

**VENTURA COUNTY APCD
IMPLEMENTATION AND ENFORCEMENT POLICY GUIDE
ARB GHG REGULATION FOR CRUDE OIL AND NATURAL GAS**

**Dan Searcy, Manager, Compliance Division
Kerby E. Zozula, Manager, Engineering Division**

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FINAL REGULATION ORDER

**California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change,
Article 4**

**Subarticle 13: Greenhouse Gas Emission Standards for
Crude Oil and Natural Gas Facilities**

The purpose of this document is to provide guidance to VCAPCD staff, the public, and the regulated community when implementing, complying with, and enforcing this regulation. It is important to note that many existing VCAPCD rules currently apply to the local oil and gas industry. These rules include Rule 71.1, “Crude Oil Production and Separation”, and Rule 74.10, “Components at Crude Oil Production and Natural Gas Production and Processing Facilities”. In many cases as discussed below, existing VCAPCD rules may be more stringent than this ARB GHG Regulation.

As discussed below, the VCAPCD does not require a permit application or additional fees to comply with this GHG Regulation. No changes to Rule 42, “Permit Fees” will be required. However, the VCAPCD and the GHG Regulation both require that owners and operators subject to this regulation register with ARB (Appendix A Table A6) as discussed below in §95674 Implementation. VCAPCD permit applications are still required for new oil wells, storage tanks, sumps, pits, engines, heater treaters, loading racks, glycol units, etc., consistent with current VCAPCD permitting rules and policies.

§95666 Applicability

The regulation does not apply to the four (4) OCS Platforms that VCAPCD regulates, because they are not in California waters.

The VCAPCD does not currently have any natural gas underground storage facilities in its jurisdiction.

§95668 Standards

95668(a) – Separator and Tank Systems

95668(a)(2) Page 9

Section (a) requires flash analysis testing to determine whether or not separator and tank systems will be required to install vapor recovery systems under this regulation.

Note that the GHG Regulation defines a separator as a tank or pressure vessel for separating oil, water, condensate, and natural gas. In VCAPCD terminology, a “Wash Tank” is a “Separator” as defined in the GHG Regulation. Note that the definition of “Separator and Tank Systems” includes a sump connected directly to the first separator. Note that Section B.1 of Rule 71.4, “Petroleum Sumps, Pits, Ponds and Well Cellars” prohibits first stage production sumps and to our knowledge there are no storage sumps

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directly connected and downstream of Wash Tanks. VCAPCD LACT Tanks, COST Tanks, and Produced/Waste Water Tanks are “Tanks” in the GHG Regulation. As discussed below, VCAPCD Rule 71.1, “Crude Oil Production and Separation” is far more stringent than the GHG Regulation in terms of requiring vapor recovery systems for Separator and Tank Systems.

There are a number of ways that a separator and tank system can be exempt from all of the requirements of 95668(a) of the GHG Regulation:

- (a)(2)(A) Crude oil or condensate throughput less than 50 BOPD – (18,250 BOPY) - Rule 71.1 does not have a throughput-based vapor recovery exemption.
- (a)(2)(B) Tanks used in non-associated gas production with less than 200 BOPD annual average (less than 73,000 BOPY) at non-associated gas production facilities. To our knowledge there are no non-associated gas production facilities in Ventura County. Rule 71.1 does not have a water throughput-based vapor recovery exemption.
- (a)(2)(C) Separator and tank systems already controlled with a permitted vapor recovery system required by Rule 71.1 as of January 1, 2018. Note that there are very few tanks in Ventura County not equipped with vapor recovery systems. Tanks that are exempt from vapor recovery under Rule 71.1.D.4 (cost-effectiveness) are all exempt under the 50 BOPD annual average exemption above. In addition, the VCAPCD requires vapor recovery systems on all new tanks.
- (a)(2)(D) Separator and tank systems using a gas blanket to control corrosion. Note that gas blankets are similar to vapor recovery systems.
- (a)(2)(E) Separators, tanks and sumps that have contained oil, condensate or produced water less than 45 days per year. For tanks subject to Rule 71.1, there is no days of use exemption except for portable tanks and temporary tank batteries at new wells as discussed below.
- (a)(2)(F) & (G) Temporary tanks used less than 90 days, except stimulation circulation tanks at both newly constructed wells and wells undergoing rework or inspection. Rule 71.1.D.1.c gives a 60 day vapor recovery exemptions for portable tanks used for well maintenance, therefore Rule 71.1 is more stringent than the GHG Regulation. Rule 71.1.D.1.b also gives a 90 day exemption for temporary tank batteries for new oil wells only.
- (a)(2)(H) Waste tanks with less than 10 gallons per day throughput. (3,650 gallons or 87 barrels per year) The GHG regulation does not define “petroleum waste product”. Rule 71.1 does not have a throughput-based exemption.
- (a)(2)(I) Gauge tanks with less than or equal to 100 barrels capacity. A gauge tank is defined as being upstream of a separator and tank system. Rule 71.1 does not contain this capacity-based exemption for gauge tanks.

