J.D. HEISKELL & Co.

PERMIT TO CONSTRUCT

Prepared for:
J.D. Heiskell & Co.
Gooding, Idaho 83330

Facility ID No. 047-00011

Prepared by:
McClure Engineering Inc.

McCLURE
ENGINEERING

Twin Falls, Idaho 83301

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<table>
<thead>
<tr>
<th>Date</th>
<th>Doc No.</th>
<th>Rev</th>
<th>Description</th>
<th>Preparer</th>
<th>Reviewer</th>
</tr>
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<tbody>
<tr>
<td>08/03/2021</td>
<td>21-33-RP-01</td>
<td>0</td>
<td>Initial Release</td>
<td>Z. Malina</td>
<td>J. Miller</td>
</tr>
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<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>DEQ</td>
<td>Department of Environmental Quality</td>
</tr>
<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
</tr>
<tr>
<td>IDAPA</td>
<td>a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act</td>
</tr>
<tr>
<td>MMBtu/hr</td>
<td>Million British Thermal Units</td>
</tr>
<tr>
<td>PTC</td>
<td>Permit to Construct</td>
</tr>
<tr>
<td>PM</td>
<td>Particle Matter</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile organic compound</td>
</tr>
<tr>
<td>PTE</td>
<td>Potential to Emit</td>
</tr>
<tr>
<td>NO\textsubscript{x}</td>
<td>Nitrogen Oxides</td>
</tr>
<tr>
<td>SO\textsubscript{2}</td>
<td>Sulfur Dioxide</td>
</tr>
<tr>
<td>NESHAP</td>
<td>National Emissions Standards for Hazardous Air Pollutants</td>
</tr>
</tbody>
</table>
1. Application Scope

1.1 Purpose

The purpose of this report is to satisfy the requirements of IDAPA 16.01.01.200 for issuing a Permit to Construct (PTC). This is a permit for the following air pollution activities at the facility:

- Natural gas-fired steam boilers
- Receiving and loading of grain
- Grain handling
- Mineral plant

1.2 Facility Process Description

J.D. Heiskell receives and stores grain using a grain receiving system, steam flakes corn, and receives and blends vitamin/mineral supplements for the beef & dairy industry. The facility operates two (2) natural gas-fired steam boilers with a rated heat capacity of 8.368 MMBtu/hr each. The boilers are used to supply steam to the corn and flaking process. The facility receives around 320,000 tons of corn a year. There is a self-contained commodity barn that has a capacity of 30,000 tons and loads around 240,000 tons per year from the barn. The proposed emission sources are listed below in greater detail:

- **Natural Gas-Fired Fire-Tube Boilers (2)**
  - Sellers - 200HP-105E, SO# 105618A
  - Input (MMBtu/hr) - 8.368
  - Fuel Supply Pressure - 5 PSI
  - Primary Voltage 460V

- **Receiving System**
  - Grain is received by railcar
  - The facility utilizes a rail receiving system

- **Grain Handling**
  - The facility has a self-contained commodity barn that stores grain until loadout
  - The barn is fully enclosed with a roll-up door on each end which is closed during operations
  - A scale is located inside the barn

- **Mineral/Vitamin Plant**
  - Minerals are loaded into outdoor mineral pit

Manufacturer specification sheets for emission sources are provided in Appendix C for the following:

- Sellers – 200HP-105E, SO# 105618A – Natural Gas Fire-Tube Steam Boiler
- Airlancco – HE-54 Cyclone application data sheet
1.3 J.D. Heiskell & Co. - Gooding, Idaho
The feed mill is shown from the air in figure 1 below. The silos are in the middle and the commodity barn is at the south.

![Figure 1 - J.D. Heiskell & Co. Gooding Site Plan Photo.](image)

1.4 Ambient Air Boundary
The Gooding site is part of Parcel No. RP05S15E350562 and covers 38 Acres as shown in Figure 2 below.

![Figure 2 - JD Heiskell & Co. Gooding Property Boundary for Ambient Air Fugitive Dust Calculations.](image)
1.5 *Regulated Sources*

Table 1.1 lists all sources of regulated emissions in this PTC.

<table>
<thead>
<tr>
<th>Permit section</th>
<th>Source Description</th>
<th>Emission Control(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Natural Gas-Fired Boilers</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Fugitive Dust</td>
<td>Yes</td>
</tr>
</tbody>
</table>

1.6 *Process Flow*

The process flow diagram is found below in figure 3.

![Process Flow Diagram](image)

**Figure 3** – Process Flow Diagram for J. D. Heiskell & Co.

1.7 *Pre-Application Meeting & Application Submittal Date*

Meeting date - May 4th, 2021

Submittal date - July 30th, 2021

1.8 *Facility Permitting History*

June 4th, 2010  
DEQ issued the final permit and statement of basis to change name from Land O’Lakes Purina Feed LLC to J.D. Heiskell & Co.

June 2nd, 2005  
P-050403, Facility name change from Land O’Lakes Farmland Feed LLC to Land O’Lakes Purina Feed LLC, Permit Status (S).

November 8th, 1999  
P-990073, Initial PTC for Land O’Lakes Feed Division, Permit Status (S).
2. Emissions Overview

2.1 Process Description

The maximum possible uncontrolled operating hours for J.D. Heiskell & Co. is based on a 52-week per year operation, 7-days per week, and 24-hours per day. A maximum of 365 days per year was used to arrive at 8,760 hours per year (hr/yr).

2.2 Assumptions for Emission Units with No Controls

*Heating:* Natural gas-fired heater emission calculations were made using Environmental Protection Agency (EPA) emission factors found in AP-42 Chapter 1.4. Boilers are rated at 8.368 MMBtu/hr each and uncontrolled and controlled emissions are the same based on 8,760 hr/yr of use.

2.3 Assumptions for Emission Units with Controls

*Fugitive Dust:* In accordance with IDAPA 58.01.01.625, all reasonable precautions shall be taken to prevent particulate matter (PM) from becoming airborne. In determining what is reasonable, considerations will be given to factors such as the proximity of dust emitting operations to human habitations and/or activities, the proximity to mandatory Class I Federal Areas and atmospheric conditions which might affect the movement of PM. Some of the reasonable precautions may include, but are not limited to, the following:

- Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land.
- Application, where practical, of asphalt, oil, water or suitable chemicals to, or covering of dirt roads, *material stockpiles*, truck beds, and other surfaces which can create dust.
- Installation and use, where practical, of hoods, fans and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations.
- Covering, when practical, open bodied trucks transporting materials likely to give rise to airborne dusts.
- Paving or roadways and their maintenance in a clean condition.
- Prompt removal of earth or other stored material from streets.

3. Emission Limits

3.1 Boiler Emission Summary

Potential emissions are referred to as PTE. Table 1 provides a summary of uncontrolled PTE for the facility, based on worst case operation of 8,760 hr/yr. The spreadsheet for the boiler is presented in Appendix A.
Table 1: Uncontrolled PTE for Natural Gas-Fired Boiler (both boilers)

<table>
<thead>
<tr>
<th>Source</th>
<th>PM-10</th>
<th>SO2</th>
<th>NOx</th>
<th>CO</th>
<th>VOC</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas-Fired Boilers</td>
<td>0.55</td>
<td>0.04</td>
<td>4.4</td>
<td>0.66</td>
<td>0.4</td>
<td>0</td>
</tr>
</tbody>
</table>

3.2 Receiving System Summary

Table 2 provides a summary of the receiving system. Fugitive PM-10 emission factors are from AP-42-9.9.1. Grain is received by railcar in amounts of approximately 320,000 tons per year. The emission factor is 0.0078 lb/ton. The spreadsheet with the calculation is found in Appendix A.

