# INSPECTION CHECKLIST

## Off-Site Waste and Recovery Operations

***Drafted: June 14, 2001***

**Disclaimer:**
**This is a checklist designed to assist agency inspectors (Federal, State, Local, Tribal and others) as well as facility owners, operators and responsible employees to investigate and/or monitor compliance with the Off-Site Waste and Recovery Operations MACT (40 CFR Part 63, Subpart DD). This checklist does not represent all requirements of the regulation nor does it represent agency positions in any way related to the Off-Site Waste and Recovery Operations MACT. Completion, or lack thereof, does not prevent an agency from taking appropriate actions (seeking information, enforcement, etc.) at any time regarding compliance with the Off-Site Waste and Recovery Operations MACT or other regulations.**

Additional Subpart DD guidance, currently displayed on the OAQPS TTN (http://www.epa.gov/ttn/atw/offwaste/oswropg.html), is as follows:

"Implementation Guidance for Off-Site Waste and Recovery Operations (OSWRO) NESHAP: Interrelationships with Other Related EPA Air Rules (EPA - 305-00-006)"
http://www.epa.gov/ttn/atw/offwaste/oecatool.pdf

"OSWRO Implementation Assistance Document (EPA-456/R-99-007)"
http://www.epa.gov/ttn/atw/offwaste/oswroimp.pdf

## Table of Contents

OSWRO-CHECKLIST SUMMARY
*Modified: May 4, 2001*

**Facility Name:** _____

**Facility Address:** _____

_____

**Mailing Address:** _____

_____

**Facility SIC Code(s):** _____

**Contact/Title Name:** _____

**Telephone Number:** _____

**Number of Employees:** _____ **Hours of Operation:** _____

**Date of Inspection:** _____

**40 CFR 63.680; Applicability and Designation of Affected Sources**:

a) **Applicability:**

1) Is the facility a major source (10/25 TPY HAP)? **YES NO**

2) Does the facility handle "off-site" material[1] which is not exempt? **YES NO**

3) Does the facility have one or more of the following waste management or recovery operations which receives, manages, treats, recovers or re-processes off-site material *[40 CFR 63.680(a)(2)(i-vi)]*?

i) A waste management operation regulated as a TSDF under RCRA? **YES NO**

[1] In general, off-site material is: A waste, used oil and/or used solvent which contains one or more HAP listed in Table 1, at the point-of-delivery, and is generated outside the boundaries of the plant site.

ii) A waste management operation that treats wastewater and is exempt from regulation as a TSDF under RCRA? **YES NO**

iii) A waste management operation that treats wastewater and **YES NO**

A) Is permitted for discharge from a point source but is not owned by a “State” or “Municipality”? **YES NO**

B) Where treatment of wastewater received from off-site is the predominant activity performed at the plant site? **YES NO**

iv) A recovery operation that recycles or re-processes

A) Hazardous waste and is exempt from regulation as a TSDF under RCRA? **YES NO**

B) Used solvent and is not part of a chemical, petroleum, or other manufacturing process required to control air emissions by another subpart of 40 CFR Part 61 or 63? **YES NO**

v) A recovery operation that re-fines or re-processes used oil and is regulated under 40 CFR 279 Subpart F? **YES NO**

4) Did the Facility claim a facility-wide exemption because it receives off-site material(s) with < 1 megagram[2]/year total annual HAP(s) *[40 CFR 63.680(d)]*? **YES NO**

b) **Affected Source Identification**:

1) Does the facility have any of the following "off-site material management units" (OMMU) within the operations identified in (a)(3)(i-v), above *[40 CFR 63.680(c)(1)]*?

i) Tanks **YES** (How many?_____) **NO**

ii) Containers **YES** (How many?_____) **NO**

iii) Surface Impoundments **YES** (How many?_____) **NO**

iv) Oil-water **YES** (How many?_____)

[2]One Megagram is approximately one metric ton or 2204 pounds.

| | | | |
|---|---|---|---|
| | Separators | **NO** | |
| v) | Organic-water | **YES** | (How many?_____) |
| | Separators | **NO** | |
| vi) | Transfer | **YES** | (How many?_____) |
| | Systems | **NO** | |

2) Does the Facility have one or more of the following processes, within the operations identified in (a)(3)(i-v) above, which have at least one Process Vent[3] *[40 CFR 63.680(c)(2)]*?

| | | |
|---|---|---|
| i) | Distillation Process? | **YES NO** |
| ii) | Fractionation Process? | **YES NO** |
| iii) | Thin-film Evaporation Process? | **YES NO** |
| iv) | Solvent Extraction Process? | **YES NO** |
| v) | Steam Stripping Process? | **YES NO** |
| vi) | Gas Stripping Process? | **YES NO** |

***NOTE:*** ***For each process vent identified in (b)(2), the facility must control it using a closed-vent system vented to a control device [40 CFR 63.690].***

3) Does the Facility have any of the following equipment components, within the operations identified in (a)(3)(i-v) above[4] (for purposes of LDAR) *[40 CFR 63.680(c)(3)]*?

| | | |
|---|---|---|
| i) | Pumps | **YES** (How many?_____) **NO** |
| ii) | Compressors | **YES** (How many?_____) **NO** |
| iii) | Agitators | **YES** (How many?_____) **NO** |

[3]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 from any of the processes listed. ***[NOTE: A tank or container may serve as a process vent for one of these processes]***.

[4]The equipment of interest is that equipment which contacts off-site waste with a total HAP concentration $ 10% by weight, and operates $ 300 hours in a calendar year in off-site material service

| | | | |
|---|---|---|---|
| iv) | Pressure relief devices | **YES** | (How many?_____) |
| | | **NO** | |
| v) | Sampling connection systems | **YES** | (How many?_____) |
| | | **NO** | |
| vi) | Open-ended valves or lines | **YES** | (How many?_____) |
| | | **NO** | |

vii) Connectors **YES** (How many?_____)
**NO**

viii) Instrumentation systems **YES** (How many?_____)
**NO**

**40 CFR 63.683; General Standards**:

a) For each OMMU, which of the following requirements is the facility meeting to comply [40 CFR 63.683(b)(1)]?

1) Control air emissions from the OMMU *[Go to 40 CFR 63.685-689]*? **YES** **NO**

2) Remove or destroy HAP in the off-site material prior to placing it in an OMMU *[Go to 40 CFR 63.684]*? **YES** **NO**

3) Determine the VOHAP concentration of the off-site material is less than 500 ppmw at the point-of-delivery, initially and each year thereafter *[Go to 40 CFR 63.694(b)]*? **YES** **NO**

4) Is the Facility claiming one or more exemptions apply?
*[40 CFR 63.683(b)(2)(i-v)]*
**YES**: Which one(s)? _____
_____
_____
**NO**: Go to (b)

b) For each process vent, which of the following requirements is the facility meeting to comply *[40 CFR 63.683(c)(1)]*?

1) Control air emissions from the process vent in accordance with 40 CFR 63.690? **YES** **NO**

2) Determine the VOHAP concentration of the off-site material is less than 500 ppmw at the point-of-delivery, initially and each year thereafter? **YES** **NO**

3) Is the Facility claiming one or more exemptions

apply
*[40 CFR 63.683(c)(2)]*?
**YES**: Which one(s)? _____

_____

**NO**: Go to (c)

c. Has the Facility implemented leak detection and control measures in accordance with 40 CFR 63.691 *[40 CFR 63.683(d)]*? **YES** **NO**

**40 CFR 63.684; Off-site Material Treatment:**

a) Which of the following methods is used to remove or destroy HAP *[40 CFR 63.684(b)]*?

1) Reduce VOHAP concentration of off-site material using a means other than dilution? **YES NO**

2) HAP mass removal? **YES NO**

3) HAP reduction efficiency? **YES NO**

4) Biodegradation performed in an open tank or surface impoundment? **YES NO**

5) Incineration[5]? **YES NO**

b) Has the O/O demonstrated compliance with requirements one of the above requirements [(a)(1)-(a)(4)] within 30 days of initial treatment *[40 CFR 63.684(d)]*? **YES NO**

c) Is the O/O performing the following continuous monitoring of treatment process *[40 CFR 63.684(e)(1-3)]*?

1) Continuously monitor and record (at least once every 15 minutes) values of operating parameters appropriate for the treatment process?

**YES**: What parameter(s)? _____

_____

_____

**NO**: Continue

2) For each monitored operating parameter in (c)(1), what is the minimum or maximum operating parameter value?

| Parameter(s)? | Value (min/max)? |
|---|---|
| | |
| | |
| | |
| | |

3) Does O/O routinely review the treatment process data and operate the process between the minimum and maximum values? **YES NO**

[5]Incineration using an incinerator or BIF either permitted under RCRA or complying with interim status requirements under RCRA.

