

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Air Quality Control Commission

REGULATION NUMBER 7

CONTROL OF OZONE VIA OZONE PRECURSORS AND CONTROL OF HYDROCARBONS VIA OIL AND GAS EMISSIONS

(EMISSIONS OF VOLATILE ORGANIC COMPOUNDS AND NITROGEN OXIDES)

5 CCR 1001-9

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II. General Provisions

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II.B. Exemptions

Emissions of the organic compounds listed as having negligible photochemical reactivity in the common provisions definition of Negligibly Reactive Volatile Organic Compound are exempt from the provisions of this regulation.

(State Only) Notwithstanding the foregoing exemption, hydrocarbon emissions from oil and gas operations, including methane and ethane, are subject to this regulation as set forth in Sections XVII. and XVIII.

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XVII. (State Only, except Section XVII.E.3.a. which was submitted as part of the Regional Haze SIP) Statewide Controls for Oil and Gas Operations and Natural Gas-Fired Reciprocating Internal Combustion Engines

XVII.A. (State Only) Definitions

XVII.A.1 "Air Pollution Control Equipment," as used in this Section XVII, means a combustion device or vapor recovery unit. Air pollution control equipment also means alternative emissions control equipment and pollution prevention devices and processes intended to reduce uncontrolled actual emissions that comply with the requirements of Section XVII.B.2.e.

XVII.A.2. ~~"Atmospheric", when used to modify the term "condensate storage tank", means a type of condensate storage tank that vents, or is designed to vent, to the atmosphere"~~Approved Instrument Based Monitoring Method," as used in this Section XVII. means an infra-red camera, Method 21, or other Division approved instrument based monitoring device or method. If an owner/operator elects to use a Division approved Continuous Emission Monitoring program, the Division may approve a streamlined inspection and reporting program for such operations. Any instrument based monitoring method approved by the Division under this definition must be at least as effective as Method 21 or an infra-red camera.

- XVII.A.3. ~~“Condensate Storage Tank” means any production tank or series of production tanks that are manifolded together that store condensate.~~ “Auto-Igniter” means a device which will automatically attempt to relight the pilot flame in the combustion chamber of a control device in order to combust volatile organic compound emissions.
- XVII.A.4. “Component” means each pump seal, compressor seal, flange, pressure relief device, connector, open ended line, and valve that contains or contacts a process stream with hydrocarbons. Process streams consisting of glycol, amine, produced water, or methanol are not components for purposes of this Section XVII.
- XVII.A.5. “Connector” means flanged, screwed, or other joined fittings used to connect two pipes or a pipe and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Jointed fittings welded completely around the circumference of the interface are not considered connectors.
- XVII.A.6. “Date of First Production” means the date reported to the COGCC as the “first date of production.”
- XVII.A.47. “Glycol Natural Gas Dehydrator” means any device in which a liquid glycol (including ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water.
- XVII.A.8. “Multi-Well Site” means a common well pad from which multiple wells may be drilled to various bottomhole locations.
- XVII.A.9. “Natural Gas Compressor Station” means a facility which contains one or more compressors designed to compress natural gas from well pressure to gathering system pressure and recompress natural gas prior to processing.
- XVII.A.10. “Normal Operation” means all periods of operation, excluding malfunctions as defined in Section I.G. of the Common Provisions regulation. For storage tanks at well production facilities, normal operation includes but is not limited to liquid dumps from the separator.
- XVII.A.11. “Stabilized” when used to refer to crude oil, condensate, intermediate hydrocarbon liquids, or produced water means that the vapor pressure of the liquid is sufficiently low to prevent the production of vapor phase upon transferring the liquid to an atmospheric pressure in a storage tank, and that any emissions that occur are limited to those commonly referred to within the industry as working, breathing, and standing losses.
- XVII.A.12. “Storage Tank” means any fixed roof storage vessel or series of storage vessels that are manifolded together via liquid line. Storage vessel is as defined in 40 CFR Part 60, Subpart OOOO. Storage tanks may be located at a well production facility or other location.
- XVII.A.13. “Unsafe to Monitor” means a component is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of such monitoring.
- XVII.A.14. “Visible Emissions” means observations of smoke for any period or periods of duration greater than or equal to one (1) minute in any fifteen (15) minute period during normal operation. Visible emissions do not include radiant energy or water vapor.

XVII.A.15. "Well Production Facility" means all equipment at a single stationary source directly associated with one or more oil wells or gas wells. This equipment includes, but is not limited to, equipment used for storage, separation, treating, dehydration, artificial lift, combustion, compression, pumping, metering, monitoring, and flowline.

XVII.B. (State Only) General Provisions

XVII.B.1. General requirements for prevention of emissions and good air pollution control practices for all oil and gas exploration and production operations, well production facilities, natural gas compressor stations, and natural gas processing plant~~equipment, prevention of leakage, and flares and combustion devices.~~

~~XVII.B.1.a. All air pollution control equipment required by this Section XVII shall be operated and maintained pursuant to manufacturer specifications or equivalent to the extent practicable, and consistent with technological limitations and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications or equivalent on file. In addition, all such air pollution control equipment shall be adequately designed and sized to achieve the control efficiency rates required by this Section XVII and to handle reasonably foreseeable fluctuations in emissions of volatile organic compounds during normal operations. Fluctuations in emissions that occur when the separator dumps into the tank are reasonably foreseeable.~~

XVII.B.1.~~ba~~. All ~~condensate intermediate hydrocarbon liquids~~ collection, storage, processing, and handling operations, regardless of size, shall be designed, operated, and maintained so as to minimize leakage of volatile organic compounds to the atmosphere to the extent reasonably practicable.

XVII.B.1.b. At all times, including periods of start-up and shutdown, the facility and air pollution control equipment shall be maintained and operated in a manner consistent with good air pollution control practices for minimizing emissions. Determination of whether or not acceptable operating and maintenance procedures are being used will be based on information available to the Division, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

XVII.B.2. General requirements for air pollution control equipment, flares, and combustion devices used to comply with Section XVII.

XVII.B.2.a. All air pollution control equipment shall be operated and maintained pursuant to the manufacturing specifications or equivalent to the extent practicable, and consistent with technological limitations and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications or equivalent on file. In addition, all such air pollution control equipment shall be adequately designed and sized to achieve the control efficiency rates and to handle reasonably foreseeable fluctuations in emissions of volatile organic compounds and hydrocarbons during normal operations. Fluctuations in emissions that occur when the separator dumps into the tank are reasonably foreseeable.

XVII.B.~~42~~.~~eb~~. If a flare or other combustion device is used to control emissions of ~~volatile organic compounds to comply with Section XVII~~hydrocarbons, it shall be enclosed, have no visible emissions during normal operations, and be designed so ~~than that~~ an observer can, by means of visual observation from the outside of the enclosed flare or combustion device, or by other ~~convenient~~ means approved by the Division, determine whether it is operating properly.

XVII.B.12.d. Any of the effective dates for installation of controls on ~~condensate storage~~ tanks, dehydrators, and/or internal combustion engines may be extended at the ~~air pollution control~~ Division's discretion for good cause shown.

XVII.B.2.d. Auto-igniters: All combustion devices used to control emissions of hydrocarbons shall be equipped with and operate an auto-igniter as follows:

XVII.B.2.d.(i) All combustion devices installed on or after May 1, 2014, will be equipped with an operational auto-igniter upon installation of the combustion device.

XVII.B.2.d.(ii) All combustion devices installed before May 1, 2014, will be equipped with an operational auto-igniter by or before May 1, 2016, or after the next combustion device planned shutdown, whichever comes first.

XVII.B.2.e. Alternative emissions control equipment shall qualify as air pollution control equipment, and may be used in lieu of, or in combination with, combustion devices and vapor recovery units to achieve the emission reductions required by this Section XVII, if the Division approves the equipment, device or process. As part of the approval process the Division, at its discretion, may specify a different control efficiency than the control efficiencies required by this Section XVII.

XVII.B.3. Oil refineries are not subject to ~~this section of the rule~~ Section XVII.

XVII.B.4. ~~Condensate tanks, Glycol natural gas~~ dehydrators and internal combustion engines that are subject to an emissions control requirement in a federal maximum achievable control technology ("MACT") standard under 40 CFR Part 63, a Best Available Control Technology ("BACT") limit, or a New Source Performance Standard ("NSPS") under 40 CFR Part 60 are not subject to this Section XVII.

XVII.C. (State Only) Emission reduction from ~~condensate~~ storage tanks at oil and gas exploration and production operations, well production facilities, natural gas compressor stations, ~~natural gas drip stations~~ and natural gas processing plants.

XVII.C.1. Control requirements for storage tanks

XVII.C.1.a. Beginning May 1, 2008, owners or operators of all ~~atmospheric condensate~~ storage tanks storing condensate with uncontrolled actual emissions of volatile organic compounds equal to or greater than twenty (20) tons per year based on a rolling twelve-month total ~~shall must~~ operate air pollution control equipment that has an average control efficiency of at least 95% for VOCs ~~on such tanks~~.

XVII.C.1.b. Owners or operators of all storage tanks with uncontrolled actual emissions of volatile organic compounds equal to or greater than six (6) tons per year based on a rolling twelve-month total must operate air pollution control equipment that achieves an average hydrocarbon control efficiency of 95%. If a combustion device is used, it shall have a design destruction efficiency of at least 98% for hydrocarbons.

XVII.C.1.b.(i) A storage tank constructed on or after May 1, 20014, must be in compliance by the ~~date~~ that the storage tank commences operation.

XVII.C.1.b.(ii) A storage tank constructed before May 1, 2014, must be in compliance by May 1, 2015.

