March 2025

Via STEERS

Air Permits Initial Review Team
Texas Commission on Environmental Quality
MC 161
Austin, Texas 78711-3087

RE: Non-Rule Standard Permit Registration No. 179449
Vital Energy, Inc., CN604527994
Wicked Ram L49H, RN110633328

Dear Sir/Madam,

MHT Consulting, LLC (MHT) is submitting the attached Non-Rule Standard Registration on behalf of Vital Energy, Inc. for the above-referenced facility, located in Reeves County, Texas. Please note that changes within this application are the result of a self-audit and include lowered throughput, updated analyses, removal of the VRU, and increased fugitive counts to reflect actual counts from a full site inventory. Vital requests the previous APD Certification (Permit No. 155058) be voided upon issuance of this NRSP.

If you require any further information regarding this application, please contact me via email at lauren@mhtconsulting.us or by phone at 405-760-6703.

Sincerely,

Lauren White

Lauren White
Senior Environmental Professional

# TABLE OF CONTENTS

**TCEQ Forms and Checklists** 1

**Introduction/Process Description** 18

**Map and Process Flow Diagram** 19

**Emission Calculations and Support Documents** 22

**Calculation Methodology and Regulatory Applicability** 51

Vital Energy, Inc., CN604527994
Wicked Ram L49H, RN110633328
March 2025

# TCEQ FORMS AND CHECKLISTS

TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

**1. Reason for Submission** (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

| **2. Customer Reference Number** *(if issued)* | Follow this link to search for CN or RN numbers in Central Registry** | **3. Regulated Entity Reference Number** *(if issued)* |
|---|---|---|
| **CN 604527994** | | **RN 110633328** |

## SECTION II: Customer Information

**4. General Customer Information** | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

***The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).***

**6. Customer Legal Name** *(If an individual, print last name first: eg: Doe, John)* | *If new Customer, enter previous Customer below:*

| **7. TX SOS/CPA Filing Number** | **8. TX State Tax ID** (11 digits) | **9. Federal Tax ID** (9 digits) | **10. DUNS Number** *(if applicable)* |
|---|---|---|---|
| | | | |

**11. Type of Customer:** ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

**12. Number of Employees**
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

**13. Independently Owned and Operated?**
☐ **Yes** ☐ **No**

**14. Customer Role** (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

| **15. Mailing Address:** | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **City** | | **State** | | **ZIP** | | **ZIP + 4** | |

| **16. Country Mailing Information** *(if outside USA)* | **17. E-Mail Address** *(if applicable)* |
|---|---|
| | |

| **18. Telephone Number** | **19. Extension or Code** | **20. Fax Number** *(if applicable)* |
|---|---|---|

| | | |
|---|---|---|
| ( ) - | | ( ) - |

# SECTION III: Regulated Entity Information

**21. General Regulated Entity Information** *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

***The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).***

**22. Regulated Entity Name** *(Enter name of the site where the regulated action is taking place.)*

Wicked Ram L49H

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **23. Street Address of the Regulated Entity:** ***(No PO Boxes)*** | | | | | | | | |
| | **City** | | **State** | | **ZIP** | | **ZIP + 4** | |
| **24. County** | Reeves | | | | | | | |

**If no Street Address is provided, fields 25-28 are required.**

| | | | | | |
|---|---|---|---|---|---|
| **25. Description to Physical Location:** | FROM THE INTERSECTION OF FM2448 S AND THE IH-10 SERVICE RD, TRAVEL EAST ON IH-10 SERVICE RD FOR 8.6 MILES. | | | | |
| **26. Nearest City** | | | **State** | **Nearest ZIP Code** | |
| Saragosa | | | TX | 79718 | |

***Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).***

| | | | | | |
|---|---|---|---|---|---|
| **27. Latitude (N) In Decimal:** | 30.998861 | | **28. Longitude (W) In Decimal:** | -103.522997 | |
| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| 31 | 59 | 55.90 | -103 | 31 | 22.79 |

| | | | |
|---|---|---|---|
| **29. Primary SIC Code** (4 digits) | **30. Secondary SIC Code** (4 digits) | **31. Primary NAICS Code** (5 or 6 digits) | **32. Secondary NAICS Code** (5 or 6 digits) |
| 1311 | | 211120 | |

**33. What is the Primary Business of this entity?** *(Do not repeat the SIC or NAICS description.)*

Oil and natural gas extraction

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **34. Mailing Address:** | **521 E. 2ND STREET** | | | | | | | |
| | **City** | **Tulsa** | **State** | **OK** | **ZIP** | **74120** | **ZIP + 4** | |
| **35. E-Mail Address:** | | | | | | | | |

| | | |
|---|---|---|
| **36. Telephone Number** | **37. Extension or Code** | **38. Fax Number** *(if applicable)* |
| ( ) - | | ( ) - |

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

| | | | | |
|---|---|---|---|---|
| ☐ Dam Safety | ☐ Districts | ☐ Edwards Aquifer | ☐ Emissions Inventory Air | ☐ Industrial Hazardous Waste |
| | | | | |
| ☐ Municipal Solid Waste | ☒ New Source Review Air | ☐ OSSF | ☐ Petroleum Storage Tank | ☐ PWS |
| | APD-Cert 155058, NPN 179449 | | | |
| ☐ Sludge | ☐ Storm Water | ☐ Title V Air | ☐ Tires | ☐ Used Oil |
| | | | | |
| ☐ Voluntary Cleanup | ☐ Wastewater | ☐ Wastewater Agriculture | ☐ Water Rights | ☐ Other: |
| | | | | |

## SECTION IV: Preparer Information

| **40. Name:** | Lauren White | **41. Title:** | Sr. Environmental Professional |
|---|---|---|---|

| **42. Telephone Number** | **43. Ext./Code** | **44. Fax Number** | **45. E-Mail Address** |
|---|---|---|---|
| **(** 405 **)** 760-6703 | | **(  )** - | lauren@mhtconsulting.us |

## SECTION V: Authorized Signature

**46.** By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

| **Company:** | Vital Energy, Inc. | **Job Title:** | Vice President and Chief Sustainability Officer |
|---|---|---|---|
| **Name** *(In Print):* | Dr. David Ferris | **Phone:** | **(** 918 **)** 513- **4570** |
| **Signature:** | | **Date:** | |

**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: | | |
| Vital Energy, Inc. | | |
| B. Company Official Contact Information (☐ Mr. ☐ Mrs. ☐ Ms. ☒ Other:) Dr. | | |
| Name: David Ferris | | |
| Title: Vice President and Chief Sustainability Officer | | |
| Mailing Address: 521 E. 2ND STREET | | |
| City: Tulsa | State: OK | ZIP Code: 74120 |
| Phone: (918) 513-4570 | Fax: | |
| Email Address: david.ferris@vitalenergy.com | | |
| *All permit correspondence will be sent via email.* | | |
| C. Technical Contact Information (☐ Mr. ☐ Mrs. ☒ Ms. ☐ Other:) | | |
| Name: Mary Guinn | | |
| Title: Air Quality Specialist | | |
| Company Name: Vital Energy, Inc. | | |
| Mailing Address: 521 E. 2ND STREET | | |
| City: Tulsa | State: OK | ZIP Code: 74120 |
| Phone: (918) 289-4274 | Fax: | |
| Email Address: mary.guinn@vitalenergy.com | | |
| **II. Facility and Site Information** | | |
| A. Name and Type of Facility | | |
| Facility Name: Wicked Ram L49H | | |
| Type of Facility: | ☒ Permanent ☐ Temporary | |
| For portable units, please provide the serial number of the equipment being authorized below. | | |
| Serial No: | Serial No: | |

**Texas Commission on Environmental Quality**
**Form PI-1S**
**Registrations for Air Standard Permit**
**(Page 2)**

| **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 THE INTERSECTION OF FM2448 S AND THE IH-10 SERVICE RD, TRAVEL EAST ON IH-10 SERVICE RD E | | |
| City: Saragosa | County: Reeves | ZIP Code: 79718 |
| Latitude (nearest second): 31.998861 | Longitude (nearest second): -103.522997 | |
| C. Core Data Form (**required** for Standard Permits 6006, 6007, and 6013). | | |
| Is the Core Data Form (TCEQ Form 10400) attached? | ☒ Yes ☐ No | |
| If "No," provide customer reference number (CN) and regulated entity number (RN) below. | | |
| Customer Reference Number (CN): | | |
| Regulated Entity Number (RN): | | |
| D. TCEQ Account Identification Number (if known): | | |
| E. Type of Action: | | |
| ☒ Initial Application ☐ Change to Registration ☐ Renewal ☐ Renewal Certification | | |
| For Change to Registration, Renewal, or Renewal Certification actions provide the following: | | |
| Registration Number: | Expiration Date: | |
| F. Standard Permit Claimed: | | |
| 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? | ☒ Yes ☐ 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** |
|---|---|
| 155058 | 06/18/2020 |
| | |
| | |
| | |

**Texas Commission on Environmental Quality**
**Form PI-1S**
**Registrations for Air Standard Permit**
**(Page 3)**

| **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? | | ☐ Yes ☒ 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? | | ☐ Yes ☒ 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? | | ☐ Yes ☒ No |
| If "Yes," enter permit number(s) in the spaces provided below. | | |
| | | |
| | | |

| **II. Facility and Site Information *(continued)*** | |
|---|---|
| K. Federal Operating Permit (FOP) Requirements | |
| Is this facility located at a site that is required to obtain an FOP pursuant to 30 TAC Chapter 122? | ☐ Yes ☒ No ☐ 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 (*check all that apply).* | |
| ☐ Initial Application for an FOP ☐ Significant Revision for an SOP ☐ Minor Revision for an SOP<br>☐ Operational Flexibility/Off Permit Notification for an SOP ☐ Revision for a GOP<br>☐ To be Determined ☒ None | |
| Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for the site. *(check all that apply)* | |
| ☐ SOP ☐ GOP ☐ GOP application/revision (submitted or under APD review)<br>☒ N/A ☐ SOP application/revision (submitted or under APD review) | |
| **III. Fee Information** *(see Section IX. for address to send fee or go to www.tceq.texas.gov/epay to pay online)* | |
| A. Fee Amount: $850 | |
| B. Payment Information | |
| Check/money order/transaction or voucher number: | |
| Individual or company name on check: | |
| Was fee paid online? | ☒ Yes ☐ No |

**Texas Commission on Environmental Quality**
**Form PI-1S**
**Registrations for Air Standard Permit**
**(Page 5)**

| **IV. Public Notice** *(if applicable)* | | | |
|---|---|---|---|
| A. Responsible Person (☐ Mr. ☐ Mrs. ☐ Ms. ☐ Other:)_____ | | | |
| Name: | | | |
| Title: | | | |
| Company: | | | |
| Mailing Address: | | | |
| City: | State: | ZIP Code: | |
| Phone: | Fax No.: | | |
| Email Address: | | | |
| B. Technical Contact (☐ Mr. ☐ Mrs. ☐ Ms. ☐ 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? | | | ☐ Yes ☐ 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? | | | ☐ Yes ☐ 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? | | | ☐ Yes ☐ No |
| Is the site a major source under 30 TAC Chapter 122, Federal Operating Permit Program? | | | ☐Yes ☐ No |
| Are the site emissions of any individual regulated air contaminant equal to or greater than 50 tpy? | | | ☐ Yes ☐ No |
| Are the site emissions of all regulated air contaminant combined equal to or greater than 75 tpy? | | | Yes ☐ No |

**Texas Commission on Environmental Quality**
**Form PI-1S**
**Registrations for Air Standard Permit**
**(Page 6)**

| | | |
|---|---|---|
| **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? | ☐ Yes ☐ 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)? | ☐ Yes ☐ No |
| C. | Does the company and/or site have an unsatisfactory compliance history? | ☐ Yes ☐ No |
| D. | Are there any applications currently under review for this standard permit registration? | ☐ Yes ☐ No |
| E. | Are scheduled maintenance, startup, or shutdown emissions required to be included in the standard permit registration at this time? | ☐ Yes ☐ No |
| F. | Are any of the following actions being requested at the time of renewal: | ☐ Yes ☐ No |
| 1. | Are there any facilities that have been permanently shutdown that are proposed to be removed from the standard permit registration? | ☐ Yes ☐ No |
| 2. | Do changes need to be made to the standard permit registration in order to remain in compliance? | ☐ Yes ☐ 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? | ☐ Yes ☐ No |
| 4. | Are there any changes to the current emission rates table being proposed? | ☐ Yes ☐ No |
| *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.* | | |
| *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**<br>**Place a check next to the appropriate box to indicate what you have included in your submittal.**<br>*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 projec*t. | |
| 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? | | ☒ Yes ☐ No |
| Did you demonstrate that emission limitations in 30 TAC Sections 106.261 and 106.262 are met? | | ☐ Yes ☒ No |

| **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.** | |
| *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*. | |
| Did you demonstrate that the individual requirements of the specific standard permit are met? | ☒ Yes ☐ No |
| B. Confidential Information (All pages properly marked "CONFIDENTIAL") | ☐ Yes ☒ No |
| C. Process Flow Diagram | ☒ Yes ☐ No |
| D. Process Description | ☒ Yes ☐ No |
| E. Maximum Emissions Data and Calculations | ☒ Yes ☐ No |
| F. Plot Plan | ☒ Yes ☐ No |
| G. Projected Start Of Construction Date, Start Of Operation Date, and Length of Time at Site: | ☐ Yes ☐ No |
| Projected Start of Construction (provide date): | |
| Projected Start of Operation (provide date): | |
| Length of Time at the Site: permanent | |

| **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): Dr. David Ferris |
| Signature (original signature required): |
| Date: |

| **IX. Copies of the Registration** | | |
|---|---|---|
| Copies must be sent as listed below. Processing delays will occur if copies are not sent as noted. | | |
| **Who** | **Where** | **What** |
| Air Permits Initial Review Team (APIRT) | Regular, Certified, Priority Mail<br>Mail Code 161, P.O. Box 13087,<br>Austin, Texas 78711-3087<br>OR<br>Hand Delivery, Overnight Mail<br>Mail Code 161, 12100 Park 35 Circle, Building C, Third Floor, Room 300 W, Austin, Texas 78753 | Originals of Form PI-1S, Core Data Form, all attachments. Not required if using ePermits[2]. |
| Revenue Section TCEQ | Regular, Certified, Priority Mail<br>Mail Code 214, P.O. Box 13088,<br>Austin, Texas 78711-3088<br>OR<br>Hand Delivery, Overnight Mail<br>Mail Code 214, 12100 Park 35 Circle,<br>Building A, Third Floor, Austin, Texas 78753 | Original Money Order or Check, Copy of Form PI-1S, Core Date Form. Not required if fee was paid using ePay[3]. |
| Appropriate TCEQ Regional Office | To find your regional office address go to www.tceq.texas.gov/assets/public/comm_exec/pubs/gi/gi-002.pdf or call (512) 239-1250 | Copy of Form PI-1S, Core Data Form, and all attachments. Not required if using ePermits[2] |
| Appropriate Local Air Pollution Control Program(s) | To find your local air pollution control programs go to www.tceq.texas.gov/permitting/air/local_programs.html or call (512) 239-1250 | Copy of Form PI-1S, Core Data Form, and all attachments |

[2] ePermits located at www3.tceq.texas.gov/steers/
[3] ePay located at www.tceq.texas.gov/epay/

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## Table 1(a) Emission Point Summary

| Date: | 03/2025 | Permit No.: | 179449 | Regulated Entity No.: | RN110633328 |
|---|---|---|---|---|---|
| Area Name: | Wicked Ram L49H | | | Customer Reference No.: | CN604527994 |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| AIR CONTAMINANT DATA | | | | | |
|---|---|---|---|---|---|
| 1. Emission Point | | | 2. Component or Air Contaminant Name | 3. Air Contaminant Emission Rate | |
| (A) EPN | (B) FIN | (C) NAME | | (A) POUND PER HOUR | (B) TPY |
| TK-1 | TK-1 | 500-bbl Oil Tank | VOC | 0.07 | 0.33 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | <0.01 | 0.02 |
| TK-2 | TK-2 | 500-bbl Oil Tank | VOC | 0.07 | 0.33 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | <0.01 | 0.02 |
| TK-3 | TK-3 | 500-bbl Oil Tank | VOC | 0.07 | 0.33 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | <0.01 | <0.01 |
| VRT-1 | VRT-1 | Vapor Recovery Tower | VOC | 0.15 | 0.66 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | <0.01 | 0.04 |

| | | | | | |
|---|---|---|---|---|---|
| TK-W1 | TK-W1 | 500-bbl Produced Water Tank | VOC | 0.02 | 0.07 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | <0.01 | <0.01 |
| TK-W2 | TK-W2 | 500-bbl Produced Water Tank | VOC | 0.02 | 0.07 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | <0.01 | <0.01 |
| GB-1 | GB-1 | 750-bbl Gunbarrel | VOC | <0.01 | 0.02 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | <0.01 | <0.01 |
| VDU-1 | VDU-1 | Vapor Destruction Device | NOx | 0.06 | 0.27 |
| | | | CO | 0.12 | 0.54 |
| | | | VOC | 0.11 | 0.50 |
| | | | $SO_2$ | 0.25 | 1.11 |
| | | | PM | <0.01 | <0.01 |
| | | | $H_2S$ | <0.01 | 0.01 |
| | | | Total HAP | <0.01 | 0.01 |
| FL-1 | FL-1 | Standard Flare | NOx | 5.65 | 24.74 |
| | | | CO | 11.28 | 49.39 |
| | | | VOC | 71.79 | 71.92 |
| | | | $SO_2$ | 1.87 | 1.87 |
| | | | PM | 0.96 | 0.96 |
| | | | $H_2S$ | 0.02 | 0.02 |
| | | | Total HAP | 1.91 | 1.92 |
| FUG | FUG | Fugitive Emissions | VOC | 0.90 | 3.93 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | 0.04 | 0.18 |

| | | | | | |
|---|---|---|---|---|---|
| MSS | MSS | Maintenance, Startup, Shutdown Activities | VOC | 299.64 | 2.78 |
| | | | $H_2S$ | 0.09 | <0.01 |
| | | | Total HAP | 8.41 | 0.07 |
| PC-1 | PC-1 | Pneumatic Controllers | VOC | 3.78 | 16.54 |
| | | | $H_2S$ | <0.01 | <0.01 |
| | | | Total HAP | 0.09 | 0.39 |

