAA personnel serving on these vessels and the visiting NOAA scientific personnel must be informed of what they can and cannot do while on the vessel.

7.8.1 Sewage Discharge Standards

Discharge of sewage within 3 nautical miles of land is not allowed unless the sewage is treated using an approved Marine Sanitation Device (MSD). While Type I MSD's are allowed if they were installed prior to January 31, 1978, when replacement is required, an approved Type II or III MSD must be used. Section 9-3-1 of Safety Standards for Ships of the NOAA Fleet details the requirements for MSDs.

7.8.2 Graywater Discharge

To minimize the amount of water to be treated, good marine practice requires that graywater must be segregated from sewage to the maximum amount possible.

Except in certain port areas where State or local requirements have established "no discharge" zones, graywater can usually be discharged overboard without treatment

7.8.3 Discharge to a POTW

NOAA ships cannot discharge any pollutant to a POTW that would cause an interference with the treatment process or a violation of the permit standards for the POTW. Normally this includes pollutants that create a fire or explosion hazard, cause corrosive structural damage, have a pH below 5.0 or are solid enough to cause physical blockage in the sewer pipes. If a vessel inadvertently discharges anything that could cause a problem, the treatment works must be notified immediately.

7.8.4 Ballast Water Discharge

The discharge of ballast water is subject to controls by the International Maritime Organization (IMO), the U.S. Coast Guard (USCG) and the U.S. Navy.

The Marine Environmental Protection Committee of the (IMO) has developed "Guidelines for Preventing the Introduction of Unwanted Aquatic Organisms and Pathogens from Ship's Ballast Water and Sediment Discharges" (IMO 1993). These guidelines recommend ballast exchange in at least 2000-feet of water (deep ocean) prior to entering a port to remove non-indigenous organisms picked up in ballast water at a previously visited port. The Coast Guard also requires deep ocean ballast water exchange for all vessels entering the Great Lakes and upper Hudson River. Both the Coast Guard and the Navy have adopted the practice of exchanging ballast water outside the 12 nautical mile limit prior to entering a U.S. port upon return from a foreign port. As a good marine practice, NOAA vessels should also follow this practice.

7.8.5 Garbage and Solid Waste

The Ocean Dumping Act prohibits the transportation of material from the United States for the purpose of dumping it into the sea. The law does not apply to the discharge of wastes generated onboard a ship while it is underway. Trash, garbage or food wastes cannot be disposed overboard within 3 miles of land. No trash, garbage, food wastes or incinerator ash can be disposed overboard when the ship is between 3 and 12 nautical miles of the nearest land unless the waste is ground and can pass through a screen with a mesh opening of 25 millimeters. Dunnage, lining or packing materials cannot be disposed within 25 nautical miles of land. All nondegradable materials must be punctured (holed) and weighted to assure immediate sinking. Plastics cannot be discharged. The dumping of medical wastes in peacetime is strictly prohibited - except under emergency conditions.

7.9 Responsibilities

7.9.1 NOAA Headquarters (NOAA)

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

7.9.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

c. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

7.9.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that procedures are developed at NOAA field offices for managing and monitoring, if necessary, all discharges of water and storm water from the facility.

d. Shall ensure NOAA employees follow the requirements of this section.

e. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

7.9.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official 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

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.

7.10.1 **U.S. Environmental Protection Agency**

a. "Water Permitting 101," http://www.epa.gov/npdes/pubs/101pape.htm.

(1) 40 CFR 122.28 "General permits"

(2) 40 CFR 124 "Procedures for Decisionmaking"

(3) 40 CFR Subchapter N - "Effluent Guidelines and Standards"

(4) 40 CFR 503 "Standards for the Use or Disposal of Sewage Sludge"

7.10.2 **Office of Marine and Aviation Operations**

a. Ship Environmental Compliance Protocol

b. Environmental Compliance & Guidance Manual

c. NOAA Fleet Medical Policy Manual "Handbook on Sanitation of Vessels in Operation"

7.10.3 **U.S. Coast Guard**

a. 33 CFR 151 - "Vessels Carrying Oil, Noxious Liquid Substances, Garbage, Municipal or Commercial Waste, and Ballast Water"

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8 AIR

Synopsis
This section is promulgated to ensure NOAA facilities, work sites and ships comply with the State Implementation Plans with regard to the discharge of air pollutants by the operation of the facility, work site or ship.

The section applies to all NOAA facilities, work sites and vessels that release pollutants to the air through stationary or mobile sources.

Initial Implementation Requirements:

- **Appoint a Program Coordinator**
- **Compare Site/Facility Operations with the Requirements of this Section**
  - Determine if a State Air Emission Permit is required for the emissions from fixed sources like the heating system exhaust, laboratory fume hoods, gas turbines, medical or other incinerator, printing presses and graphic arts, emergency diesel engine (8.5.1a)
  - If so, determine if the permit has been obtained and if it is current
  - Ensure requirements of the permit are enforced at the facility/workstation
  - Ensure CFC equipment repair is performed by EPA-certified technicians (8.6.1a)
  - Perform radon testing if the facility or workstation is located in a Zone 1 area on the EPA map of radon zones (8.7.1)
  - If radon is detected at a level exceeding 4 pCi/L, perform radon reduction sealing (8.7.2)

Recurring and Annual Task Requirements:

- **Ensure Generator is Properly Maintained**
- **If Radon Reduction Program is Enacted, Periodically Test to Determine Effectiveness**

Checklist

8 Air	YES	NO	N/A
1. Has a Designated Person been appointed? (8.5.1a)	_____	_____	_____
2. Does the facility or work site have any stationary sources of emissions to the environment? (8.5.1)	_____	_____	_____
3. Does the State require the source(s) to have a Clean Air Permit for the emissions? (8.5.1a)	☐	_____	_____
4. If so, has the facility, work site or vessel obtained the necessary permit? (8.5.1a)	_____	☐	_____
- Is it accessible?	_____	_____	_____
- Has the equipment generating the emissions been maintained as required by the permit?	_____	_____	_____
5. Do NOAA employees repair CFC-containing equipment?	_____	_____	_____
- If yes, are these employees certified by the EPA? (8.6.1a)	_____	_____	_____
6. Is the facility or work site located in a Zone 1 area on the EPA map of radon zones? (8.7.1)	_____	_____	_____
- If yes, has a radon test been performed? (8.7.1)	_____	_____	_____

8 AIR

8.1 Purpose and Scope

This section has been promulgated to ensure that in performing their mission, NOAA facilities, work sites and ships do not degrade the air in the area surrounding the site and, as a result, the section applies to all NOAA facilities, work sites and ships.

8.2 Definitions

Designated Person - a NOAA employee assigned the task of coordinating the air emission effort. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

Picocurie - a unit of measure used to describe certain types of nuclear radiation. A curie is the amount of any radionuclide that undergoes exactly 3.7×10^{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.

8.3 Acronyms Employed in This Section

CFCs	-	Chlorofluorohydrocarbons
EPA	-	Environmental Protection Agency
NWS	-	National Weather Service
pCi/L	-	Picocuries per liter
RECO	-	Regional Environmental Compliance Officer
SIP	-	State Implementation Plan

8.4 Regulatory Requirements

8.4.1 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 Oceanic and Atmospheric administration sources of air pollutants include: the exhaust of laboratory fume hoods; gas turbines; medical and other incinerators; printing presses and other graphic arts applications; diesel emergency generators; exhausts of ships, cars, vans and trucks; gasoline-powered machinery or tools; and the facility heating and ventilation equipment.

Sources that remain in one location (e.g. the heating system) are deemed stationary sources while those that move around are called mobile sources (i.e. ships, cars and vans).

To prevent air quality degradation, each State under its State Implementation Plan, will grant a permit to the larger sources of air pollutants whether they be stationary or mobile. 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 which 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.

a. NOAA Application

NOAA facilities, work sites and ships that have a stationary emission source like the heating system, a fume hood or a diesel-fueled engine (the ship's engine or the back-up emergency generator) may be required to obtain a State or local government-granted air emission permit.

To ensure compliance, the Designated Responsible Official will designate a NOAA employee as the Air Program Coordinator. This individual must contact the Regional Environmental Coordinator or the Safety/Environmental Coordinator, if applicable, and/or the NOAA RECO to determine:

(1) is a State permit required for the stationary source(s),
(2) if so, has a State permit been obtained and is it current,
(3) if so, where is it located, and
(4) 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.

a. NOAA Application

NOAA facilities, work sites and ships 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 13149, NOAA will consider the acquisition of fuel efficient and/or alternative fueled vehicles.

8.6 Ozone-Depleting Substances

After May 1993, consumer products containing chlorofluorohydrocarbons (CFCs) were required to have a label that reads:

WARNING: Contains or manufactured with (name of chemical), a substance which harms public health and the environment by destroying ozone in the upper atmosphere.

Products that contain chemicals that are listed in the Clean Air Act of 1990 as less destructive (or Class II chemicals) must have this label affixed after 2015.

Executive Order 13148 requires the prohibition from the procurement and use by Federal Agencies of products containing a Class I ozone-depleting substance by December 31, 2010. Class I ozone-depleting substances include halons, chlorofluorocarbons, carbon tetrachloride and methylchloroform as identified by the EPA.

8.6.1 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."

a. NOAA Application

No NOAA employee should attempt to repair or service any equipment containing a CFC unless certified by the EPA for this work. Contractors employed by the NOAA must be able to provide documentation or certification that their technicians are EPA-certified.

8.6.2 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.

8.7 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 NOAA facility and hence has been included in this section.

8.7.1 Radon Zones

To help identify areas with high radon potential, the U.S. 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 http://www.epa.gov/iaq/radon/zonemap.html.

Using this map, the Environmental Focal Point or Air Program Coordinator can estimate the potential need to perform radon sampling at a NOAA 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 be scheduled according to the following priority scheme:

Radon Levels (pCi/L)	Action
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.

8.7.2 Remedial Action

Should a radon level in excess of 4pCi/L be detected in a NOAA 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" which 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 http://www.epa.gov/iaq/radon/pubs/consguid.html offers several suggestions and techniques. Although aimed at the homeowner, the information provided can be used by NOAA facilities and work sites.

Once remedial work is complete, retest on an annual basis to ensure the effectiveness of the effort.

8.8 Responsibilities

8.8.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

8.8.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

8.8.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. May consider testing NOAA 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. Shall ensure NOAA employees follow the requirements of this section.

e. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

8.8.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official 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

a. "Map of Radon Zones," http://www.epa.gov/iaq/radon/zonemap.html

b. "Consumer's Guide to Radon Reduction," http://www.epa.gov/iaq/radon/pubs/consguid.html

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9 PROCUREMENT

Synopsis

The purpose of this section is to provide guidelines for NOAA supervisors and employees who purchase goods and services required for the operation of the facility or workstation. The section applies to all NOAA facilities, work sites and employees and NOAA contractors who work on NOAA sites.

Initial Implementation Requirements:

- **Determine Which Items Purchased Are Listed in the EPA Comprehensive Procurement Guidelines List (9.6 and Attachment A)**
  - Ensure products purchased meet the comprehensive procurement guidelines (CPG) (9.6)
  - Inform all affected NOAA employees of the requirements and reasons for the program

Recurring and Annual Task Requirements:

- **Ensure All Purchases Comply with the CPG (9.6)**

Checklist

9 Procurement	YES	NO	N/A
1. Has a Designated Person been appointed?	_____	_____	_____
2. Does the facility, work site or ship have an established policy requiring employees to review the General Service Administration's Catalog of Comprehensive Procurement Guidelines Compliant Products or the Defense Logistic Agency's Environmental Products Catalog before purchasing any item? (9.6)	_____	_____	_____

9 PROCUREMENT

9.1 Purpose and Scope

In performing its mission, the National Oceanic and Atmospheric Administration (NOAA) 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 (i.e. paint, fluorescent bulbs, services contracted to apply pesticides, various types of oil and lubricants, etc.), NOAA operations must consider more than just "cost" when procuring items, materials and services to support NOAA mission functions. This section describes the basis and purchasing guidelines applicable to all NOAA facilities and work sites.

9.2 Definitions

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.

Designated Person - a NOAA employee designated by the Facility 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.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

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

Recovered Materials Advisory Notices (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.

9.3 Acronyms Employed in this Section

CPG	-	Comprehensive Procurement Guidelines
DLA	-	Defense Logistics Agency
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
FEE	-	Federal Environmental Executive
FSS	-	Federal Supply Service
GSA	-	General Services Administration
NOAA	-	National Oceanic and Atmospheric Administration
NWS	-	National Weather Service
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 Resource Conservation and Recovery Act (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 Guideline (CPG) Program was developed by the Environmental Protection Agency (EPA). RCRA defines criteria that are to be considered when designating items as being produced with recovered materials. Consideration is to be given to:

a. the availability of such items
b. the impact of the procurement of such 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.

Once 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.

9.5 Executive Orders

9.5.1 Executive Order 12873 - Federal Acquisition, Recycling and Waste Prevention

The President, in signing this order, directed Federal agencies to implement acquisition programs aimed at encouraging new technologies and building markets for environmentally preferable and recycled products. All agencies are directed to review and revise their specifications, product descriptions and standards to foster this change. Agencies will also set goals for waste prevention and acquisition of recycled products.

This order was superceded by the following order.

9.5.2 Executive Order 13101 - Greening the Government Through Waste Prevention, Recycling and Federal Acquisition

Signed on September 14, 1998, this Executive Order puts more teeth into the concepts introduced in Executive Order 12873. It asks executive agencies to work to increase and expand markets for recovered materials through greater Federal Government preference and demand for such products. The Order imposes an implementation strategy that will hold Federal Agencies increasingly accountable for what they buy. The order requires the agencies to set recycling goals, creates a steering committee to oversee implementation and currently mandates the purchase of printing and writing paper with a minimum recycled content.

The order requires each agency to make an annual report to the Federal Environmental Executive (FEE) about their compliance status with this order. To ensure compliance, the order further directs the EPA to also report to the FEE the results of its inspections of the agencies. The FEE is then required to prepare a biennial report to the President on the progress under this order.

9.6 Comprehensive Procurement Guidelines

The Comprehensive Procurement Guideline 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. In 1995, the EPA issued the first CPG which covered EPA's original five (5) procurement guidelines and added 19 products. As required by Executive Order 13101, the EPA is required to promulgate amendments to the CPG every two (2) years. The first update to the CPG (CPG II) in 1997 designated 12 additional items and the second update (CPG III) in 2000 designated 18 items. See

Attachment A for a listing of designated items by category. The EPA's website on the Comprehensive Procurement Guidelines (CPG) contains a description for each product listed as well as EPA's recommended recycled-content ranges, manufacturers, vendors and suppliers for each item. The General Services Administration (GSA) has prepared a catalog of CPG Compliant Products. See 9.9, Additional Resources, for a website reference.

As technology and market conditions change, new items and/or increases in the levels of recovered materials content become available, the EPA will promulgate Recovered Materials Advisory Notices (RMAN) to update the listed items in the CPG.

For products that have been designated, agencies must buy those products which contain recycled content as long as they are available, they meet the performance needs of the agency and they are cost-competitive.

9.7 NOAA Policy

(Reserved)

9.8 Line Office Policies

a. NESDIS Policy
(Reserved)

b. NMF Policy
(Reserved)

c. NOS Policy
(Reserved)

d. NWS Policy
(Reserved)

e. OAR Policy
(Reserved)

f. OMAO Policy
(Reserved)

9.9 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)
  www.fss.gsa.gov/environ

  The U.S. General Services Administration, Federal Supply Service has introduced many products into its supply system that have recycled content, offer energy and/or water savings or that have been reformulated to be less environmentally detrimental. This site includes product descriptions, ordering information, information for prospective vendors and more. You can also access *GSA Advantage!*, GSA's on-line ordering system to order any GSA product.

- CPG-Compliant Products and Other Recycled Content Products
  www.gsa-CPG Compliant Products and Other Recycled Content Products.htm

  This on-line catalog identifies CPG-compliant products available through GSA. NOAA personnel who purchase these products should review this list to determine what is available.

- Defense Logistics Agency (DLA)
  www.dscr.dla.mil/products/epa/eppcat.htm

  The Defense Logistics Agency's *Environmental Products Catalog* includes information on several CPG-designated items including re-refined lubricating oil, recycled plastic lumber and remanufactured/recycled laser printer toner cartridges. This site provides products and ordering information for these and other environmental products.

- Other DLA Catalogs
  www.dscr.dla.mil/catalogs/catalog.htm

  This page identifies product catalogs with on-line ordering capabilities and includes a link for a catalog for batteries and motor oil.

9.10 Responsibilities

9.10.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

9.10.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall assist regional headquarters and field offices or operating units in locating and assessing environmentally-preferable products.

d. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

e. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

9.10.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure that sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

9.10.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

9.10.5 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 Focal Point.

9.11 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.

9.11.1	3 CFR	Presidential Executive Order 13101, September 14, 1998, "Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition"

U.S. Environmental Protection Agency

9.11.2	40 CFR 247	Comprehensive procurement guideline for products containing recovered materials

9.11.3 http://www.epa.gov/cpg/products.htm

This website contains a brief description for each of the designated products listed in EPA's CPG Program. Additional information on recycled content ranges and suppliers is available for viewing.

Attachment A to Section 9 - Procurement
EPA's Comprehensive Procurement Guidelines

Construction Products **Designated:** Building insulation products Carpet Carpet cushion Cement and concrete containing: -Coal fly ash -Ground granulated blast furnace slag Consolidated and reprocessed latex paint Floor tiles Flowable fill Laminated paperboard Patio blocks Railroad grade crossing surfaces Shower and restroom dividers/partitions Structural fiberboard	**Proposed:** Cement and Concrete containing: -Cenospheres -Silica fume Modular threshold ramps Nonpressure pipe Nylon carpet and nylon carpet backing Roofing materials
Landscaping Products **Designated:** Garden and soaker hoses Hydraulic mulch Plastic lumber landscaping timbers and posts Lawn and garden edging Compost made from yard trimmings or food waste	 **Proposed:** None at this time.
Nonpaper Office Products **Designated:** Binders, clipboards, file folders, clip portfolios, and presentation folders Office recycling containers Office waste receptacles Plastic desktop accessories Plastic envelopes Plastic trash bags Printer ribbons Toner cartridges	 **Proposed:** Office furniture

Paper and Paper Products **Designated:** Commercial/industrial sanitary tissue products Miscellaneous papers Newsprint Paperboard and packaging products Printing and writing papers	**Proposed:** None at this time
Park and Recreation Products **Designated:** Park benches and picnic tables Plastic fencing Playground equipment Playground surfaces Running tracks	**Proposed:** None at this time.
Transportation Products **Designated:** Channelizers Delineators Flexible delineators Parking stops Traffic barricades Traffic cones	**Proposed:** None at this time.
Vehicular Products **Designated:** Engine coolants Re-refined lubricating oils Retread tires	**Proposed:** Rebuilt vehicular parts Tires
Miscellaneous Products **Designated:** Awards and plaques Industrial drums Mats Pallets Signage Sorbents Manual-grade strapping	**Proposed:** Bike racks Blasting grit

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10 PESTICIDES

Synopsis
This section is designed to provide guidance in the use and disposal of pesticides in and around NOAA facilities, work sites and ships.

The section applies to all NOAA facilities,work sites and ships.

