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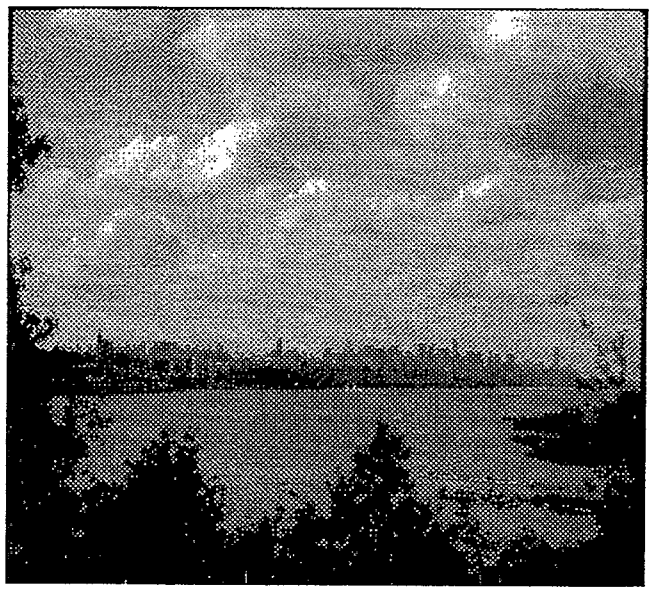
IMPLEMENTATION GUIDANCE FOR OFF-SITE WASTE AND RECOVERY OPERATIONS (OSWRO) NESHAP

INTERRELATIONSHIPS WITH OTHER RELATED EPA AIR RULES



EPA Office of Compliance

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Contents

Section **Page**

Tables iv

1.0 Introduction 1-1
1.1 General Summary of OSWRO NESHAP 1-1
1.1.1 What is the OSWRO NESHAP ? 1-1
1.1.2 What subparts in 40 CFR part 63 apply to the OSWRO NESHAP ? 1-1
1.1.3 What is an *off-site material* as the term is applied to the OSWRO NESHAP ? 1-2
1.1.4 What types of facilities are potentially subject to the OSWRO NESHAP ? . . . 1-2
1.1.5 What are the affected sources at a facility subject to the OSWRO NESHAP ? . 1-5
1.1.6 What are the general standards for affected sources ? 1-5
1.1.7 For affected sources that use air emission controls, what are the control requirements ? 1-7
1.1.8 Where can I obtain more information about the specific OSWRO NESHAP requirements ? 1-7
1.2 Additional Information About Rule Requirements 1-7
1.2.1 Where can I obtain more information about the specific OSWRO NESHAP requirements ? 1-7
1.2.2 If I need additional assistance, whom can I ask for help ? 1-7

2.0 Interrelation with other NESHAP 2-1
2.1 Overlap of OSWRO NESHAP with Other NESHAP 2-1
2.1.1 Why can the owner and operator of a facility be subject to both the OSWRO NESHAP and another NESHAP ? 2-1
2.1.2 Which NESHAP have requirements that potentially may overlap with the OSWRO NESHAP ? 2-2
2.1.3 How is the OSWRO NESHAP implemented when the facility also is subject to another NESHAP ? 2-7
2.2 Implementing OSWRO NESHAP In NESHAP Regulatory Overlap Situations 2-7
2.2.1 How is the OSWRO NESHAP implemented at a facility subject to another NESHAP when the affected source is already using air emission controls to comply with the other NESHAP ? 2-7
2.2.2 How is the OSWRO NESHAP implemented at a facility subject to another NESHAP when the affected source is not required to use air emission controls under the other NESHAP ? 2-8
2.2.3 How is the OSWRO NESHAP implemented at a facility subject to another NESHAP when the affected source is not regulated under the other NESHAP ? 2-8

Contents (continued)

Section **Page**

3.0 Interrelation of OSWRO NESHAP with Relevant RCRA Regulatory Programs 3-1
3.1 Applicability of OSWRO NESHAP at RCRA Hazardous Waste Facilities 3-1
3.1.1 What are the "RCRA air standards" ? 3-1
3.1.2 What is the difference between a "waste" under OSWRO NESHAP and a "hazardous waste" under the RCRA air standards ? 3-2
3.1.3 Why can the OSWRO NESHAP apply to facilities subject to the RCRA air standards ? 3-3
3.1.4 What type of waste and recovery operations are potentially subject to the OSWRO NESHAP and also subject to the RCRA air standards ? 3-4
3.1.5 Which of the RCRA air standards may apply to affected sources at a facility subject to the OSWRO NESHAP ? 3-6
3.2 Applicability of OSWRO NESHAP at RCRA Used Oil Management Facilities 3-6
3.2.1 Why can the OSWRO NESHAP apply to facilities subject to the RCRA used oil management rules ? 3-6
3.2.2 What is the difference between "used oil" as defined for implementation of the OSWRO NESHAP and "used oil" for implementation of the RCRA used oil management rules ? 3-6
3.2.3 What type of used oil management operations regulated by RCRA are potentially subject to the OSWRO NESHAP ? 3-9
3.2.4 If a used oil processing or refining operation is subject to the OSWRO NESHAP, how are the technical requirements of the OSWRO NESHAP implemented ? 3-9
3.3 Comparison of OSWRO NESHAP and RCRA Air Standards Technical Requirements 3-9
3.3.1 How does the action level, determined under the OSWRO NESHAP, compare with the RCRA air standards ? 3-9
3.3.2 Are there affected sources which are exempted under one rule but not the other ? 3-12
3.3.3 How do the technical control requirements under the OSWRO NESHAP compare to the technical control requirements under the RCRA air standards ? 3-14
3.3.4 Which technical requirements apply to an affected source when it must use air emission controls under both the OSWRO NESHAP and the RCRA air standards ? 3-20
3.4 Permitting Considerations 3-22
3.4.1 What is the relationship between a facility's CAA Title V operating permit with the facility's RCRA Subtitle C permit ? 3-22

Contents (continued)

Section **Page**

3.4.2 How does the program policy of a "permit shield" as implemented under the CAA differ from the "permit-as-a-shield" policy implemented under RCRA ? 3-23
3.4.3 Can the sources in a facility's CAA Title V operating permit be different than those listed in the facility's RCRA Subtitle C permit ? 3-24

Tables

Number		Page
1-1	OSWRO NESHAP Subparts in 40 CFR part 63	1-3
1-2	Waste and Recovery Operations subject to OSWRO NESHAP	1-4
1-3	OSWRO NESHAP Affected Sources	1-6
1-4	OSWRO NESHAP Air Emission Control Requirements for Affected Sources	1-8
2-1	NESHAP Source Categories With Waste or Recovery Operations That Potentially May Be Subject to the OSWRO NESHAP If the Facility Receives Off-Site Material	2-3
3-1	Waste or Recovery Operations Potentially Subject to OSWRO NESHAP and RCRA Air Standards	3-5
3-2	Comparison of Affected Sources Regulated Under OSWRO NESHAP and RCRA Air Standards	3-7
3-3	Comparison of Process Vent Units Regulated Under OSWRO NESHAP and RCRA Air Standards	3-8
3-4	Comparison of 500 ppmw "Action Level" Determination Procedures Under OSWRO NESHAP with RCRA Air Standards	3-11
3-5	Comparison of Exemptions from Using Air Emission Controls for Affected-Sources Managing Hazardous Waste Allowed Under OSWRO NESHAP and RCRA Air Standards	3-13
3-6	Comparison of Air Emission Control Requirements Under OSWRO NESHAP with RCRA Hazardous Waste TSDF Standards	3-16
3-7	Control Device Performance Requirements for Both the OSWRO NESHAP and the RCRA Air Rules	3-19
3-8	Equipment modifications that can be Used on Components Subject to the Equipment Leak Standards	3-20

1.0 INTRODUCTION AND BACKGROUND

When developing the *National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations*, the U.S. Environmental Protection Agency (EPA) recognized that the potential exists for regulatory overlap with other national standards promulgated by the Agency to meet congressional directives established under the Clean Air Act (CAA) and Resource Conservation and Recovery Act (RCRA). Section 112(n)(7) of the CAA voices a strong preference for consistency of National Emission Standards for Hazardous Air Pollutants (NESHAP) with RCRA standards, where practicable. Similarly, section 1006(b) of RCRA requires that the air standards be consistent with and not duplicative of CAA standards. The provisions of the National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations have been developed to minimize, if not eliminate, regulatory overlap to the extent allowed under these different legislative acts.

The purpose of this document is to describe the interrelationship of the National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations with other NESHAP as well as national air standards established under RCRA for hazardous waste treatment, and disposal facilities. The remainder of this section presents a general summary of the OSWRO NESHAP. Section 2 discusses the interrelationship of the OSWRO NESHAP with other NESHAP. The interrelationship of the OSWRO NESHAP with RCRA air standards is discussed in Section 3.

1.1 GENERAL SUMMARY OF OSWRO NESHAP

1.1.1 What is the "OSWRO NESHAP"?

The "OSWRO NESHAP" is a set NESHAP applicable to certain facilities that operate waste management and recovery processes for materials received from off-site. These selected waste management and recovery operations are not subject to federal air standards under other NESHAP in 40 CFR parts 61 and 63; and are referred to as "off-site waste and recovery operations" (OSWRO) . The OSWRO NESHAP establishs national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from off-site waste and recovery operations.

1.1.2 What subparts in 40 CFR part 63 apply to the OSWRO NESHAP?

The specific provisions of the OSWRO NESHAP are established by six subparts in 40 CFR part 63 as listed in Table 1-1. In addition, general provisions in 40 CFR 63 subpart A are applicable to all facilities regulated under 40 CFR part 63 are applied to facilities subject to the OSWRO NESHAP.