EPN = Emission Point Number
FIN = Facility Identification Number

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## Table 1(a) Emission Point Summary

| Date: | 03/2025 | Permit No.: | 179449 | Regulated Entity No.: | RN110633328 |
|---|---|---|---|---|---|
| Area Name: | Wicked Ram L49H | | | Customer Reference No.: | CN604527994 |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| AIR CONTAMINANT DATA | | | EMISSION POINT DISCHARGE PARAMETERS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Emission Point | | | 4. UTM Coordinates of Emission Point | | | Source | | | | | | | |
| | | | | | | | | 7. Stack Exit Data | | | 8. Fugitives | | |
| EPN (A) | FIN (B) | Name (C) | Zone | East (Meters) | North (Meters) | 5. Building Height (ft) | 6. Height Above Ground (ft) | Diameter (ft) (A) | Velocity (FPS) (B) | Temperature (°F) (C) | Length (Ft.) (A) | Width (Ft.) (B) | Axis Degrees (C) |
| TK-1 | TK-1 | 500-bbl Oil Tank | 13 | 641013 | 3430412 | | 16.0 | 15.5 | | Ambient | | | |
| TK-2 | TK-2 | 500-bbl Oil Tank | 13 | 641013 | 3430412 | | 16.0 | 15.5 | | Ambient | | | |
| TK-3 | TK-3 | 500-bbl Oil Tank | 13 | 641013 | 3430412 | | 16.0 | 15.5 | | Ambient | | | |
| VRT-1 | VRT-1 | Vapor Recovery Tower | 13 | 641013 | 3430412 | | | | | Ambient | | | |
| TK-W1 | TK-W1 | 500-bbl Produced Water Tank | 13 | 641013 | 3430412 | | 16.0 | 15.5 | | Ambient | | | |
| TK-W2 | TK-W2 | 500-bbl Produced Water Tank | 13 | 641013 | 3430412 | | 16.0 | 15.5 | | Ambient | | | |
| GB-1 | GB-1 | 750-bbl Gunbarrel | 13 | 641013 | 3430412 | | 24.0 | 15.5 | | Ambient | | | |
| VDU-1 | VDU-1 | Vapor Destruction Device | 13 | 641013 | 3430412 | | 20.0 | 2.0 | <0.1 | 1,000 | | | |
| FL-1 | FL-1 | Standard Flare | 13 | 641013 | 3430412 | | 30.0 | 0.3 | 399.4 | 1,000 | | | |
| FUG | FUG | Fugitive Emissions | 13 | 641013 | 3430412 | | 3.00 | | | Ambient | | | |
| MSS | MSS | Maintenance, Startup, Shutdown Activities | 13 | 641013 | 3430412 | | 3.00 | | | | | | |
| PC-1 | PC-1 | Pneumatic Controllers | 13 | 641013 | 3430412 | | 3.00 | | | | | | |

EPN = Emission Point Number
FIN = Facility Identification Number

**Vital Energy, Inc.**
**Wicked Ram L49H**
**TCEQ Emission Summary**

# ESTIMATED EMISSIONS

| Equipment | Unit ID | Specific VOC or Other Pollutants | VOC | | NOx | | CO | | $SO_2$ | | $PM_{10}$ | | $PM_{2.5}$ | | $H_2S$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr |
| 500-bbl Oil Tank | TK-1 | | 0.07 | 0.33 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| 500-bbl Oil Tank | TK-2 | | 0.07 | 0.33 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| 500-bbl Oil Tank | TK-3 | | 0.07 | 0.33 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| Vapor Recovery Tower | VRT-1 | | 0.15 | 0.66 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| 500-bbl Produced Water Tank | TK-W1 | | 0.02 | 0.07 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| 500-bbl Produced Water Tank | TK-W2 | | 0.02 | 0.07 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| 750-bbl Gunbarrel | GB-1 | | <0.01 | 0.02 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| Vapor Destruction Device | VDU-1 | | 0.11 | 0.50 | 0.06 | 0.27 | 0.12 | 0.54 | 0.25 | 1.11 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.01 |
| Standard Flare | FL-1 | | 71.79 | 71.92 | 5.65 | 24.74 | 11.28 | 49.39 | 1.87 | 1.87 | 0.96 | 0.96 | 0.96 | 0.96 | 0.02 | 0.02 |
| Fugitive Emissions | FUG | | 0.90 | 3.93 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| Maintenance, Startup, Shutdown Activities | MSS | | 299.64 | 2.78 | - | - | - | - | - | - | - | - | - | - | 0.09 | <0.01 |
| Pneumatic Controllers | PC-1 | | 3.78 | 16.54 | - | - | - | - | - | - | - | - | - | - | <0.01 | <0.01 |
| **TOTAL EMISSIONS (TPY):** | | | | **97.47** | | **25.01** | | **49.93** | | **2.98** | | **0.96** | | **0.96** | | **0.04** |
| **MAXIMUM OPERATING SCHEDULE:** | | **Hours/Day** | **24** | | **Days/Week** | | **7** | | **Weeks/Year** | | **52** | | **Hours/Year** | | **8,760** | |

Notes:
1) Truck loading and fugitive sources are not considered vents. Per TCEQ guidance, MSS activities included under §106.359 do not have to meet the vent height requirements in §106.352(l).

## INTRODUCTION

Vital Energy, Inc. operates Wicked Ram L49H (Site) in Reeves County. With this proposed oil and gas non-rule standard permit registration application, Vital requests continued authorization for the Site. The new project notification was submitted on March 18, 2025. The purpose of this application is to lower throughput, update analyses, increase $H_2S$, remove LOAD and VRU-1, replace COMB-1 with VRU-1, replace ENG-1 with an electric compressor, add PC-1, and increase fugitive counts based on site-specific inventory. There is no receptor within 1 mile of this registration, therefore no further ESL review is required.

The Site consists of three (3) 500-bbl oil storage tanks (TK 1-3), two (2) 500-bbl produced water storage tanks (TK-W 1-2), one (1) 750-bbl gunbarrel (GB-1), one (1) vapor recovery tower (VRT-1), one (1) standard flare (FL-1), one (1) vapor destruction device (VDU-1), one (1) electric compressor, planned maintenance, startup, and shutdown (MSS) emissions, and emissions from pneumatic controllers (PC-1) and fugitive sources (FUG).

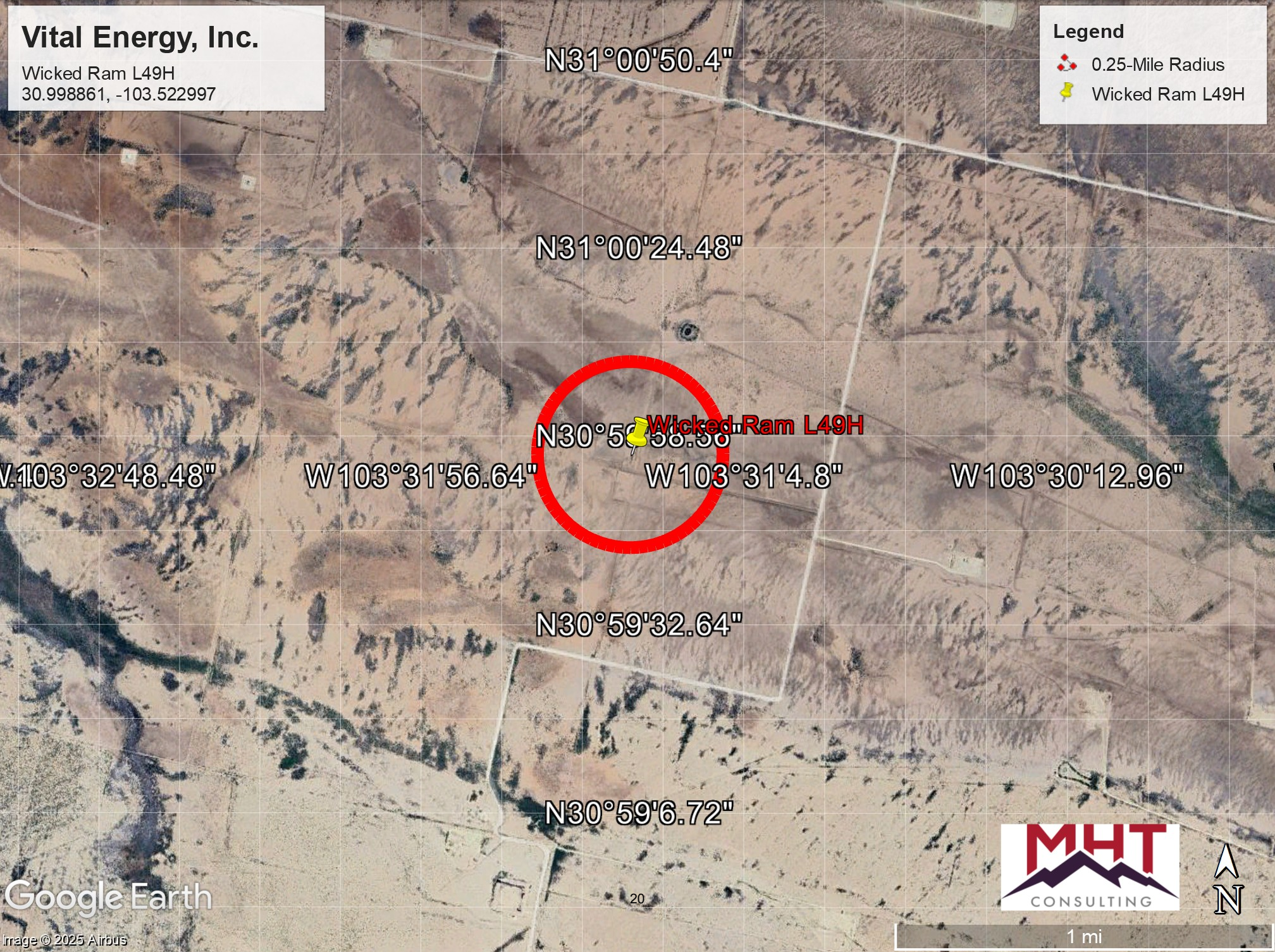
Anticipated production is summarized below:

Oil: 100 bbl/d
Produced Water: 200 bbl/d
Gas: 0.2 MMSCFD
$H_2S$: 90 ppm (gas), 390 ppm (oil), 530 ppm (produced water)

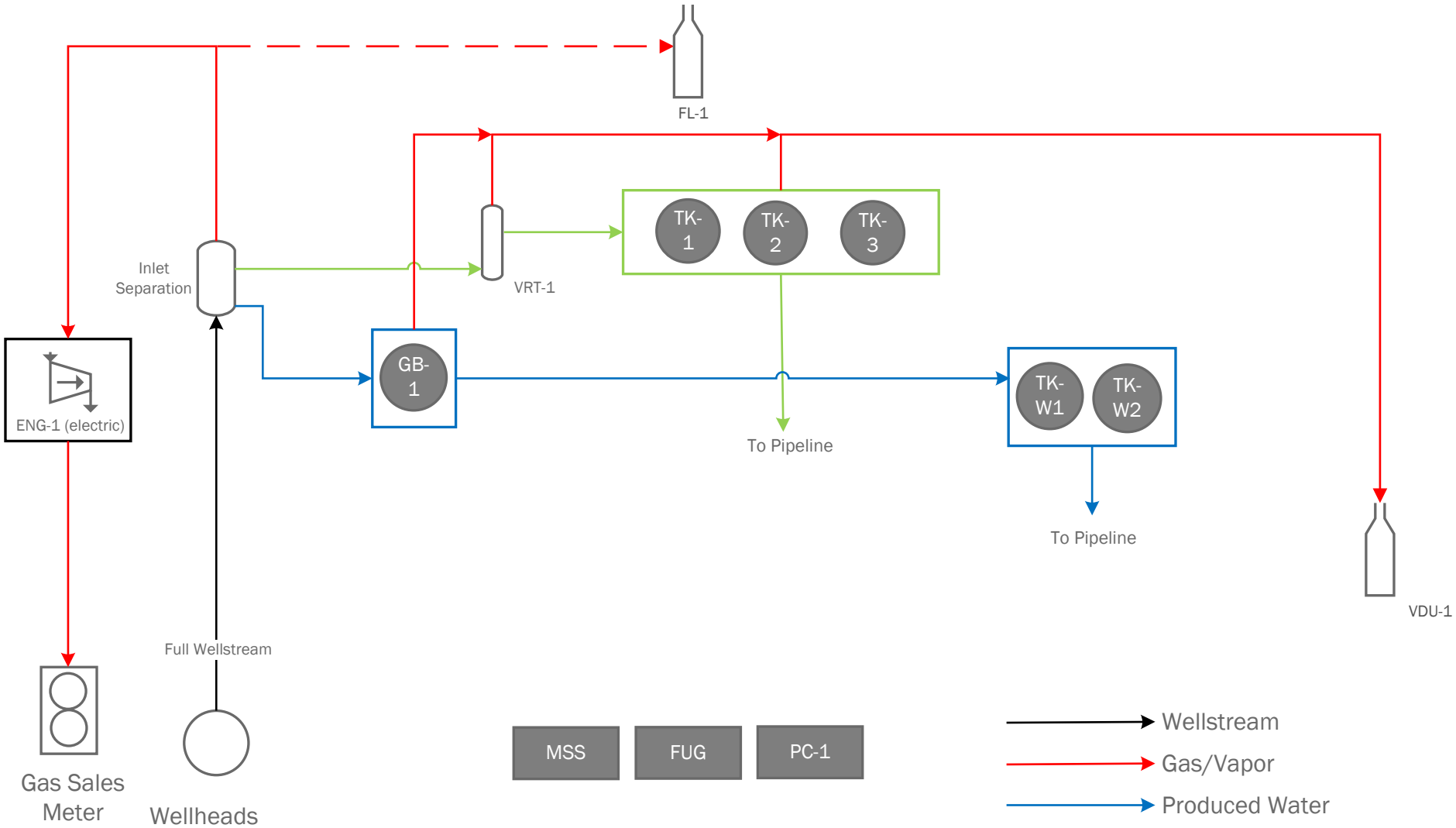
## PROCESS DESCRIPTION

The full well stream enters the facility and passes through inlet separation where liquids and gas are separated by mechanical processes. Oil is removed from the inlet natural gas at the inlet separators and is routed through the vapor recover tower prior to being stored in oil storage tanks. Produced water is removed from the inlet natural gas at the inlet separators and is routed through the gunbarrel prior to being stored in the produced water storage tanks. Oil and Produced water are transferred offsite via pipeline. Flash vapors from the vapor recovery tower, gunbarrel, and oil storage tanks are routed to the vapor destruction unit. During sales gas pipeline downtime, the standard flare on site controls stranded gas coming from the pipeline. There are also emissions from MSS, pneumatic controllers, and fugitive sources.