4) For Biological degradation, has the O/O established a written monitoring procedure that demonstrates proper operation [40 CFR 63.694(h)]? **YES** **NO**

**40 CFR 63.685; Standards: Tanks**;

a) Has the O/O controlled air emissions from each tank subject to this section in accordance with the applicable requirements in Table 1 or Table 2 (on next page) *[40 CFR 63.685(b)]*? **YES** **NO**

1) Does the Facility have one or more tanks that manages off-site material with a max organic VP $76.6 kPa
*[40 CFR 63.685(b)(4)]*?
**YES**: How many? _____
**NO**: Go to (b)

2) Is the O/O controlling each tank in (a)(1) using one of the following?

i) A closed vent system vented to a control device [40 CFR 63.685(g)]? **YES** **NO**

ii) A pressure tank [40 CFR 63.685(h)]? **YES** **NO**

iii) A tank within a total enclosure, vented through a closed-vent system to a control device [40 CFR 63.685(i)] **YES** **NO**

Table 1: For tanks at an **existing affected source**:

| Tank design capacity ($m^3$) | Max HAP VP (kPa) | Tank control level |
|---|---|---|
| < 75.5 | <76.6 | Level 1:[*Go to (b)(1)*] |
| $75.5 but <151 | <27.6<br>$ 27.6 | Level 1:[*Go to (b)(1)*]<br>Level 2:[*Go to (b)(2)*] |
| $ 151 | < 5.2<br>$ 5.2 | Level 1:[*Go to (b)(1)*]<br>Level 2:[*Go to (b)(2)*] |

| | | |
|---|---|---|
| Tank used for a waste stabilization process | NA | Level 2:[*Go to (b)(2)*] |

Table 2: For tanks at a **new affected source**:

| Tank design capacity ($m^3$) | Max HAP VP (kPa) | Tank control level |
|---|---|---|
| <38 | <76.6 | Level 1:[*Go to (b)*(1)] |
| $38 but < 151 | <13.1<br>$ 13.1 | Level 1:[*Go to (b)(1)*]<br>Level 2:[*Go to (b)(2)*] |
| >151 | < .7<br>$ .7 | Level 1:[*Go to (b)(1)*]<br>Level 2:[*Go to (b)(2)*] |
| Tank used for a waste stabilization process | NA | Level 2:[*Go to (b)(2)*] |

Note: To convert [*gal*] to [*$m^3$*] multiply by 0.003785
To convert [*L*] to [*$m^3$*] multiply by 0.001
To convert *[mmHg] to [kPa]* multiply by 0.1333
To convert *[inches of $H_2O$] to [kPa]* multiply by 0.2491
To convert *[PSI] to [kPa]* multiply by 6.894
To convert *[millibar] to [kPa]* multiply by 0.1
To convert *[atmosphere] to [kPa]* multiply by 101.325

b) Level 1 requirements:

1) Which of the following Level 1 control options is the O/O using to comply *[40 CFR 63.685(c)(2)]*?

i) 40 CFR 63 subpart OO? **YES NO**

ii) Level 2 controls? **YES NO**

iii) Using tank as an interim transfer point[6]? **YES NO**

2) Which of the following Level 2 control options is the O/O using to comply *[40 CFR 63.685(d)(1-5)]*?

[6]Interim transfer point tanks must be controlled in accordance with OO except during transfer activities when a cover is not necessary.

i) Fixed roof (FR) with internal floating roof (IFR)?
**YES**: Worksheet A
**NO**

ii) External floating roof (EFR)?
**YES**: Worksheet B
**NO**

iii) Tank vented through closed-vent system (CVS) to control device?
**YES**: Worksheet C
**NO**

iv) Pressure tank?
**YES**: Worksheet D
**NO**

v) Enclosure vented through a CVS to a combustion device?
**YES**: Worksheet E
**NO**

**40 CFR 63.686; Standards: Oil-water and organic-water separators:**

Which of the following method(s) of control is (are) being used?

1) Floating Roof Separator?
**YES**: Worksheet F
**NO**

3) Fixed-roof vented through a CVS to a Control device?
**YES**: Worksheet G
**NO**

2) Pressurized Separator Operated as a Closed System?
**YES**: Worksheet H
**NO**

**40 CFR 63.687; Standards: Surface Impoundments**:

Which of the following control options is the O/O using to comply?

1) A floating membrane cover?
**YES**: Worksheet I
**NO**

2) A cover vented through a closed-vent system to a control device?
**YES**: Worksheet J
**NO**

**40 CFR 63.688; Standards: Containers**:

| Has the O/O controlled air emissions from each container subject to this section in accordance with the following applicable requirements in Table 3 [40 CFR Part 63, Subpart PP]? | **YES** | **NO** |
|---|---|---|

Table 3

| **Design Capacity of Container** | **Container control level** |
|---|---|
| *> 0.1m³ and < 0.46m³* (**NOT** in "light-material" service) | Level 1 Controls[7] (Worksheet K) |
| *>0.46m³* (In "light-material" service) | Level 2 Controls[8] (Worksheet L) |
| *>0.1m³* and used for treatment of an Off-site material by a "waste stabilization process" | Level 3 Controls[9] (Worksheet M) |

Note: To convert [*gal*] to [*m³*] multiply by 0.003785
To convert [*L*] to [*m³*] multiply by 0.001

**40 CFR 63.689; Standards: Transfer Systems:**

a) Which of the following types of transfer systems does the facility own or operate?
   1) An individual drain system?
      **YES**: Worksheet N
      **NO**
   2) Another transfer system?
      **YES**: What kind? _____
      **NO**

b) Which of the following is the Facility using to control air emissions from transfer systems which are not individual drain systems *[40 CFR 63.689(c)]*?
   1) Covers? **YES** **NO**
   2) A hard-piped transfer system whose joints or seams are permanently or semi-permanently sealed? **YES** **NO**
   3) An enclosed transfer system operated at a **YES** **NO**

[7]Level 1 control options include: containers meeting applicable DOT regulations, covers/closure devices or open-top with a vapor suppression barrier on regulated material.

[8]Level 2 control options include: containers meeting applicable DOT regulations, no detectable emissions (M21) or vapor-tight containers (M27).

[9]Level 3 control options include: venting container through a CVS to a control device or a container within a total enclosure which is exhausted through a CVS to a control device.

pressure below atmospheric pressure and vented through a CVS to a control device?

**40 CFR 63.691; Standards: Equipment Leaks:**

a) Which of the following methods is the O/O using to control HAP emitted from equipment leaks (Note it may be both)?

1) 40 CFR Part 61 subpart V [40 CFR §§61.242-247]?
**YES**: Worksheet O
**NO**

(2) 40 CFR Part 63 subpart H (40 CFR §§63.162-182)?
**YES**: Worksheet P
**NO**

**40 CFR 63.693; Closed-vent systems and Control Devices:**

a) Which of the following CVS is the O/O using to comply?

1) A closed vent system designed to operate w/ no detectable organic emissions? **YES** **NO**

2) A closed vent system designed to operate below atmospheric pressure and equipped with at least one pressure measurement device? **YES** **NO**

b) Which of the following control device technologies has the O/O elected to use to comply?

1) Carbon adsorption?
**YES**: Regenerative or Non-regenerative?
**NO**

2) Condenser?
**YES**
**NO**

3) Vapor Incinerator?
**YES**: Thermal or Catalytic?
**NO**

4) Boilers and/or process heater?
**YES**: Boiler or Process heater?
**NO**

5) Flare?
**YES**
**NO**

c) Does the CVS have a bypass device *[40 CFR 63.693(c)(2)]*? **YES** **NO**

d) Is the bypass device equipped with one of the following

*[40 CFR 63.693(c)(2)(i-ii)]*?

1) A flow indicator installed at the entrance to the bypass line and designed to take a flow reading at least once every 15-minutes? **YES** **NO**

2) A car-seal or lock-and-key type seal maintained in the non-diverting position and visually inspected at least once a month? **YES NO**

**Record-keeping and Reporting Requirements:**

a) Has the O/O complied with general record-keeping requirements which includes maintaining records of the following *[40 CFR §63.10]*:

1) Each occurrence and duration of each startup, shutdown, or malfunction of operation? **YES NO**
2) Actions taken during periods of startup, shutdown, or malfunction? **YES NO**
3) All continuous monitoring system (CMS) calibration checks? **YES NO**
4) All adjustments and maintenance performed on CMS? **YES NO**
5) All documentation concerning any internal floating roof? **YES NO**
6) Control device design analysis and/or continuous monitoring records? **YES NO**

**SPECIFIC RECORD-KEEPING REQUIREMENTS FOR OFF-SITE MACT:**

a) This section is a reference section which provides specific record-keeping requirements of the OSWRO MACT. Applicable requirements given below should be reviewed for each piece of equipment to which it is applicable and noted on the appropriate worksheet. These requirements can be found in the record-keeping section of the Off-Site MACT *[40 CFR 63.696]*.

b) **Tank Record-keeping Requirements**

1) Tanks include those controlled with an internal floating roof (IFR), external floating roof (EFR), fixed roof vented to a control device (FRCD), tank(s) enclosure (TE) and pressure tanks (PT).

2) For each IFR, EFR and FRCD the O/O should maintain a record for:
   i) Each tank inspection which includes the following information:
      A) A tank identification number (or other

unique identification description), and
B) The date of the inspection.

ii) Each defect detected during tank inspections which includes the following:
A) Location of the defect,
B) A description of the defect,
C) The date of detection, and
D) Corrective action taken to repair the defect.
E) In the event that repair of the defect is delayed, the record must also include:
(a) The reason for the delay and
(b) The date that completion of repair of the defect is expected.

3) For each IFR and EFR, documentation describing the floating roof design and the dimensions of the tank.

