October 5th, 2023

Jefferson County Department of Health

ATTN: Jonathan Lovell
Air and Radiation Protection Division
1400 Sixth Avenue South
Birmingham, Alabama 35233

RE: Keyrock Energy, LLC
 Shoal Creek Mine Flare Site
 Air Permit Application

Dear Mr. Lovell,

Enclosed please find the Air Permit Application for the Keyrock Energy, LLC – Shoal Creek Mine Flare Site located in Jefferson County, Alabama. This application submittal is purposed to obtain an air permit for the Shoal Creek Mine Well Sites B-2 and C-3 by demonstrating that the proposed project meets the requirements for a new facility air permit authorized by the Jefferson County Board of Health – Air Pollution Control Rules and Regulations under Alabama Air Pollution Control Act of 1971 (JCBH). The attached forms and supporting documentation list the equipment that will be installed and the operating parameters and emissions calculations required.

Keyrock Energy intends to install two (2) enclosed incineration devices for health and safety purposes on the specified post-mine degasification sites as outlined in the attached forms. The enclosed incineration devices will destruct the methane (CH₄) that is received from the well sites. The CH₄ will be combusted by a controlled flaring system, emitting CO rather than CH₄. Greenhouse gas (GHG) emissions relevant to combustion sources include carbon dioxide (CO₂), CH₄, and nitrous oxide (N₂O). GHGs have different lifetimes in the atmosphere and therefore have different global warming potentials (GWP). The GWP of CH₄ is approximately 21 times that of CO over a 100-year span. Therefore, the installation of the proposed incineration devices would result in emissions of a significantly less harmful GWP gas.
The flare sites will be owned and operated by Keyrock Energy, LLC but will be located on the Shoal Creek Mine site. Based on availability Keyrock Energy, LLC will only be using one of the two potential flare types listed below. Both flare types are very similar in operations and emissions.

John Zink 6X30/50 and Zeeco VCU-6-35-AD

I would like to thank you for your cooperation and considerations of these matters. If you should have any questions, please contact me at (205) 221-0686.

Sincerely,

McGehee Engineering Corp.

Brady Pugh, P.E.
Engineering Manager

Appendix:

(A) Emissions Calculations
(B) Equipment Specifications
(C) Engine Certificate of Conformity
(D) Process Schematic
Permit Application for Facility Identification

Does this application contain Confidential Business Information (CBI)?
☐ Yes    ☐ No

Facility Information

1. Name of Facility: Shool Creek Mine Flare Site
   Street Address: N/A: no physical address. Sites are off access roads off Lock 17 Road and Nancy Ann Bend Road.
   City: N/A
   State: Alabama
   Zip: 35475

Mailing Address: 207 E. Main Street, Suite 2-D
   City: Johnson City
   State: Tennessee
   Zip: 37604
   Facility Phone Number: N/A

Owner Information

2. Name: Keyrock Energy, LLC
   Mailing Address: 207 E. Main Street, Suite 2-D
   City: Johnson City
   State: Tennessee
   Zip: 37604
   Telephone Number: 423-720-0025
   Email Address: Compliance@Keyrockenergy.com

Responsible Official Information

3. Name: Mark Allaman
   Title: Managing Director
   Mailing Address: 207 E. Main Street, Suite 2-D
   City: Johnson City
   State: Tennessee
   Zip: 37604
   Telephone Number: 814-470-3185
   Email Address: Compliance@Keyrockenergy.com

Plant Contact Information

4. Name: Joe Lane
   Title: Compliance Manager
   Telephone Number: 304-989-5533
   Email Address: Compliance@Keyrockenergy.com

Billing Address

5. Attention to: Marcia Barnes
   Mailing Address: 207 E. Main Street, Suite 2-D
   City: Johnson City
   State: Tennessee
   Zip: 37604
6. Please check the type of permit application being submitted. Check all that apply.

☐ Existing Source - Current Permit Number (if applicable): __________________________

☐ Initial Application

☐ Major Source    ☐ Minor Source

☐ Synthetic Minor Source    ☐ Partial Application

☐ Permit Renewal

☐ Modification

☐ Major Modification    ☐ Minor Modification

☑ New Source (To Be Constructed)

☐ Change of:

☐ Facility Name

☐ Ownership

☐ Location

☐ Early reductions demonstrations under Section 112(i)(5) of the Act

☐ Other (specify) _______ N/A

☑ If application is being made to construct or modify, please provide the name, address, and telephone number of the installer or contractor.

Keyrock Energy, LLC  207 E. Main Street, Suite 2-D, Johnson City TN  (423) 720-0025

________________________________________________________

Date Construction/Modification to Begin  October 1, 2023  To Be Completed  __________________________

7. Indicate the number of each form contained in your facility’s application package. If a form does not apply to your operation indicate “N/A” in the space provided.

2  JCDH-APCP-104 – Indirect Heating or Fuel Burning Unit

N/A  JCDH-APCP-105 – Manufacturing or Processing Operation

N/A  JCDH-APCP-106 – Waste Disposal

1  JCDH-APCP-107 – Stationary Internal Combustion Engines

N/A  JCDH-APCP-108 – Loading, Storage, & Dispensing of Organic Compounds

N/A  JCDH-APCP-109 – Volatile Organic Compound (VOC) Surface Coating Emission Sources

2  JCDH-APCP-110 – Air Pollution Control Device

N/A  JCDH-APCP-111 – Coal Preparation Facility

N/A  JCDH-APCP-112 – Solvent Metal Cleaning

N/A  JCDH-APCP-113 – Continuous Emission Monitoring System (CEMS)

N/A  JCDH-APCP-114 – Compliance Schedule
8. Describe the general nature of the business and list the appropriate Standard Industrial Classification (SIC) Codes:

<table>
<thead>
<tr>
<th>SIC</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>Services, not elsewhere classified</td>
</tr>
</tbody>
</table>

SECONDARY 

TERTIARY 

9. Please provide the emission rate for each pollutant and identify the emissions sources by Standard Classification Code (SCC) Numbers. In addition, list each pollutant's potential emissions and indicate if the potential to emit is greater than the major source thresholds. For Hazardous Air Pollutants (HAPs), please include each pollutant's Chemical Abstract (CAS) Number.