1.1.3 What is an *off-site material* as the term is applied to OSWRO NESHAP?

An *off-site material* is a material that is either a *waste*, *used oil*, or *used solvent* (as these terms are defined in the rule) that contains organic HAP, and this material is not generated at the facility but is instead shipped or transferred to the facility from another location. Off-site material includes any one of the following:

- *Waste* is any material generated from industrial, commercial, mining, or agricultural operations or from community activities which is discarded, discharged, or is being treated before being discarded or discharged. This definition in the OSWRO NESHAP is consistent with the definition of *waste* used for other NESHAP.

- *Used oil* is any oil refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities. This definition in the OSWRO NESHAP is the same definition of *used oil* in the RCRA regulation under 40 CFR 279.1.

- *Used solvent* is a mixture of aliphatic hydrocarbons or a mixture of one and two ring aromatic hydrocarbons that has been used as a solvent and as a result of such use is contaminated by physical or chemical impurities.

1.1.4 What types of facilities are potentially subject to the OSWRO NESHAP?

You are subject to the OSWRO NESHAP if you own or operate one of the waste or recovery operations listed in Table 1-2 that: 1) meets the applicable qualifiers for the operation as specified in the table; 2) receives *off-site material*; and 3) this operation is located at, or is part of a *major source* of HAP emissions. A *major source* means any stationary source or group of stationary sources within a contiguous area and under common control that emits or has the potential to emit, considering controls, in aggregate, 10 tons or more per year or more of any HAP or 25 tons per year or more of any combination of HAP.

Table 1-1.
OSWRO NESHAP Subparts in 40 CFR part 63

40 CFR 63	Subpart Title	Specifies Requirements under OSWRO NESHAP for . . .
Subpart DD	National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations	• Applicability • Compliance dates • General standards for affected source • Level 2 air emission controls for tanks • Transfer system air emission controls • Closed vent systems and control devices • Testing and initial compliance • Inspections and monitoring • Notifications, reports, and records
Subpart OO	National Emission Standards for Tanks-Level 1	• Cross-referenced by Subpart DD • Level 1 air emission controls for tanks
Subpart PP	National Emission Standards for Containers	• Cross-referenced by Subpart DD • Level 1 air emission controls for containers • Level 2 air emission controls for containers • Level 3 air emission controls for containers
Subpart QQ	National Emission Standards for Surface Impoundments	• Cross-referenced by Subpart DD • Air emission controls for surface impoundments
Subpart RR	National Emission Standards for Individual Drain Systems	• Cross-referenced by Subpart DD • Air emission controls for individual drain systems
Subpart VV	National Emission Standards for Oil-Water Separators and Organic-Water Separators	• Cross-referenced by Subpart DD • Air emission controls for oil-water separators and organic-water separators

Table 1-2.
Waste and Recovery Operations Subject to OSWRO NESHAP

Waste or Recovery Operation	**Qualifiers operation must meet for it to be potentially subject to OSWRO NESHAP**
Hazardous waste treatment, storage, and disposal	Operation is a TSDF under either 40 CFR part 264 or part 265.
Hazardous wastewater treatment	Operation is exempted from RCRA hazardous waste permitting because the operations meet conditions specified in 40 CFR 264.1(g)(6) or 40 CFR 265.1(c)(10).
Other wastewater treatment	Operation meets all 3 conditions: 1. Regulated under either section 402 or 307(b) of the Clean Water Act; 2. Not owned by a "state" or "municipality" as defined by section 502(3) and 502(4), respectively, of the Clean Water Act; and 3. Operation is the predominant activity performed at the facility site
Hazardous waste recycling	Operation is exempted from RCRA hazardous waste permitting because the operations meet conditions specified in 40 CFR 264.1(g)(2) or 40 CFR 265.1(c)(6).
Used oil processing or re-refining	Operation is regulated under 40 CFR 279 subpart F
Used solvent recovery	Operation is not part of a chemical, petroleum, or other manufacturing process that is required to use air emission controls by another subpart of 40 CFR part 61 or 40 CFR part 63

1.1.5 What are the affected sources at a facility subject to the OSWRO NESHAP?

The OSWRO NESHAP applies to three groups of organic HAP emission sources that operate in a waste or recovery operation subject to the rule: off-site material management units, process vents, and equipment leaks. Table 1-3 lists the affected sources subject to the requirements of the OSWRO NESHAP. An off-site material management unit means a tank, container, surface impoundment, oil-water separator, organic-water separator, or transfer system used to manage off-site material. A process vent means an open-ended pipe, stack, or duct through which a gas stream containing HAP is continuously or intermittently discharged to the atmosphere. Under the rule, a process vent is not a pressure-relief vent; a vent used as a safety device as defined in the rule; an open-ended line or other vent that is subject to the equipment leak control requirements under the rule; or a stack or other vent that is used to exhaust combustion products from a boiler, furnace, process heater, incinerator, or other combustion device. The equipment leak standards apply to each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, or instrumentation system that contains or contacts off-site material having a total HAP concentration equal to or greater than 10 percent by weight; and the equipment component is intended to operate for 300 hours or more during a calendar year in off-site material service, as defined in the rule.

1.1.6 What are the general standards for affected sources?

For an affected off-site material management unit or process vent , you must meet one of the following alternatives:

1. Determine that the average volatile organic hazardous air pollutant (VOHAP) concentration of the *off-site material* managed in the affected source is less than 500 ppmw mass weighted average. The rule specifies the test protocol to be used for determining the VOHAP concentration, or

2. Install and operate air emission controls, or

3. Treat the *off-site material* to remove or destroy the HAP before you place the material in the affected source. The rule provides alternative treatment standards with which you may choose to comply, or

4. Meet one of the unit-specific control requirement exemptions specified in the rule.

Table 1-3.
OSWRO NESHAP Affected Sources

Source Type	**Qualifiers source must meet for it to be an *affected source* subject to OSWRO NESHAP**
Tanks	Used for storage or treatment of *off-site material*
Surface impoundments	Used for storage or treatment of *off-site material*
Containers	Containers having a capacity > 0.1 meters^3 (≈26 gallons) and are used for storage or treatment of *off-site material*
Oil/water and chemical/water separators	Used for treatment of *off-site material*
Material transfer systems	Used for transfer of *off-site material*
Process vents	Used on any of the following *off-site material* treatment processes: • Distillation • Fractionation • Thin-film evaporation • Solvent extraction • Steam stripping • Air stripping
Equipment leaks	Equipment components (e.g., pumps and valves) that contain or contact *off-site material* having an organic HAP concentration ≥ 10%

1.1.7 For affected sources that use air emission controls, what are the control requirements?

The control requirements for affected sources that use air emission controls are summarized in Table 1-4. See the applicable subpart for the affected source for the specific control requirements that must be met.

1.2 ADDITIONAL INFORMATION ABOUT RULE REQUIREMENTS

1.2.1 Where can I obtain more information about the specific OSWRO NESHAP requirements?

More information about the specific OSWRO NESHAP requirements is available in the EPA document, "The Plain Language Implementation Assistance Document for 40 CFR Part 63 Subpart DD (Off-Site Waste and Recovery Operations NESHAP)" (EPA-456/R-99-007). An electronic version of this document can be downloaded from the Internet at http://www.epa.gov/ttn/uatw/offwaste/rioswao.html .

1.2.2 If I need additional assistance, whom can I ask for help?

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Table 1-4.
OSWRO NESHAP Air Emission Control Requirements for Affected Sources

Affected Source Type	Air Emission Control Requirements
Tanks	• Required control level determined by vapor pressure of *off-site material*, tank capacity, and management operation performed in tank • Level 1 — Use either: – Tight-fitting cover or fixed-roof – Cover and vent to control device • Level 2 — Use either: – Fixed-roof with internal floating roof – External floating roof – Cover and vent to control device – Pressure tank – Locate in enclosure vented to combustion control device
Surface impoundments	• Use either: – Floating membrane cover – Cover and vent to control device
Containers	• Required control level determined by organic content of *off–site material*, container capacity, and whether the container is used for waste stabilization process • Level 1 — Use either: – Container that meets DOT specifications [(a)] – Tight-fitting cover – Organic vapor suppression barrier • Level 2 — Use either – Container that meets DOT specifications [(a)] – Leak- tight container as tested by Method 21 – Vapor-tight container as tested by Method 27 • Level 3 — Use either – Cover and vent to control device – Place in enclosure vented to combustion control device

Notes:

(a) A container that meets the applicable U.S. Department of Transportation (DOT) regulations for packaging hazardous materials for transportation under 49 CFR parts 178 and 179.

Table 1-4. (Concluded)

Affected Source Type	Air Emission Control Requirements
Oil/water and chemical/water separators	• Use either: – Floating roof [b] – Fixed-roof vented to control device – Pressurized separator
Material transfer systems	• Individual drain systems, use either. – Covers, water seals, and other drain closure devices – Continuous hard-piping – Vent system through control device • Other transfer systems, use either – Covers – Continuous hard-piping – Enclosure vented to control device
Process vents	• Standard applied to each individual affected process vent at facility • Each affected process must be vented through a closed-vent system to a control device • Control device must achieve ≥95 % control efficiency
Equipment leaks	• Implement leak detection and repair program that meets requirements in either: – 40 CFR 61 Subpart V – 40 CFR 63 Subpart H

Notes:

(b) For parts of the separator where it infeasible to use a floating roof, such as a weir mechanism, then use a fixed-roof vented to a control device.

2.0 INTERRELATION WITH OTHER NESHAP

This section discuses the implementation of the OSWRO NESHAP at facilities that may also potentially be subject to compliance with other NESHAP. The applicability of the OSWRO NESHAP to these facilities is discussed. Compliance with the rule is discussed for situations when a facility is subject to both the OSWRO NESHAP and another NESHAP.