XVII.C.1.b.(iii) A storage tank not otherwise subject to Sections XVII.C.1.b.(i) or XVII.C.1.b.(ii), above, that increases uncontrolled actual emissions to six tons VOC or more per year on a rolling twelve month basis after May 1, 2014, must be in compliance within sixty days of discovery of the emissions increase.

XVII.C.1.c. Control requirements within 90 days of the date of first production.

XVII.C.1.c.(i) Beginning May 1, 2014, owners or operators of storage tanks at well production facilities shall collect and control emissions by routing emissions to operating air pollution control equipment during the first 90 calendar days after the date of first production. The air pollution control equipment shall achieve an average hydrocarbon control efficiency of 95%. If a combustion device is used, it shall have a design destruction efficiency of at least 98% for hydrocarbons. Except that this requirement does not apply to storage tanks that are projected to have emissions less than 1.5 tons of VOC during the first 90 days after the date of first production.

XVII.C.1.c.(ii) The air pollution control equipment and any associated monitoring equipment required pursuant to Section XVII.C.1.c., above, may be removed at any time after the first 90 calendar days as long as the source can demonstrate that uncontrolled actual emissions from the storage tank are below the threshold in Section XVII.C.1.b., above.

XVII.C.2. For condensate storage tanks with past, uncontrolled actual emissions of volatile organic compounds of less than 20 tons per year based on a rolling twelve-month total that may become subject to Section XVII.C.1. by virtue of the addition of a newly drilled well or the recompletion or stimulation of an existing well, owners or operators of such tanks shall have until 90 days after the date of 1st production of the newly drilled, recompleted or stimulated well to install and operate any required air pollution control equipment. If the owner or operator determines that emissions of volatile organic compounds will be below the 20-ton per year threshold, the owner or operator shall notify the Division of this determination in writing and include an explanation of the methodology used to make this determination. Capture requirements for storage tanks that are fitted with air pollution control equipment as required by Sections XII.D. or XVII.C.1.

XVII.C.2.a. Beginning on the applicable compliance date specified in Section XVII.C.1.b., owners and operators of storage tanks shall route all hydrocarbon emissions to air pollution control equipment, and shall operate without venting hydrocarbon emissions from the thief hatch (or other access point to the tank) or pressure relief device during normal operation unless venting is reasonably required for maintenance, gauging, or safety of personnel and equipment.

XVII.C.2.b. Beginning on the applicable compliance date specified in section XVII.C.1.b., owners and operators of storage tanks shall develop, certify, and implement a document Storage Tank Emission Management System (STEM) plan to identify appropriate strategies to minimize emissions from venting at thief hatches (or other access points to a storage tank) and pressure relief devices during normal operation. As part of STEM, owners and operators shall evaluate and employ appropriate control technologies, monitoring practices, operational practices, and/or other strategies designed to meet the requirements set forth in Section XVII.C.2.a., above, and will update the STEM plan as necessary to

achieve or maintain compliance. Owners and operators are not required to develop and implement STEM for storage tanks containing only stabilized liquids. The minimum elements of STEM are listed below.

XVII.C.2.b.(i) STEM must include a monitoring strategy that incorporates the minimum monitoring frequency set forth in Section XVII.F.5.e., procedures for evaluating ongoing storage tank emission capture performance, and, if applicable, the selected strategies.

XVII.C.2.b.(ii) STEM must include a certification by the owner or operator that the selected STEM strategy or strategies are designed to minimize emissions from storage tanks and associated equipment components at the facility or facilities, including thief hatches and pressure relief devices.

XVII.C.3. Monitoring: ~~The owner or operator of any condensate storage tank that is required to control volatile organic compound emissions pursuant to this Section XVII.C. shall visually inspect or monitor the Air Pollution Control Equipment to ensure that it is operating at least as often as condensate is loaded out from the tank, unless a more frequent inspection or monitoring schedule is followed. In addition, if a flare or other combustion device is used, the owner or operator shall visually inspect the device for visible emissions at least as often as condensate is loaded out from the tank.~~The monitoring strategy of each STEM plan must include monitoring in accordance with Approved Instrument Based Monitoring Methods, as specified in Section XVII.F.5.

XVII.C.3.a. In addition to any applicable Approved Instrument Based Monitoring Methods, audio, visual, olfactory ("AVO") inspection of the storage tank and any associated equipment (i.e. separator, air pollution control equipment, or other pressure reducing equipment), must be completed as often as liquids are loaded out from the storage tank. However, AVO inspection is required no more frequently than every seven (7) days or less frequently than every thirty (30) days. AVO monitoring is not required for components and tanks that are unsafe to monitor. AVO inspection must include, at a minimum:

XVII.C.3.a.(i) Visual inspection of any thief hatch, pressure relief valve, or other access point to ensure that they are enclosed and properly sealed;

XVII.C.3.a.(ii) Visual inspection or monitoring of the air pollution control equipment to ensure that it is operating, including that the pilot light is lit on combustion devices used as air pollution control equipment;

XVII.C.3.a.(iii) If a flare or other combustion device is used, visual inspection of the auto-igniter and valves for piping of gas to the pilot light, to ensure they are functioning properly;

XVII.C.3.a.(iv) Visual inspection of the air pollution control equipment to ensure that the valves for the piping from the storage tank to the air pollution control equipment are open; and

XVII.C.3.a.(v) If a flare or other combustion device is used, inspection of the device for the presence of absence of smoke. If smoke is observed, either the equipment will be immediately shut-in to investigate that potential cause for smoke and perform repairs, as necessary, or Method 22 shall be conducted to determine whether visible emissions are present for a period of at least one (1) minute in fifteen (15) minutes.

XVII.C.4. Recordkeeping: The owner or operator of each ~~condensate~~ storage tank subject to XII.D. or XVII.C. must shall maintain the following records for a period of five years of STEM as applicable, including the plan, any updates, and the certification, to be made available to the Division upon request. In addition, for a period of two years, the owner or operator must maintain records of any required monitoring and make them available to the Division upon request, including:

XVII.C.4.a. ~~Monthly condensate production from the tank~~The AIRS ID for the storage tank.

XVII.C.4.b. ~~For any condensate storage tank required to be controlled pursuant to this Section XVII.C., the date, time and duration of any period where the air pollution control equipment is not operating. The duration of a period of non-operation shall be from the time that the air pollution control equipment was last observed to be operating until the time the equipment recommences operation~~The date and duration of any period where the thief hatch, pressure relief device, or other access point are found to be venting hydrocarbon emissions.

XVII.C.4.c. ~~For tanks where a flare or other combustion device is being used, the date and time of any instances where visible emissions are observed from the device~~The date and duration of any period where the air pollution control equipment is not operating.

XVII.C.4.d. Where a flare or other combustion device is being used, the date and result of any Method 22 test.

XVII.C.4.e. The timing of and efforts made to eliminate venting, restore operation of air pollution control equipment, and mitigate visible emissions.

XVII.D. (State Only) Emission reductions from glycol natural gas dehydrators

XVII.D.1. Beginning May 1, 2008, still vents and vents from any flash separator or flash tank on a glycol natural gas dehydrator located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant subject to control requirements pursuant to Section XVII.D.2., shall reduce uncontrolled actual emissions of volatile organic compounds by at least 90 percent through the use of a condenser or air pollution control equipment.

XVII.D.2. The control requirement in Section XVII.D.1. shall apply where:

XVII.D.2.a. Actual uncontrolled emissions of volatile organic compounds from the glycol natural gas dehydrator are equal to or greater than two tons per year; and

XVII.D.2.b. The sum of actual uncontrolled emissions of volatile organic compounds from any single glycol natural gas dehydrator or grouping of glycol natural gas dehydrators at a single stationary source is equal to or greater than 15 tons per year. To determine if a grouping of dehydrators meets or exceeds the 15 tons per year threshold, sum the total actual uncontrolled emissions of volatile organic compounds from all individual dehydrators at the stationary source, including those with emissions less than two tons per year.

XVII.D.3. Beginning May 1, 2015, still vents and vents from any flash separator or flash tank on a glycol natural gas dehydrator located at an oil and gas exploration and production operation, natural gas compressor station, and drip station or gas-processing

plant subject to control requirements pursuant to Section XVII.D.4., shall reduce uncontrolled actual emissions of hydrocarbons by at least 95 percent on a rolling twelve-month basis through the use of a condenser or air pollution control equipment. If a combustion device is used, it shall have a design destruction efficiency of at least 98% for hydrocarbons.

XVII.D.4. The control requirement in Section XVII.D.3. shall apply where:

XVII.D.4.a. Actual uncontrolled emissions of volatile organic compounds from a single new glycol natural gas dehydrator are equal to or greater than two tons per year; or

XVII.D.4.b. Actual uncontrolled emissions of volatile organic compounds from a single existing glycol natural gas dehydrator are equal to or greater than six (6) tons per year, or two (2) tons per year if the glycol natural gas dehydrator is located within 1,320 feet of a building unit or designated outside activity area.

XVII.D.4.c. For purposes of Section XVII.D.4.:

XVII.D.4.c.(i) Building Unit shall mean a residential building unit, and every five thousand (5,000) square feet of building floor area in commercial facilities or every fifteen thousand (15,000) square feet of building floor area in warehouses that are operating and normally occupied during working hours.

XVII.D.4.c.(ii) A designated outside activity area shall mean an outdoor venue or recreation area, such as a playground, permanent sports field, amphitheater, or other similar place of public assembly owned or operated by a local government, which the local government seeks to have established as a Designated Outside Activity Area; or an outdoor venue or recreation area where ingress to or egress from could be impeded in the event of an emergency condition at an oil and gas location less than three hundred and fifty (350) feet from the venue due to the configuration of the venue and the number of persons known or expected to simultaneously occupy the venue on a regular basis.