<table>
<thead>
<tr>
<th>REGULATED POLLUTANT (CAS# FOR HAPS)</th>
<th>PROCESS &amp; SCC NUMBER</th>
<th>TONS/YEAR (POTENTIAL)</th>
<th>MAJOR SOURCE (YES/NO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>(FLARES) 2-02-002-52</td>
<td>21.9</td>
<td>NO</td>
</tr>
<tr>
<td>NOx</td>
<td>(FLARES) 2-02-002-52</td>
<td>13.2</td>
<td>NO</td>
</tr>
<tr>
<td>CO</td>
<td>(ENGINES) 2-02-002-52</td>
<td>0.465</td>
<td>NO</td>
</tr>
<tr>
<td>NOx + VOC</td>
<td>(ENGINES) 2-02-002-52</td>
<td>0.115</td>
<td>NO</td>
</tr>
<tr>
<td>HAPs</td>
<td>(ENGINES) 2-02-002-52</td>
<td>&lt;0.01</td>
<td>NO</td>
</tr>
</tbody>
</table>
10. Indicate the compliance status for each program below that you are subject to for each emission unit or source at your facility and the method used to determine compliance. Also cite the applicable regulations.

Emission Unit or Source (describe): 

<table>
<thead>
<tr>
<th>PROGRAM REQUIREMENT</th>
<th>COMPLIANCE STATUS</th>
<th>APPLICABLE REGULATIONS AND METHOD USED TO DETERMINE COMPLIANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSD (TITLE I PART C)</td>
<td>Yes</td>
<td>The proposed project is complying with the program requirement with this application submittal.</td>
</tr>
<tr>
<td>NON-ATTAINMENT NSR (TITLE I PART D)</td>
<td>N/A</td>
<td>Not a major source.</td>
</tr>
<tr>
<td>NSPS (40 CFR 60)</td>
<td>N/A</td>
<td>The sources that are controlled by the flare are not NSPS sources. Therefore, this program requirement does not apply.</td>
</tr>
<tr>
<td>NESHAP (40 CFR 61)</td>
<td>JJJJ ZZZZ</td>
<td>The submittal of this application and the purchase of engines built to meet the program requirements adhere to this program.</td>
</tr>
<tr>
<td>NESHAP (40 CFR 63)</td>
<td>N/A</td>
<td>Not a listed category or source of hazardous air pollutants.</td>
</tr>
<tr>
<td>ACCIDENTAL RELEASE (112(i), 40 CFR 68)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TITLE I (PART B-OZONE PROTECTION)</td>
<td>N/A</td>
<td>Not a Major Source for any regulated pollutant.</td>
</tr>
<tr>
<td>TITLE IV (ACID RAIN)*</td>
<td>N/A</td>
<td>Not a Major Source for any regulated pollutant.</td>
</tr>
<tr>
<td>ENHANCED MONITORING (40 CFR 51, 52, 60, 61, 63, &amp; 64)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TITLE VI (STRATOSPHERIC OZONE)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>SIP (JCBH RULES &amp; REGULATIONS)</td>
<td>Yes</td>
<td>See Appendix A for specific compliance calculations.</td>
</tr>
<tr>
<td>OTHER (SPECIFY):</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Sources subject to Title IV must complete and submit Nationally Standardized Application Forms.
11. List all insignificant activities. Please state the basis for listing these activities such as below the insignificant activity thresholds or on the list of insignificant activities. The list of insignificant activities is contained in Attachment 5. Supporting documentation should be included.

*Note: Sources subject to NSPS and/or NESHAP cannot be considered insignificant for permitting purposes even if the source is listed in Attachment 5.*

<table>
<thead>
<tr>
<th>INSIGNIFICANT ACTIVITY</th>
<th>BASIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
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<tr>
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</tbody>
</table>
12. List and discuss any exemption from the applicable requirements your facility is claiming:
   a. N/A
   b. 
   c. 
   d. 
   e. 
   f. 
   g. 
   h. 

13. List the supporting documentation your facility is including as a part of this application. All supporting engineering calculations must be included.
   a. Appendix A - Emissions Calculations
   b. Appendix B - Equipment Specifications
   c. Appendix C - Engine Certificate of Conformity
   d. Appendix D - Process Schematic
   e. 
   f. 
   g. 
   h. 

14. Attach a facility plot plan including building dimensions & fence locations. Stack data, including latitude, longitude, grade elevation (in feet above mean sea level), stack height and orientation, and flow barriers should be provided.

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.

I also certify that the source will continue to comply with applicable requirements for which it is in compliance, and that the source will, in a timely manner, meet all applicable requirements that will become effective during the permit term and submit a detailed schedule, if needed, for meeting the requirements.