Table 2: Receiving System Emissions

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>lb/hr</th>
<th>T/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-10</td>
<td>0.28</td>
<td>1.25</td>
</tr>
</tbody>
</table>

3.3 Internal Handling Summary

Table 3 provides a summary of grain handling. This involves the use of legs, conveyors, scales, and cleaners. Also provided is the commodity barn that has a capacity of 30,000 tons and is totally enclosed with vents. Trucks drive in and out through roll up doors that close when handling the grain. Approximately 240,000 tons are processed through the barn in a year. Emission factors come from AP-42-9.9.1-1. The spreadsheets with the calculations are also found in Appendix A.

Table 3: Internal Handling Emissions

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>lb/hr</th>
<th>T/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-10</td>
<td>0.3</td>
<td>1.3</td>
</tr>
</tbody>
</table>

3.4 Mineral Plant Emissions

Table 4 provides a summary of the mineral plant emissions. This involves the mineral pit receiving and loading with emission factors from AP.42 9.9.1-1. The PM-10 emission factor for loading is 0.0008 lb/ton and 0.0025 lb/ton for receiving. The approximate throughput of the mineral pit is 36,000 tons a year. The spreadsheet with the calculations are found in Appendix A.

Table 4: Mineral Plant Emissions

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>lb/hr</th>
<th>T/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-10 (Receiving)</td>
<td>0.01</td>
<td>0.045</td>
</tr>
<tr>
<td>PM-10 (Loading)</td>
<td>0.003</td>
<td>0.014</td>
</tr>
<tr>
<td>Total</td>
<td>0.059</td>
<td></td>
</tr>
</tbody>
</table>

See Appendix A for cyclone emissions calculators.
4. Project Emissions Summary

Table 5 provides the summary of total emissions and the PTE for this facility. PTE for this report does not include fugitive emissions because this facility is not a designated facility and there are no emissions units subject to a New Source Performance Standard.

<table>
<thead>
<tr>
<th>Pollutant Name</th>
<th>Total (T/yr)</th>
<th>PTE (T/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-10</td>
<td>3.26</td>
<td>0.65</td>
</tr>
<tr>
<td>VOC</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>NOx</td>
<td>4.4</td>
<td>4.4</td>
</tr>
<tr>
<td>SO2</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>CO</td>
<td>0.66</td>
<td>0.66</td>
</tr>
</tbody>
</table>

5. Facility Classification

J.D. Heiskell & Co. is not a major facility as defined in IDAPA 58.01.008.10. The facility does not have a potential to emit ten (10) tons per year or more of any hazardous air pollutant. In addition, the facility uncontrolled emissions are less than 100 tons per year.

6. Area Classification

The facility is located in Gooding, Idaho which is within Air Quality Control Region 63. This region is designated as attainment or unclassifiable for all criteria air pollutants.

7. Regulatory Review

7.1 IDAPA 58.01.01.200 Permit to Construct Required

J.D. Heiskell has submitted a PTC application for the proposed construction of two updated natural gas-fired boilers. A PTC will be required because the project does not qualify for any category exemptions in sections 220 through 223.

7.2 IDAPA 58.01.01.576 General Provisions for Ambient Air Quality Standards

PM-10 Modeling has been done on prior PTC. No changes besides reasonable and affective methods on reducing the PM-10 Emissions have been done. Emissions are limited at the property boundary by permit limit.
7.3 **IDAPA 58.01.01.650 Rules for the Control of Fugitive Dust**

The facility is required to reasonably control fugitives for leaving the property boundary for more than three minutes in any sixty minute period.

7.4 **FRA Form**

<table>
<thead>
<tr>
<th>IDENTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Company Name: J.D. Heiskell &amp; Co.</td>
</tr>
<tr>
<td>2. Facility Name:</td>
</tr>
<tr>
<td>3. Brief Project Description: J.D. Heiskell &amp; Co. is a feed mill for the agricultural industry.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPLICABILITY DETERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. List all applicable subparts of the New Source Performance Standards (NSPS) (40 CFR part 60).</td>
</tr>
<tr>
<td>List of all applicable subpart(s):</td>
</tr>
<tr>
<td>List of all non-applicable subpart(s) which may appear to apply to the facility but do not.</td>
</tr>
<tr>
<td>Examples of NSPS-affected emissions units include internal combustion engines, boilers, turbines, etc. Applicant must thoroughly review the list of affected emissions units.</td>
</tr>
<tr>
<td>5. List applicable subpart(s) of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR part 61 and 40 CFR part 63).</td>
</tr>
<tr>
<td>List of all applicable subpart(s):</td>
</tr>
<tr>
<td>List of all non-applicable subpart(s) which may appear to apply to the facility but do not.</td>
</tr>
<tr>
<td>Examples of affected emission units include solvent cleaning operations, industrial cooling towers, paint stripping and miscellaneous surface coating. Reference EPA's webpage on NESHAPs for more information.</td>
</tr>
<tr>
<td>6. For each subpart identified above, conduct a complete regulatory analysis using the instructions and referencing the example on the following pages.</td>
</tr>
<tr>
<td>Note: Regulatory reviews must be submitted with sufficient detail so that DEQ can verify applicability and document in legal terms why the regulation does or does not apply. Regulatory reviews submitted with insufficient detail will be determined incomplete.</td>
</tr>
<tr>
<td>A detailed regulatory review has been provided</td>
</tr>
<tr>
<td>DEQ has already been provided a detailed regulatory review (please provide a reference)</td>
</tr>
</tbody>
</table>

**IF YOU ARE UNSURE HOW TO ANSWER ANY OF THESE QUESTIONS, CALL THE AIR PERMIT HOTLINE AT 1-877-5PERMIT.**

It is emphasized that it is the applicant's responsibility to satisfy all technical and regulatory requirements, and that DEQ will help the applicant understand those requirements prior to submittal of the application but that DEQ will not perform the required technical or regulatory analyses on the applicant's behalf.
• Subpart DC—Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units

§ 60.40c Applicability and delegation of authority.

(a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).

(c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO₂) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in §60.41c.

This Facility has two (2) natural-gas fired boilers that have a capacity of 8,368 MMBtu/hr each, but since they use natural-gas they meet the requirements for SO₂ and PM, therefore this subpart does not apply.

• Subpart DD—Standards of Performance for Grain Elevators

§ 60.300 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility at any grain terminal elevator or any grain storage elevator, except as provided under §60.304(b). The affected facilities are each truck unloading station, truck loading station, barge and ship unloading station, barge and ship loading station, railcar loading station, railcar unloading station, grain dryer, and all grain handling operations.

(b) Any facility under paragraph (a) of this section which commences construction, modification, or reconstruction after August 3, 1978, is subject to the requirements of this part.

This Facility does have truck loading/unloading and a railcar system but there are no changes, modifications, or reconstruction with the rail receiving system of grain from the original permit.

• Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

§ 63.7485 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP, except as specified in §63.7491. For purposes of this subpart, a major source of HAP is as defined in §63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in §63.7575.

This Facility is not a major source of HAP as defined in §63.2.
• Subpart JJJJJ—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

§ 63.11195 Are any boilers not subject to this subpart?

The types of boilers listed in paragraphs (a) through (k) of this section are not subject to this subpart and to any requirements in this subpart.