XVII.E. Control of emissions from new, modified, existing, and relocated natural gas fired reciprocating internal combustion engines.

XVII.E.1. (State Only) The requirements of this Section XVII.E. shall not apply to any engine having actual uncontrolled emissions below permitting thresholds listed in Regulation Number 3, Part B.

XVII.E.2. (State Only) New, Modified and Relocated Natural Gas Fired Reciprocating Internal Combustion Engines

XVII.E.2.a. Except as provided in Section XVII.E.2.b. below, the owner or operator on any natural gas fired reciprocating internal combustion engine that is either constructed or relocated to the state of Colorado from another state, on or after the date listed in the table below shall operate and maintain each engine according to the manufacturer's written instructions or procedures to the extent practicable and consistent with technological limitations and good engineering and maintenance practices over the entire life of the engine so that it achieves the emission standards required in Section XVII.E.2.b. Table 1 below.

XVII.E.2.b. Actual emissions from natural gas fired reciprocating internal combustion engines shall not exceed the emission performance standards in Table 1 below as expressed in units of grams per horsepower-hour (G/hp-hr)

TABLE 1				
Maximum Engine Hp	Construction or Relocation Date	Emission Standards is G/hp-hr		
		NOx	CO	VOC
< 100 Hp	Any	NA	NA	NA
≥100 Hp	On or after January 1, 2008	2.0	4.0	1.0
and < 500 Hp	On or after January 1, 2011	1.0	2.0	0.7
≥500 Hp	On or after July 1, 2007	2.0	4.0	1.0
	On or after July 1, 2010	1.0	2.0	0.7

XVII.E.3. Existing Natural Gas Fired Reciprocating Internal Combustion Engines

XVII.E.3.a. (Regional Haze SIP) Rich Burn Reciprocating Internal Combustion Engines

XVII.E.3.a.(i) Except as provided in Sections XVII.3.1.(i)(b) and (c) and XVII.E.3.a.(ii), all rich burn reciprocating internal combustion engines with a manufacturer's name plate design rate greater than 500 horsepower, constructed or modified before February 1, 2009 shall install and operate both a non-selective catalytic reduction system and an air fuel controller by July 1, 2010. A rich burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of less than 2% by volume.

XVII.E.3.a.(i)(a) All control equipment required by this Section XVII.E.3.a. shall be operated and maintained pursuant to manufacturer specifications or equivalent to the extent practicable, and consistent with technological limitations and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications or equivalent on file.

XVII.E.3.a.(i)(b) Internal combustion engines that are subject to an emissions control requirement in a federal maximum achievable control technology ("MACT") standard under 40 CFR Part 63, a Best Available Control Technology ("BACT") limit, or a New Source Performance Standard under 40 CFR Part 60 are not subject to this Section XVII.E.3.a.

XVII.E.3.a.(i)(c) The requirements of this Section XVII.E.3.a. shall not apply to any engine having actual uncontrolled emissions below permitting thresholds listed in Regulation Number 3, Part B.

XVII.E.3.a.(ii) Any rich burn reciprocating internal combustion engine constructed or modified before February 1, 2009, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than \$ 5,000 per ton of combined volatile organic compound and nitrogen oxides emission reductions (this value shall be adjusted for future applications according to the current day consumer price index) is exempt complying with Section XVII.E.3.a. Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an application making such a demonstration, together with all supporting documents, to the Division by August 1, 2009.

XVII.E.3.b. (State Only) Lean Burn Reciprocating Internal Combustion Engines

XVII.E.3.b.(i) Except as provided in Section XVII.E.3.b.(ii), all lean burn reciprocating internal combustion engines with a manufacturer's nameplate design rate greater than 500 horsepower shall install and operate an oxidation catalyst by July 1, 2010. A lean burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of 2% by volume, or greater.

XVII.E.3.b.(ii) Any lean burn reciprocating internal combustion engine constructed or modified before February 1, 2009, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than \$ 5,000 per ton of volatile organic compound emission reduction (this value shall be adjusted for future applications according to the current day consumer price index) is exempt complying with Section XVII.E.3.b.(i). Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an application making such a demonstration, together with all supporting documents, to the Division by August 1, 2009.

XVII.F. (State Only) Leak detection and repair program for well production facilities, storage tanks, and compressor stations

XVII.F.1. Beginning January 1, 2015, owners and operators of well production facilities and compressor stations will identify and repair leaks from components at these facilities in accordance with the requirements of this Section XVII.F. The following shall apply in lieu of any directed inspection and maintenance program requirements established pursuant to Regulation Number 3, Part B, Section III.D.2.

XVII.F.2. Owners and operators of well production facilities or natural gas compressor stations that monitor components as part of this Section XVII.F. may opt to estimate emissions from components for the purpose of evaluating the applicability of component fugitive emissions to Regulation Number 3 by utilizing the emission factors defined as less than 10,000 ppmv of Table 2-8 of the 1995 EPA Protocol for Equipment Leak Emission Estimates (Document EPA-453/R-95-017).

XVII.F.3. Owners and operators of well production facilities or natural gas compressor stations shall utilize the Approved Instrument Based Monitoring Method and AVO program as outlined in Section XVII.F. AVO monitoring is not required of components and tanks that are unsafe to monitor or inaccessible to monitor, pursuant to XVII.F.5.g.

XVII.F.4. Inspection schedules for natural gas compressor stations: Beginning January 1, 2015, owners and operators of natural gas compressor stations shall inspect components for leaks using an Approved Instrument Based Monitoring Method, in accordance with the following Table 2, except for components subject to XVII.F.5.g. For purposes of this Section XVII.F.4., fugitive emissions shall be calculated using the emission factors of Table 2-4 of the 1995 EPA Protocol for Equipment Leak Emission Estimates (Document EPA-453/R-95-017), of other Division approved method.

<u>Table 2</u>	
<u>Fugitive VOC Emissions (tpy)</u>	<u>Inspection Frequency</u>
<u>>0 and < 12</u>	<u>Annually</u>
<u>> 12 and < 50</u>	<u>Quarterly</u>
<u>> 50</u>	<u>Monthly</u>

XVII.F.5. Requirements for well production facilities and/or storage tanks

XVII.F.5.a. Beginning August 1, 2014, all new well production facilities shall have a documented pressure test performed on all equipment and piping prior to start up. Documentation of this 90 day testing and monitoring shall be provided in the first annual report to the Division, as required by Section XVII.F.9.

XVII.F.5.b. Beginning January 1, 2015, within 90 days of startup of all new well production facilities and/or storage tanks, owners and/or operators shall identify and repair leaks from components using an Approved Instrument Based Monitoring Method. Such action shall qualify as an inspection pursuant to the inspection frequency schedule in Table 3.

XVII.F.5.c. Consistent with the provisions of XVII.F.5.f., owners and operators of existing well production facilities and/or storage tanks shall identify and repair leaks using an Approved Instrument Based Monitoring Method, in accordance with the implementation schedule in XVII.F.5.e. Inspection frequency shall be determined according to Table 3.

XVII.F.5.d. Consistent with the provisions of XVII.F.5.f., owners and operators of new well production facilities and/or storage tanks shall identify and repair leaks from components using an Approved Instrument Based Monitoring Method beginning on January 1, 2015. Inspection frequency shall be determined according to Table 3.

XVII.F.5.e. The estimated uncontrolled actual emissions from storage tanks determine the frequency at which inspections must be performed. If no storage tanks are located at the well production facility or multi-well site, operators will

rely on the potential to emit of VOC for all of the emissions sources, including emissions from components located at the facility. All components at a well production facility or storage tank must be inspected:

<u>Table 3</u>	
<u>Threshold (per XVII.F.5.e.) VOC Emissions (tpy, uncontrolled actual for sites with tanks or PTE for sites without tanks)</u>	<u>Inspection Frequency</u>
<u>> 0 and < 6</u>	<u>One time using Approved Instrument Based Monitoring Method and thereafter using monthly AVO</u>
<u>> 6 and < 12</u>	<u>Annually with monthly AVO</u>
<u>> 12 and < 50</u>	<u>Quarterly with monthly AVO</u>
<u>> 50</u>	<u>Monthly</u>
<u>Multi-well sites without storage tanks after April 15, 2014, that have a PTE > 20 tpy VOC</u>	<u>Monthly</u>

XVII.F.5.f. Phase-in of Approved Instrument Based Monitoring Methods: Owners and operators of existing well production facilities and/or storage tanks shall identify and repair leaks from components using an Approved Instrument Based Monitoring Method, in accordance with the following schedule:

XVII.F.5.f.(i) Beginning January 1, 2015, facilities with uncontrolled actual VOC emissions greater than 50 tpy or multi-well sites.

XVII.F.5.f.(ii) Beginning July 1, 2015, facilities with uncontrolled actual VOC emissions greater than 20 tpy but less than or equal to 50 tpy.

XVII.F.5.f.(iii) Beginning January 1, 2016, facilities with uncontrolled actual VOC emissions greater than 6 tpy but less than or equal to 20 tpy.

XVII.F.5.g.(iv) By July 1, 2016, facilities with uncontrolled actual VOC emissions less than or equal to 6 tpy.

XVII.F.5.g. If a component is difficult, unsafe, or inaccessible to monitor, the owner or operator shall not be required to monitor the component until it becomes feasible to do so.

XVII.F.5.g.(i) Difficult to monitor components are those that cannot be monitored without elevating the monitoring personnel more than two meters above a supported surface or are unable to be reached via a wheeled scissor-lift or hydraulic type scaffold that allows access to components up to 7.6 meters (25 feet) above the ground.