# MAP AND PROCESS FLOW DIAGRAM


Vital Energy, Inc.
Wicked Ram L49H
30.998861, -103.522997
Legend
0.25-Mile Radius
Wicked Ram L49H
N31°00'50.4"
N31°00'24.48"
Wicked Ram L49H
N30°59'58.56"
W103°32'48.48"
W103°31'56.64"
W103°31'4.8"
W103°30'12.96"
N30°59'32.64"
N30°59'6.72"
MHT
CONSULTING
N
1 mi
Google Earth
Image © 2025 Airbus

# Wicked Ram L49H - Process Flow Sheet



# EMISSIONS CALCULATIONS AND SUPPORT DOCUMENTS

**Vital Energy, Inc.**
**Wicked Ram L49H**
**FACILITY-WIDE CRITERIA EMISSIONS SUMMARY SHEET**

| EQUIPMENT DESCRIPTION | UNIT ID | Control ID | NOx | | CO | | TOTAL VOC | | $SO_2$ | | PM | | $H_2S$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LB/HR | TON/YR | LB/HR | TON/YR | LB/HR | TON/YR | LB/HR | TON/YR | LB/HR | TON/YR | LB/HR | TON/YR |
| 500-bbl Oil Tank | TK-1 | VDU-1 | - | - | - | - | 0.07 | 0.33 | - | - | - | - | <0.01 | <0.01 |
| 500-bbl Oil Tank | TK-2 | VDU-1 | - | - | - | - | 0.07 | 0.33 | - | - | - | - | <0.01 | <0.01 |
| 500-bbl Oil Tank | TK-3 | VDU-1 | - | - | - | - | 0.07 | 0.33 | - | - | - | - | <0.01 | <0.01 |
| Vapor Recovery Tower | VRT-1 | VDU-1 | - | - | - | - | 0.15 | 0.66 | - | - | - | - | <0.01 | <0.01 |
| 500-bbl Produced Water Tank | TK-W1 | NONE | - | - | - | - | 0.02 | 0.07 | - | - | - | - | <0.01 | <0.01 |
| 500-bbl Produced Water Tank | TK-W2 | NONE | - | - | - | - | 0.02 | 0.07 | - | - | - | - | <0.01 | <0.01 |
| 750-bbl Gunbarrel | GB-1 | VDU-1 | - | - | - | - | <0.01 | 0.02 | - | - | - | - | <0.01 | <0.01 |
| Vapor Destruction Device | VDU-1 | - | 0.06 | 0.27 | 0.12 | 0.54 | 0.11 | 0.50 | 0.25 | 1.11 | <0.01 | <0.01 | <0.01 | 0.01 |
| Standard Flare | FL-1 | - | 5.65 | 24.74 | 11.28 | 49.39 | 71.79 | 71.92 | 1.87 | 1.87 | 0.96 | 0.96 | 0.02 | 0.02 |
| Fugitive Emissions | FUG | - | - | - | - | - | 0.90 | 3.93 | - | - | - | - | <0.01 | <0.01 |
| Maintenance, Startup, Shutdown Activities | MSS | - | - | - | - | - | 299.64 | 2.78 | - | - | - | - | 0.09 | <0.01 |
| Pneumatic Controllers | PC-1 | | - | - | - | - | 3.78 | 16.54 | - | - | - | - | <0.01 | <0.01 |
| **TOTAL =** | | | **5.71** | **25.01** | **11.40** | **49.93** | **376.64** | **97.47** | **2.12** | **2.98** | **0.96** | **0.96** | **0.11** | **0.04** |

**Vital Energy, Inc.**
**Wicked Ram L49H**
**FACILITY-WIDE HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS SUMMARY SHEET**

| EQUIPMENT DESCRIPTION | UNIT ID | AVERAGE HOURLY PTE (LB/HR) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | BENZENE | ETHYL-BENZENE | FORMALDE-HYDE | N-HEXANE | TOLUENE | XYLENES | OTHER HAP | TOTAL HAP |
| 500-bbl Oil Tank | TK-1 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| 500-bbl Oil Tank | TK-2 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| 500-bbl Oil Tank | TK-3 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| Vapor Recovery Tower | VRT-1 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| 500-bbl Produced Water Tank | TK-W1 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| 500-bbl Produced Water Tank | TK-W2 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| 750-bbl Gunbarrel | GB-1 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| Vapor Destruction Device | VDU-1 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| Standard Flare | FL-1 | 0.12 | 0.02 | - | 1.32 | 0.15 | 0.09 | 0.21 | **1.91** |
| Fugitive Emissions | FUG | <0.01 | <0.01 | - | 0.02 | <0.01 | <0.01 | <0.01 | **0.04** |
| Maintenance, Startup, Shutdown Activities | MSS | 0.52 | 0.09 | - | 5.77 | 0.71 | 0.40 | 0.92 | **8.41** |
| Pneumatic Controllers | PC-1 | <0.01 | <0.01 | - | 0.07 | <0.01 | <0.01 | - | 0.09 |
| | **TOTAL =** | **0.65** | **0.12** | **<0.01** | **7.20** | **0.87** | **0.51** | **1.14** | **10.48** |

**Vital Energy, Inc.**
**Wicked Ram L49H**
**FACILITY-WIDE HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS SUMMARY SHEET**

| EQUIPMENT DESCRIPTION | UNIT ID | ANNUAL PTE (TPY) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | BENZENE | ETHYL-BENZENE | FORMALDE-HYDE | N-HEXANE | TOLUENE | XYLENES | OTHER HAP | TOTAL HAP |
| 500-bbl Oil Tank | TK-1 | <0.01 | <0.01 | - | 0.01 | <0.01 | <0.01 | <0.01 | **0.02** |
| 500-bbl Oil Tank | TK-2 | <0.01 | <0.01 | - | 0.01 | <0.01 | <0.01 | <0.01 | **0.02** |
| 500-bbl Oil Tank | TK-3 | <0.01 | <0.01 | - | 0.01 | <0.01 | <0.01 | <0.01 | **0.02** |
| Vapor Recovery Tower | VRT-1 | <0.01 | <0.01 | - | 0.02 | <0.01 | 0.01 | <0.01 | **0.04** |
| 500-bbl Produced Water Tank | TK-W1 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| 500-bbl Produced Water Tank | TK-W2 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| 750-bbl Gunbarrel | GB-1 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** |
| Vapor Destruction Device | VDU-1 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | **0.01** |
| Standard Flare | FL-1 | 0.12 | 0.02 | - | 1.32 | 0.15 | 0.09 | 0.21 | **1.92** |
| Fugitive Emissions | FUG | <0.01 | <0.01 | - | 0.10 | 0.02 | 0.03 | 0.02 | **0.18** |
| Maintenance, Startup, Shutdown Activities | MSS | <0.01 | <0.01 | - | 0.05 | <0.01 | <0.01 | <0.01 | **0.07** |
| Pneumatic Controllers | PC-1 | 0.03 | <0.01 | - | 0.30 | 0.03 | 0.02 | - | **0.39** |
| | **TOTAL =** | **0.16** | **0.04** | **<0.01** | **1.84** | **0.22** | **0.18** | **0.24** | **2.69** |

**Vital Energy, Inc.**
**Wicked Ram L49H**
**STORAGE TANK EMISSIONS CALCULATIONS**

| EQUIPMENT ID | TANK CONTENTS | CAPACITY | | THROUGHPUT | | | CONTROL DEVICE | | |
|---|---|---|---|---|---|---|---|---|---|
| | | BBL | GAL | BBL/YR | GAL/YR | BBL/D | TYPE | CAPTURE % | CONTROL % |
| TK-1 | Oil | 500 | 21,000 | 12,167 | 511,000 | 33 | Flare/Combustor | 98.00% | 98.00% |
| TK-2 | Oil | 500 | 21,000 | 12,167 | 511,000 | 33 | Flare/Combustor | 98.00% | 98.00% |
| TK-3 | Oil | 500 | 21,000 | 12,167 | 511,000 | 33 | Flare/Combustor | 98.00% | 98.00% |
| VRT-1 | Oil | - | - | 36,500 | 1,533,000 | 100 | Flare/Combustor | 98.00% | 98.00% |
| **TOTAL OIL THROUGHPUT =** | | | | **73,000** | **3,066,000** | **100** | | | |
| TK-W1 | Produced Water | 500 | 21,000 | 36,500 | 1,533,000 | 100 | Uncontrolled | 98.00% | 0.00% |
| TK-W2 | Produced Water | 500 | 21,000 | 36,500 | 1,533,000 | 100 | Uncontrolled | 98.00% | 0.00% |
| GB-1 | Produced Water | 750 | 31,500 | 73,000 | 3,066,000 | 200 | Flare/Combustor | 98.00% | 98.00% |
| **TOTAL PRODUCED WATER THROUGHPUT =** | | | | **146,000** | **6,132,000** | **200** | | | |

| UNIT ID | POINT ID | VOC WORKING LOSSES | | | VOC BREATHING LOSSES | | | VOC FLASHING LOSSES | | | TOTAL (W+B+F) UNCONTROLLED | | TOTAL (W+B+F) CONTROLLED | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TANKS RESULTS | AVG. HOURLY | ANNUAL PTE | TANKS RESULTS | AVG. HOURLY | ANNUAL PTE | FLASH FACTOR | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE |
| | | LB | LB/HR | TON/YR | LB | LB/HR | TON/YR | LB/BBL | LB/HR | TON/YR | LB/HR | TON/YR | LB/HR | TON/YR |
| EU-TK-1 | EP-TK-1 | 1,961.16 | 0.22 | 0.98 | 1,627.25 | 0.19 | 0.81 | 1.06 | 1.48 | 6.47 | 1.89 | 8.27 | **0.07** | **0.33** |
| EU-TK-2 | EP-TK-2 | 1,961.16 | 0.22 | 0.98 | 1,627.25 | 0.19 | 0.81 | 1.06 | 1.48 | 6.47 | 1.89 | 8.27 | **0.07** | **0.33** |
| EU-TK-3 | EP-TK-3 | 1,961.16 | 0.22 | 0.98 | 1,627.25 | 0.19 | 0.81 | 1.06 | 1.48 | 6.47 | 1.89 | 8.27 | **0.07** | **0.33** |
| EU-VRT-1 | EP-VRT-1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.91 | 3.81 | 16.70 | 3.81 | 16.70 | **0.15** | **0.66** |
| **TOTAL OIL =** | | | **0.67** | **2.94** | **-** | **0.56** | **2.44** | **-** | **8.25** | **36.11** | **9.47** | **41.50** | **0.38** | **1.64** |
| EU-TK-W1 | EP-TK-W1 | 97.03 | 0.01 | 0.05 | 43.95 | <0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.07 | **0.02** | **0.07** |
| EU-TK-W2 | EP-TK-W2 | 97.03 | 0.01 | 0.05 | 43.95 | <0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.07 | **0.02** | **0.07** |
| EU-GB-1 | EP-GB-1 | 347.93 | 0.04 | 0.17 | 60.93 | <0.01 | 0.03 | 0.01 | 0.09 | 0.38 | 0.13 | 0.59 | **<0.01** | **0.02** |
| **TOTAL PRODUCED WATER =** | | | **0.06** | **0.27** | **-** | **0.02** | **0.07** | **-** | **0.09** | **0.38** | **0.17** | **0.73** | **0.04** | **0.16** |

UNCONTROLLED HAZARDOUS AIR POLLUTANT EMISSIONS

| UNIT ID | POINT ID | N-HEXANE | | BENZENE | | TOLUENE | | ETHYLBENZENE | | XYLENES | | $H_2S$ | | TOTAL HAP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE |
| | | 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 |
| EU-TK-1 | EP-TK-1 | 0.06 | 0.27 | <0.01 | 0.02 | 0.02 | 0.07 | <0.01 | 0.04 | 0.03 | 0.14 | <0.01 | <0.01 | **0.12** | **0.53** |
| EU-TK-2 | EP-TK-2 | 0.06 | 0.27 | <0.01 | 0.02 | 0.02 | 0.07 | <0.01 | 0.04 | 0.03 | 0.14 | <0.01 | <0.01 | **0.12** | **0.53** |
| EU-TK-3 | EP-TK-3 | 0.06 | 0.27 | <0.01 | 0.02 | 0.02 | 0.07 | <0.01 | 0.04 | 0.03 | 0.14 | <0.01 | <0.01 | **0.12** | **0.53** |
| EU-VRT-1 | EP-VRT-1 | 0.12 | 0.54 | <0.01 | 0.04 | 0.03 | 0.13 | 0.02 | 0.07 | 0.06 | 0.28 | <0.01 | <0.01 | **0.24** | **1.07** |
| **TOTAL OIL =** | | **0.31** | **1.35** | **0.02** | **0.10** | **0.08** | **0.33** | **0.04** | **0.18** | **0.16** | **0.69** | **<0.01** | **<0.01** | **0.61** | **2.66** |
| EU-TK-W1 | EP-TK-W1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **<0.01** |
| EU-TK-W2 | EP-TK-W2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **<0.01** |
| EU-GB-1 | EP-GB-1 | <0.01 | 0.02 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **0.04** |
| **TOTAL PW =** | | **<0.01** | **0.02** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **0.01** | **<0.01** | **<0.01** | **0.01** | **0.05** |

CONTROLLED HAZARDOUS AIR POLLUTANT EMISSIONS

| UNIT ID | POINT ID | N-HEXANE | | BENZENE | | TOLUENE | | ETHYLBENZENE | | XYLENES | | $H_2S$ | | TOTAL HAP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE | AVG. HOURLY | ANNUAL PTE |
| | | 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 |
| EU-TK-1 | EP-TK-1 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **0.02** |
| EU-TK-2 | EP-TK-2 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **0.02** |
| EU-TK-3 | EP-TK-3 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **0.02** |
| EU-VRT-1 | EP-VRT-1 | <0.01 | 0.02 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.01 | <0.01 | <0.01 | **<0.01** | **0.04** |
| **TOTAL OIL =** | | **0.01** | **0.05** | **<0.01** | **<0.01** | **<0.01** | **0.01** | **<0.01** | **<0.01** | **<0.01** | **0.03** | **<0.01** | **<0.01** | **0.02** | **0.11** |
| EU-TK-W1 | EP-TK-W1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **<0.01** |
| EU-TK-W2 | EP-TK-W2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **<0.01** |
| EU-GB-1 | EP-GB-1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **<0.01** |
| **TOTAL PW =** | | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **0.01** |

HAP COMPOSITION (% BY WEIGHT)

| POLLUTANT | N-HEXANE | BENZENE | TOLUENE | ETHYLBENZENE | XYLENES | $H_2S$ | TOTAL HAP |
|---|---|---|---|---|---|---|---|
| WEIGHT % | 3.26% | 0.25% | 0.80% | 0.43% | 1.66% | 0.0133% | **6.42%** |

NOTES:

1) Working and breathing losses calculated using AP-42 equations and EPA Tanks 4.0.9d data. Flashing losses calculated with Promax process simulation software.
2) Produced water conservatively assumed to contain 1% condensate modeled as Crude Oil RVP 6.
3) Due to variable short-term emission rates, average lb/hr based on annual emissions shown for reference only.
4) HAP composition estimated using analyses.
5) No flashing associated produced water tanks.

**Vital Energy, Inc.**
**Wicked Ram L49H**
**STORAGE TANK WORKING AND BREATHING AP-42 RESULTS**

| Tank Group | TK-1 Through TK-3 | TK-W1 Through TK-W2 | GB-1 Through GB-1 |
|---|---|---|---|
| Throughput Per Tank (gal/yr) | 511,000 | 1,533,000 | 3,066,000 |
| Nearest City: | Midland, TX | Midland, TX | Midland, TX |
| Annual Avg. Max Temp (TAX): oF | 76.70 | 76.70 | 76.70 |
| Annual Avg. Min Temp (TAN): oF | 51.40 | 51.40 | 51.40 |
| Daily Avg. Ambient Temp (TAA): oR | 523.72 | 523.72 | 523.72 |
| Daily Ambient Temp Range (ΔTA): oR | 25.30 | 25.30 | 25.30 |
| Annual Avg. Solar (I): Btu/(ft2 day) | 1,698.00 | 1,698.00 | 1,698.00 |
| Shell Color: | Tan | Tan | Tan |
| Shell Condition: | Average | Average | Average |
| Shell Paint Factor (αS): | 0.49 | 0.49 | 0.49 |
| Roof Color: | Tan | Tan | Tan |
| Roof Condition: | Average | Average | Average |
| Roof Paint Factor (αR): | 0.49 | 0.49 | 0.49 |
| Liquid Bulk Temp (TB): oR | 526.22 | 526.22 | 526.22 |
| Daily Vapor Temp Range (ΔTV): oR | 35.39 | 35.39 | 35.34 |
| **Daily Avg. Surface Temp (TLA): oR** | **528.64** | **528.64** | **528.38** |
| **Average Vapor Temperature (TV): oR** | **531.06** | **531.06** | **530.55** |
| Reid Vapor Pressure (RVP): psia | 6.00 | 6.00 | 6.00 |
| Modeled As: | Crude oil | Crude oil | Crude oil |
| Material Stored: | Crude oil RVP 6 | Crude oil RVP 6 | Crude oil RVP 6 |
| Vapor MW (MV1): lb/lb-mol | 50.00 | 50.00 | 50.00 |
| Liquid MW (ML1): lb/lb-mol | 207.00 | 207.00 | 207.00 |
| TVP at Daily Avg. Surface Temp (P1): psia | 4.36 | 4.36 | 4.34 |
| Constant A: | 11.09 | 11.09 | 11.09 |
| Constant B: oR | 5,082.22 | 5,082.22 | 5,082.22 |
| Percent Water: % | 0.00% | 99.00% | 99.00% |
| Liquid Mole Ratio of VOL (x1): | 1.00 | 0.00 | 0.00 |
| Liquid Mole Ratio of Water (x2): | 0.00 | 1.00 | 1.00 |
| TVP at Daily Avg. Surface Temp (P2): psia | 0.35 | 0.35 | 0.35 |
| **Combined TVP @ TLA (PVA): psia** | **4.36** | **0.35** | **0.35** |
| **Combined Vapor MW (MV): lb/lb-mol** | **50.00** | **18.37** | **18.37** |
| Atmospheric Pressure (PA): psia | 13.26 | 13.26 | 13.26 |
| Breather Vent Pressure (PBP): psia | 0.03 | 0.03 | 0.03 |
| Breather Vent Vacuum (PBV): psia | (0.03) | (0.03) | (0.03) |
| Breather Vent Pres. Setting Range (ΔPB): psia | 0.06 | 0.06 | 0.06 |
| Roof Type: | Cone | Cone | Cone |
| Shell Height (HS): ft | 16.00 | 16.00 | 24.00 |

| | | | |
|---|---|---|---|
| Shell Diameter (D): ft | 15.50 | 15.50 | 15.50 |
| Tank Shell Radius (RS): ft | 7.75 | 7.75 | 7.75 |
| Liquid Height (HL): ft | 8.00 | 8.00 | 12.00 |
| Cone Roof Slop: ft/ft | 0.06 | 0.06 | 0.06 |
| Tank Cone Roof Height (HR): ft | 0.48 | 0.48 | 0.48 |
| Cone Roof Outage (HRO): ft | 0.16 | 0.16 | 0.16 |
| Tank Dome Radius (RR): ft | 15.50 | 15.50 | 15.50 |
| Tank Dome Roof Height (HR): ft | 2.08 | 2.08 | 2.08 |
| Cone Dome Outage (HRO): ft | 1.06 | 1.06 | 1.06 |
| Vapor Space Outage (HVO): ft | 8.16 | 8.16 | 12.16 |
| **Tank Vapor Space Volume (VV): ft3** | **1,540.00** | **1,540.00** | **2,294.77** |
| **Vented Vapor Saturation Factor (KS):** | **0.3463** | **0.8672** | **0.8156** |
| Daily Max Surface Temp (TLX): oR | 537.49 | 537.49 | 537.21 |
| TVP at Daily Max Surface Temp (PX1): psia | 5.11 | 5.11 | 5.09 |
| TVP at Daily Max Surface Temp (PX2): psia | 0.47 | 0.47 | 0.47 |
| Combined TVP @ TLX (PVX): psia | 5.11 | 0.48 | 0.47 |
| Daily Min Surface Temp (TLN): oR | 519.79 | 519.79 | 519.55 |
| TVP at Daily Min Surface Temp (PN1): psia | 3.70 | 3.70 | 3.69 |
| TVP at Daily Min Surface Temp (PN2): psia | 0.26 | 0.26 | 0.25 |
| Combined TVP @ TLX (PVX): psia | 3.70 | 0.26 | 0.26 |
| Daily Vapor Pressure Range (ΔPV): psia | 1.41 | 0.22 | 0.21 |
| **Vapor Space Expansion Factor (KE):** | **0.2183** | **0.0790** | **0.0788** |
| Ideal Gas Law Constant (R): psia ft3/ lb-mole oR | 10.73 | 10.73 | 10.73 |
| **Stock Vapor Density (WV): lb/ft3** | **0.0383** | **0.0011** | **0.0011** |
| Throughput (Q): bbl/yr/tank | 12,166.67 | 36,500.00 | 73,000.00 |
| Maximum Liquid Height (HLX): ft | 15.00 | 15.00 | 23.00 |
| Tank Max Liquid Volume (VLX): ft3 | 2,830.38 | 2,830.38 | 4,339.91 |
| Tank Capacity: gallons | 21,000.00 | 21,000.00 | 31,500.00 |
| Override Working Volume Calculation?: - | Yes | Yes | Yes |
| Number of Turnovers per year (N): | 25.86 | 77.57 | 98.72 |
| Annual Sum of Liquid Level Incease (∑HQI): ft/yr | 361.99 | 1,085.96 | 2,171.91 |
| **Net Working Loss Throughput (VQ): ft3/yr** | **68,303.67** | **204,911.00** | **409,822.00** |
| **Working Loss Turnover Factor (KN):** | **1.00** | **0.55** | **1.00** |
| **Working Loss Product Factor (KP):** | **0.75** | **0.75** | **0.75** |
| **Vent Setting Correction Factor (KB):** | **1.00** | **1.00** | **1.00** |
| **Standing Storage Loss (LS): lb/yr** | **1,627.25** | **43.95** | **60.93** |
| **Working Loss (LW): lb/yr** | **1,961.16** | **97.03** | **347.93** |

