STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502
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C.L. "Butch" Otter, Governor
John H. Tippets, Director

February 22, 2016

Dale Hayes, VP of Operations
Alta Mesa Services, LP
15021 Katy Freeway, Suite 400
Houston, TX 77094

RE: Facility ID No. 075-00022, Alta Mesa Services, LP – Little Willow Road Gathering Facility, New Plymouth
Final Permit Letter

Dear Mr. Hayes:

The Department of Environmental Quality (DEQ) is issuing Permit to Construct (PTC) No. P-2015.0015 Project 61636 to Alta Mesa Services, LP located at New Plymouth for the PTC revision to install additional equipment and reduce the compressor engine size. This PTC is issued in accordance with IDAPA 58.01.01.200 through 228 (Rules for the Control of Air Pollution in Idaho) and is based on the certified information provided in your PTC application received December 15, 2015.

This permit is effective immediately and replaces PTC No. P-2015.0015, issued on November 18, 2015. This permit does not release Alta Mesa Services, LP from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

Pursuant to the Construction and Operation Notification General Provision of your permit, it is required that construction and operation notification be provided. Please provide this information as listed to DEQ's Boise Regional Office, 1445 N. Orchard, Boise, ID 83706, Fax (208) 373-0287.

In order to fully understand the compliance requirements of this permit, DEQ highly recommends that you schedule a meeting with Tom Krinke, Air Quality Compliance Officer, at (208) 373-0419 to review and discuss the terms and conditions of this permit. Should you choose to schedule this meeting, DEQ recommends that the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any other staff responsible for day-to-day compliance with permit conditions.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to contact Kelli Wetzel at (208) 373-0502 or kelli.wetzel@deq.idaho.gov to address any questions or concerns you may have with the enclosed permit.

Sincerely,

Mike Simon
Stationary Source Program Manager
Air Quality Division

MS\KW

Permit No. P-2015.0015 PROJ 61636

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# AIR QUALITY

# PERMIT TO CONSTRUCT

| | |
|---|---|
| **Permittee** | Alta Mesa Services, LP |
| **Permit Number** | P-2015.0015 |
| **Project ID** | 61636 |
| **Facility ID** | 075-00022 |
| **Facility Location** | 4649 Little Willow Rd<br>New Plymouth, ID 83655 |

## Permit Authority

This permit (a) is issued according to the "Rules for the Control of Air Pollution in Idaho" (Rules), IDAPA 58.01.01.200–228; (b) pertains only to emissions of air contaminants regulated by the State of Idaho and to the sources specifically allowed to be constructed or modified by this permit; (c) has been granted on the basis of design information presented with the application; (d) does not affect the title of the premises upon which the equipment is to be located; (e) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (f) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; and (g) in no manner implies or suggests that the Idaho Department of Environmental Quality (DEQ) or its officers, agents, or employees assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment. Changes in design, equipment, or operations may be considered a modification subject to DEQ review in accordance with IDAPA 58.01.01.200–228.

**Date Issued** February 22, 2016

Kelli Wetzel

**Kelli Wetzel, Permit Writer**

**Mike Simon, Stationary Source Manager**

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# 1 Permit Scope

## Purpose

1.1 This permit is a revised permit to construct (PTC). This permit revision provides for the reduction in size of one compressor engine and dehydrator, the installation and operation of four additional line heaters, four additional water tanks, and one additional oil tank, and the installation of two heater treaters.

**[February 22, 2016]**

1.2 Those permit conditions that have been modified or revised by this permitting action are identified by the permit issue date citation located directly under the permit condition and on the right-hand margin.

1.3 This PTC replaces Permit to Construct No. P-2015.0015, issued on November 18, 2015.

**[February 22, 2016]**

## Regulated Sources

Table 1.1 lists all sources of regulated emissions in this permit.

**Table 1.1 Regulated Sources**

| Permit Section | Source | Control Equipment |
|---|---|---|
| 2 | Reboiler<br>Rated capacity: 0.25 MMBtu/hr<br>Allowable fuel type: natural gas only | None |
| 2 | Vapor Combustor<br>Rated capacity: 2.5 MMBtu/hr<br>Allowable fuel type: natural gas only | |
| 2 | 10 Line Heaters<br>Rated capacity: From 0.5 to 1.0 MMBtu/hr each<br>Allowable fuel type: natural gas only | None |
| 2 | Dehydrator<br>Throughput: 20 MMscf/day | Control Efficiency 98% |
| 2 | 6 Oil Tanks<br>Capacity: 1000 bbl each | Controlled by the Vapor Combustor<br>Control Efficiency 98.0% |
| 2 | 6 Water Tanks<br>Capacity: 500 bbl each | |
| 2 | Oil Loading | Control Efficiency 98.0% |
| 2 | 2 Heater Treaters<br>Rated capacity: 1.0 and 2.5 MMBtu/hr<br>Allowable fuel type: natural gas only | None |
| 3 | Compressor Engine 1<br>Max Capacity: 690 bhp<br>Allowable fuel type: natural gas only | None |

**[February 22, 2016]**

# 2 Natural Gas Gathering Facility

### 2.1 Process Description

The facility gathers natural gas from individual well sites where produced gas, oil, and water is separated and prepared for pipeline delivery to the refrigeration plant.

Production from individual well sites flow into individual line heaters/separators (gas production units). Separated water is piped to tanks and trucked off site. Crude is also piped to tanks and trucked off site. Flashed vapors from the tanks are collected in a venting system and piped to a vapor combustor to be burned. Condensate from all of the individual gas production units comingle and flow into a single three-phase separator to allow flashed gas from pressure reduction to separate out before metering. The condensate is metered and proceeds to a 4" pipeline for transport to the refrigeration plant approximately 11 miles to the south. The separated gas from the individual gas production units is compressed in an engine compressor to pipeline pressure. From there, the gas flows into an electric cooler to be cooled and then into a 98% emission free dehydrator. The gas is then metered and proceeds to a 12" pipeline for transport to the refrigeration plant.

### 2.2 Control Device Descriptions

**Table 2.1 Natural Gas and Hydrocarbon Treatment Facility Description**

| Emissions Units / Processes | Control Devices |
|---|---|
| Reboiler | None |
| 10 Line Heaters | None |
| Dehydrator | None |
| 6 Water Tanks | None |
| 6 Oil Storage Tanks | Vapor Combustor |
| 2 Heater Treaters | None |
| Oil Loading | None |

**[February 22, 2016]**

## Emission Limits

### 2.3 Emission Limit

The permittee shall not discharge to the atmosphere from any fuel burning equipment with a maximum rated input of ten million BTU per hour or more, PM in excess of 0.015 gr/dscf corrected to 3% oxygen, in accordance with IDAPA 58.01.01.676-677.

### 2.4 Opacity Limit

Emissions from the any stack, vent, or functionally equivalent opening shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

## Operating Requirements

### 2.5 Fuel Type Restriction

All fuel burning equipment listed in Table 2.1 shall be fired on natural gas exclusively.

### 2.6 Vapor Combustor

The facility shall be equipped with a vapor combustor designed to collect the total organic compound vapors displaced from tank trucks during product loading and from the oil tanks.

### 2.7 Reasonable Control of Fugitive Emissions

All reasonable precautions shall be taken to prevent particulate matter (PM) from becoming airborne in accordance with IDAPA 58.01.01.650-651. In determining what is reasonable, considerations will be given to factors such as the proximity of dust-emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of PM. Some of the reasonable precautions include, but are not limited to, the following:

- Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of lands.
- Application, where practical, of asphalt, oil, water, or suitable chemicals to, or covering of, dirt roads, material stockpiles, and other surfaces which can create dust.
- Installation and use, where practical, of hoods, fans, and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations.
- Covering, where practical, of open-bodied trucks transporting materials likely to give rise to airborne dusts. Paving of roadways and their maintenance in a clean condition, where practical.
- Prompt removal of earth or other stored material from streets, where practical.

## Monitoring and Recordkeeping Requirements

### 2.8 Opacity Monitoring

The permittee shall conduct a quarterly facility-wide inspection of potential sources of visible emissions, during daylight hours and under normal operating conditions. The inspection shall consist of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emission, the permittee shall either

a) take appropriate corrective action as expeditiously as practicable to eliminate the visible emissions. Within 24 hours of the initial see/no see evaluation and after the corrective action, the permittee shall conduct a see/no see evaluation of the emissions point in question. If the visible emissions are not eliminated, the permittee shall comply with b).

or

b) perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20%, as measured using Method 9, for a period or periods aggregating more than three minutes in any 60-minute period, the permittee shall take all necessary corrective action and report the exceedance in accordance with IDAPA 58.01.01.130-136.

The permittee shall maintain records of the results of each visible emission inspection and each opacity test when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

**2.9 Responsible Control Measures**

The permittee shall conduct a quarterly facility-wide inspection of potential sources of fugitive emissions, during daylight hours and under normal operating conditions, to ensure that the methods used to reasonably control fugitive emissions are effective. If fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive emissions inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive emissions, and the date the corrective action was taken. A compilation of the most recent five years of records shall be kept onsite and made available to DEQ representatives upon request.

## *Federal Requirements*

## *40 CFR 60 Subpart OOOO Requirements*

## *"Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution"*

**2.10** In accordance with 40 CFR 60.5370, the permittee must be in compliance with the standards of this subpart no later than October 15, 2012 or upon startup, whichever is later.

**2.11** In accordance with 40 CFR 60.5400(a), the permittee must comply with the requirements of §§60.482-1a(a), (b), and (d), 60.482-2a, and 60.482-4a through 60.482-11a, except as provided in §60.5401 for the group of all equipment, except compressors, within a process unit.

**2.12** In accordance with 40 CFR 60.482-1a(a), the permittee must demonstrate compliance with the requirements of §§60.482-1a through 60.482-10a or §60.480a(e) for all equipment within 180 days of initial startup.