XVII.F.5.g.(ii) Unsafe to monitor components are those that cannot be monitored without exposing monitoring personnel to an immediate danger as a consequence of completing the monitoring.

XVII.F.5.g.(iii) Inaccessible to monitor components are those that are buried, insulated in a manner that prevents access to the components by a monitor probe, or obstructed by equipment or piping that prevents access to the components by a monitor probe.

XVII.F.6 Leak detection requiring repair: Leaks shall be identified utilizing the methods listed in this Section XVII.F.6.a. through XVII.F.6.d. Only leaks detected pursuant to this Section XVII.F.6. shall require repair under Section XVII.F.

XVII.F.6.a. For Method 21 monitoring at existing facilities, a leak is any concentration of hydrocarbon above 2,000 parts per million (ppm), except for existing well production facilities where leak is defined as any concentration of hydrocarbon above 500 ppm.

XVII.F.6.b. For Method 21 monitoring at facilities constructed after May 1, 2014, a leak is any concentration of hydrocarbon above 500 ppm.

XVII.F.6.c. For infra-red camera and AVO monitoring, a leak is any detectable emissions not associated with normal equipment operation, such as pneumatic device actuation and crank case ventilation.

XVII.F.6.d. For other Division approved monitoring devices or methods, leak identification requiring repair will be established as set forth in the Division's approval.

XVII.F.7. Repair and remonitoring

XVII.F.7.a. First attempt to repair a leak shall be made no later than five (5) working days after discovery, unless parts are unavailable, the equipment requires shutdown to complete repair, or other good cause exists. If parts are unavailable, they shall be ordered promptly and the repair shall be made within fifteen (15) working days of receipt of the parts. If shutdown is required, the leak shall be repaired during the next scheduled shutdown. If delay is attributable to other good cause, repairs shall be completed within fifteen (15) working days after the cause of delay ceases to exist.

XVII.F.7.b. Within fifteen (15) working days of completion of a repair, the leaks shall be remonitored to verify the repair was effective.

XVII.F.7.c. Leaks discovered pursuant to the leak detection methods of Section XVII.F. shall not be subject to enforcement by the Division unless the owner or operator fails to perform the required repairs in accordance with Section XVII.F.7.

XVII.F.7.d. For leaks identified using an Approved Instrument Based Monitoring Method, owners and operators have the option of either repairing the leak in accordance with the repair schedule set forth in Section XVII.F.7. or conducting follow-up monitoring using Method 21 within five (5) working days of the leak detected. If the follow-up Method 21 monitoring shows that the leak concentration is less than or equal to 2,000 ppm hydrocarbon for existing facilities (other than existing well production facilities), or 500 ppm for new

facilities or existing well production facilities, then the emission shall not be considered a leak for purposes of this Section.

XVII.F.8. Recordkeeping: The owner or operator of each facility subject to the inspection and maintenance requirements in this Section XVII.F. shall maintain the following for a period of two (2) years and make them available to the Division upon request.

XVII.F.8.a. Documentation of the pre-start-up pressure tests for new well production facilities;

XVII.F.8.b. The date and site information for each inspection;

XVII.F.8.c. A list of the leaking components and the monitoring method used to determine the presence of the leak;

XVII.F.8.d. The date of first attempt to repair the leak and, if necessary, any additional attempt to repair the leak;

XVII.F.8.e. The date the leak was repair;

XVII.F.8.f. The delayed repair list including the basis for placing leaks on the list;

XVII.F.8.g. The date the leak was remonitored to verify the effectiveness of the repair, and the results of the remonitoring; and

XVII.F.8.h. A list of identification numbers for components that are designated as unsafe or inaccessible to monitor, as described in Section XVII.F.5.g., an explanation for each component stating why the component is so designated, and the plan for monitoring such component(s).

XVII.F.9. Reporting: The owner or operator of each facility subject to the inspection and maintenance requirements in Section XVII.F. shall submit a single annual report on or before April 30th of each year summarizing inspection and maintenance activities at all of their subject facilities during the previous calendar year. This report shall contain at a minimum the following information:

XVII.F.9.a. The number of facilities inspected;

XVII.F.9.b. The total number of inspections;

XVII.F.9.c. The total number of leaks identified, broken out by component type;

XVII.F.9.d. The total number of leaks repaired;

XVII.F.9.e. The number of leaks on the delayed repair list as of December 31st; and

XVII.F.9.f. Each report shall be accompanied by a self-certification form. The form shall contain a certification by a responsible official of the truth, accuracy, and completeness of such form, report, or certification stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

XVII.G. (State Only) Control of emissions from well production facilities

XVII.G.1. Well Operation and Maintenance: On or after August 1, 2014, during normal operation gas coming off a separator produced from any newly constructed, hydraulically fractured, or recompleted oil and gas well must either be routed to a gas gathering line or controlled by air pollution control equipment that achieves an average hydrocarbon control efficiency of 95% from the date of first production. If a combustion device is used, it shall have a design destruction efficiency of at least 98% of hydrocarbons.

XVII.H. (State Only) Venting during downhole well maintenance and unloading events

XVII.H.1. Well Maintenance: Beginning May 1, 2014, hydrocarbon emissions from flowing wells must be captured or controlled during downhole well maintenance or servicing activities, unless venting is necessary for safety.

XVII.H.1.a. Operators shall use best management practices to minimize the need for well venting associated with downhole well maintenance and liquids unloading. During liquids unloading events, any means of creating differential pressure will first be used to attempt to unload the liquids from the well without venting. If these methods are not successful in unloading the liquids from the well, the well may be vented to the atmosphere to create the necessary differential pressure to bring the liquids to the surface.

XVII.H.1.b. Venting will be minimized to the extent possible, using best management practices during the well maintenance and liquids unloading events in XVII.H.1.a. The owner and/or operator shall be present on-site during any planned well maintenance and liquids unloading event in XVII.H.1.a. and shall ensure that any venting to the atmosphere is limited to the maximum extent practicable.

XVII.H.1.c. Records of the cause, date, time, and duration of venting events under this Section XVII.H. will be kept and made available to the Division upon request.

XVIII. (State Only) Natural Gas-Actuated Pneumatic Controllers Associated with Oil and Gas Operations ~~in the 8-Hour Ozone Control Area or Any Ozone Nonattainment or Attainment/Maintenance Area~~

XVIII.A. ~~Applicability~~

This section applies to pneumatic controllers that are actuated by natural gas, and located at, or upstream of natural gas processing plants (upstream activities include: oil and gas exploration and production operations, natural gas compressor stations, and/or natural gas drip stations) ~~in the 8-Hour Ozone Control Area or any Ozone Nonattainment or Attainment/Maintenance Area.~~

XVIII.B. ~~Definitions~~

XVIII.B.1. "Affected Operations" shall mean pneumatic controllers that are actuated by natural gas, and located at, or upstream of natural gas processing plants (upstream activities include: oil and gas exploration and production operations, natural gas compressor stations, and/or natural gas drip stations).

XVIII.B.2. "Enhanced Maintenance" is specific to high-bleed devices and shall include but is not limited to cleaning, tuning, and repairing leaking gaskets, tubing fittings, and seals; tuning to operate over a broader range of proportional band; and eliminating unnecessary valve positioners.

XVIII.B.3. "High-Bleed Pneumatic Controller" shall mean a pneumatic controller that is designed to have a constant bleed rate that emits in excess of 6 standard cubic feet per hour (scfh) of natural gas to the atmosphere.

XVIII.B.4. "Low-Bleed Pneumatic controller" shall mean a pneumatic controller that is designed to have a constant bleed rate that emits less than or equal to 6 scfh of natural gas to the atmosphere.

XVIII.B.5. "Natural Gas Processing Plant" shall mean any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

XVIII.B.6. "No-bleed Pneumatic Controller" shall mean any pneumatic controller that is not using hydrocarbon gas as the valve's actuating gas.

XVIII.B.6Z. "Pneumatic Controller" shall mean an instrument that is actuated using natural gas pressure and used to control or monitor process parameters such as liquid level, gas level, pressure, valve position, liquid flow, gas flow and temperature.

XVIII.C. — Emission Reduction Requirements

The owners and operators of affected operations shall reduce emissions of volatile organic compounds from pneumatic controllers associated with affected operations as follows:

XVIII.C.1. In the 8-Hour Ozone Control Area:

XVIII.C.1.a. All pneumatic controllers placed in service on or after February 1, 2009, shall emit VOCs in an amount equal to or less than a low-bleed pneumatic controller, unless allowed pursuant to Section XVIII.C.31.c.

XVIII.C.21.b. All high-bleed pneumatic controllers in service prior to February 1, 2009 shall be replaced or retrofit such that VOC emissions are reduced to an amount equal to or less than a low-bleed pneumatic controller, by May 1, 2009, unless allowed pursuant to Section XVIII.C.31.c.

XVIII.C.31.c. All high-bleed pneumatic controllers that must remain in service due to safety and/or process purposes must have Division approval and comply with Sections XVIII.D. and XVIII.E.

XVIII.C.31.ac.(i) For high-bleed pneumatic controllers in service prior to February 1, 2009, the owner/operator shall submit justification for high-bleed pneumatic controllers to remain in service due to safety and /or process purposes by March 1, 2009. The Division shall be deemed to have approved the justification if it does not object to the owner/operator within 30-days upon receipt.

XVIII.C.31.bc.(ii) For high-bleed pneumatic controllers placed in service on or after February 1, 2009, the owner/operator shall submit justification for high-bleed pneumatic controllers to be installed due to safety and /or process purposes prior to installation. The Division shall be deemed to have approved the justification if it does not object to the owner/operator within 30-days upon receipt.