Initial Implementation Requirements:

- **Compare Site/Facility Operations with the Requirements of this Section**
  - Determine if NOAA operations are regulated under State law (10.3.2)
  - Pesticides are managed in accord with NOAA 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.**

Checklist

10 Pesticides	YES	NO	N/A
1. Do NOAA personnel use pesticides or insecticides?	_____	_____	_____
2. Does the State regulate this use under State law? (10.3.2)	_____	_____	_____
3. If so,			
a. has a Pesticide Program Coordinator been appointed?	_____	_____	_____
b. are only EPA-approved pesticides employed? (10.3.1 &10.4)	_____	_____	_____
c. are all NOAA employees who use the pesticides trained in accord with the State rules? (10.3.2)	_____	_____	_____

10 PESTICIDES

10.1 Purpose and Scope

This section is designed to provide guidance in the use and disposal of pesticides in and around NOAA facilities, work sites and ships. The section applies to all NOAA facilities, work sites and ships.

10.2 Acronyms Employed in This Section

DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
FIFRA	-	Federal Insecticide, Fungicide, Rodenticide Act
NWS	-	National Weather Service

10.3 Regulatory Requirements

10.3.1 Federal

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

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.

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 Facility Environmental Coordinator should check the EPA website of State contacts at http://www.epa.gov/pesticides/safety/applicators/statepro.htm or the Association of American Pesticide Control Officials website at www.aapco.ceris.purdue.edu and click the banner for "Control Officials." This site will provide information on whether a State has an authorized program and who to contact for more specific information regarding:

a. which NOAA 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 Regional Environmental Coordinator (if applicable) and/or the NOAA RECO

10.4 NOAA Program

Whether done by NOAA personnel or contractor personnel, NOAA 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 NOAA water to mix the concentrate unless a backflow prevention valve is used and a sufficient air gap is present. An air gap is the preferred method for eliminating cross-connections. Hoses used to fill mixing tanks must have a backflow prevention valve at the hose bib.

e. record the amounts, type, location, name of pesticide applied and the target species. This record must be kept for 5 years.

10.5 Responsibilities

10.5.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the Environmental/Safety Office.

10.5.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

10.5.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure that sufficient personnel and resources are available to enable compliance with the requirements of this section.

c. Shall ensure NOAA employees follow the requirements of this section.

d. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

10.5.4 Facility Environmental Coordinator or Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

b. Shall 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. Report all violations of the requirements of this section to their supervisor or Safety Focal Point.

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11 ASBESTOS MANAGEMENT

Synopsis

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 NOAA facilities, work sites and ships and the NOAA employees who work in and around these operations.

Initial Implementation Requirements:

- **Review the NOAA Occupational Safety and Health Manual, Section 31 - Asbestos Safety**
- **Analyze Site Operations versus Requirements of the Procedure**
  - Identify all sites where an asbestos hazard may be present (NOAA Occupational Safety and Health Manual, para.31.3.3)
  - Perform Visual Inspection and Instrumental Testing of "suspect" ACMs. (NOAA Occupational Safety and Health Manual, para 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 (NOAA Occupational Safety and Health Manual para.31.3.3) (if applicable)
- **Provide Local Training of Site Personnel** (if required)
- **Develop an Asbestos Removal Plan** (if applicable)
- **Contract with an EPA-approved Asbestos Removal Contractor if ACM is present**
- **Manage the removed material as 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. (NOAA OSHA Manual para 31.3.3) as necessary
- **Review/Update Documentation/Information required for Site**
  - Maintain Asbestos Control Program. (NOAA Occupational Safety and Health Manual para 31.3.3) (if applicable)
- **Provide Refresher Training of Site Personnel** (if required)

Checklist

11 Asbestos	YES	NO	N/A
1. Does the facility, work site or ship have or is it suspected to have asbestos or asbestos-containing material? (11.5.1)	☐	_____	☐
a. If yes, has testing been performed? (11.5.1)	_____	_____	_____
2. For land based facilities, if asbestos was found, has an Asbestos Control Program been established? (11.5.2)	_____	☐	_____
a. Has an Asbestos Control Program Coordinator been appointed? (11.5.2a)	_____	_____	_____
b. Have all affected employees been notified in writing of the presence of asbestos? (11.5.2b)	_____	_____	_____
c. Have "regulated areas" been established? (11.5.2d)	_____	_____	_____
d. Are all NOAA personnel prohibited from entering the prohibited areas? (11.5.2e)	_____	_____	_____
e. Are there plans to remove the asbestos? (11.6)	☐	_____	_____
f. Has a plan been filed with the EPA Regional Office? (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 on-site for at least 2 years? (11.6.2)	_____	_____	_____
i. Has or will the removed asbestos material be disposed at an approved facility? (11.6.3)	_____	_____	_____

	YES	NO	N/A
3. For Ships,			
a. Are all asbestos materials that are damaged or deteriorated asbestos materials such that airborne particles are possible removed, repaired, encapsulated or replaced? (11.5.3 a)	_____	_____	____
b. When asbestos material is removed, is it replaced with acceptable non-asbestos material? (11.5.3 b)	_____	_____	____
c. Is all removal or repair of asbestos material done by a qualified contractor except in an emergency? (11.5.3 c)	_____	_____	____
d. Is all emergency asbestos work done in accord with Supplement #10 of the NOAA Fleet Hazardous Materials and Hazardous Waste Manual?	_____	_____	____
e. Does the ship have appropriate equipment on board for asbestos removal? (11.5.3 e)	_____	_____	____
f. Have all removed asbestos wastes been disposed appropriately? (11.5.3 f)	_____	_____	____
g. Has the annual report been submitted to the ECO at the MCO? (11.5.3 g)	_____	_____	____
h. Have ship personnel been trained? (11.5.3 h)	_____	_____	____

11 ASBESTOS MANAGEMENT

11.1 Purpose and Scope

While NOAA has attempted to remove asbestos from the workplace, because of the pervasive use of this material, it is possible that asbestos-containing material may still be found at some NOAA facilities, work sites and on some ships. To ensure NOAA personnel are protected from this material during its use, removal and disposal, this section has been created.

The section applies to all NOAA operations where asbestos or asbestos-containing material are known or assumed to be present.

11.2 Definitions

Designated Person - a NOAA employee assigned the task of coordinating the asbestos management effort. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

Friable Asbestos - is any material that contains more than 1 percent 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 - is a material containing more than 1 percent asbestos that cannot be crumbled, pulverized or reduced to powder by hand pressure. Vinyl asbestos floor tile or uncracked transite are examples of non-friable asbestos.

Regulated Asbestos-Containing Material (RACM) - means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

11.3 Acronyms Employed in This Section

ACM	-	Asbestos-Containing Material
CIH	-	Certified Industrial Hygienist
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
ECO	-	Environmental Compliance Officer
FEC	-	Facility Environmental Coordinator
MOC	-	Marine Operations Center
NOAA	-	National Oceanic & Atmospheric Administration
NWS	-	National Weather Service
OSHA	-	Occupational Safety and Health Agency
PEL	-	Permissible Exposure Limit
RACM	-	Regulated Asbestos-Containing Material
RECO	-	Regional Environmental Compliance Officer
RSM	-	Regional Safety Manager
TWA	-	Time Weighted Average
WSR	-	Waste Shipment Record

11.4 Regulatory Requirements

11.4.1 Federal Laws and Regulations

a. Occupational Safety & Health Administration (OSHA)

The Occupational Safety & Health Administration (OSHA) regulates asbestos in all industries other than construction, ship repair and shipbuilding, in 29 CFR 1910.1001.

b. Environmental Protection Agency (EPA)

The Environmental Protection Agency (EPA) regulates asbestos emissions, removal and disposal under 40 CFR Part 61 - The National Emissions Standards for Hazardous Air Pollutants, Subparts A (40 CFR Parts 61.01 to 61.19) and M (40 CFR 140-157 and Appendix A to M).

c. National Oceanic and Atmospheric Administration (NOAA)

The National Oceanic and Atmospheric Administration (NOAA) asbestos control program is detailed in NOAA Occupational Safety and Health Manual, Section 31 - Asbestos Safety.

11.5 Asbestos Control Program

11.5.1 Identification of Asbestos-Containing Material (ACM)

The EPA and OSHA define two types of asbestos - friable and non-friable.

Friable asbestos material is any material that contains more than 1 percent 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 is a material containing more than 1 percent asbestos that cannot be crumbled, pulverized or reduced to powder by hand pressure. Vinyl asbestos floor tile or uncracked transite are examples of non-friable asbestos.

The EPA further divides non-friable asbestos into two categories - 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 1% asbestos.

Category II non-friable asbestos-containing material is any material other than Category I ACM that contains more than 1% asbestos that when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

While the continued use and removal of both friable and non-friable asbestos are regulated, because of the obvious threat to the air, both the EPA and OSHA require more control of friable asbestos-containing materials to ensure the asbestos remains contained**.**

The NOAA Occupational Safety and Health Manual - Section 31 - Asbestos Safety requires in 31.3.3 that "NOAA facilities where asbestos or ACM are potentially present (e.g. buildings, structures and ships built before 1981), shall arrange visual inspections and testing of "suspect" materials by an accredited inspector or Certified Industrial Hygienist (CIH) who has completed an EPA-approved asbestos training course. This effort will be coordinated with NOAA Regional Environmental Compliance Officer (RECOs), NOAA Regional Safety Manager (RSMs) and the Regional Environmental/Safety Coordinator (if applicable).

11.5.2 Establish an Asbestos Control Program for Land Based Facilities

Paragraph 31-3.3 of the NOAA Occupational Safety and Health Manual requires that, "When presence of asbestos or ACM is confirmed, an Asbestos Control Program shall be established and maintained with RECOs and/or RSMs."

This program includes:

a. Designation of an Asbestos Control Program Coordinator by the Designated Responsible Official to coordinate the facility efforts.

b. The notification of all affected employees of any asbestos monitoring within 15-days of receipt by the NOAA facility, workstation, or ship. 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. If airborne concentrations of asbestos or presumed asbestos material are in excess of the OSHA Permissible Exposure Limit (PEL) on a Time Weighted Average (TWA), a "regulated area" must be established, clearly demarcated and access limited.

e. Persons entering the regulated area must use an appropriate respirator and be trained and certified in its use.

f. All employees are prohibited from eating, drinking, smoking, chewing tobacco or gum or applying cosmetics in the regulated area.

11.5.3 Asbestos Control Program for Ships

Asbestos aboard ships is regulated by the NC Instruction 5100.1B "Safety Standards for the Ships of the NOAA Fleet." These standards detail the procedures to be used for the repair, removal, replacement and disposal of asbestos onboard NOAA Vessels as well as the personnel training and recordkeeping requirements that must be met. These standards include:

a. If asbestos material appears to be damaged or deteriorated to the point where emission of airborne particles is possible, it shall be removed, repaired, encapsulated or replaced with acceptable non-asbestos material.

b. If asbestos-containing material is removed for renovations, repairs or maintenance work, it will be replaced with acceptable non-asbestos material.

c. Removal or repair of asbestos onboard a ship shall be done by a qualified contractor. NOAA personnel are not allowed to perform this work except in an emergency or casualty situation.

d. All emergency asbestos removal and repair work must be done in accordance with Supplement #10 of the NOAA Fleet Hazardous Materials and Hazardous Waste Manual.

e. All NOAA vessels must have appropriate equipment onboard for asbestos removal.

f. Once removed, the asbestos waste must be managed in accordance with Federal, State and local requirements.

g. All NOAA vessels are required to submit an annual report to the Environmental Compliance Officer (ECO) at the Marine Operations Center (MOC) on asbestos activities by October 1st .

h. NOAA Class I and II vessels must ensure that one officer, two personnel from the engine room and the medical technicians receive training in personnel protection, removal and repair procedures, and air sampling techniques at least annually. Personnel on other vessels should receive similar training.

i. All asbestos-containing material removed during an emergency repair must be disposed in accordance with the Federal, State and local requirements and Supplement #10 of the NOAA Fleet Hazardous Materials and Hazardous Waste Manual.

Additional guidance can be found in MOC Env 3, "Control of Asbestos Health Hazards."

11.6 Asbestos Removal Plan

In consultation with the NOAA Regional Environmental Compliance Officer (RECO) and/or the NOAA Regional Safety Manager, the decision will be made whether to:

a. allow the asbestos or ACM to remain in its current state,
b. encapsulate it, or
c. remove it.

If removal is decided, an asbestos removal plan must be prepared which includes:

a. Notification of the EPA Regional Office and the receipt of a written approval prior to initiation of the removal.

b. Establishing and maintaining a formal file to record all activities.

c. A description of the procedures to be employed to remove the asbestos or ACM while preventing contamination to the rest of the facility.

d. Disposal at an approved facility.

11.6.1 Notification

Depending on the amount, type and location of the asbestos or asbestos-containing material, the Regional Office of the Environmental Protection Agency (EPA) may require a notification prior to initiating the removal of the material. The requirements for when this notification is required are detailed in 40 CFR 61.145. Contact the NOAA Regional Environmental Compliance Officer (RECO) and/or Regional Safety Manager (RSM) for assistance in both determining if the notification is required and preparing the notice.

The notification must be received by the EPA at least 10 working days before the start of the asbestos removal and must include 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 operation will be supervised by an EPA-certified Asbestos Supervisor.

Upon review by the EPA, the Regional Administrator will provide a written approval for the asbestos abatement project. This approval must be kept at the work site during the operation.

To assist in understanding and complying with the notification requirements, the EPA has created a website to explain what is required and when. The web address is: www.epa.gov/region04/air/asbestos/asbqa.htm.

Note: The States can impose more stringent requirements for managing, reporting and notifying of a removal project. Contact the Regional Environmental Coordinator, the Safety/Environmental Coordinator (SECO), NOAA Regional Environmental Coordinator (RECO) or Regional Safety Manager (RSM) for more specific information.

11.6.2 Recordkeeping

A copy of the EPA notification, the EPA Regional Administrator's approval, the shipping paper [waste shipment record (WSR)] and the disposal site confirmation will be provided to the NOAA Regional Environmental/Safety Coordinator and the NOAA Regional Environmental Compliance Officer (RECO). The EPA requires the records to be kept on-site for at least two (2) years, however, it is highly recommended that these records be kept permanently.

11.6.3 Disposal

Prior to disposal, all asbestos and asbestos-containing materials must be wetted to minimize the release of air particles and then placed in a leak tight wrapping which is then placed into another leak tight wrapping (this is also known as double-bagging).

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 NOAA RECO will assure all local ordinances are known and followed.

11.7 Responsibilities

11.7.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

11.7.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to ensure compliance with the requirements of this section by the regional headquarters, field offices or operating units.

b. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

c. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

11.7.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that an asbestos control program is developed at NOAA field offices containing asbestos materials.

d. Shall ensure NOAA employees follow the requirements of this section.

e. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

11.7.3 Facility Environmental Coordinator or Environmental and/or Safety Focal Point or Asbestos Control Program Coordinator

a. Shall ensure any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

11.7.4 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

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.

11.8.1 Department of Labor Occupational Safety and Health Administration, 20 CFR 1910.1001, "Asbestos"

11.8.2 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

11.8.3 NOAA Occupational Health and Safety Manual, Section 31

11.8.4 NC 5100.1B Safety Standards for the Ships of the NOAA Fleet

11.8.5 Marine Operations Center Env 3, Control of Asbestos Health Hazards

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12 POLYCHLORINATED BIPHENYLS (PCBs)

Synopsis
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 NOAA 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)**
- **Provide Training for Personnel.**

Recurring and Annual Task Requirements:

- **Inspect Daily, Weekly, Monthly, Quarterly or Annually as required (12.5.3)**
- **Maintain Inspection Logs (12.5.5)**
- **Report all Spills over the Reportable Quantity (10 pounds) to the National Response Center (12.6)**
- **Dispose of PCBs in accord with EPA/State Regulations.**
  - Maintain/inspect PCB items in temporary storage awaiting disposal (12.7.1
  - Select appropriate disposal option for each PCB item (12.7.2)

Checklist

12 Polychlorinated Biphenyls (PCBs)	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, 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? (12.6.2)	_____	_____	_____
7. Has an inquiry been made to the State by the NOAA RECO 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 accord with EPA and/or State requirements? (12.7)	_____	_____	_____

12 POLYCHLORINATED BIPHENYLS (PCBs)

12.1 Purpose and Scope

The purpose of this section is to provide guidance to NOAA personnel in the management and disposal of polychlorinated biphenyls (PCBs) and PCB items.

The section applies to all NOAA facilities and work sites that use or have PCBs or PCB items such as old fluorescent ballasts or transformers.

12.1.1 While most NOAA 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. This section will also apply should NOAA 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 which 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 which contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates at 2,000 volts (a.c. or d.c.) or above.

c. **Large Low Voltage Capacitor** - a capacitor which 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 general 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).

Designated Person - a NOAA employee assigned the task of coordinating the PCB management effort. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Enhanced Electrical Protective System - a system to avoid transformer failures caused by sustained low current faults. Examples are: pressure sensors, temperature sensors, disconnect equipment.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

Higher Secondary Voltage - the secondary voltage is equal or greater than 480 volts including 480/277 volt systems.

In or Near Commercial Buildings - 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.

KVA - kilovolt ampere, which is a measurement of the power capacity of a transformer.

Lower Secondary Voltage - the secondary voltage is below 480 volts including 280/120 volt systems.

Mark - an item contains PCBs, includes the descriptive name, instructions, cautions or other information applied to PCBs and PCB Items, or other objects subject to these rules.

Marked - 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.

Network PCB Transformer - 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.

Non-PCB Transformer - any transformer containing less than 50 ppm PCBs as determined by manufacturer certification or laboratory analysis.

PCB and PCBs - a chemical compound composed of or containing any of the various chlorinated biphenyl molecules. Unless it is otherwise specifically provided, the terms PCB and PCBs are 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 shall be included as PCB and 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, sludges, slurries, dredge spoils, soils, materials contaminated as a result of spills and other chemical substances or combination of substances, including impurities and byproducts.

PCB Article - 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, (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB article.

PCB Container - means any package, can, bottle, bag, barrel, drum, tank or other device that contains PCBs or PCB Articles and whose surface (2) has been in direct contact with PCBs.

PCB Equipment - 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.

PCB Item - any PCB Article, PCB Container or PCB Equipment that contains or has as a part of it any PCB or PCBs at a concentration of 50 ppm or greater.

PCB Transformer - any transformer that contains 500 ppm PCB or greater.

PCB-Contaminated Electrical Equipment - 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, reclosures and cable whose PCB concentration is unknown are assumed to be PCB-Contaminated Electrical Equipment until proven otherwise.

ppm - a concentration in parts per million expressed as milligrams per kilogram (mg/kg).

Posing an exposure risk to food or feed product - any potential exposure of food and feed products to PCBs if there were leakage of dielectric fluid or if all the dielectric fluid in the transformer were discharged from the PCB unit.

Restricted Access - an area is fenced or walled-in to restrict public access.

Radial PCB Transformer - 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.

Reclassified - 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 PCBs.

12.3 Acronyms Employed in This Section

CFR	-	Code of Federal Regulations
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
NOAA	-	National Oceanic & Atmospheric Administration
NWS	-	National Weather Service
PCB	-	Polychlorinated Biphenyl

ppm	-	Parts Per Million
RCRA	-	Resource Conservation and Recovery Act
RECO	-	Regional Environmental Compliance Officer
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 NOAA Regional Environmental Coordinator or the Safety/ Environmental Coordinator and/or the NOAA Regional Environmental Compliance Officer (RECO) should be contacted to determine if additional requirements exist.

12.5 Program Implementation

12.5.1 Inventory of PCB/PCB Items

To determine if a NOAA 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 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 Facility 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 NOAA Regional Environmental Compliance Officer must be contacted prior to submitting this registration to the EPA.

12.5.2 Assign a Designated Person

If a NOAA facility or work site is determined to have any PCB-containing items, a NOAA employee will be assigned by the Facility Manager to coordinate the PCB compliance effort.