**2.13** In accordance with 40 CFR 60.482-1a(b), compliance will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485a.

**2.14** In accordance with 40 CFR 60.482-1a(d), equipment that is in vacuum service is excluded from the requirements of §§60.482-2a through 60.482-10a if it is identified as required in §60.486a(e)(5).

**2.15** In accordance with 40 CFR 60.482-2a(a)(1), each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485a(b), except as provided in §60.482-1a(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in §60.482-1a(c) and paragraphs (d), (e), and (f) of this section.

**2.16** In accordance with 40 CFR 60.482-2a(a)(2), each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in §60.482-1a(f).

**2.17** In accordance with 40 CFR 60.482-2a(b)(1), the instrument reading that defines a leak is specified below:

- 5,000 parts per million (ppm) or greater for pumps handling polymerizing monomers;
- 2,000 ppm or greater for all other pumps.

**2.18** In accordance with 40 CFR 60.482-2a(b)(2), if there are indications of liquids dripping from the pump seal, the permittee shall follow the procedure below. This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than the concentration specified, whichever is applicable.

- Monitor the pump within 5 days as specified in §60.485a(b). A leak is detected if the instrument reading measured during monitoring indicates a leak. The leak shall be repaired using the procedures in paragraph (c) of this section.
- Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures in paragraph (c) of this section or by eliminating the visual indications of liquids dripping.

**2.19** In accordance with 40 CFR 60.482-2a(c)(1), when a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9a.

**2.20** In accordance with 40 CFR 60.482-2a(c)(2), a first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described below, where practicable.

- Tightening the packing gland nuts;
- Ensuring that the seal flush is operating at design pressure and temperature.

**2.21** In accordance with 40 CFR 60.482-2a(d), each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified below are met.

- Each dual mechanical seal system is:
    - Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
    - Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482-10a; or
    - Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.
- The barrier fluid system is in heavy liquid service or is not in VOC service.
- Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
- Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.
    - If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (d)(4)(ii)(A) or (B) of this section prior to the next required inspection.
        - Monitor the pump within 5 days as specified in §60.485a(b) to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 2,000 ppm or greater is measured, a leak is detected.
        - Designate the visual indications of liquids dripping as a leak.

- Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm.
    - The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
    - If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected.
- When a leak is detected pursuant to paragraph (d)(4)(ii)(A) of this section, it shall be repaired as specified in paragraph (c) of this section.
    - A leak detected pursuant to paragraph (d)(5)(iii) of this section shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor.
    - A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping.

**2.22** In accordance with 40 CFR 60.482-2a(e), any pump that is designated, as described in §60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

- Has no externally actuated shaft penetrating the pump housing;
- Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485a(c); and
- Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

**2.23** In accordance with 40 CFR 60.482-2a(f), if any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §60.482-10a, it is exempt from paragraphs (a) through (e) of this section.

**2.24** In accordance with 40 CFR 60.482-2a(g), any pump that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

- The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and
- The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

**2.25** In accordance with 40 CFR 60.482-2a(h), any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

**2.26** In accordance with 40 CFR 60.482-4a(a), except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485a(c).

**2.27** In accordance with 40 CFR 60.482-4a(b), after each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482-9a.

- No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485a(c).

**2.28** In accordance with 40 CFR 60.482-4a(c), any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482-10a is exempted from the requirements of paragraphs (a) and (b) of this section.

**2.29** In accordance with 40 CFR 60.482-4a(d), any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements below.

- After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482-9a.

**2.30** In accordance with 40 CFR 60.482-5a(a), each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in §60.482-1a(c) and paragraph (c) of this section.

**2.31** In accordance with 40 CFR 60.482-5a(b), each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified below.

- Gases displaced during filling of the sample container are not required to be collected or captured.
- Containers that are part of a closed-purge system must be covered or closed when not being filled or emptied.
- Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured.
- Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph below.
    - Return the purged process fluid directly to the process line.
    - Collect and recycle the purged process fluid to a process.
    - Capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482-10a.
    - Collect, store, and transport the purged process fluid to any of the following systems or facilities:

- A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;
- A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266;
- A facility permitted, licensed, or registered by a state to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261;
- A waste management unit subject to and operated in compliance with the treatment requirements of 40 CFR 61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of 40 CFR 61.343 through 40 CFR 61.347; or
- A device used to burn off-specification used oil for energy recovery in accordance with 40 CFR part 279, subpart G, provided the purged process fluid is not hazardous waste as defined in 40 CFR part 261.

**2.32** In accordance with 40 CFR 60.482-5a(c), in-situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

**2.33** In accordance with 40 CFR 60.482-6a(a), each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482-1a(c) and paragraphs (d) and (e) of this section.

- The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

**2.34** In accordance with 40 CFR 60.482-6a(b), each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

**2.35** In accordance with 40 CFR 60.482-6a(c), when a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.

**2.36** In accordance with 40 CFR 60.482-6a(d), open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b), and (c) of this section.

**2.37** In accordance with 40 CFR 60.482-6a(e), open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

**2.38** In accordance with 40 CFR 60.482-7a(a), each valve shall be monitored monthly to detect leaks by the methods specified in §60.485a(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g),and (h) of this section, §60.482-1a(c) and (f), and §§60.483-1a and 60.483-2a.

- A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1a(c), and §§60.483-1a and 60.483-2a.
    - Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.
    - If the existing valves in the process unit are monitored in accordance with §60.483-1a or §60.483-2a, count the new valve as leaking when calculating the percentage of valves leaking as described in §60.483-2a(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.

**2.39** In accordance with 40 CFR 60.482-7a(b), if an instrument reading of 500 ppm or greater is measured, a leak is detected.

**2.40** In accordance with 40 CFR 60.482-7a(c), any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

- As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.
- If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

**2.41** In accordance with 40 CFR 60.482-7a(d), when a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482-9a.

- A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

**2.42** In accordance with 40 CFR 60.482-7a(e), first attempts at repair include, but are not limited to, the following best practices where practicable:

- Tightening of bonnet bolts;
- Replacement of bonnet bolts;
- Tightening of packing gland nuts;
- Injection of lubricant into lubricated packing.

**2.43** In accordance with 40 CFR 60.482-7a(f), any valve that is designated, as described in §60.486a(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) of this section if the valve:

- Has no external actuating mechanism in contact with the process fluid,
- Is operated with emissions less than 500 ppm above background as determined by the method specified in §60.485a(c), and

- Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

**2.44** In accordance with 40 CFR 60.482-7a(g), any valve that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) of this section if:

- The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section, and
- The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

**2.45** In accordance with 40 CFR 60.482-7a(h), any valve that is designated, as described in §60.486a(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) of this section if:

- The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.
- The process unit within which the valve is located either:
    - Becomes an affected facility through §60.14 or §60.15 and was constructed on or before January 5, 1981; or
    - Has less than 3.0 percent of its total number of valves designated as difficult-to-monitor by the owner or operator.
- The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

**2.46** In accordance with 40 CFR 60.482-8a(a), if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall follow either one of the following procedures:

- The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485a(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.
- The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.

**2.47** In accordance with 40 CFR 60.482-8a(b), if an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

**2.48** In accordance with 40 CFR 60.482-8a(c), when a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9a.

- The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

**2.49** In accordance with 40 CFR 60.482-8a(d), first attempts at repair include, but are not limited to, the best practices described under §§60.482-2a(c)(2) and 60.482-7a(e).

**2.50** In accordance with 40 CFR 60.482-9a(a), delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.

**2.51** In accordance with 40 CFR 60.482-9a(b), delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

**2.52** In accordance with 40 CFR 60.482-9a(c), delay of repair for valves and connectors will be allowed if:

- The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and
- When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482-10a.

**2.53** In accordance with 40 CFR 60.482-9a(d), delay of repair for pumps will be allowed if:

- Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and
- Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

**2.54** In accordance with 40 CFR 60.482-9a(e), delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

**2.55** In accordance with 40 CFR 60.482-9a(f), when delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

**2.56** In accordance with 40 CFR 60.482-10a(a), owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

**2.57** In accordance with 40 CFR 60.482-10a(b), vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume (ppmv), whichever is less stringent.

**2.58** In accordance with 40 CFR 60.482-10a(c), enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

**2.59** In accordance with 40 CFR 60.482-10a(f), except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (2) of this section.

- If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements below:
    - Conduct an initial inspection according to the procedures in §60.485a(b); and
    - Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

- If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:
    - Conduct an initial inspection according to the procedures in §60.485a(b); and
    - Conduct annual inspections according to the procedures in §60.485a(b).

**2.60** In accordance with 40 CFR 60.482-10a(g), leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

- A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
- Repair shall be completed no later than 15 calendar days after the leak is detected.

**2.61** In accordance with 40 CFR 60.482-10a(h), delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

**2.62** In accordance with 40 CFR 60.482-10a(i), if a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

**2.63** In accordance with 40 CFR 60.482-10a(j), any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (2) of this section:

- The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and
- The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

**2.64** In accordance with 40 CFR 60.482-10a(k), any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified below:

- The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and
- The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and
- The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

**2.65** In accordance with 40 CFR 60.482-10a(l), the permittee shall record the information specified in below.

- Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.
- Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.
- For each inspection during which a leak is detected, a record of the information specified in §60.486a(c).
- For each inspection conducted in accordance with §60.485a(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

**2.66** In accordance with 40 CFR 60.482-10a(m), closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

**2.67** In accordance with 40 CFR 60.482-11a(a), the permittee shall initially monitor all connectors in the process unit for leaks by the later of either 12 months after the compliance date or 12 months after initial startup. If all connectors in the process unit have been monitored for leaks prior to the compliance date, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.

**2.68** In accordance with 40 CFR 60.482-11a(b), except as allowed in §60.482-1a(c), §60.482-10a, or as specified in paragraph (e) of this section, the permittee shall monitor all connectors in gas and vapor and light liquid service as specified below.