XVIII.C.2. Statewide:

XVIII.C.2.a. All pneumatic controllers placed in service on or after May 1, 2014, shall:

XVIII.C.2.c.(i) Emit VOCs in an amount equal to or less than a low-bleed pneumatic controller, unless allowed pursuant to Section XVIII.C.2.c.; or

XVIII.C.2.c.(ii) Utilize no-bleed pneumatic controllers where on-site electrical grid power is being used and is technically and economically feasible.

XVIII.C.2.b. All high-bleed pneumatic controllers in service prior to May 1, 2014, shall be replaced or retrofitted by May 1, 2015, such that VOC emissions are reduced to an amount equal to or less than a low-bleed pneumatic controller, unless allowed pursuant to Section XVIII.C.2.c.

XVIII.C.2.c. All high-bleed controllers that must remain in service due to safety and/or process purposes must have Division approval and comply with Sections XVIII.D. and XVIII.E.

XVIII.C.2.c.(i) All high-bleed pneumatic controllers in service prior to May 1, 2014, the owner/operator shall submit justification for high-bleed pneumatic controllers to remain in service due to safety and/or process purposes by March 1, 2015. The Division shall be deemed to have approved the justification if it does not object to the owner/operator within 30-days upon receipt.

XVIII.C.2.c.(ii) For high-bleed pneumatic controllers placed in service on or after May 1, 2014, the owner/operator shall submit justification for high-bleed pneumatic controllers to be installed due to safety and/or process purposes prior to installation. The Division shall be deemed to have approved the justification if it does not object to the owner/operator within 30-days upon receipt.

XVIII.D. Monitoring

This section applies only to high-bleed pneumatic controllers identified in Sections XVIII.C.31.c. and XVIII.C.2.c.

XVIII.D.1. In the 8-Hour Ozone Control Area

XVIII.D.1.a. Effective May 1, 2009, each high-bleed pneumatic controller shall be physically tagged by the owner/operator identifying it with a unique high-bleed pneumatic controller number that is assigned and maintained by the owner/operator.

XVIII.D.21.b. Effective May 1, 2009, each high-bleed pneumatic controller shall be inspected on a monthly basis, perform necessary enhanced maintenance as defined in Section XVIII.B.2 , and maintain the device according to manufacturer specifications to ensure that the controller's VOC emissions are minimized.

XVIII.D.2. Statewide:

XVIII.D.2.a. Effective May 1, 2015, each high-bleed pneumatic controller shall be physically tagged by the owner/operator identifying it with a unique high-bleed pneumatic controller number that is assigned and maintained by the owner/operator.

XVIII.D.2.b. Effective May 1, 2015, each high-bleed pneumatic controller shall be inspected on a monthly basis, perform necessary enhanced maintenance as defined in Section XVIII.B.2, and maintain the device according to manufacturer specifications to ensure that the controller's VOC emissions are minimized.

XVIII.E. ~~Recordkeeping~~

This section applies only to high-bleed pneumatic controllers identified in Sections XVIII.C.31.c. and XVIII.C.2.c.

XVIII.E.1. The owner or operator of affected operations shall maintain a log of the total number of high-bleed pneumatic controllers and their associated controller numbers per facility, the total number of high-bleed pneumatic controllers per company and the associated justification that the high-bleed pneumatic controllers must be used pursuant to Sections XVIII.C.31.c. and XVIII.C.2.c. The log shall be updated on a monthly basis.

XVIII.E.2. The owner or operator shall maintain a log of enhanced maintenance which shall include, at a minimum, inspection dates, the date of the maintenance activity, high-bleed pneumatic controller number, description of the maintenance performed, results and date of any corrective action taken, and the printed name and signature of the individual performing the maintenance. The log shall be updated on a monthly basis.

XVIII.E.3. Records of enhanced maintenance of pneumatic controllers shall be maintained for a minimum of three years and readily made available to the ~~division~~ Division upon request.

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XIX. Statements of Basis, Specific Statutory Authority and Purpose

XIX.N. February 21, 2014 (Sections II., XVII., and XVIII.)

This Statement of Basis, Specific Statutory Authority, and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4), the Colorado Air Pollution Prevention and Control Act, C.R.S. §§ 25-7-110 and 25-7-110.5., and the Air Quality Control Commission's ("Commission") Procedural Rules.

Basis

The oil and gas industry is a source of volatile organic compounds ("VOCs"), an ozone precursor. Additionally, oil and gas operations are a source of other hydrocarbon emissions, such as methane, through the leaking and venting of natural gas.

On October 18, 2012, the Commission partially adopted federal Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution found in 40 C.F.R. Part 60, Subpart OOOO ("NSPS OOOO") into Regulation Number 6, Part A. During the partial adoption of NSPS OOOO, the Commission requested the Air Pollution Control Division ("Division") to consider full adoption at a later date and directed the Division to identify additional oil and gas control measures that complement and expand upon NSPS OOOO. This rulemaking is the result.

The Commission supports the EPA's development of NSPS OOOO, and believes that additional hydrocarbon control measures are warranted in Colorado for several reasons. The Denver Metropolitan Area/North Front Range is in nonattainment with EPA's current 8-Hour Ozone National Ambient Air Quality Standard ("NAAQS"). It is also likely that EPA will lower the ozone NAAQS in the near future. In

addition, Colorado has seen significant growth of oil and gas development in recent years, and that growth is expected to continue in the foreseeable future. The oil and gas industry is a significant source of VOC emissions (an ozone precursor). This is particularly true of oil and gas storage tanks. Oil and gas operations also emit methane, a negligibly reactive ozone precursor and a potent greenhouse gas. Division air monitors and other sampling indicate elevated levels of oil and gas related compounds in oil and gas development areas. Improved technologies and business practices can reduce emissions of hydrocarbons such as VOCs and methane in a cost effective manner. Many Colorado operators are already utilizing such technologies and practices to some degree including, without limitation, auto-igniters, low- or no-bleed pneumatic controllers, stabilized liquids or reduced tank pressures, flares achieving at least 98% destruction efficiency, and leak detection and repair (including the use of infrared ("IR") cameras). These technologies and practices have the added benefit of reducing several types of hydrocarbon emissions at the same time.

Colorado has vast experience with the regulation of oil and gas sources. In 2004, 2006, and 2008, the Commission established oil and gas industry emissions controls in Regulation Number 7, Sections XII., XVII., and XVIII. In March 2004, the Commission required condensate tank, controlled under the system-wide approach in what was known as the 8-Hour Ozone Control Area, to meet a 95% control efficiency requirement. This provision was approved into the State Implementation Plan ("SIP"). In December 2006, the Commission determined that on a state-wide, state-only basis, all (new and existing) condensate storage tanks must install air pollution control equipment and meet 95% destruction of VOC, if the total VOC emissions from the tank were equal to or greater than twenty (20) tons per year ("tpy"). Due to "flash," operators have had difficulty consistently meeting this 95% control requirement.

For these reasons and more, the Commission believes additional control measures beyond the current requirements in Regulation Number 7 and NSPS OOOO are appropriate. These regulations apply on a state-wide, state-only basis, and are not a part of Colorado's SIP. This approach gives the Commission, the Division, and stakeholders the opportunity to further assess the implementation and effectiveness of these requirements, to better inform future actions.

Statutory Authority

The Colorado Air Pollution Prevention and Control Act, C.R.S. §§ 25-7-101, et seq., ("Act"), C.R.S. § 25-7-105(1) directs the Commission to promulgate such rules and regulations as are consistent with the legislative declaration set forth in Section 25-7-102 and are necessary for the proper implementation and administration of Article 7. The Act broadly defines air pollutant and provides the Commission broad authority to regulate air pollutants. Section 25-7-106 provides the Commission maximum flexibility in developing an effective air quality program and promulgating such combination of regulations as may be necessary or desirable to carry out that program. Section 25-7-106 also authorizes the Commission to promulgate emission control regulations applicable to the entire state, specified areas or zones, or a specified class of pollution. Section 109(1)(a), (2), and (3) of the Act authorize the Commission to promulgate regulations requiring effective and practical air pollution controls for significant sources and categories of sources, emission control regulations pertaining to nitrogen oxides and hydrocarbons, and emissions control regulations pertaining to the storage and transfer of petroleum products and other VOCs. Section 25-7-109(2)(c), in particular, provides broad authority to regulate hydrocarbons.

Purpose

The Commission adopts revisions throughout Regulation Number 7 to address hydrocarbon emissions from oil and gas facilities, including well production facilities and compressor stations. The revisions expand existing oil and gas control requirements and establish additional monitoring, recordkeeping, and reporting requirements. For example, regarding oil and gas storage tanks, the revisions increase control requirements and improve capture efficiency requirements. The Commission also seeks to minimize fugitive emissions from leaking components at compressor stations and well production facilities. Further, the Commission intends to minimize emissions at new and modified oil and gas wells, and wells undergoing maintenance. The Commission also expands control requirements for pneumatic devices

and glycol dehydrators. The Commission believes that this combination of revisions is appropriate to fully adopt NSPS OOOO, and to further reduce emissions produced by the oil and gas industry.

