



**MONTEREY BAY AIR RESOURCES DISTRICT**

24580 Silver Cloud Court, Monterey, CA 93940

<b>MEETING DATE:</b>	February 16, 2022	<b>REGULAR AGENDA</b>
<b>TO:</b>	Board of Directors	
<b>FROM:</b>	Amy Clymo, Engineering and Compliance Manager	
<b>SUBJECT:</b>	Receive a Report Evaluating a Best Available Retrofit Control Technology (BARCT) Rule for Steam Driven Crude Oil Production Sources Subject to the BARCT Schedule and Adopt a Resolution Which Requires No Further Action to Implement a BARCT Rule	

RECOMMENDATION

Receive a Report Evaluating a Best Available Retrofit Control Technology (BARCT) Rule for Steam Driven Crude Oil Production Sources Subject to the BARCT Schedule and Adopt a Resolution Which Requires No Further Action to Implement a BARCT Rule.

DISCUSSION

In 2018, the Board adopted an Expedited BARCT Implementation Schedule to satisfy the requirements of Health and Safety Code Section 40920.6 (c). The purpose of the BARCT schedule was to establish a timeline for further consideration of new rules or revisions to existing rules to reduce emissions from permitted equipment at industrial sources. The BARCT schedule only applies to the following sources: Aera Energy LLC, Chevron U.S.A. Inc., CALNRG Operating LLC (formerly Eagle Petroleum LLC), and L’hoist North America of Arizona, Inc.

The current BARCT rule category under review is consideration of revisions to Rule 427 Steam Driven Crude Oil Production Wells. At the time the BARCT schedule was adopted in 2018, MBARD was designated as nonattainment for the state ozone standard. In 2020, MBARD was redesignated to attainment for the state ozone standard. Therefore, additional emission reductions are not needed to attain the state ozone standard.

The purpose of Rule 427 is to limit emissions of ozone precursor volatile organic compounds (VOC) from the operation of steam drive crude oil production wells. Staff also reviewed another MBARD rule, Rule 417 Storage of Organic Liquids, which is also applicable to the subject crude oil production facilities and is intended to achieve VOC reductions. Both Rule 417 and Rule 427 are part of MBARD’s rules included in the State Implementation Plan (SIP) and any revisions to Rule 417 or Rule 427 will require the approval from the California Air Resources Board and EPA. Therefore, staff considered creating a new rule that would only be applicable to the AB 617 industrial sources and would combine requirements from Rule 417 and Rule 427.

Three of the four BARCT sources could be subject to a new rule; Aera Energy LLC, Chevron USA

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Inc, and CALNRG Operating LLC (formerly Eagle Petroleum LLC). MBARD is proposing to not proceed with creating a new rule due to several other ongoing federal, state, and local air district rulemaking activities in the oil and gas sector in order to avoid duplicate or conflicting requirements. Below is a summary of the other rulemaking activities:

1. The United States Environmental Protection Agency (EPA) is in the process of updating their New Source Performance Standard (NSPS) and Emission Guidelines (EGs) for New, Reconstructed, Modified Sources, and Existing Sources in the oil and natural gas sector. EPA expects to finalize these rules by the end of 2022.
2. The California Air Resources Board will likely be updating the Greenhouse Gas Emissions Standard for Crude Oil and Natural Gas Facilities to comply with EPA requirements. This process is anticipated to begin in 2022 and be completed in 2023.
3. The California Department of Conservation's Geologic Energy Management Division (CalGEM) drafted a new rule for Protection of Communities and Workers from Health and Safety Impacts from Oil and Gas Production Operations. This rule includes leak detection and repair provisions which are more stringent than Rule 427. Public comments on the rule were due December 21, 2021. It is anticipated this rule making process will conclude in 2022.
4. San Joaquin Valley Air Pollution Control District is in the process of considering amendments to their leak detection and repair rules for oil and gas production facilities. The first public workshop was held on October 7, 2021. The next step will be preparing the proposed amendments to the rules. We anticipate this rule making process to occur in 2022 and possibly into 2023.

### FINANCIAL IMPACT

The California Air Resources Board (CARB) provided grants to air districts to implement the community air protection program aspects of AB617 which included the BARCT schedule. MBARD has been awarded several grants which will be utilized by Planning for community air protection activities and Engineering for rule development activities associated with the implementation of the expedited BARCT schedule.