4) For each EFR a record of each seal gap inspection. Each record must include:
i) Results of the seal gap measurements,
ii) Date the measurements are performed,
iii) Raw data obtained for the measurements, and
iv) Calculations of the total gap surface area.

v) If the seal gap measurements do not conform to the specifications, the records must also include
A) A description of the repairs that were made,
B) Date(s) the repairs were made, and
C) Date the tank was emptied, if necessary.

5) For each TE, a record of the most recent set of calculations and measurements performed by the owner or operator to verify the enclosure meets the criteria of a permanent total enclosure (see specifications in Procedure T under 40 CFR 52.741, Appendix B).

c) **Control Device Record-keeping Requirements**
1) Semi-annual records for planned routine maintenance of control devices which would cause the control device to violate applicable requirements of 40 CFR §63.693(d) through (h). Each record must include:
i) A description of routine maintenance performed for the Control device during the previous 6

months. This description must include:

A) The type of maintenance performed, and

B) The total number of hours, during these 6 months, the Control device did not meet the applicable requirement(s) due to planned routine maintenance.

ii) A description of the planned routine maintenance to be performed for the Control device during the next 6 months. This description must include:
A) The type of maintenance necessary,
B) Planned frequency of maintenance, and
C) Lengths of maintenance periods.

2) Semi-annual??? records of unexpected control device system malfunctions which would cause the control device to violate the applicable requirements of 40 CFR §63.693(d) through (h). These records must include:
i) The occurrence and duration of each malfunction of the control device system.
ii) The duration of each malfunction period when gases, vapors, or fumes are vented to the control device while the control device is not properly functioning.
iii) Actions taken during periods of malfunction to restore the malfunctioning control device to its normal or usual manner of operation.

b) Has the O/O complied with general reporting requirements which includes submitting the following *reports [40 CFR §63.9 and §63.10]*:

| | | | |
|---|---|---|---|
| 1) | Progress reports? | **YES** | **NO** |
| 2) | Periodic or immediate startup, shutdown, and malfunction reports? | **YES** | **NO** |
| 3) | Waiver of reporting requirements? | | **YES** **NO** |
| 4) | Notification to the Administrator in advance of each initial inspection required for tanks, control devices, CVS, transfer systems, etc. [40 CFR 63.695(b-f)]? | **YES** | **NO** |
| 5) | Initial notifications (October 19, 1999)? | **YES** | **NO** |
| 6) | Notification of compliance status? | | **YES** **NO** |
| 7) | Notification of performance tests? [40 CFR 63.7 and 40 CFR 63.9]? | | **YES** **NO** |
| 8) | Results of any performance tests | **YES** | **NO** |

[40 CFR 63.10(d)(2)]?

9) Semi-annual summary reports on excess emissions and CMS performance reports [40 CFR 63.10(e)(3)]? **YES NO**

10) Internal floating roof inspection records? **YES NO**

11) External floating roof inspections records? **YES NO**

12) Semi-annual reports which describe completed or planned routine maintenance **YES NO**

performed in the previous 6 months and anticipated in the next 6 months?

**SPECIFIC REPORTING REQUIREMENTS**:

a) This section is a reference section which provides specific reporting requirements of the OSWRO MACT. Applicable requirements given below should be reviewed for each piece of equipment to which it is applicable and noted on the appropriate worksheet. These requirements can be found in the reporting section of the Off-Site MACT *[40 CFR 63.697]*.

b) When a control device is used to comply with applicable requirements, the following notifications and reports must be submitted:
   1) Notification of performance tests (at least 14-days before testing???)
   2) Performance test reports
   3) Start-up, shut-down and malfunction (SSMP) reports. These reports must include:
      i) A letter containing:
         (A) The name, title and signature of responsible official certifying the accuracy of the report
         (B) Information indicating any time when actions taken during the SSMP of an affected source were not consistent with the SSMP plan
      ii) This report is not necessary if the information is included in the semi-annual summary report.
   4) Semi-annual summary reports must include all excursions which occurred during the six-month reporting period:
      i) For each excursion caused by a daily average values violating applicable requirements the summary report must include:
         (A) The daily average values of the monitored parameter,
         (B) The applicable operating parameter limit, and
         (C) The date and duration of each excursion
      ii) For each excursion caused by a lack of

monitoring, the summary report must include:

(A) The date and duration of the period when data was not collected, and

(B) The reason the data was not collected

c) Tank inspection reporting (IFR and/or EFR)

1) A notification to the Administrator is required to be received at least 30-days prior to each inspection to measure EFR seal gaps.

2) A notification to the Administrator is required to be

received at least 30-days prior to each planned visual inspection of an IFR or EFR in a tank which has been emptied and degassed.

3) A notification to the Administrator is required to be received at least 7-days prior to refilling of a tank when an unplanned visual inspection of an IFR or EFR occurred.

| **Key Word** | **Regulatory Citation*** |
|---|---|
| Closed-vent System and Control device | §63.693(b)(4,6,7),(c)(2); §63.696(b,g,); §63.697(b) |
| Internal floating roof | §63.696(d); §63.697(c) |
| External floating roof | §63.696(d); §63.697(c) |
| Fixed roof | §63.696(e) |
| Enclosure | §63.696(f) |
| Tank | §63.694(j)(2)(i), (j)(3); §63.696(d-f); §63.697(c) |
| Inspection | §63.693(b)(4)(i-ii), (c)(2)(ii); §63.695(b)(1-4), (c)(1-3), (d)(4-5), (f)(2); §63.696(d)(2-4), (e)(1-2); §63.697(c) |
| Defect | §63.695(b)(4)(i); §63.696(d)(3), (e)(2) |
| Flow indicator | §63.693(c)(2)(i) |
| Seal or Locking Device | §63.693(c)(2)(ii) |
| Seal Gap | §63.696(d)(4); §63.697(c)(1) |
| Performance Test | §63.697(b)(1-2); |
| Malfunction | §63.696(h); §63.697(b)(3) |
| Routine Maintenance | §63.696(g) |

* The regulatory citation is to paragraphs containing

record-keeping and reporting requirements. This table does not include the notification, record-keeping, and reporting requirements in §§ 63.9 and 63.10 under 40 CFR 63 subpart A

**WORKSHEET A**

Tank with Fixed Roof (FR) and Internal Floating Roof (IFR)
*[40 CFR 63.685(d)(1)]*

**General Information**:

Total Number of These Tanks: _____

Tank Number(s): _____

Off-site Material Handled by Tank(s): _____

Installation Date(s): _____

Size of Tank(s) [$m^3$]: _____

Max. Vapor Pressure of off-site material [kP]: _____

Max. HAP Vapor Pressure of off-site material [kP]: _____

HAP considered for Max. HAP Vapor Pressure of off-site material:

_____

**Level 2 Control Requirements**:

a) Which of the following continuous seals is the IFR equipped with?
   1) A single continuous liquid-mounted seal? **YES NO**
   2) A single continuous metallic shoe seal? **YES NO**
   3) Two continuous seals mounted one above the other? **YES NO**

b) Does the IFR meet the following specifications?
   1) Each opening in a non-contact IFR provides a projection below the liquid surface? **YES NO**
   2) Each opening has a cover or lid equipped with a gasket? **YES NO**
   3) Each penetration (used for the purpose of sampling) has a slit fabric cover that covers at least 90 percent of the opening? **YES NO**
   4) Each automatic bleeder vent and rim space vent have a gasket? **YES NO**
   5) Each penetration allowing passage of a **YES NO**

ladder has a gasket?

6) Each penetration allowing passage of a column supporting the fixed roof has a flexible fabric sleeve seal or a gasket? **YES NO**

c) Is the O/O operating the tank as follows?

1) The process of filling, emptying or refilling is continuous and accomplished as soon as practical when the floating roof is resting on the leg supports? **YES NO**

2) The automatic bleeder vent(s) is (are) set closed at all times when the roof is floating? **YES NO**

3) Each cover, access hatch, gauge float well or lid on any opening in the IFR is bolted or fastened closed prior to filling the tank? **YES NO**

4) The rim space vents are set open only when the IFR is not floating or the pressure beneath the rim exceeds the manufacturer's recommended setting? **YES NO**

d) Which of the following inspection methods is the O/O using to comply with 40 CFR 63.685(e)(3)?

1) Visually inspect the IFR components (and IFR) annually through hatches and every 10-years directly? **YES NO**

2) Visually inspect the IFR components (and IFR) each time the tank is de-gassed and at least every 5-years directly? **YES NO**

**REPORTING/RECORD-KEEPING REQUIREMENTS.**

Refer to main checklist for these requirements.

**WORKSHEET B**

Tank with External Floating Roof (EFR)

*[40 CFR 63.685(d)(2)]*

**General Information**:

Total Number of These Tanks: _____

Tank Number(s): _____

Off-site Material Handled by Tank(s): _____

Installation Date(s): _____

Size of Tank(s) [$m^3$]: _____

Max. Vapor Pressure of off-site material [kP]: _____

Max. HAP Vapor Pressure of off-site material [kP]: _____

HAP considered for Max. HAP Vapor Pressure of off-site material:

_____

**Level 2 Control Requirements**:

a) Is the EFR equipped with two continuous seals? **YES** **NO**

1) Which of the following lower seals is the roof equipped with?

i) A liquid-mounted seal? **YES** **NO**

ii) A metallic shoe seal? **YES** **NO**

2) Does the upper seal (secondary seal) cover the annular space between the floating roof and the wall of the tank? **YES** **NO**

b) Does the EFR meet the following specifications?

