



EOG Resources, Inc.
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May 19, 2025

Texas Commission on Environmental Quality (TCEQ)
Air Permits Initial Review Team (APIRT), MC 161

Office of Permitting, Remediation, and Registration
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Re: Revision to Permit by Rule Registration No. 124774
Standard Permit Registration, 30 TAC §116.620
EOG Resources, Inc., CN600124333
Naylor Jones 6&7 E Magpie Meadowlark Snowbird Production Facility, RN107816738
Fowlerton, La Salle County

Attn: APIRT

On behalf of EOG Resources, Inc., I am submitting the enclosed Standard Permit Authorization, 30 TAC §116.620, and associated documentation for revision to PBR Registration No. 124774 for the Naylor Jones 6&7 E Magpie Meadowlark Snowbird (the Facility). Upon approval, EOG is requesting cancellation of PBR No. 124774. Under this permit action, EOG is:

- Revising the control efficiency of the VRU system,
- Revising production to reflect current conditions at the Facility,
- Adjusting fugitive component estimates and associated emissions, and
- Using BRE ProMax for process simulation to estimate emission rates from the flares (EPN FL-1) and loading operations (EPN LOAD).

The attached PI-1S and administrative documents, including required TCEQ forms and technical documents, are submitted in support of this registration. EOG does not wish to register and certify MSS emissions, which are authorized under 106.359. EOG acknowledges the emission limits of 106.4, and these emission limits will not be exceeded. Records will be retained as required to demonstrate compliance with 106.4, 106.352, 106.359, 106.492, and 106.512.

The collection of fugitive emissions components at the site are subject to NSPS OOOOb. Please note that a TCEQ Form LPE-CERT is being submitted separate of this permit application, which establishes LPE limits of the tank battery (FIN TB-1) below the PTE of 6 tpy VOCs and 20 tpy methane. As such, the storage vessels (FIN TB-1) are not applicable to OOOOb, and the flare (FIN FL-1) does not control any other OOOOb sources. Furthermore, the compressor for EPN ENG-2 is not subject to OOOOb, as the manufacture date precedes December 6, 2022.

If you have any questions, please call me at (210) 701-4287.

Sincerely,

A handwritten signature in black ink, appearing to read "Taylor Winch", written over a light blue horizontal line.

Taylor Winch
Environmental Representative
Attachments



Texas Commission on Environmental Quality

Naylor Jones 6&7E Magpie Meadowlark Snowbird Production Facility

Form PI-1S Registration for Standard Permit under 30 TAC §116.620
PBR Registration No. 124774
Standard Permit Registration No. TBD
Fowlerton, La Salle County
Regulated Entity No.: RN
Customer No.: CN600124333

**Texas Commission on Environmental Quality
Form PI-1S
Registrations for Air Standard Permit
(Page 1)**

I. Registrant Information		
A. Company or Other Legal Customer Name:		
EOG Resources, Inc.		
B. Company Official Contact Information (<input type="checkbox"/> Mr. <input type="checkbox"/> Mrs. <input checked="" type="checkbox"/> Ms. <input type="checkbox"/> Other:)		
Name: Taylor Winch		
Title: Environmental Representative		
Mailing Address: PO Box 592929		
City: San Antonio	State: TX	ZIP Code: 78259
Phone: 210-701-4287	Fax:	
Email Address: taylor_winch@eogresources.com		
<i>All permit correspondence will be sent via email.</i>		
C. Technical Contact Information (<input type="checkbox"/> Mr. <input type="checkbox"/> Mrs. <input checked="" type="checkbox"/> Ms. <input type="checkbox"/> Other:)		
Name: Taylor Winch		
Title: Environmental Representative		
Company Name: EOG Resources, Inc.		
Mailing Address: PO Box 592929		
City: San Antonio	State: Texas	ZIP Code: 78259
Phone: 210-701-4287	Fax:	
Email Address: taylor_winch@eogresources.com		
II. Facility and Site Information		
A. Name and Type of Facility		
Facility Name: Naylor Jones 6&7E Magpie Meadowlark Production Facility		
Type of Facility:	<input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	
For portable units, please provide the serial number of the equipment being authorized below.		
Serial No:	Serial No:	

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II. Facility and Site Information (continued)		
B. Facility Location Information		
Street Address:		
If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed).		
FROM HWY97 GO W ON NATUS RD 4.0 MI TO THE FACILITY ON THE RIGHT		
City: Fowlerton	County: La Salle	ZIP Code: 78021
Latitude (nearest second):	Longitude (nearest second):	
C. Core Data Form (required for Standard Permits 6006, 6007, and 6013).		
Is the Core Data Form (TCEQ Form 10400) attached?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If "No," provide customer reference number (CN) and regulated entity number (RN) below.		
Customer Reference Number (CN): CN600124333		
Regulated Entity Number (RN): RN107816738		
D. TCEQ Account Identification Number (if known):		
E. Type of Action:		
<input type="checkbox"/> Initial Application <input checked="" type="checkbox"/> Change to Registration <input type="checkbox"/> Renewal <input type="checkbox"/> Renewal Certification		
For Change to Registration, Renewal, or Renewal Certification actions provide the following:		
Registration Number:	Expiration Date:	
F. Standard Permit Claimed: 6002		
G. Previous Standard Exemption or PBR Registration Number:		
Is this authorization for a change to an existing facility previously authorized under a standard exemption or PBR?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If "Yes," enter previous standard exemption number(s) and PBR registration number(s) and associated effective date in the spaces provided below.		
Standard Exemption and PBR Registration Number(s)	Effective Date	
124774	01/30/2015	

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II. Facility and Site Information (continued)	
H. Other Facilities at this Site Authorized by Standard Exemption, PBR, or Standard Permit	
Are there any other facilities at this site that are authorized by an Air Standard Exemption, PBR, or Standard Permit?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If "Yes," enter standard exemption number(s), PBR registration number(s), and Standard Permit registration number(s), and associated effective date in the spaces provided below.	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s)	Effective Date
I. Other Air Preconstruction Permits	
Are there any other air preconstruction permits at this site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If "Yes," enter permit number(s) in the spaces provided below.	
J. Affected Air Preconstruction Permits	
Does the standard permit directly affect any permitted facility?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If "Yes," enter permit number(s) in the spaces provided below.	

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II. Facility and Site Information (continued)		
K. Federal Operating Permit (FOP) Requirements		
Is this facility located at a site that is required to obtain a FOP pursuant to 30 TAC Chapter 122?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> To Be Determined	
If the site currently has an existing FOP, enter the permit number:		
Check the requirements of 30 TAC Chapter 122 that will be triggered if this standard permit is approved (<i>check all that apply</i>).		
<input type="checkbox"/> Initial Application for a FOP <input type="checkbox"/> Significant Revision for a SOP <input type="checkbox"/> Minor Revision for a SOP <input type="checkbox"/> Operational Flexibility/Off Permit Notification for a SOP <input type="checkbox"/> Revision for a GOP <input type="checkbox"/> To be Determined <input checked="" type="checkbox"/> None		
Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for the site. (<i>check all that apply</i>)		
<input type="checkbox"/> SOP <input type="checkbox"/> GOP <input type="checkbox"/> GOP application/revision (submitted or under APD review) <input checked="" type="checkbox"/> N/A <input type="checkbox"/> SOP application/revision (submitted or under APD review)		
III. Fee Information (go to www.tceq.texas.gov/epay to pay online)		
A. Fee Amount: 900		
B. Voucher number from ePay:		
IV. Public Notice (if applicable)		
A. Responsible Person (<input type="checkbox"/> Mr. <input type="checkbox"/> Mrs. <input type="checkbox"/> Ms. <input type="checkbox"/> Other:) _____		
Name:		
Title:		
Company:		
Mailing Address:		
City:	State: 	ZIP Code:
Phone:	Fax No.:	
Email Address:		

**Texas Commission on Environmental Quality
Form PI-1S
Registrations for Air Standard Permit
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IV. Public Notice (continued) (if applicable)		
B. Technical Contact (<input type="checkbox"/> Mr. <input type="checkbox"/> Mrs. <input type="checkbox"/> Ms. <input type="checkbox"/> Other): _____		
Name:		
Title:		
Company:		
Mailing Address:		
City:	State: 	ZIP Code:
Phone No.:	Fax No.:	
Email Address:		
C. Bilingual Notice		
Is a bilingual program required by the Texas Education Code in the School District?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If "Yes," list which language(s) are required by the bilingual program?		
D. Small Business Classification and Alternate Public Notice		
Does this company (including parent companies and subsidiary companies) have fewer than 100 employees or less than \$6 million in annual gross receipts?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the site a major source under 30 TAC Chapter 122, Federal Operating Permit Program?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are the site emissions of any individual regulated air contaminant equal to or greater than 50 tpy?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are the site emissions of all regulated air contaminant combined equal to or greater than 75 tpy?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
V. Renewal Certification Option		
A. Does the permitted facility emit an air contaminant on the Air Pollutant Watch List, and is the permitted facility located in an area on the watch list?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
B. For facilities participating in the Houston/Galveston/Brazoria area (HGB) cap and trade program for highly reactive VOCs (HRVOCs), do the HRVOCs need to be speciated on the maximum allowable emission rates table (MAERT)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
C. Does the company and/or site have an unsatisfactory compliance history?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
D. Are there any applications currently under review for this standard permit registration?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

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V. Renewal Certification Option (<i>continued</i>)	
E. Are scheduled maintenance, startup, or shutdown emissions required to be included in the standard permit registration at this time?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
F. Are any of the following actions being requested at the time of renewal:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1. Are there any facilities that have been permanently shutdown that are proposed to be removed from the standard permit registration?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. Do changes need to be made to the standard permit registration in order to remain in compliance?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3. Are sources or facilities that have always been present and represented, but never identified in the standard permit registration, proposed to be included with this renewal?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4. Are there any changes to the current emission rates table being proposed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>Note: If answers to all of the questions in Section V. Renewal Certification Option are "No," use the certification option and skip to Section VII. of this form. If the answers to any of the questions in Section V. Renewal Certification Option are "Yes," the certification option cannot be used.</i>	
*If notice is applicable and comments are received in response to the public notice, the application does not qualify for the renewal certification option.	
VI. Technical Information Including State and Federal Regulatory Requirements	
Place a check next to the appropriate box to indicate what you have included in your submittal.	
<i>Note: Any technical or essential information needed to confirm that facilities are meeting the requirements of the standard permit must be provided. Not providing key information could result in an automatic deficiency and voiding of the project.</i>	
A. Standard Permit requirements (Checklists are optional; however, your review will go faster if you provide applicable checklists.)	
Did you demonstrate that the general requirements in 30 TAC Sections 116.610 and 116.615 are met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did you demonstrate that emission limitations in 30 TAC Sections 106.261 and 106.262 are met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did you demonstrate that the individual requirements of the specific standard permit are met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Confidential Information (All pages properly marked "CONFIDENTIAL")	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C. Process Flow Diagram	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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VI. Technical Information Including State and Federal Regulatory Requirements (continued)	
Place a check next to the appropriate box to indicate what you have included in your submittal.	
<i>Note: Any technical or essential information needed to confirm that facilities are meeting the requirements of the standard permit must be provided. Not providing key information could result in an automatic deficiency and voiding of the project.</i>	
D. Process Description	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
E. Maximum Emissions Data and Calculations	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
F. Plot Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
G. Projected Start Of Construction Date, Start Of Operation Date, and Length of Time at Site:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Projected Start of Construction (provide date):	
Projected Start of Operation (provide date):	
Length of Time at the Site:	
VII. Delinquent Fees and Penalties	
This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ website at: www.tceq.texas.gov/agency/financial/fees/delin/index.html .	
VIII. Signature Requirements	
The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382, the Texas Clean Air Act (TCAA) the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.	
Name (printed): Taylor Winch	
Signature (original signature required):	
Date:	
IX. Copies of the Registration	
The PI-1S application must be submitted through ePermits. No additional copies need to be sent to the Regional Office or local Air Pollution Control Program(s). The link to ePermits can be found here: www3.tceq.texas.gov/steers/ .	

Reset Form

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APPENDICES

APPENDIX A – ANALYTICAL DATA

APPENDIX B – AREA MAP

APPENDIX C – MODELING OUTPUT

APPENDIX D – ENGINE DATA

EOG RESOURCES, INC.

MAY 2025

NAYLOR JONES 6&7E MAGPIE MEADOWLARK SNOWBIRD PRODUCTION FACILITY

Form PI-1S Registration for Standard Permit under 30 TAC §116.620

ATTACHMENT VI.A

STANDARD PERMIT REQUIREMENTS

Standard Permit Applicability Checklist
Title 30 Texas Administrative Code §116.610

Citation	Text Description	Information	Response
§116.610(a)(1)	Will the project, which results in a net increase in emissions of air contaminants from the project other than carbon dioxide, water, nitrogen, methane, ethane, hydrogen, oxygen, or those for which a NAAQS has been established, meet the emission limitations of §106.261 of this title (relating to Facilities (Emission Limitations), unless otherwise specified by a particular standard permit?	The project will meet the emission limitations. See Speciated Emission Summary.	Yes
§116.610(a)(2)	Will construction and operation of the project begin prior to the effective date of a revision to this subchapter under which the project would no longer meet the requirements for a standard permit?		Yes
§116.610(a)(3)	Will the proposed project comply with the applicable provisions of the Federal Clean Air Act (FCAA), §111 (concerning New Source Performance Standards) as listed under 40 Code of Federal Regulations (CFR) Part 60, promulgated by the United States EPA?	Enforceable emission rates for tanks previously established. Not subject to NSPS OOOOb	Yes
§116.610(a)(4)	Will the proposed project comply with the applicable provisions of FCAA, §112 (concerning Hazardous Air Pollutants) as listed under 40 CFR Part 61, promulgated by the EPA?	There are no applicable subparts of NESHAPs Part 61.	N/A
§116.610(a)(5)	Will the proposed project comply with the applicable MACT standards as listed under 40 CFR Part 63, promulgated by the EPA under FCAA, §112 or as listed under Chapter 113, Subchapter C of this title (relating to National Emissions Standards for Hazardous Air Pollutants for Source Categories (FCAA, §112, 40 CFR Part 63))?	MACT ZZZZ	Yes
§116.610(a)(6)	If subject to Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program), does the proposed facility, group of facilities, or account agree to obtain allocations to operate?	The site is not subject to the Mass Emissions Cap and Trade Program.	N/A
§116.610(b)	Any project that constitutes a new major stationary source or major modification as defined in §116.12 of this title (relating to Nonattainment and Prevention of Significant Deterioration Review Definitions) is subject to the requirements of §116.110 of this title (relating to Applicability) rather than this subchapter.	The emissions from the proposed operations do not constitute a new major stationary source or major modification.	
§116.610(c)	Persons may not circumvent by artificial limitations the requirements of §116.110 of this title.	There are no artificial limitations used to circumvent the requirements.	
§116.610(d)	Is the site subject to Subchapter E?	The site is an area source of HAP.	No

Standard Permit Applicability Checklist
Title 30 Texas Administrative Code §116.615

Citation	Text Description	Information	Response
§116.615(1)	Will the emissions from the facility, including dockside vessel emissions, comply with all applicable rules and regulations of the commission adopted under Texas Health and Safety Code, Chapter 382, and with the intent of the Texas Clean Air Act (TCAA), including protection of health and property of the public?		Yes
§116.615(2)	All representations with regard to construction plans, operating procedures, and maximum emission rates in any registration for a standard permit become conditions upon which the facility or changes thereto, must be constructed and operated. It is unlawful for any person to vary from such representations if the change will affect that person's right to claim a standard permit under this section. Any change in condition such that a person is no longer eligible to claim a standard permit under this section requires proper authorization under §116.110 of this title (relating to Applicability). If the facility remains eligible for a standard permit, the owner or operator of the facility shall notify the executive director of any change in conditions which will result in a change in the method of control of emissions, a change in the character of the emissions, or an increase in the discharge of the various emissions as compared to the representations in the original registration or any previous notification of a change in representations. Notice of changes in representations must be received by the executive director no later than 30 days after the change.	EOG acknowledges that all representations with regard to construction plans, operating procedures, and maximum emission rates in this standard permit registration become conditions upon which the facility must be operated.	
§116.615(3)	Standard permit in lieu of permit amendment. All changes authorized by standard permit to a facility previously permitted under §116.110 of this title shall be administratively incorporated into that facility's permit at such time as the permit is amended or renewed.	N/A	
§116.615(4)	Construction progress. Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office not later than 15 working days after occurrence of the event, except where a different time period is specified for a particular standard permit.	EOG will comply with construction progress notification requirements.	
§116.615(5)(a)	Start-up notification. The appropriate air program regional office of the commission and any other air pollution control agency having jurisdiction shall be notified prior to the commencement of operations of the facilities authorized by a standard permit in such a manner that a representative of the executive director may be present.	EOG will comply with start-up notification notification requirements.	
§116.615(5)(b)	For phased construction, which may involve a series of units commencing operations at different times, the owner or operator of the facility shall provide separate notification for the commencement of operations for each unit.	EOG will comply with start-up notification notification requirements.	