2.1 OVERLAP OF OSWRO NESHAP WITH OTHER NESHAP

2.1.1 Why can the owner and operator of a facility be subject to both the OSWRO NESHAP and another NESHAP?

The OSWRO NESHAP applies to six specific types of waste management or recovery operations used to manage off-site material (as specified in the rule), and these operations are located at, or are part of a facility that is a major source of HAP emissions. A waste management or recovery operation subject to the OSWRO NESHAP may be the predominate activity (or even the only) performed at a facility (e.g., a commercial TSDF, solvent recycler, used oil reprocessor or re-refiner). Alternatively, this operation may be an ancillary operation performed to support other processes at a facility. In this case, waste management and recovery operations that meet the OSWRO NESHAP applicability criteria are sometimes located at a chemical plant, petroleum refinery, manufacturing plant, or other facility that is subject to another NESHAP. For example, a waste management or recovery operation located at a chemical manufacturing plant that is subject to 40 CFR 63 subparts F, G, and H - National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (referred to hereafter as the "HON") may receive materials from another of the company's facilities for treatment.

In developing the OSWRO NESHAP, the EPA recognized this potential for regulatory overlap of the rule with other NESHAP and, therefore, added provisions to the OSWRO NESHAP to avoid duplication or overlap with standards under other NESHAP that potentially can be applicable to the same group of affected sources. While these provisions address many of potential overlap situations that can be anticipated, special or unique site-specific situations do still exist where a tank, process vent, or other affected source is subject to air emissions standards under both the OSWRO NESHAP and another NESHAP.

2.1.2 Which NESHAP have requirements that potentially may overlap with the OSWRO NESHAP?

In general, the NESHAP with requirements that potentially overlap with the OSWRO NESHAP are those NESHAP that include provisions regulating organic HAP emissions from wastewater treatment operations. Under certain site-specific circumstances, the applicability of the OSWRO NESHAP to some hazardous waste management, recycling operations, and solvent recovery operations may overlap with another NESHAP when those units are used to handle wastes, used solvents, or used oil shipped to the facility site. Table 2-1 provides a general guide identifying which NESHAP promulgated under 40 CFR part 63 (as of April 28 , 2000) have requirements which could potentially overlap with the OSWRO NESHAP. This table is not intended to be comprehensive but rather used as a guide to identify likely facilities where other NESHAP may potentially overlap with the OSWRO NESHAP. Due to site-specific conditions regarding a particular type of waste management or recovery operation handling off-site material, unique circumstances may exist for a facility overlap of the OSWRO NESHAP with another NESHAP not indicated in the table.

The OSWRO NESHAP contains provisions to avoid overlap of the rule with other NESHAP that specifically regulate air emissions from the off-site management of wastes containing organic HAP. The OSWRO NESHAP explicitly states under the rule applicability that a waste is not an "off-site material" when it is transferred from a chemical manufacturing plant, petroleum refinery, or coke by-product recovery plant subject to the National Emission Standards for Benzene Waste Operations (40 CFR 61 subpart FF), and the owner or operator of the facility from which the waste is transferred complies with the provisions of §61.342(f). A similar exemption is stated in the rule for chemical manufacturing plants subject to the process wastewater standards under National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (see 40 CFR 63.132 through 63.147). The OSWRO NESHAP states that a waste is not an "off-site material" when it is transferred from a facility subject to the HON and the owner or operator of the facility from which the waste is transferred complies with the provisions in §63.132(g). In both of these situations, an owner or operator complying the requirements of the applicable NESHAP is not subject to the OSWRO NESHAP. Thus, regulatory overlap of the OSWRO NESHAP and these other NESHAP is avoided by these applicability exemptions which have been included in the rule.

Table 2-1.
NESHAP Source Categories With Waste or Recovery Operations That Potentially May Be Subject to the OSWRO NESHAP If the Facility Receives Off-Site Material

Source Category for Which NESHAP Have Been Promulgated Under 40 CFR part 63 as of April 28, 2000	40 CFR 63 Subpart	Subpart DD Regulated Off-site Waste or Recovery Operation					
		Hazardous Waste TSDF	Hazardous Wastewater Treatment	Other Wastewater Treatment	Hazardous Waste Recycling	Used Oil Processing or Re-Refining	Used Solvent Recovery
Synthetic organic chemical manufacturing (the "HON")	Subparts F/G	✔	✔		✔		
Synthetic organic chemical manufacturing (the "HON")	Subparts F/H	✔	✔		✔		
Certain processes subject to the negotiated regulation for equipment leaks	Subpart I	✔	✔		✔		
Coke oven batteries	Subpart L						
Dry cleaning facilities	Subpart M						
Hard and decorative chromium electroplating and chromium anodizing tanks	Subpart N						
Ethylene oxide sterilization	Subpart O						
Industrial process cooling towers	Subpart Q						
Gasoline distribution facilities	Subpart R						
Pulp and paper	Subpart S		✔				
Halogenated solvent cleaning	Subpart T						
Group I polymers and resins	Subpart U		✔				

Table 2-1. (continued)

Source Category for Which NESHAP Have Been Promulgated Under 40 CFR part 63 as of April 28, 2000	40 CFR 63 Subpart	Subpart DD Regulated Off-site Waste or Recovery Operation					
		Hazardous Waste TSDF	Hazardous Wastewater Treatment	Other Wastewater Treatment	Hazardous Waste Recycling	Used Oil Processing or Re-Refining	Used Solvent Recovery
Epoxy resins production and non-nylon polyamide production	Subpart W						
Secondary lead smelting	Subpart X						
Marine vessel loading	Subpart Y						
Phosphoric acid manufacturing	Subpart AA						
Phosphate fertilizers manufacturing	Subpart BB						
Petroleum refineries	Subpart CC		✔				
Magnetic tape manufacturing	Subpart EE						✔
Aerospace manufacturing and rework facilities	Subpart GG	✔					✔
Oil and natural gas production	Subpart HH						
Shipbuilding and ship repair	Subpart II						
Wood furniture manufacturing	Subpart JJ						✔
Printing and publishing	Subpart KK						
Primary aluminum redaction plants	Subpart LL						

Table 2-1. (continued)

Source Category for Which NESHAP Have Been Promulgated Under 40 CFR part 63 as of April 28, 2000	40 CFR 63 Subpart	Subpart DD Regulated Off-site Waste or Recovery Operation					
		Hazardous Waste TSDF	Hazardous Wastewater Treatment	Other Wastewater Treatment	Hazardous Waste Recycling	Used Oil Processing or Re-Refining	Used Solvent Recovery
Acetal resins production	Subpart YY						
Hydrogen fluoride production	Subpart YY						
Polycarbonates production	Subpart YY						
Acrylic/modacrylic production	Subpart YY		✔				
Steel pickling HCL process	Subpart CCC						
Mineral wool production	Subpart DDD						
Hazardous waste combustors	Subpart EEE						
Pharmaceuticals manufacturing	Subpart GGG		✔				
Natural gas transmission and storage	Subpart HHH						
Flexible polyurethane foam production	Subpart III						
Group IV polymers and resins	Subpart JJJ		✔				
Portland cement manufacturing	Subpart LLL						
Pesticide active ingredient production	Subpart MMM						

Table 2-1. (continued)

Source Category for Which NESHAP Have Been Promulgated Under 40 CFR part 63 as of April 28, 2000	40 CFR 63 Subpart	Subpart DD Regulated Off-site Waste or Recovery Operation					
		Hazardous Waste TSDF	Hazardous Wastewater Treatment	Other Wastewater Treatment	Hazardous Waste Recycling	Used Oil Processing or Re-Refining	Used Solvent Recovery
Wool fiberglass manufacturing	Subpart NNN						
Group III polymers and resins	Subpart OOO		✔				
Polyether polols production	Subpart PPP						
Secondary aluminum	Subpart RRR						
Primary lead smelting	Subpart TTT						
Publicly owned treatment works (POTW)	Subpart VVV		✔				
Ferroalloys production	Subpart XXX						

2.1.3 How is the OSWRO NESHAP implemented when the facility also is subject to another NESHAP?

At a facility where the owner and operator is subject to requirements under both the OSWRO NESHAP and another NESHAP, the standards under the OSWRO NESHAP apply only to those specific affected sources that are part of one of the waste management operations or recovery operations regulated under the rule and used to manage off-site material. The OSWRO NESHAP does not apply to any other units or equipment at the facility. For example, the standards for tanks under the OSWRO NESHAP apply only to those tanks used to manage off-site material for the six specific types of regulated waste management or recovery operations. Tanks at the facility used for other processes are not subject to standards under the OSWRO NESHAP although these tanks may be subject to standards under the other NESHAP applicable to the facility. In addition, any tanks used as part of one of the six specific types of regulated waste management or recovery operations (but not used to manage off-site material, e.g., tanks used exclusively to store waste or used solvent generated on-site at the facility) are not subject to standards under the OSWRO NESHAP regardless of organic HAP content. Again, these tanks may be subject to standards under the other NESHAP applicable to the facility. Therefore, situation may occur where a facility is subject to the OSWRO NESHAP and another NESHAP without encountering any direct overlap of requirements because the two rules are not applicable to the same set of affected sources.

2.2 IMPLEMENTING OSWRO NESHAP IN REGULATORY OVERLAP SITUATIONS WITH OTHER NESHAP REGULATIONS.

This section discusses the implementation of the standards under the OSWRO NESHAP to an affected source when that source is located at a facility subject to both the OSWRO NESHAP and another NESHAP. Three possible regulatory overlap situations are discussed.

2.2.1 How is the OSWRO NESHAP implemented at a facility subject to another NESHAP when the affected source is already using air emission controls to comply with the other NESHAP?

To address the regulatory overall situation at a facility where an affected source would be required to use air emission controls under both the OSWRO NESHAP and another NESHAP, the OSWRO NESHAP contains provisions to avoid overlapping the technical air emission control requirements under the two NESHAP. The OSWRO NESHAP explicitly states in § 63.683(b)(2)(i) that an off-site material management unit is not required to meet the applicable air standards in the OSWRO NESHAP if this unit is also subject to another subpart under 40 CFR part 61 or 40 CFR part 63, and the owner or operator is controlling the organic HAP that are emitted from the unit in compliance with the provisions specified in the other applicable subpart under part 61 or 63. For example, if a tank at a facility subject to

both the OSWRO NESHAP and the HON is used to manage an off-site material with a VOHAP concentration greater than 500 ppmw, the owner or operator is not required to meet tank standards under the OSWRO NESHAP as long as the tank uses air emission controls in compliance with the provisions specified in the HON. The same provision is applied in the OSWRO NESHAP to process vents under § 63.683(c)(2)(i). The OSWRO NESHAP standards for equipment leaks are directly cross-referenced to the same equipment leak NESHAP standards also used by other NESHAP.