1) Each opening in a non-contact EFR provides a projection below the liquid surface? **YES** **NO**

2) Each opening has a cover, seal or lid equipped with a gasket? **YES** **NO**

3) Each access hatch and each gauge float well has a cover designed to be bolted **YES** **NO**

or fastened when the cover is in the closed position?

4) Each automatic bleeder vent and rim space vent has a gasket? **YES NO**

5) Each roof drain that empties into the liquid managed has a slotted membrane fabric cover that covers at least 90 percent of the opening? **YES NO**

6) Each un-slotted and slotted guide pole has a sliding cover with a gasket or a flexible fabric sleeve seal? **YES NO**

7) Each un-slotted guide pole has a cap with a gasket on the end of the pole? **YES NO**

8) Each slotted guide pole has a float with a gasket or other device which

closes off the surface from the atmosphere

9) Each gauge hatch and each sample well has a cover with a gasket? **YES NO**

c) Is the O/O operating the tank as follows

1) The process of filling, emptying or refilling is continuous and accomplished as soon as practical when the floating roof is resting on the leg supports? **YES NO**

2) Each automatic bleeder vent, rim space vent, roof drain and leg sleeve is set closed at all times? **YES NO**

3) Each cover, access hatch, gauge float well or lid on any opening in the IFR is bolted or fastened closed prior to filling the tank? **YES NO**

4) The rim space vents are set open only when the IFR is not floating or the pressure beneath rim exceeds the manufacturer's recommended setting? **YES NO**

5) The cap on the end of each un-slotted guide pole is secured in the closed position at all times except when measuring the level or collecting samples from the tank? **YES NO**

6) The cover on each gauge hatch or sample well is secured in the closed position at all times except when the hatch or well must be opened for access? **YES NO**

d) Is the O/O using the following inspection methods to comply with 40 CFR 63.685(f)(3)?

1) Visually inspect the EFR initially and annually thereafter [40 CFR 63.695(b)(2)(i)]? **YES NO**

2) Measure the seal gaps as follows *[40 CFR 63.695(b)(2)(ii)]*:

i) Primary seal 60-days after initial start-up and at least once every 5-years thereafter? **YES NO**

ii) Secondary seal 60-days after initial **YES**

**NO**

start-up and at least once every year thereafter?

**REPORTING/RECORD-KEEPING REQUIREMENTS**.
Refer to main checklist for these requirements

**WORKSHEET C**

Tank with Fixed Roof, Closed-Vent System and Control Device

*[40 CFR 63.685(d)(3)]*

**General Information**:

Total Number of These Tanks: _____

Tank Number(s): _____

Off-site Material Handled by Tank(s): _____

Installation Date(s): _____

Size of Tank(s) [$m^3$]: _____

Max. Vapor Pressure of off-site material [kP]: _____

Max. HAP Vapor Pressure of off-site material [kP]: _____

HAP considered for Max. HAP Vapor Pressure of off-site material:

_____

**Level 2 Control Requirements**:

| | | | |
|---|---|---|---|
| a) | Is the FR and closure devices designed to form a continuous barrier over the entire surface area of the liquid in the tank? | **YES** | **NO** |
| b) | Does each opening in the fixed roof have a closure device? | **YES** | **NO** |
| c) | Is the integrity of the fixed roof and closure device components maintained? | | **YES** **NO** |
| d) | Is the fixed roof installed with each closure device secured in the closed position? | | **YES** **NO** |
| e) | Is the vapor head-space, underneath the fixed roof, vented through a CVS to the control device continuously? | **YES** | **NO** |
| f) | Is the O/O using the following inspection methods to comply with 40 CFR 63.685(g)(3)? | | |

**REPORTING/RECORD-KEEPING REQUIREMENTS**.

Refer to main checklist for these requirements

**WORKSHEET D**

Pressure Tank

*[40 CFR 63.685(d)(4)]*

**General Information**:

Total Number of These Tanks: _____

Tank Number(s): _____

Off-site Material Handled by Tank(s): _____

Installation Date(s): _____

Size of Tank(s) [$m^3$]: _____

Max. Vapor Pressure of off-site material [kP]: _____

Max. HAP Vapor Pressure of off-site material [kP]: _____

HAP considered for Max. HAP Vapor Pressure of off-site material:

_____

**Level 2 Control Requirements**:

a) Is the tank designed so it does not vent to the atmosphere in response to the compression of the vapor head-space in the tank during filling of the tank to its design capacity? **YES NO**

b) Is each tank opening equipped with closure devices designed to operate at no detectable organic emissions? **YES NO**

c) Is the O/O using the following inspection methods to comply with 40 CFR 63.685(h)(2)?

**REPORTING/RECORD-KEEPING REQUIREMENTS.**

Refer to main checklist for these requirements

**WORKSHEET E**

Enclosure Vented Through a CVS to a Combustion Device

*[40 CFR 63.685(d)(5)]*

**General Information**:

Total Number of These Tanks: _____

Tank Number(s): _____

Off-site Material Handled by Tank(s): _____

Installation Date(s): _____

Size of Tank(s) [$m^3$]: _____

Max. Vapor Pressure of off-site material [kP]: _____

Max. HAP Vapor Pressure of off-site material [kP]: _____

HAP considered for Max. HAP Vapor Pressure of off-site material:

_____

Combustion Device Used: _____

**Level 2 Control Requirements**:

a) Is the enclosure designed and operated as a permanent total enclosure *[40 CFR §52.741]*? **YES NO**

   1) Does the enclosure have permanent or temporary openings? **YES NO**

   2) Has the O/O performed the verification procedure for the enclosure? **YES NO**

b) Is the O/O using the following inspection methods to comply with 40 CFR 63.685(i)(2)?

**REPORTING/RECORD-KEEPING REQUIREMENTS.**

Refer to main checklist for these requirements

**WORKSHEET F**

Separators with a Floating Roof

*[40 CFR 63.686(b)(1)]*

**General Information**:

Total Number of These Separators: _____

Separator Number(s): _____

Off-site Material Handled by Separator(s): _____

Installation Date(s): _____

Max. throughput for separator [$m^3$/hr]: _____

Hours of operation for separator(s) [hr/yr]: _____

**Standards-Separator floating roof [40 CFR 63.1043]**:

a) Is the floating roof designed to meet the following specifications?

1) Float on the liquid surface during normal operation? **YES NO**

2) Equipped with two continuous seals one above the other? **YES NO**

3) Is the primary seal (the lower seal)

A) A liquid mounted seal? **YES NO**

B) A metallic shoe seal? **YES NO**

4) Each opening has a closure device designed to have no visible cracks, holes, gaps or other open spaces exists? **YES NO**

5) Each closure device(s) is secured whenever regulated-material is in the separator? **YES NO**

b) Does the floating roof have any emergency roof drains? **YES NO**

1) Does one or more of the emergency roof drains have a slotted membrane fabric cover which covers 90 percent of the opening? **YES NO**

2) Does one or more of the emergency **YES**

**NO**

roof drain have a flexible fabric sleeve seal?

c) Is the O/O using the following inspection methods to comply with 40 CFR 63.1043(d)?

1) **WE NEED THE INSPECTION REQUIREMENTS, SEE 63.1047(b).**

**WORKSHEET G**

Fixed-roof separators vented through a CVS to a control device

*[40 CFR 63.686(b)(2)]*

**General Information**:

Total Number of These Separators: _____

Separator Number(s): _____

Off-site Material Handled by Separator(s): _____

Installation Date(s): _____

Max. throughput for separator [$m^3$/hr]: _____

Hours of operation for separator(s) [hr/yr]: _____

**Standards-Separator vented to control device [40 CFR 63.1044]**:

a) Is the fixed roof and closed-vent system designed to meet the following specifications?

1) Forms a continuous barrier over the entire surface area of the liquid in the separator? **YES NO**

2) Each opening is vented to a control device or equipped with a closure device that has no visible cracks, holes, gaps or other open spaces? **YES NO**

3) Each closure device(s) is secured whenever regulated-material is in the separator? **YES NO**

b) Does the floating roof have any emergency roof drains? **YES NO**

1) Does one or more of the emergency roof drains have a slotted membrane fabric cover which covers 90 percent of the opening? **YES NO**

2) Does one or more of the emergency roof drain have a flexible fabric sleeve seal? **YES NO**

c) Is the O/O using the following inspection methods to comply with 40 CFR 63.1044(d)?

1) **WE NEED THE INSPECTION REQUIREMENTS, SEE 63.1047(c).**

**WORKSHEET H**

Pressurized Separator Operated as a Closed System

*[40 CFR 63.686(b)(3)]*

**General Information**:

Total Number of These Separators: _____

Separator Number(s): _____

Off-site Material Handled by Separator(s): _____

Installation Date(s): _____

Max. throughput for separator [$m^3$/hr]: _____

Hours of operation for separator(s) [hr/yr]: _____

**Standards-Pressurized Separator [40 CFR 63.1045]**:

a) Is the Pressurized Separator designed to meet the following specifications?