Citation	Text Description	Information	Response
§116.615(5)(c)	Prior to beginning operations of the facilities authorized by the permit, the permit holder shall identify to the Office of Permitting, Remediation, and Registration, the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program).	N/A	
§116.615(5)(d)	A particular standard permit may modify start-up notification requirements.	EOG will comply with start-up notification notification requirements.	
§116.615(6)	Sampling requirements. If sampling of stacks or process vents is required, the standard permit holder shall contact the commission's appropriate regional office and any other air pollution control agency having jurisdiction prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The standard permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant.	Any sampling and testing required under this regulation will be conducted according to these requirements.	
§116.615(7)	Equivalency of methods. The standard permit holder shall demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the standard permit. Alternative methods must be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the standard permit.	EOG is not proposing any alternatives to methods indicated in the conditions of the standard permit.	
§116.615(8)	Will a copy of the standard permit along with information and data sufficient to demonstrate applicability of and compliance with the standard permit shall be maintained in a file at the plant site and made available at the request of representatives of the executive director, the United States EPA, or any air pollution control agency having jurisdiction? For facilities that normally operate unattended, this information shall be maintained at the nearest staffed location within Texas specified by the standard permit holder in the standard permit registration. This information must include, but is not limited to, production records and operating hours. Additional recordkeeping requirements may be specified in the conditions of the standard permit. Information and data sufficient to demonstrate applicability of and compliance with the standard permit must be retained for at least two years following the date that the information or data is obtained. The copy of the standard permit must be maintained as a permanent record.	Records will be maintained as required.	Yes

Citation	Text Description	Information	Response
§116.615(9)	<p>The facilities covered by the standard permit may not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. Notification for emissions events and scheduled maintenance shall be made in accordance with §101.201 and §101.211 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; and Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements).</p>	<p>All air pollution emission capture and abatement equipment will continue to be maintained and operated properly during normal facility operations. Notification of emission events or maintenance will be made in accordance with §101.201 and §101.211.</p>	
§116.615(10)	<p>With this registration of a standard permit, do you acknowledge and agree to comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the claiming of the standard permit? If more than one state or federal rule or regulation or permit condition are applicable, the most stringent limit or condition shall govern. Acceptance includes consent to the entrance of commission employees and designated representatives of any air pollution control agency having jurisdiction into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the standard permit.</p>		Yes
§116.615(11)	<p>Are there any conditions in the standard permit concerning a distance, setback, or buffer from other property or structures?</p>		No

Standard Permit Applicability Checklist
§116.620. Installation and/or Modification of Oil and Gas Facilities.

Citation	Text Description	Information	Response
§116.620(a)(1)	Will the facility flare or vent more than 0.3 long tons per day of total sulfur?	Calculations show the flared sulfur is less than 0.3 long tons/day.	No
§116.620(a)(2)	Will the facility emit 4.0 lb/hr or more of uncontrolled sulfur compounds, excluding sulfur dioxide, from all vents?		No
§116.620(a)(3)	Will all vents, excluding safety relief valves, that emit sulfur compounds other than SO ₂ be at least 20 feet above ground level?		Yes
§116.620(a)(4)	Will all new or modified internal combustion reciprocating engines or gas turbines permitted under this standard permit meet the requirements of §106.512?		Yes
§116.620(a)(5)	Will VOC emissions from a glycol dehydration unit exceed 10 tpy?	No dehy at the site.	N/A
§116.620(a)(6)	Will all combustion units (excluding flares, internal combustion engines, or natural gas turbines) with a design maximum heat input greater than 40 MMBtu/hr (using LHV) emit less 0.06 pounds of nitrogen oxides per million Btu?	There are no combustion units subject to this requirement with a heat input greater than 40 MMBtu/hr.	N/A
§116.620(a)(7)	No facility which is less than 500 feet from the nearest off-plant receptor shall be allowed to emit uncontrolled VOC process fugitive emissions equal to or greater than ten tpy, but less than 25 tpy, unless the equipment is inspected and repaired according to subsection (c)(1) of this section.	Facility is greater than 500 feet from the nearest off-plant receptor.	
§116.620(a)(8)	No facility which is 500 feet or more from the nearest off-plant receptor shall be allowed to emit uncontrolled VOC process fugitive emissions equal to or greater than 25 tpy unless the equipment is inspected and repaired according to subsection (c)(1) of this section.	The uncontrolled fugitive emissions will not exceed 25 tpy.	
§116.620(a)(9)	No facility which is less than 500 feet from the nearest off-plant receptor shall be allowed to emit uncontrolled VOC process fugitive emissions equal to or greater than 25 tpy unless the equipment is inspected and repaired according to subsection (c)(2) of this section.	Facility is greater than 500 feet from the nearest off-plant receptor.	
§116.620(a)(10)	No facility shall be allowed to emit uncontrolled VOC process fugitive emissions equal to or greater than 40 tpy unless the equipment is inspected and repaired according to subsection (c)(2) of this section.	The uncontrolled fugitive emissions will not exceed 40 tpy.	

Standard Permit Applicability Checklist
§116.620. Installation and/or Modification of Oil and Gas Facilities.

Citation	Text Description	Information	Response
§116.620(a)(11)	No facility which is located less than 1/4 mile from the nearest off-plant receptor shall be allowed to emit hydrogen sulfide H ₂ S or SO ₂ process fugitive emissions unless the equipment is inspected and repaired according to subsection (c)(3) of this section. No facility which is located at least 1/4 mile from the nearest off-plant receptor shall be allowed to emit H ₂ S or SO ₂ process fugitive emissions unless the equipment is inspected and repaired according to subsection (c)(3) of this section or unless the H ₂ S or SO ₂ emissions are monitored with ambient property line monitors according to subsection (e)(1) of this section. Components in sweet crude oil or gas service as defined by Chapter 101 of this title (relating to General Air Quality Rules) are exempt from these limitations.	Equipment will be inspected and repaired according to subsection c(3) of this section.	
§116.620(a)(12)	Will the flare be designed and operated in accordance with 40 Code of Federal Regulations (CFR), Part 60.18 or equivalent standard approved by the commission, including specifications of minimum heating values of waste gas, maximum tip velocity, and pilot flame monitoring? If necessary to ensure adequate combustion, sufficient gas shall be added to make the gases combustible. An infrared monitor is considered equivalent to a thermocouple for flame monitoring purposes. An automatic ignition system may be used in lieu of a continuous pilot.	The flare will meet all the requirements of 60.18.	Yes
§116.620(a)(13)	Is the facility subject to the PSD and nonattainment new source review provisions of the FCAA, Parts C and D?		No
§116.620(a)(14)	Documentation shall be submitted to demonstrate compliance with applicable New Source Performance Standards (NSPS, 40 CFR Part 60).	N/A	
§116.620(a)(15)	Documentation shall be submitted to demonstrate compliance with applicable National Emission Standards for Hazardous Air Pollution (NESHAP, 40 CFR Part 61).	There are no applicable NESHAPS for this site.	
§116.620(a)(16)	Documentation shall be submitted to demonstrate compliance with applicable maximum achievable control technology standards as listed under 40 CFR Part 63, promulgated by the EPA under FCAA, §112 or as listed in Chapter 113, Subchapter C of this title (relating to National Emissions Standards for Hazardous Air Pollutants for Source Categories (FCAA §112, 40 CFR Part 63)).	One engine considered new under MACT ZZZZ at an area source. Engine will meet the compliance of NSPS JJJJ.	Yes
§116.620(a)(17)	Will new and increased emissions shall cause or contribute to a violation of any National Ambient Air Quality Standard or regulation property line standards as specified in Chapters 111, 112, and 113 of this title?		No

Standard Permit Applicability Checklist
§116.620. Installation and/or Modification of Oil and Gas Facilities.

Citation	Text Description	Information	Response
§116.620(a)(18)	Fuel for all combustion units and flare pilots shall be sweet natural gas or liquid petroleum gas, fuel gas containing no more than ten grains of total sulfur per 100 dry standard cubic feet (dscf), or field gas. If field gas contains more than 1.5 grains of H ₂ S or 30 grains total sulfur compounds per 100 dscf, the operator shall maintain records, including at least quarterly measurements of fuel H ₂ S and total sulfur content, which demonstrate that the annual SO ₂ emissions from the facility do not exceed the limitations listed in the standard permit registration. If a flare is the only combustion unit on a property, the operator shall not be required to maintain such records on flare pilot gas.	The fuel gas is field gas.	
§116.620(b)(1)(A)- (E)	Are all storage tanks at the facility either pressurized tanks which meet §106.476 or have a capacity less than 25,000 gallons?	The storage tanks have a capacity less than 25,000 gallons.	Yes
§116.620(b)(2)(A)- (B)	Are there any glycol dehydration units with uncontrolled emissions greater than 10 tpy VOC?	No dehy at the site.	N/A
§116.620(c)(1)(A)- (J)	Is the facility subject to the requirements of subsection (a)(7) or (8) of this section?		No
§116.620(c)(2)(A)- (K)	Is the facility subject to the requirements of subsection (a)(9) or (10) of this section?		No
§116.620(c)(3)	For owners and operators who are subject to the applicable parts of subsection (a)(11) of this section, auditory and visual checks for SO ₂ and H ₂ S leaks within the operating area shall be made every day. Immediately, but no later than eight hours upon detection of a leak, operating personnel shall take the following actions: (A) isolate the leak; and (B) commence repair or replacement of the leaking component; or (C) use a leak collection/containment system to prevent the leak until repair or replacement can be made if immediate repair is not possible.	These procedures will be followed.	
§116.620(d)(1)	An approved gas analyzer used for the VOC fugitive inspection and repair requirement in subsection (c) of this section, shall conform to requirements listed in 40 CFR §60.485(a) and (b).	These requirements will be met.	
§116.620(d)(2)	Tutweiler analysis or equivalent shall be used to determine the H ₂ S content as required under subsections (a) and (e) of this section	Tutweiler analysis or equivalent will be used to determine the H ₂ S content at the Facility.	
§116.620(d)(3)	Are there any condensers used as a VOC emissions control device to comply with subsection (a)(5) of this section?		No
§116.620(e)(1)	Will H ₂ S property line monitors be installed to comply with subsection a(11)?		No

Standard Permit Applicability Checklist
§116.620. Installation and/or Modification of Oil and Gas Facilities.

Citation	Text Description	Information	Response
§116.620(e)(2)(A)-(E)	The results of the VOC leak detection and repair requirements shall be made available to the executive director or any air pollution control agency having jurisdiction upon request. Records, for all components, shall include: (A) appropriate dates; (B) test methods; (C) instrument readings; (D) repair results; and (E) corrective actions. Records of flange inspections are not required unless a leak is detected.	Records will be maintained as required.	
§116.620(e)(3)	(3) Records for repairs and replacements made due to inspections of H2S and SO2 components shall be maintained.	Records will be maintained as required.	
§116.620(e)(4)(A)-(D)	(4) Records shall be kept for each production, processing, and pipeline tank battery or for each storage tank if not located at a tank battery, on a monthly basis, as follows: (A) tank battery identification or storage tank identification, if not located at a tank battery; (B) compound stored; (C) monthly throughput in barrels/month; and (D) cumulative annual throughput, barrels/year.	EOG will keep all required records.	
§116.620(e)(5)	A plan shall be submitted to show how ongoing compliance will be demonstrated for the efficiency requirements listed in subsection (b)(1)(D) of this section. The demonstration may include, but is not limited to, monitoring flowrates, temperatures, or other operating parameters.	The facility is not subject to the efficiency requirements listed in subsection (b)(1).	
§116.620(e)(6)	Records shall be kept on at least a monthly basis of all production facility flow rates (in standard cubic feet per day) and total sulfur content of process vents or flares or gas processing streams. Total sulfur shall be calculated in long tons per day.	EOG will keep all required records.	
§116.620(e)(7)	Records shall be kept of all ambient property line monitor alarms and shall include the date, time, duration, and cause of alarm, date and time of initial on-site inspection, and date and time of corrective actions taken.	N/A	
§116.620(e)(8)	All required records shall be made available to representatives of the agency, the EPA, or local air pollution control agencies upon request and be kept for at least two years. All required records shall be kept at the plant site, unless the plant site is unmanned during business hours. For plant sites ordinarily unmanned during business hours, the records shall be maintained at the nearest office in the state having day-to-day operations control of the plant site.	EOG will keep all required records for at least two years at its San Antonio, Texas office. The records will be made available in a reviewable format at the request of personnel from the TCEQ, EPA, or any air pollution control program having jurisdiction.	

EOG RESOURCES, INC.

MAY 2025

NAYLOR JONES 6&7E MAGPIE MEADOWLARK SNOWBIRD PRODUCTION FACILITY

Form PI-1S Registration for Standard Permit under 30 TAC §116.620

ATTACHMENT VI.C

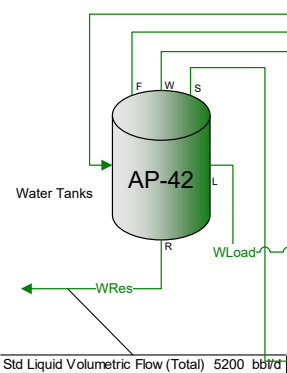
PROCESS FLOW DIAGRAM

Loading Water

Analysis	Load Water Atm	
Mass Flow Sum(VOCs)	0.02916	ton/yr
Mass Flow Sum(HAPs)	0.02916	ton/yr
Composition		
H2S(Mass Flow)	0.0057956	ton/yr
C3(Mass Flow)	0	ton/yr
iC4(Mass Flow)	0	ton/yr
nC4(Mass Flow)	0	ton/yr
2,2-Dimethylpropane(Mass Flow)	0	ton/yr
iC5(Mass Flow)	0	ton/yr
nC5(Mass Flow)	0	ton/yr
2,2-Dimethylbutane(Mass Flow)	0	ton/yr
Cyclopentane(Mass Flow)	0	ton/yr
2,3-Dimethylbutane(Mass Flow)	0	ton/yr
2-Methylpentane(Mass Flow)	0	ton/yr
3-Methylpentane(Mass Flow)	0	ton/yr
n-Hexane(Mass Flow)	0	ton/yr
Methylcyclopentane(Mass Flow)	0	ton/yr
Benzene(Mass Flow)	0.010589	ton/yr
Cyclohexane(Mass Flow)	0	ton/yr
2-Methylhexane(Mass Flow)	0	ton/yr
3-Methylhexane(Mass Flow)	0	ton/yr
2,2,4-Trimethylpentane(Mass Flow)	0	ton/yr
C7(Mass Flow)	0	ton/yr
Methylcyclohexane(Mass Flow)	0	ton/yr
Toluene(Mass Flow)	0.011357	ton/yr
Octane(Mass Flow)	0	ton/yr
Ethylbenzene(Mass Flow)	0.0013702	ton/yr
m-Xylene(Mass Flow)	0.0019437	ton/yr
p-Xylene(Mass Flow)	0.0020695	ton/yr
o-Xylene(Mass Flow)	0.0018303	ton/yr
Nonane(Mass Flow)	0	ton/yr
Decane(Mass Flow)	0	ton/yr
C11Plus(Mass Flow)	0	ton/yr