12.5.3 Periodic PCB Inspections

NOAA 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 12-1. If an item is not listed on Table 12-1, there are no TSCA inspection requirements.

These inspection requirements range from daily to annually, 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 NOAA RECO immediately to arrange for removal and disposal. These 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 activity personnel who understands the PCB inspection procedures and knows the proper PCB spill (or leak) reporting actions. Inspectors may be an electronic technician (ET), sector facility technician (SFT), environmental focal point, etc.

TABLE 12-1

TSCA PCB INSPECTION REQUIREMENTS (40 CFR 761.30)

TRANSFORMERS (in service or in storage for reuse)

Leaking	Daily [40CFR 761.30(a)(1)(iii)] until leak is repaired
Intact w/>500 ppm and w/food or feed risk	Weekly [40 CFR 761.30(a)(1)(xii] Note: This item is prohibited after 1 Oct 85.
Intact w/>60,000 ppm and w/o secondary containment	Quarterly [40 CFR 761.30(a)(1)(ii)]
Intact w/>60,000 ppm and w/secondary containment	Annually [40 CFR 761.30(a)(1)(v)(A)]
Intact w/500-60,000 ppm	Annually [40 CFR 761.30(a)(1)(v)(B)]
Intact w/<500 ppm	None

ELECTROMAGNETS, SWITCHES AND VOLTAGE REGULATORS

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 85)
Others	None

STORAGE AREAS

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)]

CAPACITORS, CIRCUIT BREAKERS, RECLOSERS AND ELECTRIC CABLE

	None

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 an activity PCB transformer inspection log sheet 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 shall be maintained for at least three (3) years after the PCB item is disposed. The records shall 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.

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 reuse) in or near commercial buildings.

The rule also requires:

a. 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:

i. allow early detection of sustained low-current faults; and
ii. 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 which 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:

i. **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 <u>not</u> 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.

ii. **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, a generator that stores his own PCB waste is 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

iii. **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. As with all PCB wastes, dilution to less than 50 ppm to escape regulation is prohibited.

iv. **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.

v. **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.

vi. **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

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.

i. 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;
- the number and type of containers;
- the US 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 acknowledgement by the disposal facility that the shipment was acceptable.

ii. 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.

Of course, if a state modified manifest is used, additional copies of the document may have to be sent to various state agencies by both the generator and the disposal facility.

iii. Manifest Protocol

In a rule identical to RCRA, the EPA has required generators to use the manifest according to the following protocol:

- if the state where the disposal facility is located has a state-modified uniform manifest, this version will be used.

- if the disposer state does not have a state-modified manifest but the state where the generator is located does, the generator's state modified version shall be used.

- if neither state has a state modified version, any pre-printed version may be used.

12.9 Records

a. Manifests

Manifests must be retained for at least 3 years after the date of shipment.

b. 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.

c. 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 some time prior to shipment to a disposal facility, compliance with this requirement has always been a problem. Generators had been assumed to be in compliance 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.

d. Certificate of Disposal

The EPA now requires the disposer to provide the generator with a certificate indicating the date of disposal.

e. Discrepancy Reports

If a disposer receives a PCB waste which is different in type or quantity than 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.

f. Unmanifested Waste Report

If a disposer receives a PCB waste without a manifest, the disposer must file a 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; and,
- a brief explanation of why the waste was unmanifested, if known.

g. Annual Reports

The final rule requires owners or operators of facilities that are neither a commercial storer or 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 logs 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 <u>any</u> 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 <u>initiated</u> (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, NOAA policy is to:

a. Evacuate all personnel
b. Assist injured if risks allow
c. Call 911 or other outside response agency
d. Call the NOAA RECO who must in turn contact the National Response Center within 24-hours of a release if more than a total of 1 pound of PCB-containing material is released.
e. Within 48-hours of notification, the RECO should prepare a written report outlining the steps taken for notification, who was notified, when they were notified and the details of the spill.

Unless trained as emergency responders, NOAA personnel may not attempt to respond to a spill of PCBs.

12.11 Disposal of PCBs

12.11.1 Temporary Storage

Upon 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 absorbant
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.) And 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 NOAA Regional Environmental Compliance Officer (RECO).

12.12 Responsibilities

12.12.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

12.12.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

12.12.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that procedures are developed at NOAA field offices for management of PCBs on-site.

d. Shall ensure NOAA employees follow the requirements of this section.

e. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

12.12.4 Facility Environmental Coordinator, Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official 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"

40 CFR 761.30(a) Use in and servicing of transformers
40 CFR 761.50 Subpart D - Storage and Disposal - Applicability
40 CFR 761.62 Disposal of PCB bulk product waste
40 CFR 761.65 Storage for disposal

Attachment A

PRELIMINARY PCB INVENTORY DATA COLLECTION FORMAT

A. TRANSFORMERS

Item Identification: _____

Specific Location: _____

Manufacturer: _____

Other Name plate 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 Completed: _____/_____/_____
mo day yr

Describe Process: _____

Final PCB Concentration: _____ppm Date Tested: _____/_____/_____
after reclassification mo day yr

Note: Words identified by asterisk (*) are defined in Section 12.2 - Definitions.

Attachment A (Continued)

PRELIMINARY PCB INVENTORY DATA COLLECTION FORMAT

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 Name plate 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

Date Tested: _____/_____/_____
mo day yr

PCB Concentration: _____ppm

Date Drained/Refilled: _____/_____/_____
mo day yr

Date Retested: _____/_____/_____
mo day yr

PCB Concentration: _____ppm

After draining/refilling

Marked as PCB? **Yes / No**

Note: Words identified by asterisk (*) are defined in Section 12.2 - Definitions.

Attachment A (Continued)

PRELIMINARY PCB INVENTORY DATA COLLECTION FORMAT

D. HYDRAULIC EQUIPMENT

Item Identification: _____

Location: _____

Quantity Fluid: _____ gallons

Date Tested: _____/_____/_____
mo day yr

PCB Concentration: _____ppm

Date Drained/Refilled: _____/_____/_____
mo day yr

Date Retested: _____/_____/_____
mo day yr

PCB Concentration after draining/refilling: _____ppm

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 yr

Poses an Exposure Risk to Food or Feed*? **Yes / No**

Marked* as PCB? **Yes / No**

Reclassified? **Yes / No** Date: _____/_____/_____
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 _____

DATE	INSPECTOR'S NAME	Check Each, + or - *								SUMMARY OF INSPECTION/SERVICE: Description of inspections and servicing. If leaks or spills are observed, attach Spill/Leak Report Form.	IF OVER 10 LBS., SPILL REPORT FILED?
		BUSHINGS	GAUGES	VALVES	FINS	INSPECTION PORTS	TAP CHANGES	SPILL EQUIPMENT AVAILABLE	ARE COMBUSTIBLE MATERIALS WITHIN 5 M		

* + 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 if information is provided showing PCB level is not above 500 ppm, and if liquid is not an ignitable waste and is containerized or stabilized. Prohibited after 17 July 1987 by RCRA Liquid Landfill Ban.	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 (other than the above)	Acceptable	Acceptable	Municipal solid waste
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

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13 LEAD-BASED PAINT

Synopsis
This section is promulgated to ensure NOAA personnel and their families who use NOAA-provided residences containing lead-based paint (LBP) are knowledgeable of the risks presented. It is also provided to ensure NOAA personnel understand the requirements for removal of LBP from NOAA facilities.

The section applies to all NOAA facilities and work sites.

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 NOAA-provided housing, ensure NOAA 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 NOAA 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).**

Checklist

13 Lead-Based Paint	YES	NO	N/A
1. Was the facility or work site built prior to 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 NOAA 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)	_____	_____	_____

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 NOAA employees and their families who may be exposed to these coatings are protected. The section applies to all NOAA facilities, work sites and employee housing where lead-based paint was applied.

13.2 Definitions

Designated Person - a NOAA employee assigned the task of coordinating the lead-based paint effort. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NOAA, this individual is identified as the Environmental and/or Safety Focal Point.

Lead-Based Paint - paint containing lead oxide as the base pigment.

13.3 Acronyms Employed in This Section

CPSC	-	Consumer Product Safety Commission
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
HUD	-	Department of Housing and Urban Development
LBP	-	Lead-Based Paint
NLIC	-	National Lead Information Clearinghouse
NOAA	-	National Oceanic & Atmospheric Administration
NWS	-	National Weather Service
NWSH	-	National Weather Service Headquarters
RECO	-	Regional Environmental Compliance Officer
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, NOAA facilities that have housing built prior to 1978 must contact the NOAA RECO to determine if a State lead-based paint program is in effect.

13.4.3 National Weather Service

While the National Oceanic and Atmospheric Administration (NOAA) does not sell or lease housing in the legal sense, it has decided to voluntarily comply with these requirements to ensure NOAA 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 a NOAA facility or work site has buildings built prior to 1978, the Designated Responsible Official will appoint a Lead-Based Paint Coordinator to investigate the presence of lead-based paint and if found, initiate and maintain a control program.

13.5.2 Facility Survey

For NOAA 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 NOAA Regional Environmental Compliance Officer (RECO) or the NOAA Regional Safety Manager (RSM).

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 NOAA 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 NOAA Lead-Based Paint Program Manager 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 NOAA 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). A request may also be made by FAX to (202) 659-1192 or by e-mail to ehc@cais.com.

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 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.

On January 22, 2001, the EPA proposed to change the regulations to require that the EPA Regional Office be notified 10-days prior to the initiation of any lead-based paint remediation. This proposal has not been finalized yet, but check with the NOAA RECO.

13.6 Residue Disposal

The residue from the removal of lead-based paint meets the lead toxicity characteristic (D008) and thus 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 NOAA-owned residences - the EPA allows the residue to 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 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

13.7.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

13.7.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that resident lead-based paint notifications are provided to residents of NOAA housing units contaminated with lead-based paint.

d. Shall ensure NOAA employees follow the requirements of this section.

e. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

13.7.4 Facility Environmental Coordinator or Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

b. Shall 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 NOAA housing known to be contaminated with lead-based paint or built prior to 1978.

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

40 CFR 261.4 Exclusions
(b) Solid waste which are not hazardous wastes
(1) Household waste

13.8.2 "EPA Regulatory Status of Waste Generated by Contractors and Residents from Lead-Based Paint Activities Conducted in Households", August 2000), http://www.epa.gov/lead/fslbp.htm

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ATTACHMENT A . . . . . .
Determination of a Categorical Exclusion Under NEPA . . . . . .
(To be provided by NOAA)

14 IMPLEMENTATION OF NEPA

Synopsis
This section is designed to provide guidance on the requirements of the National Environmental Policy Act (NEPA) as it impacts NOAA facility or work site operations. The section applies to all NOAA facilities and work sites.

Initial Implementation Requirements:

- **Compare Site/Facility Operations with the Requirements of this Section**
  - Identify facility/work site plans that may have environmental impacts (14.6)
  - Contact the RECO and/or NOAA NEPA Coordinator to determine if the proposed action is deemed a categorical exclusion (14.6.1)
  - If no, prepare an environmental assessment (EA) to determine if action will significantly affect the environment (14.6.2)
  - If no, issue a Finding of No Significant Impact (FONSI) (14.6.2)
  - If yes, prepare an Environmental Impact Statement (EIS) (14.6.3)
  - Prepare public notices and conduct a public hearing if necessary (14.6.3)
  - Prepare public record which explains the final decision and how the findings of the EIS were addressed (14.6.3)

Recurring and Annual Task Requirements:

- **Review New Projects for Applicability of NEPA**

Checklist

14 Implementation of NEPA	YES	NO	N/A
1. Is the facility planning a project which qualifies for a Categorical Exclusion (CE) per the checklist in Attachment A?	_____	☐	_____

14 IMPLEMENTATION OF NEPA

14.1 Purpose and Scope

This section is designed to provide guidance on the requirements of the National Environmental Policy Act (NEPA) as it impacts NOAA facility or work site operations. The section applies to all NOAA facilities and work sites.

14.2 Definitions

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.

Designated Person - a NOAA employee assigned the task of coordinating the NEPA process of a NOAA facility or work site. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point

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.

14.3 Acronyms Employed in This Section

CAA	-	Clean Air Act
CE	-	Categorical Exclusion
CZMA	-	Coastal Zone Management Act

DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
EA	-	Environmental Assessment
EIS	-	Environmental Impact Statement
ESA	-	Endangered Species Act
FEC	-	Facility Environmental Coordinator
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
PPA	-	Pollution Prevention Act
RECO	-	Regional Environmental Compliance Officer
ROD	-	Record of Decision

14.4 Regulatory Requirements

a. Federal

The National Environmental Policy Act (NEPA)

Under NEPA, the EPA created a process which 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).

The NEPA review process could be required if a NOAA facility or work site plans to:

(1) construct, modify or rehabilitate a building or property

(2) implement changes in facility siting or perform a significant redistribution of staff
(3) make changes that will alter the prevailing land use.

b. State

Some States have enacted legislation that mirrors the Federal statutes. NOAA facilities or work sites will need to contact the NOAA Regional Environmental Compliance Officer to determine the applicability of State requirements.

c. NOAA Orders

The National Oceanic and Atmospheric Administration (NOAA) has promulgated NOAA Administrative Order NA0 216-6, "Environmental Review Procedures for Implementing the National Environmental Policy Act." This order, which was effective on May 20, 1999, explains how NOAA will comply with the NEPA requirements. The order creates the role of the "NEPA Coordinator" and tasks this individual with "ensuring NEPA compliance for NOAA." Assigned to the NOAA Office of Strategic Planning, the NEPA Coordinator is assigned to assist Line, Staff and Program Offices in establishing "categorical exclusions," defining what is a "significant action" and providing consultation on NEPA matters.

14.5 NEPA Requirements

Under Section 102 of the law, Federal agencies must incorporate environmental consideration in their planning and decision-making. All Federal agencies are now required to prepare detailed statements assessing the environmental impact of major Federal actions that could significantly affect the environment and the alternatives to this action.

These statements are termed environmental impact statements (EISs).

14.6 The NEPA Process

The NEPA evaluation process involves three levels of analysis:

a. categorical exclusion determination
b. preparation of an environmental assessment (EA) and a finding of no significant impact (FONSI)
c. preparation of an environmental impact statement (EIS).

As defined in NOAA Administrative Order NA0216-6, the NOAA NEPA Coordinator, working with Line, Staff and Program Offices and their designated Responsible Program Managers (RSMs), will establish categorical exclusions and establish or define the criteria used to define "significant."

14.6.1 Categorical Exclusion (CE)

A number of Federal agencies have developed lists of actions which are normally excluded from environmental evaluation under the NEPA regulations. Although in administrative order NAO-216-6, NOAA has not included a list of categorical exclusions (CEs), it has provided the criteria for evaluating when an action can be designated a CE in Section 6.03 of the order. In addition, Section 6.03c.3 of the order provides categories of projects or actions that normally do not have the potential for a significant impact on the quality of the human environment. This document can be accessed at http://www.rdc.noaa.gov/~nao/216-6.html.

A NOAA facility or work site planning an action that is deemed to meet the requirements for a categorical exclusion would have no further requirements under NEPA except to document the CE and submit a copy to the RECO.

14.6.2 Environmental Assessment (EA)

For this level of effort, the NOAA facility will prepare a written environmental assessment to determine whether the planned or proposed action would significantly affect the environment. If the answer is no, NOAA will issue a finding of no significant impact (FONSI) in which NOAA may describe actions which will be taken to reduce or mitigate any potentially significant impacts. The NOAA Regional Environmental Officer (RECO) should be contacted prior to attempting to prepare the EA.

The EA will provide sufficient evidence and analysis to support either a finding of no significant impact (FONSI) or the determination that an environmental impact statement (EIS) will be required.

If the EA determines that the environmental effects of the proposed action may be significant, an EIS is then required to be prepared.

14.6.3 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. Again, the NOAA RECO should be contacted prior to preparing the EIS.

If an action is expected to impact 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.

14.7 Application to NOAA

While most NOAA actions do not require scrutiny under the NEPA process, NOAA Designated Responsible Officials must be aware of this law's potential. Contact the NOAA Regional Environmental Compliance Officer (RECO) if there is any doubt about the environmental impacts of a proposed effort.

NOAA Administrative Order NAO 216-6, Section 1.02b1 clearly explains that "a proposed action, in conceptual stages, does not require an environmental review until it has an established goal and is preparing to make a decision on how to establish that goal." At that stage, the proposed action is subject to environmental review.

To assist in defining which Federal actions may be considered "major" and potentially subject to NOAA's control and responsibility, Section 6.01a of NAO 216-6 defines the term "actions" to include: new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated or approved by NOAA; new or revised agency rules, regulations, plans, policies or procedures; and legislative proposals.

14.8 Responsibilities

14.8.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

14.8.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities to incorporate the NEPA process into the planning of "major actions".

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

14.8.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Shall ensure that procedures are developed at NOAA field offices to consider the environmental impacts of "major actions" early in the planning process.

d. Shall ensure NOAA employees follow the requirements of this section.

e. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

f. Shall ensure that the NEPA process is included early in the planning of "major actions."

14.8.4 Facility Environmental Coordinator or Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

14.8.5 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 Safety Focal Point.

14.9 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.

17.10.1 National Oceanic and Atmospheric Administration Administrative Order NAO216-6 "Environmental Review Procedures for Implementing the National Environmental Policy Act," http://www.rdc.noaa.gov/~nao/216-6.html

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15 PAST SITE CONTAMINATION

Synopsis
This section is applicable to the NOAA facilities and work sites that are located on a site found to be chemically contaminated or attempting to acquire or dispose of real estate.

Initial Implementation Requirements:

- **If a NOAA facility or work site is notified that it is a Potentially Responsible Party (PRP) for the remediation of a contaminated site, contact the RECO and NOAA legal 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.**

Checklist

I5 Past Site Contamination	YES	NO	N/A
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 NOAA is attempting to acquire real estate, has a Phase I property investigation been performed? (15.5.1 b)	_____	☐	_____

15 PAST SITE CONTAMINATION

15.1 Purpose and Scope

This section is applicable to any NOAA facility or work site that is currently located on, or attempting to acquire, a site that has been chemically contaminated by past activities and operations. The section applies to all NOAA facilities and work sites.

15.2 Definitions

Due Diligence - the formal investigation of a piece of real estate to determine its environmental history and the potential for on-site contamination.

Designated Person - a NOAA employee assigned the task of coordinating the effort to identify and manage site contamination created in the past. This role need not be assigned to the Facility Environmental Coordinator. It may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NOAA, this individual is identified as the Environmental and/or Safety Focal Point

Responsible Party - any person, organization, agency or other legal entity which is found to be responsible for any contaminants located on a piece of property.

15.3 Acronyms Employed in This Section

ASC	-	Administrative Service Center
CERCLA	-	Comprehensive Environmental Response, Compensation and Liability Act
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
FEC	-	Facility Environmental Coordinator
NOAA	-	National Oceanic & Atmospheric Administration
NWS	-	National Weather Service
PRP	-	Principal Responsible Party
RECO	-	Regional Environmental Compliance Officer

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 can't 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. The Facility Environmental Coordinator must contact the RECO 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 remediating 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 NOAA

For the NOAA, these principles will apply to three activities: past disposal activities, acquiring real estate and transferring real estate.

a. Past Disposal Activities

If a NOAA 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 NOAA could be identified as a "Responsible Party," and because the EPA (or State) need only

identify one responsible party, the NOAA 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 NOAA would then be required to sue any other potentially responsible parties (PRPs) to recover any money it was forced to pay.