1) To not to vent to the atmosphere as a result of compression of the vapor headspace during operation of the separator at its design capacity? **YES** **NO**

2) All separator openings are equipped with closure devices that operate with no detectable organic emissions as determined using the procedure specified in Sec. 63.1046(a) **YES** **NO**

b) When regulated-material is in the separator is the separator operated as a closed system that does not vent to the atmosphere ? **YES** **NO**

c) When purging of inerts from the separator is the purge stream routed to a closed-vent system and control device? **YES** **NO**

**WORKSHEET I**

Surface Impoundments with Floating Membrane Covers

*[40 CFR 63.687(b)(1)]*

**General Information**:

Total Number of These Impoundments: _____

Impoundment Number(s): _____

Off-site Material Handled by Impoundment(s): _____

Installation Date(s): _____

Max. throughput for Impoundment [$m^3$/hr]: _____

Hours of operation for Impoundment(s) [hr/yr]: _____

**Standards-Surface Impoundment with Floating Membrane**:

a) Does the floating membrane cover meet the following requirements?

1) Designed to float on the liquid surface and form a continuous barrier over the entire liquid surface? **YES NO**

2) Fabricated from one of the following synthetic membrane materials?

A) A high density polyethylene (HDPE) with a thickness no less than 2.5 mm **YES NO**

B) Another material determined to have properties equivalent to HDPE? **YES NO**

If yes, what material? _____

3) Installed with no visible cracks, holes, gaps, or other open spaces? **YES NO**

4) Is each opening in the floating membrane cover equipped with a closure device with no visible **YES NO**

cracks, holes, gaps or other open spaces?

5) Is the floating membrane cover equipped with one or more emergency cover drains[10] for removal of storm water? **YES NO**



[10]Each emergency cover drain must be equipped with a slotted membrane fabric cover that covers at least 90% of the area of the opening or a flexible fabric sleeve seal

6) Are the closure devices made of suitable materials which minimizes exposure of the regulated material to the atmosphere? **YES NO**

b) Is the O/O using the following inspection methods to comply with 40 CFR 63.946(a)?

1) Visually inspecting following installation and at least once every year after? **YES NO**

2) If a defect was detected, did the owner or operator repair the defect as follows:

A) First attempt at repair no later than 5 calendar days after detection? **YES NO**

B) Completed repair as soon as possible but no later than 45 calendar days after detection? **YES NO**

C) Request[11] a delay of repair beyond 45 calendar days? **YES NO**

[11] In this case, the owner or operator shall repair the defect at the next time the process or unit that is generating the regulated-material managed in the surface impoundment stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

**WORKSHEET J**

Surface Impoundments with Fixed Roof and Closed-Vent System

*[40 CFR 63.687(b)(2)]*

**General Information**:

Total Number of These Impoundments: _____

Impoundment Number(s): _____

Off-site Material Handled by Impoundment(s): _____

Installation Date(s): _____

Max. throughput for Impoundment [$m^3$/hr]: _____

Hours of operation for Impoundment(s) [hr/yr]: _____

**Standards-Surface Impoundments with FR and CVS:**

a) Does the FR and CVS meet the following requirements? [40 CFR 63.943]

1) Designed to form a continuous barrier over the entire liquid surface? **YES NO**

2) Is each opening equipped with a closure device with no visible cracks, holes, gaps or other open spaces? **YES NO**

3) Made of suitable materials which will minimize emissions to the atmosphere? **YES NO**

4) Designed and operated in accordance with 40 CFR 63.693, Subpart DD? **YES NO**

b) Is the O/O using the following inspection methods to comply with 40 CFR 63.946(a)?

1) Visually inspecting following installation and at least once every year after? **YES NO**

2) If a defect was detected, did the owner or operator

repair the defect as follows:

| | | | |
|---|---|---|---|
| A) | First attempt at repair no later than 5 calendar days after detection? | **YES** | **NO** |
| B) | Completed repair as soon as possible but no later than 45 calendar days after detection? | | **YES** **NO** |
| C) | Request a delay of repair beyond 45 calendar days? | | **YES** **NO** |

**WORKSHEET K**

Level 1 Controls for Containers

*[40 CFR 63.688(b)(1-2)]*

**General Information**:

Total Number of Level 1 Containers: _____

Container Number(s):_____

Off-site Material Handled by Container: _____

Installation Date(s): _____

Design Capacity of Container(s)[$m^3$]: _____

Max. Vapor Pressure of material in the Container: _____

Total Concentration of Organic in the Container: _____

**Standards; Container Level 1 [40 CFR 63.922]:**

a) Which of the following methods of control is the O/O using to comply with 40 CFR 63.922(b)?

1) A container that meets applicable DOT regulations on packaging hazardous materials for transportation? **YES NO**

2) A cover and closure devices which form a continuous barrier over the container opening? **YES NO**

3) An open-top container with a vapor-suppressing barrier? **YES NO**

b) Does each cover and closure device meet the following specifications?

1) No visible holes, gaps, or other open spaces into the interior of the container when closed? **YES NO**

2) Operated and maintained in a closed position when holding off-site material? **YES NO**

c) Is the O/O using the following inspection methods to

comply with 40 CFR 63.926.

1) When a regulated material is received in a level 1 container, has the O/O visually inspected the container(s), cover(s) and closure devices while the devices are in a secured and closed position within 24 hours? **YES NO**

2) Has the O/O inspected containers used for managing regulated materials and remaining at the facility for a period of one-year or more at least once every 12 months? **YES NO**

3) When a defect is detected, has the O/O

i) Made the first efforts at repair of the defect no later than 24 hours after detection? **YES NO**

ii) Has the O/O repaired the defects as soon as possible but no later than 5 calendar days after detection? **YES NO**

iii) If a defect cannot be repaired within the 5 calendar days, has the O/O removed the regulated material from the container? **YES NO**

**WORKSHEET L**

Level 2 Controls for Containers

*[40 CFR 63.687(b)(3)]*

**General Information**:

Total Number of Level 2 Containers: _____

Container Number(s):_____

Off-site Material Handled by Container: _____

Installation Date(s): _____

Design Capacity of Container(s)[$m^3$]: _____

Max. Vapor Pressure of material in the Container: _____

Total Concentration of Organic in the Container: _____

**Standards; Container Level 2 [40 CFR 63.923]:**

a) Which of the following methods of control is the O/O using to comply with 40 CFR 63.923(b)?

1) A container that meets applicable DOT regulations on packaging hazardous materials for transportation? **YES NO**

2) A container that has been demonstrated to operate at no detectable emissions using Method 21? **YES NO**

3) A container that has been demonstrated to be vapor tight using Method 21? **YES NO**

b) Is each closure device maintained in a closed position, at all times when off-site material is contained within the container? **YES NO**

c) Is the O/O using the following inspection methods to comply with 40 CFR 63.926.

1) When a regulated material is **YES**

**NO**

received in a level 2 container, has the O/O visually inspected the container(s), cover(s) and closure devices while the devices are in a secured and closed position within 24 hours?

2) Has the O/O inspected containers **YES** **NO**

used for managing regulated materials and remaining at the facility for a period of one-year or more at least once every 12 months?

3) When a defect is detected, has the O/O

i) Made the first efforts at repair of the defect no later than 24 hours after detection? **YES NO**

ii) Has the O/O repaired the defects as soon as possible but no later than 5 calendar days after detection? **YES NO**

iii) If a defect cannot be repaired within the 5 calendar days, has the O/O removed the regulated material from the container? **YES NO**

**WORKSHEET M**

Level 3 Controls for Containers

*[40 CFR 63.687(b)(4)]*

**General Information**:

Total Number of Level 3 Containers: _____

Container Number(s):_____

Off-site Material Handled by Container: _____

Installation Date(s): _____

Design Capacity of Container(s)[$m^3$]: _____

Max. Vapor Pressure of material in the Container: _____

Total Concentration of Organic in the Container: _____

**Standards; Container Level 3 [40 CFR 63.923]:**

a) Which of the following methods of control is the O/O using to comply with 40 CFR 63.924(b)?

1) A container vented directly through a closed-vent system to a control device? **YES NO**

2) A container inside an enclosure which is exhausted through a closed-vent system to a control device? **YES NO**

b) Has the enclosure:

1) Been designed and operated in accordance with the criteria for a permanent total enclosure (See 40 CFR 52.741)? **YES NO**

2) Had a verification procedure performed by O/O (Procedure T) initially and annually thereafter? **YES NO**

c) Is the closed-vent system and control device designed and operated in accordance with the requirements of 40 CFR 63.692? **YES NO**

d) Is the O/O inspecting the CVS and control **YES NO**

device(s) in accordance with 40 CFR § 63.693.