2.2.2 How is the OSWRO NESHAP implemented at a facility subject to another NESHAP when the affected source is not required to use air emission controls under the other NESHAP?

Although not expected to occur commonly, the regulatory overlap situation could possibly exist at a given facility where an affected source is used to manage an off-site material with a VOHAP concentration greater than 500 ppmw; however this off-site material does not meet the action level or threshold criteria used under the second NESHAP to apply air emission controls. In this case, a given affected source would be required to use air emission controls under the OSWRO NESHAP but the source would not be required to use air emission controls under the other NESHAP. For example, under the HON, the organic HAP concentration action level used to determine which wastewater treatment units must use air emission controls is higher than the concentration action level used for the OSWRO NESHAP. Consequently, at a facility subject to the HON and accepting wastewater for treatment together with its on-site wastewater, a situation could occur where the OSWRO NESHAP requires the facility owner or operator to use air emission controls on a wastewater treatment unit which previously had not been required to use controls under the HON. In this case, the affected source must comply with applicable standards under the OSWRO NESHAP.

2.2.3 How is the OSWRO NESHAP implemented at a facility subject to another NESHAP when the affected source is not regulated under the other NESHAP?

The situation can occur at a facility subject to another NESHAP where a particular type or category of affected sources is subject to standards under the OSWRO NESHAP but these affected sources are not regulated under the other NESHAP. For example, containers and transfer systems are types of affected sources not specifically regulated under all NESHAP. In this case, there is no regulatory overlap, per se, since the affected sources are only regulated by the OSWRO NESHAP. These affected source must comply with applicable standards under the OSWRO NESHAP.

3.0 INTERRELATION OF OSWRO NESHAP WITH RELEVANT RCRA REGULATORY PROGRAMS

This section discuses the implementation of the OSWRO NESHAP at facilities that may also potentially be subject to compliance with EPA regulatory programs administered under the authority of the Subtitle C of the Resource Recovery and Conservation Act (RCRA). The applicability of the OSWRO NESHAP to RCRA hazardous waste and used oil management facilities is discussed. The technical requirements of the OSWRO NESHAP are compared to air emission control requirements of the RCRA rules. Compliance with the rule is discussed for situations when a facility is subject to both the OSWRO NESHAP and the RCRA rules. The section concludes with a discussion of facility permitting requirements under the CAA and RCRA.

3.1 APPLICABILITY OF OSWRO NESHAP AT RCRA HAZARDOUS WASTE FACILITIES

3.1.1 What are the "RCRA air standards"?

The EPA establishes rules for the management of solid wastes under authority of the Resource Conservation and Recovery Act (RCRA). Under authority of Subtitle C of RCRA, the EPA has established rules in 40 CFR parts 260 through 271 regulating the management of solid wastes determined to be hazardous waste. For certain hazardous waste management facilities subject to requirements under Subtitle C, the EPA established national standards to control volatile organic air emissions from waste management units used to accumulate, store, and treat hazardous wastes. These standards are referred to collectively in this document as the "RCRA air standards".

The RCRA air standards are established under three subparts (subparts AA, BB, and CC) in both 40 CFR parts 264 and 265. The RCRA air standards in 40 CFR part 264 apply to owners and operators of RCRA permitted hazardous waste treatment, storage, and disposal facilities (TSDF). The standards in 40 CFR part 265 apply to owners and operators of interim status TSDF. In addition, the RCRA air standards also apply under certain conditions specified in the rules, to some waste management operations exempted from Subtitle C permitting. For example, large quantity hazardous waste generators accumulating waste on-site for less than 90-days in RCRA permit-exempted tanks and containers (commonly referred to under the RCRA program as "90-day" tanks and containers) are subject to the applicable RCRA air standards.

The technical requirements for affected sources under the subparts AA, BB, and CC are identical in both parts 264 and 265. The *subpart AA* standards are applicable to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, air stripping, and stream stripping operations that manage hazardous wastes with 10 ppmw or greater total organic concentration. The subpart *BB* standards establish requirements for control of equipment leak emissions at TSDF. The *subpart CC* standards require the use of air emission controls on TSDF tanks, surface impoundments, and containers used to manage hazardous waste having an average volatile organic concentration equal to or greater than 500 parts per million by weight (ppmw), as determined using the test procedures specified in the rule.

3.1.2 What is the difference between a "waste" under the OSWRO NESHAP and a "hazardous waste" under the RCRA air standards?

The term *waste* is defined under the OSWRO NESHAP to mean any material generated from industrial, commercial, mining, or agricultural operations or from community activities than is discarded, discharged, or under treatment before being discarded or discharged. This definition is consistent with the definition of *waste* used for other NESHAP.

The term *hazardous waste* under RCRA is defined to mean a solid waste that meets the criteria under the definition in 40 CFR 261.3. This definition encompasses many materials that do not contain organic HAP.

A waste under the OSWRO NESHAP may be either hazardous or nonhazardous under the RCRA definition. The criteria in the OSWRO NESHAP by which this waste is determined to be an *off-site material* and, therefore, potentially subject to the OSWRO NESHAP are : 1) whether the waste is generated on-site or off-site; and 2) whether the waste contains any of the organic HAP listed in Table 1 of 40 CFR 63 subpart DD (this table is included as Appendix A to this guidance document). If a waste is generated on-site, then the waste is not an *off-site material* regardless of whether it is also a RCRA hazardous waster or if this waste contains organic HAP, in any quantity. Similarly, if the waste contains no organic HAP then the waste is not an *off-site material* regardless if this waste is generated off-site or is also a RCRA hazardous waste

3.1.3 Why can the OSWRO NESHAP apply to facilities subject to the RCRA air standards?

The EPA established the OSWRO NESHAP and the RCRA air standards under two separate congressionally mandated regulatory programs. Section 112 of the Clean Air Act directs EPA to regulate the emission of hazardous air pollutants from stationary sources by establishing national emission standards (i.e., National Emission Standards for Hazardous Air Pollutants or NESHAP). Section 3004(n) of RCRA directs EPA to establish standards for the monitoring and control emissions from TSDF, as necessary to protect human health and the environment.

Congress included both in CAA section 112 and in RCRA section 3004(n) specific criteria that the EPA must use to establish the air standards under each of the regulatory programs. However, these criteria are different under the two statutes. For example, CAA section 112 requires that NESHAP be developed for major sources of hazardous air pollutants based on application of Maximum Achievable Control Technology (MACT) (i.e, the standard must be control technology-based). In contrast, RCRA section 3004(n) requires that RCRA air standards for TSDF be developed to achieve acceptable levels of protection of human health (i.e, be health risk-based). As a result of these different regulatory approaches EPA is required to use for implementing the Congressional directives under these environmental protection statutes, certain waste and recovery operations subject to the OSWRO NESHAP may also be subject to complying with regulations under RCRA.

The 1990 Amendments to the CAA recognize the potential for overlap of categories or subcategories of air emission sources at RCRA facilities regulated by NESHAP and by RCRA subtitle C rules. Section 112(n)(7) of the CAA specifically address this situation by directing the EPA, to the maximum extent practicable and consistent with other provisions of section 112, to ensure that the requirements of a NESHAP are consistent with requirements under RCRA subtitle C. In developing the OSWRO NESHAP, the EPA identified many cases where a facility subject to RCRA subtitle C rules managed hazardous wastes containing organic HAP and generated off-site in waste or recovery operations exempted from the RCRA air standards. Therefore, the EPA included applicability provisions in the OSWRO NESHAP to control the organic HAP emissions from theses sources at RCRA facilities not regulated by the RCRA air standards. In response to the directive of CAA section 112(n)(7), the EPA also added provisions to both the OSWRO NESHAP and the RCRA air standards so that the air standards under the two rules are as consistent as practicable and do not have duplicative requirements considering the requirements mandated by other provisions of section 112 . However, due to certain conditions and operating practices at some RCRA facilities, there still exist situations of regulatory overlap by which a given waste or recovery operation used to manage hazardous waste received from off-site is subject to air emission control requirements under both the OSWRO NESHAP and the RCRA air standards.

3.1.4 What type of waste and recovery operations are potentially subject to the OSWRO NESHAP and also subject to the RCRA air standards?

Table 3-1 identifies the types of waste and recovery operations potentially subject to both the OSWRO NESHAP and the RCRA air standards. Four of the types of waste or recovery operations potentially regulated by the OSWRO NESHAP may be located at facilities subject to the RCRA subtitle C: hazardous waste treatment, storage, and disposal, operations; hazardous waste water treatment operations; hazardous waste recycling operations; and used solvent recovery operations. Not all of these operations, however, are subject to the RCRA air standards. The hazardous wastewater treatment operations are exempted from RCRA hazardous waste permitting, and therefore the RCRA air standards, under the RCRA exemption in 40 CFR 264.1(g)(6) or 40 CFR 265.1(c)(10). Certain hazardous waste recycling and used solvent recovery operations may be subject to the RCRA air standards under subparts AA and BB. When developing the RCRA air standards, the EPA modified 40 CFR 261.6 to apply the RCRA air standards in subparts AA and BB to exempted units used for recycling at RCRA-permitted facilities. However, tanks, containers, and surface impoundments (if any) at these hazardous waste recycling and used solvent recovery operations are not subject to the RCRA air standards under subpart CC.

Used oil processing or re-refining is not regulated under the RCRA air standards. Used oil is regulated under RCRA as a unique material (i.e., it is not as a hazardous waste) with its own set of standards 40 CFR part 279 - Standards for the Management of Used Oil. The interrelationship of the OSWRO NESHAP with these standards is discusses in Section 3.2 of this document.