Normally, this does not happen. 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 a NOAA facility or work site be notified by the EPA or State that it has been identified as a potentially responsible party, the Designated Responsible Official must immediately contact the NOAA Regional Environmental Compliance Officer (RECO) for assistance. Copies of all the NOAA correspondence must be sent to legal counsel.

b. Acquisition of Property

Prior to a NOAA facility or work site acquiring 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 1527-00 dated Nov. 1, 2000). A Phase I Environmental Site Assessment includes four basic components; a records review, a site reconnaissance, 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 is arranged by the Administrative Service Center (ASC) 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 "junk yard," 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 technique.

If the Phase I study identifies a major environmental problem or problems with a site, the Regional Environmental Compliance Officer (RECO) should

be contacted. The RECO, with NOAA General Counsel guidance, will recommend what course of action the line office and ASC should take. 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 NOAA 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 NOAA taking control of the site.

c. Transferring Property

When a NOAA facility or work site no longer needs a piece of real property, it will often transfer the property to another agency or governmental unit. When this occurs, NOAA 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 Environmental Coordinator or Safety/Environmental Coordinator (SECO) or NOAA RECO 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. The ASC will include a written disclosure of known environmental contamination in the real property sale or transfer deeds.

There are additional requirements when a property is sold to a non-Federal buyer. The NOAA RECO shuld be contacted to assist in this effort.

15.6 Responsibilities

15.6.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA headquarters facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

15.6.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall ensure that procedures are developed at regional headquarters or operating unit facilities to identify and report past site contamination.

c. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

d. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

15.6.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure that procedures are developed at NOAA field offices for reporting chemical contamination discovered on-site.

c. Shall ensure NOAA employees follow the requirements of this section.

d. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

15.6.4 Facility Environmental Coordinator or Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure that any tasks assigned by the Designated Responsible Official are implemented in accordance with this section.

15.6.5 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.

15.7 **References** (text)

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)**

"Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM 1527-00, dated November 1, 2000.

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16 NOAA ENVIRONMENTAL COMPLIANCE AND SAFETY ASSESSMENT SYSTEM

Synopsis

This section is designed to explain the NOAA Environmental Compliance and Safety Assessment System (NECSAS) which is used by NOAA to determine NOAA facility and/or work site compliance with environmental and worker safety regulations.

The section applies to all NOAA facilities and work sites.

Initial Implementation Requirements:

- **If Selected as a NECSAS Audit Site: (16.8)**
  - Complete and submit the Facility Pre-Visit Questionnaire (PVQ)
  - Assist NOAA Contractor and NECSAS team during the field assessment activities
  - Review and comment on the Draft Data Set
  - Review and comment on the Proof Data Set
  - Select or develop a Line Office Corrective Action Plan (LOCAP) for each assessment finding
  - Implement the LOCAP for each finding____

Recurring and Annual Task Requirements:

- **Ensure all applicable areas of environmental concerns are identified and addressed.**

16 NOAA ENVIRONMENTAL COMPLIANCE AND SAFETY ASSESSMENT SYSTEM

16.1 Purpose and Scope

This section is designed to explain the NOAA Environmental Compliance and Safety Assessment System (NECSAS) used by NOAA to determine NOAA facility and/or work site compliance with environmental and worker safety regulations. The section applies to all NOAA facilities and work sites.

16.2 Definitions

Corporate Assessment Team - this team consists of no more than 21 voting members who are nominated for membership by the Line Offices during the first two weeks of each fiscal year. The Team is responsible for establishing quality environmental, health and safety compliance assistance for all of NOAA while identifying the resource needs for the development, implementation and sustainment of such support programs that are responsive to corporate fiscal directives.

Designated Person - a NOAA employee assigned the task of coordinating the NECSAS Program at a NOAA facility or work site. This role is normally assigned to the Facility Environmental Coordinator, but may be assigned to another NOAA employee.

Designated Responsible Official (DRO) - the senior NOAA official on-site. This official has authority over operations or activities which are subject to environmental and worker safety statutes. The responsibility of the DROs is inherent in their position and need not be formally designated or ascribed.

Facility Environmental Coordinator (FEC) -the individual responsible for ensuring the activities carried out at a facility are conducted in accordance with Federal, state and local environmental regulations. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements. In the NWS, this individual is identified as the Environmental and/or Safety Focal Point.

16.3 Acronyms Employed in This Section

DDS	-	Draft Data Set
DRO	-	Designated Responsible Official
FEC	-	Facility Environmental Coordinator
NAO	-	NOAA Administrative Order
NECSAS	-	NOAA Environmental Compliance and Safety Assessment System
NOAA	-	National Oceanic & Atmospheric Administration
NWS	-	National Weather Service
PCBs	-	Polychlorinated Biphenyls

PfDs	-	Proof Data Sets
RAC	-	Risk Assessment Code
RECO	-	Responsible Environmental Compliance Officer
RSM	-	Regional Safety Manager

16.4 Regulatory Requirements

16.4.1 Executive Order 12196

Executive Order 12196, issued February 26, 1980, requires each Federal Agency to comply with all standards issued under Section 6 of the Occupational Safety and Health Act of 1970 except where the Secretary of Labor approves alternative standards. The order requires the head of each agency to operate an occupational safety and health program in accordance with the requirements of the order.

16.4.2 Executive Order 13148

Executive Order 13148 was signed on April 21, 2000. The order assigned the head of each Federal Agency the responsibility for ensuring that all necessary actions are taken to integrate environmental accountability into day-to-day decision-making and long term planning. In addition, to attain these goals, each agency was required to conduct an agency-level environmental management system self-assessment.

16.4.3 NAO 216.17 NOAA Environmental Compliance Program

NAO 216.17 was effective September 29, 1998 and revised October 4, 2000. This administrative order identifies the senior NOAA official on-site as the Designated Responsible Official (DRO) and assigns this individual the authority over operations or activities which are subject to environmental and occupational safety/health compliance. The order also affirms that this responsibility is inherent in the position and need not be formally designated or ascribed.

16.5 NOAA Environmental Compliance and Safety Assessment System

To comply with both Executive Orders 12196 and 13148 as well as NAO 216.17, NOAA developed the NOAA Environmental Compliance and Safety Assessment System (NECSAS) which attempts to provide quality compliance assistance service by:

a. attaining, sustaining and monitoring compliance with applicable Federal, State and local environmental and health and safety laws, regulations and standards

b. progressing beyond compliance through the strategic implementation of innovative policies and documented best management practices, procedures and projects to mitigate potential liabilities

c. assessing and enhancing the safety and environmental management systems of the organization.

To accomplish these goals, the program first identifies environmental and safety and health compliance issues using a standardized assessment conducted by an independent third party.

Once the problems are identified, the program assists the line offices to:

a. develop the appropriate corrective strategies
b. identify the resources necessary
c. provide the accurate technical data to support the effort
d. track the execution of the corrective program.

The program is divided into three levels or tiers:

16.5.1 Tier I

This is the most comprehensive and complex level of compliance assistance service provided within the NECSAS Program. Tier I (Assessments) efforts are formal, multi-media, Environmental Health & Safety assessments managed by a disinterested third party - primarily a contracted consultant - and follow a systematic approach (i.e., pre-assessment, site assessment and post assessment activities), policy and program standards. Standard data elements, formatted in a finding management report are interactively verified and validated by staff from NOAA and its assessed facilities/sites/activities, the Line Offices, the Administrative Service Centers and the Contractor.

The Contractor (or assessment team) is required to submit three developmental stages of the data (contractual deliverables in the form of compilations of draft, proof and final data sets); each data set is subject to a fourteen-day review by NOAA and its appropriate stakeholders. The final data set, once reviewed and completed, provides corrective action planning which can then be incorporated as part of the project prospectus and strategic plan.

The scheduling of Tier I Assessments is conducted during the Annual NECSAS Planning Meeting, six months prior to the beginning of the target year, according to a pre-approved, four-year perpetual calendar. Other terms often used to describe Tier I compliance assistance include assessments, external or benchmark visits or third-party assessments.

16.5.2 Tier II

A joint effort of facility compliance assistance service conducted by a Regional Environmental Compliance Officer (RECO) and Safety Manager (RSM). By rule, both RECO and RSM must actively participate during the on-site activities and follow-up reporting that is required of a Tier II (Visits) effort. The Tier II approach will follow a formal, multi-media approach, similar to a Tier I Assessment - defined by its own discrete business rules, policy and standards - but to a pared down version that is established by the Corporate Assessment Team. Tier II Visits may be performed for a variety of reasons (e.g., follow-up to Tier I efforts, technical assistance at the request of the facility or site, etc.), based on the discretion of the participating RECO-RSM team, with each visit being documented with the aforementioned report on a timely basis.

The Corporate Assessment Team will establish the format for standard Tier II reports, incorporating data elements common to Tier I data sets, to facilitate program metrics including the measurability of Tier II compliance assistance service. Other terms often used to describe Tier II compliance assistance include in-house assistance visits or internal assessments.

16.5.3 Tier III

All other forms of compliance assistance service provided to NOAA facilities by internal staff or agents such as one-person visits, telephone surveys, completion of site questionnaires, on-line inquiries, etc. The approach to Tier III (Other) efforts will be the simplest and least formal of the three tiers, however, each will be defined by its own discrete business rules, policy and standards (as appropriate) under the auspices of the NECSAS Program to facilitate measurability of this form of compliance assistance service.

16.6 Areas for Assessment

The assessments involve review of a variety of environmental and worker safety programs.

The environmental programs that are reviewed include:

a. air emissions
b. cultural resources
c. hazardous materials use and storage
d. hazardous waste management
e. natural resource
f. pesticide use and management
g. petroleum/oil/lubricant management
h. solid waste management

i. bulk storage in tanks
j. use, management and disposal of:
   (1) PCBs
   (2) Asbestos
   (3) Radon
   (4) Lead-based paint
k. wastewater management
l. water quality programs
m. noise impacts
n. NEPA issues

The worker health and safety areas include:

a. recordkeeping
b. injury/illness reporting
c. Hazard Communication Standard
d. use of personal protective equipment
e. noise exposure
f. confined space entry
g. use of compressed gases
h. lockout/tagout
i. machine guarding
j. welding
k. indoor air quality
l. use and management of specific materials such as:
   (1) benzene
   (2) methylene chloride
   (3) cadmium
   (4) asbestos
   (5) lead
m. ventilation
n. sanitation.

16.7 Assessment Results

Once the assessment is completed, the discovered problems are rated. For safety problems, the severity of the hazard is described as:

Category I	-	Catastrophic
Category II	-	Critical
Category III	-	Marginal
Category IV	-	Negligible

The likelihood that an accident may occur is also determined and assigned to Level A (Frequent), Level B (Probable), Level C (Occasional), Level D (Remote) or Level E (Improbable).

From these assignments, a final Risk Assessment Code (RAC) is assigned. RAC (1) is used to describe imminent danger, RAC (2) means dangerous, RAC (3) is serious and RAC (4) and (5) are non-serious.

For the finding management report, these RAC assignments are used to categorize the safety problems as a Class I, Class II or Class III finding, listed in the following table.

NECSAS Safety and Health Classifications

CLASS I	**SERIOUS S/H FINDING**
Substantial probability that death or serious physical harm could result and management knew or should have known of the hazard. Categorized in terms of Risk Assessment Code (RAC) 1 or 2	
CLASS II	**OTHER-THAN-SERIOUS S/H FINDING**
Moderate to low probability of resulting in an injury or illness. Categorized in Terms of Risk Assessment Code (RAC) 3, 4 or 5	
CLASS III	**REGULATORY OR REPEAT S/H FINDINGS**
Programmatic, written or other administrative defects with minor probability of occurrence. Involve one or more of the following examples. • no formal posting of injury and illness reporting and/or recordkeeping requirements, • no formal written standard operating procedures for hazardous operations, • no formal program documentation (i.e., fire evacuation plans, permitted confined space entry). Categorized in terms of any Risk Assessment Code (RAC) 1 through 5; however, administrative or "paperwork" oriented in nature.	

For environmental issues, the findings are categorized as the following:

Environmental Risk Classifications

All environmental issues during facility and site visits should be categorized as follows:

Class I Finding - An observed noncompliant condition of a Federal, State or local regulation with potential for adverse impacts to human health or the environment. Class I environmental findings are divided into High, Moderate or Low risk.

1. High risk - the most extreme degree of environmental endangerment and liability assigned to a noncompliant condition that requires a timely corrective action requiring immediate attention. Such a condition poses, or has extreme likelihood to pose, a direct threat to the environment or mission at the time of discovery.

2. Moderate - A serious degree of environmental endangerment and liability assigned to a noncompliant condition that requires a timely corrective action, but not necessarily immediate. Such a condition poses a threat to the environment or mission at the time of discovery.

3. Low - A minimal degree of environmental endangerment and liability assigned to a noncompliant condition that requires resolution, but not of an urgent nature. Such a condition poses a potential but very small threat to the environment or mission at the time of discovery. This type of Class I environmental finding may be related to administrative or recordkeeping requirements if punitive penalties are not associated with its noncompliance.

Class II Finding - An observed <u>future</u> noncompliant condition of a Federal, State or local regulation with potential for <u>future</u> adverse impacts to human health or the environment. Class II environmental findings are divided into Moderate and Low risk subcategories.

1. Moderate - a serious degree of environmental endangerment and liability assigned to a noncompliant condition that requires a corrective action within one year. Such a condition will be expected to pose a threat to the environment or mission at some future date if not addressed.

2. Low - A <u>future</u> minimal degree of environmental endangerment and liability assigned to a noncompliant condition that requires resolution, but not of an urgent nature. Such a condition poses a potential but very small threat to the environment or mission within one year's time. This type of Class II environmental finding may be related to administrative or recordkeeping requirements if punitive penalties are not associated with its noncompliance.

Class III Environmental Findings - Involve noncompliance with internal NOAA/Line Office policies, procedures or directives. Class III findings are subdivided into two categories, Moderate and Low Risk.

1. Moderate - A violation of an internal policy or standard which could adversely affect environmental compliance. Examples of moderate risk classifications include failure to conduct an internal inspection, which is more frequent than a Federally-required inspection, that could prevent an interim storage tank leak.

2. Low - This category is a violation of an internal requirement to go beyond regulatory standards.

16.8 Responsibilities

16.10.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall manage the NECSAS Tier I Program.

b. The NOAA Environmental/Safety Office shall coordinate NECSAS Tier I and Tier II activities with appropriate Line Office staff.

c. Requests for clarification concerning this section shall be directed to the NOAA Environmental/Safety Office.

16.10.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall assist regional headquarters and field offices or operating units in the NECSAS Program.

b. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

c. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements.

16.10.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that corrective actions are implemented by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to correct any and all deficiencies discovered in the NECSAS process.

c. Shall ensure that facility personnel cooperate with the NECSAS Assessment Team.

d. Shall ensure that approved corrective actions are implemented.

16.10.4 Environmental or Environmental/Safety Focal Point or Designated Person

a. Shall ensure that any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

16.10.5 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/Safety Focal Point.

Date of Issuance: 10/5/98
Effective Date: 09/29/98

ATTACHMENT A

NAO 216-17

NOAA ENVIRONMENTAL COMPLIANCE PROGRAM

SECTION 1. PURPOSE

This Order establishes the National Oceanic and Atmospheric Administration (NOAA) program for continued compliance with Department Administrative Order (DAO) 216-17, Compliance with Environmental Pollution Standards; Executive Order (E.O.) 12088, Federal Compliance with Pollution Control Standards; and Federal, state, and local statutes and environmental regulations. NOAA's Environmental Compliance program has been developed to ensure that NOAA facilities and activities are in compliance with all applicable Federal, state, and local environmental requirements.

SECTION 2. SCOPE AND AUTHORITY

DAO 216-17 requires Department offices and operating units to adhere fully to environmental pollution control laws, regulations, and directives and to cooperate with Federal, state, and local agencies in improving the quality of the environment. DAO 216-17 also specifically directs the head of each operating unit (such as the NOAA Administrator) to develop and implement programs and activities to prevent or minimize adverse impacts on environmental quality. This NOAA Administrative Order (NAO) implements and supplements DAO 216-17 within NOAA. The provisions of this Order apply to all NOAA personnel, including contractors. For purposes of this Order, the Office of NOAA Corps Operations shall be considered a Line Office (LO).

SECTION 3. DEFINITIONS

.01 General Note on Certain Definitions.

Within this Section, certain terms are defined representing personnel who have roles in environmental compliance matters. However, the terms may not be used by each LO/SO component of NOAA. The specific terms are: Designated Responsible Official; Facility Environmental Coordinator; Line Office Environmental Compliance Officer; Principle Investigator; Safety and Environmental Compliance Officer; and Special Project Manager. Because of organizational and management differences, LOs and SOs may have adopted different "titles" for their environmental personnel and, in some cases, may not have individuals performing the functions associated with each of the defined terms. Readers of this Order should review the functions described in the definitions of these specific terms to determine whether the terms are applicable to their organization.

.02 Terms and Definitions.

a. Annual Operation and Maintenance Costs. These costs include environmentally required items and activities such as annual tank testing, permit fees, training costs, annual service fees, disposal of hazardous wastes, spill containment and cleanup (spills that are due to operational activities), and incidents which are the direct result of operating a facility. These costs includes activities necessary to correct notices of violation received from regulating agencies (excluding historical contamination).

b. Capital Costs. These costs include items and activities such as designing, constructing, and installing pollution abatement systems and equipment; designing, constructing, and implementing remedial environmental projects; and the studying, managing, and monitoring associated with designing and constructing corrective/remedial measures and equipment. This definition is consistent with the definitions and policies established by the Office of Management and Budget (OMB) in Circular A-11 and the FEDPLAN (see Section 3.06 of this Order).

c. Chief Financial Officers (CFO) Act. The CFO Act of 1990, as amended by the Government Management Reform Act of 1994, requires audited financial statements covering all accounts and associated activities of each office, bureau, and activity of all Executive Branch offices. These acts require NOAA's Environmental Compliance Program to identify contaminated sites and estimate cleanup costs. These sites and costs are considered environmental liabilities and are disclosed in NOAA's annual financial statement.

d. 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.

e. 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. Typically, each NOAA facility will have a designated FEC who is also responsible for compliance with occupational safety and health requirements.

f. Federal Agency Environmental Management Program Planning - Project Report (FEDPLAN). This is a U.S. Environmental Protection Agency (EPA) form required as part of a process established by E.O. 12088 and also required by OMB Circular A-11. The main purposes of FEDPLAN are to ensure that Federal agencies identify needed environmental projects and their costs, and target adequate resources to address those projects.

g. Line Office Environmental Compliance Officer. The Line Office Environmental Compliance Officer (LECO) is responsible for assisting the LO managers, including the DROs, Safety and Environmental Compliance Officers (SECOs), and FECs, with

environmental compliance responsibilities. The LECOs are knowledgeable of Federal, state, and local regulations affecting facilities within their LO.

h. NOAA Environmental Compliance Network. The NOAA Environmental Compliance Network includes the Headquarters Environmental Compliance Staff (including Regional Environmental Compliance Officers (RECOs)), LECOs, SECOs, and FECs.

i. NOAA Environmental Compliance Program. The purpose of the NOAA Environmental Compliance Program (NECP) is to assure adherence and compliance with environmental laws established by Federal, state, and local governments as well as internal NOAA policies. The NECP includes policies/guidance development, training, standard operating procedures, organizational structure, financial management, and lines of communication. The Environmental Compliance Staff, reportable to NOAA's Chief Financial Officer/Chief Administrative Officer (CFO/CAO), is responsible for carrying out the NECP. The Chief of the Environmental Compliance Staff is the NECP manager.

j. Principle Investigator. “Principle Investigator” (PI) is a term common in the research community. A PI is an individual having primary responsibility for planning a specific NOAA research activity, project, or program, and for managing the associated people and funds throughout its life cycle. A PI may incur environmental compliance responsibilities associated with the activity, project, or program.

k. Program Management Costs. These costs include items and activities necessary to provide a service, such as compliance auditing, training, project management, or chemical inventory management to NOAA-wide customers. Specific management programs typically have three phases: concept, prototype and implementation. NOAA-wide programs are developed when services are needed or requested by NOAA LO and/or Staff Office (SO) personnel. Management programs are developed by the Environmental Compliance Staff in consultation with targeted clients interested in the specific service or program.

l. Project Prospectus Form. The Project Prospectus Form is used to initiate the environmental compliance project planning, programming, and budgeting process. The form is initiated by the FEC, transferred to the RECO for cost validation, and then sent to the Environmental Compliance Staff for final validation and inclusion in the NOAA Project List and FEDPLAN.

m. Regional Environmental Compliance Officer. The Regional Environmental Compliance Officers (RECO) assist NOAA managers with their environmental compliance responsibilities. The RECOs are knowledgeable of Federal, state, and local regulations affecting facilities within their region and assist in implementation of the NECP at the local level. The RECO positions are formally matrixed from NOAA's Environmental Compliance Staff to the four Administrative Support Centers (ASCs).

n. Safety and Environmental Compliance Officer. The Safety and Environmental Compliance Officers (SECO) are responsible for advising LO directors, DROs, managers, and other personnel within their respective region of the various safety, health, and environmental compliance requirements applicable to their operations and/or facilities. Additionally, they provide assistance to ensure all LO operations are conducted in a safe and environmentally compliant manner.

o. Special Project Manager. Special project managers are individuals that conduct various activities on NOAA's behalf. Among those included in this category are construction project managers and individuals conducting major LO programmatic initiatives off-site. Special project managers may incur environmental compliance responsibilities associated with project or initiative.

p. Strategic Planning. This is a formal plan required by the Government Performance and Results Act of 1993 (GPRA) to improve the internal management of the Federal Government. The strategic plan is used to align the organization and budget with mission, goals, and objectives. In accordance with OMB Circular A-11, the strategic plan serves as a guide for formulating and executing budgets for programs, projects, and activities.