(a) Any boiler specifically listed as, or included in the definition of, an affected source in another standard(s) under this part.
(b) Any boiler specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act.
(c) A boiler required to have a permit under section 3005 of the Solid Waste Disposal Act or covered by subpart EEE of this part (e.g., hazardous waste boilers), unless such units do not combust hazardous waste and combust comparable fuels.
(d) A boiler that is used specifically for research and development. This exemption does not include boilers that solely or primarily provide steam (or heat) to a process or for heating at a research and development facility. This exemption does not prohibit the use of the steam (or heat) generated from the boiler during research and development, however, the boiler must be concurrently and primarily engaged in research and development for the exemption to apply.
(e) A gas-fired boiler as defined in this subpart.
(f) A hot water heater as defined in this subpart.
(g) Any boiler that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler is provided by regulated gas streams that are subject to another standard.
(h) Temporary boilers as defined in this subpart.
(i) Residential boilers as defined in this subpart.
(j) Electric boilers as defined in this subpart.

This Facility operates two gas-fired Boilers.

8. Appendices
Appendix A – Calculations
<table>
<thead>
<tr>
<th>Source</th>
<th>Throughput (lb/hr)</th>
<th>Throughput (tpy)</th>
<th>PM Emissions Factor (lb/ton grain)(^{(a)})</th>
<th>PM PTE Rate (lb/hr)</th>
<th>PM(_{2.5}) PTE Rate (lb/hr)(^{(b)})</th>
<th>PM(_{2.5}) PTE (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclone 1</td>
<td>315</td>
<td>1,379.7</td>
<td>0.15</td>
<td>0.024</td>
<td>0.012</td>
<td>0.052</td>
</tr>
<tr>
<td>Cyclone 2</td>
<td>315</td>
<td>1,379.7</td>
<td>0.15</td>
<td>0.024</td>
<td>0.012</td>
<td>0.052</td>
</tr>
</tbody>
</table>

\(^{(a)}\) Emissions factor from AP-42 Table 9.9.1-2. Cyclone PM emissions factor of 0.15 lb/ton throughput for flaking operations at an animal feed facility.

\(^{(b)}\) PM\(_{2.5}\) emissions are conservatively set to half the PM emissions. Specifically, U.S. EPA AP-42 notes in Table 9.9.1-2 that when PM\(_{10}\) data are not available, 50% of the PM data should be used. Heiskell has applied this guidance to PM\(_{2.5}\) as well.
Grain Handling (Commodity Barn)

30,000 ton barn capacity
240,000 tons per year loaded into barn

30,000 tons * .034 lb/tons = 1,020 lb/year = .51 tons/year

240,000 tons/year * .0063 lb/tons = 1,512 lb/year = .756 tons/year

Total = .51 + .756 = 1.3 tons/year
<table>
<thead>
<tr>
<th>Throughputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 tons per hour</td>
</tr>
<tr>
<td>36,000 tons per year</td>
</tr>
<tr>
<td>0.0025 lb/ton PM-10 Emissions (Receiving)</td>
</tr>
<tr>
<td>0.0008 lb/ton PM-10 Emissions (Loading)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PM-10 (Receiving)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36,000 tons/year * 0.0025 = 90 lb/year = .045 tons/year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PM-10 (Loading)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36,000 tons/year * 0.0008 = 28.8 lb/year = .0144 tons/year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0594 tons/year</td>
</tr>
</tbody>
</table>
J.D. Heiskell Receiving system PM-10 Emissions (AP-42 9.9.1)

Corn is received by railcar
1,000 tons per hour
320,000 tons per year

From Table 9.9.1-1

320,000 tons/year * .0078 lb/ton = 2,496 lbs/year = 1.25 of PM-10 T/yr

1.25 T/yr / 8,760 hrs * 2,000 lbs = .29 lb/yr

* emission rate from AP-42
J.D. Heiskell- PTE Natural Gas Boiler Emissions

2 Natural Gas Boilers
Boiler Max Capacity= 8.368 MMBtu/hr each
Uncontrolled Boiler

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PPM @ 3% O2</th>
<th>Emission Factor lb/MMBtu</th>
<th>lb/hr each</th>
<th>T/yr each</th>
<th>T/yr total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>12 each</td>
<td>0.009</td>
<td>0.075</td>
<td>0.33</td>
<td>0.66</td>
</tr>
<tr>
<td>NOx</td>
<td>50 each</td>
<td>0.06</td>
<td>0.5</td>
<td>2.2</td>
<td>4.4</td>
</tr>
<tr>
<td>SO2</td>
<td>not given by Sellers</td>
<td>0.6*</td>
<td>0.005</td>
<td>0.022</td>
<td>0.043</td>
</tr>
<tr>
<td>PM-10</td>
<td>not given by Sellers</td>
<td>7.6*</td>
<td>0.062</td>
<td>0.273</td>
<td>0.546</td>
</tr>
<tr>
<td>VOC</td>
<td>not given by Sellers</td>
<td>5.5*</td>
<td>0.045</td>
<td>0.198</td>
<td>0.395</td>
</tr>
</tbody>
</table>

Emission Factor (CO & NOx) from Boiler Book Cleaver Brooks based on Manufacturers PPM
Method: Emission Factor * 8.368 * 8,760 / 2,000 * 2

* Emission Factor (SO2, PM-10, VOC) from AP-42 Table 1.4-1. (lb/10^4 * scf)
Method: Emission Factor / 1,020 * 8.368 * 8,760 / 2,000 * 2
Appendix B – DEQ Forms
### FACILITY INFORMATION

1. Facility Name: J.D. Heiskell & Co. - Gooding Mill
2. Facility ID Number: 047-00011
3. Operating status:
   - Operating
   - Planned
   - Under construction

### PROJECT INFORMATION

4. Are you constructing a new facility at a new location (this is known as a greenfield facility)?
   - Yes, go to question 8.
   - No, go to question 5.
5. Are you modifying, revising or renewing an existing permit?
   - Yes, go to question 6.
   - No, go to question 8.
6. Existing permit number: P2010.0232
7. Permit issue date: June 4, 2010
8. NAICS Number: (see www.census.gov/eos/www/naics/) 311119
9. Physical location of facility:
   - County: GOODING
   - Street Address: 1711 S 2300 E
   - City: GOODING
   - Zip Code: 83330
10. Specify permit application type:
    - Permit to Construct
    - Tier II permit
    - Permit by Rule (PBR)
    - 15-Day Pre-Construction Approval
    - Tier I
    - Exemption
11. Facility process description: (enter facility description below, or attach separate document to form)

   The J.D. Heiskell & Co. - Gooding ID facility is comprised of these process areas. The facility receives and stores grain and grain products using a grain receiving system, steam flaxes grain, and receives, stores, blends, and loads out grain products, and vitamin/mineral supplement mixes for the dairy industry.

   The facility operates two natural gas-fired boilers with rated heat input capacities of 8.1 MMBtu/HR. The boilers are used to supply steam to the grain for flaking purposes. The facility also operates a grain receiving system capable of handling 40,000 bushels per hour, and dairy feed supplement system that receives, stores, blends and loads out vitamin/mineral supplements.

   Emissions from the boilers are uncontrolled. No stacks are associated with the grain receiving and dairy feed supplement systems.

12. Project description: (enter project description below, or attach separate document to form)

   This PTC is a revision/consolidation to existing PTCs that appear to contain a complete description of operating equipment across all documents, but individually they misrepresent all permitted facility equipment and processes established and approved for J.D. Heiskell & Co. - Gooding, ID. Administrative changes should also address any updated contacts, and equipment processes that are required for compliance and due diligence in managing the environmental aspects of the facility.

### MEETING INFORMATION

13. Is the preapplication meeting required in response to a DEQ compliance or enforcement action?  
   - Yes
   - No

14. Propose (2) meeting dates and times:
   - First Preference: 4/28/2016 9:00 AM
   - Second Preference: At earliest availability

15. List meeting attendees on Applicant's behalf (list the attendees and the company they represent):

   Name(s) of attendee(s):
   - Trent Becker, Regional EHS Manager
   - J.D. Heiskell & Co.