Signature of Responsible Official  [Signature]  Date  4-26-2024
# Permit Application for Indirect Heating or Fuel Burning Unit

Does this application contain Confidential Business Information (CBI)?
- [ ] Yes  [ ] No

1. Name of Facility: Shoal Creek Mine Flare Site B-2

   Existing JCDH Air Permit Number (if applicable): N/A

2. Equipment Information:
   - **Type of Equipment**: Enclosed Incinerator
   - **Name of Manufacturer**: John Zink Company, LLC or Zeeco
   - **Model Number**: FBF ZTOF060X30/50 SP or VCU-6-35-AD
   - **Rated Capacity-Input (BTU/hr)**: 30,000,000 or 25,000,000
   - **Rated Efficiency (%)**: 99% or 99.5%
   - **Emission Unit No. on Current Permit (if applicable)**: N/A
   - **Standard Classification Code (SCC) Nos.**: 2-02-002-52
   - **Date Manufactured**: 04/2020 or 09/2023
   - **Date of Construction/Installation**: TBD
   - **Date of Reconstruction**: N/A
   - **Date of Modification**: N/A

3. Types and Quantity of Fuels Used:

   **Primary**
   - **Coal (Tons/yr)**: N/A
   - **BTU Value (BTU/lb as received)**: N/A
   - **Weight Percent Sulfur**: N/A
   - **Weight Percent Ash**: N/A
   - **Fuel Oil (Gal/yr)**: N/A
   - **Grade No.**: N/A
   - **Weight Percent Sulfur**: N/A
   - **BTU Value**: N/A
   - **Natural Gas (Million ft³/yr)**: N/A
   - **L.P. Gas (Gal/yr)**: N/A
   - **Other (Specify)**: Gob Well Gas (CM Methane)
Standby

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal (Tons/yr)</td>
<td>N/A</td>
</tr>
<tr>
<td>BTU Value (BTU/lb as received)</td>
<td>N/A</td>
</tr>
<tr>
<td>Weight Percent Sulfur</td>
<td>N/A</td>
</tr>
<tr>
<td>Weight Percent Ash</td>
<td>N/A</td>
</tr>
<tr>
<td>Fuel Oil (Gal/yr)</td>
<td>N/A</td>
</tr>
<tr>
<td>Grade No.</td>
<td>N/A</td>
</tr>
<tr>
<td>Weight Percent Sulfur</td>
<td>N/A</td>
</tr>
<tr>
<td>BTU Value</td>
<td>N/A</td>
</tr>
<tr>
<td>Natural Gas (Million ft³/yr)</td>
<td>N/A</td>
</tr>
<tr>
<td>L.P. Gas (Gal/yr)</td>
<td>N/A</td>
</tr>
<tr>
<td>Other (Specify)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

4. Purpose (if multipurpose, provide percentage for each category):

- Process Heat
- Space Heat
- Steam
- Hot Water
- Power Generation
- Other (specify) Flare Methane Gas

5. Normal operating schedule of unit:

- Hours per Day 24
- Days per Week 7
- Weeks per Year 52

6. Stack Data:

- Base Elevation (feet) 410
- Gas Temperature at Exit (°F) N/A
- Inside Diameter (or equivalent diameter at Exit (feet) 6ft

Stack Characteristics:

- Vertical ☑ Yes ☐ No
- Horizontal ☐ Yes ☑ No
- Hooded ☐ Yes ☑ No

Volume of Gas Discharged (ACFM) N/A

Gas Velocity (feet/sec) N/A

Are sampling ports available? ☐ Yes ☑ No

If yes, describe: N/A
7. Is this unit used in the production of electrical power or steam? □ Yes  ☑ No

If yes, number of steam generators _______________ N/A

Maximum Steam Capacity (lb/hr) N/A

Enthalpy (h) of Steam (BTU/lb) N/A

Steam Temperature (°F) N/A

Steam Pressure (psig) N/A

8. Is a control device installed on this emission source?

□ Yes  ☑ No  If Yes, form JCDH-APCP-110 must be completed.

9. Is this unit in compliance with all applicable Air Pollution Rules and Regulations?

☑ Yes  □ No  If No, form JCDH-APCP-114 must be completed.

10. Please list the actual and allowable emission rates for all regulated air pollutants. Calculations and references documenting the emission rates must be provided. Please include the Chemical Abstract System (CAS) number for all Hazardous Air Pollutants (HAPs).

<table>
<thead>
<tr>
<th>REGULATED POLLUTANT</th>
<th>ACTUAL (LB/HR)</th>
<th>ACTUAL (TON/YR)</th>
<th>ALLOWABLE (LB/HR)</th>
<th>ALLOWABLE (TON/YR)</th>
<th>APPLICABLE REGULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOx</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zink Flare NOx</td>
<td>2.402</td>
<td>10.5</td>
<td></td>
<td></td>
<td>NSPS</td>
</tr>
<tr>
<td>Zink Flare CO</td>
<td>6.006</td>
<td>26.3</td>
<td></td>
<td></td>
<td>NSPS</td>
</tr>
<tr>
<td>Zeeco Flare NOx</td>
<td>1.996</td>
<td>8.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zeeco Flare CO</td>
<td>4.990</td>
<td>21.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Supporting documentation should be submitted if any of the following apply to this unit:
   a. Monitoring devices are used to measure the operation of this unit.
   b. Special operational or physical restrictions are being requested as a part of this application.
   c. Performance tests or emission monitors are being used to demonstrate compliance.

   Note: If a CEMS is used, form JCDH-APCP-113 must be completed.

Name of person preparing application ________________________________  Brady Pugh

Title ___________________________  Consultant  Company  McGehee Engineering Corp.