SECTION 4. POLICIES

.01 NOAA shall operate its facilities and manage its resources to minimize any adverse impact on human health and the environment. NOAA shall cooperate with the EPA, state, interstate, and local agencies in the prevention, control, and abatement of environmental pollution. NOAA shall consult with the EPA and with state, interstate, and local agencies concerning the best techniques and methods available for the prevention, control, and abatement of environmental pollution. NOAA shall adhere fully to the laws, regulations, E.O.'s, and DAOs forming the basis for this Order and will cooperate with Federal, state, and local agencies in protecting the quality of the environment.

.02 The Under Secretary for Oceans and Atmosphere shall ensure that funds made available through appropriations from Congress for the prevention, control, and abatement of environmental pollution are not used for any other purpose unless permitted by law and specifically approved by OMB.

.03 Incidents involving the release of an oil or hazardous substance in reportable quantities, as defined by Section 302 of title 40 of the Code of Federal Regulations (40 CFR 302), shall immediately be reported to the designated regulatory agency identified in the facility spill contingency plan as well as to the appropriate LECO and RECO. Additionally, all areas of non-compliance and inability to meet environmental requirements, and all Notices of Violation received from a Federal, state, and/or local regulating agency, shall be reported to the designated LECO and RECO within five (5) days of receipt or at such time as the FEC, Special Project Manager, SECO, or DRO becomes aware of any compliance deficiency. The RECO shall notify the NECP manager of the deficiency or violation and will work with the LECO, DRO, and FEC to address and resolve the issue.

.04 In the event that the NECP manager determines or becomes aware that an LO or SO is unable to carry out the compliance measures required by any law or regulation, the NECP manager shall advise the Deputy Under Secretary (DUS) and the CFO/CAO. Such notice to senior management shall include a recommendation for action to address the issue at hand. The CFO/CAO shall, in accordance with Section 1-101 of E.O. 12088, and on a cost reimbursable basis, initiate appropriate measures to ensure that necessary actions are taken to address any deficiencies specifically raised. The purpose of such measures is to prevent, control, and abate environmental pollution at facilities under the control of NOAA.

.05 Environmental compliance responsibilities shall be incorporated into senior NOAA management performance criteria. The NECP manager shall provide feedback to the DUS regarding senior management's performance of environmental compliance duties and responsibilities. This information will be used by the DUS in assessing management's fulfillment of the environmental compliance performance criteria.

.06 The NOAA Environmental Compliance Staff shall establish guidance for implementing the policies established in this Order. This guidance shall be developed with full participation by LOs and SOs and shall be issued under the signature of the Chief, Environmental Compliance Staff. Topics covered in this guidance include, but are not limited to, project management, audits, funding, corrective actions, property transfers, and cleanup activities.

.07 NOAA shall sustain environmental compliance by following the Code of Environmental Management Principles (CEMP), an environmental management system for Federal agencies and their facilities (see the October 16, 1996, Federal Register). The CEMP is composed of five broad environmental management principles: 1) Management Commitment, 2) Compliance Assurance and Pollution Prevention, 3) Enabling Systems, 4) Performance and Accountability, and 5) Measurement and Improvement. These principles are presented in detail in EPA's Implementation Guide for the Code of Environmental Management Principles for Federal Agencies (CEMP) (March 1997). The Environmental Compliance Strategic Plan implements the CEMP for NOAA.

SECTION 5. RESPONSIBILITIES.

.01 General Responsibilities.

a. The Under Secretary for Oceans and Atmosphere shall strive to ensure that sufficient funds are requested and allocated for the NECP which include capital costs, annual operations and maintenance costs, and program management costs.
b. NOAA's Office of General Counsel shall provide legal advice and counsel on environmental compliance issues.

c. NOAA's CFO/CAO shall develop policies and institute a program to ensure environmental compliance throughout NOAA.

d. The NOAA Environmental Compliance Staff shall oversee, monitor, and provide technical assistance and training concerning environmental compliance to DROs, Special Project Managers, PIs, and the NOAA Environmental Compliance Network. The NECP shall provide funds within the limits of its allocation from NOAA's Congressional appropriation for compliance projects where financial responsibility goes beyond the funding capabilities of the DRO, Special Project Manager, and LO. The NECP funding will typically cover violations and cleanup of past NOAA operations.

e. Heads of LOs and SOs shall plan, develop, and implement programs and activities to prevent or minimize adverse impacts to human health and the environment. This includes incorporating environmental compliance responsibilities into performance plans for those who manage or handle hazardous materials and incorporating environmental compliance as an element in existing and new programs and activities.

f. The day-to-day responsibility for protecting the environment is a responsibility of every NOAA employee. DROs, FECs, Special Project Managers, and PIs shall be responsible for the day-to-day environmental compliance of their facilities and activities.

.02 Program Responsibilities. Environmental compliance is a responsibility shared among NOAA components. Failure to take actions necessary to abate environmental problems once they have been discovered can lead to personal legal liability. Following are organizational responsibilities for administering the NECP.

a. The Environmental Compliance Staff is responsible for:

1. developing NOAA-wide programs and guidance for implementing environmental compliance policies through the strategic planning process;

2. formulating multi-year budgets in consultation with the NOAA Environmental Compliance Network and the LOs and SOs;

3. executing the NECP in accordance with annual appropriations;

4. setting project priorities, establishing performance measures, and developing annual spending plans in consultation with LOs and SOs;

5. disseminating environmental compliance technical assistance and information to all NOAA operations;
6. providing functional management support, training, funding, and supervisory oversight to the RECO positions matrixed to the ASCs;

7. establishing training standards, providing training guidance, and sponsoring training classes for LOs and SOs on:

(a) hazardous material and waste management,

(b) best environmental compliance management practices,

(c) environmental laws for managers, and

(d) specific training classes (upon request from an LO or SO);

8. overseeing program implementation, evaluating performance against stated goals, and providing program reports as required;

9. managing the facility audit and survey program to assess the compliance status of NOAA facilities and operations;

10. managing the environmental management system audits to assess the effectiveness of programs at the facility and management levels;

11. providing technical assistance on compliance with the National Environmental Policy Act (NEPA) for construction-related projects;

12. determining environmentally-regulated contamination at NOAA- owned properties and providing data annually on financial environmental liabilities to support NOAA's financial statement as required by the CFO Act of 1990;

13. maintaining the NECP project list and providing the annual NOAA FEDPLAN submittal to OMB and EPA; and

14. elevating environmental compliance issues to senior management with recommendations for resolution as necessary to ensure compliance.

b. The technical assistance and field component of the NECP is conducted by the RECOs.

The RECOs, who are physically located at the ASCs, have day-to-day responsibility for addressing environmental concerns with their respective NOAA regional clients. RECOs are responsible for:

1. supporting the NECP strategic plan;

2. formulating the regional environmental compliance budget requirements in cooperation with the DROs, Special Project Managers, and the NOAA Environmental Compliance Network;

3. providing technical information on Federal, state, and local environmental compliance requirements;

4. participating in facility condition surveys, environmental audits, surveys, environmental management system audits, and site studies;

5. providing technical support in developing pollution abatement and prevention plans;

6. providing technical support in the cleanup of contaminated site conditions;

7. maintaining contact with appropriate Federal, state, and local government and regulatory officials;

8. providing the results and assisting with the close-out of findings from audits, surveys, reviews, or other assessments performed within their respective regions;

9. providing assistance on the completion of NEPA documents for construction projects within their region. Assistance will be provided in accordance with the requirements of NAO 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act;

10. assisting with the preparation of Project Prospectus Forms, including cost estimates, and submitting the forms to the Headquarters Environmental Compliance Staff;

11. creating and updating environmental liability project files in accordance with the requirements of implementing policy guidelines;

12. providing assistance to LOs and SOs on environmental compliance status reports for NOAA Headquarters;

13. elevating environmental compliance issues to Headquarters Environmental Compliance Staff with recommendations for resolution as necessary to ensure compliance; and

14. maintaining environmental compliance performance measurements for the assigned region.

c. LO and SO officials are responsible for:

1. supporting the NECP strategic plan;

2. incorporating plans for environmental compliance in programs and activities that require the decommissioning of facilities or vessels;
3. formulating budget requests for annual maintenance and operating costs related to environmental compliance;

4. ensuring that funds appropriated and apportioned for the prevention, control, and abatement of environmental pollution are used for their specifically intended purpose, and are consistent with EO.s and this Order;

5. preparing and submitting the Project Prospectus Forms for environmental compliance projects to their LOs and providing copies to the servicing ASC;

6. ensuring that all appropriate personnel are trained in accordance with assigned responsibilities and legal mandates and that the personnel are certified, as applicable;

7. ensuring DROs have, to the extent practical, adequate staffing to assure environmental compliance;

8. ensuring LECOs, SECOs, and FECs receive periodic environmental compliance training to maintain currency with regulatory requirements;

9. participating in the environmental compliance audit and survey program, and closing out findings as noted; and

10. elevating environmental compliance issues to LO senior management with recommendations for resolution as necessary to ensure compliance.

d. The DROs are responsible for:

1. ensuring that facility operations and activities are conducted in compliance with environmental requirements;

2. ensuring that on-site personnel are aware of environmental requirements and are appropriately trained; and

3. elevating environmental compliance issues to LO senior management with recommendations for resolution as necessary to ensure compliance.

e. Special Project Managers and PIs are responsible for:

1. assuring that activities associated with their projects are conducted in compliance with environmental requirements; and

2. assuring that project personnel are aware of environmental requirements and are appropriately trained.

03. Financial Responsibilities.

a. The Under Secretary for Oceans and Atmosphere is responsible for requesting and allocating sufficient funds for NOAA's environmental compliance. The NECP is the focal point in NOAA for the identification, correction, and prevention of environmental problems at NOAA facilities. The NECP will provide funds, within appropriations, for correcting historical environmental cleanup problems.

b. The NECP manager shall submit a budget request covering NOAA's anticipated funding requirement to establish and operate an environmental compliance program. The NECP

budget request shall include projects from the project list, capital costs, program management costs, personnel and administrative costs, and interagency joint ventures. Irrespective of the existence of this specific program and budget to oversee the NECP, ultimately, each manager is responsible for environmental compliance associated with the organization's operations. Responsibility for funding required environmental compliance program activities is not limited by the extent of funds made available for this purpose. NECP funding will be allocated to projects based on priority ranking criteria established under EPA guidelines (FEDPLAN). However, beyond the limitations of NECP funding, LOs will be responsible for ensuring that funds are made available to correct any significant environmental compliance problems associated with that Office's operations.

c. Program Costs.

1. Capital Costs. Central funding from the NECP will be used for capital costs of structure and equipment, but not for annual operation and maintenance costs. In a case where NOAA acquires property where an environmental problem is later found to exist, the Environmental Compliance Staff, with the assistance of General Counsel, will attempt to obtain funding from the previous property holders. If that effort is unsuccessful, the Environmental Compliance Staff will seek funds for the cleanup.

2. Annual Operation and Maintenance Costs. Annual operation and maintenance costs associated with environmental compliance are defined as those costs that are a result of doing business. These costs are not capital costs, and thus should not be funded from the NECP. Funding for annual operation and maintenance aspects of environmental compliance is the responsibility of each LO within the limits of its allocation from NOAA's Congressional appropriations.

3. Program Management Costs. Central funding from the NECP willbe used to initiate NOAA-wide environmental compliance programs. Centralized funding will be used to develop a program from concept through the piloting phases. At the time of nationwide implementation, the LO and Environmental Compliance Staff, in consultation with NOAA's Management and Budget Staff, will determine the LO cost sharing for the specific program. Cost sharing will be on a case-by-case basis and will be determined annually. The cost sharing requirement will be provided before LO budget submission for the Fiscal Year when the specific program will be implemented.

d. Special Situations. There are other special cases as well that affect funding:

1. Facility Closure/Modification. Some environmental cleanup actions may become necessary where NOAA program decisions affect the establishment, alteration, closure, or decommissioning of NOAA facilities. Where such actions can be anticipated, their costs should be incorporated into the program budget of the LO as part of the overall project cost.

2. Special Funding (Emergencies). When a situation develops that requires extensive and immediate action, the LO and the Environmental Compliance Staff will jointly determine the priority of the project required to correct the situation and will jointly determine funding for the project from their existing programs. If the project requires funding beyond the capabilities of their programs, funding will be requested from others sources in the following order: NOAA sources, Department sources, and supplemental Congressional appropriations. The Environmental Compliance Staff and the LO will jointly prepare such requests for funding the required project.

SECTION 6. EFFECT ON OTHER ISSUANCES.

This Order supersedes NAO 216-17, NOAA Environmental Compliance Program, dated December 14, 1994.

SIGNED,
Chief Financial Officer/Chief Administrative Officer

Office of Primary Interest:
Office of Finance and Administration
Environmental Compliance Staff (OFAx3)

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17 TRAINING

Synopsis
This section is promulgated to ensure that all NOAA 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 NOAA 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 workstation (17.6)
  - Determine the training required (17.6)
  - Provide the required training (17.6.1 through 17.6.15)

Recurring and Annual Task Requirements:

- **Provide Refresher Training as Required.**

Checklist

17 Training	YES	NO	N/A
1. Has the Station Manager taken the NOAA DRO Awareness Course? (17.5)	____	☐	____
2. Does the facility or work site:			
a. generate hazardous waste? (17.6.1)	☐	____	____
b. have a SPCC Plan? (17.6.2)	☐	____	____
c. have lead-based paint? (17.6.3)	☐	____	____
d. have lead-based paint in housing units? (17.6.4)	☐	____	____
e. store flammable materials? (17.6.9)	☐	____	____
f. use an underground storage tank? (17.6.12)	☐	____	____
g. have a confined space? (17.6.13)	☐	____	____
h. have employees who:			
- remove lead-based paint? (17.6.3)	☐	____	____
- remove asbestos? (17.6.5)	☐	____	____
- maintain air conditioners? (17.6.6)	☐	____	____
- apply pesticides? (17.6.7)	☐	____	____
- use OSHA-defined hazardous chemicals? (17.6.8)	☐	____	____
- respond to spills of hazardous materials? (17.6.10)	☐	____	____
- use personal protective equipment? (17.6.11)	☐	____	____
- specify or apply labels, markings or containers for shipments of hazardous materials? (17.6.14)			

Note: If the correct answer results in an “x” in a boxed area, specific employee training is required.

17 TRAINING

17.1 Purpose and Scope

This section is promulgated to ensure that the employee training required under numerous environmental programs is established and implemented at all NOAA facilities and work sites.

17.2 Definitions

Asbestos-Containing Material - any material that contains more than 1% asbestos.

Hazmat Employee - a person who "in the course of employment, affects hazardous materials safety."

17.3 Acronyms Employed in This Section

CDL	-	Commercial Driver's License
CESQG	-	Conditionally Exempt Small Quantity Generator
DOT	-	Department of Transportation
DRO	-	Designated Responsible Official
EPA	-	Environmental Protection Agency
HAZMAT	-	Hazardous Material
HAZWOPER	-	Hazardous Waste Operations and Emergency Response
LQG	-	Large Quantity Generator
MAP	-	Model Accreditation Plan
NOAA	-	National Oceanic & Atmospheric Administration
NPDES	-	National Pollution Discharge Elimination System
NWS	-	National Weather Service
OSHA	-	Occupational Safety and Health Agency
RCRA	-	Resource Conservation and Recovery Act
RECO	-	Regional Environmental Compliance Officer
SPCC	-	Spill Prevention Control & Countermeasures Plan
SQG	-	Small Quantity Generator

17.4 Regulatory Requirements

17.4.1 Federal

Employee training for environmental programs are mandated by the Environmental Protection Agency (EPA) as well as the Occupational Safety and Health Administration (OSHA) and the Department of Transportation (DOT). Each agency has a different reason for requiring training and as a result, a training

program designed to comply with the requirements for a particular EPA program will usually include training requirements from OSHA and the DOT.

The Federal laws which authorize these agencies to require this 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 applicators of over-the-counter products.

b. Occupational Safety and Health Act of 1970

This law empowers the Occupational Safety and Health Administration (OSHA) to require training for employees when managing and working with hazardous chemicals. As a result, OSHA has a number of requirements for training. These include training programs that involve large numbers of employees like the Hazard Communication Standard and the storage of flammable liquids as well as those that are limited in scope such as asbestos worker, lead-base paint worker training or confined space entry.

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 Program to protect the nation's water. Under this program, the EPA required the use of Spill Prevention Control and Countermeasures (SPCC) plans to prevent and contain releases of petroleum products from storage tanks. The SPCC Plans rely on employee 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 asbestos-containing material (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 empowered 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 empowered 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. As a result 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.

17.4.2 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 NOAA

facility or work site. The NOAA RECO should be consulted to determine if State or local rules are applicable.

Also, 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 US DOT requirements are universally applied throughout the US and thus the DOT regulations for training of HAZMAT employees are the only requirements for this area.

17.5 NOAA DRO TRAINING PROGRAMS

NAO216-17 designates the senior NOAA official on-site as the Designated Responsible Official (DRO) and assigns this individual the responsibility for environmental and worker safety compliance.

To assist the DROs in understanding what they are responsible for, NOAA has developed and periodically offers a 4-hour course entitled, the "DRO Awareness Course." This course provides an overview of the environmental and health and safety laws and regulations and discusses their impact on NOAA facilities.

All NOAA Designated Responsible Officials should attempt to attend this training when offered.