- The connectors shall be monitored to detect leaks by the method specified in §60.485a(b) and, as applicable, §60.485a(c).
- If an instrument reading greater than or equal to 500 ppm is measured, a leak is detected.
- The permittee shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.
    - If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).

- If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4-year monitoring period.
- If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as provided in paragraph (b)(3)(iii)(A) of this section and either paragraph (b)(3)(iii)(B) or (b)(3)(iii)(C) of this section, as appropriate.
    - The permittee shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.
    - If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to paragraph (b)(3) of this section, based on the percent of leaking connectors within the total monitored connectors.
    - If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.

- If, during the monitoring conducted pursuant to paragraphs (b)(3)(i) through (iii) of this section, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.
- The permittee shall keep a record of the start date and end date of each monitoring period under this section for each process unit.

**2.69** In accordance with 40 CFR 60.482-11a(c), for use in determining the monitoring frequency, as specified in paragraphs (a) and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using the following equation:

$\%C_L = C_L / C_t * 100$

Where:

$\%C_L$ = Percent of leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (iii) of this section.

$C_L$ = Number of connectors measured at 500 ppm or greater, by the method specified in §60.485a(b).

$C_t$ = Total number of monitored connectors in the process unit or affected facility.

**2.70** In accordance with 40 CFR 60.482-11a(d), when a leak is detected pursuant to paragraphs (a) and (b) of this section, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9a. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.

**2.71** In accordance with 40 CFR 60.482-11a(e), any connector that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section if:

- The owner or operator of the connector demonstrates that the connector is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) and (b) of this section; and
- The owner or operator of the connector has a written plan that requires monitoring of the connector as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (d) of this section if a leak is detected.

**2.72** In accordance with 40 CFR 60.482-11a(f), inaccessible, ceramic, or ceramic-lined connectors. (1) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of §§63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (f)(1)(i) through (vi) of this section, as applicable:

- Buried;
- Insulated in a manner that prevents access to the connector by a monitor probe;
- Obstructed by equipment or piping that prevents access to the connector by a monitor probe;
- Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to connectors up to 7.6 meters (25 feet) above the ground;
- Inaccessible because it would require elevating the monitoring personnel more than 2 meters (7 feet) above a permanent support surface or would require the erection of scaffold; or
- Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.
- If any inaccessible, ceramic, or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.

**2.73** In accordance with 40 CFR 60.482-11a(g), except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of paragraph (f) of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.

**2.74** In accordance with 40 CFR 60.5400(b), the permittee may elect to comply with the requirements of §§60.483-1a and 60.483-2a, as an alternative.

**2.75** In accordance with 40 CFR 60.483-1a(a), the permittee may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

**2.76** In accordance with 40 CFR 60.483-1a(b), the following requirements shall be met if the permittee wishes to comply with an allowable percentage of valves leaking:

- An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487a(d).
- A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.
- If a valve leak is detected, it shall be repaired in accordance with §60.482-7a(d) and (e).

**2.77** In accordance with 40 CFR 60.483-1a(c), performance tests shall be conducted in the following manner:

- All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485a(b).
- If an instrument reading of 500 ppm or greater is measured, a leak is detected.
- The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

**2.78** In accordance with 40 CFR 60.483-1a(d), owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent, determined as described in §60.485a(h).

**2.79** In accordance with 40 CFR 60.483-2a(a), the permittee may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

- An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d)a.

**2.80** In accordance with 40 CFR 60.483-2a(b), the permittee shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482-7a.

- After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
- After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
- If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482-7a but can again elect to use this section.
- The percent of valves leaking shall be determined as described in §60.485a(h).
- The permittee must keep a record of the percent of valves found leaking during each leak detection period.

- A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with §60.482-7a(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.

**2.81** In accordance with 40 CFR 60.5400(c), the permittee may apply to the Administrator for permission to use an alternative means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to that achieved by the controls required in this subpart according to the requirements of §60.5402 of this subpart.

**2.82** In accordance with 40 CFR 60.5400(d), the permittee must comply with the provisions of §60.485a of this part except as provided in paragraph (f) of this section.

**2.83** In accordance with 40 CFR 60.485(a)(a), in conducting the performance tests required in §60.8, the permittee shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

**2.84** In accordance with 40 CFR 60.485(a)(b), the permittee shall determine compliance with the standards in §§60.482-1a through 60.482-11a, 60.483a, and 60.484a as follows:

- Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 of appendix A-7 of this part. The following calibration gases shall be used:
    - Zero air (less than 10 ppm of hydrocarbon in air); and
    - A mixture of methane or n-hexane and air at a concentration no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.
- A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A-7 of this part, Section 10.1, except donot adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(7). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.

**2.85** In accordance with 40 CFR 60.485(a)(c), the permittee shall determine compliance with the no-detectable-emission standards in §§60.482-2a(e), 60.482-3a(i), 60.482-4a, 60.482-7a(f), and 60.482-10a(e) as follows:

- The requirements of paragraph (b) shall apply.
- Method 21 of appendix A-7 of this part shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

**2.86** In accordance with 40 CFR 60.485(a)(d), the permittee shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

- Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.
- Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.
- Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d)(1) and (2) of this section shall be used to resolve the disagreement.

**2.87** In accordance with 40 CFR 60.485(a)(e), the permittee shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply:

- The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. $H_2O$ at 68 °F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.
- The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. $H_2O$ at 68 °F) is equal to or greater than 20 percent by weight.
- The fluid is a liquid at operating conditions.

**2.88** In accordance with 40 CFR 60.485(a)(f), samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

**2.89** In accordance with 40 CFR 60.485(a)(h), the permittee shall determine compliance with §60.483-1a or §60.483-2a as follows:

- The percent of valves leaking shall be determined using the following equation:

  $\%V_L = (V_L / V_T) * 100$

  Where:

  $\%V_L$ = Percent leaking valves.

  $V_L$ = Number of valves found leaking.

  $V_T$ = The sum of the total number of valves monitored.

- The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored.
- The number of valves leaking shall include valves for which repair has been delayed.
- Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.
- If the process unit has been subdivided in accordance with §60.482-7a(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.
- The total number of valves monitored does not include a valve monitored to verify repair.

**2.90** In accordance with 40 CFR 60.5400(e), the permittee must comply with the provisions of §§60.486a and 60.487a of this part except as provided in §§60.5401, 60.5421, and 60.5422 of this part.

**2.91** In accordance with 40 CFR 60.486(a)(a), each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

- An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.
- The permittee shall record the information specified in paragraphs (a)(3)(i) through (v) of this section for each monitoring event required by §§60.482-2a, 60.482-3a, 60.482-7a, 60.482-8a, 60.482-11a, and 60.483-2a.
    - Monitoring instrument identification.
    - Operator identification.
    - Equipment identification.
    - Date of monitoring.
    - Instrument reading.

**2.92** In accordance with 40 CFR 60.486(a)(b), when each leak is detected as specified in §§60.482-2a, 60.482-3a, 60.482-7a, 60.482-8a, 60.482-11a, and 60.483-2a, the following requirements apply:

- A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
- The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482-7a(c) and no leak has been detected during those 2 months.
- The identification on a connector may be removed after it has been monitored as specified in §60.482-11a(b)(3)(iv) and no leak has been detected during that monitoring.
- The identification on equipment, except on a valve or connector, may be removed after it has been repaired.

**2.93** In accordance with 40 CFR 60.486(a)(c), when each leak is detected as specified in §§60.482-2a, 60.482-3a, 60.482-7a, 60.482-8a, 60.482-11a, and 60.483-2a, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

- The instrument and operator identification numbers and the equipment identification number, except when indications of liquids dripping from a pump are designated as a leak.
- The date the leak was detected and the dates of each attempt to repair the leak.
- Repair methods applied in each attempt to repair the leak.

- Maximum instrument reading measured by Method 21 of appendix A-7 of this part at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.
- "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
- The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.
- The expected date of successful repair of the leak if a leak is not repaired within 15 days.
- Dates of process unit shutdowns that occur while the equipment is unrepaired.
- The date of successful repair of the leak.

**2.94** In accordance with 40 CFR 60.486(a)(d), the following information pertaining to the design requirements for closed vent systems and control devices described in §60.482-10a shall be recorded and kept in a readily accessible location:

- Detailed schematics, design specifications, and piping and instrumentation diagrams.
- The dates and descriptions of any changes in the design specifications.
- A description of the parameter or parameters monitored, as required in §60.482-10a(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.
- Periods when the closed vent systems and control devices required in §§60.482-2a, 60.482-3a, 60.482-4a, and 60.482-5a are not operated as designed, including periods when a flare pilot light does not have a flame.
- Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482-2a, 60.482-3a, 60.482-4a, and 60.482-5a.

**2.95** In accordance with 40 CFR 60.486(a)(e), the following information pertaining to all equipment subject to the requirements in §§60.482-1a to 60.482-11a shall be recorded in a log that is kept in a readily accessible location:

- A list of identification numbers for equipment subject to the requirements of this subpart.
- A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482-2a(e), 60.482-3a(i), and 60.482-7a(f).
    - The designation of equipment as subject to the requirements of §60.482-2a(e), §60.482-3a(i), or §60.482-7a(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.
- A list of equipment identification numbers for pressure relief devices required to comply with §60.482-4a.
- The dates of each compliance test as required in §§60.482-2a(e), 60.482-3a(i), 60.482-4a, and 60.482-7a(f).
    - The background level measured during each compliance test.
    - The maximum instrument reading measured at the equipment during each compliance test.
- A list of identification numbers for equipment in vacuum service.

