

Statement of Basis

**Permit to Construct P-2011.0010
Project No. 61674**

**AgPower Jerome, LLC
Double A Dairy Digester
Jerome, Idaho**

Facility ID No. 053-00018

Final

**June 22, 2016
Tom Burnham 
Permit Writer**

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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FACILITY INFORMATION

Description

AgPower Jerome, LLC operates an anaerobic digester operation at the Double A Dairy. Manure from the dairy will be pumped into the anaerobic digester where the naturally occurring digestion process results in the production of biogas. Biogas collected from the anaerobic digester is used as fuel in three reciprocating IC engines used to power electrical generators. The generators produce electricity that is sold to the local utility. During emergencies and routine maintenance the IC engines are taken offline and the excess biogas is combusted in flares at the facility. Heat produced from the IC engines is used to maintain the operating temperature in the digester.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

July 3, 2013	P-2011.0010, PROJ 61213, Revised PTC to clarify SO ₂ emissions limit averaging time. Status: (S)
March 31, 2011	P-2011.0010, Initial PTC for the facility. Status: (S)
November 6, 2008	P-2008.0093, Initial PTC for DF-AP#3, LLC. However, this facility was never constructed within the allotted two year period following issuance. Therefore, the permit expired.

Application Scope

This permit is a revision of the initial PTC for this facility. The applicant has proposed to remove hourly carbon monoxide (CO) limit and incorporate a method for tracking annual CO emission based on individual engine efficiency factors to calculate tons CO per year.

Application Chronology

March 10, 2016	DEQ received an application and an application fee.
March 24, 2016	DEQ determined that the application was complete.
April 4, 2016	DEQ made available the draft permit and statement of basis for peer and regional office review.
April 14, 2016	DEQ made available the draft permit and statement of basis for applicant review.
April 26, 2016	DEQ received the permit processing fee.
June 22, 2016	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Devices

Emissions units and control devices are unchanged by the permit revision. Refer to the Statement of Basis for PTC No. P-2011.0010, issued on March 31, 2011.

Emissions Inventories

The emissions inventory is unchanged by this permit revision. For details, refer to the Statement of Basis for PTC No. P-2011.0010, issued on March 31, 2011.

Ambient Air Quality Impact Analyses

The emissions inventory is unchanged by the permit revision; therefore, modeling is not required. The existing modeling analysis conducted for this facility remains effective and unchanged. For details, refer to the Statement of Basis for PTC No. P-2011.0010, issued on March 31, 2011.

REGULATORY ANALYSIS

The regulatory analysis for this facility is unchanged by this permit revision. For details, refer to the Statement of Basis for PTC No. P-2011.0010, issued on March 31, 2011.

Permit Conditions Review

The following permit conditions have been revised as a result of this permitting action:

Revised Permit Condition Table 1.1

Maximum rated power was changed from 2,210 bhp to 2,110 bhp. The original modeling for permit development was done with 2,110 bhp. This minor typographical error is corrected in this version at the request of the applicant. Also add the rated maximum kW generator output for each genset.

Revised Permit Condition 2.3

Emission limits were changed to reflect changes to Table 2.2. Flares were omitted in original Statement of Basis dated March 31, 2011 as the IC engines were assumed worst case for limiting emissions.

Revised Permit Condition Table 2.2

Table 2.2 (previously Table 3) was changed to include engine specific lb/hr limits for NO_x for each separate engine because it was necessary to support the modeling analysis done for the original permit. The lb/hr CO limit was removed at the request of the applicant, and the SO₂ lb/hr limit was removed because it was redundant to permit condition 2.4. Furthermore, regarding each permit conditions specifically for each pollutant: the SO₂ lb/hr is covered in condition 2.4 and is derived from daily monitoring set forth in permit condition 2.12 Biogas SO₂ monitoring. The CO lb/hr is being monitored monthly through permit condition 2.17 for each engine in conjunction with valid source tests using permit condition 2.7 which requires 40 CFR 60 subpart JJJJ Emission Standard of 5 gram CO per brake horse power hour. NO_x lb/hr emission limits for each IC Engine #1-#3 are derived individually for each engine from DEQ approved source testing in accordance with permit condition 2.7. The NO_x T/yr will be determined by permit condition 2.17 the same way as the CO at the request of the applicant.

Revised Condition 2.9

At the request of the applicant, “and” was inserted between Engines or Flares. It now essentially states “engines and/or flares”. Original modeling asserted that engines were the worst case for emissions. If gas is diverted away from the worst case and flared, then emissions should be at least less than the worst case analyzed for permit limits.

Revised Condition 2.12

Removed 3 times daily and twice daily SO₂ monitoring because historical data provided by the applicant shows these have never been needed over the last 4.5 years, and residence time for the digester is 21 days. Specified “calendar day average” in all statements related to averaging to agree with permit condition 2.4. Also added SO₂ monitoring for T/yr as this was not previously in the permit.

Revised Condition 2.13

Removed references to making and submitting an O&M manual. This condition has already been met. Replaced with the requirement maintain the O&M manuals.

Added New Condition 2.16

This new condition requires the permittee to record the kWh total per month to be used in the calculation for CO T/yr referred to in section 2.17.

Revised Permit Condition 2.17 (Previously Condition 2.16)

A compliance statement based on the summation of the 12 month total CO and NO_x calculated from the three engines combined is added to comply with the yearly limit in Table 2.2. Equation 1 determines an emissions factor from the most recent emissions test for each engine. Equation 2 calculates the pounds per month for each of the respective pollutants for the three engines combined. These monthly total pounds are summed up for the previous consecutive 12 month period and converted to tons using 0.0005 (1/2000) tons per pound conversion factor. This 12 month total CO and NO_x calculation has been added at the request of the applicant. And, the method is justifiable by DEQ internal guidance for hierarchy of emission factors because actual emissions measurements on the source are used to develop emission factors and IDEQ Technical Services has approved the method. The 12 month period is further defined and the record keeping requirements of the general provisions stipulated.

Revised Permit condition 2.19

Specified 100% peak (or highest achievable) load.

Added Permit Condition 2.20

To comply with National Ambient Air Quality Standards (NAAQS) 40 CFR 50.11 as modeled for previous revisions of the permit, the method of lb/hr NO_x is specified for calculating lb/hr NO_x by using measured g/bhp-hr from the most recent DEQ-approved source test as set forth in permit condition 2.19.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period is not required because this is a permit revision that does not result in an increase in emissions, in accordance with IDAPA 58.01.01.209.04.

APPENDIX A – FEE CALCULATION

PTC Fee Calculation

Instructions:

Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: AgPower Jerome, LLC
Address: 333 Perry Street, Suite 301
City: Castle Rock
State: CO
Zip Code: 80104
Facility Contact: Jim Wiest
Title: Authorized Representative
AIRS No.: 0453-00018

- N** Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
- Y** Did this permit require engineering analysis? Y/N
- N** Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	0.0	0	0.0
SO ₂	0.0	0	0.0
CO	0.0	0	0.0
PM10	0.0	0	0.0
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	0.0	0	0.0
Fee Due	\$ 1,000.00		