Std Liquid Volumetric Flow (Total) 7045.9 bbl/d

Std Liquid Volumetric Flow (Total) 5205 bbl/d



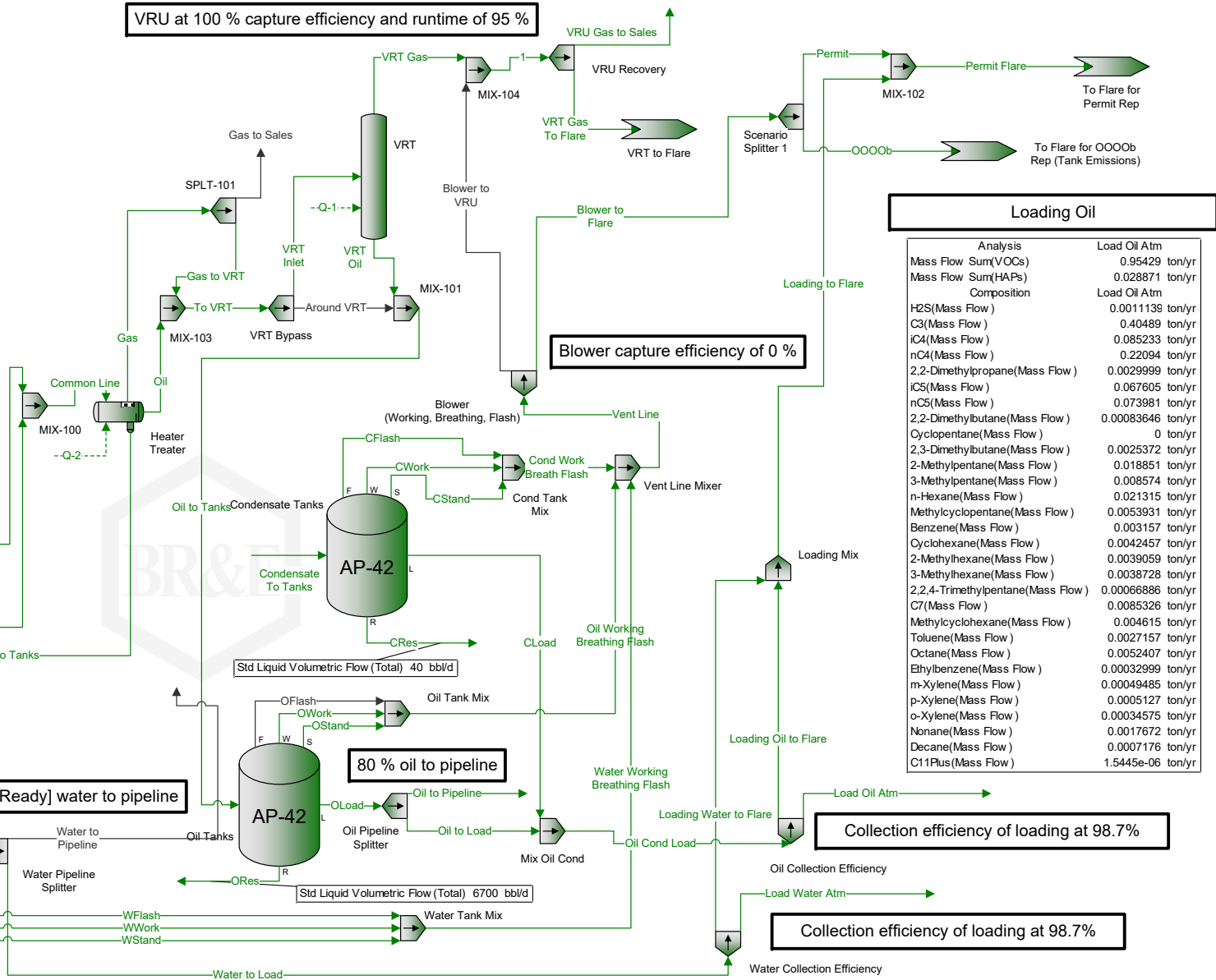
[Data Not Ready] water to pipeline

80% oil to pipeline

Std Liquid Volumetric Flow (Total) 6700 bbl/d

VRU at 100% capture efficiency and runtime of 95%

Blower capture efficiency of 0%



Annual Facility Process and Loading

Loading Oil

Analysis	Load Oil Atm	
Mass Flow Sum(VOCs)	0.95429	ton/yr
Mass Flow Sum(HAPs)	0.028871	ton/yr
Composition		
H2S(Mass Flow)	0.0011139	ton/yr
C3(Mass Flow)	0.40489	ton/yr
iC4(Mass Flow)	0.085233	ton/yr
nC4(Mass Flow)	0.22094	ton/yr
2,2-Dimethylpropane(Mass Flow)	0.0029999	ton/yr
iC5(Mass Flow)	0.067605	ton/yr
nC5(Mass Flow)	0.073981	ton/yr
2,2-Dimethylbutane(Mass Flow)	0.00083646	ton/yr
Cyclopentane(Mass Flow)	0	ton/yr
2,3-Dimethylbutane(Mass Flow)	0.0025372	ton/yr
2-Methylpentane(Mass Flow)	0.018851	ton/yr
3-Methylpentane(Mass Flow)	0.008574	ton/yr
n-Hexane(Mass Flow)	0.021315	ton/yr
Methylcyclopentane(Mass Flow)	0.0053931	ton/yr
Benzene(Mass Flow)	0.003157	ton/yr
Cyclohexane(Mass Flow)	0.0042457	ton/yr
2-Methylhexane(Mass Flow)	0.0039059	ton/yr
3-Methylhexane(Mass Flow)	0.0038728	ton/yr
2,2,4-Trimethylpentane(Mass Flow)	0.00066886	ton/yr
C7(Mass Flow)	0.0085326	ton/yr
Methylcyclohexane(Mass Flow)	0.004615	ton/yr
Toluene(Mass Flow)	0.0027157	ton/yr
Octane(Mass Flow)	0.0052407	ton/yr
Ethylbenzene(Mass Flow)	0.00032999	ton/yr
m-Xylene(Mass Flow)	0.00049485	ton/yr
p-Xylene(Mass Flow)	0.0005127	ton/yr
o-Xylene(Mass Flow)	0.00034575	ton/yr
Nonane(Mass Flow)	0.0017672	ton/yr
Decane(Mass Flow)	0.0007176	ton/yr
C11Plus(Mass Flow)	1.5445e-06	ton/yr

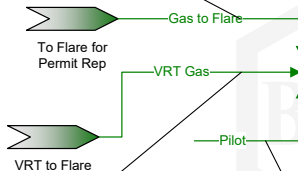
Collection efficiency of loading at 98.7%

Collection efficiency of loading at 98.7%

Annual Flare

Flare at 98% destruction efficiency for VOCs, except C3 at 99%

Std Vapor Volumetric Flow (Total)	767.08 scf/h
Gross Ideal Gas Heating Value(Total)	2121.7 Btu/ft ³
Mass Flow Sum(VOCs, Total)	57.145 lb/h
H2S(Mass Flow, Total)	0.37637 lb/h



Std Vapor Volumetric Flow (Total)	1135.3 scf/h
Gross Ideal Gas Heating Value(Total)	2335.7 Btu/ft ³
Mass Flow Sum(VOCs, Total)	95.395 lb/h
H2S(Mass Flow, Total)	0.096901 lb/h

Std Vapor Volumetric Flow (Total)	100 scf/h
Gross Ideal Gas Heating Value(Total)	2502.7 Btu/ft ³
Mass Flow Sum(VOCs, Total)	9.3558 lb/h
H2S(Mass Flow, Total)	0.11712 lb/h

Analysis	Flare Exhaust
Mass Flow Sum(VOCs)	11.427 ton/yr
Mass Flow Sum(HAPs)	0.63374 ton/yr
Composition	Flare Exhaust
H2S(Mass Flow)	0.05172 ton/yr
C1(Mass Flow)	0.90655 ton/yr
C3(Mass Flow)	2.756 ton/yr
iC4(Mass Flow)	1.219 ton/yr
nC4(Mass Flow)	3.315 ton/yr
2,2-Dimethylpropane(Mass Flow)	0.03947 ton/yr
iC5(Mass Flow)	1.056 ton/yr
nC5(Mass Flow)	1.181 ton/yr
2,2-Dimethylbutane(Mass Flow)	0.01265 ton/yr
Cyclopentane(Mass Flow)	0 ton/yr
2,3-Dimethylbutane(Mass Flow)	0.0427 ton/yr
2-Methylpentane(Mass Flow)	0.2973 ton/yr
3-Methylpentane(Mass Flow)	0.1393 ton/yr
n-Hexane(Mass Flow)	0.3826 ton/yr
Methylcyclopentane(Mass Flow)	0.08926 ton/yr
Benzene(Mass Flow)	0.09082 ton/yr
Cyclohexane(Mass Flow)	0.07544 ton/yr
2-Methylhexane(Mass Flow)	0.07453 ton/yr
3-Methylhexane(Mass Flow)	0.07459 ton/yr
2,2,4-Trimethylpentane(Mass Flow)	0.01105 ton/yr
C7(Mass Flow)	0.1685 ton/yr
Methylcyclohexane(Mass Flow)	0.08264 ton/yr
Toluene(Mass Flow)	0.09426 ton/yr
Octane(Mass Flow)	0.1032 ton/yr
Ethylbenzene(Mass Flow)	0.01223 ton/yr
m-Xylene(Mass Flow)	0.02001 ton/yr
p-Xylene(Mass Flow)	0.0202 ton/yr
o-Xylene(Mass Flow)	0.01366 ton/yr
Nonane(Mass Flow)	0.0383 ton/yr
Decane(Mass Flow)	0.01648 ton/yr
C11Plus(Mass Flow)	0.0001132 ton/yr
SO2(Mass Flow)	4.764 ton/yr

FL-1 Combustion Criteria Pollutants

NOx Emissions = 2.738 ton/yr

NOx Emission Factor = 0.138

CO Emissions = 10.9 ton/yr

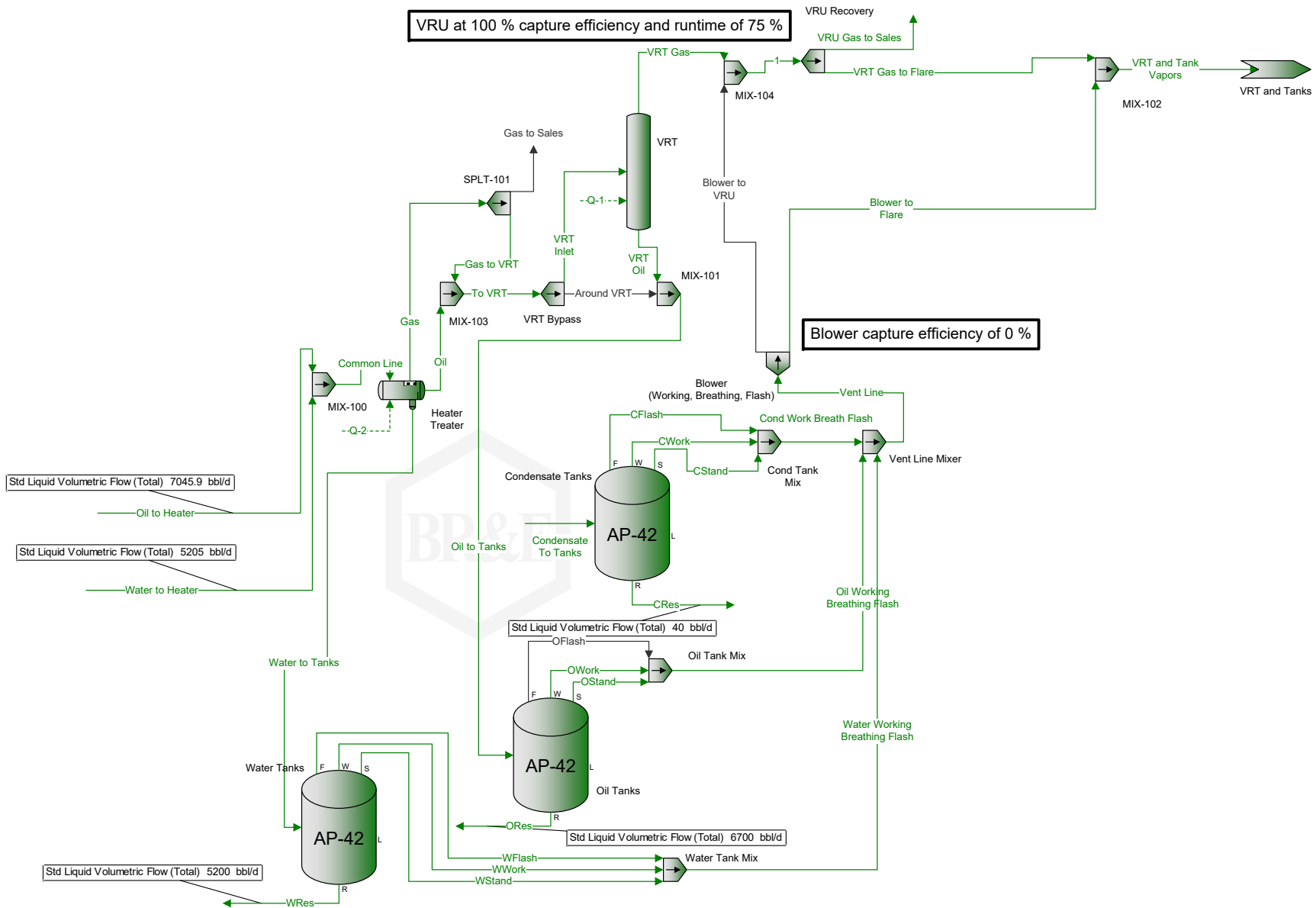
CO Emission Factor = 0.5496

FL-1 Heat Release Requirements

Heat Release = 4.162 MMBtu/h

QSO2 = 0.05764 MMBtu/h

Hourly Process



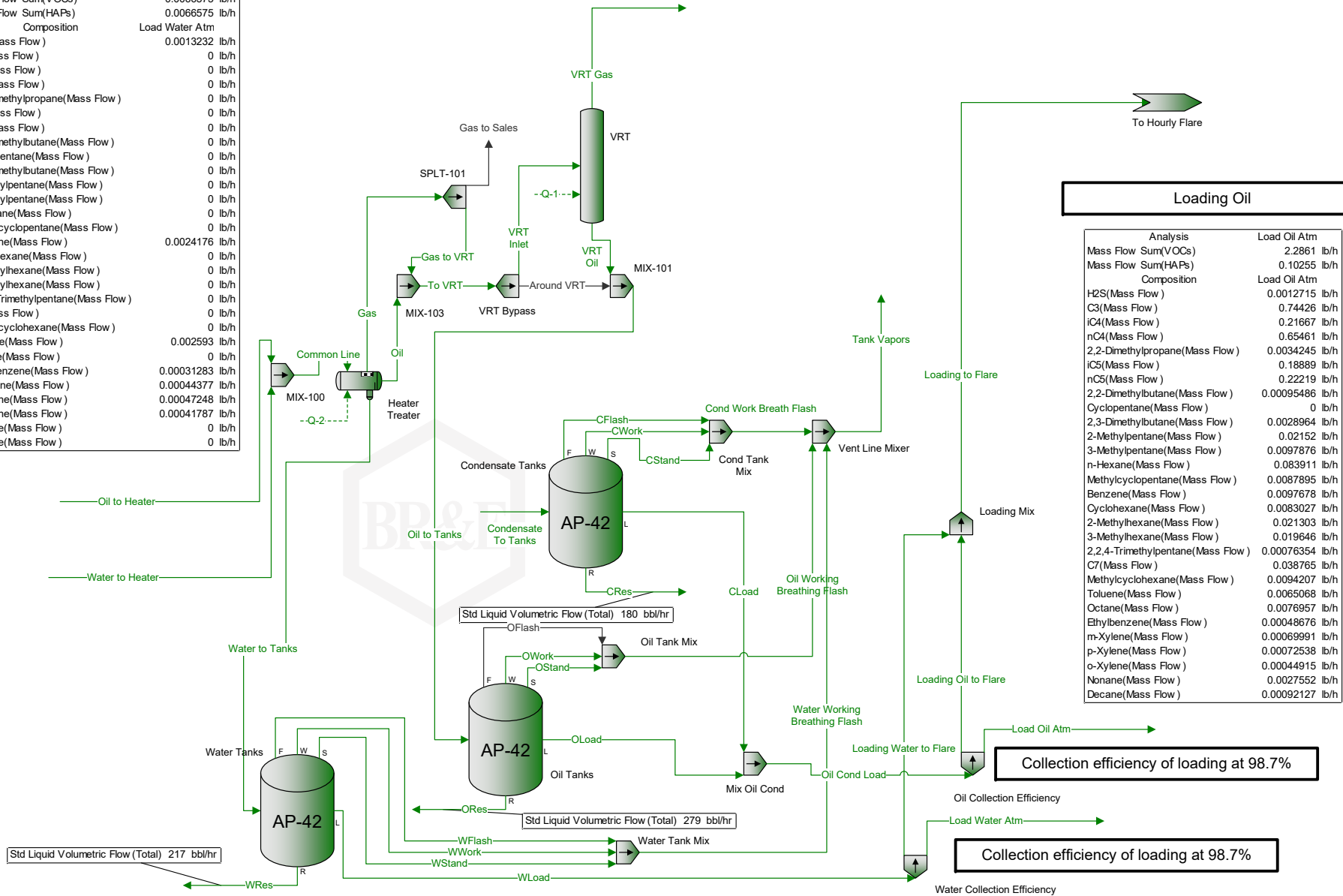
Loading Water

Analysis		Load Water Atm
Mass Flow	Sum(VOCs)	0.0066575 lb/h
Mass Flow	Sum(HAPs)	0.0066575 lb/h
Composition		Load Water Atm
H2S(Mass Flow)		0.0013232 lb/h
C3(Mass Flow)		0 lb/h
iC4(Mass Flow)		0 lb/h
nC4(Mass Flow)		0 lb/h
2,2-Dimethylpropane(Mass Flow)		0 lb/h
iC5(Mass Flow)		0 lb/h
nC5(Mass Flow)		0 lb/h
2,2-Dimethylbutane(Mass Flow)		0 lb/h
Cyclopentane(Mass Flow)		0 lb/h
2,3-Dimethylbutane(Mass Flow)		0 lb/h
2-Methylpentane(Mass Flow)		0 lb/h
3-Methylpentane(Mass Flow)		0 lb/h
n-Hexane(Mass Flow)		0 lb/h
Methylcyclopentane(Mass Flow)		0 lb/h
Benzene(Mass Flow)		0.0024176 lb/h
Cyclohexane(Mass Flow)		0 lb/h
2-Methylhexane(Mass Flow)		0 lb/h
3-Methylhexane(Mass Flow)		0 lb/h
2,2,4-Trimethylpentane(Mass Flow)		0 lb/h
C7(Mass Flow)		0 lb/h
Methylcyclohexane(Mass Flow)		0 lb/h
Toluene(Mass Flow)		0.002593 lb/h
Octane(Mass Flow)		0 lb/h
Ethylbenzene(Mass Flow)		0.00031283 lb/h
m-Xylene(Mass Flow)		0.00044377 lb/h
p-Xylene(Mass Flow)		0.00047248 lb/h
o-Xylene(Mass Flow)		0.00041787 lb/h
Nonane(Mass Flow)		0 lb/h
Decane(Mass Flow)		0 lb/h