**Vital Energy, Inc.**
**Wicked Ram L49H**
**FLARE EMISSIONS CALCULATIONS**

| EQUIPMENT ID | DESCRIPTION | STREAM HHV | STREAM NET BTU | THROUGHPUT | COMBUSTION EFFICIENCY | ANNUAL HOURS |
|---|---|---|---|---|---|---|
| | | BTU/SCF | BTU/HR | MMSCF/YR | | |
| VDU-1 | Vapor Destruction Device | 1,806 | 451,211.25 | 2.19 | 98.00% | 8,760 |
| FL-1 | Standard Flare | 1,426 | 40,928,279.34 | 251.42 | 98.00% | 8,760 |

**CRITERIA AIR POLLUTANT EMISSIONS**

| EQUIPMENT ID | NOx | | CO | | VOC | | $SO_2$ | | $PM_{TOT}$ | | Pilot Emissions Only NOx | | Pilot Emissions Only CO | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE |
| | 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 |
| VDU-1 | 0.06 | 0.27 | 0.12 | 0.54 | 0.11 | 0.50 | 0.25 | 1.11 | <0.01 | <0.01 | 0.01 | 0.06 | 0.03 | 0.12 |
| FL-1 | 5.65 | 24.74 | 11.28 | 49.39 | 71.79 | 71.92 | 1.87 | 1.87 | 0.96 | 0.96 | 0.01 | 0.06 | 0.03 | 0.12 |

**HAZARDOUS AIR POLLUTANT EMISSIONS**

| EQUIPMENT ID | N-HEXANE | | BENZENE | | TOLUENE | | ETHYLBENZENE | | XYLENES | | 2,2,4-TRIMETH. | | TOTAL HAP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE |
| | 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 |
| VDU-1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | **<0.01** | **0.01** |
| FL-1 | 1.32 | 1.32 | 0.12 | 0.12 | 0.15 | 0.15 | 0.02 | 0.02 | 0.09 | 0.09 | 0.21 | 0.21 | **1.91** | **1.92** |

**EMISSION FACTORS FOR COMBUSTION UNITS <100 MMBTU/HR (LB/MMSCF) - CRITERIA AIR POLLUTANTS**

| STREAM HHV | NOx | CO | $SO_2$ | $PM_{TOT}$ |
|---|---|---|---|---|
| BTU/SCF | LB/MMBTU | LB/MMBTU | LB/MMSCF | LB/MMSCF |
| TCEQ HIGH BTU (>1,000) | 0.138 | 0.2755 | 0.6 | 7.6 |
| TCEQ LOW BTU (<1,000) | 0.0641 | 0.5496 | 0.6 | 7.6 |

**40 CFR §60.18 VELOCITY CALCULATION**

| EQUIPMENT ID | DIAMETER | STREAM FLOW | STREAM NET BTU | THROUGHPUT | TIP AREA | VELOCITY |
|---|---|---|---|---|---|---|
| | INCHES | SCFD | SCFH | SCFS | SQ FEET | FPS |
| VDU-1 | 24 | 5,997 | 249.87 | 0.07 | 3.14 | 0.02 |
| FL-1 | 4 | 3,011,369 | 125,473.71 | 34.85 | 0.09 | 399.40 |

**30 TAC §106.492 (1)(D) HEAT RELEASE CALCULATION**

| EQUIPMENT ID | $SO_2$ | Q | ACTUAL Q | COMPLIANT? |
|---|---|---|---|---|
| | LB/HR | BTU/HR | BTU/HR | YES/NO |
| VDU-1 | 0.25 | 13,396.20 | 451,211.25 | YES |
| FL-1 | 1.87 | 99,189.36 | 40,928,279.34 | YES |

**NOTES:**

1) NOx and CO: TCEQ Air Permit Technical Guidance For Chemical Sources: Flares And Vapor Oxidizers. SO2: Stoichiometric. PM: AP-42 Table 1.4. VOC and H2S emissions based on composition of all streams routed to flare and noted combustion efficiency.

2) Uncaptured and uncombusted emissions from the tanks are shown at the tanks.

**Vital Energy, Inc.**
**Wicked Ram L49H**
**Flare Emissions Calculations - Flare Stream Analysis**

**VDU-1**

| | | Pilot Gas | | Tank Vapors | | | VRT | | | Total Streams Burned in Flare | | | | | Component Net Heating Value | Maximum Net Btu Value Rate | Average Net Btu Value Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 65 | scfh | 106 | scfh | 8760 hrs | 79 | scfh | 8760 hrs | Uncontrolled | | | Controlled Emissions | | | | |
| Components | Mol Wt | Mole% | lb/hr | Mole% | lb/hr | TPY | Mole% | lb/hr | TPY | lb/hr | tons/yr | scf/hr | lb/hr | tons/yr | Btu/scf | Btu/hr | Btu/hr |
| Hydrogen Sulfide | 34.082 | 0.009% | <0.01 | 1.027% | 0.10 | 0.43 | 0.542% | 0.04 | 0.17 | 0.14 | 0.60 | 2 | <0.01 | 0.01 | 637.11 | 972 | 972 |
| Water | 18.015 | 0.000% | <0.01 | 0.511% | 0.06 | 0.28 | 0.339% | 0.03 | 0.14 | 0.09 | 0.41 | 2 | <0.01 | 0.01 | 0.00 | 0 | 0 |
| Carbon Dioxide | 44.010 | 0.395% | 0.03 | 0.008% | <0.01 | <0.01 | 0.042% | <0.01 | 0.01 | 0.03 | 0.14 | <1 | <0.01 | <0.01 | 0.00 | 0 | 0 |
| Nitrogen | 28.013 | 0.253% | 0.01 | 2.440% | 0.12 | 0.54 | 2.061% | 0.08 | 0.34 | 0.21 | 0.93 | 3 | <0.01 | 0.02 | 0.00 | 0 | 0 |
| Helium | 4.003 | 0.000% | <0.01 | 0.000% | <0.01 | <0.01 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.00 | 0 | 0 |
| Oxygen | 31.999 | 0.000% | <0.01 | 0.000% | <0.01 | <0.01 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.00 | 0 | 0 |
| Methane | 16.042 | 59.403% | 1.63 | 12.513% | 0.56 | 2.46 | 36.871% | 1.23 | 5.40 | 3.43 | 15.01 | 81 | 0.07 | 0.30 | 919.00 | 74,498 | 74,498 |
| Ethane | 30.069 | 19.689% | 1.01 | 29.795% | 2.51 | 10.99 | 25.902% | 1.62 | 7.11 | 5.15 | 22.54 | 65 | 0.10 | 0.45 | 1,619.00 | 105,137 | 105,137 |
| Propane | 44.096 | 11.953% | 0.90 | 29.772% | 3.68 | 16.10 | 19.995% | 1.84 | 8.05 | 6.42 | 28.11 | 55 | 0.13 | 0.56 | 2,315.00 | 127,824 | 127,824 |
| i-Butane | 58.122 | 1.267% | 0.13 | 3.629% | 0.59 | 2.59 | 2.164% | 0.26 | 1.15 | 0.98 | 4.29 | 6 | 0.02 | 0.09 | 3,000.00 | 19,173 | 19,173 |
| n-Butane | 58.122 | 3.880% | 0.39 | 11.475% | 1.87 | 8.18 | 6.742% | 0.82 | 3.58 | 3.07 | 13.45 | 20 | 0.06 | 0.27 | 3,011.00 | 60,361 | 60,361 |
| i-Pentane | 72.149 | 0.739% | 0.09 | 2.212% | 0.45 | 1.96 | 1.290% | 0.19 | 0.85 | 0.73 | 3.21 | 4 | 0.01 | 0.06 | 3,699.00 | 14,242 | 14,242 |
| n-Pentane | 72.149 | 0.956% | 0.12 | 2.841% | 0.57 | 2.51 | 1.670% | 0.25 | 1.10 | 0.94 | 4.13 | 5 | 0.02 | 0.08 | 3,707.00 | 18,387 | 18,387 |
| Cyclopentane | 70.100 | 0.000% | <0.01 | 0.000% | <0.01 | <0.01 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 3,512.10 | 0 | 0 |
| n-Hexane | 86.175 | 0.232% | 0.03 | 0.709% | 0.17 | 0.75 | 0.418% | 0.08 | 0.33 | 0.28 | 1.23 | 1 | 0.01 | 0.02 | 4,404.00 | 5,437 | 5,437 |
| Cyclohexane | 84.160 | 0.146% | 0.02 | 0.451% | 0.11 | 0.47 | 0.303% | 0.05 | 0.23 | 0.18 | 0.79 | 1 | <0.01 | 0.02 | 4,179.70 | 3,403 | 3,403 |
| Other Hexanes | 86.175 | 0.456% | 0.07 | 1.345% | 0.32 | 1.41 | 0.828% | 0.15 | 0.65 | 0.54 | 2.35 | 2 | 0.01 | 0.05 | 4,404.00 | 10,422 | 10,422 |
| Heptanes (as n-Heptane) | 100.202 | 0.321% | 0.06 | 0.761% | 0.21 | 0.93 | 0.510% | 0.11 | 0.46 | 0.37 | 1.63 | 1 | 0.01 | 0.03 | 5,100.00 | 7,188 | 7,188 |
| Benzene | 78.114 | 0.023% | <0.01 | 0.087% | 0.02 | 0.08 | 0.047% | <0.01 | 0.03 | 0.03 | 0.13 | <1 | <0.01 | <0.01 | 3,590.90 | 519 | 519 |
| Toluene | 92.141 | 0.024% | <0.01 | 0.074% | 0.02 | 0.08 | 0.040% | <0.01 | 0.03 | 0.03 | 0.13 | <1 | <0.01 | <0.01 | 4,273.60 | 539 | 539 |
| Ethylbenzene | 106.167 | 0.003% | <0.01 | 0.011% | <0.01 | 0.01 | 0.006% | <0.01 | <0.01 | <0.01 | 0.02 | <1 | <0.01 | <0.01 | 4,970.50 | 91 | 91 |
| Xylenes | 106.500 | 0.013% | <0.01 | 0.038% | 0.01 | 0.05 | 0.020% | <0.01 | 0.02 | 0.02 | 0.08 | <1 | <0.01 | <0.01 | 4,957.10 | 322 | 322 |
| Octanes (as n-Octane) | 114.229 | 0.132% | 0.03 | 0.157% | 0.05 | 0.22 | 0.113% | 0.03 | 0.12 | 0.10 | 0.45 | <1 | <0.01 | 0.01 | 4,273.60 | 1,465 | 1,465 |
| 2,2,4-Trimethylpentane | 114.230 | 0.028% | <0.01 | 0.060% | 0.02 | 0.08 | 0.040% | <0.01 | 0.04 | 0.03 | 0.15 | <1 | <0.01 | <0.01 | 4,943.70 | 560 | 560 |
| Nonanes (as n-Nonane) | 128.255 | 0.054% | 0.01 | 0.034% | 0.01 | 0.05 | 0.026% | <0.01 | 0.03 | 0.03 | 0.14 | <1 | <0.01 | <0.01 | 6,493.00 | 600 | 600 |
| Decanes+ (as n-Decane) | 142.282 | 0.015% | <0.01 | <0.001% | <0.01 | <0.01 | <0.001% | <0.01 | <0.01 | <0.01 | 0.02 | <1 | <0.01 | <0.01 | 7,190.00 | 71 | 71 |
| **Total =** | | **99.991%** | **4.55** | **99.949%** | **11.46** | **50.19** | **99.970%** | **6.81** | **29.84** | **22.82** | **99.95** | **250** | **-** | **-** | **Btu/hr** | **451,211** | **451,211** |
| **Total VOC =** | | **20.242%** | **1.86** | **53.656%** | **8.10** | **35.49** | **34.213%** | **3.81** | **16.68** | **13.77** | **60.31** | - | **0.11** | **0.50** | **Heat Value (Btu/scf)** | **1,806** | |
| **Total HAP =** | | | | | | | | | | **0.40** | **1.74** | - | **<0.01** | **0.01** | | | |
| **Total $H_2S$ =** | | | | | | | | | | **0.14** | **0.60** | - | **<0.01** | **0.01** | | | |
| **MW (Stream) =** | | | | | | | | | | | | **34.65** | | | | | |

Vital Energy, Inc.
Wicked Ram L49H
Flare Emissions Calculations - Flare Stream Analysis