Tanks and containers exempted from RCRA hazardous waste permitting under 40 CFR 262.34(a) are still subject to the RCRA air standards. These tanks and containers are used by large quantity waste generators at a RCRA facility for on-site accumulation of hazardous waste for less than 90 days (and thus commonly referred to as "90-day" tanks and containers). Since these units cannot be used to manage hazardous waste received from off-site and still qualify for the permit exemption under RCRA, all 90-day tanks and containers are not subject to the OSWRO NESHAP

Table 3-1.
Waste or Recovery Operations Potentially Subject to OSWRO NESHAP and RCRA Air Standards

Waste or Recovery Operation	Potentially Subject to OSWRO NESHAP (see note a)	Potentially Subject to RCRA	
		RCRA Hazardous Waste Subtitle C Regulations	RCRA Air Standards
Hazardous waste treatment, storage, and disposal	✔	✔	✔
Hazardous wastewater treatment (see note b)	✔	✔	
Other wastewater treatment	✔		
Hazardous waste recycling	✔	✔	✔ (see note b)
Used oil processing or re-refining	✔	(see note c)	
Used solvent recovery	✔		✔ (see note b)
90-day tanks and containers (see note e)		✔	✔

Notes:

(a) Waste or recovery operations must be, be located at, or be part of a *major source* of hazardous air pollutants (HAP) emissions. A major source means any stationary source or group of stationary sources within a contiguous area and under common control that emits or has the potential to emit considering controls, in aggregate, 10 tons or more per year or more of any HAP or 25 tons per year or more of any combination of HAP.

(b) Hazardous wastewater treatment operations are exempted from RCRA hazardous waste permitting, and therefore the RCRA air standards, under the RCRA exemption in 40 CFR 264.1(g)(6) or 40 CFR 265.1(c)(10).

(c) EPA modified 40 CFR 261.6 to apply the RCRA air standards in subparts AA and BB to exempted units used for recycling at RCRA-permitted facilities.

(d) Used oil is regulated under RCRA as a unique material with its own set of standards (i.e., it is not as a hazardous waste). See 40 CFR part 279 - Standards for the Management of Used Oil. The interrelationship of the OSWRO NESHAP with these standards is discusses in Section 3.2 of this document.

(e) 90-day tanks and containers are RCRA exempted units used for on-site accumulation of hazardous waste by the waste generators. Since these units do not manage waste received from off-site, all 90-day tanks and containers are not subject to the OSWRO NESHAP.

3.1.5 Which of the RCRA air standards may apply to affected sources at a facility subject to the OSWRO NESHAP?

Table 3-2 identifies which of the RCRA air standards subparts (subparts AA, BB, and CC) may apply to affected sources at a facility that is subject to both the OSWRO NESHAP and the RCRA rules. The series of three subparts under the RCRA air standards effectively addresses the same set of affected sources that are regulated under the OSWRO NESHAP.

Both the OSWRO NESHAP and RCRA air standards (under subpart AA) require the control of air emissions from the same group of process vent sources. These processes, typically used for waste treatment or recycling operations, are distillation processes, fractionation processes, thin-film evaporation processes, solvent extraction processes, steam stripping processes, and air stripping. The definitions of each of these six treatment process types used for implementing the OSWRO NESHAP are listed in Table 3-3. These are the same definitions used for the processes to implement the RCRA air standards under subpart AA .

3.2 APPLICABILITY OF OSWRO NESHAP AT RCRA USED OIL MANAGEMENT FACILITIES

3.2.1 Why can the OSWRO NESHAP apply to facilities subject to the RCRA used oil management rules?

In developing the OSWRO NESHAP, the EPA determined that large used oil processing and re-refining operations can emit significant levels of organic HAP. Used oil processing or re-refining facilities are not subject to the RCRA air standards (i.e., subparts AA, BB, and CC) . Used oil is regulated under RCRA as a unique material (i.e., it is not regulated as a hazardous waste) with its own set of standards under 40 CFR part 279 - Standards for the Management of Used Oil. There are no specific requirements in 40 CFR part 279 requiring the control of air emissions from these sources. Therefore, the EPA extend the applicability of the OSWRO NESHAP to include used oil processing and refining operations.

3.2.2 What is the difference between "used oil" as defined for implementation of the OSWRO NESHAP and "used oil" for implementation of the RCRA used oil management rules?

There is no difference in how the term "used oil" is applied for implementing the two sets of rules. The OSWRO NESHAP adopts the same definition of *used oil* in the RCRA used oil management regulations under 40 CFR 279.1. Therefore, for applying both sets of rules, *used oil* is any oil refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities.

Table 3-2.
Comparison of Affected Sources Regulated Under OSWRO NESHAP and RCRA Air Standards

Affected Source	OSWRO NESHAP	RCRA Air Standards Under 40 CFR parts 264/ 265		
		Subpart AA	Subpart BB	Subpart CC
Tanks	✔			✔
Surface impoundments	✔			✔
Containers	✔			✔
Oil/water and chemical/water separators	✔			(see note a)
Material transfer systems	✔			(see note b)
Process vents	✔	✔		
Equipment leaks	✔		✔	

Notes:

(a) No specific requirements for oil/water and chemical/water separators. A separator meets the definition of a "tank" used in subpart CC and must meet the tank standards

(b) No specific requirements for individual drain systems or other transfer systems Provisions under tank and surface impoundment standards in subpart CC requires that transfer of hazardous waste between tanks or surface impoundments using air emission controls must be conducted using continuous hard piping or another closed system (e.g., see §264.1084(j))

Table 3-3.
Comparison of Process Vent Units Regulated Under OSWRO NESHAP and RCRA Air Standards

Process	OSWRO NESHAP	RCRA Air Standards under Subpart AA
Distillation	Distillation means a process, either batch or continuous, separating one or more material feed streams into two or more exit streams having different component concentrations from those in the feed stream or streams. The separation is achieved by the redistribution of the components between the liquid and vapor phases as they approach equilibrium within the distillation unit.	• Same as for OSWRO NESHAP
Fractionation	Fractionation means a liquid mixture separation process or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components	• Same as for OSWRO NESHAP
Thin-film evaporation	Thin-film evaporation means a liquid mixture separation process or method that uses a heating surface consisting of a large diameter tube that may be either straight or tapered, horizontal or vertical. Liquid is spread on the tube wall by a rotating assembly of blades that maintain a close clearance from the wall or actually ride on the film of liquid on the wall.	• Same as for OSWRO NESHAP
Solvent extraction	Solvent extraction means a separation process or method in which a solid or a solution is contacted with a liquid solvent (the material and the solvent being relatively insoluble in each other) to preferentially dissolve and transfer one or more components into the solvent.	• Same as for OSWRO NESHAP
Steam stripping	Steam stripping means a liquid mixture separation process or method in which vaporization of the volatile components of a liquid mixture occurs by the introduction of steam directly into the process.	• Same as for OSWRO NESHAP
Gas stripping	Gas stripping means a desorption process or method used to transfer one or more volatile components from a liquid mixture into a gas stream either with or without the application of heat to the liquid. Packed towers, spray towers, and bubble-cap, sieve, or valve-type plate towers are examples of the process configurations used for contacting the gas and a liquid	• Subpart AA uses the term "air stripping" instead of "gas stripping" but the definition of the operation is the same as for OSWRO NESHAP

3.2.3 What type of used oil management operations regulated by RCRA are potentially subject to the OSWRO NESHAP?

Not all used oil management operations regulated by RCRA are potentially subject to the OSWRO NESHAP. The OSWRO NESHAP is potentially applicable only to those used oil processing or refining operations that are subject to RCRA regulation under 40 CFR 279 subpart F. Used oil management operations not subject these RCRA standards are also not subject to the OSWRO NESHAP. Furthermore, an used oil processing or refining operation regulated under 40 CFR 279 subpart F is only subject to the OSWRO NESHAP if the used oil is delivered to the facility from an off-site location and the used oil management operation is, is located at, or is part of a *major source* of hazardous air pollutants (HAP) emissions.

3.2.4 If a used oil processing or refining operation is subject to the OSWRO NESHAP, how are the technical requirements of the OSWRO NESHAP implemented?

The technical requirements of the OSWRO NESHAP apply to each affected source located in used oil processing or refining operation. Under 40 CFR 279 subpart F, there are no requirements for control of organic air emissions from used oil processing or refining operations. The RCRA air standards do not apply to these operations. Therefore, the OSWRO NESHAP imposes no duplicative or conflicting requirements on those owners and operators of used oil processing or refining operations complying with the RCRA used oil management operations under 40 CFR 279 subpart F.

3.3 COMPARISON OF OSWRO NESHAP AND RCRA AIR STANDARDS TECHNICAL REQUIREMENTS

3.3.1 How does the action level determined under the OSWRO NESHAP compare with the RCRA Air standards?

The OSWRO NESHAP uses a 500 ppmw action level based on the concentration of volatile organic hazardous air pollutants (VOHAP) in the off-site material to determine which off-site material management units and process vents must use air emission controls. Likewise, the RCRA air standards under subpart CC uses a 500 ppmw action level on the concentration of volatile organics (VO) in the hazardous waste to determine which tanks, surface impoundments, and containers use air emission controls. Consequently, for a waste management operation subject to both the OSWRO NESHAP and the RCRA air standards under subpart CC, the need to use air emission controls on those units used to manage a hazardous waste that is also an off-site material is determined based on this material meeting both of the action levels. In the development of the rules, the EPA recognized that this situation could occur and made the procedures for determining the 500 ppmw "action level"

under the OSWRO NESHAP consistent with the procedures required under the RCRA air standards, to the extent possible under the applicable statutory requirements.