Hourly Loading

Loading Oil

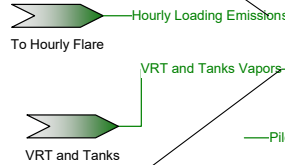
Analysis		Load Oil Atm
Mass Flow	Sum(VOCs)	2.2861 lb/h
Mass Flow	Sum(HAPs)	0.10255 lb/h
Composition		Load Oil Atm
H2S(Mass Flow)		0.0012715 lb/h
C3(Mass Flow)		0.74426 lb/h
iC4(Mass Flow)		0.21667 lb/h
nC4(Mass Flow)		0.65461 lb/h
2,2-Dimethylpropane(Mass Flow)		0.0034245 lb/h
iC5(Mass Flow)		0.18889 lb/h
nC5(Mass Flow)		0.22219 lb/h
2,2-Dimethylbutane(Mass Flow)		0.00095486 lb/h
Cyclopentane(Mass Flow)		0 lb/h
2,3-Dimethylbutane(Mass Flow)		0.0028964 lb/h
2-Methylpentane(Mass Flow)		0.02152 lb/h
3-Methylpentane(Mass Flow)		0.0097876 lb/h
n-Hexane(Mass Flow)		0.083911 lb/h
Methylcyclopentane(Mass Flow)		0.0087895 lb/h
Benzene(Mass Flow)		0.0097678 lb/h
Cyclohexane(Mass Flow)		0.0083027 lb/h
2-Methylhexane(Mass Flow)		0.021303 lb/h
3-Methylhexane(Mass Flow)		0.019646 lb/h
2,2,4-Trimethylpentane(Mass Flow)		0.00076354 lb/h
C7(Mass Flow)		0.038765 lb/h
Methylcyclohexane(Mass Flow)		0.0094207 lb/h
Toluene(Mass Flow)		0.0065068 lb/h
Octane(Mass Flow)		0.0076957 lb/h
Ethylbenzene(Mass Flow)		0.00048676 lb/h
m-Xylene(Mass Flow)		0.00069991 lb/h
p-Xylene(Mass Flow)		0.00072538 lb/h
o-Xylene(Mass Flow)		0.00044915 lb/h
Nonane(Mass Flow)		0.0027552 lb/h
Decane(Mass Flow)		0.00092127 lb/h



Hourly Flare

Flare at 98% destruction efficiency for VOCs, except C3 at 99%

Std Vapor Volumetric Flow (Total)	1813.3 scf/h
Gross Ideal Gas Heating Value (Total)	2482.6 Btu/ft ³
Mass Flow Sum(VOCs, Total)	174.07 lb/h
H2S(Mass Flow, Total)	0.197 lb/h



Std Vapor Volumetric Flow (Total)	10734 scf/h
Gross Ideal Gas Heating Value (Total)	2328.9 Btu/ft ³
Mass Flow Sum(VOCs, Total)	898.65 lb/h
H2S(Mass Flow, Total)	1.1287 lb/h

Std Vapor Volumetric Flow (Total)	100 scf/h
Gross Ideal Gas Heating Value (Total)	2502.7 Btu/ft ³
Mass Flow Sum(VOCs, Total)	9.3558 lb/h
H2S(Mass Flow, Total)	0.11712 lb/h

Analysis		Flare Exhaust	
Mass Flow	Sum(VOCs)	17.578	lb/h
Mass Flow	Sum(HAPs)	0.87194	lb/h
Composition		Flare Exhaust	
H2S(Mass Flow)		0.02886	lb/h
C1(Mass Flow)		1.4036	lb/h
C3(Mass Flow)		4.063	lb/h
iC4(Mass Flow)		1.888	lb/h
nC4(Mass Flow)		5.118	lb/h
2,2-Dimethylpropane(Mass Flow)		0.06491	lb/h
iC5(Mass Flow)		1.671	lb/h
nC5(Mass Flow)		1.891	lb/h
2,2-Dimethylbutane(Mass Flow)		0.02074	lb/h
Cyclopentane(Mass Flow)		0	lb/h
2,3-Dimethylbutane(Mass Flow)		0.06545	lb/h
2-Methylpentane(Mass Flow)		0.4862	lb/h
3-Methylpentane(Mass Flow)		0.2242	lb/h
n-Hexane(Mass Flow)		0.6196	lb/h
Methylcyclopentane(Mass Flow)		0.1435	lb/h
Benzene(Mass Flow)		0.0951	lb/h
Cyclohexane(Mass Flow)		0.1184	lb/h
2-Methylhexane(Mass Flow)		0.1226	lb/h
3-Methylhexane(Mass Flow)		0.1222	lb/h
2,2,4-Trimethylpentane(Mass Flow)		0.01948	lb/h
C7(Mass Flow)		0.2737	lb/h
Methylcyclohexane(Mass Flow)		0.1373	lb/h
Toluene(Mass Flow)		0.09276	lb/h
Octane(Mass Flow)		0.1776	lb/h
Ethylbenzene(Mass Flow)		0.01242	lb/h
m-Xylene(Mass Flow)		0.01911	lb/h
p-Xylene(Mass Flow)		0.01956	lb/h
o-Xylene(Mass Flow)		0.01333	lb/h
Nonane(Mass Flow)		0.06756	lb/h
Decane(Mass Flow)		0.03053	lb/h
SO2(Mass Flow)		2.658	lb/h

FL-1 Combustion Criteria Pollutants

NOx Emissions = 2.642 lb/h

NOx Emission Factor = 0.138

CO Emissions = 10.52 lb/h

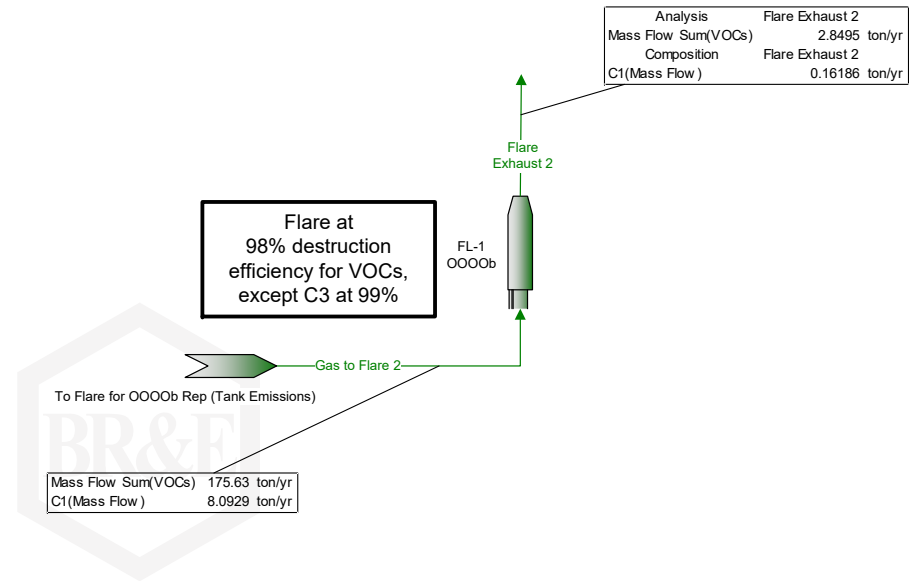
CO Emission Factor = 0.5496

FL-1 Heat Release Requirements

Heat Release = 17.6 MMBtu/h

QSO2 = 0.103 MMBtu/h

NSPS 0000b – LPE-CERT Representation of Storage Vessel Emissions



ATTACHMENT VI.D

PROCESS DESCRIPTION

The Naylor Jones 6&7E Magpie Meadowlark Snowbird Production Facility (the Facility) is a sour oil production facility. The H₂S content of inlet gas is represented at 1000 ppm, although 500 ppm H₂S has been observed in recent analysis. Produced fluids enter the site and flow through production separators and heater treaters to separate the oil, water, and gas. Crude oil is routed to a VRT, where flash gas is captured by a VRU and sent off site for further processing or routed to the flare during periods of downtime. Crude oil is then routed to four 500-bbl crude oil storage tanks and then pumped off site via pipeline. Water is stored in two 500-bbl produced water tanks and then trucked off site. A portion of the produced gas is compressed (EPN ENG-2) sent back to wells for gas lift operations. Condensate from gas compression is stored in one 500-bbl storage tank and then trucked off site. Emissions from the tank battery are controlled by a TVCS and then sent off site for further processing. The TVCS is designed to isolate and push low pressure tank vapors with a blower into the vapor recovery system. Any remaining emissions from the tank battery will be controlled by a flare (EPN FL-1). Fugitive emissions from valves, connectors, etc. are represented by EPN FUG.

Under this revision, EOG is:

- Revising the control efficiency of the VRU system,
- Revising production to reflect current conditions at the Facility,
- Adjusting fugitive component estimates and associated emissions, and
- Using BRE ProMax for process simulation to estimate emission rates from the flares (EPN FL-1) and loading operations (EPN LOAD).

OIL AND GAS FACILITY GENERAL INFORMATION			
Natural Gas Throughput (MMSCF/day):	8.100	H ₂ S Content of Inlet Gas:	1000 ppm
Oil/Condensate Throughput (bbl/day):	6700/40	Is the gas sweet or sour?	Sour
Produced Water Throughput (bbl/day):	5200	Is this site operational/producing?	Yes
TCEQ Form	PI-1S	Has the site been registered before?	Yes

EQUIPMENT/PROCESSES AT SITE						
Number of each:	Compressor Engines:	1	Glycol Dehydrators:	0	VRU:	Yes
	Separators:	Multiple	Amine units:	0	TVCS:	Yes
	Storage Tanks:	4 Oil / 2 Water / 1 R3 Tank	Heater Treaters:	2 (+ 1 Future)	Other:	N/A
	Truck Loading:	Yes, water and condensate only	Flares:	1	Other:	N/A

ATTACHMENT VI.E

MAXIMUM EMISSIONS DATA AND CALCULATIONS

Compression Engine (EPN ENG-2)

With this revision, there is one lean-burn Caterpillar at the Naylor Jones 6&7E Magpie Meadowlark Snowbird Production Facility. The NO_x, CO, VOC, and formaldehyde emission factors for the engine are from the catalyst vendor guarantee and manufacturer spec sheet, both provided in **Appendix D**. The PM and sulfur dioxide emission factors are from AP-42 Table 3.2-2, "Uncontrolled Emission Factors for 4-stroke lean-burn engines", dated July 2000. The total VOC emission rate from the engine includes formaldehyde. The fuel gas is sweet field gas.

Flare (EPN FL-1)

There is one flare at the Naylor Jones 6&7E Magpie Meadowlark Snowbird Production Facility. The flare controls the vapors from the storage tanks. A 98% destruction efficiency is assumed for the control of volatile organic compounds. Propane is represented at a 99% flare destruction rate. NO_x and CO emission factors are based on the TCEQ Technical Guidance Package for Flares and Vapor Oxidizers, dated October 2000. A scaled map of the Facility is included in **Appendix B**.

Fugitives (EPN FUG)

Fugitive emissions were estimated based on the TCEQ technical guidance document for "Equipment Fugitive Leaks", dated June 2018. The Oil and Gas Production Operations equipment leak emission factors approved by the TCEQ were used in the emissions estimations. Although the actual fugitive component counts may vary from the representation, actual emissions from fugitives will remain below the certified emission rates.

Heaters [EPN HEATER-1, -2, -3 (Future)]

There are two heater treaters at the Naylor Jones 6&7 E Magpie Meadowlark Snowbird Production Facility, and an additional one is included for a potential future addition. Emissions from the heaters are estimated based factors from AP-42 Chapter 1.4 for natural gas combustion. The fuel is field gas.

Truck Loading (EPN LOAD)

Oil is sent off site via pipeline, and condensate and produced water are trucked off site. Truck loading emissions were calculated using process simulation in BRE ProMax. Oil/condensate loading calculations were based on dedicated vapor balance service of a tank truck with a 98.7% vapor collection efficiency. Water loading calculations were based on dedicated normal service submerged loading of a tank truck with a 98.7% vapor collection efficiency for conservation of emission estimates. The maximum hourly emission rate is based on loading 180 bbls in one hour. The maximum annual emission rate is based on total daily throughputs. The trucks will be leak-tested trucks.

Storage Tanks (EPN FL-1)

Separated crude oil is first sent to a Vapor Recovery Tower (VRT). Flash gas is controlled from the VRT with a Vapor Recovery Unit (VRU), which sends gas to sales/further processing. Flash gas is routed to the flare during periods of downtime. The flash gas emissions were calculated with a VRU runtime of 95% for conservation of emission estimates. From the VRT, crude oil is sent to the storage tanks. There are four 500-bbl crude oil storage tanks (FIN TK-6A, TK-6B, TK-6AB, and TK-7EA), two 500-bbl produced water storage tanks (FIN TK-W84 and TK-W72),

and one 500-bbl R3 condensate storage tank (FIN TK-7EB). BRE ProMax with the latest EPA emission factors (12/2019) were used to calculate emissions from the storage tanks. Maximum throughputs of 6700 bbls crude oil per day, 40 bbls condensate per day, and 5200 bbls produced water per day were used to calculate the emissions. The storage tank emissions will be controlled by a tank vapor capture system (TVCS), and any remaining emissions or emissions during downtime of the TVCS will be controlled by the flare (EPN FL-1). The TVCS capture efficiency is set at 0% for conservation of emission estimates.

The oil and water analyses were obtained from the Dale Osage Vail Unit Facility. The oil and water analyses from the Dale Osage Vail are considered representative of the Naylor Jones 6&7 E Magpie Meadowlark Snowbird Production Facility because the wells are from the same geologic formation, the facilities are in proximity, and the process conditions (temperature/pressure of separator) are similar. A representative extended gas analysis was obtained from the nearby Hoff Compressor Station inlet, and site-specific gas analyses were also collected. The results of laboratory analyses of the water, crude oil, and gas are included in **Appendix A**. A summary of emission points and certified emission rates, along with emission calculations, are provided within this section below. The compressor engine will comply with the National Ambient Air Quality Standards (NAAQS), as demonstrated in **Appendix C**. Engine data is provided in **Appendix D**.

EMISSIONS SUMMARY

Source	EPN	VOC		NOx		CO		PM		SO ₂		H ₂ S		HAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Compressor Engine	ENG-2	2.13	9.33	3.04	13.33	6.08	26.65	0.11	0.48	0.01	0.03	--	--	1.07	4.68
Fugitives	FUG	2.21	9.68	--	--	--	--	--	--	--	--	0.00	0.02	0.09	0.39
Flares	FL-1	11.42	11.43	2.64	2.74	10.52	10.90	<0.01	<0.01	1.94	4.76	2.1E-02	5.2E-02	0.58	0.63
Horizontal Heater Treater	HEATER-1	3.1E-03	0.01	0.06	0.24	0.05	0.20	4.2E-03	0.02	1.0E-01	4.6E-01	--	--	4.2E-05	1.8E-04
Horizontal Heater Treater	HEATER-2	3.1E-03	0.01	0.06	0.24	0.05	0.20	4.2E-03	0.02	1.0E-01	4.6E-01	--	--	4.2E-05	1.8E-04
Horizontal Heater Treater (Future)	HEATER-3	3.1E-03	0.01	0.06	0.24	0.05	0.20	4.2E-03	0.02	1.0E-01	4.6E-01	--	--	4.2E-05	1.8E-04
Loading Oil	LOAD-O	2.29	0.95	--	--	--	--	--	--	--	--	1.27E-03	1E-03	0.103	0.03
Loading Water	LOAD-W	6.66E-03	2.92E-02	--	--	--	--	--	--	--	--	1.32E-03	5.80E-03	6.66E-03	2.92E-02
TOTAL		18.06	31.46	5.85	16.79	16.75	38.17	0.12	0.53	2.26	6.17	0.03	0.08	1.85	5.76

EMISSION ESTIMATE FOR FUGITIVES

EPN:

FUG

Operating schedule (hr/yr):

8760

Fugitive Emission Calculations:

Emission Source		Source Count	Uncontrolled Emission Factor* (lb/hr-source)	Control Factor	Hourly Emissions (lb/hr)	Annual Emissions (ton/yr)
Valves:	gas	166	0.00992	0%	1.65	7.23
	water/light oil**	189	0.000216	0%	0.0408	0.18
	light oil	188	0.0055	0%	1.03	4.51
	heavy oil	10	0.000185	0%	0.000185	0.00
Flanges:	gas	327	0.00086	0%	0.281	1.23
	water/light oil	377	0.000006	0%	0.00226	0.01
	light oil	375	0.000243	0%	0.0911	0.40
	heavy oil	10	0.0000086	0%	0.0000086	0.00
Connectors:	gas	414	0.00044	0%	0.182	0.80
	water/light oil	255	0.000243	0%	0.062	0.27
	light oil	305	0.000463	0%	0.141	0.62
	heavy oil	10	0.000165	0%	0.000165	0.00
Open-ended Lines:	gas	0	0.00441	0%	0	0.00
	water/light oil	0	0.00055	0%	0	0.00
	light oil	0	0.00309	0%	0	0.00
	heavy oil	0	0.000309	0%	0	0.00
Pumps:	light oil	6	0.02866	0%	0.172	0.75
	heavy oil	0	0.00113	0%	0	0.00
Other:	gas	10	0.0194	0%	0.194	0.85
	water/light oil	10	0.0309	0%	0.309	1.35
	light oil	10	0.0165	0%	0.165	0.72
	heavy oil	10	0.000683	0%	0.000683	0.00

Sample Calculation:

$$\text{Gas Valve Emissions} = (166 \text{ valves})(0.00992 \text{ lb/hr-source})(1 - 0) = 1.65 \text{ lb/hr}$$

$$\text{Total Annual Emissions} = (4.32 \text{ lb/hr})(8760 \text{ hr/yr})(1 \text{ ton}/2000 \text{ lb}) = 18.92 \text{ tons/yr}$$

* The emission factors are from the TCEQ's 2000 "Equipment Leak Fugitives" for Oil and Gas Production Operations.