FL-1

| Components | Mol Wt | Pilot Gas 65 scfh Mole% | Pilot Gas 65 scfh lb/hr | Stranded Gas Mole% | Stranded Gas lb/hr | Stranded Gas TPY | Total Streams Burned in Flare Uncontrolled lb/hr | Uncontrolled tons/yr | Total Streams Burned in Flare scf/hr | Controlled Emissions lb/hr | Controlled Emissions tons/yr | Component Net Heating Value Btu/scf | Maximum Net Btu Value Rate Btu/hr | Average Net Btu Value Rate Btu/hr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hydrogen Sulfide | 34.082 | 0.009% | <0.01 | 0.009% | 1.01 | 1.01 | 1.01 | 1.02 | 11 | 0.02 | 0.02 | 637.11 | 7,195 | 1,646 |
| Water | 18.015 | 0.000% | <0.01 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.00 | 0 | 0 |
| Carbon Dioxide | 44.010 | 0.395% | 0.03 | 0.395% | 57.47 | 57.47 | 57.50 | 57.60 | 496 | 1.15 | 1.15 | 0.00 | 0 | 0 |
| Nitrogen | 28.013 | 0.253% | 0.01 | 0.253% | 23.43 | 23.43 | 23.44 | 23.48 | 317 | 0.47 | 0.47 | 0.00 | 0 | 0 |
| Helium | 4.003 | 0.000% | <0.01 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.00 | 0 | 0 |
| Oxygen | 31.999 | 0.000% | <0.01 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.00 | 0 | 0 |
| Methane | 16.042 | 59.403% | 1.63 | 59.403% | 3150.19 | 3150.19 | 3,151.82 | 3,157.34 | 74,542 | 63.04 | 63.15 | 919.00 | 68,503,964 | 15,667,557 |
| Ethane | 30.069 | 19.689% | 1.01 | 19.689% | 1957.10 | 1957.10 | 1,958.11 | 1,961.54 | 24,707 | 39.16 | 39.23 | 1,619.00 | 40,000,215 | 9,148,458 |
| Propane | 44.096 | 11.953% | 0.90 | 11.953% | 1742.39 | 1742.39 | 1,743.29 | 1,746.35 | 14,999 | 34.87 | 34.93 | 2,315.00 | 34,723,199 | 7,941,551 |
| i-Butane | 58.122 | 1.267% | 0.13 | 1.267% | 243.44 | 243.44 | 243.56 | 243.99 | 1,590 | 4.87 | 4.88 | 3,000.00 | 4,769,685 | 1,090,876 |
| n-Butane | 58.122 | 3.880% | 0.39 | 3.880% | 745.49 | 745.49 | 745.88 | 747.18 | 4,869 | 14.92 | 14.94 | 3,011.00 | 14,660,011 | 3,352,894 |
| i-Pentane | 72.149 | 0.739% | 0.09 | 0.739% | 176.26 | 176.26 | 176.35 | 176.66 | 927 | 3.53 | 3.53 | 3,699.00 | 3,430,209 | 784,524 |
| n-Pentane | 72.149 | 0.956% | 0.12 | 0.956% | 228.01 | 228.01 | 228.13 | 228.53 | 1,200 | 4.56 | 4.57 | 3,707.00 | 4,447,053 | 1,017,086 |
| Cyclopentane | 70.100 | 0.000% | <0.01 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 3,512.10 | 0 | 0 |
| n-Hexane | 86.175 | 0.232% | 0.03 | 0.232% | 66.09 | 66.09 | 66.12 | 66.24 | 291 | 1.32 | 1.32 | 4,404.00 | 1,282,115 | 293,233 |
| Cyclohexane | 84.160 | 0.146% | 0.02 | 0.146% | 40.62 | 40.62 | 40.64 | 40.71 | 183 | 0.81 | 0.81 | 4,179.70 | 765,755 | 175,136 |
| Other Hexanes | 86.175 | 0.456% | 0.07 | 0.456% | 129.90 | 129.90 | 129.97 | 130.20 | 572 | 2.60 | 2.60 | 4,404.00 | 2,520,020 | 576,354 |
| Heptanes (as n-Heptane) | 100.202 | 0.321% | 0.06 | 0.321% | 106.33 | 106.33 | 106.38 | 106.57 | 403 | 2.13 | 2.13 | 5,100.00 | 2,054,315 | 469,843 |
| Benzene | 78.114 | 0.023% | <0.01 | 0.023% | 5.94 | 5.94 | 5.94 | 5.95 | 29 | 0.12 | 0.12 | 3,590.90 | 103,639 | 23,703 |
| Toluene | 92.141 | 0.024% | <0.01 | 0.024% | 7.31 | 7.31 | 7.31 | 7.33 | 30 | 0.15 | 0.15 | 4,273.60 | 128,705 | 29,436 |
| Ethylbenzene | 106.167 | 0.003% | <0.01 | 0.003% | 1.05 | 1.05 | 1.05 | 1.06 | 4 | 0.02 | 0.02 | 4,970.50 | 18,712 | 4,280 |
| Xylenes | 106.500 | 0.013% | <0.01 | 0.013% | 4.58 | 4.58 | 4.58 | 4.59 | 16 | 0.09 | 0.09 | 4,957.10 | 80,865 | 18,495 |
| Octanes (as n-Octane) | 114.229 | 0.132% | 0.03 | 0.132% | 49.84 | 49.84 | 49.87 | 49.96 | 166 | 1.00 | 1.00 | 4,273.60 | 707,880 | 161,899 |
| 2,2,4-Trimethylpentane | 114.230 | 0.028% | <0.01 | 0.028% | 10.57 | 10.57 | 10.58 | 10.60 | 35 | 0.21 | 0.21 | 4,943.70 | 173,701 | 39,727 |
| Nonanes (as n-Nonane) | 128.255 | 0.054% | 0.01 | 0.054% | 22.89 | 22.89 | 22.91 | 22.95 | 68 | 0.46 | 0.46 | 6,493.00 | 439,978 | 100,627 |
| Decanes+ (as n-Decane) | 142.282 | 0.015% | <0.01 | 0.015% | 7.06 | 7.06 | 7.06 | 7.07 | 19 | 0.14 | 0.14 | 7,190.00 | 135,336 | 30,953 |
| **Total =** | | **99.991%** | **4.55** | **99.991%** | **8,776.97** | **8,776.97** | **8,781.52** | **8,796.89** | **125,474** | **-** | **-** | **Btu/hr** | **178,952,552** | **40,928,279** |
| **Total VOC =** | | **20.242%** | **1.86** | **20.242%** | **3,587.77** | **3,587.77** | **3,589.63** | **3,595.92** | - | **71.79** | **71.92** | **Heat Value (Btu/scf)** | **1,426** | |
| **Total HAP =** | | | | | | | **95.59** | **95.76** | - | **1.91** | **1.92** | | | |
| **Total $H_2S$ =** | | | | | | | **1.01** | **1.02** | - | **0.02** | **0.02** | | | |
| **MW (Stream) =** | | | | | | | | | **26.55** | | | | | |

**Vital Energy, Inc.**
**Wicked Ram L49H**
**FUGITIVE COMPONENT EMISSIONS CALCULATIONS**

| EQUIPMENT ID | SERVICE | COMPONENT TYPE | COMPONENT COUNT | EM. FACTOR (LB/HR/COMP.) | CONTROL EFFICIENCY | TOC | |
|---|---|---|---|---|---|---|---|
| | | | | | | LB/HR | TPY |
| FUG | GAS | VALVES | 76 | 0.009921 | 0.00% | 0.75 | 3.30 |
| FUG | GAS | OTHER | 19 | 0.019400 | 0.00% | 0.37 | 1.61 |
| FUG | GAS | CONNECTORS | 320 | 0.000441 | 0.00% | 0.14 | 0.62 |
| FUG | GAS | FLANGES | 93 | 0.000860 | 0.00% | 0.08 | 0.35 |
| | | | | | **TOTAL TOC (GAS COMPONENTS) =** | **1.34** | **5.89** |
| FUG | LIGHT_OIL | VALVES | 36 | 0.005511 | 0.00% | 0.20 | 0.87 |
| FUG | LIGHT_OIL | OTHER | 1 | 0.016534 | 0.00% | 0.02 | 0.07 |
| FUG | LIGHT_OIL | CONNECTORS | 304 | 0.000463 | 0.00% | 0.14 | 0.62 |
| FUG | LIGHT_OIL | FLANGES | 36 | 0.000243 | 0.00% | 0.01 | 0.04 |
| | | | | | **TOTAL TOC (LIQUID COMPONENTS) =** | **0.36** | **1.60** |
| FUG | WATER_OIL | VALVES | 86 | 0.000216 | 0.00% | 0.02 | 0.08 |
| FUG | WATER_OIL | OTHER | 4 | 0.030864 | 0.00% | 0.12 | 0.54 |
| FUG | WATER_OIL | CONNECTORS | 680 | 0.000243 | 0.00% | 0.16 | 0.72 |
| FUG | WATER_OIL | FLANGES | 26 | 0.000006 | 0.00% | 0.00 | 0.00 |
| | | | | | **TOTAL TOC (LIQUID COMPONENTS) =** | **0.31** | **1.35** |

| COMPONENT TYPE/SERVICE | VOC | | |
|---|---|---|---|
| | HOURLY PTE | ANNUAL PTE | |
| | LB/HR | TON/YR | LB/YR |
| VALVES-GAS | 0.30 | 1.31 | 2,623.28 |
| OTHER-GAS | 0.15 | 0.64 | 1,282.49 |
| CONNECTORS-GAS | 0.06 | 0.25 | 490.91 |
| FLANGES-GAS | 0.03 | 0.14 | 278.21 |
| **TOTAL (GAS) =** | **0.53** | **2.34** | **4,674.89** |
| VALVES-LIGHT_OIL | 0.20 | 0.86 | 1,722.78 |
| OTHER-LIGHT_OIL | 0.02 | 0.07 | 143.57 |
| CONNECTORS-LIGHT_OIL | 0.14 | 0.61 | 1,222.03 |
| FLANGES-LIGHT_OIL | <0.01 | 0.04 | 75.80 |
| **TOTAL (LIQUID) =** | **0.36** | **1.58** | **3,164.17** |
| VALVES-WATER_OIL | <0.01 | <0.01 | 1.63 |
| OTHER-WATER_OIL | <0.01 | <0.01 | 10.81 |
| CONNECTORS-WATER_OIL | <0.01 | <0.01 | 14.45 |
| FLANGES-WATER_OIL | <0.01 | <0.01 | 0.01 |
| **TOTAL (LIQUID) =** | **<0.01** | **0.01** | **26.90** |
| **TOTAL (ALL COMPONENTS) =** | **0.90** | **3.93** | **7,865.96** |

| COMPONENT TYPE/SERVICE | N-HEXANE | | BENZENE | | TOLUENE | | ETHYLBENZENE | | XYLENES | | 2,2,4-TRIMETH. | | TOTAL HAP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE | HOURLY PTE | ANNUAL PTE |
| | 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 |
| VALVES-GAS | <0.01 | 0.0254 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.0370 |
| OTHER-GAS | <0.01 | 0.0124 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.0181 |
| CONNECTORS-GAS | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| FLANGES-GAS | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| **TOTAL (GAS) =** | **0.0103** | **0.0452** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **0.0150** | **0.0659** |
| VALVES-LIGHT_OIL | <0.01 | 0.0284 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.0144 | <0.01 | <0.01 | 0.0145 | 0.0636 |
| OTHER-LIGHT_OIL | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| CONNECTORS-LIGHT_OIL | <0.01 | 0.0201 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.0102 | <0.01 | <0.01 | 0.0103 | 0.0451 |
| FLANGES-LIGHT_OIL | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| **TOTAL (LIQUID) =** | **0.0119** | **0.0521** | **<0.01** | **<0.01** | **<0.01** | **0.0127** | **<0.01** | **<0.01** | **<0.01** | **0.0265** | **<0.01** | **0.0146** | **0.0267** | **0.1168** |
| VALVES-WATER_OIL | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| OTHER-WATER_OIL | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| CONNECTORS-WATER_OIL | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| FLANGES-WATER_OIL | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| **TOTAL (LIQUID) =** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** | **<0.01** |
| **TOTAL (ALL COMPONENTS) =** | **0.0222** | **0.0973** | **<0.01** | **<0.01** | **<0.01** | **0.0183** | **<0.01** | **<0.01** | **<0.01** | **0.0296** | **<0.01** | **0.0218** | **0.0417** | **0.1827** |

**POLLUTANT COMPOSITION BY STREAM (% BY WEIGHT)**

| POLLUTANT | VOC |
|---|---|
| GAS WEIGHT % | 39.7180% |
| LIQUID WEIGHT % | 99.1189% |
| WATER WEIGHT % | 1.00% |

| POLLUTANT | N-HEXANE | BENZENE | TOLUENE | ETHYLBENZENE | XYLENES | 2,2,4-TRIMETH. | TOTAL HAP | $H_2S$ |
|---|---|---|---|---|---|---|---|---|
| GAS WEIGHT % | 0.7678% | 0.0690% | 0.0941% | 0.0122% | 0.0530% | 0.1228% | **1.1191%** | **0.0118%** |
| LIQUID WEIGHT % | 3.2640% | 0.2514% | 0.7984% | 0.4318% | 1.6605% | 0.9121% | **7.3181%** | **0.0133%** |
| WATER WEIGHT % | 0.0000% | 0.0000% | 0.0000% | 0.0000% | 0.0000% | 0.0000% | **0.0000%** | **0.1001%** |

**NOTES:**

1) EPA-453/R-95-017 Emission Factors

2) Total organic compound (TOC) emission rates multiplied by weight % of component to obtain emissions.

3) Gas and liquids analyses attached.

**Vital Energy, Inc.**
**Wicked Ram L49H**
**MAINTENANCE, STARTUP, AND SHUTDOWN (MSS) EMISSIONS - MAINTENANCE EVENTS**

| MAINTENANCE ACTIVITY | EVENTS | | VOLUME PER EVENT | ANALYSIS SPECIFIC GRAVITY | STREAM DENSITY |
|---|---|---|---|---|---|
| | PER YEAR | PER HOUR | SCF | | LB/SCF |
| PIG MSS | 52 | 1 | 3,061 | 0.9220 | 0.070 |
| PIPELINE DEGASSING | 1 | 1 | 6,122 | 0.9220 | 0.070 |
| TANK DEGASSING | 5 | 0.25 | 2,807 | 0.7826 | 0.060 |
| GUNBARREL DEGASSING | 1 | 0.25 | 4,211 | 0.7826 | 0.060 |

| MAINTENANCE ACTIVITY | VOC | | $H_2S$ | |
|---|---|---|---|---|
| | LB/HR | TON/YR | LB/HR | TON/YR |
| PIG MSS | 85.57 | 2.22 | 0.03 | <0.01 |
| PIPELINE DEGASSING | 171.14 | 0.09 | 0.05 | <0.01 |
| TANK DEGASSING | 16.65 | 0.17 | <0.01 | <0.01 |
| GUNBARREL DEGASSING | 24.98 | 0.05 | <0.01 | <0.01 |
| **TOTAL =** | **298.34** | **2.78** | **0.09** | **<0.01** |

| MAINTENANCE ACTIVITY | N-HEXANE | | BENZENE | | TOLUENE | | ETHYLBENZENE | | XYLENES | | 2,2,4-TRIMETH. | | TOTAL 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 |
| PIG MSS | 1.65 | 0.04 | 0.15 | <0.01 | 0.20 | <0.01 | 0.03 | <0.01 | 0.11 | <0.01 | 0.26 | <0.01 | 2.41 | 0.06 |
| PIPELINE DEGASSING | 3.31 | <0.01 | 0.30 | <0.01 | 0.41 | <0.01 | 0.05 | <0.01 | 0.23 | <0.01 | 0.53 | <0.01 | 4.82 | <0.01 |
| TANK DEGASSING | 0.32 | <0.01 | 0.03 | <0.01 | 0.04 | <0.01 | <0.01 | <0.01 | 0.02 | <0.01 | 0.05 | <0.01 | 0.47 | <0.01 |
| GUNBARREL DEGASSING | 0.48 | <0.01 | 0.04 | <0.01 | 0.06 | <0.01 | <0.01 | <0.01 | 0.03 | <0.01 | 0.08 | <0.01 | 0.70 | <0.01 |
| **TOTAL =** | **5.77** | **0.05** | **0.52** | **<0.01** | **0.71** | **<0.01** | **0.09** | **<0.01** | **0.40** | **<0.01** | **0.92** | **<0.01** | **8.41** | **0.07** |

**POLLUTANT COMPOSITION BY STREAM (% BY WEIGHT)**

| POLLUTANT | VOC | | $H_2S$ |
|---|---|---|---|
| INLET GAS WT % | 39.72% | | 0.01% |

| POLLUTANT | N-HEXANE | BENZENE | TOLUENE | ETHYLBENZENE | XYLENES | 2,2,4-TRIMETH. | TOTAL HAP |
|---|---|---|---|---|---|---|---|
| INLET GAS WT % | 0.77% | 0.07% | 0.09% | 0.01% | 0.05% | 0.12% | **1.12%** |

Vital Energy, Inc.
Wicked Ram L49H
MAINTENANCE, STARTUP, AND SHUTDOWN (MSS) EMISSIONS - TANK CLEANING

| Collected Material | Saturation Factor | Max Vapor Pressure (psia) | Average Vapor Pressure (psia) | Vapor Molec. Wt. (lb/mole) | Max Temperature (°F) | Average Temperature (°F) | Tank Volume (Mgal) | Liquid Heel (% Volume of Tank) | Amount Loaded (Mgal) | VOC Fraction | Max Loading Loss (lb/Mgal) | Average Loading Loss (lb/Mgal) | Safety Factor | Activities/Year | Hourly VOC PTE (lb/hr) | Annual VOC (tpy) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sump Cleanout | 0.60 | 5.11 | 4.36 | 66 | 77.82 | 68.97 | - | - | 0.085 | 0.00991 | 4.69 | 4.07 | 100% | 1 | <0.01 | <0.01 |
| Oil/Condensate | 0.60 | 5.11 | 4.36 | 66 | 77.82 | 68.97 | 21.00 | 0.20 | 4.200 | 0.00991 | 4.69 | 4.07 | 100% | 1 | 0.3905 | <0.01 |
| Oil/Condensate | 0.60 | 5.11 | 4.36 | 66 | 77.82 | 68.97 | 21.00 | 0.20 | 4.200 | 0.00991 | 4.69 | 4.07 | 100% | 1 | 0.3905 | <0.01 |
| Oil/Condensate | 0.60 | 5.11 | 4.36 | 66 | 77.82 | 68.97 | 21.00 | 0.20 | 4.200 | 0.00991 | 4.69 | 4.07 | 100% | 1 | 0.3905 | <0.01 |
| Produced Water | 0.60 | 0.48 | 0.35 | 66 | 77.82 | 68.97 | 21.00 | 0.20 | 4.200 | 0.00991 | 0.44 | 0.33 | 100% | 1 | 0.0364 | <0.01 |
| Produced Water | 0.60 | 0.48 | 0.35 | 66 | 77.82 | 68.97 | 21.00 | 0.20 | 4.200 | 0.00991 | 0.44 | 0.33 | 100% | 1 | 0.0364 | <0.01 |
| Produced Water | 0.60 | 0.48 | 0.35 | 66 | 77.82 | 68.97 | 31.50 | 0.20 | 6.300 | 0.00991 | 0.44 | 0.33 | 100% | 1 | 0.0545 | <0.01 |
| | | | | | | | | | | | | | | Total: | 1.31 | <0.01 |

**Vital Energy, Inc.**
**Wicked Ram L49H**
**Pneumatic Controller Emissions**

*Intermittent Bleed*

| | | |
|---|---|---|
| Emission Factor[1] | 8.8 | scf/hr/controller |
| Number of Controllers | 15 | |
| Emission Stream for Facility | 132.00 | scf/hr |
| Operating Hours | 8760.00 | hours |