17.6 NOAA TRAINING PROGRAMS

Based on their operations and the applicable laws and regulations, NOAA facilities and work sites are required to create and implement employee training programs for the following activities if applicable:

a. hazardous waste generation
b. spill prevention control and countermeasures plan (SPCC Plan)
c. lead paint removal
d. lead paint in NOAA housing
e. asbestos removal
f. maintenance of air conditioning
g. application of pesticides
h. use of hazardous chemicals (HAZCOM Standard)
i. storage of flammable materials
j. response to spills of hazardous materials (HAZWOPER Standard)
k. use of personal protective equipment
l. use of an underground storage tank

m. inspection, testing and operation of aboveground storage tanks
n. confined space
o. DOT Hazardous Material employee

In addition, should a NOAA facility or work site be granted a permit for air emissions or the discharge of water, there may be additional training required as a permit condition.

17.6.1 Training Required for Hazardous Waste Generators

Employees at NOAA 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 generator (commonly referred to as a large quantity generator or LQG) produces more than 1,000 kilograms per calendar month
- A small quantity generator (SQG) produces less than 1,000 kilograms, but more than 100 kilograms
- A conditionally-exempt small quantity generator (CESQG) produces less than 100 kilograms per month.
- A generator that only accumulates universal wastes to be recycled.

Note: The determination of the quantity of hazardous waste generated is based on location not organization. If a NOAA facility or work site that generates less than 100 kilograms per month of hazardous waste but it 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 NOAA facility or work site is a large quantity generator.

a. The More Than 1,000 kg/mo Generator Training Requirements or LQG

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 so as 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 including their role in the implementation of the hazardous waste contingency plan.

(1) Minimum Requirements

The EPA requires each employee who handles a hazardous waste be trained to properly manage that hazardous waste as they perform their job. In addition, the EPA and OSHA require the employees be taught how to prepare for and respond to an emergency involving hazardous wastes. At a minimum, this training will involve a review of the pertinent sections of the facility/work site Emergency Action Plan developed in accordance with the NOAA Occupational Safety and Health Manual. It must also include repair and replacement of equipment needed during an 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 6-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.

(i) **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 their primary duties, such as the Electronics Technician or Data Acquisition Program Manager. While each of these individuals have different

primary duties, for the purposes of the hazardous waste training program job titles, they would be identical.

(ii) **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.

(iii) **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.

(iv) **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 1,000 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. Conditionally-Exempt 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 currently includes:

(1) batteries
(2) pesticides
(3) mercury-containing thermostats
(4) lamps including fluorescent bulbs.

If a NOAA facility or work site only generates universal wastes and accumulates a total of less than 5,000 kilograms (11,000 pounds) of these wastes prior to transport to a recycling facility, the facility is a "small quantity handler" (SQH) of universal waste and thus, the NOAA 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 situation.

17.6.2 Training Required by the Spill Prevention, Control and Countermeasures Plan

a. Training Requirements

If a NOAA facility is required to have a Spill Prevention, Control and Countermeasures (SPCC) Plan, the EPA requires the presentation of a personnel 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 should a spill occur, the personnel know what to do.

Because petroleum products are considered a Department of Transportation (DOT) hazardous material, employees who respond to releases of these materials may also be required to receive training in accord with the OSHA HAZCOM Standard in 29 CFR 1910.1200 (see Section 17.6.8) and the OSHA HAZWOPER Standards in 29 CFR 1910.120(q) (see Section 17.6.10).

b. Retraining

The SPCC training must be repeated or updated at "intervals frequent enough to ensure adequate understanding of the SPCC Plan for the facility."

c. Regulatory Citations

40 CFR 112.7(f).

17.6.3 Training Required by the Lead Worker Protection Program

The training for workers who work with or remove lead-based paint is regulated by both OSHA and EPA under separate programs.

a. OSHA Lead Worker Requirements

(1) OSHA requires every worker who is exposed to an airborne concentration of lead of 30 ug/m^3 or higher to be trained in the following:

(a) the requirements of the OSHA requirements for lead workers in 29 CFR 1926.62

(b) the specific ways overexposure to lead could occur

(c) the purpose, use, selection and limitations of respirators

(d) the purpose of the medical surveillance and medical removal programs

(e) the engineering controls and work practices to be used

(f) the contents of any contingency plan that is in effect

(g) instructions about the use of chelating agents

(h) the employee's right of access to records.

(2) Retraining

OSHA requires annual retraining of the employees.

(3) Regulatory Citation

29 CFR 1926.62(l)(2).

b. EPA Lead Worker Requirements

(1) The EPA has divided lead worker training into five categories or disciplines: inspector, risk assessor, supervisor, project designer and abatement worker. Further, the EPA requires all lead worker programs to be certified by the EPA. No individuals or firms are allowed to provide, offer or even claim to provide lead-based paint activities, training or refresher training without being accredited by the EPA according to the requirements in 40 CFR 745.225.

(2) Retraining

The EPA requires an annual refresher course for each discipline of at least 8-hours except for the project designer who must receive at least 4-hours of refresher training. Like the basic training, the refresher training can only be provided by a firm or individual accredited by the EPA.

(3) Regulatory Citation

40 CFR 745 Parts 220-239.

17.6.4 Lead-Based Paint (LBP) in Housing

a. For NOAA employees and their families who live in NOAA-provided housing that was found to contain lead-based paint, the NOAA facility or work site Lead-Based Paint Program Manager (i.e., the Designated Person) 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."

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). A request may also be made by FAX to (202) 659-1192 or by e-mail to ehc@cais.com.

b. Retraining

There is a one-time notification to each resident.

c. Regulatory Citation

40 CFR Part 745.107.

17.6.5 Asbestos Training

a. General Requirements

OSHA requires asbestos training for all employees who either work with asbestos-containing materials or because of where they work could be exposed to a concentration of asbestos in excess of the permissible exposure limit (PEL) of 1.0 fiber per cubic centimeter in air work. This training must

be completed prior to or at the time of initial exposure and the NOAA must provide written materials at no cost to the employee.

OSHA divides the types of work with asbestos into four (4) classes and requires training appropriate to each class of work. The four (4) OSHA classes are:

(1) ***Class I asbestos work*** means activities involving the removal of thermal system insulation (TSI) and encapsulating asbestos-containing material (ACM) or potentially asbestos-containing material (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 contact but do not disturb ACM or PACM and activities to cleanup dust, waste and debris resulting from Class I, II and III activities.

b. Class I Worker Training

For workers involved in Class I operations and Class II operations that require the use of critical barriers (i.e. sealing the area to prevent asbestos fibers from leaving the immediate work area) or negative pressure enclosures (i.e. air is drawn into the work area), OSHA requires workers be provided training equivalent to the EPA-certified Asbestos Worker Course designed in accordance with 40 CFR 763, Appendix C.

For NOAA operations, this means sending personnel to a school or vendor certified by the EPA to provide the Asbestos Worker Course.

c. Class II Worker Training

For workers involved in Class II operations that require neither the critical barriers nor negative pressure enclosures, OSHA requires they receive the Basic Asbestos Safety Course required to be provided to Class IV workers plus:

(1) specific work practices and engineering controls which specifically relate to the category of material being removed
(2) "hands-on" training in the applicable work practices the employee will be required to use for each type of material to be removed.

d. Class III Worker Training

For Class III workers, OSHA refers to asbestos training required by the EPA for custodial workers at schools that contain asbestos or asbestos-containing materials (ACM) as specified in 40 CFR 763.92(a)(2). This training includes:

(1) information about asbestos, its uses and various forms

(2) information about the health effects from asbestos exposure

(3) locations where asbestos has been identified in the facility

(4) recognition of damage, deterioration and delamination of ACM

(5) name and telephone number of person responsible for asbestos management program.

While the EPA requires this training be at least 2-hours in length, OSHA requires "hands-on" training be added and that it take at least 16-hours.

The OSHA regulations include a proviso that if the competent person determines that the EPA training is not adequate, the training for Class III workers can be modified to include:

(1) the basic asbestos safety course provided Class IV workers

(2) specific work practices and engineering controls used on the job

(3) the purpose, use, fitting and limitations of respirators

(4) the appropriate work practices

(5) medical surveillance program

(6) the OSHA rules

(7) the names, addresses and phone numbers of public health organizations which provide information or conduct programs to stop smoking

(8) the requirements for posting of signs and affixing labels and what they mean.

(9) hands-on training in the applicable work practices.

e. Class IV Worker Training

Class IV workers are required to receive a basic asbestos safety training course which includes:

(1) the differences in the types of training required by OSHA

(2) the methods of recognizing asbestos including the OSHA requirement that untested, but presumed asbestos-containing material, was to be handled as ACM

(3) the health effects of asbestos exposure

(4) the relationship of smoking and asbestos in producing lung cancer

(5) the nature of operations that could result in asbestos exposure and the importance of protective controls including:

a. engineering controls
b. work practices
c. respirators
d. housekeeping procedures
e. hygiene facilities
f. protective clothing
g. decontamination procedures
h. emergency procedures
i. waste disposal procedures

(6) Retraining

Asbestos worker training is required to be provided annually.

(7) Regulatory Citation

For OSHA Requirements: 29 CFR 1926.1101(k)(9)
For EPA Requirements: 40 CFR 763.92(a)(2).

17.6.6 Air Conditioner Maintenance

a. NOAA 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.

b. Retraining

The EPA does not require retraining, but does allow the EPA Administrator to require recertification by placing a notice in the Federal Register.

c. Regulatory Citation

40 CFR Part 82.40 and 40 CFR Part 82.161.

17.6.7 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.

The EPA regulations classify applicators as either private or commercial and then promulgates separate standards for each.

A ***private applicator*** uses or supervises the use of restricted use pesticides for the purpose of 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, NOAA facilities need to check with the NOAA RECO 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.

(1) Agricultural pest control

(a) Plant
(b) Animal

(2) Forest pest control

(3) Ornamental & turf pest control

(4) Seed treatment

(5) Aquatic pest control

(6) Right-of-Way pest control

(7) Industrial, institutional, structural and health-related pest control

(8) Public health pest control

(9) Regulatory pest control

(10) Demonstration and research pest control

To determine the training required and the certification process, the NOAA 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://www.epa.gov/pesticides/safety/applicators/statepro.htm.

17.6.8 Using Hazardous Chemicals

a. Requirements

All NOAA personnel who use, manage or store OSHA-defined hazardous chemicals are required to be trained under the Hazard Communication (HAZCOM) Standard. For NOAA Laboratories, this program is referred to as the "Chemical Hygiene Plan." Procedure 7 in the NOAA Occupational Health and Safety Manual details the requirements for both programs and provides a series of templates to assist in their implementation.

Under the OSHA HAZCOM Standard rules, personnel who work with a hazardous chemical must take training which explains:

(1) the existence of the HAZCOM Standard and what it requires.

(2) what are the hazardous chemicals in the workplace and why they are considered hazardous.

(3) the role of the Material Safety Data Sheet (MSDS) and where they are located.

(4) how an employee would obtain a material safety data sheet (MSDS).

The employee training plan shall 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. visual 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 MSDSs and how employees can obtain and use the available hazard information.

Similarly, under the requirements for the Chemical Hygiene Plan, Laboratories must provide each employee information which informs employees of:

(1) the contents of the standard and its appendices,

(2) the location and availability of the Chemical Hygiene Plan,

(3) the permissible exposure limits for OSHA-regulated substances or the recommended exposure limits for other hazardous chemicals where there is no OSHA Standard,

(4) signs and symptoms associated with exposures to hazardous chemicals used in the laboratory, and

(5) the location and availability of known reference material on the hazards, safe handling, storage and disposal of the hazardous chemicals found in the laboratory. These references must include the Material Safety Data Sheets.

The OSHA Chemical Hygiene Plan Standard also requires the laboratory employees receive training which includes:

(1) methods and observations that may be used to detect the presence or release of a hazardous chemical,

(2) the physical and health hazards of the chemicals in the work area,

(3) the measures employees can take to protect themselves, including specific procedures provided by NOAA like work practices, emergency procedures, and personal protective equipment used to protect the employees.

For those NOAA operations 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 NOAA employees who only handle sealed containers, for example, in a warehouse facility, the training program must ensure 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 for the HAZCOM Standard and 29 CFR 1910.1450 for the Chemical Hygiene Plan requirements.

17.6.9 Storage of Flammable and Combustible Materials

a. All NOAA personnel who use, store or handle flammable and combustible materials need to be trained in the dangers of these materials and the proper management techniques. Toward this end, Procedure 16 in the NOAA Occupational Health and Safety Manual creates a management program for these materials.

While there is no OSHA nor 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.

17.6.10 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 Hazardous Waste Operations and Emergency Response (HAZWOPER) Standards.

a. Regulated Activity

When a hazardous substance is spilled, OSHA has determined the residues from the clean-up 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."

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." Also, responses where "there is no potential health or safety hazard" are not emergency releases. Personnel responding to these situations would have received appropriate training under this HAZCOM Standard.

Under the OSHA rule, there are five (5) 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 NOAA facilities or work sites, NOAA 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.

(a) **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 the Hazard Communication (HAZCOM) training thus meeting two requirements simultaneously.

(b) **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 alternatives to this training. If the employer certifies that the employee "has sufficient experience to objectively demonstrate competency" in the areas identified as necessary 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

(c) **Hazardous Materials Technician**

The employee who "plugs or patches or otherwise stops a release of hazardous substance" from a container or tank is known as a "Hazardous Materials Technician." These employees need 24-hours of training which includes the First Responder - Operations Level training plus:

- implementation of the contingency plan

- identification and classification of unknown materials
- personal protective equipment
- hazard and risk assessment
- containment techniques
- decontamination
- termination procedures
- chemical and toxicological terms.

(d) **Hazardous Materials Specialist**

The employee with more specific knowledge about the released material is deemed the "Hazardous Materials Specialist." This employee may have responsibilities for liaison with regulatory agencies.

The 24-hour training for the Hazardous Materials Specialist includes the training provided for the HAZMAT Technician and:

- implementation of the local emergency response plan
- knowledge of the state response plan
- in-depth hazard and risk assessment
- development of site safety and control plan
- chemical, radiological and toxicological terminology.

(e) **On-Scene Incident Commander**

The employee who assumes control of the emergency response is called the "Incident Commander." This individual needs 24-hours of training which includes the First Responder - Operations Level training as well as:

- employer's incident command systems
- implementation of the employer's plan
- risks and hazards of PPE
- implementation of the local response plan
- the State and Federal response
- decontamination.

Note: Although the Hazardous Materials Technician, Hazardous Materials Specialist and the Incident Commander all are required to complete a 24-hour training course, the three courses are significantly different in their scope and purpose.

b. Retraining

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).

17.6.11 Training on the Use of Personal Protective Equipment

On April 6, 1994, OSHA revised the regulations in 29 CFR 1910 Subpart I governing the use of personal protective equipment (PPE) in the workplace.

a. Regulated Activity

The general rules require each employer to assess if hazards are present or are likely to be present which would necessitate the use of PPE. The performance of this assessment must be verified by written certification. If PPE is required, the employer must select the appropriate equipment, communicate these decisions to each employee and properly fit each affected employee.

b. Required Training

The employer must provide training to ensure employees know:

(1) when PPE is necessary
(2) what PPE is necessary
(3) how to properly done, doff, adjust and wear the PPE
(4) the limitations of the PPE used
(5) the proper care, maintenance, useful life and disposal of the PPE.

Before being allowed to perform work using PPE, each employee must demonstrate an understanding of the training provided and the ability to use the appropriate PPE properly.

Should the employer have reason to believe that an employee does not have an understanding of the reasons for using the PPE or the skills necessary to properly use it, retraining is required. Retraining can be required when there are changes in the workplace or the PPE employed or it becomes apparent the employee has not retained the required skills or understanding.

The employer must provide a written certification that verifies that each employee has received and understands the training.

c. Retraining and Recordkeeping

(1) Retraining Requirement:

Whenever an employer believes the employee does not have the understanding and skill required to properly use PPE.

(2) Records Required:

Written certificate from employer that contains the name of each employee trained, the date of training and the subjects presented.

d. Regulatory Citation

29 CFR 1910.132.

17.6.12 Use of an Underground Storage Tank (UST)

a. Regulated Activity

NOAA facilities that use an underground storage tank 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 mandate it be provided.

b. Required Training

NOAA 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.

17.6.13 Inspection, Testing and Operation of Aboveground Storage Tanks

Under the EPA rules for Oil Pollution Prevention and Response which were revised effective August 16, 2002, all aboveground tanks used for bulk storage of petroleum products must be subject to periodic testing to ensure they are not leaking.

For all aboveground tanks used by NOAA, this inspection requires the inspectors be trained in:

- what to look for when visually inspecting the outer shell and diking for signs of deterioration,
- how to inspect the interstitial space or test the interstitial monitoring device, if available,
- how to inspect all piping and connected equipment for leaks, and
- how and where to record the results.

There is no regulatory requirement for retraining but an annual review is recommended.

17.6.14 Training Requirements for Confined Space Entry

OSHA has identified four classifications of personnel that participate in confined space entries and requires specific training before any employee is allowed to perform their assigned role. Authorized entrants, outside attendants, authorizing individual and rescue personnel are each required to receive training specific to their role prior to engaging in confined space entries. Training on how to perform the necessary job requirements for each classification along with the hazards of confined space entry must be met.

a. Authorized Entrants

An authorized entrant is an individual who will enter the confined space area to perform work. Prior to entry, such a worker is required to receive training about hazards in confined space areas and how to perform their job duties. At a minimum, employers must provide training which includes:

(1) **Hazard recognition** - entrants need training to identify hazards and recognize signs and symptoms of exposure and the consequences of being overexposed.

(2) **Communication** - entrants must establish communication with an outside attendant and alert the attendant when a self-initiated evacuation is conducted.

(3) **Protective equipment** - entrants must be trained on the types and proper use of PPE needed to enter confined space areas.

(4) **Self-Rescue** - entrants must receive training on proper exit procedures upon an evacuation signal.

b. Outside Attendants

The outside attendant is an individual who is stationed outside the confined space area to monitor and direct authorized entrants in a work area during scheduled operations. Employers are responsible for providing training to attendants in the following areas:

(1) **Head Count** - the attendant shall be trained in maintaining an accurate count of authorized entrants in the work area.

(2) **Hazard Recognition** - attendants must be trained to identify hazards inside and outside the permit area and monitor changes in the work area.

(3) **Communication** - attendants must be trained in proper measures to maintain effective and proper communication with entrants and outside individuals in the event that an evacuation is required as well as how to conduct an evacuation.

(4) **Rescue** - attendants shall be trained in proper procedures to initiate a rescue while not entering the permit area.

c. Authorizing Individual

An authorizing individual is the person who makes the initial determination about allowing entry into the confined space area. The authorizing individual must be trained to conduct the following procedures:

(1) determine that the entry permit contains all the required information.

(2) determine that the necessary procedures and practices are in effect and the necessary equipment is in place before entrants proceed with work.

(3) conduct monitoring at specified intervals to determine any changes in the work area which deviate from the initial permit.

(4) remove unauthorized personnel from permit area.

d. Rescue Teams

If the employer chooses to use a rescue team from an outside source or in-plant operation, he must establish contact with such a team prior to initiating work. The employer must also alert the team to hazards in the confined space entry area. The rescue team must also have adequate training in proper rescue procedures and equipment use and must simulate a rescue operation once in a twelve month period.

e. Retraining and Recordkeeping

(1) Retraining Required - as necessary to introduce new or revised procedures or when the employer believes there are inadequacies in the employee's knowledge.