Currently, no existing tanks in Ventura County are required to install vapor recovery or perform flash analysis testing under this Section 95668(a). Requirements for circulation tanks for well stimulation are covered in Section 95668(b).

Flash testing is not required for new and existing tanks equipped with vapor recovery systems required by Rule 71.1. VCAPCD requires all new tanks to be equipped with vapor recovery systems, so flash testing will never be required for new tanks in Ventura County as the regulation is currently written. If a tank in VCAPCD is not equipped with vapor recovery and does not meet an exemption above, the owner/operator would need to do the flash testing.

If a vapor recovery system were to be required to be installed on a tank in VCAPCD without vapor recovery because flash test emissions show > 10 metric tons methane per year, then any new flare would need to meet § 95671 (Vapor Collection Systems and Vapor Control Devices) and install a “low NOx flare”.

95668(b) Circulation Tanks for Well Stimulation Treatments - Page 12

Section (b) requires for circulation tanks:

- (b)(1) Owners/operators must implement Best Practices Management Plans by January 1, 2018.
- (b)(2) Owners/operators must submit written reports and technology assessments to ARB by January 1, 2019.
- (b)(3) ARB must review technology assessments and provide a determination on the installation of vapor collection and control equipment by July 1, 2019.
- (b)(4) Operators must begin controlling circulation tanks by July 1, 2020, unless ARB determines it is not possible.

A circulation tank is defined as a stationary or portable tank used during or following a well stimulation treatment. A well stimulation treatment is defined by the Division of Oil, Gas, and Geothermal Resources (DOGGR) SB 4 Well Stimulation Treatment Regulations. All “frac jobs” and all “acid matrix stimulations” are defined to be well stimulation treatments. Frac jobs are not that common in Ventura County but acid stimulations do occur in Ventura County. To our knowledge, the acid stimulations in Ventura County do not meet the definition of “acid matrix stimulation” as discussed in the following DOGGR publication and any tanks used would not be defined as a circulation tank subject to Section 95668(b):

[DOGGR Discussion Of Calculated Acid Volume Threshold](#)

The acid stimulations generally performed in Ventura County are of low acid volume and used for wellbore cleanout, maintenance, and removal of formation damage and do not meet the definition of “acid matrix stimulation”.

For the 45% porosity example presented in the DOGGR document above, an Acid Volume Threshold of 95 gallons per foot was calculated. For a lower porosity of 20%, more typical of the larger Ventura County oil fields, an Acid Threshold Volume of 42 gallons per foot can be calculated. It is our understanding that most Ventura County acid stimulations are less than the calculated 42 to 95 gallons per foot range, often in the 10 to 30 gallons per foot range. Tanks used for acid stimulation treatments in Ventura County must comply with the portable tank requirements of Rule 71.1 in any case.

95668(c) Reciprocating Natural Gas Compressors - Page 13

Section (c) contains requirements for reciprocating natural gas compressors, unless they are operated less than 200 hours per year per (c)(2)(A).