** Assuming VOC content 1% of water, water HAP content 5% of VOCs, and H2S content from flash analysis

FUGITIVE EMISSION RATE CALCULATIONS

Gas/Vapor Components

Component	Weight Percent Flash Gas Analysis	Total Emissions [lb/hr]	Total Emissions [ton/yr]
Hydrogren Sulfide	0.100	0.002	0.010
Nitrogen	0.331	0.008	0.033
Carbon Dioxide	2.808	0.065	0.284
Methane	51.099	1.179	5.163
Ethane	18.947	0.437	1.915
Propane	14.156	0.327	1.430
Isobutane	2.471	0.057	0.250
n-Butane	6.437	0.149	0.650
2,2 Dimethylpropane	0.000	0.000	0.000
Isopentane	1.137	0.026	0.115
n-Pentane	1.223	0.028	0.124
2,2 Dimethylbutane	0.000	0.000	0.000
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.000	0.000	0.000
2 Methylpentane	0.000	0.000	0.000
3 Methylpentane	0.000	0.000	0.000
n-Hexane	1.081	0.025	0.109
Methylcyclopentane	0.019	0.000	0.002
Benzene	0.039	0.001	0.004
Cyclohexane	0.021	0.000	0.002
2-Methylhexane	0.000	0.000	0.000
3-Methylhexane	0.000	0.000	0.000
2,2,4 Trimethylpentan	0.000	0.000	0.000
Other C-7's	0.095	0.002	0.010
n-Heptane	0.081	0.002	0.008
Methylcyclohexane	0.022	0.001	0.002
Toluene	0.017	0.000	0.002
Other C-8's	0.001	0.000	0.000
n-Octane	0.009	0.000	0.001
E-Benzene	0.000	0.000	0.000
M & P Xylenes	0.001	0.000	0.000
O-Xylene	0.000	0.000	0.000
Other C-9's	0.001	0.000	0.000
n-Nonane	0.001	0.000	0.000
Other C-10's	0.000	0.000	0.000
n-decane	0.000	0.000	0.000
Undecanes(11)	0.000	0.000	0.000
TOTAL	100.097	2.309	10.114
TOTAL VOC	26.812	0.619	2.709
TOTAL HAPs	1.138	0.026	0.115

Speciation from sample dated 11/22/2024 from the Hoff Compressor Station inlet gas

FUGITIVE EMISSION RATE CALCULATIONS

Light/Heavy Liquid Components

Component	Weight Percent Flash Gas Analysis	Total Emissions [lb/hr]	Total Emissions [ton/yr]
Hydrogren Sulfide	0.100	0.002	0.007
Nitrogen	0.003	0.000	0.000
Carbon Dioxide	0.029	0.000	0.002
Methane	0.176	0.003	0.012
Ethane	0.639	0.010	0.045
Propane	1.580	0.025	0.111
Isobutane	0.548	0.009	0.038
n-Butane	1.794	0.029	0.126
2,2 Dimethylpropane	0.034	0.001	0.002
Isopentane	1.191	0.019	0.083
n-Pentane	1.658	0.027	0.116
2,2 Dimethylbutane	0.031	0.000	0.002
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.124	0.002	0.009
2 Methylpentane	1.000	0.016	0.070
3 Methylpentane	0.507	0.008	0.036
n-Hexane	1.416	0.023	0.099
Methylcyclopentane	0.381	0.006	0.027
Benzene	0.185	0.003	0.013
Cyclohexane	0.421	0.007	0.029
2-Methylhexane	0.487	0.008	0.034
3-Methylhexane	0.542	0.009	0.038
2,2,4 Trimethylpentane	0.141	0.002	0.010
Other C-7's	0.297	0.005	0.021
n-Heptane	1.327	0.021	0.093
Methylcyclohexane	0.902	0.014	0.063
Toluene	0.652	0.010	0.046
Other C-8's	2.391	0.038	0.168
n-Octane	1.351	0.022	0.095
E-Benzene	0.282	0.005	0.020
M & P Xylenes	0.960	0.015	0.067
O-Xylene	0.368	0.006	0.026
Other C-9's	2.757	0.044	0.193
n-Nonane	1.345	0.022	0.094
Other C-10's	4.259	0.068	0.298
n-decane	1.101	0.018	0.077
Undecanes(11)	4.492	0.072	0.315
Dodecanes(12)	3.711	0.059	0.260
Tridecanes(13)	3.927	0.063	0.275
Tetradecanes(14)	3.582	0.057	0.251
Pentadecanes(15)	3.239	0.052	0.227
Hexadecanes(16)	2.862	0.046	0.201
Heptadecanes(17)	2.641	0.042	0.185
Octadecanes(18)	2.608	0.042	0.183
Nonadecanes(19)	2.640	0.042	0.185
Eicosanes(20)	2.201	0.035	0.154
Heneicosanes(21)	2.027	0.032	0.142
Docosanes(22)	1.831	0.029	0.128
Tricosanes(23)	1.639	0.026	0.115
Tetracosanes(24)	1.494	0.024	0.105
Pentacosanes(25)	1.377	0.022	0.096
Hexacosanes(26)	1.280	0.020	0.090
Heptacosanes(27)	1.220	0.020	0.086
Octacosanes(28)	1.115	0.018	0.078
Nonacosanes(29)	1.009	0.016	0.071
Triacontanes(30)	0.895	0.014	0.063
Hentriacontanes Plus(31+)	23.333	0.373	1.635
TOTAL	100.100	1.602	7.016
TOTAL VOC	99.154	1.587	6.949
TOTAL HAPs	3.862	0.062	0.271

Speciation from sample dated 11/22/2024 from the Dale Osage Vail Production Facility

30 TAC 106.261/262 Emission Limits Evaluation

Speciated Compound	Limit ¹		Hourly Emissions by EPN ²					Under Limit? (Y/N)
	(lb/hr)		FUG ³ (lb/hr)	LOAD-O (lb/hr)	LOAD-W (lb/hr)	FL-1 (lb/hr) ⁴	Total (lb/hr)	
Hydrogen Sulfide	1.3	c	0.005	0.00127	0.00132	0.021	0.028	Yes
Propane	6.0	a	0.356	0.74426	0.00000	2.594	3.694	Yes
Isobutane	6.0	a	0.066	0.21667	0.00000	1.233	5.743	Yes
n-Butane			0.177	0.65461	0.00000	3.396		
2,2 Dimethylpropane	1.0	b	0.001	0.00342	0.00000	0.039	0.043	Yes
Isopentane	6.0	d	0.045	0.18889	0.00000	1.088	2.835	Yes
n-Pentane			0.055	0.22219	0.00000	1.236		
2,2 Dimethylbutane	1.0	b	0.000	0.00095	0.00000	0.012	0.014	Yes
Cyclopentane	6.0	a	0.000	0.00000	0.00000	0.000	0.000	Yes
2,3 Dimethylbutane	1.0	b	0.002	0.00290	0.00000	0.039	0.044	Yes
2-Methylpentane	6.0	d	0.016	0.02152	0.00000	0.290	0.328	Yes
3-Methylpentane	6.0	d	0.008	0.00979	0.00000	0.134	0.152	Yes
Methylcyclopentane	6.0	d	0.007	0.00879	0.00000	0.088	0.192	Yes
Cyclohexane			0.007	0.00830	0.00000	0.073		
2-Methylhexane	1.0	b	0.008	0.02130	0.00000	0.085	0.114	Yes
2,2,4-Trimethylpentane	1.0	b	0.002	0.00076	0.00000	0.011	0.014	Yes
3-Methylhexane	1.0	b	0.009	0.01965	0.00000	0.084	0.112	Yes
Other C7's	1.0	b	0.007	0.03876	0.00000	0.184	0.230	Yes
n-Heptane	6.0	d	0.023	0.00000	0.00000	0.000	0.023	Yes
Methylcyclohexane	6.0	d	0.015	0.00942	0.00000	0.084	0.109	Yes
Other C8's	6.0	d	0.038	0.00770	0.00000	0.106	0.173	Yes
n-Octane			0.022	0.00000	0.00000	0.000		
Other C9's	6.0	a	0.044	0.00276	0.00000	0.040	0.108	Yes
n-Nonane			0.022	0.00000	0.00000	0.000		
Other C10s and + ³	1.0	b	0.068	0.00092	0.00000	0.018	0.087	Yes
n-Decane	1.0	b	0.018	0.00000	0.00000	0.000	0.018	Yes
Benzene	0.38	d	0.004	0.00977	0.00242	0.065	0.081	Yes
Toluene	6.0	d	0.011	0.00651	0.00259	0.062	0.082	Yes
Ethylbenzene	1.0	b	0.005	0.00049	0.00031	0.008	0.013	Yes
Xylenes	6.0	d	0.021	0.00187	0.00133	0.033	0.058	Yes
n-Hexane	1.0	b	0.048	0.08391	0.00000	0.414	0.545	Yes
Undecanes (11)	1.0	b	0.072	0.00000	0.00000	0.000	0.072	Yes
Dodecanes(12)	1.0	b	0.059	0.00000	0.00000	0.0000	0.059	Yes
Tridecanes(13)	1.0	b	0.063	0.00000	0.00000	0.0000	0.063	Yes
Tetradecanes(14)	1.0	b	0.057	0.00000	0.00000	0.0000	0.057	Yes
Pentadecanes(15)	1.0	b	0.052	0.00000	0.00000	0.0000	0.052	Yes
Hexadecanes(16)	1.0	b	0.046	0.00000	0.00000	0.0000	0.046	Yes
Heptadecanes(17)	1.0	b	0.042	0.00000	0.00000	0.0000	0.042	Yes
Octadecanes(18)	1.0	b	0.042	0.00000	0.00000	0.0000	0.042	Yes
Nonadecanes(19)	1.0	b	0.042	0.00000	0.00000	0.0000	0.042	Yes
Eicosanes(20)	1.0	b	0.035	0.00000	0.00000	0.0000	0.035	Yes
Heneicosanes(21)	1.0	b	0.032	0.00000	0.00000	0.0000	0.032	Yes
Docosanes(22)	1.0	b	0.029	0.00000	0.00000	0.0000	0.029	Yes
Tricosanes(23)	1.0	b	0.026	0.00000	0.00000	0.0000	0.026	Yes
Tetracosanes(24)	1.0	b	0.024	0.00000	0.00000	0.0000	0.024	Yes
Pentacosanes(25)	1.0	b	0.022	0.00000	0.00000	0.0000	0.022	Yes
Hexacosanes(26)	1.0	b	0.020	0.00000	0.00000	0.0000	0.020	Yes
Heptacosanes(27)	1.0	b	0.020	0.00000	0.00000	0.0000	0.020	Yes
Octacosanes(28)	1.0	b	0.018	0.00000	0.00000	0.0000	0.018	Yes
Nonacosanes(29)	1.0	b	0.016	0.00000	0.00000	0.0000	0.016	Yes
Triacosanes(30)	1.0	b	0.014	0.00000	0.00000	0.0000	0.014	Yes
Hentriacosanes Plus(31+)	1.0	b	0.373	0.00000	0.00000	0.0000	0.373	Yes

¹ Limit values based on the following:

a 30 TAC 106.261(a)(2)

b 30 TAC 106.261(a)(3)

c Per 30 TAC 116.620(a)(17), use an "L" value of 10 for H2S d 30 TAC 106.262(a)(2) where:

d 30 TAC 106.262(a)(2) where:

$$D = \frac{3000}{K}$$

² MSS emissions are authorized under Permit by Rule 106.359 (blowdowns, pigging, etc.) and 106.263 (painting and abrasive blasting) and are therefore not included.

³ Fugitive liquids are speciated through C31 and plus

⁴ Short term emissions (lb/hr) for the flare (EPN FL-1) lack VRU control for conservation of emission estimates.

30 TAC 106.261/262 Emission Limits Evaluation

Speciated Compound	Limit ¹		Annual Emissions by EPN ²					Under Limit? (Y/N)
	(tpy)		FUG ³ (tpy)	LOAD-O (tpy)	LOAD-W (tpy)	FL-1 (tpy)	Total (tpy)	
Hydrogen Sulfide	1.3	c	0.021	0.0011	0.00580	0.052	0.079	Yes
Propane	10.0	a	1.56	0.4049	0.00000	2.756	4.720	Yes
Isobutane	10.0	a	0.29	0.0852	0.00000	1.219	5.905	Yes
n-Butane			0.78	0.2209	0.00000	3.315		
2,2 Dimethylpropane	4.4	b	0.00	0.0030	0.00000	0.039	0.045	Yes
Isopentane	5.0	d	0.20	0.0676	0.00000	1.056	2.817	Yes
n-Pentane			0.24	0.0740	0.00000	1.181		
2,2 Dimethylbutane	4.4	b	0.00	0.0008	0.00000	0.013	0.016	Yes
Cyclopentane	10.0	a	0.00	0.0000	0.00000	0.000	0.000	Yes
2,3 Dimethylbutane	4.4	b	0.01	0.0025	0.00000	0.043	0.054	Yes
2-Methylpentane	5.0	d	0.07	0.0189	0.00000	0.297	0.386	Yes
3-Methylpentane	5.0	d	0.04	0.0086	0.00000	0.139	0.183	Yes
Methylcyclopentane	5.0	d	0.03	0.0054	0.00000	0.089	0.235	Yes
Cyclohexane			0.03	0.0042	0.00000	0.075		
2-Methylhexane	4.4	b	0.03	0.0039	0.00000	0.075	0.113	Yes
2,2,4-Trimethylpentane	4.4	b	0.01	0.0007	0.00000	0.011	0.022	Yes
3-Methylhexane	4.4	b	0.04	0.0039	0.00000	0.075	0.116	Yes
Other C7's	4.4	b	0.03	0.0085	0.00000	0.168	0.207	Yes
n-Heptane	5.0	d	0.10	0.0000	0.00000	0.000	0.101	Yes
Methylcyclohexane	5.0	d	0.07	0.0046	0.00000	0.083	0.153	Yes
Other C8's	5.0	d	0.17	0.0052	0.00000	0.103	0.372	Yes
n-Octane			0.10	0.0000	0.00000	0.000		
Other C9's	10.0	a	0.19	0.0018	0.00000	0.038	0.328	Yes
n-Nonane			0.09	0.0000	0.00000	0.000		
Other C10s and + ³	4.4	b	0.30	0.0007	0.00000	0.016	0.316	Yes
n-Decane	4.4	b	0.08	0.0000	0.00000	0.000	0.077	Yes
Benzene	5.0	d	0.02	0.0032	0.01059	0.091	0.122	Yes
Toluene	5.0	d	0.05	0.0027	0.01136	0.094	0.156	Yes
Ethylbenzene	4.4	b	0.02	0.0003	0.00137	0.012	0.034	Yes
Xylenes	5.0	d	0.09	0.0014	0.00584	0.054	0.154	Yes
n-Hexane	4.4	b	0.21	0.0213	0.00000	0.383	0.612	Yes
Undecanes (11)	4.4	b	0.31	0.0000	0.00000	0.000	0.315	Yes
Dodecanes(12)	4.4	b	0.26	0.0000	0.0000	0.0000	0.260	Yes
Tridecanes(13)	4.4	b	0.28	0.0000	0.0000	0.0000	0.275	Yes
Tetradecanes(14)	4.4	b	0.25	0.0000	0.0000	0.0000	0.251	Yes
Pentadecanes(15)	4.4	b	0.23	0.0000	0.0000	0.0000	0.227	Yes
Hexadecanes(16)	4.4	b	0.20	0.0000	0.0000	0.0000	0.201	Yes
Heptadecanes(17)	4.4	b	0.19	0.0000	0.0000	0.0000	0.185	Yes
Octadecanes(18)	4.4	b	0.18	0.0000	0.0000	0.0000	0.183	Yes
Nonadecanes(19)	4.4	b	0.19	0.0000	0.0000	0.0000	0.185	Yes
Eicosanes(20)	4.4	b	0.15	0.0000	0.0000	0.0000	0.154	Yes
Heneicosanes(21)	4.4	b	0.14	0.0000	0.0000	0.0000	0.142	Yes
Docosanes(22)	4.4	b	0.13	0.0000	0.0000	0.0000	0.128	Yes
Tricosanes(23)	4.4	b	0.11	0.0000	0.0000	0.0000	0.115	Yes
Tetracosanes(24)	4.4	b	0.10	0.0000	0.0000	0.0000	0.105	Yes
Pentacosanes(25)	4.4	b	0.10	0.0000	0.0000	0.0000	0.096	Yes
Hexacosanes(26)	4.4	b	0.09	0.0000	0.0000	0.0000	0.090	Yes
Heptacosanes(27)	4.4	b	0.09	0.0000	0.0000	0.0000	0.086	Yes
Octacosanes(28)	4.4	b	0.08	0.0000	0.0000	0.0000	0.078	Yes
Nonacosanes(29)	4.4	b	0.07	0.0000	0.0000	0.0000	0.071	Yes
triacontanes(30)	4.4	b	0.06	0.0000	0.0000	0.0000	0.063	Yes
Hentriacontanes Plus(31+)	4.4	b	1.64	0.0000	0.0000	0.0000	1.635	Yes

¹ Limit values based on the following:

a 30 TAC 106.261(a)(2)

b 30 TAC 106.261(a)(3)

c Per 30 TAC 116.620(a)(17), use an "L" value of 10 for H2S

d 30 TAC 106.262(a)(2) where: no more than 5 tpy or 6 lb/hr D =

10,845

3000

K =

8

² MSS emissions are authorized under Permit by Rule 106.359 (blowdowns) are therefore not included.