- A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with §60.482-1a(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.
- The date and results of the weekly visual inspection for indications of liquids dripping from pumps in light liquid service.
- Records of the information specified in paragraphs (e)(8)(i) through (vi) of this section for monitoring instrument calibrations conducted according to sections 8.1.2 and 10 of Method 21 of appendix A-7 of this part and §60.485a(b).
    - Date of calibration and initials of operator performing the calibration.
    - Calibration gas cylinder identification, certification date, and certified concentration.
    - Instrument scale(s) used.
    - A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A-7 of this part.
    - Results of each calibration drift assessment required by §60.485a(b)(2) (i.e., instrument reading for calibration at end of monitoring day and the calculated percent difference from the initial calibration value).
    - If an owner or operator makes their own calibration gas, a description of the procedure used.
- The connector monitoring schedule for each process unit as specified in §60.482-11a(b)(3)(v).
- Records of each release from a pressure relief device subject to §60.482-4a.

**2.96** In accordance with 40 CFR 60.486(a)(f), the following information pertaining to all valves subject to the requirements of §60.482-7a(g) and (h), all pumps subject to the requirements of §60.482-2a(g), and all connectors subject to the requirements of §60.482-11a(e) shall be recorded in a log that is kept in a readily accessible location:

- A list of identification numbers for valves, pumps, and connectors that are designated as unsafe-to-monitor, an explanation for each valve, pump, or connector stating why the valve, pump, or connector is unsafe-to-monitor, and the plan for monitoring each valve, pump, or connector.
- A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

**2.97** In accordance with 40 CFR 60.486(a)(g), the following information shall be recorded for valves complying with §60.483-2a:

- A schedule of monitoring.
- The percent of valves found leaking during each monitoring period.

**2.98** In accordance with 40 CFR 60.486(a)(h), the following information shall be recorded in a log that is kept in a readily accessible location:

- Design criterion required in §§60.482-2a(d)(5) and 60.482-3a(e)(2) and explanation of the design criterion; and
- Any changes to this criterion and the reasons for the changes.

**2.99** In accordance with 40 CFR 60.486(a)(i), the following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in §60.480a(d):

- An analysis demonstrating the design capacity of the affected facility,
- A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and
- An analysis demonstrating that equipment is not in VOC service.

**2.100** In accordance with 40 CFR 60.486(a)(j), information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

**2.101** In accordance with 40 CFR 60.486(a)(k), the provisions of §60.7(b) and (d) do not apply to affected facilities subject to this subpart.

**2.102** In accordance with 40 CFR 60.487(a)(a), each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 months after the initial startup date.

**2.103** In accordance with 40 CFR 60.487(a)(b), the initial semiannual report to the Administrator shall include the following information:

- Process unit identification.
- Number of valves subject to the requirements of §60.482-7a, excluding those valves designated for no detectable emissions under the provisions of §60.482-7a(f).
- Number of pumps subject to the requirements of §60.482-2a, excluding those pumps designated for no detectable emissions under the provisions of §60.482-2a(e) and those pumps complying with §60.482-2a(f).
- Number of compressors subject to the requirements of §60.482-3a, excluding those compressors designated for no detectable emissions under the provisions of §60.482-3a(i) and those compressors complying with §60.482-3a(h).
- Number of connectors subject to the requirements of §60.482-11a.

**2.104** In accordance with 40 CFR 60.487(a)(c), all semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486a:

- Process unit identification.
- For each month during the semiannual reporting period,
    - Number of valves for which leaks were detected as described in §60.482-7a(b) or §60.483-2a,
    - Number of valves for which leaks were not repaired as required in §60.482-7a(d)(1),
    - Number of pumps for which leaks were detected as described in §60.482-2a(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii),
    - Number of compressors for which leaks were detected as described in §60.482-3a(f),
    - Number of compressors for which leaks were not repaired as required in §60.482-3a(g)(1),
    - Number of connectors for which leaks were detected as described in §60.482-11a(b),

- Number of connectors for which leaks were not repaired as required in §60.482-11a(d), and
- The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

- Dates of process unit shutdowns which occurred within the semiannual reporting period.
- Revisions to items reported according to paragraph (b) of this section if changes have occurred since the initial report or subsequent revisions to the initial report.

**2.105** In accordance with 40 CFR 60.487(a)(d), the permittee electing to comply with the provisions of §§60.483-1a or 60.483-2a shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

**2.106** In accordance with 40 CFR 60.487(a)(e), the permittee shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

**2.107** In accordance with 40 CFR 60.487(a)(f), the requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a state under section 111(c) of the CAA, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the state.

**2.108** In accordance with 40 CFR 60.5400(f), the permittee must use the following provision instead of §60.485a(d)(1): Each piece of equipment is presumed to be in VOC service or in wet gas service unless an owner or operator demonstrates that the piece of equipment is not in VOC service or in wet gas service. For a piece of equipment to be considered not in VOC service, it must be determined that the VOC content can be reasonably expected never to exceed 10.0 percent by weight. For a piece of equipment to be considered in wet gas service, it must be determined that it contains or contacts the field gas before the extraction step in the process. For purposes of determining the percent VOC content of the process fluid that is contained in or contacts a piece of equipment, procedures that conform to the methods described in ASTM E169-93, E168-92, or E260-96 (incorporated by reference as specified in §60.17) must be used.

**2.109** In accordance with 40 CFR 60.5401(a), the permittee may comply with the following exceptions to the provisions of §60.5400(a) and (b).

**2.110** In accordance with 40 CFR 60.5401(b), each pressure relief device in gas/vapor service may be monitored quarterly and within 5 days after each pressure release to detect leaks by the methods specified in §60.485a(b) except as provided in §60.5400(c) and in paragraph (b)(4) of this section, and §60.482-4a(a) through (c) of subpart VVa.

- If an instrument reading of 500 ppm or greater is measured, a leak is detected.
- When a leak is detected, it must be repaired as soon as practicable, but no later than 15 calendar days after it is detected, except as provided in §60.482-9a.
    - A first attempt at repair must be made no later than 5 calendar days after each leak is detected.
- Any pressure relief device that is located in a nonfractionating plant that is monitored only by non-plant personnel may be monitored after a pressure release the next time the monitoring personnel are on-site, instead of within 5 days as specified in paragraph (b)(1) of this section and §60.482-4a(b)(1) of subpart VVa.

- No pressure relief device described in paragraph (b)(4)(i) of this section must be allowed to operate for more than 30 days after a pressure release without monitoring.

**2.111** In accordance with 40 CFR 60.5401(c), sampling connection systems are exempt from the requirements of §60.482-5a.

**2.112** In accordance with 40 CFR 60.5401(d), pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service that are located at a nonfractionating plant that does not have the design capacity to process 283,200 standard cubic meters per day (scmd) (10 million standard cubic feet per day) or more of field gas are exempt from the routine monitoring requirements of §§60.482-2a(a)(1) and 60.482-7a(a), and paragraph (b)(1) of this section.

**2.113** In accordance with 40 CFR 60.5401(f), the permittee may use the following provisions instead of §60.485a(e):

- Equipment is in heavy liquid service if the weight percent evaporated is 10 percent or less at 150 °C (302 °F) as determined by ASTM Method D86-96 (incorporated by reference as specified in §60.17).
- Equipment is in light liquid service if the weight percent evaporated is greater than 10 percent at 150 °C (302 °F) as determined by ASTM Method D86-96 (incorporated by reference as specified in §60.17).

**2.114** In accordance with 40 CFR 60.5401(g), the permittee may use the following provisions instead of §60.485a(b)(2): A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A-7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(8). Divide these readings by the initial calibration values for each scale and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.

**2.115** In accordance with 40 CFR 60.5402(a), if, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under any design, equipment, work practice or operational standard, the Administrator will publish, in the FEDERAL REGISTER, a notice permitting the use of that alternative means for the purpose of compliance with that standard. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.

**2.116** In accordance with 40 CFR 60.5402(b), any notice under paragraph (a) of this section must be published only after notice and an opportunity for a public hearing.

**2.117** In accordance with 40 CFR 60.5402(c), the Administrator will consider applications under this section from either owners or operators of affected facilities, or manufacturers of control equipment.

**2.118** In accordance with 40 CFR 60.5402(d), the Administrator will treat applications under this section according to the following criteria, except in cases where the Administrator concludes that other criteria are appropriate:

- The applicant must collect, verify and submit test data, covering a period of at least 12 months, necessary to support the finding in paragraph (a) of this section.
- If the applicant is an owner or operator of an affected facility, the applicant must commit in writing to operate and maintain the alternative means so as to achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under the design, equipment, work practice or operational standard.

**2.119** In accordance with 40 CFR 60.5410, the permittee must determine initial compliance with the standards for each affected facility using the requirements in paragraphs (a) through (i) of this section. The initial compliance period begins on October 15, 2012, or upon initial startup, whichever is later, and ends no later than one year after the initial startup date for the permittee's affected facility or no later than one year after October 15, 2012. The initial compliance period may be less than one full year.

**2.120** In accordance with 40 CFR 60.5410(a), to achieve initial compliance with the standards for each well completion operation conducted at the gas well affected facility the permittee must comply with paragraphs below.

- The permittee must submit the notification required in §60.5420(a)(2).
- The permittee must submit the initial annual report for the well affected facility as required in §60.5420(b).
- The permittee must maintain a log of records as specified in §60.5420(c)(1)(i) through (iv) for each well completion operation conducted during the initial compliance period.
- For each gas well affected facility subject to both §60.5375(a)(1) and (3), as an alternative to retaining the records specified in §60.5420(c)(1)(i) through (iv), the permittee may maintain records of one or more digital photographs with the date the photograph was taken and the latitude and longitude of the well site imbedded within or stored with the digital file showing the equipment for storing or re-injecting recovered liquid, equipment for routing recovered gas to the gas flow line and the completion combustion device (if applicable) connected to and operating at each gas well completion operation that occurred during the initial compliance period. As an alternative to imbedded latitude and longitude within the digital photograph, the digital photograph may consist of a photograph of the equipment connected and operating at each well completion operation with a photograph of a separately operating GIS device within the same digital picture, provided the latitude and longitude output of the GIS unit can be clearly read in the digital photograph.