Section (c)(3) applies to reciprocating natural gas compressors at onshore or offshore production facilities:

- (c)(3)(A) Beginning January 1, 2018, components on driver engines and compressors must comply with the LDAR requirements in 95669 and;
- (c)(3)(B) Test each rod packing or seal in accordance with 95669 while operating at normal temperature. If not operating, test within 7 days of resuming operation.
- (c)(3)(C) By January 1, 2019, stacks used to vent rod packing or seals must be controlled as specified in 95671; or,
- (c)(3)(D) Compressor rod packing or seals above leak thresholds in 95669, shall be repaired within 30 days of the initial measurement. ARB may grant delays, if parts have been ordered.
- (c)(3)(E) Owner/operator must keep records of rod packing leaks and send report to ARB as required by 95673.
- (c)(3)(F) Critical component leaks (on critical components approved by ARB) must be repaired within a year or the next process shutdown, whichever is sooner.

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Section (c)(4) applies to reciprocating natural gas compressors at natural gas gathering and boosting stations, natural gas processing plants and natural gas transmission compressor stations:

- (c)(4)(A) Beginning January 1, 2018, components on driver engines and compressors must comply with the LDAR requirements in 95669 and;
- (c)(4)(B) Test each rod packing or seal vent stack emission flow rate by direct measurement.
(c)(4)(B)(1) Vent stacks must be equipped with a meter to measure emission flow rate: or,
- (c)(4)(B)(2) Vent stacks must be equipped with clearly identified access port for making measurements.
- (c)(4)(C) By January 1, 2019, stacks used to vent rod packing or seals must be controlled as specified in section 95671; or,
- (c)(4)(D) Compressor rod packing or seals with a measured emission flow rate above 2 scfm must be repaired within 30 days. ARB may grant delays, if parts have been ordered.
- (c)(4)(E) Owner/operator must keep records of flow rate measurements and send an annual report to ARB as required by 95673.
- (c)(4)(F) Critical component leaks must be repaired within a year or the next process shutdown, whichever is sooner.

95668(d) Centrifugal Natural Gas Compressors - Page 16

Section (d) contains requirements for centrifugal natural gas compressors at onshore or offshore production facilities, natural gas gathering and boosting stations, natural gas processing plants and transmission compressor stations and natural gas underground storage facilities, unless they are operated less than 200 hours per year per (d)(2)(A).

- (d)(3) Beginning January 1, 2018, components on driver engines and compressors that use a wet or dry seal must comply with the LDAR requirements in 95669 and;
- (d)(4) Test each compressor wet seal annually by direct measurement while operating at normal temperature using one of the following:
 - (d)(4)(A) Vent stacks must be equipped with a meter to measure emission flow rate: or,
 - (d)(4)(B) Vent stacks must be equipped with a clearly identified access port for making wet seal emission flow rate measurements.
- (d)(4)(C) If not operating, test within 7 days of resuming operation.
- (d)(5) By January 1, 2019, control wet seal vent gas with a vapor control system as specified in 95671; or,
- (d)(6) Compressor wet seals with an emission flow rate greater than 3 scfm, shall be repaired within 30 days of the initial measurement. ARB may grant delays, if parts have been ordered.
- (d)(7) If parts aren't available, replace wet seals with dry seals.
- (d)(8) Owner/operator must keep records of flow rate measurements and send an annual report to ARB as required by Section 95673.
- (d)(9) Critical component leaks (on critical components approved by ARB) must be repaired within a year or the next process shutdown, whichever is sooner.

95668(e) Natural Gas Powered Pneumatic Devices and Pumps - Page 18

Section (e) contains requirements for natural gas powered pneumatic devices and pumps.

- (e)(2) As of January 1, 2019, continuous bleed natural gas powered pneumatic devices must comply with the LDAR requirements in 95669.
- (e)(2)(A) As of January 1, 2019, continuous bleed natural gas powered pneumatic devices may be used if they comply with the following:
 1. May not leak at a rate greater than 6 scfm when idle.
 2. Must be clearly marked with a permanent tag.