There will be no financial impacts to the subject industrial sources because MBARD is proposing to not proceed with rule development.

### ATTACHMENTS

Resolution

Evaluation of Best Available Retrofit Control Technology (BARCT) – Consideration of Revisions to Rule 427 Steam Driven Crude Oil Production Wells or Creation of a New Rule for Crude Oil Facilities Subject to the BARCT Schedule

**RESOLUTION 22-XXX**

**BEFORE THE AIR POLLUTION CONTROL BOARD OF THE  
MONTEREY BAY AIR RESOURCES DISTRICT**

Adopt a Resolution Requiring No Further Action to Implement a Best Available Retrofit Control Technology (BARCT) Rule for Steam Driven Crude Oil Production Sources Subject to the BARCT Schedule.....)

WHEREAS, Health and Safety Code §40920.6(c)(1) requires each district that is a nonattainment area for one or more pollutants to adopt an expedited BARCT schedule on or before January 1, 2019 and implement the schedule, by the earliest date feasible, but not later than December 31, 2023; and

WHEREAS, the Monterey Bay Air Resources District (MBARD) is state nonattainment area for the pollutant PM<sub>10</sub>; and

WHEREAS, Health and Safety Code §40920.6(c)(2) states the schedule shall apply to each industrial source that, as of January 1, 2017, was subject to a market-based compliance mechanism adopted by the state board; and

WHEREAS, MBARD has four subject industrial sources: Aera Energy LLC, Chevron USA Inc., CALNRG Operating LLC (formerly Eagle Petroleum LLC), and Lhoist North America of Arizona, Inc.; and

WHEREAS, an expedited BARCT schedule was adopted November 14, 2018 identifying review of Rule 427 Steam Driven Crude Oil Production Wells; and

WHEREAS, three of the four industrial sources operate steam driven crude oil production wells subject to local, state, and federal requirements for vapor control and leak detection; and

WHEREAS, based on a review of ongoing local, state, and federal oil and gas sector regulatory activities, staff determined no further action is necessary to develop a new rule in order to avoid duplicate or conflicting requirements; and

NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD OF DIRECTORS OF THE MONTEREY BAY AIR RESOURCES DISTRICT:

1. Require no further action to implement a BARCT rule for steam driven crude oil production sources.

PASSED AND ADOPTED this 16<sup>th</sup> day of February 2022, upon motion of, seconded by and carried by the following vote, to wit:

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AYES:

NOES:

ABSENT:

I hereby certify that the foregoing is a true and correct Resolution as duly adopted by the Board of Directors of the Monterey Bay Air Resources District on February 16, 2022.

By: \_\_\_\_\_

Approved: \_\_\_\_\_



## Evaluation of Best Available Retrofit Control Technology (BARCT) – Consideration of Revisions to Rule 427 Steam Driven Crude Oil Production Wells or Creation of a New Rule for Crude Oil Facilities Subject to the BARCT Schedule

Armando Jimenez, Engineer III  
Seong Kim, Engineer II  
Mary Giraudo, Engineer Supervisor  
Amy Clymo, Engineering and Compliance Manager

January 24, 2022

### Background

Assembly Bill 617 (AB 617), which was approved on July 26, 2017, amended California Health and Safety Code Division 26, Part 3, Chapter 10, Section 40920.6., and required each air district that is a nonattainment area for one or more air pollutants to adopt, by January 1, 2019, an expedited schedule for implementation of best available retrofit control technology (BARCT) by the earliest feasible date, but no later than December 31, 2023. This requirement applies to each industrial source subject to California Greenhouse Gas (GHG) Cap-and-Trade requirements. At the time AB 617 was approved, the Monterey Bay Air Resources District (MBARD) was designated nonattainment for the state 8-hour ozone standard and state 24-hour particulate matter less than 10 microns (PM<sub>10</sub>) standard and was therefore required to adopt an expedited BARCT schedule. Based on monitoring data for the years 2017-2019, the California Air Resources Board (CARB) redesignated MBARD to attainment for the 8-hour ozone standard.