16. List consultant's name and company (if applicable):

17. Will the meeting occur in person at DEQ's Boise office or will the meeting be a teleconference or will the meeting be both? (Check box below)
   - Meeting will be in person at the State Office in Boise
   - Meeting will be a teleconference
   - Meeting will be both a teleconference and in person

18. Do you have questions for DEQ to consider before the meeting?  
   - Yes
   - No
   - If yes, attach a brief Word or PDF document with your questions.

Note: The applicant is expected to review the following material prior to the preapplication meeting:
- Emissions inventories; regulatory review, modeling, if required

Actual Meeting Held: May 4, 2016.
**DEQ AIR QUALITY PROGRAM**

1410 N. Hilton, Boise, ID 83706
For assistance, call the Air Permit Hotline - 1-877-5PERMIT

General Information - Form Gl
04/23/19

Please see instructions on second page before filling out the form.

<table>
<thead>
<tr>
<th>FACILITY AND PERMIT INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Facility Name: J.D. Hieskell &amp; Co</td>
</tr>
<tr>
<td>2. Facility ID Number:</td>
</tr>
<tr>
<td>3. Brief Project Description: This facility is a feed mill for the dairy and other agricultural industries.</td>
</tr>
<tr>
<td>4. Facility Contact Name: Al Ward</td>
</tr>
<tr>
<td>5. Facility Contact Title: Plant Manager</td>
</tr>
<tr>
<td>6. Facility Contact Telephone Number: 208-731-0995</td>
</tr>
<tr>
<td>7. Facility Contact Email: <a href="mailto:award@hieskell.com">award@hieskell.com</a></td>
</tr>
<tr>
<td>8. Mailing address where permit will be sent (street/city/state/zip code): 1711 S 2300 E, Gooding, Idaho 83330</td>
</tr>
<tr>
<td>9. Physical address of facility (if different than mailing address) (street/city/state/zip code):</td>
</tr>
<tr>
<td>10. County Facility is located: Gooding, Idaho</td>
</tr>
<tr>
<td>11. Is the equipment portable? ☐ No ☐ Yes</td>
</tr>
<tr>
<td>12. NAICS codes Primary NAICS: Secondary NAICS (if applicable):</td>
</tr>
<tr>
<td>14. Describe any contiguous or adjacent facility this company owns or operates:</td>
</tr>
<tr>
<td>15. Permit Application Type, Provide Permit Number for existing permit. For a PTC, an application fee is required.</td>
</tr>
<tr>
<td>☐ Initial Permit to Construct (PTC) ☐ PTC Modification PTC No. P2010.0025 Issued Date 11/09/1989</td>
</tr>
<tr>
<td>☐ Initial Tier II ☐ Tier II Modification ☐ Tier II Renewal Tier II No. Issued Date</td>
</tr>
<tr>
<td>☐ Initial Tier I ☐ Tier I Administrative Amendment ☐ Tier I Significant Modification</td>
</tr>
<tr>
<td>☐ Tier I Renewal Tier I No. Issued Date</td>
</tr>
<tr>
<td>16. For Tier I permitted facilities only: if you are applying for a PTC then you must specify how the PTC will be incorporated into the Tier I permit.</td>
</tr>
<tr>
<td>☐ Incorporate PTC at the time of Tier I renewal (IDAPA 58.01.01.209.05.a)</td>
</tr>
<tr>
<td>☐ Co-process PTC with Tier I Modification (IDAPA 58.01.01.209.05.b)</td>
</tr>
<tr>
<td>☐ Administrative amend the Tier I No incorporate PTC upon applicant's request (IDAPA 58.01.01.209.05.c)</td>
</tr>
<tr>
<td>17. ☐ Check here to request facility draft permit before final issuance.</td>
</tr>
<tr>
<td>18. ☐ Check here to request a permit hand-off meeting.</td>
</tr>
</tbody>
</table>

Certification of Truth, Accuracy, and Completeness (by Responsible Official)
I hereby certify that based on information and belief formed after reasonable inquiry, the statements and information contained in this and any attached and/or referenced documents are true, accurate, and complete in accordance with IDAPA 58.01.01.123 124.

Responsible Official Signature: Donald J. Totten
Print or Type Responsible Official Name
Regional EHS Manager 5-25-2022
Responsible Official Title
Date

Page 1
Instructions for Form GI

Facility Information:
1. Provide facility name. If the facility is doing business as (dba) a facility different in name than the primary facility, provide the dba name.
2. If the facility is an existing permitted facility in Idaho, provide the facility identification number. If the facility is new and does not yet have a Facility ID, leave blank.
3. Provide a brief project description.
4-7. Provide the name of the primary contact person for this permit application. Provide title, telephone number, and e-mail address for the primary contact person.
8. Provide mailing address where DEQ should mail the final permit.
9. Provide the physical address where the equipment or facility is located (if different than 8).
10. Provide the Idaho County where the equipment or facility is located.
11. Indicate if equipment is portable by checking the appropriate box.
12. Provide the primary and secondary (if applicable) North American Industry Classification System (NAICS) code(s) for your facility.
13. Describe the primary activity and principal product of your business as it relates to the NAICS code listed in 12.
14. Identify and describe any other sources or equipment owned and operated by the primary facility that are located on contiguous or adjacent properties and the role the source or equipment plays in supporting the primary facility.

Permit Application Type:
15. Check the box describing the type of permit application. Provide the permit number as applicable.

Important note: Applications can be mailed hard copy or submitted electronically (PDF version) to:

Idaho Department of Environmental Quality
Attn: Air Quality Program
1410 North Hilton
Boise, ID 83706-1255

Electronically: Send to the Stationary Source Permit Program Coordinator (see the DEQ website)

PTC Fee:

Important note: If application is for a permit to construct (PTC), include the application fee of $1,000 when submitting the application. Per IDAPA 58.01.01.226.02, DEQ cannot process the application without the fee, which must be submitted with the application.

If paying PTC Fee with a check, make the check payable to the Idaho Department of Environmental Quality, and send with the application to the above address:

If paying with a credit card or E-check, payment can be made at https://www.accessidaho.org/a/payport/online/deq/index.html (Note: Convenience fee of 3% applies to credit card payments, $5 to E-check payments.)

If paying by bank wire transfer the DEQ Fiscal Office at (208) 373-0446.

16. For existing Tier I facilities that are applying for a PTC, the applicant must specify how the PTC will be incorporated into the Tier I permit (IDAPA 58.01.01.209.05). If you have questions, call the Air Permit Hotline at 1-877-573-7848.
17. Check this box to indicate if you want to review a draft permit before the final permit is issued.
18. Check this box to indicate if you want to request a permit hand-off meeting. This meeting is an opportunity to meet with DEQ staff to further understand how to demonstrate and maintain compliance with your permit conditions. If this box is checked, a DEQ representative will contact you to schedule a permit hand-off meeting after the final permit has been issued.

Certification of Truth, Accuracy, and Completeness (by Responsible Official):

Provide the name, title, address, telephone number, and e-mail of the facility's responsible official. Responsible Official is defined in IDAPA 58.01.01.006. The responsible official must sign and date the application before it is submitted to DEQ. Important note: DEQ does accept applications submitted via e-mail (PDF version) as long as it has a representation of the actual signature of the responsible official.
Please see instructions on page 3 before filling out the form.

**IDENTIFICATION**

1. Company Name: J.D. Heiskell & Co
2. Facility Name: Gooding Mill
3. Facility No.: 047-00011

4. Brief Project Description:
   This facility is a feed mill that works with the dairy and other agricultural facilities.