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3. Must be tested annually for flow rate.
4. Any device with a flow rate greater than 6 scfm must be repaired within 14 days of the measurement.
5. Owner/operator must keep records of flow rate measurements and send annual report to ARB as required by 95673.

Rule 74.10 prohibits continuous bleed natural gas powered pneumatic devices and pumps. It is our understanding that most, if not all, have been replaced with instrument air or electric power.

95668(f) Liquids Unloading of Natural Gas Wells - Page 19

Section (f) applies to liquids unloading of natural gas wells. There are no non-associated natural gas wells in Ventura County.

95668(g) Well Casing Vents - Page 20

Section (g) applies to well casing vents. This practice is prohibited in Ventura County by Rule 71.1.C.1. Therefore, the requirement to measure the natural gas flow rate from well casing vents does not apply in Ventura County.

95668(h) Natural Gas Underground Storage Facility Monitoring Requirements - Page 20

Section (h) applies to natural gas underground storage facilities. There are currently no underground natural gas storage facilities in Ventura County.

§95669 Leak Detection and Repair

95669(b) Page 24

Section (b)(1) exempts all components that were already subject to local air district LDAR requirements prior to January 1, 2018 (i.e. Rule 74.10). This is the majority of the oil field components in Ventura County. Components that were previously subject to APCD 74.10 (LDAR) requirements are not subject to LDAR requirements in the GHG Regulation. This section, 95669(b)(2) through (b)(14), lists an additional number of specific component exemptions from the LDAR requirements in the GHG Regulation.

95669(c) through (o) Page 26

Sections (c) through (o) contain a number of LDAR requirements for subject components:

- (c) Inspect components within the specified time frames.
- (d) ARB may perform inspections at any time.
- (e) Daily audio-visual (by hearing and sight) inspections required for hatches, P-V valves, well casings, stuffing boxes, & pump seals, except for inaccessible components.
- (f) Test any audio-visual leaks found with Method 21 instrument and repair as required by this section.
- (g) Requirement for quarterly Method 21 leak testing. OGI may be used as a screening tool, if leaks found are measured with a method 21 compliant device. Inspect all inaccessible components annually.
- (h) Contains allowable leaks and timeframes for repairing leaks that are 10,000 to 49,999 ppm and leaks that are 50,000 or more from January 1, 2018 through December 31, 2019.
- (i) Contains allowable leaks and timeframes for repairing leaks on or after January 1, 2020.
- (j) Contains requirements for tagging leaks found.
- (k) Requires owners/operators to make records of leaks found available to ARB and to submit an annual report to ARB as required by Section 95673.
- (l) Requirement to keep hatches closed except on limited occasions.

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- (m) Requirement to seal/cap open ended lines.
- (n) Requirement to replace components that have been found leaking 5 times in a 12-month period.
- (o) Discusses compliance requirements for leaks found and specifies the allowable number of leaks by concentration and timeframe. Clarifies when leaks are violations under the GHG Regulation.

§95670 Critical Components

95670(a)(1) Page 31

Section (a)(1) states that all components that are already designated as critical under a district LDAR program are not subject to the critical component requirements in this section.

- Other sections, (b) through (f) are related to requirements for facilities requesting designation of components as critical. ARB, not local districts will review and approve requests for critical components under this regulation.

§95671 Vapor Collection System and Vapor Control Devices

95671(a) Page 32

Section (a) states that the requirements of the section apply for facilities that must be controlled as a result of the requirements of Section 95668. Currently, no stationary tanks in Ventura County are required to install vapor recovery or perform flash analysis testing under Section 95668.

Other sections contain requirements for vapor control devices. Essentially, if gas vapors cannot be directed to a 1) sales gas system, 2) fuel gas system or a 3) gas disposal well, the vapor control device (i.e. flare) is limited to 95% control efficiency and 15 PPM NOx or the subject equipment must be taken out of service by January 1, 2019.