Table 3-4 compares determination procedures for the 500 ppmw "action level" under the OSWRO NESHAP with the procedures required under the RCRA air standards. For both off-site material and for hazardous waste received from off-site generators, the action level concentration is based on the composition of the material where the owner/operator accepts position or custody of the material. The determination is made by collecting representative samples and analyzing these samples using one of the specified test methods. As an alternative, both the OSWRO NESHAP and the RCRA air rules allow the use of "knowledge" by the owner/operator to determine the VOHAP concentration of the off-site material or the VO concentration of the hazardous waste. The requirements for using "knowledge" for the action level determination are the same under both rules.

Method 305 is the compliance test method used for the OSWRO NESHAP. This method is designed for speciation of volatile organic hazardous air pollutants (i.e., identification and measurement of individual compounds). Method 305 is a "purge and trap" method quite similar to Method 25D on the front-end sampling and purging to remove the organic compounds from the sample. The major difference is in the analysis where in Method 305 the purged stream undergoes separation of the individual compounds by gas chromatography with measurement by mass spectrometry (or other appropriate means). The concentrations of the constituents identified as HAP in the OSWRO NESHAP are added to obtain the total VOHAP concentration of the off-site material. It is this total VOHAP concentration that is compared to the OSWRO NESHAP action level of 500 ppmw.

The RCRA air standards under subpart CC use Method 25D as the compliance test method for measurement of the VO concentration of the collected hazardous waste samples. Method 25D is not an individual compound speciation analysis method like Method 305 but rather is used to provide a measure of the organic emission potential of a material. The method measures carbon (using a flame ionization detector) and organochlorine (by electrolytic conductivity detector) in the material. The carbon (expressed as methane) and the chlorine (expressed as chloride) measurements are added together to provide an estimate of the total VO emission potential of the waste. This VO concentration value is compared to the RCRA air rules action level of 500 ppmw.

Since Method 305 uses a speciation analysis method and the OSWRO NESHAP specifies which chemical constituents are to be considered in the VOHAP concentration, Method 305 measures a subset of the VO concentration measured by Method 25D. Therefore, if an owner/operator uses Method 25D to measure the (total) VO concentration of an off-site material and that result indicates that the material has a VO concentration of less than 500 ppmw, then the owner or operator can use the result of this alternative test method to verify that the off-site material has a VOHAP concentration of less than 500 ppmw. On the other hand, a Method 25D concentration of greater than 500 ppmw does not automatically

Table 3-4.
Comparison of 500 ppmw "Action Level" Determination Procedures Under OSWRO NESHAP With RCRA Air Standards

Parameter	OSWRO NESHAP	RCRA Air Standards
Organic compounds	• Volatile organic hazardous air pollutants (VOHAP) as defined in the rule	• Volatile organic (VO) compounds as defined in rule
Averaging period	• Any time interval up to 1 year that the owner/ operator determines is appropriate for the material	• Same as for OSWRO NESHAP
Point where action level is applied	• VOHAP concentration at *point-of-delivery* • Applied to both RCRA hazardous wastes and non-hazardous wastes • Applied only to wastes generated off-site and delivered to facility. Not applied to any waste generated on-site. • Point where the owner/operator first accepts custody takes possession, or assumes responsibility for a waste	• VO concentration at *point-of-waste origination* • Applied only to RCRA hazardous wastes • If waste generated on-site, point where waste is determined to be a RCRA hazardous waste • If waste generated off-site, point where the owner/operator first accepts custody of a RCRA hazardous waste
Determination procedure	• Use either: – Direct measurement (i.e., collect & analyze samples) – Knowledge of the waste	• Same as for OSWRO NESHAP
Sampling procedure	• Collect sufficient number of samples, but not less than 4, to be representative of the complete range of organic compositions and quantities that occur in the material stream during the averaging period • Collect and handle samples according to a written site sampling plan	• Same as for OSWRO NESHAP
Compliance analysis method	• Method 305 in 40 CFR part 63, appendix A.	• Method 25D in 40 CFR part 60, appendix A.
Alternative analysis methods an owner/operator may choose to use	• Method 25D in 40 CFR part 60, appendix A. • Method 624 in 40 CFR part 136, appendix A. • Method 625 in 40 CFR part 136, appendix A. • Method 1624 in 40 CFR part 136, appendix A. • Method 1625 in 40 CFR part 136, appendix A. • Method 8260 in EPA SW-846 • Method 8270 in EPA SW-846 • Other validated methods	• Same as for OSWRO NESHAP

mean that the (OSWRO NESHAP) VOHAP concentration is greater than 500 ppmw. The off-site material may contain a number of organic compounds that are measured by Method 25D but are not on the list of HAP specified for consideration in the rule.

Both rules also allow the uses of alternative analysis methods to Methods 25D and 305. The selection of alternative methods is identical in both rules. All of these methods are speciation methods that require identification and measurement of individual compounds. However, each method has been validated only for a limited number of compounds, and multiple analyses by different methods may be required to measure all of the volatile organic HAP present in a off-site material sample. If one of the alternative methods is used to measure specific compounds present in an off-site material, the measured concentrations can be corrected to values that would be measured using Method 305. This is done using published Method 305 correction factors (f_{m305}). The concentration of each individual HAP may be "corrected" to equate to values that would be measured using Method 305 by multiplying the measured constituent concentration by the constituent-specific adjustment factor (f_{m305}). Sum the constituent Method 305 concentrations to obtain the VOHAP concentration for the off-site material.

3.3.2 Are there affected sources which are exempted under one rule but not the other?

Both OSWRO NESHAP and the RCRA air standards include provisions which specifically exempt certain affected sources that manage hazardous waste from having to use air emission controls even if the waste in the unit has an organic content above the applicable action level. Table 3-5 compares the unit-specific exemptions potentially applicable to tanks, surface impoundments, and containers managing hazardous waste allowed under the OSWRO NESHAP with the exemptions allowed under the RCRA air standards. With two exceptions discussed below, when a tank, surface impoundment, or container qualifies for a unit-specific exemption under the RCRA air standards it also qualifies to be exempted from using air emission controls under the OSWRO NESHAP.

The first exception occurs where tanks, surface impoundments, and containers managing hazardous waste may be exempted under the OSWRO NESHAP but not the RCRA air standards. The OSWRO NESHAP allows an owner or operator to designate one or a combination of units managing off-site materials with a VOHAP concentration greater than 500 ppmw to be exempted from using air emission controls when these units meet the condition that the total annual quantity of HAP contained in the off-site material placed in the units (exempted under this provision) is less than 1 megagram per year. To qualify for this exemption, the owner or operator must meet the requirements specified in the rule under 40 CFR 63.683(b)(2). The RCRA air standards under subpart CC do not provide for a comparable exemption. Therefore, the situation could occur at a hazardous waste TSDF also subject to the OSWRO NESHAP where an individual tank, surface impoundment, or

Table 3-5.
Comparison of Exemptions from Using Air Emission Controls for Affected-Sources Managing Hazardous Waste Allowed Under OSWRO NESHAP and RCRA Air Standards

Affected Unit	Conditions for Exemption From Using Air Emission Controls Under Rule	
	OSWRO NESHAP	RCRA Air Standards
Owner/operator designated tank, surface impoundment, or container	• Unit exempted if total annual quantity of HAP contained in the off-site material placed in all units exempted under this provision is less than 1 Mg/yr.	• No comparable exemption
Tank or surface impoundment used for biological treatment of hazardous waste	• Unit exempted if either: - HAP biodegradation efficiency (R_{bio}) for the biological treatment process is equal to or greater than 95% - Total actual HAP mass removal rate (MR_{bio}) for the off-site material treated by the biological treatment process is equal to or greater than the required HAP mass removal rate (RMR) for the off-site material.	• Same conditions to qualify for exemption as for OSWRO NESHAP
Tank, surface impoundment, or container used to manage hazardous waste subject to RCRA Land Disposal Restrictions	• Unit exempted if hazardous waste meets the applicable numerical organic concentration limits specified in the Land Disposal Restrictions under in 40 CFR 268.40.	• Same conditions to qualify for exemption as for OSWRO NESHAP
Tank, surface impoundment, or container used to manage treated hazardous waste	• Unit exempted if organic hazardous constituents in the hazardous waste have been treated by the treatment technology established by the EPA for the hazardous waste in 40 CFR 268.42(a), or have been removed or destroyed by an equivalent method of treatment approved by the EPA under 40 CFR 268.42(b).	• Same conditions to qualify for exemption as for OSWRO NESHAP
Tank used for bulk feed of hazardous waste to a waste incinerator	• Unit exempted all 3 conditions met: - Tank located inside an enclosure vented to control device that meets applicable requirements in 40 CFR 61 subpart FF - Enclosure and control device began operation before *July 1, 1996* - Enclosure meets criteria in "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B.	• Same conditions to qualify for exemption as for OSWRO NESHAP with exception that cutoff date for enclosure and control device to have begun operation extended to before *November 25, 1996*.

container is required to use air emission controls under the RCRA air standards but is not required under the OSWRO NESHAP to use controls. However, it is unlikely that a TSDF owner/operator would choose to use this discretionary exemption available under the OSWRO NESHAP for a unit that already must use air emission controls under the RCRA air standards. There would seem to be little advantage or incentive for an owner/operator to doing so.

The second exception applies to a tank used for bulk feed of hazardous waste to a waste incinerator. The OSWRO NESHAP exempts this type of tank when located in an enclosure and vented to a control device before July 1, 1996 (and meets the other conditions listed in Table 3-5). The RCRA air standards exempt this type of tank when located in an enclosure and vented to a control device before November 25, 1996. The dates are differ because the cutoff date for either rule is determined by the date on which the exemption provision in the applicable rule was published in the Federal Register.

3.3.3 How do the technical control requirements under the OSWRO NESHAP compare to the technical control requirements under the RCRA Air standards?

For affected sources required to use air emission controls, Table 3-6 compares the technical control requirements of the OSWRO NESHAP with those required under the RCRA Air standards in subparts AA, BB, and CC by the different affected source types.