**CYCLONE SEPARATOR INFORMATION**

**Equipment Description**

<table>
<thead>
<tr>
<th>Manufacturer:</th>
<th>ALANCO</th>
<th>Model Number:</th>
<th>88000841</th>
</tr>
</thead>
</table>

**Dimensions**

- Gas In
- Gas Out
- FRONT VIEW
- TOP VIEW

Give dimensions of cyclone. (See sample diagram above.)

1. B: 9.84 in.
4. L: 58.66 in.
5. Z: 34.61 in.
6. D: 49.21 in.
7. A: 24 in.

**Particle Size Distribution Data**

<table>
<thead>
<tr>
<th>Micron range</th>
<th>Particle size distribution weight %</th>
<th>Manufacturer's guaranteed removal efficiency for each micron range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5-1.0</td>
<td>(10)2.5</td>
<td>not given</td>
</tr>
<tr>
<td>1.0-5.0</td>
<td>(10)2.5</td>
<td>70%</td>
</tr>
<tr>
<td>5-10</td>
<td>(10)5</td>
<td>85%</td>
</tr>
<tr>
<td>10-20</td>
<td>(10)80</td>
<td>93%</td>
</tr>
<tr>
<td>Over 20</td>
<td>(60)80</td>
<td>&gt;96%</td>
</tr>
</tbody>
</table>

9. Type of Cyclone: ☐ Wet ☒ Dry

10. Type of Cyclone Unit: ☐ Single ☐ Quadruple ☐ Dual ☒ Multicone

11. Blower: Blower horsepower: 75 hp
Design flow rate: 10,000 scfm
Draft: ☐ Forced ☒ Induced

12. Design Criteria
Cyclone configuration: ☐ Positive pressure ☒ Negative pressure

13. Pre-Treatment Device
☐ Cyclone ☐ Knock-out chamber ☐ None
☐ Precooler ☐ Preheater

14. Post-Treatment Device
☐ Baghouse/Cartridge ☐ HEPA ☐ Other:
<table>
<thead>
<tr>
<th>15. Brief Description of Process</th>
<th>The flaking system consists of steep tanks where the grain soaks. The grain is then steamed to soften and goas to the roller mills and cooler tanks. The cooler tanks use ambient air to dry flaked grain as it is rotated through the cooler drums. The Cyclones pull air through cooler system and discharge particules that are captured in the process back to process stream.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Flow Data</td>
<td><strong>Gas stream temperature:</strong> 120 degrees F&lt;br&gt;&lt;br&gt;<strong>Moisture content:</strong> 1.75 grams of water/cubic feet (ft^3) of dry air&lt;br&gt;&lt;br&gt;<strong>Pressure drop range</strong>&lt;br&gt;High: 5.6 in. H₂O&lt;br&gt;Low: 2.0 in. H₂O&lt;br&gt;&lt;br&gt;<strong>Dew point temperature of process stream:</strong> 103 degrees F&lt;br&gt;&lt;br&gt;<strong>Inlet flow rate:</strong> 16,407 ACFM</td>
</tr>
<tr>
<td>17. Dust Collection Device</td>
<td>☑ Pneumatic conveyor  ☑ Rotary airlock values  ☑ Screw conveyors  ☑ Closed container &lt;br&gt;☐ Double dump  ☐ Drag conveyor  &lt;br&gt;☐ Manual discharge device  ☐ Slide gate  OR  ☐ Hinged doors or drawers</td>
</tr>
<tr>
<td>18. Operating Schedule</td>
<td>Normal: 24 hours/day  6 days/week  52 weeks/year&lt;br&gt;Maximum: 24 hours/day  7 days/week  52 weeks/year</td>
</tr>
</tbody>
</table>
**DEQ AIR QUALITY PROGRAM**
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

**Emissions Units Industrial Boiler Information - Form EU5**
Revision 6
11/26/18

Please see instructions on page 3 before filling out the form.

## IDENTIFICATION

1. Company Name
   - J.D. Heiskell

2. Facility Name:

3. Brief Project Description:
   - This Facility is a feed mill for the dairy and other agricultural industries.

## BOILER UNIT SPECIFICATIONS

4. Type of Unit: [ ] New unit [ ] Unpermitted existing unit [ ] Modification to an existing permitted unit? Permit number: ____________

5. Manufacturer: [ ] Sellers

6. Model: 200HP-105E

7. Manufacture Date: June 2019

8. Date of installation: October 2019

9. Serial Number: 105618

10. Boiler ID Number: A & B

11. Control Device (if any) [ ] Baghouse, ESP, or Scrubber Note: Attach applicable control equipment FORM BCE, ESP, or SCE

12. Fuel Meter Used: [ ] Gaseous [ ] Liquid [ ] None

13. Boiler Exhaust Stack Parameters:
   - Diameter: [ ] 18" inches
   - Height: [ ] 7 feet
   - Temperature: [ ] 350 °F
   - Flow rate: [ ] 1,853 acfm
   - Exhaust Orientation: [ ] Vertical (unobstructed upward)
   - [ ] Vertical (obstructed upward)
   - [ ] Horizontal
   - [ ] Other

14. Primary Burner: Manufacturer: [ ] Sellers

   Model: [ ] Integral

   Max Heat Input Rating: [ ] 8,368 MMBtu/hr

15. Secondary Burner (if applicable): Manufacturer: [ ]

   Model: [ ]

   Max Heat Input Rating: [ ] MMBtu/hr

## FUEL SPECIFICATION AND EMISSION FACTORS

16. Primary Fuel Type: [ ] Natural Gas [ ] Diesel Fuel (# ) [ ] LPG/Propane [ ] Other Fuel:

17. Secondary Fuel Type (if applicable): [ ] Natural Gas [ ] Diesel Fuel (# ) [ ] LPG/Propane [ ] Other Fuel:

### Fuel Type

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Primary Fuel</th>
<th>Secondary Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

18. Fuel Heat Value (Btu/unit, LHV)

19. Sulfur Content (ppmv, wt%)
   - From AP-42 9.1.1-1

20. Manufacturer’s Rated or Source Test Emission Factors (if applicable)

<table>
<thead>
<tr>
<th>Operational Mode</th>
<th>Operational Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steady State (lbs/MMBtu)</td>
<td>Start Up (lb/hr)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>PM_{10}</td>
<td>Appendix B</td>
</tr>
<tr>
<td>PM_{2.5}</td>
<td></td>
</tr>
<tr>
<td>NO_{x}</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td></td>
</tr>
<tr>
<td>SO_{2}</td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td></td>
</tr>
</tbody>
</table>

21. Other Pollutant(s):

22. Duration Operational Mode:
   - N/A

### OPERATING LIMITS & SCHEDULE

23. Proposed Operating Limits: (hr/day, hr/yr, gallyr, MMScf/yr, etc) Note: These limits will be placed in the permit:

### FEDERAL RULES APPLICABILITY

24. NSPS or MACT Applicability: [ ] Yes [ ] No

   If "Yes", which subpart applies?: ____________

   Note: Form FRA must be completed.
Instructions for Form EU1

Please refer to IDAPA 58.01.01.220 for a list of the general exemption criteria for Permit to Construct exemptions.

1 – 3. Provide the same company name, facility name (if different), and brief project description as on Form GI. This is useful if the application pages are separated.

USE ATTACHMENT IF ADDITIONAL SPACE IS REQUIRED.