³ Fugitive liquids are speciated through C31 and plus

Site Location <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td style="width:30%;">County</td><td>La Salle</td></tr> <tr><td>Region</td><td>16</td></tr> </table>	County	La Salle	Region	16	Discharge Parameters <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td style="width:30%;">Stack height (feet)</td><td>24.17</td></tr> <tr><td>Stack diameter (feet)</td><td>1.33</td></tr> <tr><td>Stack Temperature (°F)</td><td>847</td></tr> <tr><td>Exhaust Gas Flow (ft³/min)</td><td>7423</td></tr> </table>	Stack height (feet)	24.17	Stack diameter (feet)	1.33	Stack Temperature (°F)	847	Exhaust Gas Flow (ft ³ /min)	7423	Fuel Data <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td style="width:30%;">Fuel Type</td><td>Field Gas</td></tr> <tr><td>Fuel Consumption (BTU/bhp-hr)</td><td>7,942</td></tr> <tr><td>Heat Value (HHV)</td><td>1443</td></tr> <tr><td>Heat Value (LHV)</td><td>1314</td></tr> <tr><td>Sulfur Content (grains/100scf)</td><td>Sweet</td></tr> </table>	Fuel Type	Field Gas	Fuel Consumption (BTU/bhp-hr)	7,942	Heat Value (HHV)	1443	Heat Value (LHV)	1314	Sulfur Content (grains/100scf)	Sweet																
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Additional Required Information <ol style="list-style-type: none"> 1. Submit a copy of the engine manufacturer's site rating or general rating specification data. 2. Submit a typical fuel analysis, including sulfur content and heating value. For gaseous fuels, provide mole percent of constituents. 3. Submit a description of the air/fuel ratio control system (manufacturer's information is acceptable). 																																								
<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td style="width:30%;">Horsepower:</td><td>1,380</td></tr> <tr><td>Fuel consumption (Btu/hp-hr):</td><td>7,942</td></tr> <tr><td>Hours of operation per year:</td><td>8,760</td></tr> <tr><td>Engine Type:</td><td>4 Stroke, Lean-Burn</td></tr> </table>			Horsepower:	1,380	Fuel consumption (Btu/hp-hr):	7,942	Hours of operation per year:	8,760	Engine Type:	4 Stroke, Lean-Burn																														
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To Determine Emissions for Air Permitting																
	If available, enter the test results or manufacturer's emission factors before control (g/hp-hr)	from AP-42:					appropriate AP-42 factor	emission factor used	units	Uncontrolled lb/hr	Uncontrolled tpy	If present, enter the efficiency of any control device (as a %)	If present, enter the controlled emission factor (as g/hp-hr)	control factor used	lb/hr	tpy
		Table 3.2-1 2 stroke engine emission factors (lb/MMBtu)	Table 3.2-2 4 stroke, lean-burn engine emission factors (lb/MMBtu)	Table 3.2-3 4 stroke, rich burn engine emission factors (lb/MMBtu)												
VOC (NMNEHC)	1.63	0.12	0.118	0.0296	0.118	1.63	g/hp-hr	4.959	21.721		0.7	0.7	2.13	9.33		
NOx	0.5	3.17	4.08	2.21	4.08	0.5	g/hp-hr	1.521	6.663		1	1	3.04	13.33		
CO	2.59	0.386	0.317	3.72	0.317	2.59	g/hp-hr	7.880	34.514		2	2	6.08	26.65		
PM (condensable)		0.00991	0.00991	0.00991	0.00991	0.00991	lb/MMBtu	0.109	0.476			0	0.11	0.48		
PM ₁₀ (filterable)		0.0384	0.0000771	0.0095	0.0000771	0.0000771	lb/MMBtu	0.001	0.004			0	0.00	0.00		
PM _{2.5} (filterable)		0.0384	0.0000771	0.0095	0.0000771	0.0000771	lb/MMBtu	0.001	0.004			0	0.00	0.00		
SO ₂		0.000588	0.000588	0.000588	0.000588	0.000588	lb/MMBtu	0.006	0.028			0	0.01	0.03		
Formaldehyde	0.35	0.0552	0.0528	0.0205	0.0528	0.35	g/hp-hr	1.065	4.664		0.35	0.35	1.06	4.66		
Benzene		0.00194	0.000404	0.00158	0.000404	0.000404	lb/MMBtu	0.004	0.019			0	0.00	0.02		

EMISSION ESTIMATE FOR HEATER OPERATIONS

Heater Treaters

EPN HEATER-1, -2, and -3 (Future)

Firing Rate: 0.75 MM Btu/hr
Hours of Operation: 8760 hr/yr
Assumptions: 1,348 Btu/scf

Pollutant	EMISSION FACTORS	EMISSION FACTOR UNITS	EMISSIONS	
			(lb/hr)	(tpy)
NOx ¹	100	lb/MMscf	0.0556	0.244
CO ¹	84	lb/MMscf	0.0467	0.205
SO2 ²	188	lb/MMscf	0.1046	0.458
TOC ²	11	lb/MMscf	0.0061	0.027
VOC ²	5.5	lb/MMscf	0.0031	0.013
HAP ³	0.075	lb/MMscf	0.00004	0.0002
PM10 ⁴	7.6	lb/MMscf	0.0042	0.019

¹Factors obtained from Table 1.4-1 of AP-42 dated 7/98 for small, uncontrolled boilers.

²Factors based on Table 1.4-2 of AP-42 dated 7/98.

³Factor for formaldehyde from Table 1.4-3 of AP-42 dated 7/98.

⁴PM10 factor is the summation of the condensable and filterable particulate emission factors given in Table 1.4-2 of AP-42 dated 7/98.

Site-specific sulfur content: = 626285 grains/MMscf

$\frac{(100 \text{ lb NOx/MM scf gas})(0.75 \text{ MMBtu/hr})}{(1347.71 \text{ Btu/scf})}$ = 0.0556 lb NOx/hr

EMISSION ESTIMATE FOR LOADING OIL

Number of Oil Tanks:

4

Loading Parameters From BRE ProMax

The screenshot shows a software window titled "Crude Oil Tanks" with a standard Windows interface (minimize, maximize, close buttons). The window contains a tabbed interface with the following tabs: "Working and Breathing Parameters", "Floating Roof Fittings", "Loading Loss Parameters", "Results", "Working and Breathing Report", and "Loading F...". The "Loading Loss Parameters" tab is active, displaying a table with the following data:

Property	Value	Units
Cargo Carrier	Tank Truck or Rail Tank Car	
Land Based Mode of Operation	Submerged Loading: Dedicated Vapor Balance	
Marine Based Mode of Operation	Submerged Loading: Ships	
Overall Reduction Efficiency	0	%
Maximum Hourly Loading Rate	4,320	bb/d

At the bottom left of the window, there is a button labeled "Edit Source ...".

EMISSION ESTIMATE FOR LOADING WATER

Number of Water Tanks:

2

Loading Report From BRE ProMax

Produced Water Tanks

Working and Breathing Parameters | Floating Roof Fittings | Loading Loss Parameters | Results | Working and Breathing Report | Loading Report

Property	Value	Units
Cargo Carrier	Tank Truck or Rail Tank Car	
Land Based Mode of Operation	Submerged Loading: Dedicated Vapor Balance S	
Marine Based Mode of Operation	Submerged Loading: Ships	
Overall Reduction Efficiency	0	%
Maximum Hourly Loading Rate	4,320	bb/d

Edit Source ...

EMISSION ESTIMATE FOR LOADING CONDENSATE

Number of Condensate Tanks:

1

Loading Report From BRE ProMax

Condensate Tanks

Floating Roof Fittings | Loading Loss Parameters | Results | Working and Breathing Report | Loading Report | Flash Report | Warnings

Property	Value	Units
Cargo Carrier	Tank Truck or Rail Tank Car	
Land Based Mode of Operation	Submerged Loading: Dedicated Vapor Balance	
Marine Based Mode of Operation	Submerged Loading: Ships	
Overall Reduction Efficiency	0	%
Maximum Hourly Loading Rate	40	bb/d

Edit Source ...

EOG RESOURCES, INC.

MAY 2025

NAYLOR JONES 6&7E MAGPIE MEADOWLARK SNOWBIRD PRODUCTION FACILITY

Form PI-1S Registration for Standard Permit under 30 TAC §116.620

APPENDIX A

ANALYTICAL DATA

November 22, 2024

FESCO, Ltd.
1100 FESCO Avenue - Alice, Texas 78332

For: EOG Resources, Inc.
P. O. Box 592929
San Antonio, Texas 78259

Sample: Dale Osage Vail
Heater Treater A Hydrocarbon Liquid
Sampled @ 95 psig & 122 °F

Date Sampled: 11/12/2024

Job Number: 243825.002

CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2186-M

COMPONENT	MOL %	LIQ VOL %	WT %
Nitrogen	0.018	0.003	0.003
Carbon Dioxide	0.108	0.028	0.029
Methane	1.822	0.467	0.176
Ethane	3.535	1.429	0.639
Propane	5.963	2.484	1.580
Isobutane	1.568	0.776	0.548
n-Butane	5.136	2.448	1.794
2,2 Dimethylpropane	0.077	0.045	0.034
Isopentane	2.746	1.518	1.191
n-Pentane	3.825	2.096	1.658
2,2 Dimethylbutane	0.060	0.038	0.031
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.240	0.149	0.124
2 Methylpentane	1.930	1.211	1.000
3 Methylpentane	0.978	0.604	0.507
n-Hexane	2.735	1.700	1.416
Heptanes Plus	<u>69.258</u>	<u>85.004</u>	<u>89.272</u>
Totals:	100.000	100.000	100.000

Characteristics of Heptanes Plus:

Specific Gravity ----- 0.8372 (Water=1)
°API Gravity ----- 37.51 @ 60°F
Molecular Weight ----- 214.5
Vapor Volume ----- 12.39 CF/Gal
Weight ----- 6.98 Lbs/Gal

Characteristics of Total Sample:

Specific Gravity ----- 0.7972 (Water=1)
°API Gravity ----- 45.99 @ 60°F
Molecular Weight ----- 166.4
Vapor Volume ----- 15.21 CF/Gal
Weight ----- 6.64 Lbs/Gal

Base Conditions: 14.650 PSI & 60 °F

Certified: FESCO, Ltd. - Alice, Texas

Sampled By: (16) Elizondo
Analyst: JL
Processor: Jldjv
Cylinder ID: W-1803

Conan Pierce 361-661-7015

TANKS DATA INPUT REPORT - GPA 2186-M

COMPONENT	Mol %	LiqVol %	Wt %
Carbon Dioxide	0.108	0.028	0.029
Nitrogen	0.018	0.003	0.003
Methane	1.822	0.467	0.176
Ethane	3.535	1.429	0.639
Propane	5.963	2.484	1.580
Isobutane	1.568	0.776	0.548
n-Butane	5.213	2.493	1.827
Isopentane	2.746	1.518	1.191
n-Pentane	3.825	2.096	1.658
Other C-6's	3.209	2.002	1.662
Heptanes	5.996	3.891	3.455
Octanes	7.107	5.029	4.644
Nonanes	5.379	4.380	4.102
Decanes Plus	46.478	69.308	74.484
Benzene	0.394	0.167	0.185
Toluene	1.178	0.596	0.652
E-Benzene	0.442	0.258	0.282
Xylenes	2.080	1.213	1.327
n-Hexane	2.735	1.700	1.416
2,2,4 Trimethylpentane	<u>0.205</u>	<u>0.161</u>	<u>0.141</u>
Totals:	100.000	100.000	100.000

Characteristics of Total Sample:

Specific Gravity -----	0.7972 (Water=1)
°API Gravity -----	45.99 @ 60°F
Molecular Weight-----	166.4
Vapor Volume -----	15.21 CF/Gal
Weight -----	6.64 Lbs/Gal

Characteristics of Decanes (C10) Plus:

Specific Gravity -----	0.8568 (Water=1)
Molecular Weight-----	266.7

Characteristics of Atmospheric Sample:

°API Gravity -----	42.78 @ 60°F
Reid Vapor Pressure Equivalent (D-6377)-----	10.67 psi

QUALITY CONTROL CHECK			
	Sampling Conditions	Test Samples	
Cylinder Number	-----	W-1803	-----
Pressure, PSIG	95	95	-----
Probe Temperature, °F	122	122	-----

* Sample used for analysis

COMPONENT	Mol %	LiqVol %	Wt %
Nitrogen	0.018	0.003	0.003
Carbon Dioxide	0.108	0.028	0.029
Methane	1.822	0.467	0.176
Ethane	3.535	1.429	0.639
Propane	5.963	2.484	1.580
Isobutane	1.568	0.776	0.548
n-Butane	5.136	2.448	1.794
2,2 Dimethylpropane	0.077	0.045	0.034
Isopentane	2.746	1.518	1.191
n-Pentane	3.825	2.096	1.658
2,2 Dimethylbutane	0.060	0.038	0.031
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.240	0.149	0.124
2 Methylpentane	1.930	1.211	1.000
3 Methylpentane	0.978	0.604	0.507
n-Hexane	2.735	1.700	1.416
Methylcyclopentane	0.754	0.403	0.381
Benzene	0.394	0.167	0.185
Cyclohexane	0.832	0.428	0.421
2-Methylhexane	0.808	0.568	0.487
3-Methylhexane	0.901	0.625	0.542
2,2,4 Trimethylpentane	0.205	0.161	0.141
Other C-7's	0.498	0.330	0.297
n-Heptane	2.204	1.537	1.327
Methylcyclohexane	1.529	0.929	0.902
Toluene	1.178	0.596	0.652
Other C-8's	3.609	2.575	2.391
n-Octane	1.968	1.524	1.351
E-Benzene	0.442	0.258	0.282
M & P Xylenes	1.504	0.882	0.960
O-Xylene	0.576	0.331	0.368
Other C-9's	3.634	2.895	2.757
n-Nonane	1.745	1.485	1.345
Other C-10's	5.016	4.393	4.259
n-decane	1.287	1.195	1.101
Undecanes(11)	5.085	4.569	4.492
Dodecanes(12)	3.836	3.723	3.711
Tridecanes(13)	3.734	3.886	3.927
Tetradecanes(14)	3.138	3.497	3.582
Pentadecanes(15)	2.617	3.124	3.239
Hexadecanes(16)	2.145	2.737	2.862
Heptadecanes(17)	1.854	2.502	2.641
Octadecanes(18)	1.729	2.457	2.608
Nonadecanes(19)	1.670	2.472	2.640
Eicosanes(20)	1.332	2.049	2.201
Heneicosanes(21)	1.159	1.876	2.027
Docosanes(22)	0.999	1.685	1.831
Tricosanes(23)	0.858	1.500	1.639
Tetracosanes(24)	0.751	1.361	1.494
Pentacosanes(25)	0.664	1.248	1.377
Hexacosanes(26)	0.593	1.155	1.280
Heptacosanes(27)	0.543	1.096	1.220
Octacosanes(28)	0.478	0.998	1.115
Nonacosanes(29)	0.418	0.901	1.009
Triacosanes(30)	0.358	0.796	0.895
Hentriacosanes Plus(31+)	<u>6.212</u>	<u>20.088</u>	<u>23.333</u>
Total	100.000	100.000	100.000



NG Extended Analysis Report_C11+

PRODUCER	EOG Resources
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Acquisition Date & Time: 12/2/2024 9:33:23 AM	Serial Number:: EOG_Ext NG_101
Station Name:: Hoff Comp. Inlet #1	Station Number:: 1004001F20
Station Location:: Area 6	Sample Point:: Downstream
Cylinder Number:: SMS-A1038	Sampled Date:: 11/22/2024
Sampled By:: R.K.	Sample Contents:: NG Spot
Sample Conditions:: 141 psig @ 83 degF	H2S:: 5 ppm

H2S determined by stained tube on site

Components (60°F)

Name	Qty (Norm) [Mol %]	Wt Percent (%)	GPM
nitrogen	0.2680	0.331	0.0000
methane	72.1653	51.099	0.0000
carbon dioxide	1.4456	2.808	0.0000
ethane	14.2760	18.947	3.8084
propane	7.2731	14.156	1.9989
i-butane	0.9630	2.471	0.3143
n-butane	2.5093	6.437	0.7892
i-pentane	0.3572	1.137	0.1303
n-pentane	0.3842	1.223	0.1389
n-hexane	0.1002	0.381	0.0411
n-heptane	0.0184	0.081	0.0085
n-octane	0.0018	0.009	0.0009
benzene	0.0113	0.039	0.0032
methylcyclohexane	0.0050	0.022	0.0020
methylcyclopentane	0.0052	0.019	0.0018
cyclohexane	0.0057	0.021	0.0019
toluene	0.0043	0.017	0.0014
ethylbenzene	0.0001	0.000	0.0000
m,p-xylene	0.0002	0.001	0.0001
o-xylene	0.0001	0.000	0.0000
n-nonane	0.0002	0.001	0.0001
n-decane	0.0000	0.000	0.0000
C6	0.1839	0.700	0.0755
C7	0.0215	0.095	0.0099
C8	0.0002	0.001	0.0001
C9	0.0002	0.001	0.0001



NG Extended Analysis Report_C11+

PRODUCER	EOG Resources		
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Name	Qty (Norm) [Mol %]	Wt Percent (%)	GPM
C10	0.0000	0.000	0.0000
C11+	0.0000	0.000	0.0000
	100.0000	100.000	7.3268

Calculations (14.65)

Density (G) (Dry Gas) :	0.78225	Compressibility (Z) (Dry Gas) :	0.99674
Heating Value (Dry Real) Total BTU:	1324.799	Heating Value (Sat Real) Total BTU:	1301.534
Heating Value (Dry Ideal) Total BTU:	1324.624	Heating Value (Sat Ideal) Total BTU:	1301.509

Approved: *Randy Lunceford*

Date: 12/03/2024



Scott Measurement Services Inc.