**2.121** In accordance with 40 CFR 60.5410(d), to achieve initial compliance with emission standards for the permittee's pneumatic controller affected facility the permittee must comply with the requirements specified below.

- The permittee must demonstrate initial compliance by maintaining records as specified in §60.5420(c)(4)(ii) of the permittee's determination that the use of a pneumatic controller affected facility with a bleed rate greater than 6 standard cubic feet of gas per hour is required as specified in §60.5390(a).
- The permittee own or operate a pneumatic controller affected facility located at a natural gas processing plant and the permittee's pneumatic controller is driven by a gas other than natural gas and therefore emits zero natural gas.

- The permittee own or operate a pneumatic controller affected facility located between the wellhead and a natural gas processing plant and the manufacturer's design specifications indicate that the controller emits less than or equal to 6 standard cubic feet of gas per hour.
- The permittee must tag each new pneumatic controller affected facility according to the requirements of §60.5390(b)(2) or (c)(2).
- The permittee must include the information in paragraph (d)(1) of this section and a listing of the pneumatic controller affected facilities specified in paragraphs (d)(2) and (3) of this section in the initial annual report submitted for the permittee's pneumatic controller affected facilities constructed, modified or reconstructed during the period covered by the annual report according to the requirements of §60.5420(b).
- The permittee must maintain the records as specified in §60.5420(c)(4) for each pneumatic controller affected facility.

**2.122** In accordance with 40 CFR 60.5410(f), for affected facilities at onshore natural gas processing plants, initial compliance with the VOC requirements is demonstrated if the permittee is in compliance with the requirements of §60.5400.

**2.123** In accordance with 40 CFR 60.5415(a), for each gas well affected facility, the permittee must demonstrate continuous compliance by submitting the reports required by §60.5420(b) and maintaining the records for each completion operation specified in §60.5420(c)(1).

**2.124** In accordance with 40 CFR 60.5415(d), for each pneumatic controller affected facility, the permittee must demonstrate continuous compliance according to paragraphs (d)(1) through (3) of this section.

- The permittee must continuously operate the pneumatic controllers as required in §60.5390(a), (b), or (c).
- The permittee must submit the annual report as required in §60.5420(b).
- The permittee must maintain records as required in §60.5420(c)(4).

**2.125** In accordance with 40 CFR 60.5415(f), for affected facilities at onshore natural gas processing plants, continuous compliance with VOC requirements is demonstrated if the permittee is in compliance with the requirements of §60.5400.

**2.126** In accordance with 40 CFR 60.5415(h), affirmative defense for violations of emission standards during malfunction. In response to an action to enforce the standards set forth in §§60.5375, 60.5380, 60.5385, 60.5390, 60.5395, 60.5400, and 60.5405, the permittee may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at §60.2. Appropriate penalties may be assessed, however, if the permittee fails to meet the burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

- To establish the affirmative defense in any action to enforce such a standard, the permittee must timely meet the reporting requirements in §60.5415(h)(2), and must prove by a preponderance of evidence that:
    - The violation:
        - Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

        - Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and
        - Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and
        - Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and
    - Repairs were made as expeditiously as possible when a violation occurred. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and
    - The frequency, amount and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and
    - If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and
    - All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment and human health; and
    - All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and
    - All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and
    - At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and
    - A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.
- Report. The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (h)(1) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

**2.127** In accordance with 40 CFR 60.5420(a), the permittee must submit the notifications according to paragraphs (a)(1) and (2) of this section if the permittee owns or operates one or more of the affected facilities specified in §60.5365 that was constructed, modified, or reconstructed during the reporting period.

- If the permittee owns or operates a gas well, pneumatic controller, centrifugal compressor, reciprocating compressor or storage vessel affected facility the permittee is not required to submit the notifications required in §60.7(a)(1), (3), and (4).

- If the permittee owns or operates a gas well affected facility, the permittee must submit a notification to the Administrator no later than 2 days prior to the commencement of each well completion operation listing the anticipated date of the well completion operation. The notification shall include contact information for the owner or operator; the API well number, the latitude and longitude coordinates for each well in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983; and the planned date of the beginning of flowback. The permittee may submit the notification in writing or in electronic format.
    - If the permittee is subject to state regulations that require advance notification of well completions and the permittee has met those notification requirements, then the permittee is considered to have met the advance notification requirements of paragraph (a)(2)(i) of this section.

**2.128** In accordance with 40 CFR 60.5420(b), the permittee must submit annual reports containing the information specified below to the Administrator and performance test reports as specified below. The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to §60.5410. Subsequent annual reports are due no later than same date each year as the initial annual report. If the permittee owns or operates more than one affected facility, the permittee may submit one report for multiple affected facilities provided the report contains all of the information required as specified below. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. The permittee may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

- The general information specified below.
    - The company name and address of the affected facility.
    - An identification of each affected facility being included in the annual report.
    - Beginning and ending dates of the reporting period.
    - A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- For each gas well affected facility, the information below.
    - Records of each well completion operation as specified in paragraph (c)(1)(i) through (iv) of this section for each gas well affected facility conducted during the reporting period. In lieu of submitting the records specified in paragraph (c)(1)(i) through (iv), the owner or operator may submit a list of the well completions with hydraulic fracturing completed during the reporting period and the records required by paragraph (c)(1)(v) of this section for each well completion.
    - Records of deviations specified in paragraph (c)(1)(ii) of this section that occurred during the reporting period.
- For each pneumatic controller affected facility, the information specified below.
    - An identification of each pneumatic controller constructed, modified or reconstructed during the reporting period, including the identification information specified in §60.5390(b)(2) or (c)(2).

- If applicable, documentation that the use of pneumatic controller affected facilities with a natural gas bleed rate greater than 6 standard cubic feet per hour are required and the reasons why.
- Records of deviations specified in paragraph (c)(4)(v) of this section that occurred during the reporting period.

- Within 60 days after the date of completing each performance test (see §60.8 of this part) as required by this subpart, except testing conducted by the manufacturer as specified in §60.5413(d), the permittee must submit the results of the performance tests required by this subpart to the EPA as follows. The permittee must use the latest version of the EPA's Electronic Reporting Tool (ERT) (see http://www.epa.gov/ttn/chief/ert/index.html) existing at the time of the performance test to generate a submission package file, which documents the performance test. The permittee must then submit the file generated by the ERT through the EPA's Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed by logging in to the EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). Only data collected using test methods supported by the ERT as listed on the ERT Web site are subject to this requirement for submitting reports electronically. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) to EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, the permittee must also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority. For any performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator shall submit the results of the performance test to the Administrator at the appropriate address listed in §60.4.
- For enclosed combustors tested by the manufacturer in accordance with §60.5413(d), an electronic copy of the performance test results required by §60.5413(d) shall be submitted via email to Oil_and_Gas_PT@EPA.GOV unless the test results for that model of combustion control device are posted at the following Web site: epa.gov/airquality/oilandgas/.

**2.129** In accordance with 40 CFR 60.5420(c), the permittee must maintain the records identified as specified in §60.7(f) and as identified below. All records required by this subpart must be maintained either onsite or at the nearest local field office for at least 5 years.

- The records for each gas well affected facility as specified below.
  - Records identifying each well completion operation for each gas well affected facility;
  - Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in §60.5375.
  - Records required in §60.5375(b) or (f) for each well completion operation conducted for each gas well affected facility that occurred during the reporting period. The permittee must maintain the records specified in paragraphs below.

        - For each gas well affected facility required to comply with the requirements of §60.5375(a), the permittee must record: The location of the well; the API well number; the duration of flowback; duration of recovery to the flow line; duration of combustion; duration of venting; and specific reasons for venting in lieu of capture or combustion. The duration must be specified in hours of time.
        - For each gas well affected facility required to comply with the requirements of §60.5375(f), the permittee must maintain the records specified in paragraph (c)(1)(iii)(A) of this section except that the permittee does not have to record the duration of recovery to the flow line.
    - For each gas well facility for which the permittee claims an exception under §60.5375(a)(3), the permittee must record: The location of the well; the API well number; the specific exception claimed; the starting date and ending date for the period the well operated under the exception; and an explanation of why the well meets the claimed exception.
    - For each gas well affected facility required to comply with both §60.5375(a)(1) and (3), if the permittee is using a digital photograph in lieu of the records required in paragraphs (c)(1)(i) through (iv) of this section, the permittee must retain the records of the digital photograph as specified in §60.5410(a)(4).
- For each pneumatic controller affected facility, the permittee must maintain the records identified below.
    - Records of the date, location and manufacturer specifications for each pneumatic controller constructed, modified or reconstructed.
    - Records of the demonstration that the use of pneumatic controller affected facilities with a natural gas bleed rate greater than the applicable standard are required and the reasons why.
    - If the pneumatic controller is not located at a natural gas processing plant, records of the manufacturer's specifications indicating that the controller is designed such that natural gas bleed rate is less than or equal to 6 standard cubic feet per hour.
    - If the pneumatic controller is located at a natural gas processing plant, records of the documentation that the natural gas bleed rate is zero.
    - Records of deviations in cases where the pneumatic controller was not operated in compliance with the requirements specified in §60.5390.

**2.130** In accordance with 40 CFR 60.5421(b), the following recordkeeping requirements apply to pressure relief devices subject to the requirements of §60.5401(b)(1) of this subpart.