**WORKSHEET N**
**Individual Drain Systems**
*[40 CFR 63.689(b)]*

**General Information**:
Total Number of Individual Drain Systems (IDS): _____

IDS Number(s): _____

Off-site Material Handled by IDS: _____

Installation Date(s): _____

Max. throughput for IDS [$m^3$/hr]: _____

Hours of operation for IDS [hr/yr]: _____

**Standards - Individual Drain Systems [40 CFR 63.960]:**

a) Which of the following is the O/O using to control air emissions?
   1) Covers, water seals, and other specified air emission control equipment *[40 CFR 63.962(b)]*? **YES NO**
   2) Hard piping? **YES NO**
   3) A CVS and control device(s) **YES NO**

b) When covers, water seals and other specified air emission control equipment is used to control IDS, is the O/O meeting the following requirements? *[40 CFR 63.692(b)]*
   1) Is the IDS designed to segregate the managed wastewater organic vapors from any other IDS that is not subject to these standards? **YES NO**
   2) Is each drain equipped with a water seal or closure device? **YES NO**
      i) For each water seal
         A) Does the outlet to the discharge pipe extend below the liquid surface in the water seal? **YES NO**
         B) Is a flexible shield or other device installed which restricts wind motion **YES NO**

| | | | |
|---|---|---|---|
| | across the open space between the outlet of the discharge pipe and the drain? | | |
| ii) | Is each closure device designed to operate, when closed, so there are no visible cracks, holes, gaps, or other open spaces in the device, or between the perimeter of the drain opening and the closure device? | **YES** | **NO** |

3) Is each junction box equipped with a closure device, CVS or vented to the atmosphere? **YES NO**

i) Is each closure device designed to operate, when closed, so there are no visible cracks, holes, gaps, or other open spaces in the device, or between the perimeter of the Junction box opening and the closure device? **YES NO**

ii) If vented through a CVS, is the CVS installed and operating in accordance with 40 CFR §63.693 ? **YES NO**

iii) If vented directly to the atmosphere, is the O/O meeting the following requirements?

A) Is the junction box filled and emptied by gravity flow (i.e., no pump) or operated with no more than slight changes in the liquid level? **YES NO**

B) Is the vent pipe at least 90 cm long and no more than 10.2 cm in diameter? **YES NO**

C) Are water seals installed at the liquid entrance(s) to or exit from the junction box? **YES NO**

If yes, is this proven by observation or smoke test?

_____

4) Is each sewer line covered or closed to the atmosphere so there are no visible cracks, holes, gaps, or other open spaces in the sewer line joints, seals, or other emission interfaces? **YES NO**

5) Is the O/O operating IDS air emission control devices as follow?

i) Maintaining each closure device in a closed position whenever wastewater is in the IDS? **YES NO**

ii) Maintaining the liquid level in each water seal, used to control **YES NO**

drains, at an appropriate level?

A) Is the liquid level maintained by using a flow monitoring device? **YES** **NO**

B) Is the liquid level maintained by continuously supplying water? **YES NO**

C) Is the liquid level maintained by conducting regular visual inspections (and adjusting levels when found to be below appropriate levels)? **YES NO**

c) When a CVS and control device(s) is used to control each IDS, is the O/O meeting the following requirements? *[40 CFR 63.692(a)(3)(i-ii)]*

1) Maintaining the vapor head-space pressure below atmospheric pressure when the control device is operating? **YES NO**

2) Operating each CVS and the associated control device in accordance with 40 CFR §63.693? **YES NO**

d) Is the O/O meeting the following inspection requirements? *[40 CFR 63.964]*

1) Visually inspecting the IDS to check for defects which could result in air emissions? **YES NO**

2) Inspecting each drain as follows?

i) Verifying that the appropriate liquid levels are maintained? **YES NO**

ii) Checking for other defects? **YES NO**

iii) Verifying each closure device is in place, and has no defects? **YES NO**

3) Visually inspecting each junction box to verify each closure device is in place, and there are no defects? **YES NO**

4) Visually inspecting the unburied portion of each sewer line to verify all closure devices are in place and there are no defects? **YES NO**

5) Performed an inspection of the water seals and closure devices initially and thereafter, once per year? **YES NO**

6) Inspected and monitored the CVS and associated control device(s) in accordance with 40 CFR §63.693? **YES NO**

7) Maintained inspection records in accordance with §63.965? **YES NO**

e) Has the O/O repaired all detected defects as follows?

| | | | |
|---|---|---|---|
| 1) | Made first attempt repairs no later than five calendar days after the defect was detected? | **YES** | **NO** |
| 2) | Completed repair no later than 15 days after the defect was detected? | **YES** | **NO** |
| 3) | Completed a delayed repair before the process or unit resumed operation? *[40 CFR §63.964(b)(2)]* | **YES** | **NO** |
| 4) | Maintained a record of each defect repair in accordance with 40 CFR §63.965? | **YES** | **NO** |

**WORKSHEET O**

40 CFR Part 61, Subpart V

**Standards: General [40 CFR 61.242-1]**

a) How is the owner or operator of each new or existing source complying with 40 CFR Part 61, Subpart V[12]?
   1) Complying with 40 CFR 61.242-1 to 11? **YES NO**
   2) Using an alternative method approved by the Administrator[13]? **YES NO**
   3) Maintaining the equipment in vacuum service? **YES NO**

b) Is each piece of equipment subject to this regulation marked so it is distinguishable from other pieces of equipment? **YES NO**

c) ***In General***: For each piece of equipment identified as leaking:
   1) Was the first attempt at repair made within 5 calendar days after being detected? **YES NO**
   2) Was the leak repaired within 15 calendar days after being detected? **YES NO**

**Standards: Pumps [40 CFR 61.242-2]**

a) Is each pump:
   1) Monitored monthly to detect leaks[14] using Method 21? **YES NO**
   2) Visually inspected weekly to detect leaks? **YES NO**

b) Is the O/O claiming any of the following conditional exemptions for pumps?
   1) Pumps equipped with a dual mechanical seal system that includes a barrier fluid system [40 CFR 61.242-2(d)]? **YES NO**
   2) Pumps designed to operate at no detectable emissions [40 CFR 61.242-2(e)]? **YES NO**

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[12]Compliance with this subpart should be determined through review of records, performance test results and by conducting inspections

[13]The alternative method option is only provided for 61.242-2, -3, -5, -6, -7, -8, -9 or -11

[14]A pump is considered leaking if an instrument reading is 10,000 ppm or greater.

| | | | |
|---|---|---|---|
| 3) | Pumps equipped with “a closed vent system vented to a control device” [40 CFR 61.242-2(f)]? | **YES** | **NO** |

4) Pumps located within the boundary of an unmanned plant site [40 CFR 61.242-2(g)]? **YES NO**

**Standards: Compressors [40 CFR 61.242-3]**

a) Is each compressor equipped with a seal system that includes a barrier fluid system? **YES NO**

b) Is the compressor seal system:

1) Operated with the barrier fluid[15] at a pressure greater? than the compressor stuffing box pressure? **YES NO**

2) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device? **YES NO**

3) Equipped with a system that purges the barrier fluid into a process stream with zero VHAP emissions? **YES NO**

c) Is the barrier fluid system equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both? **YES NO**

1) Is each sensor for the barrier fluid checked daily or equipped with an audible alarm? **YES NO**

2) Has the owner or operator determined criteria used to indicate failure of the seal system, the barrier fluid system or both? **YES NO**

d) Is the O/O claiming any of the following conditional exemptions for compressors?

1) Compressors equipped with a CVS and control device [40 CFR 61.242-3(h)]? **YES NO**

2) Compressors designed to operate at no detectable emissions [40 CFR 61.242-3(i)] **YES NO**

**Standards: Pressure relief devices in gas/vapor service [40 CFR 61.242-4]**

a) Except during pressure releases, is each **YES NO**

[15]The barrier fluid shall not be in VHAP service and , if the compressor is covered by standards under 40 CFR Part 60, shall not be in VOC service

pressure relief device in gas/vapor service operated with no detectable emissions?

b) Has a pressure release occurred? **YES NO**

c) After each pressure release:
   1) Was the pressure relief device returned to a condition of no detectable emissions within five calendar days after the pressure release? **YES NO**
   2) Was the pressure relief device monitored within 5 calendar days after the pressure release to confirm the condition of no detectable emissions using Method 21? **YES NO**

d) Is the O/O claiming an exemption for any pressure relief device because it is equipped with a closed-vent system and control device [40 CFR 61.242-4(c)]? **YES NO**

**Standards: Sampling connecting systems [40 CFR 61.242-5]**

a) Is each sampling connection system equipped with a closed-purge system or a closed-vent system? **YES NO**

b) For each closed-purge system or a closed-vent system:
   1) Does the system return the purged process fluid directly to the process line with zero VHAP emissions? **YES NO**
   2) Does the system collect and recycle the purged process fluid with zero VHAP emissions? **YES NO**
   3) Is the system designed and operated to capture and transport all the purged process fluid to a control device? **YES NO**

c) Is the O/O claiming an exemption for any sampling connection system because it is an in-situ (non-extractive or in-line) sampling system [40 CFR 61.242-5(c)]? **YES NO**

**Standards: Open-ended valves or lines [40 CFR 61.242-6]**

a) Is each open-ended valve or line equipped with a cap, blind flange, plug, or a second valve? **YES NO**

b) Is the system a double block and bleed system? **YES NO**

**Standards: Valves or lines [40 CFR 61.242-7]**

a) Is each valve monitored monthly to detect **YES NO**

leaks[16] using Method 21?