[1] - *Controller emission factor from 40 CFR Part 98, Subpart W, Table W-1A*

| | | Intermittent Bleed | | | Total Emissions For Site | |
|---|---|---|---|---|---|---|
| | | 132.00 | scfh | | | |
| Components | Mol Wt | Mole% | lb/hr | TPY | lb/hr | TPY |
| Hydrogen Sulfide | 34.082 | 0.009% | <0.01 | <0.01 | <0.01 | <0.01 |
| Water | 18.015 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 |
| Carbon Dioxide | 44.010 | 0.395% | 0.06 | 0.26 | 0.06 | 0.26 |
| Nitrogen | 28.013 | 0.253% | 0.02 | 0.11 | 0.02 | 0.11 |
| Helium | 4.003 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 |
| Oxygen | 31.999 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 |
| Methane | 16.042 | 59.403% | 3.32 | 14.52 | 3.32 | 14.52 |
| Ethane | 30.069 | 19.689% | 2.06 | 9.02 | 2.06 | 9.02 |
| Propane | 44.096 | 11.953% | 1.83 | 8.03 | 1.83 | 8.03 |
| i-Butane | 58.122 | 1.267% | 0.26 | 1.12 | 0.26 | 1.12 |
| n-Butane | 58.122 | 3.880% | 0.78 | 3.44 | 0.78 | 3.44 |
| i-Pentane | 72.149 | 0.739% | 0.19 | 0.81 | 0.19 | 0.81 |
| n-Pentane | 72.149 | 0.956% | 0.24 | 1.05 | 0.24 | 1.05 |
| Cyclopentane | 70.100 | 0.000% | <0.01 | <0.01 | <0.01 | <0.01 |
| n-Hexane | 86.175 | 0.232% | 0.07 | 0.30 | 0.07 | 0.30 |
| Cyclohexane | 84.160 | 0.146% | 0.04 | 0.19 | 0.04 | 0.19 |
| Other Hexanes | 86.175 | 0.456% | 0.14 | 0.60 | 0.14 | 0.60 |
| Heptanes (as n-Heptane) | 100.202 | 0.321% | 0.11 | 0.49 | 0.11 | 0.49 |
| Benzene | 78.114 | 0.023% | <0.01 | 0.03 | <0.01 | 0.03 |
| Toluene | 92.141 | 0.024% | <0.01 | 0.03 | <0.01 | 0.03 |
| Ethylbenzene | 106.167 | 0.003% | <0.01 | <0.01 | <0.01 | <0.01 |
| Xylenes | 106.500 | 0.013% | <0.01 | 0.02 | <0.01 | 0.02 |
| Octanes (as n-Octane) | 114.229 | 0.132% | 0.05 | 0.23 | 0.05 | 0.23 |
| 2,2,4-Trimethylpentane | 114.230 | 0.028% | 0.01 | 0.05 | 0.01 | 0.05 |
| Nonanes (as n-Nonane) | 128.255 | 0.054% | 0.02 | 0.11 | 0.02 | 0.11 |
| Decanes+ (as n-Decane) | 142.282 | 0.015% | <0.01 | 0.03 | <0.01 | 0.03 |
| **Total =** | | **99.991%** | **9.24** | **40.46** | **9.24** | **40.46** |
| **Total VOC =** | | **20.242%** | **3.78** | **16.54** | **3.78** | **16.54** |

Bryan Research & Engineering, LLC

# ProMax® 6.0

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## Simulation Report

### Project: Wicked Ram_5b_ProMax.pmx

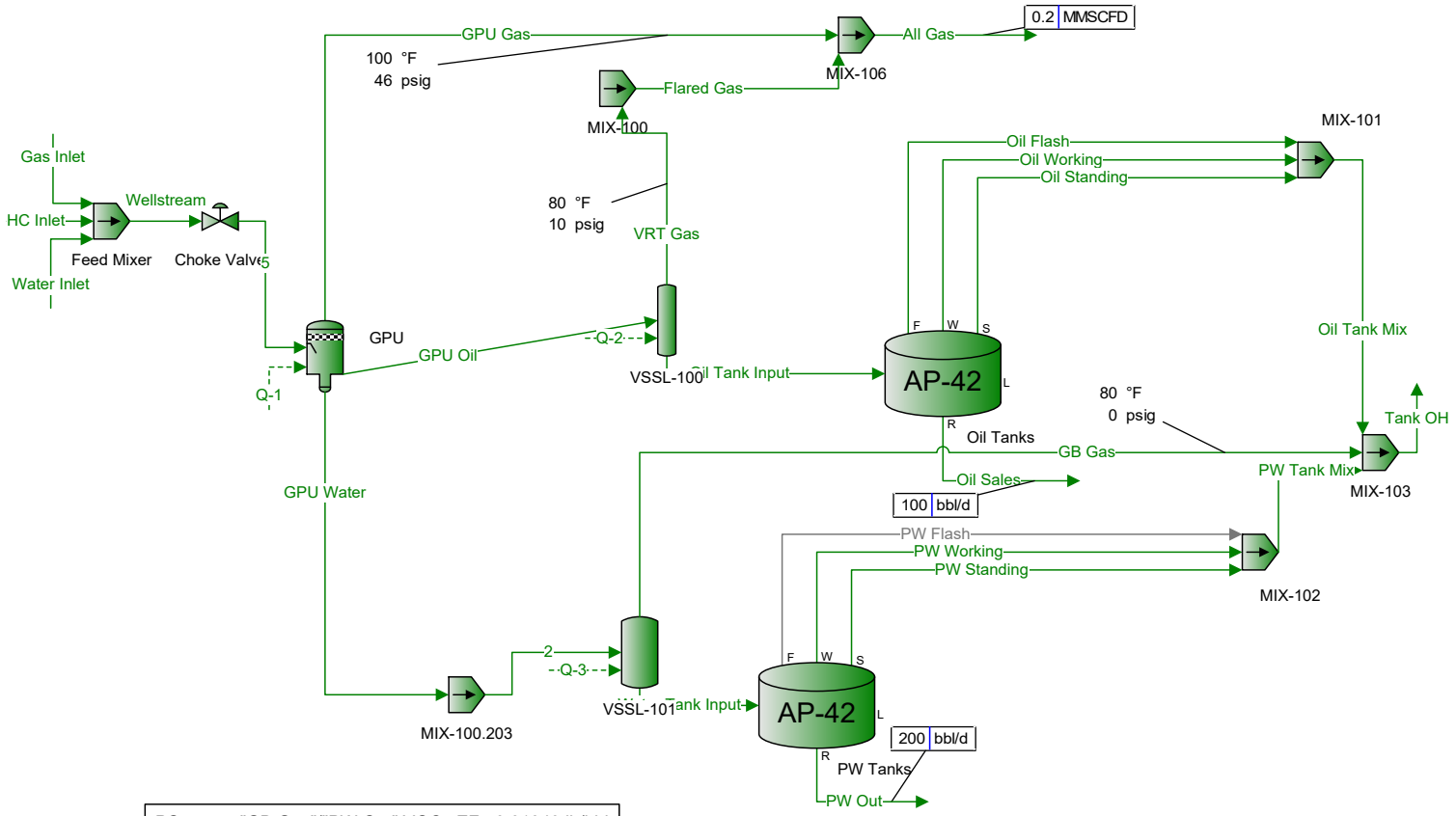
**Licensed to MHT Consultants, LLC and Affiliates**

**Client Name:** Vital Energy
**Location:** Wicked Ram
**Job:**

**ProMax Filename:** G:\Shared drives\Environmental Departments\Air Permitting\Vital (fka Laredo)\Wicked Ram L49H\2024-06 PBR\Working Files\Wicked Ram_5b_ProMax.pmx
**ProMax Version:** 6.0.24240.0
**Simulation Initiated:** 2/28/2025 11:02:37 AM

**Bryan Research & Engineering, LLC**
Chemical Engineering Consultants
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http://www.bre.com/

Report Navigator can be activated via the ProMax Navigator Toolbar.
An asterisk (*), throughout the report, denotes a user specified value.
A question mark (?) after a value, throughout the report, denotes an extrapolated or approximate value.


GPU Gas
100 °F
46 psig
MIX-106
All Gas
0.2 MMSCFD
Flared Gas
MIX-100
MIX-101
Oil Flash
Oil Working
Oil Standing
Gas Inlet
HC Inlet
Water Inlet
Wellstream
Feed Mixer
Choke Valve
5
80 °F
10 psig
VRT Gas
GPU
GPU Oil
Q-2
VSSL-100
Oil Tank Input
AP-42
F
W
S
L
R
Oil Tank Mix
Q-1
GPU Water
Oil Tanks
GB Gas
80 °F
0 psig
Tank OH
Oil Sales
100 bbl/d
PW Tank Mix
MIX-103
PW Flash
PW Working
PW Standing
MIX-102
2
Q-3
VSSL-101
Tank Input
AP-42
MIX-100.203
200 bbl/d
PW Tanks
PW Out
PStreams "GB Gas"/"PW Out" VOCs EF= 0.01049 lb/bbl
PStreams "PW Flash"/"PW Out" VOCs EF= 0 lb/bbl
PStreams "VRT Gas"/"Oil Sales" VOCs EF= 0.9149 lb/bbl
PStreams "Oil Flash"/"Oil Sales" VOCs EF= 1.064 lb/bbl

| Process Streams | | Tank OH | VRT Gas |
|---|---|---|---|
| **Composition** | **Status:** | Solved | Solved |
| Phase: **Total** | **From Block:** | MIX-103 | VSSL-100 |
| | **To Block:** | -- | MIX-100 |
| **Mole Fraction** | | % | % |
| Carbon Dioxide | | 0.510576 | 0.339347 |
| Hydrogen Sulfide | | 1.02658 | 0.542084 |
| H2O | | 2.44036 | 2.06089 |
| Nitrogen | | 0.00829638 | 0.0416999 |
| Methane | | 12.5129 | 36.8710 |
| Ethane | | 29.7948 | 25.9020 |
| Propane | | 29.7718 | 19.9953 |
| Isobutane | | 3.62892 | 2.16412 |
| n-Butane | | 11.4752 | 6.74225 |
| 2,2-Dimethylpropane | | 0.0505084 | 0.0300004 |
| Isopentane | | 2.21171 | 1.28959 |
| n-Pentane | | 2.84056 | 1.66969 |
| 2,2-Dimethylbutane | | 0.0164159 | 0.00958761 |
| Cyclopentane | | 0 | 0 |
| 2,3-Dimethylbutane | | 0.139414 | 0.0818806 |
| 2-Methylpentane | | 0.543228 | 0.324033 |
| 3-Methylpentane | | 0.271940 | 0.161667 |
| n-Hexane | | 0.709116 | 0.417747 |
| Methylcyclopentane | | 0.373830 | 0.251075 |
| Benzene | | 0.0868152 | 0.0472338 |
| Cyclohexane | | 0.451145 | 0.303350 |
| 2-Methylhexane | | 0.0648576 | 0.0439014 |
| 3-Methylhexane | | 0.0912411 | 0.0609012 |
| 2,2,4-Trimethylpentane | | 0.0596384 | 0.0401281 |
| Heptane | | 0.276717 | 0.187225 |
| Methylcyclohexane | | 0.327976 | 0.217478 |
| Toluene | | 0.0744194 | 0.0396949 |
| Octane | | 0.157440 | 0.113319 |
| Ethylbenzene | | 0.0109539 | 0.00594998 |
| o-Xylene | | 0.0108715 | 0.00598697 |
| p-Xylene | | 0.0273224 | 0.0144233 |
| Nonane | | 0.0343705 | 0.0263656 |
| Decane | | 7.64972E-05 | 6.23564E-05 |
| C10+ Pinto | | 5.57640E-06 | 4.51880E-06 |
| **Molar Flow** | | lbmol/h | lbmol/h |
| Carbon Dioxide | | 0.00142999 | 0.000707253 |
| Hydrogen Sulfide | | 0.00287518 | 0.00112979 |
| H2O | | 0.00683482 | 0.00429522 |
| Nitrogen | | 2.32361E-05 | 8.69092E-05 |
| Methane | | 0.0350454 | 0.0768449 |
| Ethane | | 0.0834477 | 0.0539839 |
| Propane | | 0.0833834 | 0.0416733 |
| Isobutane | | 0.0101637 | 0.00451037 |
| n-Butane | | 0.0321391 | 0.0140519 |
| 2,2-Dimethylpropane | | 0.000141461 | 6.25256E-05 |
| Isopentane | | 0.00619443 | 0.00268771 |
| n-Pentane | | 0.00795569 | 0.00347989 |
| 2,2-Dimethylbutane | | 4.59768E-05 | 1.99821E-05 |
| Cyclopentane | | 0 | 0 |
| 2,3-Dimethylbutane | | 0.000390462 | 0.000170652 |
| 2-Methylpentane | | 0.00152145 | 0.000675335 |
| 3-Methylpentane | | 0.000761636 | 0.000336940 |
| n-Hexane | | 0.00198605 | 0.000870650 |
| Methylcyclopentane | | 0.00104700 | 0.000523280 |
| Benzene | | 0.000243147 | 9.84426E-05 |
| Cyclohexane | | 0.00126354 | 0.000632230 |
| 2-Methylhexane | | 0.000181650 | 9.14973E-05 |
| 3-Methylhexane | | 0.000255543 | 0.000126928 |
| 2,2,4-Trimethylpentane | | 0.000167032 | 8.36333E-05 |
| Heptane | | 0.000775015 | 0.000390206 |
| Methylcyclohexane | | 0.000918579 | 0.000453257 |
| Toluene | | 0.000208430 | 8.27304E-05 |
| Octane | | 0.000440951 | 0.000236175 |
| Ethylbenzene | | 3.06791E-05 | 1.24007E-05 |
| o-Xylene | | 3.04483E-05 | 1.24778E-05 |
| p-Xylene | | 7.65232E-05 | 3.00604E-05 |
| Nonane | | 9.62631E-05 | 5.49500E-05 |
| Decane | | 2.14249E-07 | 1.29961E-07 |
| C10+ Pinto | | 1.56181E-08 | 9.41788E-09 |

| Mass Fraction | % | % |
|---|---|---|
| Carbon Dioxide | 0.548723 | 0.456550 |
| Hydrogen Sulfide | 0.854374 | 0.564774 |
| H2O | 1.07359 | 1.13499 |
| Nitrogen | 0.00567545 | 0.0357107 |
| Methane | 4.90201 | 18.0823 |
| Ethane | 21.8779 | 23.8095 |
| Propane | 32.0588 | 26.9538 |
| Isobutane | 5.15069 | 3.84522 |
| n-Butane | 16.2873 | 11.9796 |
| 2,2-Dimethylpropane | 0.0889894 | 0.0661688 |
| Isopentane | 3.89675 | 2.84431 |
| n-Pentane | 5.00471 | 3.68266 |
| 2,2-Dimethylbutane | 0.0345457 | 0.0252575 |
| Cyclopentane | 0 | 0 |
| 2,3-Dimethylbutane | 0.293383 | 0.215705 |
| 2-Methylpentane | 1.14317 | 0.853628 |
| 3-Methylpentane | 0.572272 | 0.425895 |
| n-Hexane | 1.49227 | 1.10051 |
| Methylcyclopentane | 0.768287 | 0.645958 |
| Benzene | 0.165599 | 0.112789 |
| Cyclohexane | 0.927183 | 0.780449 |
| 2-Methylhexane | 0.158702 | 0.134478 |
| 3-Methylhexane | 0.223261 | 0.186552 |
| 2,2,4-Trimethylpentane | 0.166359 | 0.140127 |
| Heptane | 0.677109 | 0.573505 |
| Methylcyclohexane | 0.786391 | 0.652772 |
| Toluene | 0.167445 | 0.111808 |
| Octane | 0.439174 | 0.395708 |
| Ethylbenzene | 0.0283985 | 0.0193105 |
| o-Xylene | 0.0281849 | 0.0194306 |
| p-Xylene | 0.0708348 | 0.0468105 |
| Nonane | 0.107648 | 0.103373 |
| Decane | 0.000265791 | 0.000271224 |
| C10+ Pinto | 3.58142E-05 | 3.63309E-05 |
| **Mass Flow** | **lb/h** | **lb/h** |
| Carbon Dioxide | 0.0629333 | 0.0311258 |
| Hydrogen Sulfide | 0.0979887 | 0.0385042 |
| H2O | 0.123131 | 0.0773795 |
| Nitrogen | 0.000650921 | 0.00243462 |
| Methane | 0.562215 | 1.23278 |
| Ethane | 2.50919 | 1.62324 |
| Propane | 3.67684 | 1.83761 |
| Isobutane | 0.590735 | 0.262152 |
| n-Butane | 1.86799 | 0.816727 |
| 2,2-Dimethylpropane | 0.0102063 | 0.00451115 |
| Isopentane | 0.446921 | 0.193915 |
| n-Pentane | 0.573993 | 0.251070 |
| 2,2-Dimethylbutane | 0.00396207 | 0.00172196 |
| Cyclopentane | 0 | 0 |
| 2,3-Dimethylbutane | 0.0336482 | 0.0147060 |
| 2-Methylpentane | 0.131111 | 0.0581972 |
| 3-Methylpentane | 0.0656343 | 0.0290359 |
| n-Hexane | 0.171149 | 0.0750285 |
| Methylcyclopentane | 0.0881153 | 0.0440390 |
| Benzene | 0.0189927 | 0.00768953 |
| Cyclohexane | 0.106339 | 0.0532081 |
| 2-Methylhexane | 0.0182016 | 0.00916821 |
| 3-Methylhexane | 0.0256059 | 0.0127184 |
| 2,2,4-Trimethylpentane | 0.0190798 | 0.00955331 |
| Heptane | 0.0776580 | 0.0390994 |
| Methylcyclohexane | 0.0901917 | 0.0445036 |
| Toluene | 0.0192044 | 0.00762265 |
| Octane | 0.0503691 | 0.0269779 |
| Ethylbenzene | 0.00325705 | 0.00131652 |
| o-Xylene | 0.00323254 | 0.00132470 |
| p-Xylene | 0.00812409 | 0.00319136 |
| Nonane | 0.0123462 | 0.00704762 |
| Decane | 3.04838E-05 | 1.84910E-05 |
| C10+ Pinto | 4.10756E-06 | 2.47690E-06 |

| Process Streams | | Tank OH | VRT Gas |
|---|---|---|---|
| **Properties** | **Status:** | Solved | Solved |
| Phase: **Total** | **From Block:** | MIX-103 | VSSL-100 |
| | **To Block:** | -- | MIX-100 |
| **Property** | **Units** | | |
| Temperature | °F | 67.8179 | 80* |
| Pressure | psig | -1.43595 | 10* |
| Mole Fraction Vapor | % | 100 | 100 |
| Mole Fraction Light Liquid | % | 0 | 0 |
| Mole Fraction Heavy Liquid | % | 0 | 0 |
| Molecular Weight | lb/lbmol | 40.9500 | 32.7117 |
| Mass Density | lb/ft^3 | 0.0972150 | 0.141611 |
| Molar Flow | lbmol/h | 0.280075 | 0.208416 |
| Mass Flow | lb/h | 11.4691 | 6.81763 |
| Vapor Volumetric Flow | ft^3/h | 117.976 | 48.1432 |
| Liquid Volumetric Flow | gpm | 14.7087 | 6.00227 |
| Std Vapor Volumetric Flow | MMSCFD | 0.00255081 | 0.00189817 |
| Std Liquid Volumetric Flow | sgpm | 0.0474048 | 0.0313146 |
| Compressibility | | 0.986707 | 0.985006 |
| Specific Gravity | | 1.41390 | 1.12945 |
| API Gravity | | | |
| Enthalpy | Btu/h | -12842.6 | -8608.85 |
| Mass Enthalpy | Btu/lb | -1119.76 | -1262.73 |
| Mass Cp | Btu/(lb*°F) | 0.402520 | 0.429351 |
| Ideal Gas CpCv Ratio | | 1.13802 | 1.16649 |
| Dynamic Viscosity | cP | 0.00854564 | 0.00943504 |
| Kinematic Viscosity | cSt | 5.48770 | 4.15934 |
| Thermal Conductivity | Btu/(h*ft*°F) | 0.0108894 | 0.0135167 |
| Surface Tension | lbf/ft | | |
| Net Ideal Gas Heating Value | Btu/ft^3 | 2104.68 | 1707.05 |
| Net Liquid Heating Value | Btu/lb | 19347.6 | 19666.9 |
| Gross Ideal Gas Heating Value | Btu/ft^3 | 2290.03 | 1864.28 |
| Gross Liquid Heating Value | Btu/lb | 21065.9 | 21491.5 |