Boiler Unit Specifications:

4. Indicate whether the boiler unit is a new unit, unpermitted existing unit, or a unit being modified.
5-7. Provide the boiler unit manufacturer, model, and date the boiler unit was manufactured.
8. Provide the date of installation of the boiler unit if the unit is already existing.
9. Provide the serial number of the boiler unit.
10. Provide the Boiler ID number of the boiler unit (if a specific number is used for identification in emissions inventory or modeling analysis).
11. List any add-on emissions control equipment used with the boiler unit. Idaho DEQ Form BCE and SCE are to be completed in addition to provide additional information if a baghouse or scrubber is used.
12. Indicate if a fuel meter for the boiler unit is used, and if so, what type.
13. Provide the boiler unit exhaust stack parameters. The temperature and flow rate should be per the boiler unit manufacturer. If the stack height is very tall, provide a justification for the exhaust gas temperature.
14. Provide the manufacturer, model and heat input rating for the primary burner of the boiler unit. Heat input rating should be per manufacturer.
15. If the boiler unit has a secondary burner unit, provide the manufacturer, model and heat input rating for the secondary burner. Heat input rating should be per manufacturer.

Fuel Specifications and Emission Factors:

16. Indicate which type of primary fuel is combusted by the boiler unit.
17. If a secondary, back-up, or emergency fuel is combusted by the boiler unit, indicate which type.
18. Provide the Fuel Heating Value for fuels combusted by boiler unit (if different from industry standard, include supporting documentation).
19. Provide the sulfur content by percent weight for fuels combusted by the boiler unit.
20. If applicable and available, list the manufacturer's rated or previous source test generated emission factors for the boiler unit. Include supporting documentation. This section is to provide emission factor information that is boiler unit specific and different from generic EPA boiler unit combustion data (i.e. AP-42). Note: Start up and shut down emission factor information may not be available.
21. List any additional pollutant(s) and associated emission factors not listed under question 20 if boiler unit specific info is to be used. Include supporting documentation as necessary. Note: Start up and shut down emission factor information may not be available.
22. List the anticipated time of start up and shut down associated with the boiler unit. If start up and shut down emission factors are not available please list "NA". Note: These anticipated start up and shut down times may be placed in the permit.

Operating Limits & Schedule:

23. Propose a maximum daily and maximum annual boiler unit hourly limit for all applicable fuels. Note: Unless it is 24 hours per day and 8,760 hours per year of operation, this proposed daily hourly limit will be placed in the permit.

Federal Rules Applicability:

25. Indicate if an NSPS or MACT (40 CFR 60 and 40 CFR 63, respectively) subpart is applicable to the boiler unit. If yes, Idaho DEQ Form FRA must be complete to determine the specific applicability of appropriate NSPS or MACT subpart.
Appendix C – Manufacturer's Sheets
TEST RECORD

MANUFACTURING CO.

SO & Model Number: 105618A 2004P-105E
Job Name: JD HEISEKELL
Job Location: BOISE, IDAHO

COMBUSTION TEST RECORD

Input (MBTU/HR) 8,368
Supply Pressure 5 PSI

ft. at sec.

min. sec. at

Pilot Gas Press 8 " WC

Primary Voltage 460V
Blower Mtr NP FLA / OL Setpoint 12A
Blower Motor AMPS L1 10.3
L2 10.7
L3 10.1
Control Circuit AMPS 2.4

Housing SH1350600C3RB
Blower Impeller SF1350400FEA
Air Jet Diameter 6 "
Throat Diameter 6.875 "
Burner Port Dia. 5/8"

Pilot Header On
Left Center Right

Shutter on Blower 3/4" Bolt
Burner Nozzle Size 3/4"

Pilot Header Size 1"
Runner Pilot size 3/4"
Main Reg Spring NA
Pilot Reg Spring PURPLE

Notes:

FLUE GAS ANALYSIS

O2 4.5 %
CO2 9.2 %
CO 12 PPM @3% O2
NOx 50 PPM @ 3% O2

Stack 308 Deg F.
Pilot Flame Sig. 2.8V
Main Flame Sig. 3.2V
Pilot Cold Flash 3 Sec
PRI LWC-Set Pt 13" Check X
2nd LWC-Set Pt 12" Check X
HWC-Set Pt NA Check NA

Note: All measurements are in "INCHES OF WATER COLUMN"
## Quality Control - Controls Check / Test Record

<table>
<thead>
<tr>
<th>Tested By: JARROD &amp; EZRA</th>
<th>Date: 6/18/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Check</strong></td>
<td><strong>Set Point</strong></td>
</tr>
<tr>
<td>Operating Control</td>
<td>X</td>
</tr>
<tr>
<td>High Limit Control</td>
<td>X</td>
</tr>
<tr>
<td>Nox Start Control</td>
<td>NA</td>
</tr>
<tr>
<td>Air Switch</td>
<td>X</td>
</tr>
<tr>
<td>Hi Gas Press Switch</td>
<td>BACK ORDER</td>
</tr>
<tr>
<td>Low Gas Press Switch</td>
<td>X</td>
</tr>
<tr>
<td>Proof of Closure</td>
<td>X</td>
</tr>
<tr>
<td>Pilot Flame Failure</td>
<td>X</td>
</tr>
<tr>
<td>Main Flame Failure</td>
<td>X</td>
</tr>
<tr>
<td>Primary LWCO</td>
<td>X</td>
</tr>
<tr>
<td>Secondary LWCO</td>
<td>X</td>
</tr>
<tr>
<td>High Water Cutoff</td>
<td>NA</td>
</tr>
<tr>
<td>NOVV Test</td>
<td>NA</td>
</tr>
<tr>
<td>Gas Leak Test</td>
<td>X</td>
</tr>
<tr>
<td>Dielectric Test</td>
<td></td>
</tr>
<tr>
<td>Spark &amp; Flame Rod Ck</td>
<td></td>
</tr>
<tr>
<td>Adj Nuts Secure</td>
<td>X</td>
</tr>
</tbody>
</table>

**Emissions**
- Regular
- NOx

**Energy Extractor Type:**
- 1/4"
- 5/16"

** Feed Water YES
- Modulating YES
- Pressure at 4ma NA
- at 20ma NA

**Circulation Pump Provided**

**Pump Voltage**
- Amp Draw
  - L1
  - L2
  - L3

**Circulation Line Test**

*MP Control Circuit Without flamerod jumper in*

<table>
<thead>
<tr>
<th>Check</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

_Sellers-Manufacturing CO._
FORM P-2 MANUFACTURER'S DATA REPORT FOR ALL TYPES OF BOILERS EXCEPT WATERTUBE AND ELECTRIC
As Required by the Provisions of the ASME Code Rules, Section I

1. Manufactured by
   Sellers Manufacturing Co., 916-922 West Walnut, Danville, Kentucky, 40422
   (Name and address of manufacturer)

2. Manufactured for
   Not Known
   (Name and address of purchaser)

3. Location of Installation
   Not Known
   (Name and address)

4. Type
   Horizontal Fired
   Boiler No.: 15411
   (HRT, etc.)
   (MM's Serial No.)
   (CRN)
   (Drawing No.)
   (N aft Board No.)
   Year Built: 2019

5. The chemical and physical properties of all parts must meet the requirements of material specifications of the ASME Boiler and Pressure Vessel Code. The design conforms to Section I of the ASME Boiler and Pressure Vessel Code 2017

Addenda to N/A (if applicable), and Code Cases N/A
   (Date) (Year) (Number)

Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors are attached for the following items of this report:
N/A
   (Name of part, item numbrer, mfr's name and identifying Certification Mark)

6. Shell or drums
   One
   (no.)
   (matl spec. gr.)
   5/16" (thickness)
   54" (diameter ID)
   0.114" (length, inside)
   N/A (diameter OD)
   N/A (length, inside)

7. Joints
   Welded
   100% efficiency (as compared with seamless)
   [long (seamless, welded)]
   [shear (seamless, welded)]
   [no. of shell courses]