Tanks, Surface Impoundments, and Containers. The technical requirements for tanks, surface impoundments, and containers under the RCRA air standards in subpart CC are essentially the same as those in the OSWRO NESHAP. A tank, surface impoundment, or container controlled under either set of requirements will achieve the same emission reduction and performance level.

Oil/water and Chemical/water Separators. There are no specific requirements under the RCRA Air standards as there are in the OSWRO NESHAP for oil/water and chemical/water separators. However, an oil/water and chemical/water separator meets the definition of a "tank" used for applying the RCRA air standards. Therefore, these units potentially must meet the tank standards under subpart CC.

Material Transfer Systems. The material transfer system control requirements under the OSWRO NESHAP apply to any stationary system for which the predominant function is to convey liquids or solid off-site materials from one point to another point within a waste management operation or recovery operation conveyance of material using a container or a self-propelled vehicle such as a front-end loader is not a transfer system under the rule). In contrast, there are no specific requirements under the RCRA air standards for the affected source of material transfer systems. The RCRA air standards do include a provision under both the tank and the surface impoundment standards in subpart CC that requires transfer of

hazardous waste between tanks or surface impoundments using air emission controls be conducted using continuous hard piping or another closed system (e.g., see §264.1084(j)). There are no requirements under the RCRA air standards affecting the transfer of materials into or out of containers.

Process vents. As discussed previously in this section, both the OSWRO NESHAP and RCRA air standards (under subpart AA) require the control of air emissions from the same group of process vent sources. However, there are significant differences in the application of the process vent standards to these six process types under the OSWRO NESHAP compared to the RCRA air standards. The OSWRO NESHAP process vent standards apply to any of six process types when the process is used to treat an off-site material having a VOHAP concentration greater than 500 ppmw. Also, the OSWRO NESHAP specifically exempts very low flow process vents and process vents that meet the process vent flow and concentration criteria of 6 m3/min and 20 ppmv for the vent stream. Under the RCRA air standards the process vent standards are applied to the six process types when the process is used to manage hazardous wastes with a total organic concentration of at least 10 ppmw.

Table 3-6.
Comparison of Air Emission Control Requirements Under OSWRO NESHAP With RCRA Hazardous Waste TSDF Standards

Affected Source Type	OSWRO NESHAP Technical Control Requirements	RCRA Air Standards Technical Control Requirements
Tanks	• Required control level determined by vapor pressure of material in tank, tank capacity, management operation performed in tank, and whether tank is an existing or new source. • Tank Level 1 — Use either: – Tight-fitting cover or fixed-roof – Cover and vent to control device • Tank Level 2 — Use either: – Fixed-roof with internal floating roof – External floating roof – Cover and vent to control device – Pressure tank – Locate in enclosure vented to combustion control device	• Tank control level applicability criteria same as for existing sources under OSWRO NESHAP • Tank Level 1 — Same as OSWRO NESHAP • Tank Level 2 — Same as OSWRO NESHAP
Surface impoundments	• Use either: – Floating membrane cover – Cover and vent to control device	• Same as for OSWRO NESHAP

Table 3-6. (continued)

Affected Source Type	OSWRO NESHAP Air Emission Control Requirements	RCRA Air Standards Air Emission Control Requirements
Containers	• Required container control level determined by organic content of material in container, container capacity, and whether the container is used for waste stabilization process. • Container Level 1 — Use either: – Container that meets DOT specifications [a] – Tight-fitting cover – Organic vapor suppression barrier • Container Level 2 — Use either – Container that meets DOT specifications [a] – Leak-tight container as tested by Method 21 – Vapor-tight container as tested by Method 27 • Container Level 3 — Use either – Cover and vent to control device – Place in enclosure vented to combustion control device	• Container control level applicability criteria same as for OSWRO NESHAP • Container Level 1 — Same as for OSWRO NESHAP • Container Level 2 — Same as for OSWRO NESHAP • Container Level 3 — Same as for OSWRO NESHAP
Oil/water and chemical/water separators	• Use either: – Floating roof [b] – Fixed-roof vented to control device – Pressurized separator	• RCRA imposes Subpart BB standards on tank ancillary equipment, piping and conveyance such as waste solvent/paint collection system at a facility. The collection system is subject to Subpart BB. • A separator meets the definition of a "tank" used in subpart CC and must meet the tank standards
Material transfer systems	• Individual drain systems, use either. – Covers, water seals, and other drain closure devices – Continuous hard-piping – Vent system through control device • Other transfer systems, use either – Covers – Continuous hard-piping – Enclosure vented to control device	• No specific requirements for individual drain systems or other transfer systems • Provisions under tank and surface impoundment standards in subpart CC requires that transfer of hazardous waste between tanks or surface impoundments using air emission controls must be conducted using continuous hard piping or another closed system (e.g., see §264.1084(j))

Table 3-6. (continued)

Affected Source Type	OSWRO NESHAP Air Emission Control Requirements	RCRA Air Standards Air Emission Control Requirements
Process vents	• Standard applied to each individual affected process vent at facility • Each affected process vent must be vented through a closed-vent system to a control device • Control device must achieve ≥95 % control efficiency	• Standard applied to combination of all affected process vents at facility • Achieve either: – Reduction of total organic emissions from all affected process vents below 1.4 kg/h and 2.8 Mg/yr – Reduction of total organic emissions from all affected process vents by 95% • Standard allows "emission averaging" of vent sources to achieve compliance
Equipment leaks	• Implement leak detection and repair (LDAR) program and equipment modifications that meets requirements in either: – 40 CFR 61 Subpart V – 40 CFR 63 Subpart H	• Implement LDAR program and equipment modifications that meets requirements in subpart BB. These requirements are similar to the requirements in 40 CFR 61 Subpart V.

The OSWRO NESHAP are applied on an individual process vent basis and require each affected process vent to be controlled. In, contrast, the RCRA air standards are applied on a facility basis and require that owners or operators to reduce total organic emissions from all affected process vents at the facility to below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 ton/yr) or install and operate a control device(s) that reduces total organic emissions from all affected process vents at the facility by 95 weight percent. If the total emissions from all affected process vents at a the facility exceed either the daily or annual emission limitations then controls are required; if total emissions are below both of the emission limit criteria then no controls are required for the process vents under subpart AA.

For those affected process vents under either the OSWRO NESHAP required to be vented to a control device, the technical air emission control requirements for the closed vent system and control device are relatively consistent. Both rules require installation and operation of an organic recovery or destruction control device that meet certain design, operational, and performance criteria. The performance requirements are summarized in Table 3-7.

Table 3-7.
Control Device Performance Requirements for both the OSWRO NESHAP and RCRA Air Standards

Control Device Type	Performance Requirement
Enclosed Combustion Devices (e.g., thermal incinerator, catalytic incinerator, boiler, or process heater)	• 95 % destruction efficiency or • 20 ppmv exit concentration or • minimum residence and temperature, (e.g., 760 °C and 0.5 sec)
Organic Recovery Devices (e.g., carbon adsorber or condenser)	• 95 % overall recovery
Flares	• design and operational criteria (e.g., no visible emissions)

Equipment leaks. The EPA has promulgated a number of NESHAP equipment leak standards in 40 CFR parts 61 and 63. The OSWRO NESHAP cross-references several of these existing NESHAP subparts. The rule allows the owner/operator the option of complying with the 40 CFR 61 subpart V or 40 CFR 63 subpart H. The RCRA air standards specifies all of equipment leak requirements in subpart BB in parts 264 and 265. The technical requirements under the RCRA air standards in subpart BB are essentially the same as the technical requirements in 40 CFR 61 subpart V.

There are two primary techniques for reducing equipment leak emissions that form the basis of these EPA equipment leak standards: 1) modifying or replacing existing equipment, and 2) implementing a leak detection and repair (LDAR) program. The equipment requirements (e.g., installing caps on open-ended lines or installing closed-loop sampling systems) are essentially the same in all of the EPA equipment leak standards. There are no differences in these technical requirements between the NESHAP subparts cross-referenced by the OSWRO NESHAP and the RCRA air standards. Table 3-8 presents a summary of equipment modifications that can be used for each equipment component type subject to the equipment leak standards.

Table 3-8.
Equipment Modifications for Equipment Leak Standards

Equipment Component Type	Modification
Pumps	• Sealless design • Closed-vent system • Dual mechanical seal with barrier fluid maintained at a higher pressure than the pumped fluid
Compressors	• Closed-vent system • Dual mechanical seal with barrier fluid maintained at a higher pressure than the compressed gas
Pressure relief devices	• Closed-vent system • Rupture disk assembly
Valves	• Sealless design
Connectors	• Weld together
Open-ended lines	• Blind, cap, plug, or second valve
Sampling connections	• Closed-loop sampling

The LDAR program is routinely administered at a facility to detect and repair equipment that is "leaking" (i.e., emitting sufficient amounts of organics to the atmosphere to warrant reduction of these emissions by repairing the equipment). A portable monitoring device is used to identify equipment leaks from individual pieces of equipment. The control effectiveness of any given LDAR program is dependent on a number of factors including leak definition and monitoring frequency as well as initial and final leak frequencies. The EPA equipment leak standards vary in how the LDAR program is implemented with respect to leak definition and monitoring frequency as well as initial and final leak frequencies. Some standards specify the leak definition (e.g., 10,000 ppmv) and monitoring frequency (e.g.,

monthly or quarterly) and others specify the final leak frequency. The equipment leak standards under both 40 CFR 61 subpart V and the RCRA air standards in subpart BB both require a monthly LDAR with a leak definition of 10,000 ppmv. In contrast, 40 CFR 63 subpart H of part 63 that has a lower leak definition for pumps and valves (e.g., 500 ppmv for Phase II and III) and specifies the monitoring frequency based on the leak frequency.

3.3.4 Which technical requirements apply to an affected source when it must use air emission controls under both the OSWRO NESHAP and the RCRA air standards?