Signature ______________________  _______________________  Date  August 7, 2023
Permit Application for Indirect Heating or Fuel Burning Unit

Does this application contain Confidential Business Information (CBI)?
☐ Yes       ☐ No

1. Name of Facility ___________________________ Shoal Creek Mine Flare Site C-3
Existing JCDH Air Permit Number (if applicable) ___________________________ N/A

2. Equipment Information:
Type of Equipment ___________________________ Enclosed Incinerator
Name of Manufacturer ___________________________ John Zink Company, LLC or Zeeco
Model Number ___________________________ FBF ZTOF060X30/50 SP or VCU-6-35-AD
Rated Capacity-Input (BTU/hr) ___________________________ 30,000,000 or 25,000,000
Rated Efficiency (%) ___________________________ 99% or 99.5%
Emission Unit No. on Current Permit (if applicable) ___________________________ N/A
Standard Classification Code (SCC) Nos. ___________________________ 2-02-002-52
Date Manufactured ___________________________ 04/2020 or 09/2023
Date of Construction/Installation ___________________________ TBD
Date of Reconstruction ___________________________ N/A
Date of Modification ___________________________ N/A

3. Types and Quantity of Fuels Used:
   Primary
Coal (Tons/yr) ___________________________ N/A
   BTU Value (BTU/lb as received) ___________________________ N/A
   Weight Percent Sulfur ___________________________ N/A
   Weight Percent Ash ___________________________ N/A
Fuel Oil (Gal/yr) ___________________________ N/A
   Grade No. ___________________________ N/A
   Weight Percent Sulfur ___________________________ N/A
   BTU Value ___________________________ N/A
Natural Gas (Million ft³/yr) ___________________________ N/A
L.P. Gas (Gal/yr) ___________________________ N/A
Other (Specify) ___________________________ Gob Well Gas (CM Methane)
Standby

Coal (Tons/yr) _______________________________ N/A

BTU Value (BTU/lb as received) _______________________________ N/A

Weight Percent Sulfur _______________________________ N/A

Weight Percent Ash _______________________________ N/A

Fuel Oil (Gal/yr) _______________________________ N/A

Grade No. _______________________________ N/A

Weight Percent Sulfur _______________________________ N/A

BTU Value _______________________________ N/A

Natural Gas (Million ft³/yr) _______________________________ N/A

L.P. Gas (Gal/yr) _______________________________ N/A

Other (Specify) _______________________________ N/A

4. Purpose (if multipurpose, provide percentage for each category):

_____ Process Heat _____ Space Heat _____ Steam _____ Hot Water

_____ Power Generation 100% Other (specify) ______ Flare CM Methane Gas

5. Normal operating schedule of unit:

Hours per Day 24 Days per Week 7 Weeks per Year 52

6. Stack Data:

Base Elevation (feet) 603

Gas Temperature at Exit (°F) N/A

Inside Diameter (or equivalent diameter) at Exit (feet) 6ft

Stack Characteristics:

Vertical ☑ Yes ☐ No Horizontal ☐ Yes ☑ No Hooded ☐ Yes ☑ No

Volume of Gas Discharged (ACFM) N/A

Gas Velocity (feet/sec) N/A

Are sampling ports available? ☐ Yes ☑ No

If yes, describe: N/A

______________________________

______________________________

______________________________

JCDH-APCP-104-06/18  Page 2 of 3
7. Is this unit used in the production of electrical power or steam?  ☐ Yes  ☑ No

   If yes, number of steam generators  N/A
   Maximum Steam Capacity (lb/hr)  N/A
   Enthalpy (h) of Steam (BTU/lb)  N/A
   Steam Temperature (°F)  N/A
   Steam Pressure (psig)  N/A

8. Is a control device installed on this emission source?
   ☐ Yes  ☑ No  If Yes, form JCDH-APCP-110 must be completed.

9. Is this unit in compliance with all applicable Air Pollution Rules and Regulations?
   ☑ Yes  ☐ No  If No, form JCDH-APCP-114 must be completed.

10. Please list the actual and allowable emission rates for all regulated air pollutants. Calculations and references documenting the emission rates must be provided. Please include the Chemical Abstract System (CAS) number for all Hazardous Air Pollutants (HAPs).

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<tr>
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<td>N/A</td>
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   b. Special operational or physical restrictions are being requested as a part of this application.
   c. Performance tests or emission monitors are being used to demonstrate compliance.

   Note: If a CEMS is used, form JCDH-APCP-113 must be completed.

Name of person preparing application _________________________________ Brady Pugh
Title _________________________________ Consultant
Company _________________________________ McGehee Engineering Corp.
Signature _________________________________
Date _________________________________ August 7, 2023
NAME OF FIRM OR ORGANIZATION: Keyrock Energy, LLC

PLANT LOCATION: Farwell Site B-2 and C-3

MANUFACTURER'S NAME: Industrial Irrigation Services, Inc.

MODEL NUMBER: II-B6580574 RATED HORSEPOWER: 165

DATE INSTALLED: TBD TYPE OF ENGINE: Reciprocating

TYPE OF FUEL USED
PRIMARY: LPG Gas STANDBY: Propane

STACK PARAMETERS
HEIGHT: N/A DIAMETER @ EXIT: N/A
TEMPERATURE: N/A VELOCITY: N/A

EMISSIONS EXPECTED (TONS/YEAR)
PARTICULATIES: N/A CARBON MONOXIDE: 0.468
NITROGEN OXIDES: N/A SULFUR DIOXIDE: N/A
NOx + VOC'S: 0.116 HAP'S < 0.01 (SPECIFY W/CAS#)

BASIS FOR CALCULATIONS: Manufacturer Data

SCC CODE 2-02-002-52

SCHEDULE OF OPERATION
HOURS PER DAY: 24 WEEKS PER YEAR: 52
DAYS PER WEEK: 7 PEAK SEASON: N/A

NAME OF PERSON PREPARING APPLICATION: Brody Pursh
TITLE: Consultant DATE: 08-07-2023
PHONE NUMBER: 205-221-0686 SIGNATURE: [signature]

APCP-107
JEFFERSON COUNTY DEPARTMENT OF HEALTH
BUREAU OF ENVIRONMENTAL HEALTH
AIR POLLUTION CONTROL PROGRAM

PERMIT APPLICATION FOR
AIR POLLUTION CONTROL DEVICE

1. Name of Facility: Shoal Creek Mine Flare Site (B-2)

2. Equipment Information. Please complete a separate application for each control device at your facility.

[ ] Settling Chamber  [ ] ESP
[ ] Afterburner  [ ] Baghouse
[ ] Cyclone  [ ] Multiclone
[ ] Absorber  [ ] Adsorber
[X] Incinerator  [ ] Wet Scrubber
[ ] Stage I Vapor Balance (specify)
[ ] Other (specify)