8. Heads
   SA516-70 3/4" Flat
   (Material Specification No.: Thickness - Flat, Dished, Elliptical - Radiu s of Dished)

9. Tubesheet
   SA516-70 3/4"
   (Matl. Spec., Grade, Thickness)
   Tube Holes
   2 1/32" (Diameter)

    100
    SA178A
    (Matl. Spec., Grade)
    (Straight or Bent)
    Diameter
    2" XID
    Length
    84" (if various, give max. & min.)
    Gage
    .065 (or thickness)

11. Furnace No.
    N/A
    Size
    N/A
    (O.D. or W.T.)
    Length, each section N/A
    Total N/A

   Type
   N/A
   (Plain, Augmented, Ring Reinforced, Corrugated, Combined, or Stayed)
   (Matl. Spec., Grade, Thickness)
   Seams: Type
   N/A
   (Seamless, Welded)

    N/A
    Size
    N/A
    (Diameter, Matl. Spec., Grade, Size Yields, Net Area)

   Pitch
   N/A
   (Horizontal and Vertical)
   MAWP N/A

13. Stays or braces

<table>
<thead>
<tr>
<th>Location</th>
<th>Material Spec. No.</th>
<th>Type</th>
<th>No. and Size</th>
<th>Maximum Pitch</th>
<th>Fig. PFT-32 LA</th>
<th>Dist. Tubes to Shell</th>
<th>MAWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) F.H. above tubes</td>
<td>SA516-70</td>
<td>Thru</td>
<td>(2) 1 3/4&quot;</td>
<td>12&quot;</td>
<td>N/A</td>
<td>19&quot;</td>
<td>165</td>
</tr>
<tr>
<td>(b) R.H. above tubes</td>
<td>SA516-70</td>
<td>Thru</td>
<td>(2) 1 3/4&quot;</td>
<td>12&quot;</td>
<td>N/A</td>
<td>19&quot;</td>
<td>165</td>
</tr>
<tr>
<td>(c) F.H. below tubes</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>10&quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>(d) R.H. below tubes</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>10&quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>(e) Through stays</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>(f) Dome braces</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

14. Other Parts.

1. Boiler Piping
   (Brief Description - i.e., Dome, Boiler Piping, etc.)

2. Safety Valve

3. N/A

1. See Remarks

2. See Remarks

3. N/A
   (Matl. Spec., Grade, Size, Material Thickness, MAWP)
FORM P-2

Manufactured by: Sellers Manufacturing Co., 916-922 West Walnut, Danville, Kentucky, 40422

Mr's Serial No. 15411 CRN N/A National Board No. 12912

[Specifications and data for the boiler are listed here.]

16. Fusible Plug (if used) N/A

17. Boiler Supports: No. One Type Skid (Saddles, Leg, or Lug) Attachment Welded (Bolted or Welded)

18. MAWP 150 psi Based On PG 27 & PG 46 (Code Para. and/or Formula) Heating Surface 340 sq. ft. (Total)

19. Shop Hydrostatic Test 220 psi 20. Maximum Designed Steaming Capacity 6,900 lb/hr

21. Remarks

Master Report Plug (1/1" (1/2) 2/6000# SAI05 Bushing (1) 1"-4" (1/4)-4" 2/6000# SAI05 Bell Coupling (1) 1"-6" MZ 300#

Cross (1) 1" MZ 1500#

See (2) 1" (2) 1-1 1/4" MZ 1500# (1) 2" SAI05 2000#

Union (1) 1/4" (1) 1/4" MZ 1500# (1) 1/2" MZ 300#

Elbow (1) 1/4"-4" MZ 1500# (1) 2" 2000# SAI05 (1) 1/4" MZ 300#

Additional Remarks - See Attached P-8...

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this data report are correct and that all details of design, material, construction, and workmanship of this boiler conform to Section I of the ASME Boiler and Pressure Vessel Code.

Our Certificate of Authorization no. 18468 to use the S Designator expires January 16, 2020

Date 06/17/2019 Signed

(Authorized Representative) Name Sellers Manufacturing Co.

(Manufacturer)

CERTIFICATE OF SHOP INSPECTION

Boiler constructed by Sellers Manufacturing Co. at 916-922 West Walnut, Danville, Kentucky, 40422

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by The Hartford Steam Boiler Inspection and Insurance Company have inspected parts of this boiler referred to as data items and have examined the Manufacturer's Partial Data Reports and that, to the best of my knowledge and belief, the manufacturer has constructed this boiler in accordance with Section I of the ASME Boiler and Pressure Vessel Code. By signing this certificate, neither the inspector nor the manufacturer makes any warranty, expressed or implied, concerning the boiler described in this Manufacturer's Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 06/17/2019 Signed

(National Board Authorized Inspector Commission Number)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly of all parts of this boiler conforms with the requirements of Section I of the ASME Boiler and Pressure Vessel Code.

Our Certificate of Authorization no. 18468 to use the S Designator expires January 16, 2020

Date 06/17/2019 Signed

(Authorized Representative) Name

(Assembler)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by

have compared statements in this Manufacturer's Data Report with the described boiler and state that the parts referred to as data items included in this certificate of shop inspection, have been inspected by me and that, to the best of my knowledge and belief, the manufacturer and/or the assembler has constructed and assembled this boiler in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code. The described boiler was inspected and subjected to a hydrostatic test of... By signing this certificate, neither the inspector nor the manufacturer makes any warranty, expressed or implied, concerning the boiler described in this Manufacturer's Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 06/17/2019 Signed

(National Board Authorized Inspector Commission Number)
FORM P-6 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules

1. Manufacturer (or Engineering-Contractor) Sellers Manufacturing Co., 916-922 West Walnut, Danville, Kentucky, 40422
   (Name and Address)

2. Purchaser Not Known
   (Name and Address)

3. Type of Boiler Horiz/Internal Fired

4. Boiler No. 15411
   (Mfr's. Serial No.) N/A
   (CRN) BS-1-6
   (Drawing No.) 12912
   (Neff Board No.)
   2019
   (Year Built)

Data Items by Line No.

Additional Remarks:
Slow Opening Valve (1) 2" United 325U 300#
Quick Opening Valve (1) 2" Everlasting 4000A
Feed water valve (1) 1/4" Sharpe 1500# CWF (1) 1/4" Belimo 200#
Check valve (1) 1/4" Watson McDaniel SS
Surface Blow down valve (1) 1/4" Nibco T-174-A (1) 1/4" Tasco 4445 150#
Nipples SA106-B/SA53-B SMLS
(1) 1/4" (5) 1/4" (15) 1" (4) 1/4" (5) 2" Sch 80 (8) 1" Sch 40
Water Column Blowdown Valve (2) 1" Brass 150#
Syphon (1) 1/4" Brass
Unplugged Openings (3)
(1) 2" Runkle 6021JH01 5/C 150# 10,816

Date 06/17/2019 Signed Sellers Manufacturing Co. by

Date 06/17/2019

[Authorized Inspector] Commissions 15728, IN2018, KY1142, IL02329/C, OH1401
(National Board Commission Number and Endorsement)

PK3Y 3407S12 ex: v6.3.45
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Appendix A – Facility Wide PTE Calculations
1. INTRODUCTION

J.D. Heiskell & Co. LLC (Heiskell) owns and operates a livestock feed manufacturing and transport loading facility in Gooding, Idaho (Facility). The Facility is a minor stationary source as defined by the federal operating permit program (40 CFR Part 70) and the federal New Source Review (NSR) program (40 CFR Part 52). The Facility is subject to the Idaho Administrative Procedures Act (IDAPA) 58.01.01.200 Permit to Construction (PTC) requirements. The Facility’s most recent PTC (Permit Number P-2010.0025) was issued on June 9, 2010.