[16]A valve is considered leaking if an instrument reading of 10,000 ppm or greater is measured

b) Has any valve been free from leaks for two successive months of monitoring[17] [18]? **YES NO**

c) If a leak was detected:
   1) Was the first attempt at repair made within 5 calendar days after being detected? **YES NO**
   2) Was the leak repaired within 15 calendar days after being detected? **YES NO**

e) Is the O/O claiming any of the following conditional exemptions/special monitoring for valves designated?
   1) To operate at no detectable emissions [40 CFR 61.242-7(f)]? **YES NO**
   2) Unsafe-to-monitor[40 CFR 61.242-7(g)]? **YES NO**
   3) Difficult to monitor[40 CFR 61.242-7(h)]? **YES NO**

**Standards: Pressure relief device in liquid service and flanges and other connectors; [40 CFR 61.242-8]**

a) Is each pressure relief device in liquid service, flange or other connector monitored within five-days, using Method 21, if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method? **YES NO**

b) Were any of the monitoring instrument readings [from (a)] 10,000 ppm or greater? **YES NO**

**Standards: Product accumulator vessels [40 CFR 61.242-9]**

a) Is each product accumulator vessel equipped with a closed-vent system capable of capturing and transporting any leakage from the vessel to a control device? **YES NO**

b) Is the closed-vent system and control device complying with 40 CFR 61.242-11? **YES NO**

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[17] If a valve has been leak free for 2 successive months of monitoring, these valves may be monitored during the first month of every quarter (i.e. quarterly)

[18] After initiating quarterly monitoring of valves (as provided for in the rule), if a leak is detected by monitoring during the first month of any quarter, the O/O must return to monthly monitoring [until 2 successive months of monitoring show no leak]

**Standards: Delay of repair [40 CFR 61.242-10]**

| | | YES | NO |
|---|---|---|---|
| a) | Has a delay of repair been requested for any piece of equipment (besides valves or pumps) found to be leaking? | | |
| b) | Has a delay of repair been requested for | | |

valves [40 CFR 61.242-10(c)][19]? **YES NO**

c) Has a delay of repair been requested for pumps [40 CFR 61.242-10(d)]? **YES NO**

**Standards: Closed-vent system and control device [40 CFR 61.242-11]**

a) Which closed-vent system and control device is used to control organic emissions?
   1) Vapor recovery system? **YES NO**
   2) Enclosed combustion device? **YES NO**
   3) Flare? **YES NO**

b) If a vapor recovery system is used, is it designed and operated to reduce organic vapors with an efficiency of $95 percent? **YES NO**

c) If an enclosed combustion device is used, is it:
   1) Designed and operated to reduce the VHAP emissions with an efficiency of $95 percent? **YES NO**
   2) Designed and operated to provide a minimum residence time of 0.5 seconds at a minimum temperature of 760°C? **YES NO**

d) If a flare is used, is it complying with 40 CFR 60.18 (b-f)? **YES NO**

**Standards: Alternative Standards for valves in VHAP service or emission limitations [40 CFR 61.243-1, -2 or 40 CFR 61.244]**

a) Is the O/O using either of the following alternative monitoring scenarios for valves?
   1) Less than or equal to two percent of the valves for a process unit leaking[20]? **YES NO**
   2) Consecutive monitoring and percentage leaking[21]? **YES NO**

b) Is the facility using an alternative method **YES**

---

[19]A delay of repair beyond a process unit shut-down will be allowed for a valve under certain conditions [see 40 CFR 61.242-10(e)].

[20]This option requires that no more than two percent of the valves at any process unit subject to or using this method of compliance be leaking at any time.

[21]This option requires two or five consecutive quarterly monitoring periods (in accordance with 40 CFR 61.242-7) which show less than two percent of the valves are leaking prior to allowing semi-annual or annual monitoring, respectively. If, at any time, more than two percent of the valves are leaking, the O/O must return to monitoring as required by 40 CFR 61.242-7. This option may be re-selected.

**NO**

for emission limitations?

c) Has the O/O notified the Administrator that **YES**
**NO**

it has chosen to use one of the above alternative standards?

**WORKSHEET P**

40 CFR Part 63, Subpart H

**Standards: General [40 CFR 63.162]**

a) How is the owner or operator of each new and existing source complying with 40 CFR Part 63, Subpart H[22]?

1) Complying with 40 CFR 63.160 to 63.182? **YES NO**

2) Using an alternative method approved by the Administrator[23]? **YES NO**

3) Maintaining the equipment in vacuum service? **YES NO**

4) Operating subject equipment in organic HAP service for less than 300 hours per calendar year? **YES NO**

b) Is each piece of equipment subject to this part marked so it is distinguishable from other pieces of equipment? **YES NO**

c) For each piece of equipment currently found leaking, is there a weatherproof and readily visible identification with the equipment identification number attached to the equipment[24] [25]? **YES NO**

d) ***In General***: For each piece of equipment identified as leaking:

1) Was the first attempt at repair made within 5 calendar days after being detected? **YES NO**

2) Was the leak repaired within 15 calendar days after being detected? **YES NO**

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[22]Compliance with this subpart should be determined through review of records, performance test results and by conducting inspections

[23]The alternative method option is only provided for 63.163-170 and 63.172-174

[24]Identification may be removed from each piece of equipment, except for valves, after repair is made.

[25]Identification may be removed from each valve after the follow-up monitoring shows the valve is operating at no detectable emissions.

**Standards: Pumps in light-liquid service [40 CFR 63.163]**

a) Which phase is the facility in for pump monitoring or leak detection?

1) Phase I[26]? **YES NO**

[26]Phase I leak detection has a leak threshold of 10,000 ppm or greater.

2) Phase II[27]? **YES NO**
3) Phase III[28]? **YES NO**

b) Is each pump:
1) Monitored monthly to detect leaks using Method 21? **YES NO**
2) Visually inspected weekly to detect leaks? **YES NO**

c) Has the O/O selected to calculate percent leaking pumps on a ***process unit basis*** or on a ***source-wide basis***? **YES NO**

d) Has the O/O been required to implement a Quality Improvement Program[29] (QIP)? **YES NO**

e) Is the O/O claiming any of the following conditional exemptions for pumps?
1) Equipped with a dual mechanical seal system that includes a barrier fluid system [40 CFR 63.163(e)]? **YES NO**
2) Designed to operate at no detectable emissions [40 CFR 63.163(f)]? **YES NO**
3) Equipped with "a closed vent system vented to a control device [40 CFR 63.163(g)]? **YES NO**
4) Located within the boundary of an unmanned plant site [40 CFR 63.163(h)]? **YES NO**
5) Designated unsafe-to-monitor [40 CFR 63.163(j)]? **YES NO**

**Standards: Compressors [40 CFR 63.164]**

a) Is each compressor equipped with a seal system that includes a barrier fluid system? **YES NO**

b) Is the compressor seal system:

[27]Phase II leak detection has a leak threshold of 5,000 ppm or greater.

[28]Phase III leak detection has a leak threshold of: (1) 5,000 ppm for pumps handling polymerizing monomers; (2) 2,000 ppm for pumps in food/medical service only; (3) 1,000 ppm or greater for all other pumps

[29]A QIP is required if either 10 percent of the pumps in a process unit or three pumps in a process unit were found leaking on a six-month rolling average.

| | | |
|---|---|---|
| 1) Operated with the barrier fluid[30] at a pressure greater than the compressor stuffing box pressure? | **YES** | **NO** |

[30]The barrier fluid shall not be in VHAP service and , if the compressor is covered by standards under 40 CFR Part 60, shall not be in VOC service.

2) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with 40 CFR 63.172? **YES NO**

3) Equipped with a system that purges the barrier fluid into a process stream with zero VHAP emissions to atmosphere? **YES NO**

c) Is the barrier fluid system equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both? **YES NO**

1) Is each sensor for the barrier fluid checked daily or equipped with an audible alarm? **YES NO**

2) Has the owner or operator determined criteria used to indicate failure of the seal system, the barrier fluid system or both? **YES NO**

d) Is the O/O claiming any of the following conditional exemptions for compressors?

1) Compressors equipped with a CVS and control device [40 CFR 63.164(h)]? **YES NO**

2) Compressors designed to operate at no detectable emissions [40 CFR 63.164(i)]? **YES NO**

**Standards: Pressure relief devices in gas/vapor service [40 CFR 63.165]**

a) Except during pressure releases, is each pressure relief device in gas/vapor service operated with no detectable emissions? **YES NO**

b) Has a pressure release occurred? **YES NO**

c) After each pressure release:

1) Was the pressure relief device returned to a condition of no detectable emissions within five calendar days after the pressure release? **YES NO**

2) Was the pressure relief device monitored within five calendar days after the pressure release to confirm the condition of no detectable emissions using Method 21? **YES NO**

d) Is the O/O claiming any of the following conditional exemptions?

1) Pressure relief device equipped with **YES NO**

a closed-vent system and control device [40 CFR 63.165(c)]?

2) Pressure relief device equipped with a rupture disk upstream of the pressure relief device [40 CFR 63.165(d)]? **YES NO**

**Standards: Sampling connecting systems [40 CFR 63.166]**

a) Is each sampling connection system equipped with a closed-purge, closed-loop or a closed-vent system? **YES NO**

b) For each closed-purge, closed loop or closed-vent system:

1) Does the system return the purged process fluid directly to the process line with zero VHAP emissions? **YES NO**

2) Does the system collect and recycle the purged process fluid with zero VHAP emissions? **YES NO**

3) Is the system designed and operated to capture and transport all the purged process fluid to a control device? **YES NO**

4) Does the system collect, store and transport the purged process fluid to one of the following systems or facilities?