(2) Records Required - Employer certification containing the employee's name, signature or initials of the trainers(s) and the date of training.

f. Regulatory Citation

29 CFR 1910.146.

17.6.15 DOT Hazardous Material Employee Training

The DOT requires each "hazmat employer" 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:

(1) load, unload or handle hazardous materials
(2) test, recondition, repair, modify, mark or otherwise represent containers, drums or packages as qualified for use for hazardous materials
(3) prepare hazardous materials for transportation
(4) are responsible for safety of hazardous materials transportation
(5) operates a vehicle used to transport hazardous materials.

NOAA personnel typically perform the tasks described in items (1), (3) and (4) and hence, the DOT requires them to receive information to do these tasks correctly.

a. 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 each employee received the training and was 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:

(1) 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.

(2) 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 site- and job-specific and includes NOAA personnel who handle, load, unload, package or even sign the shipping papers or manifest.

(3) Safety Training

This category includes:

(a) emergency response training
(b) personnel protective equipment and measures to protect employees from associated hazards
(c) 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.

(4) Driver Training

This training is only required of all drivers of motor vehicles used to transport commercial quantities of hazardous materials. Because NOAA employees do not transport commercial quantities of DOT Hazardous Materials, it is unlikely that this training will be required. It is included here for reference only.

For drivers, the training includes:

(a) pretrip safety inspection
(b) use of vehicle controls and equipment including emergency equipment
(c) operation of the vehicle
(d) procedures to navigate tunnels, bridges and railroad crossings
(e) requirements for attendance of vehicles, parking, smoking, routing, incident reporting
(f) 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:

(a) operation of emergency controls on the tank
(b) special vehicle handling characteristics
(c) loading and unloading
(d) properties and hazards of materials transportation
(e) retesting and inspection requirements.

(5) Retraining and Recordkeeping

(a) Retraining Required: recurrent every three (3) years.

(b) Records Required:

(1) certification by employer
(2) training record which 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 that completes the training.

(6) Regulatory Citation

49 CFR 172 Subpart H.

17.7 Responsibilities

17.7.1 NOAA Headquarters

a. The NOAA Environmental/Safety Office shall perform an annual assessment of the NOAA facilities to ensure that the facilities are in compliance with this section.

b. The NOAA Environmental/Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this section. The frequency of these regional and field office assessments shall be determined by the NOAA Headquarters Environmental/Safety Office.

c. Requests for clarification concerning this section shall be directed to the NOAA Headquarters Environmental/Safety Office.

17.7.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters and field offices or operating units.

b. Shall identify training opportunities to field offices when available and assist in implementation.

c. Shall ensure that appropriate training program procedures are developed at regional headquarters or operating unit facilities.

d. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this section.

e. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of the section.

17.7.3 Designated Responsible Official

a. Shall have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NOAA facility.

b. Shall ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section

c. Shall ensure that training programs are developed at NOAA field offices and implemented for environmental and worker safety programs.

d. Shall 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 shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

e. Shall ensure that all NOAA facility/work site personnel have received the training required to properly perform their duties in accord with environmental/worker health and safety requirements.

17.7.4 Facility Environmental Coordinator or Environmental and/or Safety Focal Point or Designated Person

a. Shall ensure any tasks delegated to them by the Designated Responsible Official are implemented in accordance with the requirements of this section.

b. Shall determine training requirements for facility/workstation personnel.

c. Shall implement required training.

d. Shall maintain training records.

17.7.5 Employees

a. 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.

17.8 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.

17.7.1 U.S. Department of Labor Occupational Safety and Health Agency

a.	29 CFR 1910.106	"Flammable and combustible liquids"
b.	29 CFR 1910.120	"Hazardous waste operations and emergency response"
	29 CFR 1910.120(p)	Certain operations conducted under the Resource Conservation and Recovery Act of 1976 (RCRA)
	29 CFR 1910.120(p)(8)	Emergency Response Program
	29 CFR 1910.120(p)(8)(iii)	Training
	29 CFR 1910.120(q)	"Emergency response to hazardous substance releases"
c.	29 CFR 1910.132	"Personal Protective Equipment"
d.	29 CFR 1910.146	"Permit required confined space"
e.	29 CFR 1910.1200	"Hazard Communication Standard"
f.	29 CFR 1926.62	"Lead"
	29 CFR 1926.62(l)	Employee information and training
	29 CFR 1926.62(2)	Training Program
g.	29 CFR 1926.1101	"Asbestos"
	29 CFR 1926.1101(k)	Communication of hazards
	29 CFR 1926.1101(k)(9)	Employee information and training

17.8.2 U.S. Department of Transportation

a. 49 CFR 172 Subpart H - "Training"

17.8.3 U.S. Environmental Protection Agency

a.	40 CFR 82	"Protection of Stratospheric Ozone"
	40 CFR 82.40	Technician training and certification
	40 CFR 82.161	Technician certification
b.	40 CFR 112.7	"Guidelines for the Preparation and Implementation of a Spill Prevention Control and Countermeasure Plan"
	40 CFR 112.7(e)(10)	Personnel, training and spill prevention procedures
c.	40 CFR 265	"Interim Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities"
	40 CFR 265.16	Personnel training
d.	40 CFR 262	"Generator Standards"
	40 CFR 262.34	Accumulation Time
e.	40 CFR 280	"Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (USTs)"
f.	40 CFR 475	"Lead-Based Paint Poisoning Prevention in Certain Residential Structures"
	40 CFR 475.107	Disclosure requirements for sellers and lessors
	40 CFR 475.220-239	Lead-Based Paint Activities
g.	40 CFR 763 Subpart E	"Asbestos-Containing Materials in Schools"
	40 CFR 763.92(a)	Training and periodic surveillance
	40 CFR 763.92(a)(2)	Training for custodial staff

h. Appendix C - Asbestos Model Accreditation Plan

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 of 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.

Corporate Assessment Team - this team consists of no more than 21 voting members who are nominated for membership by the Line Offices during the first two weeks of each fiscal year. The Team is responsible for establishing quality environmental, health and safety compliance assistance for all of NOAA while identifying the resource needs for the development, implementation and sustainment of such support programs that are responsive to corporate fiscal directives.

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

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

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.

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

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

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 - is paint manufactured prior to 1978 which contains lead oxide as the base pigment (coloring).

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".

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), Radar Operations Center (ROC) or the Sterling Research & Development Center (SR&DC).

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 3.7×10^{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.

Regional Safety Manager (RSM) - located at the respective Administrative Support Center (ASC).

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 Plan (SPCC) - 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 Preduction center, NP7; and Tropical Prediction Center, NP8), Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SR & DC facilities; or Meteorologist-in-Charge (MIC), Hydrologist-in-Charge (HIC) or Official-in-Charge (OIC).

Threshold Planning Quantity (TPQ) - that 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 I Form - a summary of the amount and hazards presented by hazardous materials stored on-site.

Tier II Form - provides information about a specific hazardous material stored at a site.

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.

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.

ACRONYMS

AA	-	Assistant Administrator
ACGIH	-	American Conference of Governmental Industrial Hygienists
ACM	-	Asbestos-containing Material
ANSI	-	American National Standards Institute
ASC	-	Administrative Service Center
ASOS	-	Automated Surface Observation System
AST	-	Aboveground Storage Tank
ASTM	-	American Society for Testing and Materials
AUL	-	Authorized Use List
BMP	-	Best Management Practices
CAA	-	Clean Air Act
CAAA	-	Clean Air Act Amendments
CDL	-	Commercial Driver's License
CE	-	Categorical Exclusion
CERCLA	-	Comprehensive Environmental Response, Compensation, Liability Act
CESQG	-	Conditionally-Exempt Small Quantity Generator
CFC	-	Chlorofluorohydrocarbons or Freon
CFR	-	Code of Federal Regulations
CHEMTEC	-	Chemical Manufacturers Transportation Emergency Center
CIH	-	Certified Industrial Hygienist
CONUS	-	Continental United States
COTR	-	Contracting Officer's Technical Representative

CPG	-	Comprehensive Procurement Guidelines
CPSC	-	Consumer Product Safety Commission
CWA	-	Clean Water Act
CZMA	-	Coastal Zone Management Act
DCP	-	Data Collection Platform
DDS	-	Draft Data Set
DLA	-	Defense Logistics Agency
DOC	-	Department of Commerce
DOT	-	Department of Transportation
DRO	-	Designated Responsible Official
EA	-	Environmental Assessment
ECO	-	Environmental Compliance Officer
EHS	-	Extremely Hazardous Substance
EIS	-	Environmental Impact Statement
EO	-	Executive Order
EPA	-	Environmental Protection Agency
EPCRA	-	Emergency Planning and Community Right-to-Know Act
ERA	-	Emergency Response Agreements
ERG	-	Emergency Response Guidebook
ESA	-	Endangered Species Act
ET	-	Electronic Technician
FEC	-	Facility Environmental Coordinator

FEE	-	Federal Environmental Executive
FIFRA	-	Federal Insecticide, Fungicide and Rodenticide Act
FONSI	-	Finding of No Significant Impact
FSS	-	Federal Supply System
GSA	-	General Services Administration
HAZMAT	-	Hazardous Material
HAZCOM	-	Hazard Communication Standard
HAZWOPER	-	Hazardous Waste Operations and Emergency Response
HC	-	Hazardous Chemical
HIC	-	Hydrologist-in-Charge
HM	-	Hazardous Material
HMR	-	Hazardous Material Regulations
HMT	-	Hazardous Materials Table
HMTA	-	Hazardous Materials Transportation Act
HMTUSA	-	Hazardous Materials Table Uniform Safety Act
HS	-	Hazardous Substance
HSWA	-	Hazardous and Solid Waste Amendments
HTIS	-	Hazardous Technical Information Service
HUD	-	Housing and Urban Development
HW	-	Hazardous Waste
LARC	-	Limited Access Remote Collector
LBP	-	Lead-based Paint
LEL	-	Lower Explosive Limit

LEPC	-	Local Emergency Planning Committee
LQG	-	Large Quantity Generator
MAP	-	Model Accreditation Plan
MARPOL	-	Maritime Pollution (International Convention for the Prevention of Pollution from Ships)
MIC	-	Meteorologist-in-Charge
MOC	-	Marine Operations Center
MOU	-	Memorandum of Understanding
MPRSA	-	Marine Protection, Research and Sanctuaries Act
MSD	-	Marine Sanitation Device
MS4	-	Municipal Separate Storm Sewer System
MSDS	-	Material Safety Data Sheet
NA	-	Not Applicable
NAO	-	NOAA Administrative Order
NCEP	-	National Centers for Environmental Prediction
NDBC	-	National Data Buoy Center
NECSAS	-	NOAA Environmental Compliance and Safety Assessment System
NEPA	-	National Environmental Policy Act
NFPA	-	National Fire Protection Agency
NHPA	-	National Historic Preservation Act
NiCad	-	Nickle Cadmium Battery
NIOSH	-	National Institute of Occupational Safety and Health
NLIC	-	National Lead Information Clearinghouse

NLSC	-	National Logistics Supply Center
NOAA	-	National Oceanic & Atmospheric Administration
n.o.s.	-	Not Otherwise Specified
NPDES	-	National Pollutant Discharge Elimination System
NRC	-	National Response Center
NWS	-	National Weather Service
NWSH	-	National Weather Service Headquarters
OIC	-	Official-in-Charge
OJT	-	On-the-Job Training
ORM-D	-	Other Regulated Materials
OSHA	-	Occupational Safety and Health Act **- OR -** Occupational Safety and Health Administration
PCBs	-	Polychlorinated Biphenyls
pCi/L	-	Picocuries Per Liter
P.E.	-	Professional Engineer
PEL	-	Permissible Exposure Limit
PfDs	-	Proof Data Sets
POTW	-	Publicly-Owned Treatment Works
PPA	-	Pollution Prevention Act
PPE	-	Personal Protective Equipment
ppm	-	Parts Per Million
PRP	-	Potentially Responsible Party
P2	-	Pollution Prevention

RAC	-	Risk Assessment Code
RCRA	-	Resource Conservation and Recovery Act
RDA	-	Radar Data Acquisition
RECO	-	Regional Environmental Compliance Officer
RMAN	-	Recovered Materials Advisory Notice
ROC	-	Radar Operations Center
ROD	-	Record of Decision
RQ	-	Reportable Quantity
RSM	-	Regional Safety Manager
SARA	-	Superfund Amendments and Reauthorization Act
SDWA	-	Safe Drinking Water Act
SECO	-	Safety/Environmental Coordinator
SERC	-	State Emergency Response Commission
SFT	-	Sector Facility Technician
SIP	-	State Implementation Plan
SPCC	-	Spill Prevention Control and Countermeasures
sp.gr.	-	Specific Gravity
SQG	-	Small Quantity Generator
SR&DC	-	Sterling Research and Development Center
SWDA	-	Solid Waste Disposal Act
TLV	-	Threshold Limit Value
TPQ	-	Threshold Planning Quantity
TSCA	-	Toxic Substance Control Act

TSD	-	Treatment, Storage or Disposal
TSDF	-	Treatment, Storage, Disposal Facility
TWA	-	Time Weighted Average
UEL	-	Upper Explosive Limit
UN	-	United Nations
UN/NA	-	United Nations/North America
UST	-	Underground Storage Tank
UV	-	Ultraviolet
WFO	-	Weather Forecast Office
WQA	-	Water Quality Act
WSOM	-	Weather Service Operations Manual
WSR	-	Waste Shipment Record
XRF	-	X-ray Spectrophotometer

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 NOAA

FIFRA focuses its enforcement efforts on the manufacture, registration, distribution, and management of the commercial application of pesticides. While NOAA 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; and/or
- Dispose of registered or restricted pesticides.

RESPONSIBILITIES UNDER FIFRA

NOAA is responsible for ensuring that pesticide management activities under FIFRA are successfully performed. These responsibilities include:

- Ensuring that NOAA 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 of this manual describes the NOAA 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 NOAA

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." This administrative order explains that NOAA is subject to NEPA if it:

- engages in a major federal action, including construction, modification, or rehabilitation of a building or property;
- implements changes in facility siting or significant redistribution of NWS staff;
- changes activities that alter prevailing land use; and/or
- provides grant money.

RESPONSIBILITIES UNDER NEPA

NEPA is largely a procedural statute which requires Federal agencies to study, develop, and describe impacts, alternatives, and mitigation measures, and to obtain public input on projects considered to be major federal actions. NEPA should be part of the planning process of all major NOAA actions. The types of activities required under NEPA include:

- Evaluating all federal actions to determine the applicability of NEPA --- as appropriate submitting Categorical Exclusion (CE) or Findings of No Significant Impact (FONSI) documentation to denote where actions are not significant.
- Performing Environmental Assessments (EAs) and preparing Environmental Impact Statements (EISs).
- 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 of this manual describes the NOAA compliance activities under the NEPA.

Because the NEPA process can appear daunting at least initially, the NOAA RECO should be contacted for assistance.

CLEAN AIR ACT AND **THE CLEAN AIR ACT AMENDMENTS**

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; and 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 NOAA

Most of NOAA's compliance requirements will be associated with CFC and halon management, as well as state regulation of boilers, emergency generators, and fuel storage tanks. NOAA facilities with large boilers may exceed emissions thresholds and may be required to obtain permits. NOAA 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 tons or more per year of any hazardous air pollutant (HAP); and/or
- Service or repair CFC-containing equipment or dispose of CFCs.

RESPONSIBILITIES UNDER THE CAAA

NOAA 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 management of 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 of this manual describes the NOAA 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 NOAA

Most NOAA operations involve the collection and discharge of water to either a direct outfall or to a local sewage treatment facility. Additionally, NOAA installations may be sited in the vicinity of waterways or wetlands. These facilities may be subject to CWA requirements.

NOAA 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 is defined as a body of water that may be put into public use whether it be for commercial navigation or not. It makes no difference if the water body is a shallow pool, or muddy lake, or marsh. The water body need have the potential to be used in agriculture, trade, or commerce and possess the capacity for floatage in transporting products (i.e., logs or wood) to market.

RESPONSIBILITIES UNDER THE CWA

NOAA is responsible for ensuring that its activities do not negatively impact area water bodies or wetlands. Depending on the point of discharge, effluents from NOAA facilities must meet either pretreatment standards or NPDES requirements. Additionally, NOAA 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 as well as any guidelines imposed by the NOAA RECO (i.e. "RECO rules").
- 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 of this manual address the NOAA 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 ublic 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 NOAA

Because most NOAA 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.

NOAA 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 of this manual addresses the NOAA 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 NOAA

NOAA 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, NOAA 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 of this manual describe the NOAA 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 NOAA

Because RCRA Subtitle C regulates hazardous waste from "cradle to grave," most NOAA operations and facilities are affected by the statute. NOAA facilities are subject to the provisions of RCRA Subtitle C if they:

- Generate hazardous waste --- many NOAA facilities qualify as "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, NOAA is responsible for ensuring the proper management and disposal of all hazardous waste generated as part of its operations.

Under this law, NOAA 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 of this manual describes the NOAA 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 NOAA

Because CERCLA regulates hazardous substance releases and environmental cleanup of past activities, some NOAA operations, facilities, and programs are affected by the statute. Section 120 of CERCLA specifically addresses the responsibilities of Federal facilities. EPA can hold NOAA, 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. NOAA 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

NOAA 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 NOAA to report all such events as part of a "due diligence audit" required upon property transfers.

If a cleanup is required, NOAA 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, NOAA 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 of this manual describes the NOAA compliance effort under CERCLA.

UNDERGROUND STORAGE TANKS, RCRA SUBTITLE I

In 1984, Congress enacted the ***Hazardous and Solid Waste Amendments*** (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 NOAA

All USTs operated by NOAA should have been removed under the provisions of HSWA and thus no NOAA 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, NOAA 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 NOAA facility must also maintain all records required under these regulations.

Section 1 of this manual includes a description of the NOAA 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 ***Superfund Amendments and Reauthorization Act*** (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 EPRA 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 NOAA

NOAA 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 a NOAA facility:

- Has an emergency power backup system containing lead-acid or gel-cell batteries with about 90-gallons of electrolyte,
- 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 a NOAA 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 hierarchical 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 is the base for Executive Order 12856 which directs all Federal Agencies to develop pollution prevention strategies and incorporate them into facility management. A series of other Executive Orders (see E.O. 12843, 12844, 12845, 12873 and 12902) encourage the Federal government to take the lead in pollution prevention and environmental stewardship.

IMPACTS ON NOAA

In performing its mission, NOAA utilizes materials, energy and natural resources in addition to generating waste.

The PPA and the Executive Orders it spawned requires NOAA 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, NOAA 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 of this manual describe the NOAA compliance efforts under PPA.

Other Laws

There are two additional laws that have important impacts in most NOAA 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** 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 NOAA

Unfortunately, the HMTA has spotty application to NOAA activities. For example,

transportation of paint thinner from a NOAA office to a remote work site is not regulated by the DOT but transportation of the spent paint thinner from the NOAA office to a hazardous waste disposal site is regulated. Even if NOAA personnel fully understand which activities are regulated, prudence may require compliance with the DOT rules for all situations.

RESPONSIBILITIES UNDER HMTUSA

NOAA 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 transport training to appropriate personnel.

Section 3 of this manual describes the NOAA 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 NOAA

To meet these Executive Orders, the director of NOAA has endorsed and implemented a safety and health program which includes:

- Compliance with applicable standards,
- At least annual inspections of all work places by qualified OSH inspectors,
- 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

NOAA 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, NOAA must provide:

- a worker right-to-know program
- effective spill response
- confined space permit program
- control of specific toxic substances (asbestos, lead, benzene, etc.)
- safe work practices for handling compressed gases, flammable and combustible materials and radioactive sources.

Section 17 of this manual describes the NOAA compliance activities with the Hazard Communication Standard (HAZCOM) while the NOAA Health and Safety Manual describes all other OSHA compliance efforts.