# User Specification Summary

**For Reported Objects**

| | | | |
|---|---|---|---|
| **Client Name:** | Vital Energy | **Job:** | |
| **Location:** | Wicked Ram | | |
| **Flowsheet:** | | | |

## Flowsheet : Flowsheet1

### PStream : Gas Inlet

| | | | |
|---|---|---|---|
| Project!Flowsheets!Flowsheet1!PStreams!Gas Inlet!Phases!Total!Properties!Temperature | | 94 | °F |
| Project!Flowsheets!Flowsheet1!PStreams!Gas Inlet!Phases!Total!Properties!Pressure | | 46 | psig |
| Project!Flowsheets!Flowsheet1!PStreams!Gas Inlet!Phases!Total!Composition!Mole Fraction | Carbon Dioxide | 0.394968403 | % |
| | Hydrogen Sulfide | 9.00E-03 | % |
| | Nitrogen | 0.252979762 | % |
| | Methane | 59.39824814 | % |
| | Ethane | 19.68742501 | % |
| | Propane | 11.95204384 | % |
| | Isobutane | 1.266898648 | % |
| | n-Butane | 3.879689625 | % |
| | 2,2-Dimethylpropane | 1.70E-02 | % |
| | Isopentane | 0.738940885 | % |
| | n-Pentane | 0.955923526 | % |
| | 2,2-Dimethylbutane | 5.00E-03 | % |
| | 2,3-Dimethylbutane | 7.00E-02 | % |
| | 2-Methylpentane | 0.165986721 | % |
| | 3-Methylpentane | 9.10E-02 | % |
| | n-Hexane | 0.231981441 | % |
| | Methylcyclopentane | 0.123990081 | % |
| | Benzene | 2.30E-02 | % |
| | Cyclohexane | 0.145988321 | % |
| | 2-Methylhexane | 2.60E-02 | % |
| | 3-Methylhexane | 3.30E-02 | % |
| | 2,2,4-Trimethylpentane | 2.80E-02 | % |
| | Heptane | 0.144988401 | % |
| | Methylcyclohexane | 0.116990641 | % |
| | Toluene | 2.40E-02 | % |
| | Octane | 0.131989441 | % |
| | Ethylbenzene | 3.00E-03 | % |
| | o-Xylene | 3.00E-03 | % |
| | p-Xylene | 1.00E-02 | % |
| | Nonane | 5.40E-02 | % |
| | Decane | 1.50E-02 | % |

### PStream : GB Gas

| | | | |
|---|---|---|---|
| Project!Flowsheets!Flowsheet1!PStreams!GB Gas!Phases!Total!Properties!Temperature | | 80 | °F |
| Project!Flowsheets!Flowsheet1!PStreams!GB Gas!Phases!Total!Properties!Pressure | | 0 | psig |

### PStream : GPU Gas

| | | | |
|---|---|---|---|
| Project!Flowsheets!Flowsheet1!PStreams!GPU Gas!Phases!Total!Properties!Temperature | | 100 | °F |
| Project!Flowsheets!Flowsheet1!PStreams!GPU Gas!Phases!Total!Properties!Pressure | | 46 | psig |

### PStream : HC Inlet

| | | | |
|---|---|---|---|
| Project!Flowsheets!Flowsheet1!PStreams!HC Inlet!Phases!Total!Properties!Temperature | | 94 | °F |
| Project!Flowsheets!Flowsheet1!PStreams!HC Inlet!Phases!Total!Properties!Pressure | | 46 | psig |
| Project!Flowsheets!Flowsheet1!PStreams!HC Inlet!Phases!Total!Composition!Mole Fraction | Carbon Dioxide | 1.80E-02 | % |
| | Hydrogen Sulfide | 3.90E-02 | % |
| | Nitrogen | 1.10E-02 | % |
| | Methane | 0.980627362 | % |
| | Ethane | 2.327115696 | % |
| | Propane | 5.059077551 | % |
| | Isobutane | 1.24952518 | % |
| | n-Butane | 5.654851157 | % |
| | 2,2-Dimethylpropane | 3.40E-02 | % |
| | Isopentane | 2.662988065 | % |
| | n-Pentane | 4.553269757 | % |
| | 2,2-Dimethylbutane | 4.30E-02 | % |
| | 2,3-Dimethylbutane | 0.411843499 | % |
| | 2-Methylpentane | 2.085207621 | % |
| | 3-Methylpentane | 1.139566965 | % |
| | n-Hexane | 3.788560347 | % |
| | Methylcyclopentane | 1.748335632 | % |
| | Benzene | 0.321877686 | % |
| | Cyclohexane | 2.70097363 | % |
| | 2-Methylhexane | 0.655750815 | % |
| | 3-Methylhexane | 1.014614447 | % |
| | 2,2,4-Trimethylpentane | 0.798696495 | % |
| | Heptane | 3.981487035 | % |
| | Methylcyclohexane | 4.595253804 | % |
| | Toluene | 0.866670665 | % |
| | Octane | 7.526140067 | % |
| | Ethylbenzene | 0.406845399 | % |
| | o-Xylene | 0.513804754 | % |
| | p-Xylene | 1.050600772 | % |
| | Nonane | 5.561886483 | % |
| | C10+ Pinto | 38.1994842 | % |

### PStream : VRT Gas

| | | | |
|---|---|---|---|
| Project!Flowsheets!Flowsheet1!PStreams!VRT Gas!Phases!Total!Properties!Temperature | | 80 | °F |
| Project!Flowsheets!Flowsheet1!PStreams!VRT Gas!Phases!Total!Properties!Pressure | | 10 | psig |

### PStream : Water Inlet

| | | | |
|---|---|---|---|
| Project!Flowsheets!Flowsheet1!PStreams!Water Inlet!Phases!Total!Properties!Temperature | | 94 | °F |
| Project!Flowsheets!Flowsheet1!PStreams!Water Inlet!Phases!Total!Properties!Pressure | | 46 | psig |
| Project!Flowsheets!Flowsheet1!PStreams!Water Inlet!Phases!Total!Composition!Mole Fraction | Hydrogen Sulfide | 5.00E-02 | % |
| | H2O | 99.95002499 | % |

August 19, 2024

**FESCO, Ltd.**
**1100 Fesco Ave. - Alice, Texas 78332**

**For:** Vital Energy Inc.
521 E. 2nd Street, Suite 1000
Tulsa, Oklahoma 74120

**Sample:** Pinto TB
Heater Treater
Spot Gas Sample @ 46 psig & 94 °F

Date Sampled: 07/28/2024 Job Number: 242886.001

**CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286**

| COMPONENT | MOL% | GPM |
|---|---|---|
| Hydrogen Sulfide* | 0.001 | |
| Nitrogen | 0.253 | |
| Carbon Dioxide | 0.395 | |
| Methane | 59.403 | |
| Ethane | 19.689 | 5.268 |
| Propane | 11.953 | 3.294 |
| Isobutane | 1.267 | 0.415 |
| n-Butane | 3.880 | 1.224 |
| 2-2 Dimethylpropane | 0.017 | 0.007 |
| Isopentane | 0.739 | 0.270 |
| n-Pentane | 0.956 | 0.347 |
| Hexanes | 0.564 | 0.232 |
| Heptanes Plus | 0.883 | 0.367 |
| Totals | 100.000 | 11.424 |

**Computed Real Characteristics Of Heptanes Plus:**

| | | |
|---|---|---|
| Specific Gravity | 3.427 | (Air=1) |
| Molecular Weight | 98.64 | |
| Gross Heating Value | 5196 | BTU/CF |

**Computed Real Characteristics Of Total Sample:**

| | | |
|---|---|---|
| Specific Gravity | 0.922 | (Air=1) |
| Compressibility (Z) | 0.9939 | |
| Molecular Weight | 26.55 | |
| Gross Heating Value | | |
| Dry Basis | 1563 | BTU/CF |
| Saturated Basis | 1537 | BTU/CF |

*Hydrogen Sulfide tested on location by: Stain Tube Method (GPA 2377)
Results: 0.629 Gr/100 CF, 10.0 PPMV or 0.001 Mol %

Base Conditions: 14.650 PSI & 60 Deg F

Sampled By: (16) Field
Analyst: LG
Processor: BC
Cylinder ID: T-2156

Certified: FESCO, Ltd. - Alice, Texas

Conan Pierce 361-661-7015

**CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286**
**TOTAL REPORT**

| COMPONENT | MOL % | GPM | WT % |
|---|---|---|---|
| Hydrogen Sulfide* | 0.001 | | 0.001 |
| Nitrogen | 0.253 | | 0.267 |
| Carbon Dioxide | 0.395 | | 0.655 |
| Methane | 59.403 | | 35.894 |
| Ethane | 19.689 | 5.268 | 22.299 |
| Propane | 11.953 | 3.294 | 19.852 |
| Isobutane | 1.267 | 0.415 | 2.774 |
| n-Butane | 3.880 | 1.224 | 8.494 |
| 2,2 Dimethylpropane | 0.017 | 0.007 | 0.046 |
| Isopentane | 0.739 | 0.270 | 2.008 |
| n-Pentane | 0.956 | 0.347 | 2.598 |
| 2,2 Dimethylbutane | 0.005 | 0.002 | 0.016 |
| Cyclopentane | 0.000 | 0.000 | 0.000 |
| 2,3 Dimethylbutane | 0.070 | 0.029 | 0.227 |
| 2 Methylpentane | 0.166 | 0.069 | 0.539 |
| 3 Methylpentane | 0.091 | 0.037 | 0.295 |
| n-Hexane | 0.232 | 0.095 | 0.753 |
| Methylcyclopentane | 0.124 | 0.044 | 0.393 |
| Benzene | 0.023 | 0.006 | 0.068 |
| Cyclohexane | 0.146 | 0.050 | 0.463 |
| 2-Methylhexane | 0.026 | 0.012 | 0.098 |
| 3-Methylhexane | 0.033 | 0.015 | 0.125 |
| 2,2,4 Trimethylpentane | 0.028 | 0.015 | 0.120 |
| Other C7's | 0.074 | 0.032 | 0.276 |
| n-Heptane | 0.071 | 0.033 | 0.268 |
| Methylcyclohexane | 0.117 | 0.047 | 0.433 |
| Toluene | 0.024 | 0.008 | 0.083 |
| Other C8's | 0.110 | 0.051 | 0.457 |
| n-Octane | 0.022 | 0.011 | 0.095 |
| Ethylbenzene | 0.003 | 0.001 | 0.012 |
| M & P Xylenes | 0.010 | 0.004 | 0.040 |
| O-Xylene | 0.003 | 0.001 | 0.012 |
| Other C9's | 0.047 | 0.024 | 0.223 |
| n-Nonane | 0.007 | 0.004 | 0.034 |
| Other C10's | 0.011 | 0.006 | 0.059 |
| n-Decane | 0.002 | 0.001 | 0.011 |
| Undecanes (11) | 0.002 | 0.001 | 0.012 |
| Totals | 100.000 | 11.424 | 100.000 |

| Computed Real Characteristics of Total Sample | | |
|---|---|---|
| Specific Gravity | 0.922 | (Air=1) |
| Compressibility (Z) | 0.9939 | |
| Molecular Weight | 26.55 | |
| Gross Heating Value | | |
| Dry Basis | 1563 | BTU/CF |
| Saturated Basis | 1537 | BTU/CF |

August 19, 2024

**FESCO, Ltd.**
**1100 Fesco Ave. - Alice, Texas 78332**

**Sample:** Pinto TB
Heater Treater
Spot Gas Sample @ 46 psig & 94 °F

Date Sampled: 07/28/2024 Job Number: 242886.001

**GLYCALC FORMAT**

| COMPONENT | MOL% | GPM | Wt % |
|---|---|---|---|
| Carbon Dioxide | 0.395 | | 0.655 |
| Hydrogen Sulfide | 0.001 | | 0.001 |
| Nitrogen | 0.253 | | 0.267 |
| Methane | 59.403 | | 35.894 |
| Ethane | 19.689 | 5.268 | 22.299 |
| Propane | 11.953 | 3.294 | 19.852 |
| Isobutane | 1.267 | 0.415 | 2.774 |
| n-Butane | 3.897 | 1.230 | 8.540 |
| Isopentane | 0.739 | 0.270 | 2.008 |
| n-Pentane | 0.956 | 0.347 | 2.598 |
| Cyclopentane | 0.000 | 0.000 | 0.000 |
| n-Hexane | 0.232 | 0.095 | 0.753 |
| Cyclohexane | 0.146 | 0.050 | 0.463 |
| Other C6's | 0.332 | 0.137 | 1.077 |
| Heptanes | 0.328 | 0.136 | 1.160 |
| Methylcyclohexane | 0.117 | 0.047 | 0.433 |
| 2,2,4 Trimethylpentane | 0.028 | 0.015 | 0.120 |
| Benzene | 0.023 | 0.006 | 0.068 |
| Toluene | 0.024 | 0.008 | 0.083 |
| Ethylbenzene | 0.003 | 0.001 | 0.012 |
| Xylenes | 0.013 | 0.005 | 0.052 |
| Octanes Plus | 0.201 | 0.099 | 0.891 |
| Totals | 100.000 | 11.424 | 100.000 |

**Real Characteristics Of Octanes Plus:**

| | | |
|---|---|---|
| Specific Gravity | 4.082 | (Air=1) |
| Molecular Weight | 117.51 | |
| Gross Heating Value | 6011 | BTU/CF |

**Real Characteristics Of Total Sample:**

| | | |
|---|---|---|
| Specific Gravity | 0.922 | (Air=1) |
| Compressibility (Z) | 0.9939 | |
| Molecular Weight | 26.55 | |
| Gross Heating Value | | |
| Dry Basis | 1563 | BTU/CF |
| Saturated Basis | 1537 | BTU/CF |

September 3, 2024

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

**For:** Vital Energy Inc.
521 E. 2nd Street, Suite 1000
Tulsa, Oklahoma 74120

**Sample:** Pinto TB
Heater Treater Hydrocarbon Liquid
Sampled @ 46 psig & 94 °F

Date Sampled: 07/28/2024 Job Number: 242886.002

**CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2186-M**

| COMPONENT | MOL % | LIQ VOL % | WT % |
|---|---|---|---|
| Nitrogen | 0.011 | 0.002 | 0.002 |
| Carbon Dioxide | 0.018 | 0.005 | 0.005 |
| Methane | 0.981 | 0.269 | 0.103 |
| Ethane | 2.328 | 1.007 | 0.459 |
| Propane | 5.061 | 2.255 | 1.462 |
| Isobutane | 1.250 | 0.661 | 0.476 |
| n-Butane | 5.657 | 2.885 | 2.154 |
| 2,2 Dimethylpropane | 0.034 | 0.021 | 0.016 |
| Isopentane | 2.664 | 1.576 | 1.259 |
| n-Pentane | 4.555 | 2.671 | 2.153 |
| 2,2 Dimethylbutane | 0.043 | 0.029 | 0.024 |
| Cyclopentane | 0.000 | 0.000 | 0.000 |
| 2,3 Dimethylbutane | 0.412 | 0.273 | 0.233 |
| 2 Methylpentane | 2.086 | 1.400 | 1.177 |
| 3 Methylpentane | 1.140 | 0.752 | 0.643 |
| n-Hexane | 3.790 | 2.521 | 2.139 |
| Heptanes Plus | 69.971 | 83.671 | 87.696 |
| Totals: | 100.000 | 100.000 | 100.000 |

**Characteristics of Heptanes Plus:**

| | | |
|---|---|---|
| Specific Gravity | 0.8202 | (Water=1) |
| °API Gravity | 41.02 | @ 60°F |
| Molecular Weight | 191.3 | |
| Vapor Volume | 13.60 | CF/Gal |
| Weight | 6.83 | Lbs/Gal |