It's important to note that these requirements do not apply to existing vapor collection systems and vapor control devices that are required by VCAPCD Rule 71.1, Section B for storage tanks and Section C for produced gas. As discussed above, the VCAPCD does not expect any new vapor collection systems and vapor control devices on Separator and Tank Systems as a result of this GHG Regulation. The few VCAPCD tanks that are exempt from vapor recovery in Rule 71.1 will also be exempt from vapor recovery under the GHG Regulation.

The GHG Regulation defines “fuel gas system” and the VCAPCD considers it to be on-site combustion of natural gas in engines, boilers, heater treaters, steam generators, turbines, microturbines, glycol units, etc. Some oilfield facilities may sell gas to a party other than Southern California Gas, such as a nearby agricultural greenhouse source. The VCAPCD considers these 3rd party gas sales to be a “sales gas system” in the GHG Regulation.

If a new vapor control device would be required to meet the GHG regulation (not very likely) it would need to meet the requirements of Section 95671(d)(2) for 95% control efficiency and 15 ppmvd NOx @ 3% oxygen as Ventura County is non-attainment with the ozone standard. Section 95671(d)(1) does not apply in Ventura County.

Section 95671(f) allows a 30 day per year exemption for vapor recovery system maintenance. Rule 71.1 is far more stringent than the GHG Regulation as it only allows a 24 hour exemption for such maintenance in Rule 71.1.D.2.

As detailed in Section 95668 above, in addition to Separator and Tank Systems, the GHG Regulations requires optional Vapor Collection Systems and Vapor Control Devices for the following:

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- Optionally for the rod packing and seal emission vent stacks of reciprocating natural gas compressors (Sections 95668(c)(3)(C) and 95668(c)(4)(C)). Other option is to repair leaking rod packing and seals within 30 days. Rule 74.10 prohibits leaking rod packings and seals.
- Optionally for the wet seal emission vent stacks of reciprocating natural gas compressors (Section 95668(d)(5)). The other option is to repair leaking wet seals within 30 days. Rule 74.10 prohibits leaking wet seals.
- Optionally for the venting of natural gas from continuous bleed natural gas powered pneumatic devices and pumps which need to be retrofitted to comply with the GHG Regulation (Section 95668(e)(5)(A)). The other option is to use compressed air or electricity to power pneumatic devices and pumps. Rule 74.10 prohibits continuous bleed natural gas powered pneumatic devices and pumps and it is our understanding that most, if not all, have been replaced with instrument air or electric power.
- Optionally for the venting of natural gas from the liquids unloading of natural gas wells (Section 95668(f)). The other option is to measure or calculate the volume of natural gas vented. Rule 71.1.C already prohibits this venting of natural gas.

§95672 Record Keeping Requirements

95672(a) Page 34

Section (a) states that facilities that are subject to Sections 95668, 95669, 95670 & 95671 must keep records. In Ventura County, the following records are not required under this regulation:

- Flash Analysis testing (a)(1), because no flash tests are currently required.
- Exemption records for separator & tank systems (a)(2)
- Liquids unloading (a)(13) – No gas only wells in Ventura County
- Well Casing Vents (a)(14) – Prohibited in Ventura County pursuant to Rule 71.1.C.1.
- Underground natural gas storage (a)(15) & (16) – None in Ventura County
- Leak detection and repair (a)(17) through (20) – Components that were previously subject to APCD 74.10 (LDAR) requirements are not subject to LDAR requirements in the GHG Regulation and therefore not subject to LDAR recordkeeping/reporting requirements in the GHG Regulation. Some recordkeeping will be required for equipment/components that are specifically required to comply with 95668, 95669, 95670 and 95671.
- Vapor collection systems and vapor control devices, except records for circulation tanks. (a)(21)

Records are required for the following:

- §95668, Circulation tanks – best practices management plan (a)(4).
- Reciprocating natural gas compressors (a)(5), (6), (7) & (8)
- Centrifugal natural gas compressors (a)(9), (10) & (11)
- Natural gas powered pneumatic devices (a)(12)
- Leak detection and repair (a)(17) through (20) – Only for those components that were not previously subject to 74.10. (i.e. exempt if already subject to 74.10).
- Section (a)(21) vapor collection system and vapor control devices required to be installed as a result of §95668.