Tanks, Surface Impoundments, and Containers. The RCRA air standards under subpart CC applicability exempt any hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the OSWRO NESHAP (or any other applicable Clean Air Act regulation under 40 CFR part 60, 61, or 63). It is important to note that this exemption only applies to those units using organic air emission controls to comply with an applicable CAA regulation.

Process Vents. The EPA amended the applicability provision of Subpart AA by adding a new §264.1030(e) and §265.1030(d). This provision states that a process vent is not subject to the Subpart AA standards provided the owner or operator certifies that all Subpart AA-regulated process vents at the facility are equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified in Part 60, 61, or 63.

Therefore, the Subpart AA process vent applicability exemption is only available at a facility where each and every process vent that would otherwise be subject to Subpart AA is equipped with and operating air emission controls in compliance with an applicable CAA standard under Part 60, 61, or 63. The various individual vents could be regulated under different CAA rules as long as all vents (otherwise subject to Subpart AA) are controlled under an applicable CAA rule.

As with the similar exemption provisions in Subparts BB and CC, to comply with the requirements at paragraphs §264.1030(e) or§265.1030(d) and thus qualify for the applicability exemption, the emissions from each Subpart AA process vent must be routed through a closed-vent system to an air emission control device. A process vent that is in compliance with a CAA standard under an exemption from control requirements (i.e., is not equipped with and operating a control device) does not meet the criteria established in the provisions paragraph §264.1030(e) or §265.1030(d) of Subpart AA. Therefore, a unit that does not use the required air emission controls but is in compliance with a NESHAP through an "emission averaging" or "bubbling" provision does not qualify for the exemption. Similarly, if the Clean Air Act standard for the particular unit is no control (for example, because the MACT floor for the source category is no control and the Agency decided not to apply controls more stringent than the floor), the exemption from the RCRA standards under §264.1030(e) or

§265.1030(d) of Subpart AA would not apply since the unit would not actually be controlled (i.e., equipped and operating air emission controls) under provisions of the MACT standard.

To take the above example a step further, at a facility where all but one of the Subpart AA process vents are equipped with air emission controls for compliance under CAA rules and the one uncontrolled Subpart AA process vent is also in compliance with a CAA regulation but is not controlled for air emissions, the facility's Subpart AA process vents do not meet the applicability exemption criteria as stated in Subpart AA and thus are not exempt from the rule under §264.1030(e) or §265.1030(d).

Equipment Leaks. The amendments to the Subpart BB rules, published on December 8, 1997 (62 FR 64636-64671), revised the recordkeeping provisions of Subpart BB to eliminate owner or operator burden caused by regulatory overlap of the various EPA equipment leak regulations under the Clean Air Act and RCRA. The Subpart BB recordkeeping provisions in Section 264.1064(m) and Sec. 265.1064(m) were amended to allow any equipment that contains or contacts hazardous waste that is subject to Subpart BB and also subject to regulations in 40 CFR Part 60, 61, or 63 to determine compliance with Subpart BB by documentation of compliance with the relevant provisions of the Clean Air Act rules codified under 40 CFR Part 60, Part 61, or Part 63. As noted in the preamble to these amendments, "because compliance with Subpart BB is demonstrated through recordkeeping, this recordkeeping revision has the effect of exempting equipment that would otherwise be subject to Subpart BB from Subpart BB requirements, provided the equipment is operated, monitored, and repaired in accordance with an applicable CAA standard, and appropriate records are kept to that effect."

Paragraph §264.1064 (m) in the recordkeeping requirements states that the owner or operator "...may elect to determine compliance with this subpart either by documentation pursuant to §264.1064 of this subpart [i.e., Subpart BB], or by documentation of compliance with the regulations at 40 CFR Part 60, Part 61, or Part 63 pursuant to the relevant provisions of the regulations at 40 CFR Part 60, Part 61, or Part 63." The corresponding Part 265 language is the same. The objective of the amendment was to eliminate any owner or operator burden caused by regulatory overlap. In making the revision to paragraph (m) in §264.1064 and §265.1064 of Subpart BB, the Agency intended that, for a piece of equipment subject to equipment leak regulations under the CAA as well as RCRA Subpart BB, compliance with the CAA rules rather than the RCRA Subpart BB requirements would be an adequate demonstration of compliance and in effect eliminate the need to demonstrate compliance under Subpart BB of the RCRA Air Rules. Based on EPA Headquarters' interpretation , the provisions in 40 CFR 264.1064(m) and 265.1064(m) are intended to allow a facility owner or operator to demonstrate compliance with all of subpart BB, through documentation of compliance with regulations under one of the specified parts of the CAA, such as the OSWRO NESHAP. Simply put, if a facility has equipment that is subject to relevant provisions (i.e., provisions for operating, monitoring, and repairing subpart BB equipment) under regulations within the specified CAA parts, that equipment is exempt from 40 CFR part 264 subpart BB and therefore no potential exists for overlap with the OSWRO

NESHAP. To be eligible for the exemption provided by 40 CFR 264.1064(m) or 265.1064(m): the relevant CAA requirements must be applicable to the subpart BB equipment; the relevant CAA requirements must include provisions for operation, monitoring, and repair of the Subpart BB equipment; the relevant CAA requirements must be codified within 40 CFR part 60, 61, or 63; and compliance with the relevant CAA requirements must be documented in the facility operating record.

3.4 FACILITY PERMITTING CONSIDERATIONS

3.4.1 What is the relationship between a facility's CAA Title V operating permit with the facility's RCRA Subtitle C permit?

A facility subject to both the OSWRO NESHAP and the RCRA air standards may be required to have two operating permits, one permit for each of the separate regulatory programs. One of the OSWRO NESHAP applicability conditions is the facility is a major source of HAP emissions. Under CAA Title V, owners and operators of facilities that are major sources of HAP emissions are required to have an operating permit (see 40 CFR part 70). Under RCRA subtitle C, owners and operators of TSDF that handle hazardous waste are required to have an operating permit

According to the EPA's Operating Permits Group of the OAQPS Information Transfer and Program Integration Division, a Title V operating permit for a major source must be comprehensive with respect to including all emission units and all applicable requirements that apply to the units (see 40 CFR 70.3(c)(1)). That is, the permit must include all "applicable requirements" for all emission units within the fenceline (except for "insignificant activities") and contain an explanation of any exemptions from otherwise "applicable requirements." An "applicable requirement" is essentially all emission limitations and standards and other requirements through State implementation plans (SIP), NSPS, MACT, NESHAP, and other CAA requirements. For example, the RCRA air emission standards are not an "applicable requirement" under Title V because they are not CAA requirements (RCRA is a separate statute). The CAA standards under Part 60, 61, or 63 are applicable requirements and as such should be included in the CAA Title V operating permit, as applicable to the facility. All terms and conditions in the permit that are required by the CAA or applicable requirements are federally-enforceable. In fact, all Federally-approved rules/requirements are independently enforceable outside of CAA permitting programs. For example, SIP requirements become federally-enforceable when EPA approves the SIP; NSPS, MACT, and NESHAP are federally-enforceable as of their effective date. Therefore, CAA requirements under 40 CFR Parts 60, 61, or 63 are independently enforceable regardless of whether or not the requirements have been incorporated into the facility's Title V permit. An owner or operator with sources subject to regulations under 40 CFR Part 60, 61, or 63 must comply with the applicable requirements of these regulations regardless of the CAA Title V permit status.

The operating permit term is 5 years. The requirements for permit content are described

in 40 CFR 70.6. Each permit must include the emission limits and standards including operational requirements and limits that assure compliance with all applicable requirements at the time of permit issuance. All the terms and conditions of the permit , including any "permit shield" granted under 40 CFR 70.6(f), remain in effect until the renewal permit has been issued or denied. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action. Section 70.6(f) allows the permitting authority to include a provision stating that compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance provided: (1) such applicable requirements are included and specifically identified in the permit; or (2) the permitting authority determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary of it. This means, in general, that once the applicable requirement is translated into permit terms, the source must only comply with the Title V permit terms.

3.4.2 How does the program policy of a "permit shield" as implemented under the CAA differ from the "permit-as-a-shield" policy implemented under RCRA?

The program policy of a "permit shield" as implemented under the CAA is significantly different than the "permit-as-a-shield" policy implemented under RCRA. The RCRA "permit-as-a-shield" policy allows a permitted TSDF to be shielded from compliance with regulatory requirements promulgated after the RCRA permit is issued; i.e., compliance with the RCRA permit constitutes compliance with the RCRA program. In general, under this policy, if a new standards is added to 40 CFR Part 264 and is not in the facility's RCRA permit, the owner or operator is typically not required to comply with that particular standard until the permit is reopened (most likely for renewal at the permit's expiration date) and the requirements of the standard can be added to the facility's permit. This is not the case under the CAA where any "shielded" requirements must be specifically identified in the Title V permit. The CAA requires that the facility's permit must be reopened to include newly promulgated requirements if more than 3 years remain in the term of the permit. If not, the requirements are included in the permit renewal. In either case, the facility owner or operator must comply with any new regulations under 40 CFR part 60, 61, or 63, which are independently enforceable, as of their effective date.

3.4.3 Can the sources in a facility's CAA Title V operating permit be different than those listed in the facility's RCRA Subtitle C permit?

Yes. There are circumstances where a particular unit or source may be listed in a facility's RCRA Subtitle C permit but not included or listed in the facility's CAA Title V permit. For example, a unit may not be listed in the Title V permit for a major source if it is an "insignificant activity." State permitting programs have varying definitions of "insignificant activity." Some use a emissions threshold for HAPs (e.g., 2 tpy) and such limits should only be subject to generally applicable requirements of the SIP. Portable units moved onto the site

for a short period of time also may not be listed in the permit for a major source. A portable source cannot be a major source. In cases where a particular unit or source is not included or listed in a facility's Title V permit, the unit is not exempt from any applicable CAA requirements under Sections 111 and 112. As this discussion illustrates, in limited cases a HWMU at a facility could be subject to and in compliance with a particular CAA rule but the facility's Title V permit may not clearly identify or list the applicability of the rule.