Among other things, these revisions:

- Expressly address hydrocarbon emissions in Section XVII. and XVIII.;
- Amend definitions in Section XVII.A. and XVIII.B.;
- Strengthen good air pollution control practices, require use of auto-igniters, and remove the off-ramp for condensate tanks if subject to NSPS, MACT, or BACT in Section XVII.B.;
- Expand condensate tank control requirements to apply state-wide, to all hydrocarbon liquid storage tanks, and to smaller storage tanks in Section XVII.C.;
- Limit venting and establish a storage tank emissions monitoring system ("STEM"), and associated recordkeeping and reporting requirements in Section XVII.C.;
- Expand glycol dehydrator control requirements in Section XVII.D.;
- Establish a leak detection and repair program for compressor stations and well production facilities in Section XVII.F.;
- Establish control measures for oil and gas wells in Section XVII.G.;
- Limit venting during well maintenance in Section XVII.H.; and
- Expand pneumatic device requirements in Section XVII.

The revisions also correct typographical, grammatical, and formatting errors found through the regulation.

The Commission intends that all the revisions to Regulation Number 7, are state-only requirements.

The following explanations provide further insight into the Commission's intention for certain revisions.

Joint Applicability of NSPS OOOO and Regulation Number 7 Sections XII. and XVII.

It is possible for storage tanks to be subject to NSPS OOOO and Regulation Number 7, Sections XII. and XVII. While this creates an overlap between the different requirements, the requirements secure different emissions reductions. Regulation Number 7, Section XII. applies to condensate storage tanks in the 8-Hour Ozone Nonattainment Area, whereas NSPS OOOO applies to storage vessels that contain more than just condensate, such as produced water and crude oil storage vessels. NSPS OOOO also applies to individual storage vessels, whereas Regulation Number 7, Sections XII. and XVII. apply to single tanks and, if manifolded together, the series of tanks in tank batteries. In addition, NSPS OOOO applies to storage vessels with 6 tpy of controlled actual VOC emissions, whereas Regulation Number 7, Sections XII. and XVII. base applicability on uncontrolled actual emissions. For these reasons, and considering that portions of Regulation Number 7, Section XII. are approved in Colorado's SIP, the Commission intends for the federal and state rules to jointly apply to storage tanks in Colorado. Thus, the Commission intentionally removed storage tanks from the exemption in Section XVII.B.4. that allowed sources subject to an NSPS, MACT, or BACT requirement to avoid having to comply with overlapping requirements in Section XVII.

Furthermore, because NSPS OOOO allows oil and gas operators to avoid applicability by establishing enforceable emission limits below NSPS OOOO applicability thresholds through a state, federal, or local requirement, most storage tanks subject to Regulation Number 7 will not be subject to NSPS OOOO monitoring or recordkeeping requirements. In those limited cases where storage tanks are subject to both NSPS OOOO and current Regulation Number 7 control requirements, Regulation Number 7 will require some additional emissions monitoring.

However, joint applicability is anticipated to be limited to those storage tanks whose uncontrolled actual VOC emissions are one hundred and twenty (120) tpy (the equivalent of six (6) tpy VOC on a controlled actual basis). While this means that more storage tanks are regulated under Regulation Number 7, Section XVII., they are regulated on a state-only basis, and are not federally enforceable like NSPS OOOO. Thus, the Commission believes joint applicability is necessary.

It is the Commission's intent that compliance with Sections XII. and XVII. shall serve to establish legally and practically enforceable limits for the purpose of estimating emissions.

Applicability of Parts of Regulation Number 7 to Hydrocarbons

Many of the control measures set forth in these revisions have the benefit of reducing both VOC emissions and emissions of other hydrocarbons such as methane. Sections XVII. and XVIII. have been revised to reflect the Commission's intent that the provisions contained therein reduce emissions of the broader category of hydrocarbons.

Visible Emissions

Regulation Number 7, Sections XII. and XVII. have historically contained a prohibition on visible emissions from combustion devices, such as flares. The Commission is not proposing to relax this requirement. To address comments from diverse stakeholders, the Commission is clarifying how the Division inspectors and the regulated community are to determine compliance with the prohibition on visible emissions going forward. The Commission has qualified that visible emissions are emissions of smoke that are observed for a period in duration of one (1) minute during a fifteen (15) minute time period. The Commission expects that both Division inspectors and the regulated community will, if any smoke is observed, determine whether the emissions are considered visible emissions for purposes of Regulation Number 7.

Definitions (Section XVII.A.)

The Commission has revised or added definitions for several terms. Further explanation for a few of these terms is set forth below.

"Normal operation" is considered to include all operation, including maintenance and other activities, as long as the operation does not meet the definition of "malfunction" as set forth in the Common Provision regulations.

"Date of first production" is meant to coincide with the date reported to the Colorado Oil and Gas Conservation Commission's ("COGCC") as the "date of first production," as currently used in COGCC Form 5A. The Commission intends for oil and gas sources to use only one date for compliance with both the COGCC and Commission requirements.

"Storage tank," means a single tank, as well as a tank battery if the tanks are manifolded together. In recent years, it has become more common for multiple tank batteries, sometimes containing different hydrocarbon liquids, to be manifolded at the emissions line and routed to a common control device. To further clarify the concept of manifolded within the definition of "storage tank," the Commission revises the definition of storage tank to specify that a tank battery must be manifolded by liquid line, and not just be gas or emission line. This revision is in keeping with the rationale that a single tank could have been

used to capture liquids in place of multiple small tanks in a battery. The Commission's definition differs from EPA's definition of "storage vessel" and the description of an affected storage vessel facility in NSPS OOOO. EPA considers each individual tank, even those in a battery manifolded by liquid line, to be a storage vessel for comparison against the applicability threshold. However, this approach differs from how Colorado has required emissions reporting and permitting for storage tanks, and the Commission intends to maintain that distinction. The Commission, therefore, deletes the previously used definition of "atmospheric condensate storage tank" and creates a new definition of "storage tank" which expands upon the definition of storage vessel in NSPS OOOO to include storage vessels manifolded together by liquid line.

"Well production facilities" are subject to leak detection and maintenance requirements. This definition is meant to include all of the emission points, as well as any other equipment and associated piping and components, located at the same stationary source (a defined term specific to permitting).

Good Air Pollution Control Practices (Section XVII.B.)

The Commission intends that all oil and gas sources, including those below the control threshold or even below Regulation Number 3 APEN and permitting thresholds, be required to adhere to good general air pollution control practices. Examples of what the Commission considers to be a good air pollution control practice include, but are not limited to:

- Keeping the thief hatch, pressure relief valve, or other access point on storage tanks closed and properly sealed during normal operation, unless being actively used during periods of maintenance or liquids loadout from the storage tank;
- Inspecting and repairing seals on their hatches, access points, or other openings of storage tanks;
- Initiating timely action to address leaks or unpermitted emissions; and
- Maintaining equipment and facility in good operating condition.

Controls for Storage Tanks Over 6 tpy (Section XVII.C.)

EPA established a six (6) tpy VOC threshold for applying storage vessel controls. This threshold differs from Regulation Number 7, Section XVII. in that it applies to individual tanks on a controlled actual emissions basis. In contrast, Colorado uses the sum total emissions from a tank battery, where multiple tanks are manifolded together, on an uncontrolled actual emissions basis for reporting, permitting, and control requirements. This means that the EPA's six (6) tpy threshold on a controlled actual emissions basis applies to individual tanks having the equivalent of one hundred and twenty (120) tpy VOC on an uncontrolled actual basis. Thus, more storage tanks are regulated under Regulation Number 7, Section XVII. than under NSPS OOOO.

The Commission intends that under Regulation Number 7, Section XVII., air pollution control devices can be removed if the following conditions are met: (1) storage tank (including manifolded tanks) emissions are below the uncontrolled actual six (6) tpy threshold, on a rolling twelve month basis and (2) controls are not required by other applicable requirements. Conversely, if storage tank emissions increase above the six (6) tpy threshold, control equipment must be installed within sixty (60) days of discovery of the increase.

Control Efficiency (Section XVII.C.)

The Commission expands the 95% control efficiency requirement to apply to storage tanks containing any hydrocarbon liquids (including condensate, crude oil, produced water, and intermediate hydrocarbon

liquids), for consistency with NSPS OOOO. Produced water and crude oil storage tanks, which in years past were thought to have insignificant emissions, can instead be significant sources of emissions. This rule change is also a result, in part, of the removal of the APEN exemption in 2008 for tanks containing crude oil and less than 1% crude. The Commission intends that the air pollution control equipment achieve an average hydrocarbon control efficiency of at least 95%, and if a combustion device is used, it must have a design destruction efficiency of at least 98%. The Commission recognizes and expects that most flares can control hydrocarbon emissions by 98% or more than properly operated.

Venting vs. Leaking (Sections XVII.B., XVII.C., and XVII.F.)

The Commission believes that emissions caused by over pressurization of oil and gas equipment are foreseeable, are not adequately addressed by NSPS OOOO, and should be addressed in Colorado specific regulations. Venting includes emissions from equipment such as a storage tank at the thief hatch, pressure relief valve, or other access point. Access points are not limited to points of entry of liquids or gas into the storage tank, but include any route from which emissions can escape. However, there are limited circumstances which should not be considered venting, such as where storage tanks emit in emergency situations, during maintenance, gauging, or where necessary to ensure the safety of personnel and equipment. For example, an unplanned third party outage resulting in increased pressure along the system may be the type of malfunction or scenario where venting may be necessary for safety purposes. Inadequate design of a storage tank emissions capture system is not a legitimate reason for venting. The Commission intends that the burden remain on the owner/operator to demonstrate that an emission should not be considered venting as provided in Section XVII.C.2.

The Commission further intends that the malfunction affirmative defense in the Common Provisions regulation continue to be available to operators, provided that the operators demonstrate that the elements of the malfunction affirmative defense have been met. The Commission recognizes that pressure release valves and other devices are meant to operate as safety devices, and not as emission devices. Nothing in this revision is intended to increase risk or compromise safety of personnel and equipment. The Commission recognizes that venting for safety purposes may occur due to sudden, unavoidable equipment failures or surges beyond normal or usual activities that could not have been reasonably foreseeable, avoided, or planned.