§95673 Reporting Requirements

95673(a) Page 37

Section (a) states that facilities that are subject to Sections 95668 & 95669 must submit reports to ARB by July 1 of each year. In Ventura County, the following reports are not required under this regulation:

- Flash Analysis testing (a)(1), because flash testing is not required in Ventura County at this point.

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- Liquids unloading (a)(6) – No gas only wells in Ventura County
- Well Casing Vents (a)(7) – Not allowed in Ventura County
- Underground natural gas storage (a)(8) through (11) – None in Ventura County
- Leak detection and repair (a)(12) & (13) – Components that were previously subject to APCD 74.10 (LDAR) requirements are not subject to LDAR requirements in the GHG Regulation and therefore not subject to LDAR recordkeeping/reporting requirements in the GHG Regulation.

Reports are required for the following:

- Reciprocating natural gas compressors (a)(2) & (3)
- Centrifugal natural gas compressors (a)(4)
- Natural gas powered pneumatic devices (a)(5)
- Leak detection and repair (a)(12) & (13) – Only for those components that were not previously subject to 74.10. (i.e. exempt if already subject to 74.10.)

§95674 Implementation

Page 39

Sections (a)(1) through (a)(4) specify how enforcement responsibilities are assigned between ARB and local air districts.

- (a)(1) VCAPCD will not revise District Rules to implement the GHG Regulation or charge additional fees.
- (a)(2) VCAPCD entered into an MOA with ARB on August 16, 2018 to enforce the GHG Regulation.
- (a)(3) VCAPCD has added permit condition(s) to all oilfield permits that refer to this regulation. However, the permit conditions make it clear that, in many cases, Rules 71.1 and 74.10 are more stringent than the GHG regulation.
- (a)(4) VCAPCD will enforce through the existing permit system. VCAPCD does not have a facility registration system as this regulation will be enforced via the existing permit system for oil and gas facilities. As discussed below, the VCAPCD will require facilities to register directly with ARB, pursuant to the GHG Regulation.

Section (b)(1) may require facility owners/operators to apply to air districts for permit term (conditions) that ensure compliance with the regulation.

- (b)(1)(A) VCAPCD will add permit conditions to existing facilities through the permit renewal process and during the Authority to Construct / Permit to Operate process for new, modified facilities. A VCAPCD permit application is not required to be submitted to comply with the GHG Regulation (unless installing a vapor recovery system on a currently uncontrolled source). There will be no changes to the VCAPCD oilfield permit scheme for wells, tanks, sumps, pits, engines, heater treaters, loading racks, glycol units, etc. There will be no additional equipment types listed on the VCAPCD oilfield permits to enforce this regulation.
- (b)(1)(B) As discussed above, VCAPCD will not require any additional equipment to be subject to permit. This regulation will be enforced via the existing permit system for oil and gas facilities.

Section (b)(2) contains registration requirements and specific facility info to be collected and shared with ARB.

- (b)(2)(A) This is the facility ARB-registration requirement. The VCAPCD requires that owners and operators subject to this regulation register their subject equipment directly with ARB (Appendix A Table A6).

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Section (b)(3) requires owners/operators to comply with the regulation regardless of whether or not they have complied with the permitting and registration requirements in this section.

§95675 Enforcement

Page 41

Sections (a) through (g) specifically call out violations, most specifically states that each day of violation is a separate violation.

- (a) Each individual non-complying piece of equipment is a separate violation.
- (b) Each day of violation is a separate violation.
- (c) Each metric ton of methane emitted is a separate violation.
- (d) Failure to submit a required report is a separate violation for each day it is not submitted.
- (e) Failure to retain and produce any required record is a separate violation for each day it is not submitted.
- (f) Submitting inaccurate information is a violation.
- (g) Falsifying any required record or information is a violation.

§95676 No Preemption

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The GHG Regulation does not preempt any other more stringent rule or regulation. As discussed above, in many cases Rule 71.1 is more stringent than the GHG Regulation.