3. Equipment Information

Name of Manufacturer: John Zink or Zeeco

Model Number: FBF ZTOF060X30/50 SP or VCU-6-35-AD

4. State the emission source or process this equipment controls.

_Incineration of fugitive mine methane emissions__________________________

Existing JCBH Air Permit No.: N/A

5. Equipment, Pollutant, and Emissions Data

Pollutants Removed or Destroyed. Please include the Chemical Abstract System (CAS) number for Hazardous Air Pollutants in the following spaces:

CO  NOx

Mass Emission Rate (Lb/hr)

Applicable Regulation(s) __________________________

Design Specification.  4.99/6.006  1.996/2.402

Manufacturer's Guarantee __________________________

Allowed by Regulation __________________________

Uncontrolled (lb/hr) __________________________
Exit Concentration (Grains/SCF)

Design Specification
Manufacturer's Guarantee

Removal Efficiency (%)
Design Specification
Manufacturer's Guarantee

6. Gas Conditions

<table>
<thead>
<tr>
<th>INLET</th>
<th>INTERMEDIATE LOCATIONS</th>
<th>OUTLET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume SCFM @ 68°F, 29.92&quot; HG</td>
<td>550/458 SCFM</td>
<td></td>
</tr>
<tr>
<td>ACFM</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Temperature (°F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Velocity (Ft/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Moisture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Drop (Inches Water)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Stack Dimensions

Height Above Grade (feet) | 30/50 ft or 35 ft

Diameter or equivalent diameter at Exit (feet) | 6ft

Coordinates North | 3703869.30
East | 473804.95

8. Draw a flow diagram which includes gas exit from process, each control device, location of by-pass, fan or blower, each emission point, exits for collected pollutants, and location of sampling ports.

9. Enclosed are:
   [ ] Blueprints
   [ ] Particle Size Distribution Report
   [X] Manufacturer's Literature
   [ ] Size-Efficiency Curves
   [ ] Emissions Test Of Existing Installation
   [ ] Fan Curves
   [ ] Other
10. Please provide a sketch of the device and how it is connected to the emission source.

11. List below the important operating parameters for the device. (For example: air/cloth ratio and fabric type, weight, and weave for baghouse; throat velocity and water use rate for a Venturi Scrubber; etc.)

N/A

12. By-Pass (If Any) Is To Be Used When: N/A
13. Disposal Of Collected Air Pollutants: N/A

<table>
<thead>
<tr>
<th>Solid Waste</th>
<th>Liquid Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td></td>
</tr>
<tr>
<td>Composition</td>
<td></td>
</tr>
<tr>
<td>Is Waste Hazardous</td>
<td></td>
</tr>
<tr>
<td>Method Of Disposal</td>
<td></td>
</tr>
<tr>
<td>Final Destination</td>
<td></td>
</tr>
</tbody>
</table>

If Collected Air Pollutants Are Recycled, Describe:

14. Supporting documentation should be submitted if any of the following apply to this unit.

A. Monitoring devices are used to measure this source's operation

B. Special operation or physical restrictions are being requested as a part of this application.

C. Performance tests or emission monitors are being used to demonstrate compliance. If a CEM is used, form APCP-113 must be completed.

D. Recordkeeping or reporting requirements applicable to this emission source.

E. Liquid waste from paints and solvents are collected for proper disposal. Include a description of the liquid waste including the density and VOC content. The quantity of liquid waste in gallons per year should be provided.

Name Or Person Preparing Application: Brady Pugh

Position Title: Consultant
Company: McGehee Engineering Corp.

Signature: [Signature]
Date: 8/18/2023
JEFFERSON COUNTY DEPARTMENT OF HEALTH
BUREAU OF ENVIRONMENTAL HEALTH
AIR POLLUTION CONTROL PROGRAM

PERMIT APPLICATION FOR
AIR POLLUTION CONTROL DEVICE

[ ] [ ] [ ] [ ] [ ] [ ] [ ]
Do not write in this space

1. Name of Facility: Shoal Creek Mine Flare Site C-3)

2. Equipment Information. Please complete a separate application for each control device at your facility.

[ ] Settling Chamber  [ ] ESP
[ ] Afterburner  [ ] Baghouse
[ ] Cyclone  [ ] Multicone
[ ] Absorber  [ ] Adsorber
[ ] Incinerator  [ ] Wet Scrubber
[ ] Stage I Vapor Balance (specify)
[ ] Other (specify)

3. Equipment Information

Name of Manufacturer: John Zink or Zeeco
Model Number: FBF ZTOF060X30/50 SP or VCU-6-35-AD

4. State the emission source or process this equipment controls.

_Incineration of fugitive mine methane emissions___________

Existing JCBH Air Permit No.: N/A

5. Equipment, Pollutant, and Emissions Data

Pollutants Removed or Destroyed. Please include the Chemical Abstract System (CAS) number for Hazardous Air Pollutants in the following spaces:

Mass Emission Rate (Lb/hr)

Applicable Regulation(s) _______ _______

Design Specification. 4.99/6.006 1.996/2.402

Manufacturer's Guarantee _______ _______

Allowed by Regulation _______ _______

Uncontrolled (lb/hr) _______ _______
Exit Concentration (Grains/SCF)

Design Specification

Manufacture's Guarantee

Removal Efficiency (%)

Design Specification

Manufacturer's Guarantee

6. Gas Conditions

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</tr>
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<td>ACFM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature (°F)</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Velocity (Ft/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Moisture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Drop (Inches Water)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Stack Dimensions

Height Above Grade (feet) | 30/50 ft or 35 ft

Diameter or equivalent diameter at Exit (feet) | 6 ft

Coordinates North | 3702952.62

East | 477180.12

8. Draw a flow diagram which includes gas exit from process, each control device, location of by-pass, fan or blower, each emission point, exits for collected pollutants, and location of sampling ports.