In contrast with venting, leaking as used in Section XVII.F. more specifically relates to unintended emissions from components at well production facilities and compressor stations. Identification and repair of leaks in accordance with these revisions benefits the public, the environment, and the oil and gas industry. The Commission has determined that leaks discovered pursuant to the detection methods specified in Section XVII.F. shall not be subject to enforcement by the Division under certain circumstances. For example, if an operator has identified a leak and is in the process of timely and properly addressing the leak in accordance with these revisions, the Division should afford the operator the opportunity to fix the leak absent enforcement. However, by this provision, the Commission does not intend to exempt owners and operators from their obligation to operate without venting or to utilize good air pollution control practices at all times.

Storage Tank Emission Management System (STEM) Plan, Monitoring, and Recordkeeping (Section XVII.C.)

All owners and operators of any storage tank not containing only stabilized liquid must develop, certify, and implement a STEM plan designed, in part, to ensure compliance with the "without venting" requirement of Section XVII.C., among other requirements. Through STEM, owners and operators must evaluate and employ appropriate control technologies and monitoring, maintenance, and operational practices, to avoid venting of emissions from storage tanks. The Commission intends that sources have flexibility in the development of individualized STEM plans. STEM plans may be developed on an individual basis for each storage tank or may be developed for a swath of similarly designed or sized tanks. However, upon request, the owner or operator must be able to identify to the Division what STEM plan applies to a storage tank and make that plan available for review.

Owners and operators of storage tanks containing only stabilized liquids are not required to develop and implement a STEM plan. However, these tanks must still comply with applicable control, capture, monitoring, and recordkeeping requirements.

For purposes of clarification, the STEM plan is intended to include the following elements:

- A monitoring strategy with a minimum of the applicable inspection frequency and methodology;
- An identification of the personnel conducting the monitoring, and any training program, materials, or training schedule for such personnel. This element does not require training, but ensures that any training by documented to permit the operator to demonstrate the quality and achievements of its STEM plan;
- The calibration methodology and schedule for emission detection equipment used in the monitoring;
- An analysis of the engineering design of the storage tank and air pollution control equipment, and where applicable, the technological or operational methods employed to preventing venting;
- An identification of the procedures to be employed to evaluate ongoing capture performance after implementation of the STEM plan;
- A procedures to update the STEM plan when capture performance is not adequate, the STEM design is not operating properly, when otherwise desired by the owner or operator, or when required by the Division; and
- The certification made by the appropriate personnel with actual knowledge of the STEM design for each storage tank.

Monitoring for storage tanks must be conducted utilizing an Approved Instrument Based Monitoring Method, on a frequency schedule that is tied to an emissions from the tank. In addition to any applicable Approve Instrument Based Monitoring Method, the Commission intends that all owners or operators of a storage tank (whether or not it contains stabilized liquids) conduct applicable audio, visual, olfactory ("AVO") monitoring. AVO inspection is not required to occur at the same time as loadout. Instead, loadout triggers the requirement for AVO inspection, and indicates the frequency with which AVO inspection is required.

Documentation of the STEM plan should be maintained by the owner or operator for the life of the storage tank, while records of STEM monitoring only need to be retained for a period of two years. Upon sale or transfer of ownership of a storage tank, the relevant documentation and records should be transferred with the ownership. Owners and operators are encouraged to reevaluate any existing STEM plan for the storage tank upon purchase or acquisition of the storage tank.

Glycol dehydrators (Section XVII.D.)

The Commission expanded the state-wide control requirements for glycol natural gas dehydrators. Currently, any glycol natural gas dehydrator with uncontrolled actual VOC emissions of two tons per year or greater that is located at a facility where the sum of uncontrolled actual VOC emissions from all of the dehydrators at the facility is greater than fifteen tpy must be equipped with a control device that reduces emissions by at least 90%. This revision requires that all existing dehydrators with uncontrolled actual emissions of six (6) tpy or greater VOC must be controlled with air pollution control equipment achieving at least 95% reduction. This revision also provides that existing dehydrator with uncontrolled actual

emissions of two (2) tpy or greater VOC must be controlled if they are located within 1,320 feet of a building unit or designated outside activity area. The definitions for building unit and designated outside activity area are taken from COGCC regulations. Finally, this revision requires that all new dehydrators with uncontrolled actual emissions of two (2) tpy or greater VOC must be controlled. The Commission intends that the air pollution control equipment achieves an average hydrocarbon control efficiency of at least 95%, and if a combustion device is used, it must have a design destruction efficiency of at least 98%. The Commission recognizes and expects that most flares can control hydrocarbon emissions by 98% or more when properly operated.

Leak Detection and Repair Requirements (Section XVII.F.)

The Commission believes the detection and timely repair of leaks is important in the efforts to reduce hydrocarbon emissions. The use of appropriate inspection instruments and methods, such as IR cameras, enhances the detection and reduction of emissions. STEM targets venting from storage tanks, while the detection and repair program more broadly targets leaks from components at compressor stations and well production facilities, even if they do not include storage tanks. The use of an Approved Instrument Based Monitoring Method as it relates to leak detection and repair frequency is generally intended to complement the STEM monitoring schedule. The Commission has created a phased schedule and tiered approach for leak detection and repair that is based on emissions, recognizing that smaller operators and facilities may need or want additional time to comply and may have lower emissions. Owner and operators have flexibility in how to meet the leak detection and repair requirements, including utilizing their own equipment and personnel or hiring a third party contractor.

The Commission has defined a leak in a manner that is dependent on the monitoring methodology used in detection. Leak detection methodologies have varied abilities to identify emission quantity and chemical makeup. EPA Reference Method 21, for example, detects and quantifies hydrocarbon emission concentration, but does not speciate hydrocarbons (e.g., methane from other hydrocarbons) or identifies the emission rate. IR cameras are becoming much more prevalent as a more affordable, time-saving, and user-friendly tool, but they also do not speciate hydrocarbons or quantify the emission concentration. The Commission provides owners and operators flexibility in choosing instrument based detection methodology.

If Method 21 is utilized, the Commission has set the threshold at which component leaks must be repaired at 2,000 parts per million ("ppm") hydrocarbons for existing compressor stations and 500 ppm for new (constructed after May 1, 2014) compressor stations and new and existing well production facilities. Where IR camera or AVO monitoring is used, a leak is any detectable emission not associated with normal equipment operation. These values were determined based in part on a review of current federal or state leak detection and repair requirements for natural gas processing plants, refineries, and other oil and gas sources. Leak detection values have decreased over time, in recognition of improved technologies and business practices. NSPS OOOO establishes leak detection at natural gas processing component type. Prior to NSPS OOOO, leaks were identified in other New Source Performance Standards (NSPS KKK and NSPS VVa) at 10,000 ppm. In addition, California, Wyoming, and Pennsylvania have varying leak detection and repair requirements and approaches to defining a leak. Some California air quality districts generally define a minor leak as between 1,000 and 10,000 ppm. Wyoming does not have a numerical limit. Pennsylvania essentially defines a leak at a well pad as anything with detectable emissions utilizing Method 21, as more than 2.5% methane or 500 ppm VOC, or no visible leaks using an IR camera. Upon consideration of all of the evidence presented, the Commission chose to define component leak at the foregoing thresholds.

The Commission anticipates that many operators will choose to utilize IR cameras, in light of their relative ease of use and increased reliance by both by industry and regulators within Colorado and across the country. The Commission expects that leaks that are not located specifically at a component will be addressed and repaired, in accordance with the general requirements to minimize emissions and employ good air pollution control practices.

The Commission expects that in most instances the leak detection and repair requirements of this regulation will apply in lieu of leak detection and repair requirements in existing permits. The Commission recognizes that leak detection and repair requirements in a few state permits may be federally enforceable, and this state-only regulation cannot supersede federal requirements. The Commission expects the Division and operators to work cooperatively on the efficient implementation of leak detection and repair requirements, in those rare instances where there may be duplicative or competing requirements.

Well Maintenance and Unloading (Section XVII.H.)

Over time, liquids build up inside a well and reduce flow out of the well. These liquids can slow and even block gas flow in wet gas wells and are removed during a well blowdown, also called liquids unloading. As a result of recent information, EPA has significantly increased their emission factor for liquids unloading. The uncontrolled emission factor is based upon fluid equilibrium calculations used to estimate the amount of gas needed to blow down a column of fluids blocking a well and Natural Gas STAR partner data on the amount of additional venting after a blowdown. Similar to the issues with well completion emissions, considerable uncertainty for liquid unloading emissions arises from the limited data sources used and the applicability of Natural Gas STAR program activities to calculate industry baseline emissions. This is especially important as liquid unloading is estimated to comprise 33% of the uncontrolled methane emissions from the natural gas industry in the latest greenhouse gas inventory. EPA's Natural Gas STAR program advocates the use of a plunger lift system to reduce the need for liquids unloading, and indicates that such systems may pay for themselves in about one year. The Commission has determined that the use of technologies and practices to minimize venting, including plunger lift systems, are available and economically feasible, and encourages their use in Colorado.

Pneumatic Controllers (Section XVIII.)