- When each leak is detected as specified in §60.5401(b)(2), a weatherproof and readily visible identification, marked with the equipment identification number, must be attached to the leaking equipment. The identification on the pressure relief device may be removed after it has been repaired.
- When each leak is detected as specified in §60.5401(b)(2), the following information must be recorded in a log and shall be kept for 2 years in a readily accessible location:

- The instrument and operator identification numbers and the equipment identification number.
- The date the leak was detected and the dates of each attempt to repair the leak.
- Repair methods applied in each attempt to repair the leak.
- "Above 500 ppm" if the maximum instrument reading measured by the methods specified in paragraph (a) of this section after each repair attempt is 500 ppm or greater.
- "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
- The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.
- The expected date of successful repair of the leak if a leak is not repaired within 15 days.
- Dates of process unit shutdowns that occur while the equipment is unrepaired.
- The date of successful repair of the leak.
- A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §60.482-4a(a). The designation of equipment subject to the provisions of §60.482-4a(a) must be signed by the owner or operator.

**2.131** In accordance with 40 CFR 60.5422(b), the permittee must include the following information in the initial semiannual report in addition to the information required in §60.487a(b)(1) through (4): Number of pressure relief devices subject to the requirements of §60.5401(b) except for those pressure relief devices designated for no detectable emissions under the provisions of §60.482-4a(a) and those pressure relief devices complying with §60.482-4a(c).

**2.132** In accordance with 40 CFR 60.5422(c), the permittee must include the following information in all semiannual reports in addition to the information required in §60.487a(c)(2)(i) through (vi):

- Number of pressure relief devices for which leaks were detected as required in §60.5401(b)(2); and
- Number of pressure relief devices for which leaks were not repaired as required in §60.5401(b)(3).

**2.133** NSPS 40 CFR 60 – General Provisions

The permittee shall comply with the requirements of 40 CFR 60, Subpart A – General Provisions. A summary of applicable requirements for affected facilities is provided in the following table:

**Table 2.2 Subpart A – General Provisions**

| Citation | Subject | Explanation |
|---|---|---|
| 40 CFR 60.1 | General Applicability of the General Provisions | |
| 40 CFR 60.2 | Definitions | Additional terms defined in §60.5430. |
| 40 CFR 60.3 | Units and abbreviations | |
| 40 CFR 60.4 | Address | |
| 40 CFR 60.5 | Determination of construction or modification | |
| 40 CFR 60.6 | Review of Plans | |
| 40 CFR 60.7 | Notification and record keeping | Except that §60.7 only applies as specified in §60.5420(a). |
| 40 CFR 60.8 | Performance tests | Performance testing is required for control devices used on storage vessels and centrifugal compressors. |
| 40 CFR 60.9 | Availability of information | |
| 40 CFR 60.10 | State authority | |
| 40 CFR 60.12 | Circumvention | |
| 40 CFR 60.13 | Monitoring requirements | Continuous monitors are required for storage vessels. |
| 40 CFR 60.14 | Modification | |
| 40 CFR 60.15 | Reconstruction | |
| 40 CFR 60.16 | Priority list | |
| 40 CFR 60.17 | Incorporations by reference | |
| 40 CFR 60.18 | General control device requirements | Except that §60.18 does not apply to flares. |
| 40 CFR 60.19 | General notification and reporting requirement | |

**2.134** Unless expressly provided otherwise, any reference in this permit to any document identified in IDAPA 58.01.01.107.03 shall constitute the full incorporation into this permit of that document for the purposes of the reference, including any notes and appendices therein. Documents include, but are not limited to:

- Standards of Performance for New Stationary Sources (NSPS), 40 CFR Part 60, Subpart OOOO and JJJJ.
- National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT), 40 CFR Part 63, Subpart ZZZZ

For permit conditions referencing or cited in accordance with any document incorporated by reference (including permit conditions identified as NSPS or NESHAP), should there be any conflict between the requirements of the permit condition and the requirements of the document, the requirements of the document shall govern, including any amendments to that regulation.

# 3 Compressor Engine 1

### 3.1 Process Description

Natural gas is compressed at the facility prior to transport to the refrigeration plant. The compressors will be driven by a 690 bhp Caterpillar natural gas-fired IC engine. The engine manufacture date has not been determined and is subject to 40 CFR 63, Subpart ZZZZ and/or 40 CFR 60 Subpart JJJJ if the engines are manufactured after June 12, 2006.

**[February 22, 2016]**

### 3.2 Control Device Descriptions

**Table 3.1 Compressor Engines Description**

| Emissions Units / Processes | Control Devices |
|---|---|
| Compressor Engine 1 | None |

## Emission Limits

### 3.3 Opacity Limit

Emissions from the Compressor Engine stack, or any other stack, vent, or functionally equivalent opening associated with the compressor engines, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

## Operating Requirements

### 3.4 Fuel Type Restriction

Compressor Engine 1 shall be fired on natural gas exclusively.

## Monitoring and Recordkeeping Requirements

### 3.5 Opacity Monitoring

The permittee shall conduct a quarterly facility-wide inspection of potential sources of visible emissions, during daylight hours and under normal operating conditions. The inspection shall consist of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emission, the permittee shall either

c) take appropriate corrective action as expeditiously as practicable to eliminate the visible emissions. Within 24 hours of the initial see/no see evaluation and after the corrective action, the permittee shall conduct a see/no see evaluation of the emissions point in question. If the visible emissions are not eliminated, the permittee shall comply with b).

or

d) perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20%, as measured using Method 9, for a period or periods aggregating more than three minutes in any 60-minute period, the permittee shall take all necessary corrective action and report the exceedance in accordance with IDAPA 58.01.01.130-136.

The permittee shall maintain records of the results of each visible emission inspection and each opacity test when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

## *Federal Requirements*

## *40 CFR 63 Subpart ZZZZ Requirements*

## *"National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"*

**3.6** In accordance with 40 CFR 63.6595(a)(1), the permittee must comply with the applicable emission and operating limitations of the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ by October 19, 2013 or upon installation.

**3.7** In accordance with 40 CFR 63.6603, the permittee shall comply with the requirements in Table 2d to install NSCR (non-selective catalytic reduction) to reduce HAP emissions on Compressor Engine 1.

**3.8** In accordance with 40 CFR 63.6605, the permittee shall, at all times, operate and maintain Compressor Engine 1, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

**3.9** In accordance with 40 CFR 63.6612, the permittee shall conduct any initial performance test or other initial compliance demonstration according to Table 5 to this subpart within 180 days after the compliance date of October 19, 2013. In order to comply with the requirement to reduce CO and THC emissions, the permittee shall:

- Install NSCR
- Conduct an initial compliance demonstration as specified in §63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent $O_2$, or the average reduction of emissions of THC is 30 percent or more.
- Install a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b), or install equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

**3.10** In accordance with 40 CFR 63.6625(h), the permittee shall minimize Compressor Engine 1's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

**3.11** In accordance with 40 CFR 63.6630(e), the permittee shall meet the following requirements to demonstrate initial compliance:

- The compliance demonstration must consist of at least three test runs.
- Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.
- To demonstrate compliance with the CO concentration or CO percent reduction requirement, the permittee must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.
- To demonstrate compliance with the THC percent reduction requirement, the permittee must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.
- The permittee must measure $O_2$ using one of the $O_2$ measurement methods specified in Table 4 of this subpart. Measurements to determine $O_2$ concentration must be made at the same time as the measurements for CO or THC concentration.
- To demonstrate compliance with the CO or THC percent reduction requirement, the permittee must measure CO or THC emissions and $O_2$ emissions simultaneously at the inlet and outlet of the control device.

**3.12** In accordance with 40 CFR 63.6635(a), the permittee must monitor and collect data for the Compressor Engine.

**3.13** In accordance with 40 CFR 63.6635(b), the permittee must monitor continuously at all times that Compressor Engine 1 is operating except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

**3.14** In accordance with 40 CFR 63.6635(c), the permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. The permittee must, however, use all the valid data collected during all other periods.

**3.15** In accordance with 40 CFR 63.6640(c), the annual compliance demonstration required shall be conducted according to the following requirements:

- The compliance demonstration must consist of at least one test run.
- Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.
- To demonstrate compliance with the CO concentration or CO percent reduction requirement, the permittee must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.
- To demonstrate compliance with the THC percent reduction requirement, the permittee must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

- The permittee must measure $O_2$ using one of the $O_2$ measurement methods specified in Table 4 of this subpart. Measurements to determine $O_2$ concentration must be made at the same time as the measurements for CO or THC concentration.
- To demonstrate compliance with the CO or THC percent reduction requirement, the permittee must measure CO or THC emissions and $O_2$ emissions simultaneously at the inlet and outlet of the control device.
- If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the permittee demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.

**3.16** In accordance with 40 CFR 63.6645(a), the permittee shall submit all of the notifications in §§63.7(b) and (c) that apply by the dates specified for Compressor Engine 1.

**3.17** In accordance with 40 CFR 63.6645(g), the permittee shall submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in §63.7(b)(1) for Compressor Engine 1.

**3.18** In accordance with 40 CFR 63.6645(h), the permittee shall submit a Notification of Compliance Status according to §63.9(h)(2)(ii) for Compressor Engine 1.

- The permittee shall submit the Notification of Compliance Status before the close of business on the 30$^{th}$ day following the completion of the initial compliance demonstration.

**3.19** In accordance with 40 CFR 63.6650(b), the permittee shall, for semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for the affected source in §63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for the source in §63.6595.

- The permittee shall ensure, for semiannual Compliance reports, that the first Compliance report be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date.
- The permittee shall ensure, for semiannual Compliance reports, each subsequent Compliance report cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
- The permittee shall ensure, for semiannual Compliance reports, each subsequent Compliance report be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

**3.20** In accordance with 40 CFR 63.6650(c), the permittee's Compliance report must contain the following:

- Company name and address.
- Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.
- Date of report and beginning and ending dates of the reporting period.

- If a malfunction occurred during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by the permittee during a malfunction to minimize emissions including actions taken to correct a malfunction.
- If there are no deviations from any emission or operating limitations that apply, a statement that there were no deviations from the emission or operating limitations during the reporting period.