9. Enclosed are:

[ ] Blueprints

[ ] Particle Size Distribution Report

[ ] Size-Efficiency Curves

[ ] Emissions Test Of Existing Installation

[ ] Fan Curves

[ ] Other
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11. List below the important operating parameters for the device. (for example: air/cloth ratio and fabric type, weight, and weave for baghouse; throat velocity and water use rate for a Venturi Scrubber; etc.)

   N/A


12. By-Pass (If Any) Is To Be Used When: _____ N/A _____


APCP-110
Page 3
13. Disposal Of Collected Air Pollutants: N/A

<table>
<thead>
<tr>
<th>Solid Waste</th>
<th>Liquid Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td></td>
</tr>
<tr>
<td>Composition</td>
<td></td>
</tr>
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</tr>
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Name Or Person Preparing Application: Brady Pugh

Position Title: Consultant Company: McGehee Engineering Corp.

Signature: [Signature] Date: 8/18/2023

APCP-110 Page 4
John Zink Combustion

John Zink Company LLC
3705 East Avenue Street
La Crosse, Wisconsin 54601
United States

T: +1-715-234-7800
F: +1-715-234-7312

Alex Bryzol
Applications Engineer - BioGas Systems

DATE: December 15, 2022
TID: Keyrock Energy
REFERENCE: Enclosed Flare (ZT01) - Estimated Emissions

John Zink Model Number: CENR-ZT01
Design Criteria

Flare Gas Stream
Type: Coal Mine Methane Gas
Composition: 100% CH4 (design) 70% - 100% CH4 (range), Balance N2
Lower Heating Value: 410 BTU/SCF (design)
Temperature: 60°F (range)
Flame Axial Inlet Pressure: 10" H2O
Flow Rate: 550 SCFM time-avg normalized at 100% CH4
Waste Gas Heat Rate: 200 - 1300 SCFM (range)

Flare Emission Range - Design Flow with Alternative Composition
Coal Mine Methane Gas (100% CH4, Balance N2)

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>1600°F</th>
<th>1800°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane Destruction Efficiency</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>NOx, lb/MMMBTU</td>
<td>0.08</td>
<td>0.10</td>
</tr>
<tr>
<td>CO, lb/MMMBTU</td>
<td>0.20</td>
<td>0.25</td>
</tr>
<tr>
<td>SO2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Particulate Matter, lb/106 scf</td>
<td>17</td>
<td>17</td>
</tr>
</tbody>
</table>

Flare Emission Range - Design Flow with Coal Mine Methane Gas (100% CH4)

<table>
<thead>
<tr>
<th>Operating Temperature</th>
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<td>0.20</td>
<td>0.25</td>
</tr>
<tr>
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<td>N/A</td>
</tr>
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<td>17</td>
<td>17</td>
</tr>
</tbody>
</table>

Notes:
- Typical sulphur containing compounds are expected to have greater than 90% on-dynamometer efficiency.
- Excludes NOx from flue gas.
- Excludes CO contribution present in the gas.
- Excludes CO contribution present in the gas.
- Emissions factors for particulate matter are expected to have greater than 90% on-dynamometer efficiency.

Design Criteria

Flare Gas Stream
Type: Coal Mine Methane Gas
Composition: 100% CH4 (design) 50% - 100% CH4 (range), Balance N2
Lower Heating Value: 410 BTU/SCF (design)
Temperature: 60°F (design)
Flame Axial Inlet Pressure: 10" H2O
Flow Rate: 403 SCFM time-avg normalized at 100% CH4
Waste Gas Heat Rate: 22 MMMBTU (range)

Flare Emission Range - Design Flow with Alternative Composition
Coal Mine Methane Gas (100% CH4, Balance N2)

<table>
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<tr>
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</tr>
</thead>
<tbody>
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<tr>
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<td>0.25</td>
</tr>
<tr>
<td>SO2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Particulate Matter, lb/106 scf</td>
<td>17</td>
<td>17</td>
</tr>
</tbody>
</table>

Flare Emission Range - Design Flow with Coal Mine Methane Gas (100% CH4)

<table>
<thead>
<tr>
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- Excludes CO contribution present in the gas.
- Excludes CO contribution present in the gas.
Appendix A – Emissions Calculations
### Zink Flaring Emissions Calculations

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Burner Rate (mmBtu/hr)</th>
<th>Operating Time (hrs/year)</th>
<th>Throughput (mmBtu/year)</th>
<th>Emission Factor</th>
<th>Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pollutant</td>
<td>(lb/mmbtu)</td>
</tr>
<tr>
<td>Enclosed Flare B-2</td>
<td>30.0</td>
<td>8,760</td>
<td>262,800</td>
<td>CO</td>
<td>0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOx</td>
<td>0.080</td>
</tr>
<tr>
<td>Enclosed Flare C-3</td>
<td>30.0</td>
<td>8,760</td>
<td>262,800</td>
<td>CO</td>
<td>0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOx</td>
<td>0.080</td>
</tr>
</tbody>
</table>

1 Manufacturer Design Data

### Zeeco Flaring Emissions Calculations

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Burner Rate (mmBtu/hr)</th>
<th>Operating Time (hrs/year)</th>
<th>Throughput (mmBtu/year)</th>
<th>Emission Factor</th>
<th>Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pollutant</td>
<td>(lb/mmbtu)</td>
</tr>
<tr>
<td>Enclosed Flare B-2</td>
<td>25.0</td>
<td>8,760</td>
<td>219,000</td>
<td>CO</td>
<td>0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOx</td>
<td>0.080</td>
</tr>
<tr>
<td>Enclosed Flare C-3</td>
<td>25.0</td>
<td>8,760</td>
<td>219,000</td>
<td>CO</td>
<td>0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOx</td>
<td>0.080</td>
</tr>
</tbody>
</table>