Gas Lab

19942 FM 2252 Building #1

Garden Ridge, TX 78266

210-599-7600

www.scottmeasurement.com

Producer: EOG
 Station Name: NJ6-NJ7E-Mag-Me-Snow CF Check
 Station Number: 1783000F06
 Sample Date: 10-09-23
 Sample Contents: NG Spot
 Sample Pressure: 118 Psig
 Sample Temp: 105 degF
 H2S: 500
 First Flow: No

Analysis Date: 10/18/2023 1:56:31 PM
 Serial Number: GC5F_65515
 Area: 6
 Source: Meter Tube
 Cylinder Number: SMS-S3165
 Sampled By: K.McCarty
 Lab Technician: Jeremy Bueno
 GPA Method: GPA 2261-19
 Resample: No
 Received Date: 10-12-23

Index	Name	Normalized [Mole%]	Wt%	GPM
1	C6+	0.8140	3.2449	0.3502
2	Nitrogen	0.3531	0.4285	0.0000
3	Methane	71.4093	49.6357	0.0000
4	Carbon Dioxide	1.4627	2.7892	0.0000
5	Ethane	14.5552	18.9635	3.8860
6	Propane	7.2952	13.9385	2.0065
7	i-Butane	0.9002	2.2671	0.2941
8	n-Butane	2.1446	5.4010	0.6754
9	i-Pentane	0.5172	1.6170	0.1891
10	n-Pentane	0.5485	1.7147	0.1984
Total		100.0000	100.0000	7.5998

Calculated Molecular Weight 23.079
 Relative Density Real Gas 0.80039
 Compressibility Factor 0.99565
 C2+ GPM 7.5998
 C3+ GPM 3.7138
 C5+ GPM 0.7377

Calculated Gross BTU @ 14.65 psia & 60 degF

Real Gas Dry BTU 1347.71

Water Sat. Gas Base BTU 1324.26

Approved: J. Bueno

Comments: _

Date: 10/18/2023

EOG RESOURCES, INC.

MAY 2025

NAYLOR JONES 6&7E MAGPIE MEADOWLARK SNOWBIRD PRODUCTION FACILITY

Form PI-1S Registration for Standard Permit under 30 TAC §116.620

APPENDIX B

AREA MAP

APPENDIX C**MODELING OUTPUT**

There will be no violations of any National Ambient Air Quality Standard (NAAQS) in the area of the proposed facility. Compliance with this condition is demonstrated using the method in 106.512(6)(A). An NO₂/NO_x ratio of 0.40 was used at the Naylor Jones 6&7 E Magpie Meadowlark Snowbird Production Facility because the engine has NO_x emission factors less than 2 g/hp-hr. Atmospheric dispersion modeling was performed using the EPA-approved SCREEN3 model, provided below. Downwash was based on the size of a box enclosing the engine skid. The maximum NO₂ concentration at any distance is 22.14 µg/m³. Adding the background concentration of 70 µg/m³ for La Salle County results in a maximum NO₂ hourly impact of 92.14 µg/m³, which is less than the standard of 188 µg/m³ or 100 ppb.

05/19/25
14:36:32

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 13043 ***

Magpie

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.153216
STACK HEIGHT (M) = 7.3670
STK INSIDE DIAM (M) = 0.4054
STK EXIT VELOCITY (M/S) = 27.1422
STK GAS EXIT TEMP (K) = 725.9278
AMBIENT AIR TEMP (K) = 293.1500
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 3.6576
MIN HORIZ BLDG DIM (M) = 3.0480
MAX HORIZ BLDG DIM (M) = 6.0960

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BOUY. FLUX = 6.520 M**4/S**3; MOM. FLUX = 12.223 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	94.78	1.89	1.85	NO
100.	13.96	4	15.0	15.0	4800.0	11.66	8.29	6.99	HS
200.	9.484	4	10.0	10.0	3200.0	16.11	15.76	10.86	HS
300.	7.882	4	10.0	10.0	3200.0	16.11	22.75	13.91	HS
400.	6.631	4	8.0	8.0	2560.0	18.29	29.62	15.59	NO
500.	5.974	4	5.0	5.0	1600.0	24.85	36.49	18.97	NO
600.	5.439	4	4.5	4.5	1440.0	26.79	43.08	21.93	NO
700.	4.955	4	4.0	4.0	1280.0	29.22	49.58	24.83	NO
800.	4.542	4	3.5	3.5	1120.0	32.34	56.03	27.72	NO
900.	4.177	4	3.0	3.0	960.0	36.51	62.44	30.62	NO
1000.	3.897	4	3.0	3.0	960.0	36.51	68.63	33.16	NO
1100.	3.607	4	3.0	3.0	960.0	36.51	74.78	35.13	NO

1200.	3.392	4	2.5	2.5	800.0	42.33	81.06	37.45	NO
1300.	3.191	4	2.5	2.5	800.0	42.33	87.09	39.29	NO
1400.	3.000	4	2.5	2.5	800.0	42.33	93.09	41.09	NO
1500.	2.961	5	1.0	1.0	10000.0	62.90	75.39	32.12	NO
1600.	3.046	5	1.0	1.0	10000.0	62.90	79.74	33.14	NO
1700.	3.111	5	1.0	1.0	10000.0	62.90	84.09	34.14	NO
1800.	3.159	5	1.0	1.0	10000.0	62.90	88.41	35.12	NO
1900.	3.193	5	1.0	1.0	10000.0	62.90	92.72	36.10	NO
2000.	3.212	5	1.0	1.0	10000.0	62.90	97.01	37.06	NO
2100.	3.266	6	1.0	1.0	10000.0	53.45	67.85	25.82	NO
2200.	3.332	6	1.0	1.0	10000.0	53.45	70.66	26.31	NO
2300.	3.389	6	1.0	1.0	10000.0	53.45	73.47	26.80	NO
2400.	3.437	6	1.0	1.0	10000.0	53.45	76.26	27.28	NO
2500.	3.477	6	1.0	1.0	10000.0	53.45	79.05	27.75	NO
2600.	3.511	6	1.0	1.0	10000.0	53.45	81.83	28.21	NO
2700.	3.537	6	1.0	1.0	10000.0	53.45	84.60	28.67	NO
2800.	3.558	6	1.0	1.0	10000.0	53.45	87.36	29.13	NO
2900.	3.574	6	1.0	1.0	10000.0	53.45	90.12	29.58	NO
3000.	3.585	6	1.0	1.0	10000.0	53.45	92.86	30.02	NO
3500.	3.514	6	1.0	1.0	10000.0	53.45	106.47	31.83	NO
4000.	3.405	6	1.0	1.0	10000.0	53.45	119.89	33.53	NO
4500.	3.277	6	1.0	1.0	10000.0	53.45	133.15	35.13	NO
5000.	3.141	6	1.0	1.0	10000.0	53.45	146.26	36.65	NO
5500.	3.005	6	1.0	1.0	10000.0	53.45	159.24	38.10	NO
6000.	2.872	6	1.0	1.0	10000.0	53.45	172.08	39.49	NO
6500.	2.743	6	1.0	1.0	10000.0	53.45	184.81	40.83	NO
7000.	2.621	6	1.0	1.0	10000.0	53.45	197.43	42.11	NO
7500.	2.502	6	1.0	1.0	10000.0	53.45	209.95	43.22	NO
8000.	2.390	6	1.0	1.0	10000.0	53.45	222.37	44.28	NO
8500.	2.287	6	1.0	1.0	10000.0	53.45	234.71	45.31	NO
9000.	2.191	6	1.0	1.0	10000.0	53.45	246.96	46.31	NO
9500.	2.101	6	1.0	1.0	10000.0	53.45	259.13	47.28	NO
10000.	2.017	6	1.0	1.0	10000.0	53.45	271.22	48.22	NO
15000.	1.420	6	1.0	1.0	10000.0	53.45	388.65	56.44	NO
20000.	1.084	6	1.0	1.0	10000.0	53.45	501.12	61.72	NO
25000.	0.8720	6	1.0	1.0	10000.0	53.45	609.89	66.18	NO
30000.	0.7269	6	1.0	1.0	10000.0	53.45	715.71	70.08	NO
40000.	0.5458	6	1.0	1.0	10000.0	53.45	920.32	75.64	NO
50000.	0.4356	6	1.0	1.0	10000.0	53.45	1117.50	80.28	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
37. 22.14 4 20.0 20.0 6400.0 8.94 3.37 4.47 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** REGULATORY (Default) ***
 PERFORMING CAVITY CALCULATIONS
 WITH ORIGINAL SCREEN CAVITY MODEL
 (BRODE, 1988)

*** CAVITY CALCULATION - 1 ***

CONC (UG/M**3) = 0.000
 CRIT WS @10M (M/S) = 99.99
 CRIT WS @ HS (M/S) = 99.99
 DILUTION WS (M/S) = 99.99
 CAVITY HT (M) = 5.64
 CAVITY LENGTH (M) = 9.13
 ALONGWIND DIM (M) = 3.05

*** CAVITY CALCULATION - 2 ***

CONC (UG/M**3) = 0.000
 CRIT WS @10M (M/S) = 99.99
 CRIT WS @ HS (M/S) = 99.99
 DILUTION WS (M/S) = 99.99
 CAVITY HT (M) = 4.33
 CAVITY LENGTH (M) = 3.14
 ALONGWIND DIM (M) = 6.10

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

END OF CAVITY CALCULATIONS

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	22.14	37.	0.

EOG RESOURCES, INC.

MAY 2025

NAYLOR JONES 6&7E MAGPIE MEADOWLARK SNOWBIRD PRODUCTION FACILITY

Form PI-1S Registration for Standard Permit under 30 TAC §116.620

APPENDIX D

ENGINE DATA

Texas Commission on Environmental Quality
Table 29 Reciprocating Engines

I. Engine Data											
Manufacturer: Caterpillar			Model No. 3516J			Serial No. JEF01875-N6W			Manufacture Date: 08/01/2012		
Rebuilds Date:			No. of Cylinders: 16			Compression Ratio: 8:1			EPN: ENG-2		
Application: <input checked="" type="checkbox"/> Gas Compression <input type="checkbox"/> Electric Generation <input type="checkbox"/> Refrigeration <input type="checkbox"/> Emergency/Stand by											
<input checked="" type="checkbox"/> 4 Stroke Cycle <input type="checkbox"/> 2 Stroke Cycle <input checked="" type="checkbox"/> Carbureted <input checked="" type="checkbox"/> Spark Ignited <input type="checkbox"/> Dual Fuel <input type="checkbox"/> Fuel Injected											
<input type="checkbox"/> Diesel <input type="checkbox"/> Naturally Aspirated <input type="checkbox"/> Blower /Pump Scavenged <input checked="" type="checkbox"/> Turbo Charged and I.C. <input type="checkbox"/> Turbo Charged											
<input type="checkbox"/> Intercooled <input type="checkbox"/> I.C. Water Temperature <input checked="" type="checkbox"/> Lean Burn <input type="checkbox"/> Rich Burn											
Ignition/Injection Timing: Fixed:						Variable:					
Manufacture Horsepower Rating: 1380						Proposed Horsepower Rating: 1380					
Discharge Parameters											
Stack Height (Feet)			Stack Diameter (Feet)			Stack Temperature (°F)			Exit Velocity (FPS)		
24.17			1.33								
II. Fuel Data											
Type of Fuel: <input checked="" type="checkbox"/> Field Gas <input type="checkbox"/> Landfill Gas <input type="checkbox"/> LP Gas <input type="checkbox"/> Natural Gas <input type="checkbox"/> Digester Gas <input type="checkbox"/> Diesel											
Fuel Consumption (BTU/bhp-hr): 7942				Heating Value: 1443				Lower Heating Value: 1314			
Sulfur Content (grains/100 scf - weight %): Sweet											
III. Emission Factors (Before Control)											
NO _x		CO		SO ₂		VOC		Formaldehyde		PM ₁₀	
g/hp-hr	ppmv	g/hp-hr	ppmv	g/hp-hr	ppmv	g/hp-hr	ppmv	g/hp-hr	ppmv	g/hp-hr	ppmv
0.50		2.59				1.63		0.35			
Source of Emission Factors: <input checked="" type="checkbox"/> Manufacturer Data <input type="checkbox"/> AP-42 <input type="checkbox"/> Other (specify):											
IV. Emission Factors (Post Control)											
NO _x		CO		SO ₂		VOC		Formaldehyde		PM ₁₀	
g/hp-hr	ppmv	g/hp-hr	ppmv	g/hp-hr	ppmv	g/hp-hr	ppmv	g/hp-hr	ppmv	g/hp-hr	ppmv
1.00		2.00				0.70		0.35			
Method of Emission Control: <input type="checkbox"/> NSCR Catalyst <input type="checkbox"/> Lean Operation <input type="checkbox"/> Parameter Adjustment <input type="checkbox"/> Stratified Charge <input type="checkbox"/> JLCC Catalyst <input checked="" type="checkbox"/> Other (Specify): <u>Oxidative</u>											
<i>Note: Must submit a copy of any manufacturer control information that demonstrates control efficiency.</i>											
Is Formaldehyde included in the VOCs?										<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
V. Federal and State Standards (Check all that apply)											
<input checked="" type="checkbox"/> NSPS JJJJ <input checked="" type="checkbox"/> MACT ZZZZ <input type="checkbox"/> NSPS IIII <input type="checkbox"/> Title 30 Chapter 117 - List County: _____											
VI. Additional Information											
1. Submit a copy of the engine manufacturer's site rating or general rating specification data. 2. Submit a typical fuel gas analysis, including sulfur content and heating value. For gaseous fuels, provide mole percent of constituents. 3. Submit description of air/fuel ratio control system (manufacturer information is acceptable).											



Emissions Compliance Test

NSPS JJJ/TAC PBR 512 - Annual Test

Facility:

NAYLOR JONES 6&7 E MAGPIE MEADOWLARK PF
La Salle County, Texas

Stationary Engine:

SN: JEF01875-N6W
CAT G3516J - 1380 hp

Test Date:

5/21/2024

Test ID: 3460

PREPARED FOR:

EOG Resources, Inc. - SATX
19100 Ridgewood Pkwy, Bldg 2
San Antonio, TX 78259

PREPARED BY:

Costa Verde Resources, LLC
PO Box 271917
Corpus Christi, TX 78427

CONTACT INFORMATION

EOG Resources, Inc. - SATX

Technical Contact: Matthew Zidek
Contact Phone: 210-730-9722
Contact Email: matthew.zidek@eogresources.com
Field Contact: Matthew Zidek
Field Contact Phone: 210-409-3488

Costa Verde Resources, LLC:

Office Contact: Mike Weaver
Contact Phone: 361-853-5300
Contact Email: mweaver@cvr-llc.com
Test Technician: Scott Hass
Technician Phone: 361-853-5300
Technician Email: shass@cvr-llc.com

This test has been reviewed and approved for submittal by the following CVR representative:

Mike Weaver

Costa Verde Resources, LLC

Matthew Zidek

EOG Resources, Inc. - SATX

TCEQ Reference Numbers:

Company CN: 600124333
Facility RN: 107816738
Unit EPN: ENG-2
Permit Number: 124774

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- 2.0 Test Equipment and Protocol**
- 3.0 QA/QC and Operating Specifications**
- 4.0 Summary of Results**
- 5.0 Operational Data**
- 6.0 Analyzer Results and Sample Calculations**
 - Wet Concentrations
 - VOC Sample Calculations, Run 1
 - CO Sample Calculations, Run 1
 - NOx Sample Calculations, Run 1

APPENDICES

- Appendix A** Test Notification & Testing Protocol Schematic
- Appendix B** QA/QC Data
- Appendix C** Supporting Data
- Appendix D** Technician Resume
- Appendix E** Raw Data

1.0 Facility Overview

Costa Verde Resources, LLC (CVR) conducted an emissions compliance test to evaluate the stack emission concentrations on the following unit:

1.1 Test Location and Information

Owner: EOG Resources, Inc. - SATX
Facility: NAYLOR JONES 6&7 E MAGPIE M
State/County: TX-La Salle

GPS Coordinates:

Latitude (N): 28.50468
Longitude (W): -98.8661

General Test & Unit Information:

Test ID:	3460	Unit ID:	0176-KOD
Test date:	5/21/2024	Serial number:	JEF01875-N6W
Manuf. date:	08/01/2012	Engine make:	CAT
Unit operator:	EOG Resources, Inc. - SATX	Engine model:	G3516J
Unit purpose:	GAS COMPRESSION	Rated HP:	1380

1.2 Regulations and Permits

The compliance emission testing was conducted in accordance with the following permit, applicable regulation(s), and test method(s) for the listed pollutants:

Permit type: PBR
Permit number: 124774
Rule name: TEST1YR-JJJ-PBR512

GAS COMPRESSION APPLICATION

ENGINE SPEED (rpm): 1400
 COMPRESSION RATIO: 8
 AFTERCOOLER TYPE: SCAC
 AFTERCOOLER - STAGE 2 INLET (°F): 130
 AFTERCOOLER - STAGE 1 INLET (°F): 201
 JACKET WATER OUTLET (°F): 210
 ASPIRATION: TA
 COOLING SYSTEM: JW+OC+1AC, 2AC
 CONTROL SYSTEM: ADEM3
 EXHAUST MANIFOLD: ASWC
 COMBUSTION: LOW EMISSION
 NOx EMISSION LEVEL (g/bhp-hr NOx): 0.5
 SET POINT TIMING: 27

RATING STRATEGY:
 RATING LEVEL:
 FUEL SYSTEM:

STANDARD
 CONTINUOUS
 CAT WIDE RANGE
 WITH AIR FUEL RATIO CONTROL

SITE CONDITIONS:

FUEL: NJ62024
 FUEL PRESSURE RANGE (psig): (See note 1) 7.0-40.0
 FUEL METHANE NUMBER: 33.0
 FUEL LHV (Btu/scf): 1314
 ALTITUDE(ft): 430
 INLET AIR TEMPERATURE(°F): 100
 STANDARD RATED POWER: 1380 bhp@1400rpm

RATING	NOTES	LOAD	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE			
			100%	100%	75%	55%
ENGINE POWER (WITHOUT FAN)	(2)	bhp	1259	1259	944	690
INLET AIR TEMPERATURE		°F	100	100	100	100

ENGINE DATA			100%	100%	75%	55%
FUEL CONSUMPTION (LHV)	(3)	Btu/bhp-hr	7229	7229	7588	8046
FUEL CONSUMPTION (HHV)	(3)	Btu/bhp-hr	7942	7942	8337	8840
AIR FLOW (@inlet air temp, 14.7 psia) (WET)	(4)(5)	ft3/min	2974	2974	2272	1697
AIR FLOW (WET)	(4)(5)	lb/hr	12644	12644	9662	7217
FUEL FLOW (60°F, 14.7 psia)		scfm	115	115	91	70
INLET MANIFOLD PRESSURE	(6)	psi(abs)	39.1	39.1	31.2	23.3
EXHAUST TEMPERATURE - ENGINE OUTLET	(7)	°F	847	847	846	892
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia) (WET)	(5)(8)	ft3/min	7423	7423	5673	4396
EXHAUST GAS MASS FLOW (WET)	(5)(8)	lb/hr	13093	13093	10015	7491

EMISSIONS DATA - ENGINE OUT			100%	100%	75%	55%
NOx (as NO2)	(9)(10)	g/bhp-hr	0.50	0.50	0.50	0.50
CO	(9)(10)	g/bhp-hr	2.59	2.59	2.60	2.52
THC (mol. wt. of 15.84)	(9)(10)	g/bhp-hr	3.43	3.43	3.35	3.19
NMHC (mol. wt. of 15.84)	(9)(10)	g/bhp-hr	1.96	1.96	1.92	1.83
NMNEHC (VOCs) (mol. wt. of 15.84)	(9)(10)(11)	g/bhp-hr	1.28	1.28	1.25	1.19
HCHO (Formaldehyde)	(9)(10)	g/bhp-hr	0.35	0.35	0.33	0.32
CO2	(9)(10)	g/bhp-hr	531	531	554	589
EXHAUST OXYGEN	(9)(12)	% DRY	9.0	9.0	8.7	8.3

HEAT REJECTION			100%	100%	75%	55%
HEAT REJ. TO JACKET WATER (JW)	(13)	Btu/min	31567	31567	27236	24027
HEAT REJ. TO ATMOSPHERE	(13)	Btu/min	5002	5002	4195	3543
HEAT REJ. TO LUBE OIL (OC)	(13)	Btu/min	3816	3816	3292	2904
HEAT REJ. TO A/C - STAGE 1 (1AC)	(13)(14)	Btu/min	7309	7309	5399	1491
HEAT REJ. TO A/C - STAGE 2 (2AC)	(13)(14)	Btu/min	4625	4625	4056	2795

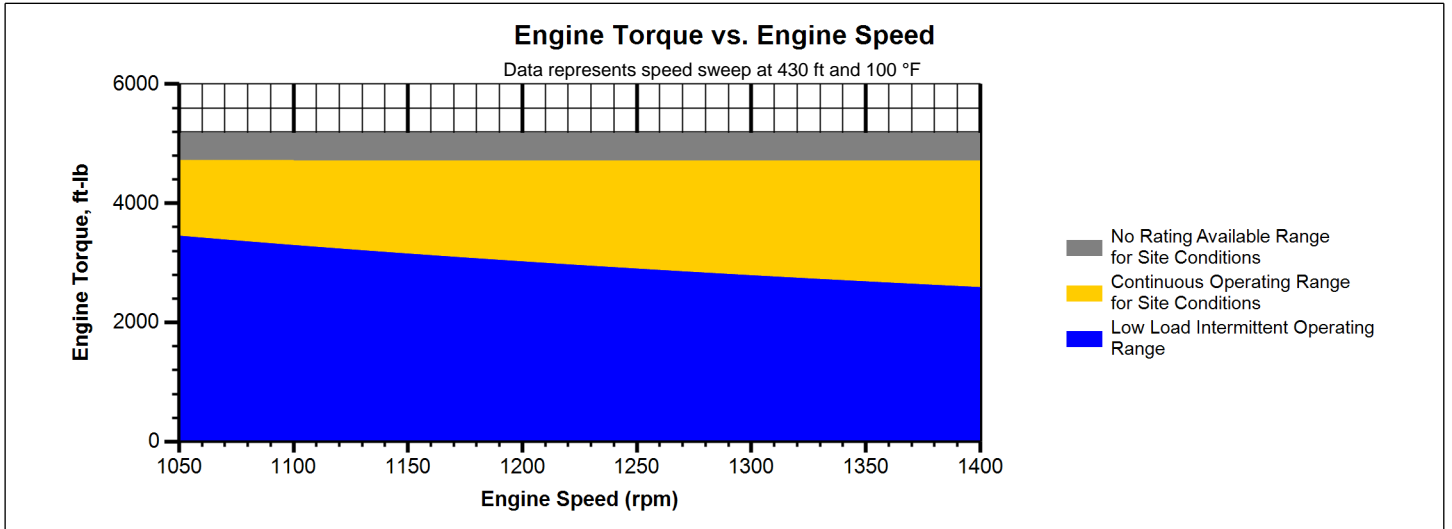
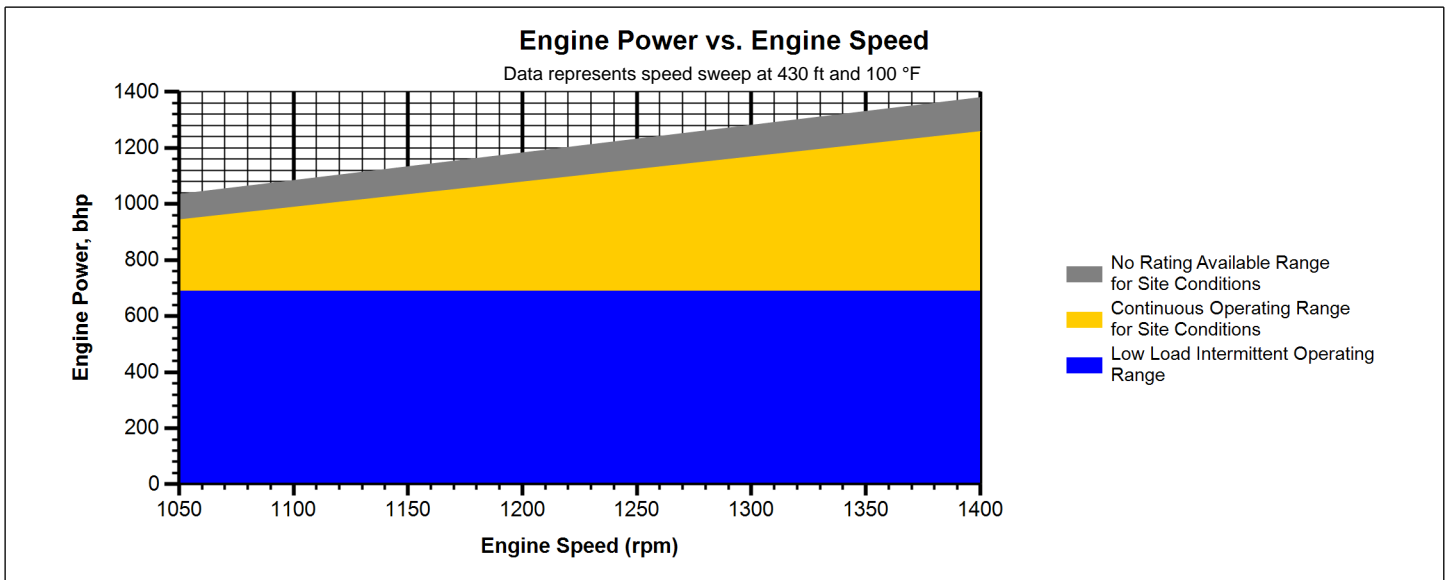
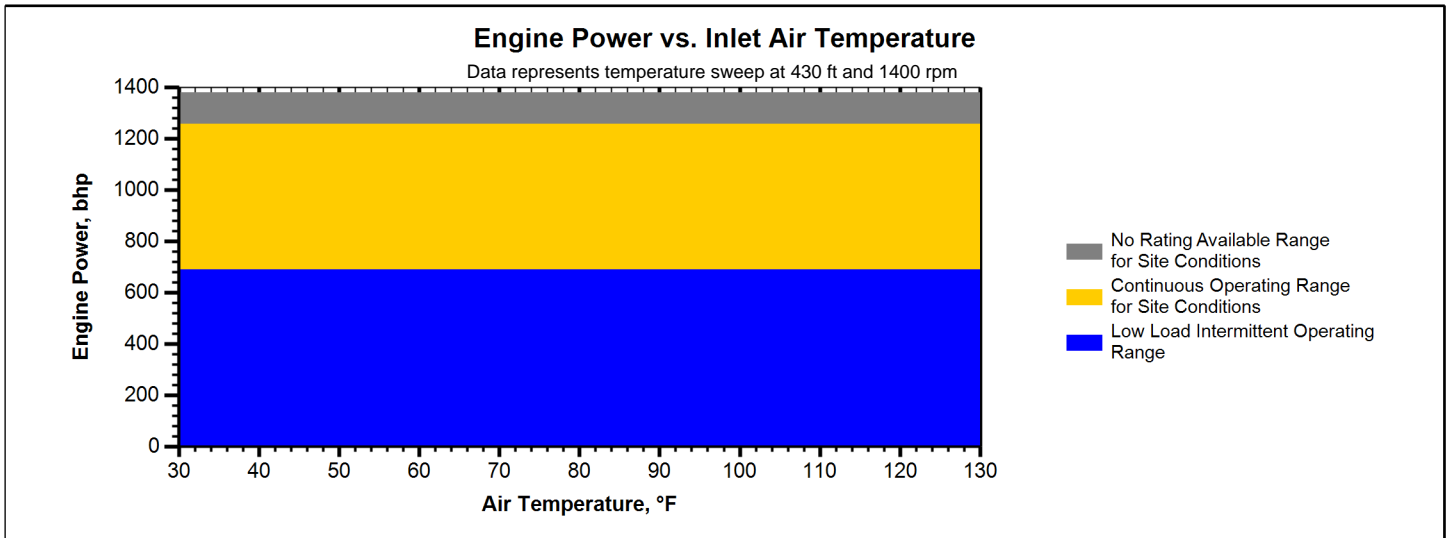
COOLING SYSTEM SIZING CRITERIA			100%	100%
TOTAL JACKET WATER CIRCUIT (JW+OC+1AC)	(14)(15)	Btu/min	46978	
TOTAL AFTERCOOLER CIRCUIT (2AC)	(14)(15)	Btu/min	4856	

A cooling system safety factor of 0% has been added to the cooling system sizing criteria.

CONDITIONS AND DEFINITIONS

Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum rating is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature. Refer to product O&M manual for details on additional lower load capability. No overload permitted at rating shown.

For notes information consult page three.



Note:

At site conditions of 430 ft and 100°F inlet air temp., constant torque can be maintained down to 1050 rpm. The minimum speed for loading at these conditions is 1050 rpm.

NOTES:

1. Fuel pressure range specified is to the engine fuel pressure regulator. Additional fuel train components should be considered in pressure and flow calculations.
2. Engine rating is with two engine driven water pumps. Tolerance is $\pm 3\%$ of full load.
3. Fuel consumption tolerance is $\pm 3.0\%$ of full load data.
4. Air flow value is on a 'wet' basis. Flow is a nominal value with a tolerance of $\pm 5\%$.
5. Inlet and Exhaust Restrictions must not exceed A&I limits based on full load flow rates from the standard technical data sheet.
6. Inlet manifold pressure is a nominal value with a tolerance of $\pm 5\%$.
7. Exhaust temperature is a nominal value with a tolerance of (+)63°F, (-)54°F.
8. Exhaust flow value is on a "wet" basis. Flow is a nominal value with a tolerance of $\pm 6\%$.
9. Emissions data is at engine exhaust flange prior to any after treatment.
10. Values listed are higher than nominal levels to allow for instrumentation, measurement, and engine-to-engine variations. They indicate the maximum values expected under steady state conditions. Fuel methane number cannot vary more than ± 3 . THC, NMHC, and NMNEHC do not include aldehydes. An oxidation catalyst may be required to meet Federal, State or local CO or HC requirements.
11. VOCs - Volatile organic compounds as defined in US EPA 40 CFR 60, subpart JJJJ
12. Exhaust Oxygen level is the result of adjusting the engine to operate at the specified NOx level. Tolerance is ± 0.5 .
13. Heat rejection values are nominal. Tolerances, based on treated water, are $\pm 10\%$ for jacket water circuit, $\pm 50\%$ for radiation, $\pm 20\%$ for lube oil circuit, and $\pm 5\%$ for aftercooler circuit.
14. Aftercooler heat rejection includes an aftercooler heat rejection factor for the site elevation and inlet air temperature specified. Aftercooler heat rejection values at part load are for reference only. Do not use part load data for heat exchanger sizing.
15. Cooling system sizing criteria are maximum circuit heat rejection for the site, with applied tolerances.

Constituent	Abbrev	Mole %	Norm
Water Vapor	H2O	0.0010	0.0010
Methane	CH4	67.1684	67.1678
Ethane	C2H6	15.6287	15.6286
Propane	C3H8	8.2792	8.2791
Isobutane	iso-C4H10	1.1221	1.1221
Norbutane	nor-C4H10	2.8229	2.8229
Isopentane	iso-C5H12	0.8312	0.8312
Norpentane	nor-C5H12	0.9866	0.9866
Hexane	C6H14	1.4980	1.4980
Heptane	C7H16	0.0000	0.0000
Nitrogen	N2	0.2834	0.2834
Carbon Dioxide	CO2	1.3794	1.3794
Hydrogen Sulfide	H2S	0.0000	0.0000
Carbon Monoxide	CO	0.0000	0.0000
Hydrogen	H2	0.0000	0.0000
Oxygen	O2	0.0000	0.0000
Helium	HE	0.0000	0.0000
Neopentane	neo-C5H12	0.0000	0.0000
Octane	C8H18	0.0000	0.0000
Nonane	C9H20	0.0000	0.0000
Ethylene	C2H4	0.0000	0.0000
Propylene	C3H6	0.0000	0.0000
TOTAL (Volume %)		100.0009	100.0001

Fuel Makeup: NJ62024
Unit of Measure: English

Calculated Fuel Properties

Caterpillar Methane Number: 33.0

Lower Heating Value (Btu/scf): 1314
Higher Heating Value (Btu/scf): 1443
WOBBE Index (Btu/scf): 1422

THC: Free Inert Ratio: 59.14
Total % Inerts (% N2, CO2, He): 1.66%
RPC (%) (To 905 Btu/scf Fuel): 100%

Compressibility Factor: 0.995
Stoich A/F Ratio (Vol/Vol): 13.57
Stoich A/F Ratio (Mass/Mass): 15.91
Specific Gravity (Relative to Air): 0.853

Fuel Specific Heat Ratio (K): 1.262

CONDITIONS AND DEFINITIONS

Caterpillar Methane Number represents the knock resistance of a gaseous fuel. It should be used with the Caterpillar Fuel Usage Guide for the engine and rating to determine the rating for the fuel specified. A Fuel Usage Guide for each rating is included on page 2 of its standard technical data sheet.

RPC always applies to naturally aspirated (NA) engines, and turbocharged (TA or LE) engines only when they are derated for altitude and ambient site conditions.

Project specific technical data sheets generated by the Caterpillar Gas Engine Rating Pro program take the Caterpillar Methane Number and RPC into account when generating a site rating.

Fuel properties for Btu/scf calculations are at 60F and 14.696 psia.

Caterpillar shall have no liability in law or equity, for damages, consequently or otherwise, arising from use of program and related material or any part thereof.

FUEL LIQUIDS

Field gases, well head gases, and associated gases typically contain liquid water and heavy hydrocarbons entrained in the gas. To prevent detonation and severe damage to the engine, hydrocarbon liquids must not be allowed to enter the engine fuel system. To remove liquids, a liquid separator and coalescing filter are recommended, with an automatic drain and collection tank to prevent contamination of the ground in accordance with local codes and standards.

To avoid water condensation in the engine or fuel lines, limit the relative humidity of water in the fuel to 80% at the minimum fuel operating temperature.