The Commission recognized in a December 2008 rulemaking that pneumatic devices are a significant source of emissions. In addition, a 2013 University of Texas study concluded that methane emissions from pneumatics are higher than EPA previously estimated. Therefore, expanding the current low-bleed pneumatic device requirements statewide and further reducing emissions is appropriate and cost-effective. While the use of low-bleed pneumatics will result in a significant reduction of VOC and methane emissions from Colorado oil and gas facilities, no-bleed pneumatic controllers are currently commercially available to further reduce emissions from these sources. However, because these devices can only be used at facilities with adequate electric power, and given the high cost of electrifying a facility, the Commission is requiring the use of no-bleed pneumatics at facilities that are connected to the electric grid and using electricity to power equipment, but only where technically and economically feasible.

ADDITIONAL CONSIDERATIONS

In accordance with C.R.S. §§ 25-7-105.1 and 25-7-133(3) the Commission states the rules in Section XVII. and XVIII. of Regulation Number 7 adopted in this rulemaking are state-only requirements and are not intended as additions or revisions to be incorporated into Colorado's SIP at this time.

In accordance with C.R.S. § 25-7-110.5(5)(b), the Commission determines:

- I. The revisions to Regulation Number 7 address hydrocarbon emissions from oil and gas facilities, including well production facilities and compressor stations. The majority of sources subject to the revised rules will not also be subject to NSPS OOOO or other federal law for such emissions. One goal of the revisions is to address individual sources below NSPS OOOO thresholds, yet that collectively contribute significantly to ozone formation in Colorado. Additionally, it is the Commission's determination that the venting of emissions from storage tanks at oil and gas facilities, caused primarily by over pressurization, is not adequately addressed under NSPS OOOO and therefore warrants Colorado-specific regulations. Moreover, leaks or fugitive emissions of hydrocarbons,

such as VOCs and methane, particularly from well production facilities and compressor stations, are not adequately addressed under NSPS OOOO. Thus, Colorado specific regulations are appropriate. Finally, some very large sources (e.g. storage vessels emitting 120 tpy uncontrolled VOC) will be subject to both the revised rules and NSPS OOOO, including the reporting and monitoring requirements.

In addition to NSPS OOOO, several other federal NSPS, as well as National Emission Standards for Hazardous Air Pollutants ("NESHAP") that apply Maximum Achievable Control Technologies ("MACT") may apply to the tanks, dehydrators, leaking components, and pneumatic devices at oil and gas facilities subject to these revisions. These include, but are not limited to, NSPS Kb and NSPS KKK (which incorporate NSPS VV or VVa) and NESHAP HH and HHH. However, the Regulation Number 7 revisions apply on a broader basis to more tanks, dehydrators, leaking components, and pneumatic devices, and address more hydrocarbon emissions. Some examples include: tank and dehydrator control measures that apply at lower thresholds; leak detection and repair requirements applicable to components beyond gas processing plants; and pneumatic device provisions that require the use of lower emitting devices.

- II. NSPS OOOO is primarily technology-based in that it largely prescribes the use of specific technologies in order to comply. EPA has provided some flexibility by allowing a storage vessel to avoid being subject to NSPS OOOO if the storage vessel is subject to any state, federal, or local requirement that brings the storage vessel's emissions below the NSPS OOOO threshold (greater than or equal to 6 tpy controlled actual VOCs). The Commission chose to set the revised Regulation Number 7 controls at 6 tpy on an uncontrolled actual emissions basis, and therefore provide Colorado's oil and gas operators a limit for calculating the controlled PTE of their storage vessels, which may be used to avoid NSPS OOOO applicability.
- III. There are no federal requirements related to the revisions to Regulation Number 7 that specifically and fully address the issues of concern to Colorado, or take into account concerns that are unique to Colorado. NSPS OOOO addresses VOC emissions and certain co-benefits of reducing such emissions, but does not address hydrocarbon emissions in the more comprehensive manner addressed by these revisions. Following these revisions, Regulation Number 7 will surpass federal requirements in several ways, including, without limitation: (a) Regulation Number 7 will apply to a broader class of tanks than NSPS OOOO; (b) Regulation Number 7 will require a leak detection and repair program for more categories and components than NSPS OOOO; and (c) Regulation Number 7 will require storage tanks with uncontrolled actual emissions equal to or greater than 6 tpy VOC to control emissions with 95% efficiency, while NSPS OOOO's threshold is 6 tpy controlled actual emissions (i.e. 120 tpy uncontrolled actual emissions). It is the Commission's determination that, given the current and projected levels of oil and gas development in Colorado, combined with the advances in technology and business practices utilized by oil and gas operators, the revisions to Regulation Number 7 are appropriate to address hydrocarbon emissions from this sector. Such emission reductions will, among other things, protect public health and the environment, address current and future ozone concerns specific to Colorado, reduce greenhouse gas emissions, and ensure the maximum beneficial use of a valuable natural resource.
- IV. Compliance with the control requirements in the revisions to Regulation Number 7 provide Colorado's oil and gas operators a limit for calculating the controlled potential to emit of their storage vessels, thereby allowing many of these sources to avoid regulation under NSPS OOOO. Additionally, the revisions may prevent or reduce the need for more costly retrofits at a later date. The Denver Metro/North Front Range area is currently in nonattainment with the ozone NAAQS. Other areas in the State are seeing elevated ozone levels, including areas of increasing oil and gas development. Colorado may also

be required to comply with a future ozone NAAQS that is lower than the current standard. The revised rules are intended to reduce ozone levels now by utilizing controls and techniques already being used or readily available. Utilizing these controls and techniques may prevent the need for more costly retrofitting in the future by addressing ozone precursor emissions now and not waiting until after ozone levels have increased.

- V. Adoption at this time allows many of Colorado's oil and gas operators to utilize the controls established in the revisions to Regulation Number 7 to avoid being subject to NSPS OOOO storage vessel requirements. Postponement of adoption would potentially subject these sources to compliance with NSPS OOOO and then compliance with State requirements once State controls become effective.
- VI. The revisions to Regulation Number 7 do not place limits on the growth of Colorado's oil and gas industry. Instead, the rules address hydrocarbon emissions from the sector to assure air quality is maintained while also allowing for continued growth of Colorado's oil and gas industry. Indeed, the oil and gas industry has already grown in Colorado while widely utilizing many of the technologies and practices set forth in these revisions.
- VII. The revisions to Regulation Number 7 establish reasonable equity for oil and gas facilities subject to these rules by providing the same standards for similarly situated sources. The revisions to Regulation Number 7 were proposed after a lengthy stakeholder process. Rules of general applicability have been developed along with tiered requirements and exclusions that tailor the rules to the regulated sources within the oil and gas sector.
- VIII. The oil and gas industry is a large anthropogenic stationary source of VOCs, a precursor pollutant to ozone. If the revisions to Regulation Number 7 are not adopted, other aspects of oil and gas operations or other sectors may be looked to for additional emission reductions.
- IX. The majority of sources subject to the revised rules in Regulation Number 7 will not be subject to federal procedural, reporting, or monitoring requirements. Those few sources subject to both NSPS OOOO and Regulation Number 7 will be required to comply with both regulations. The procedural, reporting, and monitoring requirements of Regulation Number 7, to the extent different than federal requirements, are necessary to achieve the Commission's goals while maintaining flexibility for the operators.
- X. Demonstrated technology is available to comply with the revisions to Regulation Number 7. Some of the revisions expand requirements already applicable in the 8-Hour Ozone Nonattainment Area state-wide, such as the auto-igniters and pneumatic devices. In addition, many oil and gas operators are already using the control devices and techniques intended to be used to comply with these revisions. The lead-in time provides operators time to install control devices and develop plans for compliance. Should unanticipated events occur, such as a lack of availability of control devices, the rules provide for Division approved extensions to compliance.
- XI. As set forth in the Economic Impact Analysis, the revisions to Regulation Number 7 will contribute to the prevention of hydrocarbon emissions in a cost-effective manner. Significantly, the Commission expressly finds that the cost-effectiveness of the VOC emission reductions alone supports the revisions to Regulation Number 7. The reductions of other hydrocarbon emissions such as methane add to the already cost-effective and appropriate emission reduction requirements.

XII. Alternative rules requiring differing or additional controls for oil and gas facilities could also provide reductions in hydrocarbon emissions. The Commission could adopt some or all of these proposed revisions. However, the revisions to Regulation Number 7 were proposed after a lengthy stakeholder process and provide a balanced approach, reducing emissions from the oil and gas industry while allowing the sector to continue to play a critical role in Colorado's economy and the nation's energy independence. A no action alternative would very likely only delay future reductions in hydrocarbon emissions, including ozone precursors pollutants, necessary for attaining or maintaining the ozone NAAQS in Colorado.

XIII. The Commission has taken into consideration any evidence submitted regarding the factors set forth in C.R.S. § 25-7-109(1)(b).

The incorporation by reference of NSPS OOOO in Regulation Number 6 does not affect the requirements of these revisions to Regulation Number 7. Instead, these revisions to Regulation Number 7 are designed and intended to address the differences and overlaps between NSPS OOOO and current state requirements, and to include additional emission control measures for oil and gas production and equipment. To the extent that C.R.S. § 25-7-110.8 requirements apply to this rulemaking, the Commission hereby makes the determination that:

- I. These rules are based upon reasonably available, validated, reviewed, and sound scientific methodologies, and the Commission has considered all information submitted by interested parties.
- II. Evidence in the record supports the finding that the rules shall result in a demonstrable reduction of hydrocarbon emissions.
- III. Evidence in the record supports the finding that the rules shall bring about reductions in risks to human health and the environment that justify the costs to implement and comply with the rules.
- IV. The rules are the most cost-effective to achieve the necessary and desired results, provide the regulated community flexibility, and achieve the necessary reduction in air pollution.
- V. The selected regulatory alternative will maximize the air quality benefits of regulation in the most cost-effective manner.