1 Manufacturer Design Data

### Engine Emissions Calculations

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Operating Time (hrs/year)</th>
<th>Brake Horsepower</th>
<th>Emission Factor</th>
<th>Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pollutant</td>
<td>(lb/mmbtu)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CO</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NOx + VOC</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HAPs</td>
<td>0.0739</td>
</tr>
<tr>
<td>IIS 5.7L Engine (B-2)</td>
<td>8,760</td>
<td>163</td>
<td>CO</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NOx + VOC</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td>0.0739</td>
</tr>
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<td>8,760</td>
<td>163</td>
<td>CO</td>
<td>-</td>
</tr>
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<td></td>
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<tr>
<td>Total</td>
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<td></td>
<td>CO</td>
<td>-</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>HAPs</td>
<td>-</td>
</tr>
</tbody>
</table>

1 Manufacturer Design Data
2 Maximum Fuel Consumption = 60,000 cubic feet per hour
3 Heat content of 1020 Btu/scf (AP-42)
HAPs emission factor is derived from the sum of Acetaldehyde, Acrolein, Benzene, Formaldehyde, Toluene, and Xylene emission factors given in AP-42 Table 3.2-1
Appendix B – Equipment Specifications
Zeeco VCU-6-35-AD

Design Information (Estimated):

<table>
<thead>
<tr>
<th>Source</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas MW</td>
<td>16.0</td>
</tr>
<tr>
<td>Gas LHV (Btu/Scf)</td>
<td>909</td>
</tr>
<tr>
<td>Max Flow Rate (SCFM)</td>
<td>458</td>
</tr>
<tr>
<td>Vacuum Required (in WC)</td>
<td>90</td>
</tr>
<tr>
<td>Temperature (deg F)</td>
<td>100</td>
</tr>
<tr>
<td>Heat Release (MMBtu/hr)</td>
<td>22</td>
</tr>
</tbody>
</table>

Expected Emission Range (65% CH4, 35% CO2)

| Methane Destruction Removal Efficiency (DRE%) | 99.5% |
| NOx lb/MMBtu                                  | 0.08  |
| CO lb/MMBtu                                   | 0.20  |

Scope of Supply:

Qty Equipment
1  6’ Dia. x 30’ Tall Skid-Mounted, Guywire Supported Enclosure
   • Optional: Increase to 35’ Tall (25 MMBtu/hr Capacity)
   • Optional: Increase to 40’ Tall (27 MMBtu/hr Capacity)
   • Optional: Increase to 50’ Tall (32 MMBtu/hr Capacity)
2  Automatic louvers with manual option
1  Multi-Jet Tip (MJ)
1  HSLF Pilot w/ Flame Scanner – Intermittent Operation
1  6” Deflagration Arrester
1  6” Detonation Arrester
1  Vapor Blower – 90 in WC vacuum
   • Motor to be 460 VAC 3 phase power. Voltage change from 230 VAC to 460 VAC to be outside Zeeco scope
   • Optional: Transformer panel to convert incoming 230 VAC power to 460 VAC power
1  6” Electric Shutdown Valve
1  Automatic Ignition/Monitoring Panel
   • PLC Based with HMI
   • Manual mode – Controls speed of the blower based on operator selection
   • Waste gas flow meter included
   o Automatic heat release control mode - Controls speed of blower depending on methane content and gas flow
   • Waste gas inlet pressure transmitter included
   o Automatic gas blower inlet pressure control - Adjusts the blower speed automatically to match the desired inlet pressure selected
1  Shutdown Monitoring & Controls (VCU-AD)
1 Motor Control Panel
   - Zeeco supplied VFD to handle phase change from 460 single phase to 460 three phase power
1 Calibration certificates to be supplied for applicable instruments

Keyrock to free issue to Zeeco (no additional panels considered by Zeeco to house these items)
1 Methane Gas Analyzer
1 Satellite SCADA system

**Required Utilities:**

<table>
<thead>
<tr>
<th>Consumer</th>
<th>Utility Type</th>
<th>Consumption</th>
<th>Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGF Pilot Gas</td>
<td>Fuel Gas / LPG</td>
<td>90 SCFH / 1.05 gph</td>
<td>10 / 5 psig</td>
</tr>
<tr>
<td>Control System</td>
<td>Electricity</td>
<td>90 A (Estimated)</td>
<td>460 VAC / 1 Ph / 60 Hz</td>
</tr>
</tbody>
</table>

**Customer Connections (Estimated, TBC by customer):**

<table>
<thead>
<tr>
<th>Service</th>
<th>Size</th>
<th>Type</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Gas</td>
<td>6&quot;</td>
<td>RF</td>
<td>150#</td>
</tr>
<tr>
<td>Pilot Gas</td>
<td>1/2&quot;</td>
<td>NPT</td>
<td>3000#</td>
</tr>
</tbody>
</table>
Equipment Description:

Skid Mounted, Guy-Supported Stack: The stack is mounted onto a carbon steel skid that eliminates the need for a concrete foundation. The skid only needs to be set on firm, flat soil and then connected to the provided guy wires, screw anchors and tackle. The skid mounting will help minimize field installation and foundation costs.

Multi-Jet Tip (MJ): The tip uses multi-jet technology to break up the exiting gas to allow for more fuel and air interaction to increase smokeless combustion. Components located in the high heat zone will be made of 310SS or equivalent casting material. The tip will provide a VOC destruction efficiency of at least 98 wt%.