**3.21** In accordance with 40 CFR 63.6655(a), the permittee shall keep the following records:

- A copy of each notification and report that is submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that is submitted.
- Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.
- Records of performance tests and performance evaluations.
- Records of all required maintenance performed on the air pollution control and monitoring equipment.
- Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

**3.22** In accordance with 40 CFR 63.6655(d), the permittee shall keep the records required in Table 6 to this subpart to show compliance with each emission or operating limitation for Compressor Engine 1.

**3.23** In accordance with 40 CFR 63.6655 (e), the permittee shall keep the records of the maintenance conducted on the stationary RICE, Compressor Engine 1, in order to demonstrate that the permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the permittee's own maintenance plan.

**3.24** In accordance with 40 CFR 63.6660(a), the permittee shall keep the records in a form suitable and readily available for expeditious review according to 40 CFR 63.10(b)(1).

**3.25** In accordance with 40 CFR 63.6660(b), the permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

**3.26** In accordance with 40 CFR 63.6660(c), the permittee shall keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1).

**3.27** NESHAPS 40 CFR 63 – General Provisions

The permittee shall comply with the requirements of 40 CFR 63, Subpart A – General Provisions. A summary of applicable requirements for affected facilities is provided in the following table:

**Table 3.2 Subpart A – General Provisions**

| Citation | Subject | Explanation |
|---|---|---|
| 40 CFR 63.1(a)(1)-(12) | General Applicability | |
| 40 CFR 63.1(b)(1)-(3) | Initial Applicability Determination | Applicability of subpart ZZZZ is also specified in 40 CFR 63.6585 |
| 40 CFR 63.1(c)(1) | Applicability After Standard Established | |
| 40 CFR 63.1(c)(2) | Applicability of Permit Program for Area Sources | |
| 40 CFR 63.1(c)(5) | Notifications | |
| 40 CFR 63.2 | Definitions | Additional definitions are specified in 40 CFR 63.6675. |
| 40 CFR 63.3(a)–(c) | Units and Abbreviations | |
| 40 CFR 63.4(a)(1)–(5) | Prohibited Activities | |
| 40 CFR 63.4(b)–(c) | Circumvention/Fragmentation | |
| 40 CFR 63.6(a) | Compliance With Standards and Maintenance Requirements—Applicability | |
| 40 CFR 63.6(b)(1)-(7) | Compliance Dates for New and Reconstructed Sources | 40 CFR 63.6595 specifies the compliance dates. |
| 40 CFR 63.6(c)(1)-(5) | Compliance Dates for Existing Sources | 40 CFR 63.6595 specifies the compliance dates. |
| 40 CFR 63.6(f)(2)-(3) | Methods for Determining Compliance | |
| 40 CFR 63.6(g)(1)-(3) | Use of an Alternative Standard | |
| 40 CFR 63.6(i)(1)-(16) | Extension of Compliance | |
| 40 CFR 63.6(j) | Presidential Compliance Exemption | |
| 40 CFR 63.7(a)(1)-(2) | Performance Test Dates | 40 CFR 63.6610-6612 specify the performance test dates |
| 40 CFR 63.7(b)(1)-(2) | Notification of Performance Test and Rescheduling | 40 CFR 63.6645 specifies the notification |
| 40 CFR 63.7(e)(2) | Conduct Performance Test and reduction of data | 40 CFR 63.6620 specifies appropriate test methods |
| 40 CFR 63.7(g) | Performance Test data analysis and recordkeeping and reporting | |
| 40 CFR 63.8 | Monitoring Requirements | 40 CFR 63.6625 specifies appropriate monitoring requirements |
| 40 CFR 63.9(a)-(e), (g)-(j) | Notification Requirements | 40 CFR 63.645 specifies notification requirements. |
| 40 CFR 63.10(a) | Recordkeeping/Reporting—Applicability and General Information | |
| 40 CFR 63.10(b)(1) | General Recordkeeping Requirements | Additional requirements are specified in 40 CFR 63.6655 |
| 40 CFR 63.10(b)(2)(xii) | Waiver of recordkeeping requirements | |
| 40 CFR 63.10(b)(2)(xiv) | Records supporting notifications | |
| 40 CFR 63.10(b)(3) | Recordkeeping Requirements for Applicability Determinations | |
| 40 CFR 63.10(d)(1) | General Reporting Requirements | Additional requirements are specified in 40 CFR 63.6650 |
| 40 CFR 63.10(d)(4) | Progress Reports for Sources With Compliance Extensions | |
| 40 CFR 63.10(f) | Recordkeeping/Reporting Waiver | |
| 40 CFR 63.12 | State Authority and Delegations | |
| 40 CFR 63.13 | Addresses of State Air Pollution Control Agencies and EPA Regional Offices | |
| 40 CFR 63.14 | Incorporation by Reference | |
| 40 CFR 63.15 | Availability of Information/Confidentiality | |

## *40 CFR 60 Subpart JJJJ Requirements*
## *"Standards of Performance for Stationary Spark Ignition Internal Combustion Engines"*

**3.28** In accordance with 40 CFR 60.4233, the permittee must comply with the emission standards in Table 1 to this subpart for Compressor Engine 1.

**Table 3.3 Table 1 to Subpart JJJJ of Part 60 – $NO_x$, CO and VOC Emission Standards for Stationary Non-Emergency SI Gas Engines ≥100 HP**

| Engine type and fuel | Maximum engine power | Manufacture date | Emission Standards [a] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | g/hp-hr | | | ppmvd at 15% $O_2$ | | |
| | | | $NO_X$ | CO | VOC [b] | $NO_X$ | CO | VOC [b] |
| Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350) | hp≥500 | 7/1/2007 | 2.0 | 4.0 | 1.0 | 160 | 540 | 86 |
| | hp≥500 | 7/1/2010 | 1.0 | 2.0 | 0.7 | 82 | 270 | 60 |

a) Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/hp-hr or ppmvd at 15 percent $O_2$.

b) For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

**3.29** In accordance with 40 CFR 60.4234, the permittee shall operate and maintain stationary SI ICE that achieve the emission standards as required in 40 CFR 60.4233(e) over the entire life of the engine.

**3.30** In accordance with 40 CFR 60.4243(b)(1), if the permittee chooses to purchase a certified engine, the permittee shall purchase an engine certified according to procedures specified in the subpart for the same model year demonstrating compliance to one of the methods specified in paragraph (a) of the section.

**3.31** In accordance with 40 CFR 60.4243(b)(2)(ii), if the permittee chooses to purchase a non-certified engine, the permittee shall keep a maintenance plan and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition the permittee must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

**3.32** In accordance with 40 CFR 60.4244(a), each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart.

**Table 3.4 Table 2 to Subpart JJJJ of Part 60—Requirements for Performance Tests**

| For each | Complying with the requirement to | You must | Using | According to the following requirements |
|---|---|---|---|---|
| 1. Stationary SI internal combustion engine demonstrating compliance according to §60.4244. | a. limit the concentration of $NO_x$ in the stationary SI internal combustion engine exhaust. | i. Select the sampling port location and the number of traverse points; | (1) Method 1 or 1A of 40 CFR part 60, appendix A or ASTM Method D6522–00(2005)[a]. | (a) If using a control device, the sampling site must be located at the outlet of the control device. |
| | ii. Determine the $O_2$ concentration of the stationary internal combustion engine exhaust at the sampling port location; | (2) Method 3, 3A, or 3B[b] of 40 CFR part 60, appendix A or ASTM Method D6522–00(2005)[a]. | (b) Measurements to determine $O_2$ concentration must be made at the same time as the measurements for $NO_x$ concentration. | |
| | iii. Determine the exhaust flow rate of the stationary internal combustion engine exhaust; | (3) Method 2 or 19 of 40 CFR part 60. | | |
| | iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and | (4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 (incorporated by reference, see §60.17). | (c) Measurements to determine moisture must be made at the same time as the measurement for $NO_x$ concentration. | |
| | v. Measure $NO_x$ at the exhaust of the stationary internal combustion engine. | (5) Method 7E of 40 CFR part 60, appendix A, Method D6522–00(2005)[a], Method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 (incorporated by reference, see §60.17). | (d) Results of this test consist of the average of the three 1-hour or longer runs. | |
| | b. limit the concentration of CO in the stationary SI internal combustion engine exhaust. | i. Select the sampling port location and the number of traverse points; | (1) Method 1 or 1A of 40 CFR part 60, appendix A. | (a) If using a control device, the sampling site must be located at the outlet of the control device. |
| | ii. Determine the $O_2$ concentration of the stationary internal combustion engine exhaust at the sampling port location; | (2) Method 3, 3A, or 3B[b] of 40 CFR part 60, appendix A or ASTM Method D6522–00(2005)[a]. | (b) Measurements to determine $O_2$ concentration must be made at the same time as the measurements for CO concentration. | |
| | iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and | (4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 (incorporated by reference, see §60.17). | (c) Measurements to determine moisture must be made at the same time as the measurement for CO concentration. | |
| | v. Measure CO at the exhaust of the | (5) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522– | (d) Results of this test consist of the average of | |

| For each | Complying with the requirement to | You must | Using | According to the following requirements |
|---|---|---|---|---|
| | stationary internal combustion engine. | 00(2005)[a], Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see §60.17). | the three 1-hour or longer runs. | |
| | c. limit the concentration of VOC in the stationary SI internal combustion engine exhaust. | i. Select the sampling port location and the number of traverse points; | (1) Method 1 or 1A of 40 CFR part 60, appendix A. | (a) If using a control device, the sampling site must be located at the outlet of the control device. |
| | ii. Determine the $O_2$ concentration of the stationary internal combustion engine exhaust at the sampling port location; | (2) Method 3, 3A, or 3B[b] of 40 CFR part 60, appendix A or ASTM Method D6522–00(2005)[a]. | (b) Measurements to determine $O_2$ concentration must be made at the same time as the measurements for VOC concentration. | |
| | iii. Determine the exhaust flow rate of the stationary internal combustion engine exhaust; | (3) Method 2 or 19 of 40 CFR part 60. | | |
| | iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and | (4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 (incorporated by reference, see §60.17). | (c) Measurements to determine moisture must be made at the same time as the measurement for VOC concentration. | |
| | v. Measure VOC at the exhaust of the stationary internal combustion engine. | (5) Methods 25A and 18 of 40 CFR part 60, appendix A, Method 25A with the use of a methane cutter as described in 40 CFR 1065.265, Method 18 or 40 CFR part 60, appendix A,[c,d] Method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 (incorporated by reference, see §60.17). | (d) Results of this test consist of the average of the three 1-hour or longer runs. | |

a) ASTM D6522–00 is incorporated by reference; see 40 CFR 60.17. Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

b) You may use ASME PTC 19.10–1981, Flue and Exhaust Gas Analyses, for measuring the $O_2$ content of the exhaust gas as an alternative to EPA Method 3B.