In 2018, the Board adopted an Expedited BARCT Implementation Schedule to satisfy the requirements of Health and Safety Code Section 40920.6 (c). The purpose of the BARCT schedule was to establish a timeline for further consideration of new rules or revisions to existing rules to reduce emissions from permitted equipment at industrial sources. In February 2020, the first BARCT rule, Rule 441, was adopted to address Boilers, Steam Generators, and Process Heaters. In November 2020, the Board approved staff's recommendation to not move forward with an internal combustion engine rule.

The current category under review in the BARCT schedule is consideration of revisions to Rule 427 Steam Driven Crude Oil Production Wells. Staff also reviewed another MBARD rule, Rule 417 Storage of Organic Liquids, which is also applicable to the subject crude oil facilities and is

intended to achieve reductions of the ozone precursor volatile organic compounds (VOC). Both Rule 417 and Rule 427 are part of MBARD's rules included in the State Implementation Plan (SIP) and any revisions to Rule 417 or Rule 427 will require the approval from the California Air Resources Board and EPA. Therefore, staff considered creating a new rule that would only be applicable to the AB 617 industrial sources and would combine requirements from Rule 417 and Rule 427.

Within the jurisdiction of MBARD, there are four industrial sources subject to the BARCT schedule: Aera Energy LLC, Chevron U.S.A. Inc., CALNRG Operating LLC (formerly Eagle Petroleum LLC), and L'hoist North America of Arizona, Inc. The new rule under consideration would address potential VOC reductions from the three crude oil production facilities subject to the BARCT schedule. Rule 417 and Rule 427 achieve VOC emission reductions through routine leak detection and repair activities and a vapor control requirement for tanks or wellheads (see Table 1). The three crude oil production facilities must also comply with the existing California Air Resources Board's regulation Greenhouse Gas Emissions Standard for Crude Oil and Natural Gas Facilities which has a more stringent leak detection threshold than both Rule 417 and Rule 427. Based on the following discussion, MBARD staff are proposing to not move forward with a new rule.

### Rule Review

As defined in Health and Safety Code Section 40406, BARCT is an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source. The overall purpose of the BARCT implementation is to reduce criteria pollutant emissions from large industrial sources. By taking into account current rule making activities at the federal, state, and local level, staff believes creating a new rule is unnecessary.

The prior BARCT rule evaluations were different because they focused on specific emission limits for specific types of equipment. For example, Rule 441 established a limit of 15 ppm NO<sub>x</sub> at 3% O<sub>2</sub> for steam generators. The potential emission reductions related to a new rule come from a vapor control standard and reducing fugitive emissions through routine leak detection and repair (LDAR) activities. Vapor control can be achieved through the use of a combustion source, such as a flare. Fugitive emissions are the unplanned losses of gases (measured as methane) from components such as wells, pipes, flanges, seals, or valves. LDAR is the process of locating and repairing these fugitive leaks in specified timeframe. Table 1 summarizes the Rule 417 and Rule 427 vapor control and leak detection requirements.

**Table 1. Rule 417 and 427 Requirements**

<b>Rule Section</b>	<b>Category</b>	<b>Requirements</b>
Rule 417 Section 2.4 and 3.1.3.3	Leaks (tanks and associated piping, valves and fittings)	> 10,000 ppm methane
Rule 417 Section 3.1.3.1	Vapor Recovery System (tanks)	95% vapor control efficiency
Rule 427 Section 1.3.2	Exemption – Component Leak Repair	< 10,000 ppm methane
Rule 427 Section 3.1	Hydrocarbon Control (wellheads)	98% control
Rule 427 Section 3.4, 3.5, and 3.6	Leak Repair Requirements	>15,000 ppm methane 20 working days  >75,000 ppm methane 15 working days

### Rules and Regulations

For comparison, staff also compiled existing state and other air district rules applicable to oil and gas facilities. These requirements are shown below in Table 2