HSLF Pilot w/ Flame Scanner: The premix pilot is proven to stay lit in hurricane force weather conditions. Testing has shown that a stable flame is present even in wind speeds greater than 150 mph in addition to rainfall of over 10 inches per hour. The pilot is paired with UV flame scanner for continuous monitoring of the pilot status. The pilot also meets or exceeds API 537 design requirements.

Automatic Ignition/Monitoring Panel: The automatic pilot ignition and monitoring panel will continuously monitor the pilot and attempt to relight if a pilot failure signal is received. The control panel will require customer supplied electricity and be skid mounted.

Shutdown Monitoring & Controls (VCU-AD): The burner management and high temperature shutdown systems ensure that the unit will operate in a safe manner to protect both personnel and equipment while controlling emissions efficiently. Operating temperature is controlled via an automated damper to control the amount of air that enters the combustion chamber. A shutdown will be initiated when either a high temperature or pilot failure is detected. All gas sources should be shut in indefinitely until personnel can check the system to ensure that there is not a build-up of combustible vapors or damage to the equipment.

Group D Deflagration Arrester: If a potential for having combustible levels of oxygen in the waste exists, an arrester is recommended to ensure that any flashback from the tip is stopped before it can enter into the upstream piping system.

Group D Detonation Arrester: If a potential for having combustible levels of oxygen in the waste exists, an arrester is recommended to ensure that any flashback from the tip is stopped before it can enter into the upstream piping system.

Vapor Blower (VFD Included): To ensure that there is adequate pressure to move vapors from the source to the tip, a booster blower is installed in the waste header. The blower with spark proof motor is suitable for combustible mixtures. A VFD is included for fine tuning of the performance of the system. Flow or pressure transmitter for automated VFD control are by others.

Flow Transmitter: The transmitter outputs a 4-20 mA signal to allow for remote monitoring of the gas flow.

Pressure Transmitter: The transmitter outputs a 4-20 mA signal to allow for remote monitoring of the gas pressure.
NOTES
1. ALL FLANGE BOLTING TO STRADDLE NORMAL CENTERLINES, UNLESS NOTED OTHERWISE.
2. ALL EXTERNAL CARBON STEEL SURFACES TO BE PREPARED PER SSPC-SP6.
   FIRST COAT: HIGH BUILD EPOXY – 1 COAT 4-6 MILS (103.6-152.4 μ)
   SECOND COAT: POLYURETHANE – 1 COAT 2-3 MILS (50.8-76.2 μ)
3. CONDUIT FITTINGS & FLEXIBLE CONDUIT CONTAINED WITHIN THE CONTROL RACK ASSEMBLY THAT REQUIRE SEALS PER AREA CLASSIFICATION REQUIREMENTS ARE SUPPLIED WITH SEAL FITTINGS BY ZEECO. SEALING COMPOUND AND 'TOURING' OF THE SEALS SHALL BE BY OTHERS. SEALS SHALL BE APPLIED TO MEET LOCAL, STATE, COUNTRY, AND/OR INTERNATIONAL CODE FOR THE AREA CLASSIFICATION.
4. ALL TESTING PER INSPECTION TEST PLAN DOCUMENT NO. TBD-4010
5. APPROXIMATE WEIGHT FOR SKID ASSY: 4591 lbs (2082 kg)

-ZEECO NAMEPLATE-

-ZEECO NAMEPLATE-

-FRONT ISOMETRIC VIEW-

-LIFTING LUG DETAIL-

-FOUNDATION LOADS TOTAL SKID-

-NOZZLE LEGEND-

-ZEECO NAMEPLATE-
Excellent Performance and Durability
Over 60 years of industrial engine experience allows IIS to deliver specifically engineered, sophisticated, and durable engine packages that are tailored to your specific needs.

Variable Speed Output Rankings

<table>
<thead>
<tr>
<th>Complete Power-Pack: 1200-3000rpm, HP Radiator through Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
</tr>
<tr>
<td>LPG</td>
</tr>
<tr>
<td>Nat. Gas</td>
</tr>
</tbody>
</table>

- EPA certified for use on pipeline natural gas, propane, and wellhead gas
- 700-1800 BTU wellhead gas capable/certified
- All ratings at sea-level, 77°F ambient
- All ratings will be affected by altitude and ambient temperature

Reliable HP Industrial Engines Mean Uncompromised Power:

- High-flow cylinder head with straighter intake ports and a higher compression ratio delivers impressive horsepower
- Roller valve lifters for reduced friction and improved performance
- Designed for heavy-duty, industrial use
- Modular design for consistency
- Engineered for reliability and long life cycles
- Cast and machined in North America
5.7L | ENGINE SPECIFICATIONS

Type 5.7L V-8
Displacement 350 cid
Engine Orientation Longitudinal
Compression Ratio 9.4:1
Valve Configuration Overhead valves
Bore & Stroke 101.60 mm x 88.39 mm
Main Bearing Caps 4 Bolt Main
Rear Main Seal 1 Piece
Intake Manifold Dual Plane
Oil Pan Capacity 5 qt
Engine Rotation Counter-Clockwise

Horsepower (Peak)
Propane 174 hp @ 3000 rpm
Natural Gas 163 hp @ 3000 rpm

Torque
Propane 437 lb-ft @ 2000 rpm
Natural Gas 410 lb-ft @ 1800 rpm

Reliable HP Engines Use the Following Heavy Duty Materials

<table>
<thead>
<tr>
<th>Block</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder Heads</td>
<td>Cast Iron</td>
</tr>
<tr>
<td>Intake Manifold</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Crankshaft</td>
<td>Nodular Iron</td>
</tr>
<tr>
<td>Camshaft</td>
<td>5150 Steel Billet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connecting Rods</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust Seat</td>
<td>Inserts</td>
</tr>
<tr>
<td>Intake Seat</td>
<td>Induction Hardened</td>
</tr>
</tbody>
</table>
Appendix C – Engine Certificate of Conformity