A) A waste management unit which is subject to and operating in compliance with Subpart G of 40 CFR Part 63? **YES NO**

B) A TSDF facility subject to regulation under 40 CFR Part 262, 264, 265 or 266? **YES NO**

C) A facility permitted, licensed or registered by a State to manage municipal or industrial solid waste? **YES NO**

c) Is the O/O claiming an exemption for any sampling connection system because it is an in-situ (non-extractive or in-line) sampling systems [40 CFR 63.166(c)]? **YES NO**

**Standards: Open-ended valves or lines [40 CFR 63.167]**

a) Is each open-ended valve or line equipped with a cap, blind flange, plug, or a second valve? **YES NO**

b) Is the system a double block and bleed system? **YES NO**

c) Is the O/O claiming any of the following conditional

exemptions?

1) Open-ended valves or lines in an emergency shut-down system designed to automatically open during a process upset [40 CFR 63.167(d)]? **YES** **NO**

2) Open-ended valves or lines containing materials which would polymerize or would present an explosion, serious **YES** **NO**

over-pressure or another safety hazard if capped, etc. [40 CFR 63.167(e)]?

**Standards: Valves in gas/vapor or light liquid service [40 CFR 63.168]**

a) Which phase is the facility in for valve monitoring and leak detection?
   1) Phase I[31]? **YES NO**
   2) Phase II[32]? **YES NO**
   3) Phase III[33]? **YES NO**

b) Is each valve in phase I or II monitored quarterly using Method 21? **YES NO**

c) Is each valve in phase III monitored according to the following schedule?
   1) Once per month at process units with two percent or greater valves leaking? **YES NO**
   2) Quarterly after implementing a QIP? **YES NO**
   3) Quarterly at process units with less than two percent of the valves leaking? **YES NO**
   4) Once every two quarters at process units with less than one percent of the valves leaking? **YES NO**
   5) Once every four quarters at process units with less than 0.5 percent of the valves leaking? **YES NO**

d) If a leak was detected, was the leaking valve monitored within the first three months after it was repaired using Method 21? **YES NO**

e) Is the O/O claiming any of the following conditional exemptions/special monitoring for valves?
   1) Designated unsafe-to-monitor [40 CFR 63.168(h)]? **YES NO**
   2) Designated difficult to monitor [40 CFR 63.168(i)]? **YES NO**
   3) < 250 valves in organic HAP service [40 CFR 63.168(j)]? **YES NO**

[31]Phase I leak detection for valves has a leak threshold of 10,000 ppm or greater.

[32]Phase II leak detection for valves has a leak threshold of 500 ppm or greater.

[33]Phase III leak detection for valves has a leak threshold of 500 ppm or greater.

**Standards: Pumps, valves, connectors and agitators in heavy liquid service; instrumentation systems a pressure relief devices in liquid services [40 CFR 63.169]**

a) Is the listed equipment monitored within five-days, using Method 21, if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method? **YES NO**

b) Were any of the monitoring instrument readings 10,000/5,000/2,000/500[34] ppm or greater? **YES NO**

**Standards: Surge control vessels and bottoms receivers [40 CFR 63.170]**

a) Is the surge vessel or bottoms receiver routed back to the process? **YES NO**

b) Is the surge vessel or bottoms receiver equipped with "a closed-vent system and control device? **YES NO**

c) Is the surge vessel or bottoms receiver equipped with a floating roof (external or internal) which complies with 40 CFR Part 63, Subpart G? **YES NO**

**Standards: Delay of repair [40 CFR 63.171]**

a) Has a delay of repair been requested for any piece of equipment found to be leaking? **YES NO**

b) Has a delay of repair been requested for valves, connectors or agitators [40 CFR 63.171(c)][35]? **YES NO**

c) Has a delay of repair been requested for pumps [40 CFR 63.171(d)]? **YES NO**

**Standards: Closed-vent system and control device [40 CFR 63.172]**

a) Which closed-vent system and control device is used to control organic emissions?
   1) Vapor recovery or recapture system? **YES NO**
   2) Enclosed combustion device? **YES NO**
   3) Flare? **YES NO**

b) If a vapor recovery or recapture system is used, is it designed and operated to reduce organic vapors vented to

[34] 10,000 ppm applies to agitators; 5,000 ppm applies to pumps handling polymerizing monomers; 2,000 ppm applies to pumps in food/medical service; 500 ppm applies to the remaining equipment under this section.

[35] A delay of repair beyond a process unit shut-down will be allowed for a valve under certain conditions [see 40 CFR 63.171(e)].

them:

1) By 95 percent or greater (control efficiency of 95 percent)? **YES NO**
2) To 20 ppm by volume? **YES NO**

c) If an enclosed combustion device is used, is it designed and operated to reduce organic vapors vented to it:
1) By 95 percent or greater (control efficiency of 95 percent)? **YES NO**
2) To 20 ppm by volume? **YES NO**
3) By ensuring a residence time of 0.5 seconds at a minimum temperature of 760°C? **YES NO**

d) If a flare is used, is it complying with 40 CFR 63.11 (b)(1-8)? **YES NO**

e) Is the O/O monitoring the control device to ensure proper operation and maintenance of the system? **YES NO**

f) Is the O/O conducting initial and annual inspections for leaks using Method 21? **YES NO**

g) Is the O/O conducting annual inspections for leaks[36]? **YES NO**

h) Does the closed-vent system have a bypass line that could divert a vent stream away from the control device? **YES NO**
1) Does the bypass have a flow indicator installed which takes a reading at least once every 15 minutes? **YES NO**
2) Is the bypass line valve secured in a non-diverting position with a car-seal or a lock-and-key type configuration? **YES NO**
3) Is the closure mechanism inspected at least once every month to ensure it is maintained in the non-diverting position? **YES NO**

i) Is the O/O claiming any of the following conditional exemptions/special monitoring for closed-vent systems?
1) Designated unsafe-to-monitor **YES**

[36]Annual inspections for hard-piped systems may be visual while for duct-work systems must be done using M21.

| | | | |
|---|---|---|---|
| | | | **NO** |
| | [40 CFR 63.172(k)]? | | |
| 2) | Designated difficult-to-monitor [40 CFR 63.172(l)]? | **YES** | **NO** |
| 3) | The facility is subject to and complying with requirements in 40 CFR 264, 265 [40 CFR 63.172(n)]? | **YES** | **NO** |

**Standards: Agitators in gas/vapor service and in light liquid service [40 CFR 63.173]**

a) Is each agitator:
   1) Monitored monthly to detect leaks using Method 21? **YES NO**
   2) Visually inspected weekly to detect leaks? **YES NO**

b) Is the O/O claiming any of the following conditional exemptions for agitators?
   1) Equipped with a dual mechanical seal system that includes a barrier fluid system [40 CFR 63.173(d)]? **YES NO**
   2) Designed with no externally actuated shaft penetrating the agitator housing [40 CFR 63.173(e)]? **YES NO**
   3) Equipped with "a closed vent system and control device [40 CFR 63.173(f)]? **YES NO**
   4) Located within the boundary of an unmanned plant site [40 CFR 63.173(g)]? **YES NO**
   5) Designated as difficult-to-monitor [40 CFR 63.173(h)]? **YES NO**
   6) Obstructed by equipment or piping preventing access to the agitator by a monitor probe [40 CFR 63.173(i)]? **YES NO**
   7) Designated as unsafe-to-monitor [40 CFR 63.163(j)]? **YES NO**

**Standards: Connectors in gas/vapor service and in light liquid service [40 CFR 63.174]**

a) Is the O/O initially[37] and annually (bi-annually or every four years thereafter) monitoring connectors for leaks [40 CFR 63.174(b)(1-3)]? **YES NO**

b) Is the O/O claiming any of the following conditional exemptions for connectors?
   1) Designated as unsafe-to-monitor [40 CFR 63.174(f)]? **YES NO**
   2) Designated as unsafe-to-repair **YES NO**

[37] In general, initial monitoring should occur within the first 12-months of operations.

| | | | |
|---|---|---|---|
| | [40 CFR 63.174(g)]? | | |
| 3) | Which are inaccessible, ceramic or ceramic-lined [40 CFR 63.174(h)]? | **YES** | **NO** |

**Quality Improvement Programs for valves or pumps [40 CFR 63.175 or 176, respectively]**

a) Has the O/O established a quality improvement program (QIP) for valves? **YES NO**

b) Does the QIP for valves comply with 40 CFR 63.175(d)? **YES NO**

c) Does the QIP for valves comply with 40 CFR 63.175 (e)? **YES NO**

d) Has the O/O established a QIP for pumps? **YES NO**

e) Does the QIP for pumps comply with 40 CFR 63.176(d)? **YES NO**

**Alternative means of emission limitation: General, Batch processes or enclosed-vented process units [40 CFR 63.177, 178 or 179, respectively]**

a) Has the O/O requested permission to use an alternate standard involving equipment, design or operational requirements [40 CFR 63.177(b)]? **YES NO**

b) Has the O/O requested permission to use an alternate standard involving work practice [40 CFR 63.177(c)]? **YES NO**

c) Has the O/O requested permission to use a unique approach for emission limitations [40 CFR 63.177(d)]? **YES NO**

d) Has the O/O elected to use pressure testing of batch process equipment to demonstrate compliance [40 CFR 63.178(b)]? **YES NO**

e) Has the O/O elected to use Method 21 monitoring of batch process equipment to demonstrate compliance [40 CFR 63.178(c)]? **YES NO**

f) Has the O/O requested permission to use a total enclosure vented through a CVS to a control device to demonstrate compliance [40 CFR 63.179]? **YES NO**