**Table 2. Example Requirements of Other Regulations and Rules**

<b>Air District and Rule Number</b>	<b>Category</b>	<b>Requirements</b>
California Air Resources Board Greenhouse Gas Emissions Standards for Crude Oil and Natural Gas Facilities	VOC Collection and Control System	95% vapor control efficiency (attainment areas) 95% vapor control efficiency and does not generate more than 15 ppm NOx at 3% O <sub>2</sub> (attainment areas)
	Leak Thresholds (components such as flanges, valves, pipes, or well casing)	1,000 – 9,999 ppm methane repair/remove from service in 14 days
		10,000 – 49,999 ppm methane repair/remove from service in 5 days
		>50,000 ppm methane repair/remove from service in 2 days
San Joaquin Valley Air Pollution Control District Rule 4401	VOC Collection and Control System	99% VOC destruction or removal efficiency
	Minor Leak Threshold	2,000 – 10,000 ppm methane repair in 14 days

Air District and Rule Number	Category	Requirements
	Major Leak Threshold	10,000 – 50,000 ppm methane repair 5 days
		>50,000 ppm methane repair 2 days
Ventura County Air Pollution Control District Rule 71	Minor Leak Threshold	1,000 – 10,000 ppm methane repair in 14 days
	Major Leak Threshold	10,000 – 50,000 ppm methane repair in 5 days >50,000 ppm methane repair 1 day
South Coast Air Quality Management District Rule 1148	Well VOC Control System Limit	If steam drive wells are connected to a vapor control system, VOC emissions from the control system shall average no more than 4.5 pounds per day per connected well.
South Coast Air Quality Management District Rule 1148.1	Well Cellar Leak Threshold	500 ppm methane
	Produced Gas Control System	95% VOC removal efficiency
	Leak Threshold for Components of Produced Gas Handling Equipment (located within 100 meters of a sensitive receptor)	250 ppm methane repair by close of following business day
South Coast Air Quality Management District Rule 1173	Leak Threshold - Heavy Liquid Component	100- 500 ppm methane repair 7 days
	Leak Threshold - Heavy Liquid Component	>500 ppm methane repair 1 day
	Leak Threshold – Light liquid/gas/vapor Component	500 – 10,000 ppm methane repair 7 days
	Any leak	10,000 - 25,000 ppm repair 2 days
	Any leak	> 25,000 ppm repair 1 days
Santa Barbara Air Pollution Control District Rule 325	Produced Gas Control System	90% VOC removal efficiency
	Leak Threshold	10,000 ppm methane

Upon reviewing the different state and other air district rules, the vapor control requirements

in Rule 417 and 427 are equivalent or more stringent than the existing state oil and gas regulation. The Rule 427 hydrocarbon control standard of 98% is more stringent than the state regulation standard of 95%. In addition, the three subject crude oil production facilities are already subject to the more stringent state leak detection and repair threshold of 1,000 ppm. Finally, in order to avoid duplicate or conflicting requirements with the following ongoing rule making activities, MBARD staff propose not to move forward with a new rule:

1. The United States Environmental Protection Agency (EPA) is in the process of updating their New Source Performance Standard (NSPS) and Emission Guidelines (EGs) for New, Reconstructed, Modified Sources, and Existing Sources in the oil and natural gas sector. EPA expects to finalize these rules by the end of 2022.
2. CARB will likely be updating the Greenhouse Gas Emissions Standard for Crude Oil and Natural Gas Facilities to comply with EPA requirements. This process is anticipated to begin in 2022 and be completed in 2023.
3. The California Department of Conservation's Geologic Energy Management Division (CalGEM) drafted a new rule for Protection of Communities and Workers from Health and Safety Impacts from Oil and Gas Production Operations. This rule includes leak detection and repair provisions which are more stringent than Rule 427. Public comments on the rule were due December 21, 2021. It is anticipated this rule making process will conclude in 2022.
4. San Joaquin Valley Air Pollution Control District is in the process of considering amendments to their leak detection and repair rules for oil and gas production facilities. The first public workshop was held on October 7, 2021. The next step will be preparing the proposed amendments to the rules. We anticipate this rule making process to occur in 2022 and possibly into 2023.
5. CARB redesignated MBARD to attainment for the state 8-hour ozone standard in 2020. Emission reductions from a potential new rule are not needed to attain the 8-hour ozone standard.

## Conclusion

The rule development activity under review per the Expedited BARCT Schedule is for VOC emission reductions from a potential new rule for crude oil sources subject to the BARCT schedule. MBARD is proposing to not proceed with creating a new rule due to several other federal, state, and local air district rulemaking activities in the oil and gas sector in order to avoid duplicate or conflicting requirements.