**Characteristics of Total Sample:**

| | | |
|---|---|---|
| Specific Gravity | 0.7826 | (Water=1) |
| °API Gravity | 49.32 | @ 60°F |
| Molecular Weight | 152.7 | |
| Vapor Volume | 16.27 | CF/Gal |
| Weight | 6.52 | Lbs/Gal |

Base Conditions: 14.650 PSI & 60 °F

Certified: FESCO, Ltd. - Alice, Texas

Sampled By: (16) D. Field
Analyst: JL
Processor: ANBdjv
Cylinder ID: W-1356

Conan Pierce 361-661-7015

FESCO, Ltd. Job Number: 242886.002

**TANKS DATA INPUT REPORT - GPA 2186-M**

| COMPONENT | Mol % | LiqVol % | Wt % |
|---|---|---|---|
| Carbon Dioxide | 0.018 | 0.005 | 0.005 |
| Nitrogen | 0.011 | 0.002 | 0.002 |
| Methane | 0.981 | 0.269 | 0.103 |
| Ethane | 2.328 | 1.007 | 0.459 |
| Propane | 5.061 | 2.255 | 1.462 |
| Isobutane | 1.250 | 0.661 | 0.476 |
| n-Butane | 5.691 | 2.906 | 2.170 |
| Isopentane | 2.664 | 1.576 | 1.259 |
| n-Pentane | 4.555 | 2.671 | 2.153 |
| Other C-6's | 3.680 | 2.455 | 2.077 |
| Heptanes | 10.106 | 6.661 | 6.155 |
| Octanes | 12.127 | 8.904 | 8.444 |
| Nonanes | 5.564 | 4.860 | 4.620 |
| Decanes Plus | 38.214 | 60.728 | 65.820 |
| Benzene | 0.322 | 0.146 | 0.165 |
| Toluene | 0.867 | 0.470 | 0.523 |
| E-Benzene | 0.407 | 0.254 | 0.283 |
| Xylenes | 1.566 | 0.976 | 1.089 |
| n-Hexane | 3.790 | 2.521 | 2.139 |
| 2,2,4 Trimethylpentane | 0.799 | 0.672 | 0.598 |
| Totals: | 100.000 | 100.000 | 100.000 |

**Characteristics of Total Sample:**

| | | |
|---|---|---|
| Specific Gravity | 0.7826 | (Water=1) |
| °API Gravity | 49.32 | @ 60°F |
| Molecular Weight | 152.7 | |
| Vapor Volume | 16.27 | CF/Gal |
| Weight | 6.52 | Lbs/Gal |

**Characteristics of Decanes (C10) Plus:**

| | | |
|---|---|---|
| Specific Gravity | 0.8482 | (Water=1) |
| Molecular Weight | 263.0 | |

**Characteristics of Atmospheric Sample:**

| | | |
|---|---|---|
| °API Gravity | 46.07 | @ 60°F |
| Reid Vapor Pressure Equivalent (D-6377) | 10.59 | psi |

| QUALITY CONTROL CHECK | | | |
|---|---|---|---|
| | Sampling Conditions | Test Samples | |
| Cylinder Number | ------ | W-1356 | ------ |
| Pressure, PSIG | 46 | 46 | ------ |
| Probe Temperature, °F | 94 | 94 | ------ |

* Sample used for analysis

**TOTAL EXTENDED REPORT - GPA 2186-M**

| COMPONENT | Mol % | LiqVol % | Wt % |
|---|---|---|---|
| Nitrogen | 0.011 | 0.002 | 0.002 |
| Carbon Dioxide | 0.018 | 0.005 | 0.005 |
| Methane | 0.981 | 0.269 | 0.103 |
| Ethane | 2.328 | 1.007 | 0.459 |
| Propane | 5.061 | 2.255 | 1.462 |
| Isobutane | 1.250 | 0.661 | 0.476 |
| n-Butane | 5.657 | 2.885 | 2.154 |
| 2,2 Dimethylpropane | 0.034 | 0.021 | 0.016 |
| Isopentane | 2.664 | 1.576 | 1.259 |
| n-Pentane | 4.555 | 2.671 | 2.153 |
| 2,2 Dimethylbutane | 0.043 | 0.029 | 0.024 |
| Cyclopentane | 0.000 | 0.000 | 0.000 |
| 2,3 Dimethylbutane | 0.412 | 0.273 | 0.233 |
| 2 Methylpentane | 2.086 | 1.400 | 1.177 |
| 3 Methylpentane | 1.140 | 0.752 | 0.643 |
| n-Hexane | 3.790 | 2.521 | 2.139 |
| Methylcyclopentane | 1.749 | 1.001 | 0.964 |
| Benzene | 0.322 | 0.146 | 0.165 |
| Cyclohexane | 2.702 | 1.487 | 1.489 |
| 2-Methylhexane | 0.656 | 0.493 | 0.431 |
| 3-Methylhexane | 1.015 | 0.754 | 0.666 |
| 2,2,4 Trimethylpentane | 0.799 | 0.672 | 0.598 |
| Other C-7's | 1.549 | 1.108 | 1.006 |
| n-Heptane | 2.435 | 1.817 | 1.598 |
| Methylcyclohexane | 4.597 | 2.989 | 2.956 |
| Toluene | 0.867 | 0.470 | 0.523 |
| Other C-8's | 5.569 | 4.291 | 4.021 |
| n-Octane | 1.960 | 1.624 | 1.467 |
| E-Benzene | 0.407 | 0.254 | 0.283 |
| M & P Xylenes | 1.051 | 0.660 | 0.731 |
| O-Xylene | 0.514 | 0.316 | 0.358 |
| Other C-9's | 4.123 | 3.548 | 3.409 |
| n-Nonane | 1.441 | 1.312 | 1.210 |
| Other C-10's | 4.408 | 4.168 | 4.079 |
| n-decane | 0.938 | 0.932 | 0.874 |
| Undecanes(11) | 4.294 | 4.166 | 4.134 |
| Dodecanes(12) | 3.242 | 3.398 | 3.419 |
| Tridecanes(13) | 3.129 | 3.516 | 3.587 |
| Tetradecanes(14) | 2.576 | 3.101 | 3.206 |
| Pentadecanes(15) | 2.171 | 2.800 | 2.930 |
| Hexadecanes(16) | 1.694 | 2.334 | 2.463 |
| Heptadecanes(17) | 1.493 | 2.176 | 2.318 |
| Octadecanes(18) | 1.352 | 2.075 | 2.223 |
| Nonadecanes(19) | 1.209 | 1.932 | 2.083 |
| Eicosanes(20) | 0.978 | 1.625 | 1.762 |
| Heneicosanes(21) | 0.869 | 1.518 | 1.656 |
| Docosanes(22) | 0.766 | 1.395 | 1.530 |
| Tricosanes(23) | 0.675 | 1.274 | 1.406 |
| Tetracosanes(24) | 0.597 | 1.167 | 1.294 |
| Pentacosanes(25) | 0.540 | 1.096 | 1.220 |
| Hexacosanes(26) | 0.480 | 1.009 | 1.129 |
| Heptacosanes(27) | 0.452 | 0.985 | 1.106 |
| Octacosanes(28) | 0.404 | 0.911 | 1.026 |
| Nonacosanes(29) | 0.360 | 0.838 | 0.948 |
| Triacontanes(30) | 0.324 | 0.779 | 0.884 |
| Hentriacontanes Plus(31+) | 5.262 | 17.532 | 20.543 |
| Total | 100.000 | 100.000 | 100.000 |

August 13, 2024

**FESCO Ltd.**
**5000 W. Interstate 20 - Midland, Texas 79703**

For: Vital Energy Inc.
521 E. 2nd Street, Suite 1000
Tulsa, Oklahoma 74120

LABORATORY TEST RESULTS

Area **Old Henry**
Location: **Wicked Ram L49H RRC No. 51910**
Test : **H2S** Test Method: **GPA-2377**

| Date | Well Name | Lease ID | Gas PPM | Water PPM | Oil Tank PPM |
|---|---|---|---|---|---|
| 11/27/2023 | Wicked Ram L49H | 51910 | 90.00 | 530.00 | 390.00 |

FESCO Ltd. - Midland, Texas

Bryan McCollum 432-332-3211

# CALCULATION METHODOLOGY

***Oil and Gas Standard Permit Emission Units Description***

**Storage Tank(s)**

Oil and produced water are collected and stored prior to being transferred offsite via pipeline in three (3) 500-bbl oil storage tanks (TK 1-3), two (2) 500-bbl produced water storage tanks (TK-W 1-2), and one (1) 750-bbl gunbarrel (GB-1). As a conservative estimate, produced water tanks are considered to contain 1% oil. Oil tank emissions are calculated based on a maximum anticipated oil throughput using AP-42 Chapter 7 data and equations with separator flash vapors calculated using the ProMax process simulation (output enclosed) and a recent liquid analysis. Flash vapors from the gunbarrel (GB-1) and oil storage tanks (TK 1-3) are routed to the vapor destruction unit. Vapors from the produced water tanks are vented to the atmosphere.

**Flare(s)**

The one (1) vapor destruction unit and one (1) standard flare (FL-1) are designed and operated in accordance with 40 CFR §60.18.

**Fugitive Emissions**

Fugitive emissions (FUG) are estimated using a site-specific count and Oil and Gas Production factors from API.

**Planned Maintenance, Start-ups, Shutdowns (MSS)**

Planned maintenance, start-up and shutdown of facilities (MSS) emissions, which includes routine maintenance, start-up and shutdown of facilities, and temporary maintenance VOC emissions are estimated and are included in this registration.

**Pneumatic Controllers (PC-1)**

The pneumatic controllers (PC-1) are intermittent bleed and the emissions from the controllers are estimated using a site-specific count and emission factors from 40 CFR Part 98, Subpart W, Table W-1A.

***Non-Rule Air Quality Standard Permit for Oil and Gas Handling and Production Compliance Demonstration***

(a)(1) Reeves County is not located in a Barnett Shale county; therefore, registration under the non-ruled standard permit is voluntary.

(a)(2) Facility previously qualified for APD Certification No. 155058.

(b)(5) The project includes all facilities currently authorized plus facilities added to the facility under this registration.

(b)(6)(D) The project (boundaries of the registration) includes the Facility and emission sources as outlined in the attached plot plan.

(b)(8) Impacts analysis as specified in paragraph (k) of this standard permit has been completed and demonstrates compliance with applicable ambient air standards and effects screening levels.

(c)(2)(A) This project shall not exceed thresholds for a new 30 TAC §116.12 major source, or major modification under new source review requirements of the FCAA, Part C (Prevention of Significant Deterioration Review).

(c)(2)(B) This project will comply with all applicable requirements of 40 CFR §60, §61, and §63.

(c)(2)(C) This project will comply with all applicable requirements of 30 TAC Chapters 111-114.

(c)(3) Vital shall meet all applicable requirements in this standard permit, shall not misrepresent or fail to fully disclose all relevant facts in obtaining the permit; and shall not be indebted to the state for failure to make payments of penalties or taxes imposed by the statutes or rules within the commission's jurisdiction.

(c)(4)(A) All facilities (if applicable) previously permitted under APD-Cert (Permit No. 155058) were previously incorporated into this registration.

(c)(4)(B) All facilities shall meet all emission limits established by this standard permit and review in accordance with paragraph (b)(8).

(c)(4)(C) All facilities shall meet requirements of paragraphs (e), (i), and (j) for Best Management Practices and Minimum Requirements, Planned MSS, and associated Records, Sampling, and Monitoring of this standard permit.

(c)(4)(D) Facilities (if applicable) previously permitted under 30 TAC §116.620 that are changed in such a way as to increase the potential to emit, production processing capacity, or registered emissions must meet the requirements of (e) BACT. Otherwise, paragraph (e) (BACT) does not apply.

(d)(1) Only specific facilities and groups of facilities stated in this regulation are included in this project.

(e)(1-12) Vital will employ best management practices (BMP) for the existing facilities under the project and best available control technology (BACT), as applicable, for all new facilities added under this project. The following BMP and BACT requirements apply:

> (e)(1) All new equipment will be maintained in good working order and operated properly during facility operations.

(e)(2) All new equipment shall be operated at least 50 ft from any property line or receptor.

(e)(3)(D) Please refer to the attached Regulatory Applicability for all applicable requirements of 40 CFR §60 and 40 CFR §63.

(e)(6)(A) Fugitive component seals and gaskets shall be installed, checked, and properly maintained to prevent leaking. All components shall be physically inspected quarterly for leaks.

(e)(6)(B) Vital will comply with the leak detection and repair (LDAR) program as specified in Table 9 in paragraph (m).

(e)(6)(C) All components found leaking shall be repaired. All leaks not repaired immediately shall be tagged or noted in a log and repaired within 60 days after the leak is found. If shutdown required, the repair may be delayed until the next shutdown.

(e)(6)(D) Tank hatches, not designed to be completely sealed, shall remain closed (but not completely sealed in order to maintain safe design functionality) except for sampling, gauging, loading, unloading, or planned maintenance activities.

(e)(6)(E) New and reworked valves and piping connections shall be reasonably located such that they can be accessible for leak checking.

(f)(1) For all previous claims of this standard permit (or any previous version of this standard permit) existing authorized facilities are not required to meet the requirements of this standard permit until a renewal under the standard permit is submitted after December 31, 2015.

(f)(4)(A) and (B) Notification was submitted through e-Permits using the “APD OGS New Project Notification” and the $50 fee made through the e-Pay system.

(f)(5) This registration meets (f)(5) requirements and includes the $850 fee.

(g) This registration complies with 30 TAC §116.610 (except emission limitations of §116.610 (a)(1)), §116.611, §116.614 and §116.615 (except notification requirements).

(h)(1) Total maximum estimated annual emissions of any air contaminant does not exceed PSD major source or major modification applicable limits.

(h)(2) Emissions meet the limitations established in paragraph (k).

(h)(3) Maximum emissions (facilities previously registered under 30 TAC §116.620 and facilities added under this non-rule air quality standard permit) after any operator limitations or controls are less than those stated in the (h)(3) table.

(i)(1), (2), and (3) MSS emissions are included in this non-rule air quality standard permit registration and include planned MSS activities and emissions as outlined in (2) and (3).

(i)(4) Engine/compressor start-up emissions are included (if necessary) in MSS emissions as outlined above.

(j)(1) Sampling and demonstration of compliance include those requirements as outlined in Table 7, and include the following:

- Site specific analysis shall be performed within 90 days of initial start of operation.
- Those to include H2S and VOC GC analysis for gas streams
- Initial stack testing for any engine > 500 hp
- Periodic and biennial stack testing as required

(j)(2) Monitoring and records for demonstration of compliance include those requirements as outlined in Table 8, and include the following:

- Daily oil and produced water throughput
- Current and updated plot plan
- Copy of the registration and emission calculations and the plan and records for
- routine inspection, cleaning, repair and replacement
- Record of fugitive component count shall be maintained. A record of the date that
- each quarterly inspection was made, the date of any component found leaking, and
- the date of any planned shutdown shall be maintained.
- Records of minor changes and like-kind replacements
- Records of operational hours for all combustion devices and internal combustion
- engines.

(k) Impacts evaluations (as required and outlined in (k)) were performed for facilities previously registered under 30 TAC §116.620 and facilities added under this non-rule air quality standard permit. Compliance with state or federal ambient air standards for NO2, SO2, Benzene, and H2S is shown at the property line (See Impacts Summary). Compliance with hourly and annual ESLs for benzene is shown at the nearest receptor (See Impacts Summary). For any distance to receptor or property between increments on emissions impact Tables 2-5F, the shortest distance was used to get the Hourly (ug/m3)/(lb/hr).

(l) All facilities previously qualified under 30 TAC §116.620 are now subject to the non-rule air quality standard permit, except for exceptions of paragraph (e) (BACT) mentioned in (c)(4)(D).

(m) Non-rule air quality standard permit Tables 1-10 were used as required by this standard permit registration.

## FEDERAL REGULATORY APPLICABILITY

***New Source Performance Standards Applicability***

New Source Performance Standards (NSPS) contained in 40 CFR Part 60 regulate specific new, modified, or reconstructed sources of emissions. The following is an analysis of NSPS potentially applicable to the facility.

**Subpart OOOOa, Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution.** The emission sources affected by this subpart include well completions, pneumatic controllers, equipment leaks from natural gas processing plants, sweetening units at natural gas processing plants, reciprocating compressors, centrifugal compressors and storage vessels which are constructed, modified or reconstructed after September 18, 2015, and before December 6, 2022.

Pneumatic controllers affected by the NSPS OOOOa include continuous bleed, natural gas driven pneumatic controllers with a natural gas bleed rate greater than 6 SCFH that commenced construction, modification or reconstruction after September 18, 2015, and before December 6, 2022. There are no continuous bleed natural gas-driven pneumatic controller affected facilities at this site. Therefore, the subpart does not apply (40 CFR §60.5365a(d)).

Standards also apply to storage vessels constructed, modified or reconstructed after September 18, 2015, and before December 6, 2022, with VOC emissions equal to or greater than 6 tons per year (TPY). The storage tanks have a controlled potential to emit less than 6 TPY of VOC emissions and were constructed after September 18, 2015, and before December 6, 2022; therefore, they are not subject to this subpart. Fugitives at the facility are subject to this subpart. Vital will comply with all applicable requirements.

**Subpart OOOOb, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After December 6, 2022.** If there is a standard or other requirement, then the facility is an “affected facility.” Currently there are standards for: tanks, fugitives, and pneumatic pumps.

Facility has not been modified for the purposes of this subpart since December 6, 2022; therefore, this subpart does not apply.

***National Emissions Standards for Hazardous Air Pollutants Applicability***

The project is not subject to current National Emission Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR Part 61.