c) You may use EPA Method 18 of 40 CFR part 60, appendix A, provided that you conduct an adequate presurvey test prior to the emissions test, such as the one described in OTM 11 on EPA's Web site (http://www.epa.gov/ttn/emc/prelim/otm11.pdf).

d) You may use ASTM D6420–99 (2004), Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography/Mass Spectrometry as an alternative to EPA Method 18 for measuring total nonmethane organic.

**3.33** In accordance with 40 CFR 60.4244(b), the permittee may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If the stationary SI internal combustion engine is non-operational, the permittee does not need to startup the engine solely to conduct a performance test; however, the permittee must conduct the performance test immediately upon startup of the engine.

**3.34** In accordance with 40 CFR 60.4244(c), the permittee must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

**3.35** In accordance with 40 CFR 60.4244(d), to determine compliance with the $NO_X$ mass per unit output emission limitation, convert the concentration of $NO_X$ in the engine exhaust using Equation 1:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{HP - hr} \quad \text{(Eq. 1)}$$

Where:

ER = Emission rate of NOX in g/HP-hr.

Cd = Measured NOX concentration in parts per million by volume (ppmv).

1.912×10−3 = Conversion constant for ppm NOX to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

**3.36** In accordance with 40 CFR 60.4244(e), to determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2:

$$ER = \frac{C_d \times 1.164 \times 10^{-3} \times Q \times T}{HP - hr} \quad \text{(Eq. 2)}$$

Where:

ER = Emission rate of CO in g/HP-hr.

Cd = Measured CO concentration in ppmv.

1.164×10−3 = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

**3.37** In accordance with 40 CFR 60.4244(f), when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP - hr} \quad \text{(Eq. 3)}$$

Where:

ER = Emission rate of VOC in g/HP-hr.

Cd = VOC concentration measured as propane in ppmv.

1.833×10−3 = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

**3.38** In accordance with 40 CFR 60.4244(g), if the permittee chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_{Mi}}{C_{Ai}} \quad \text{(Eq. 4)}$$

Where:

RFi = Response factor of compound i when measured with EPA Method 25A.

CMi = Measured concentration of compound i in ppmv as carbon.

CAi = True concentration of compound i in ppmv as carbon.

$$C_{icorr} = RF_i \times C_{imeas} \quad \text{(Eq. 5)}$$

Where:

Cicorr = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

Cimeas = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{Peq} = 0.6098 \times C_{icorr} \quad \text{(Eq. 6)}$$

Where:

CPeq = Concentration of compound i in mg of propane equivalent per DSCM.

**3.39** In accordance with 40 CFR 60.4245(a)(1) and (2), the permittee shall keep records of the following information:

- For each engine notifications submitted and all documentation supporting any notification.
- Maintenance conducted on each SI engine.
- If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

The permittee shall maintain these records on-site and be made available to DEQ representatives upon request for a period of at least five years.

**3.40** In accordance with 40 CFR 60.4245(c), owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the following information.

- Name and address of the owner or operator;
- The address of the affected source;
- Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
- Emission control equipment; and
- Fuel used.

**3.41** In accordance with 40 CFR 60.4245(d), the permittee shall submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed.

**3.42** In accordance with 40 CFR 60.4246, the permittee shall comply with the following applicable General Provisions of 40 CFR 60:

**Table 3.5 Table 3 to Subpart JJJJ of Part 60—Applicability of General Provisions to Subpart JJJJ**

| General Provision Citation | Subject of citation | Applies to subpart | Explanation |
|---|---|---|---|
| §60.1 | General applicability of the General Provisions | Yes | |
| §60.2 | Definitions | Yes | Additional terms defined in §60.4248. |
| §60.3 | Units and abbreviations | Yes | |
| §60.4 | Address | Yes | |
| §60.5 | Determination of construction or modification | Yes | |
| §60.6 | Review of plans | Yes | |
| §60.7 | Notification and Recordkeeping | Yes | Except that §60.7 only applies as specified in §60.4245. |
| §60.8 | Performance tests | Yes | Except that §60.8 only applies to owners and operators who are subject to performance testing in subpart JJJJ. |
| §60.9 | Availability of information | Yes | |
| §60.10 | State Authority | Yes | |
| §60.11 | Compliance with standards and maintenance requirements | Yes | Requirements are specified in subpart JJJJ. |
| §60.12 | Circumvention | Yes | |
| §60.13 | Monitoring requirements | No | |
| §60.14 | Modification | Yes | |
| §60.15 | Reconstruction | Yes | |
| §60.16 | Priority list | Yes | |
| §60.17 | Incorporations by reference | Yes | |
| §60.18 | General control device requirements | No | |
| §60.19 | General notification and reporting requirements | Yes | |

# 4 General Provisions

## General Compliance

**4.1** The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the "Rules for the Control of Air Pollution in Idaho." The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit, the "Rules for the Control of Air Pollution in Idaho," and the Environmental Protection and Health Act (Idaho Code §39-101, et seq.)

**[Idaho Code §39-101, et seq.]**

**4.2** The permittee shall at all times (except as provided in the "Rules for the Control of Air Pollution in Idaho") maintain in good working order and operate as efficiently as practicable all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

**[IDAPA 58.01.01.211, 5/1/94]**

**4.3** Nothing in this permit is intended to relieve or exempt the permittee from the responsibility to comply with all applicable local, state, or federal statutes, rules, and regulations.

**[IDAPA 58.01.01.212.01, 5/1/94]**

## Inspection and Entry

**4.4** Upon presentation of credentials, the permittee shall allow DEQ or an authorized representative of DEQ to do the following:

- Enter upon the permittee's premises where an emissions source is located, emissions-related activity is conducted, or where records are kept under conditions of this permit;
- Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
- Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
- As authorized by the Idaho Environmental Protection and Health Act, sample or monitor, at reasonable times, substances or parameters for the purpose of determining or ensuring compliance with this permit or applicable requirements.

**[Idaho Code §39-108]**

## Construction and Operation Notification

**4.5** This permit shall expire if construction has not begun within two years of its issue date, or if construction is suspended for one year.

**[IDAPA 58.01.01.211.02, 5/1/94]**

**4.6** The permittee shall furnish DEQ written notifications as follows:

- A notification of the date of initiation of construction, within five working days after occurrence; except in the case where pre-permit construction approval has been granted then notification shall be made within five working days after occurrence or within five working days after permit issuance whichever is later;
- A notification of the date of any suspension of construction, if such suspension lasts for one year or more;

- A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty days or less than thirty days prior to such date; and
- A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date; and
- A notification of the initial date of achieving the maximum production rate, within five working days after occurrence - production rate and date.

**[IDAPA 58.01.01.211.03, 5/1/94]**

## Performance Testing

**4.7** If performance testing (air emissions source test) is required by this permit, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test date or shorter time period as approved by DEQ. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests that such testing not be performed on weekends or state holidays.

**4.8** All performance testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, at least 30 days prior to conducting any performance test, the permittee is encouraged to submit a performance test protocol to DEQ for approval. The written protocol shall include a description of the test method(s) to be used, an explanation of any or unusual circumstances regarding the proposed test, and the proposed test schedule for conducting and reporting the test.

**4.9** Within 30 days, or up to 60 days when requested following the date in which a performance test required by this permit is concluded, the permittee shall submit to DEQ a performance test report. The written report shall include a description of the process, identification of the test method(s) used, equipment used, all process operating data collected during the test period, and test results, as well as raw test data and associated documentation, including any approved test protocol.

**[IDAPA 58.01.01.157, 4/5/00]**

## Monitoring and Recordkeeping

**4.10** The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this permit. Monitoring records shall include, but not be limited to, the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.

**[IDAPA 58.01.01.211, 5/1/94]**

## Excess Emissions

**4.11** The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130–136 for excess emissions due to start-up, shut-down, scheduled maintenance, safety measures, upsets, and breakdowns.

**[IDAPA 58.01.01.130–136, 4/5/00]**

## Certification

**4.12** All documents submitted to DEQ—including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification—shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

**[IDAPA 58.01.01.123, 5/1/94]**

## False Statements

**4.13** No person shall knowingly make any false statement, representation, or certification in any form, notice, or report required under this permit or any applicable rule or order in force pursuant thereto.

**[IDAPA 58.01.01.125, 3/23/98]**

## Tampering

**4.14** No person shall knowingly render inaccurate any monitoring device or method required under this permit or any applicable rule or order in force pursuant thereto.

**[IDAPA 58.01.01.126, 3/23/98]**

## Transferability

**4.15** This permit is transferable in accordance with procedures listed in IDAPA 58.01.01.209.06.

**[IDAPA 58.01.01.209.06, 4/11/06]**

## Severability

**4.16** The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**[IDAPA 58.01.01.211, 5/1/94]**