APPENDIX B

The List of Hazardous Substances and their Reportable Quantities as published in 40 CFR 302.4
and
The List of Extremely Hazardous Substances and their Threshold Planning Quantities as published in 40 CFR 355

Note: All quantities listed are in pounds

As Revised July 9, 2002

NAME	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	75-07-0	1,000			U001
Acetaldehyde, chloro-	107-20-0	1,000			P023
Acetaldehyde, trichloro-	75-87-6	5,000			U034
Acetamide	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	75-05-8	5,000			U003
Acetophenone	98-86-2	5,000			U004
2-Acetylaminofluorene	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	107-02-8	1	1	500	P003
Acrylamide	79-06-1	5,000	5,000	1,000/10,000	U007
Acrylic acid	79-10-7	5,000			U008
Acrylonitrile	107-13-1	100	100	10,000	U009
Acrylyl chloride	814-68-6		100	100	
Adipic acid	124-04-9	5,000			
Adiponitrile	111-69-3		1,000	1,000	

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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	107-05-1	1,000			
Aluminum phosphide	20859-73-8	100	100	500	P006
Aluminum sulfate	10043-01-3	5,000			
4-Aminobiphenyl	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			
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			

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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	62-53-3	5,000	5,000	1,000	U012
Aniline, 2,4,6-trimethyl-	88-05-1		500	500	
o-Anisidine	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
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	1336-36-3	1			
Arsenic	7440-38-2	1			

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Arsenic acid $HAsO_4$	7778-39-4	1			P010
Arsenic and Compounds	NA	***			
Arsenic Compounds	NA	***			
Arsenic disulfide	1303-32-8	1			
Arsenic oxide As_2O_3	1327-53-3	1	1	100/10,000	P012
Arsenic oxide As_2O_5	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)	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-	50-07-7	10			U010
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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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	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-	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	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,	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
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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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'-(2,2dichloroethylidine)	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
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	92-87-5	1			U021
Benzimidazole, 4,5-dichloro-2-(trifluoromethyl)-	92-87-5	1			U021
1,2-Benzisothiazol-3(2H)-one,	81-07-2	10			U202

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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- mehyl 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-trimethltpyrrolo [2,3-b] indol-5-yl methylcarbamate	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-Benzoapyrene	50-32-8	1			U022
p-Benzoquinone	106-51-4	10			U197
Benzotrichloride	98-07-7	10			U023
Benzoyl chloride	98-88-4	1,000	10	100	
Benzyl chloride	100-44-7	100			P028
Benzyl cyanide	140-29-4		100	500	
Beryllium	7440-41-7	10	500	500	P015
BERYLLIUM AND COMPOUNDS	N.A.	1*			
Beryllium chloride	7787-47-5	1			
Beryllium Compounds	N.A.	***			

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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	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'-dimethly-	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	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	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	75-25-2	100			U225
Bromomethane	74-83-9	1,000	1,000	1,000	U029
4-Bromophenyl phenyl ether	101-55-3	100			U030
Brucine	357-57-3	100			P018
1,3-Butadiene	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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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] methly]-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			
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	

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Calcium arsenite	52740-16-6	1			
Calcium carbide	75-20-7	10			
Calcium chromate	13765-19-0	10			U032
Calcium cyanamide	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
Camphene, octachloro-	8001-35-2	1	1	500/10,000	P123
Cantharidin	56-25-7		100	100/10,000	
Captan	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-2yl], methyl ester (Benomyl)	17804-35-2	1*			U271
Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynl ester (Barban)	101-27-9	1*			U280
Carbamic acid, [(dibutylamino)thio]methyl-, 2,3-dihydro-2,2-dimethly-7-benzofuranyl ester (Carbosulfan)	55285-14-8	1*			P189
Carbamic acid, dimethyl-,1-[(dimethlyamino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester (Dimetilan)	644-64-4	1*			P191
Carbamic acid, dimethly-, 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 (iminocarbonothioyl)] bis-, dimethyl ester (Thiophanate-methyl)	23564-05-8	1*			U409

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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
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	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	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)	463-58-1	100			
Carbon tetrachloride	56-23-5	10			U211
Carbonyl sulfide	463-58-1	100			
Carbophenothion	786-19-6		500	500	
Carbosulfan	55285-14-8	1*			P189
Catechol	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	133-90-4	100			
Chlorambucil	305-03-3	10			U035
Chlordane	57-74-9	1	1	1,000	U036
Chlordane,alpha & gamma isomers	57-74-9	1	1	1,000	U036

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Chlorfenvinfos	470-90-6		500	500	
Chlorinated Benzenes	N.A.	***			
Chlorinated camphene	8001-35-2	1			P123
Chlorinated Ethanes	N.A.	***			
Chlorinated Naphthalene	N.A.	***			
Chlorinated Phenols	N.A.	***			
Chlorine	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	79-11-8	100	100	100/10,000	
2-Chloroacetophenone	532-27-4	100			
Chloroalkyl Ethers	N.A.	***			
p-Chloroaniline	106-47-8	1,000			P024
Chlorobenzene	108-90-7	100			U037
Chlorobenzilate	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	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	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
Chloroprene	126-99-8	100			

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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_2SO_4, 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	
Creosote	8001-58-9	1			U051
Cresol (cresylic acid)	1319-77-3	100			U052
m-Cresol	108-39-4	100			U052

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p-Cresol	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
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	

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1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	77-47-4	10			U130
Cyclophosphamide	50-18-0	10			U058
2,4-D	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	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	
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	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

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Dibenz[a,i]pyrene	189-55-9	10			U064
Diborane	19287-45-7		100	100	
1,2-Dibromo-3-chloropropane	96-12-8	1			U066
1,2-Dibromoethane	106-93-4	1			U067
Dibutyl phthalate	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	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	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
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	111-44-4	10	10	10,000	U025
Dichloroisopropyl ether	108-60-1	1,000			U027
Dichloromethane	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			

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1,3-Dichloropropane	142-28-9	5,000			
Dichloropropene	26952-23-8	100			
1,3-Dichloropropene	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	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	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
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	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

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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-,(1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha,)-	60-57-1	1			P037
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-,(1aalpha,2beta,2aalpha,3alpha,6alpha,6abeta,7beta,7aalpha,)-, & metabolites	72-20-8	1			P051
Dimethoate	60-51-5	10	10	500/10,000	P044
3,3'-Dimethoxybenzidine	119-90-4	100			U091
Dimethylamine	124-40-3	1,000			U092
4-Dimethylaminoazobenzene	60-11-7	10			U093
Dimethylaminoazobenzene	60-11-7	10			U093
N,N-Dimethylaniline	121-69-7	100			
7,12-Dimethylbenz[a]anthracene	57-97-6	1			U094
3,3'-Dimethylbenzidine	119-93-7	10			U095
2,2-Dimethyl-1,3-benzodioxol-4-ol methylcarbamate	22781-23-3	1*			U278
alpha,alpha-Dimethlybenzylhydroperoxide	80-15-9	10			U096
Dimethylcarbamyl chloride	79-44-7	1			U097
Dimethyl chlorothiophosphate	2524-03-0		500	500	
Dimethyldichlorosilane	75-78-5		500	500	
Dimethylformamide	68-12-2	100			
1,1-Dimethyl hydrazine	57-14-7	10	10	1,000	U098
1,2-Dimethylhydrazine	540-73-8	1			U099
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	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			

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Dinitrobutyl phenol	88-85-7	1,000	1,000	100/10,000	P020
4,6-Dinitro-o-cresol and salts	534-52-1	10	10	10/10,000	P047
Dinitrophenol	25550-58-7	10			
2,4-Dinitrophenol	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	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	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	122-66-7	10			U109
Diphosphoramide, octamethyl-	152-16-9	100	100	100	P085
Diphosphoramide, tetraetyl 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			
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 (Tirpate)	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			

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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	106-89-8	100	100	1,000	U041
Epinephrine	51-43-4	1,000			P042
EPN	2104-64-5		100	100/10,000	
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
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
Ethaneperoxoic 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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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	
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	140-88-5	1,000			U113
Ethylbenzene	100-41-4	1,000			
Ethylbis(2-chloroethyl)amine	538-07-8		500	500	
Ethyl carbamate	51-79-6	100			U238
Ethyl chloride	75-00-3	100			
Ethyl cyanide	107-12-0	10	10	500	P101
Ethylenebisdithiocarbamic acid, salts & esters	111-54-6	5,000			U114

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Ethylenediamine-tetraacetic acid (EDTA)	60-00-4	5,000			
Ethylene dibromide	106-93-4	1			U067
Ethylene dichloride	107-06-2	100			U077
Ethylene fluorohydrin	371-62-0		10	10	
Ethylene glycol	107-21-1	5,000			
Ethylene glycol monomethyl ether	110-80-5	1,000			U359
Ethyleneimine	151-56-4	1	1	500	P054
Ethylene oxide	75-21-8	10	10	1,000	U115
Ethylene thiourea	96-45-7	10			U116
Ethyleneimine	151-56-4	1			P054
Ethyl ether	60-29-7	100			U117
Ethylidene Dichloride	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			
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.	***			
Fluenetil	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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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	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
Furfuran	110-00-9	100			U124
Gallium trichloride	13450-90-3		500	500/10,000	
Glucopyranose, 2-deooxy-2-(3-methly-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	76-44-8	1			P059
Heptachlor and Metabolites	N.A.	***			

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1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene	76-44-8	1			P059
Hexachlorobenzene	118-74-1	10			U127
Hexachloro-1,3-butadiene	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	77-47-4	10	10	100	U130
Hexachloroethane	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	822-06-0	100			
Hexamethylphosphoramide	680-31-9	1			
Hexane	110-54-3	5,000			
n-Hexane	110-54-3	5,000			
Hexone	108-10-1	5,000			U161
Hydrazine	302-01-2	1	1	1,000	U133
Hydrazinecarbothioamide	19-19-6	100			P116
Hydrazine, 1,2-diethyl-	1615-80-1	10			U086
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	7647-01-0	5,000			
Hydrocyanic acid	74-90-8	10	10	100	P063
Hydrofluoric acid	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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Hydrogen phosphide	7803-51-2	100			P096
Hydrogen selenide	7783-06-4		10	10	
Hydrogen sulfide H_2S	2148-87-8	100	100	500	U135
Hydroperoxide, 1-methyl-1-phenylethyl-	80-15-9	10			U096
Hydroquinone	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
Isofluorphate	55-91-4	100	100	100	P043
Isophorone	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			
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			

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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	
Lindane	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	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	101-68-8	5,000			

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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
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-	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
Methanesulfenyl chloride, trichloro-	594-42-3	100	100	500	P118

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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)c	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
Methanol	67-56-1	5,000			U154
Methapyrilene	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	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	74-83-9	1,000	1,000	1,000	U029
1-Methylbutadiene	504-60-9	100			U186
Methyl chloride	74-87-3	100			U045

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Methyl chlorocarbonate	79-22-1	1,000	1,000	500	U156
Methyl chloroform	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	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	60-34-4	10	10	500	P068
Methyl iodide	74-88-4	100			U138
Methyl isobutyl ketone	108-10-1	5,000			U161
Methyl isocyanate	624-83-9	10	10	500	P064
Methyl isothiocyanate	556-61-6		500	500	
2-Methyllactonitrile	75-86-5	10	10	1,000	P069
Methyl mercaptan	74-93-1	100	100	500	U153
Methylmercuric dicyanamide	502-39-6		500	500/10,000	
Methyl methacrylate	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	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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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)oxy0-7,8,9,10-tetrahydro-6,8,11-trihydroy-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	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
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 $Ni(CO_4)$, (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 $Ni(CN)_2$	557-19-7	10			P074
Nickel hydroxide	12054-48-7	10			
Nickel nitrate	14216-75-2	100			

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
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	98-95-3	1,000	1,000	10,000	U169
4-Nitrobiphenyl	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 $(NO)_2$	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	100-02-7	100			U170
2-Nitrophenol	88-75-5	100			
4-Nitrophenol	100-02-7	100			U170
Nitrophenols	N.A.	***			
2-Nitropropane	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	684-93-5	1			U177
N-Nitroso-N-methylurethane	615-53-2	1			U178
N-Nitrosomethylvinylamine	4549-40-0	10			P084
N-Nitrosomorpholine	59-89-2	1			
N-Nitrosopiperidine	100-75-4	10			U179

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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_4(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-dicar	145-73-3	1,000			P088
Oxamyl	23135-22-0	1*	1*	100/10,000	P194
1,2-Oxathiolane, 2,2-dioxide	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
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	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	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

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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	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)-, methylcarbarmate	2032-65-7	10			P199
Phenol, 2,4-dinitro-	51-28-5	10			P048
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-	87-86-5	10			F027
Phenol, 2,3,4,6-tetrachloro	58-90-2	10			F027

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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
Phenoxarsine, 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	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	75-44-5	10	10	10	P095
Phosmet	732-11-6		10	10/10,000	
Phosphamidon	13171-21-6		100	100	
Phosphine	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
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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Phosphorodithioic acid O,O-diethyl	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	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	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			

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Polynuclear Aromatic Hydrocarbons	N.A.	***			
Potassium arsenate	7784-41-0	1			
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)-,	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			

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Propargyl bromide	106-96-7		10	10	
2-Propenal	107-02-8	1	1	500	P003
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	57-57-8	10	10	500	
Propionaldehyde	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)	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	78-87-5	1,000			U083
Propylene oxide	75-56-9	100	100	10,000	
1,2 Propylenimine	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			

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
4-Pyridinamine	504-24-5	1,000			P008
Pyridine	110-86-1	1,000			U196
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-trimethly-,methylcarbamate (ester), (3aS-cis)-(Physostigmine)	57-47-6	1*			P204
Quinoline	91-22-5	5,000			
Quinone	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

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Selenium sulfide SeS_2	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
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			

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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	
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	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	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			

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2,4,5-T esters	1928-47-8	1,000			
2,4,5-T esters	2545-59-7	1,000			
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	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	79-34-5	100			U209
Tetrachloroethylene	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
Tetraethyldithiopyrophosphate	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 Tl203	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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Thallous carbonate	6533-73-9	100	100	100/10,000	U215
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 [$(H_2N)C(S)$] 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)-	7550450	1,000	1,000	100	
Titanium tetrachloride	7550-45-0	1,000	1,000	100	
Toluene	108-88-3	1,000			U220
Toluenediamine	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

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Toluene diisocyanate	26471-62-5	100	100	500	U223
2,4-Toluene diisocyanate	91-08-7	100	100	500	U223
2,4-Toluene diisocyanate	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	95-53-4	100			U328
p-Toluidine	106-49-0	100			U353
o-Toluidine hydrochloride	636-21-5	100			U222
Toxaphene	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	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	79-00-5	100			U227
Trichloroethylene	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	95-95-4	10			
2,4,6-Trichlorophenol	88-06-2	10			
3,4,5-Trichlorophenol	609198	10			
Trichlorophenylsilane	98-13-5		500	500	

NAME	CASRN	40 CFR 302.4 HazSub RQ	40 CFR 355 EHS RQ	40 CFR 355 (EHS) TPQ	RCRA HazWaste CODE
Triethoxysilane	998-30-1		500	500	
Triethylamine	121-44-8	5,000			U404
Trifluralin	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	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	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 V_2O_5	1314-62-1	1,000	1,000	100/10,000	P120

NAME	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	108-05-4	5,000	5,000	1,000	
Vinyl acetate monomer	108-05-4	5,000	5,000	1,000	
Vinyl bromide	593-60-2	100			
Vinyl chloride	75-01-4	1			U043
Vinylidene chloride	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	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,	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	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 Zn_3P_2	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 November 1, 2002

The following alphabetical listing 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, AST/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 http://www.adem.state.al.us/
http://www.adem.state.al.us/LandDivision/HazWaste/HazWasteMainInfo.htm

Alaska http://www.state.ak.us/local/akpages/ENV.CONSERV/home.htm

Arizona http://www.adeq.state.az.us/
http://www.adeq.state.az.us/environ/waste/index.html

Arkansas http://www.adeq.state.ar.us/

California http://www.calepa.ca.gov/
http://www.dtsc.ca.gov/HazardousWaste/index.html
http://www.dtsc.ca.gov/

Colorado http://www.cdphe.state.co.us/environ.asp

Connecticut http://dep.state.ct.us/index.htm
http://dep.state.ct.us/wst/index.htm

Delaware http://www.dnrec.state.de.us/dnrec2000/
http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/AWM.htm

District of Columbia – Washington, DC
http://dchealth.dc.gov/about/index_environmental.shtm

Florida http://www.dep.state.fl.us/
http://www.dep.state.fl.us/waste/Default.htm

Georgia http://www.dnr.state.ga.us/

Guam http://ns.gov.gu/government.html

Hawaii http://www.hawaii.gov/health/eh/index.htm

Idaho http://www2.state.id.us/deq/

Illinois http://www.epa.state.il.us/

Indiana http://www.in.gov/idem/land/

Iowa http://www.state.ia.us/government/dnr/organiza/epd/

Kansas http://www.kdhe.state.ks.us/
http://www.kdhe.state.ks.us/waste/

Kentucky http://www.nr.state.ky.us/nrepc/dep/dep2.htm

Louisiana http://www.deq.state.la.us/

Maine http://www.state.me.us/dep/index.htm

Maryland http://www.mde.state.md.us/

Massachusetts
http://www.state.ma.us/dep/

Michigan http://www.michigan.gov/deq

Minnesota http://www.pca.state.mn.us/netscape4.html

Mississippi http://www.deq.state.ms.us/newweb/homepages.nsf

Missouri http://www.dnr.state.mo.us/alpd/hwp/homehwp.htm
http://www.dnr.state.mo.us/alpd/swmp/homeswmp.htm

Montana http://www.deq.state.mt.us/index.asp

Nebraska http://www.deq.state.ne.us/

Nevada http://ndep.state.nv.us/
http://ndep.state.nv.us/bwm/bwm01.htm

New Hampshire
http://www.des.state.nh.us/

New Jersey http://www.state.nj.us/dep/
http://www.state.nj.us/dep/dshw/

New Mexico http://www.nmenv.state.nm.us/

New York http://www.dec.state.ny.us/
http://www.dec.state.ny.us/website/dshm/index.html

North Carolina
http://www.enr.state.nc.us/
http://www.enr.state.nc.us/files/division.htm

North Dakota
http://www.health.state.nd.us/
http://www.ehs.health.state.nd.us/ndhd/environ/wm/index.htm

Ohio http://www.epa.state.oh.us/

Oklahoma http://www.deq.state.ok.us/
http://www.deq.state.ok.us/LPDnew/index.htm

Oregon http://www.deq.state.or.us/

Pennsylvania
http://www.dep.state.pa.us/dep/deputate/airwaste/wm/default.htm

Puerto Rico Link not yet Available

Rhode Island http://www.state.ri.us/dem/

South Carolina
http://www.scdhec.net/eqc/

South Dakota
http://www.state.sd.us/denr/denr.html

Tennessee http://www.state.tn.us/environment/index.html

Texas http://163.234.20.106/index.html

Utah http://www.eq.state.ut.us/

Vermont http://www.anr.state.vt.us/
http://www.anr.state.vt.us/dec/wmd.htm

Virginia http://www.deq.state.va.us/
http://www.deq.state.va.us/recycle/

Virgin Island – Link not yet Available

Washington http://www.ecy.wa.gov/
http://www.ecy.wa.gov/programs/swfa/index.html

West Virginia
http://www.dep.state.wv.us/

Wisconsin http://www.dnr.state.wi.us/

Wyoming http://deq.state.wy.us/

Appendix D
Instructions

Appendix D is a 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 of marking appears, make the necessary entries if required and then print it.