The Facility submitted a PTC modification application to the Idaho Department of Environmental Quality (DEQ) on August 6, 2021, for the installation of two new boilers, the replacement of two new cyclones, and increases to production (Project). On September 10, 2021, DEQ determine the application was complete. However, on October 5, 2021 DEQ notified Heiskell that the PTC modification application did not include an air impact analysis (AIA) required by IDAPA 58.01.01.203 and requested that Heiskell withdraw their PTC modification application.

Heiskell submitted an air quality modeling protocol (Protocol) on February 25, 2022 in order to outline the procedures proposed to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) required as part of the AIA. The Protocol proposed using AERMOD, the U.S. EPA-preferred, refined air dispersion model to conduct the AIA. IDEQ approved the Protocol on April 7, 2022, with the provision that the modeling, and associated report, addressed comments be incorporated into the air quality modeling Report.

This Report has been prepared in order to address IDEQ comments and present the air quality modeling results, in accordance with guidance provided in 40 CFR Part 51 Appendix W “Guideline on Air Quality Models”\(^1\) as well as guidance IDEQ’s “Guideline for Performing Air Quality Impact Analyses” (DEQ Modeling Guideline), that were used to compare modeled predicted ambient concentrations of Facility-wide particulate matter less than 2.5 microns (PM\(_{2.5}\) to PM\(_{2.5}\) NAAQS.

---

2. PROJECT DESCRIPTION AND BACKGROUND

This section of the Report contains a description of the Project, as well as a description of the geographic and topographic setting of the Facility. The Project description contains general information on the emissions units and a summary of the proposed Project.

This Report is being submitted to support the air quality modeling required to support a PTC modification application at the Facility. The purpose of the PTC application is to satisfy the requirements of the IDAPA 58.01.01.200-228. The Project includes the following point and fugitive emissions sources as summarized in Table 2-1 below.

<table>
<thead>
<tr>
<th>Model ID</th>
<th>Description</th>
<th>Source Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL_ST1</td>
<td>Boiler A Stack</td>
<td>Point, Vertical Release</td>
</tr>
<tr>
<td>BL_ST2</td>
<td>Boiler D Stack</td>
<td>Point, Vertical Release</td>
</tr>
<tr>
<td>CYC1</td>
<td>Cyclone 1</td>
<td>Point, Vertical Release</td>
</tr>
<tr>
<td>CYC2</td>
<td>Cyclone 2</td>
<td>Point, Vertical Release</td>
</tr>
<tr>
<td>RCVSYS</td>
<td>Receiving System - Rail Pit Grain Receiving</td>
<td>Volume, Fugitive</td>
</tr>
<tr>
<td>TRUCKLUW</td>
<td>Truck Loading West Door - Commodity Barn</td>
<td>Point, Capped Release</td>
</tr>
<tr>
<td>TRUCKLUE</td>
<td>Truck Loading East Door - Commodity Barn</td>
<td>Point, Capped Release</td>
</tr>
<tr>
<td>BARNFEED</td>
<td>Internal Handling Commodity Barn</td>
<td>Volume, Fugitive</td>
</tr>
<tr>
<td>MINRLPLT</td>
<td>Mineral Plant Receiving &amp; Loading</td>
<td>Volume, Fugitive</td>
</tr>
</tbody>
</table>

2.1 GENERAL FACILITY DESCRIPTION

The Facility receives and stores grain using a grain receiving system, steam flakes corn and barley, and receives and blends vitamin/mineral supplements for the beef & dairy industry. The Facility operates two natural gas-fired steam boilers with a rated heat capacity of 8.368 million British thermal units per hour (MMBtu/hr) each. The boilers are used to supply steam to the corn and flaking process. The Facility receives 320,000 tons of grain per year. There is a self-contained commodity barn that has a capacity of 30,000 tons of grain and loads 240,000 tons of grain per year from the barn.
2.2 FACILITY AND PROJECT LOCATION

The Facility is located in Gooding County, three kilometers (km) north of State Route 26 and six km east of State Highway 46. The Facility is approximately six km east northeast of Gooding, Idaho. A location map of the Facility is provided as Figure 2-1. The geographical coordinates for the approximate center of the Facility are:

- Universal Transverse Mercator (UTM) Easting: 692,697 meters (m)
- UTM Northing: 4,757,947 m
- UTM Zone: 11
- North American Datum (NAD): 1983
- Longitude (degrees, minutes, seconds): 114° 38’ 16.20”W
- Latitude (degrees, minutes, seconds): 42° 56’ 59.26”N

The Facility is in the Idaho Intrastate Air Quality Control Region (AQCR No. 63). Within this AQCR, Gooding County is in attainment or unclassifiable/attainment for all regulated NSR pollutants as designated in the most recent Code of Federal Regulations.

The area surrounding the Facility is rural. The topography consists of flat terrain with ridges to the north that have elevations of up to 1,500 meters (m) above mean sea level (amsl). The base elevation at the Facility is approximately 1,108 m amsl. The elevations for the surrounding topography were obtained from United States Geological Survey (USGS) Digital Elevation Model (DEM) 1:24,000 data files.

2.3 EXISTING PERMITS AND AIR QUALITY MODELING ANALYSES PERFORMED

This section lists the permit history of the Facility. No PM$_{2.5}$ air quality modeling analyses have been performed for the Facility in support of previous permitting actions. The following list of permits applicable to the Facility is derived from DEQ’s provided permitting history in the existing permit and includes the permit status noted as active and in effect (A) or superseded (S).

- June 4, 2010 – DEQ issued the final permit and statement of basis to change name from Land O’Lakes Purina Feed LLC to J.D. Heiskell & Co. (A).
• June 2, 2005 – P-050403, Facility name change from Land O'Lakes Farmland Feed LLC to Land O'Lakes Purina Feed LLC, Permit Status (S).

• November 8, 1999 – P-990073, Initial PTC for Land O'Lakes Feed Division, Permit Status (S).
3. MODELING ANALYSES APPLICABILITY AND PROTOCOL

This section of the Report describes the air quality modeling analyses that were performed in support of the PTC application as required by DEQ and addresses why the analyses are required as part of the PTC application.

### 3.1 APPLICABLE STANDARDS

Table 3-1 shows the applicable NAAQS along with significant impact levels (SILs).

#### Table 3-1

**Air Quality Screening Levels and Standards**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Period</th>
<th>Significant Impact Levels (µg/m³)</th>
<th>Regulatory Limit (NAAQS) (µg/m³)</th>
<th>Modeled Design Value Used for Comparison to NAAQS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM&lt;sub&gt;10&lt;/sub&gt;</td>
<td>24-hour</td>
<td>5.0</td>
<td>150</td>
<td>Maximum 6&lt;sup&gt;th&lt;/sup&gt; highest</td>
</tr>
<tr>
<td>PM&lt;sub&gt;2.5&lt;/sub&gt;</td>
<td>24-hour</td>
<td>1.2</td>
<td>35</td>
<td>Mean of maximum 8&lt;sup&gt;th&lt;/sup&gt; highest</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>0.2</td>
<td>12</td>
<td>Mean of maximum 1st highest</td>
</tr>
<tr>
<td>Carbon monoxide (CO)</td>
<td>1-hour</td>
<td>2,000</td>
<td>40,000</td>
<td>Maximum 2&lt;sup&gt;nd&lt;/sup&gt; highest</td>
</tr>
<tr>
<td></td>
<td>8-hour</td>
<td>500</td>
<td>10,000</td>
<td>Maximum 2&lt;sup&gt;nd&lt;/sup&gt; highest</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>1-hour</td>
<td>3 ppb (7.8 µg/m³)</td>
<td>75 ppb (196 µg/m³)</td>
<td>Mean of maximum 4&lt;sup&gt;th&lt;/sup&gt; highest</td>
</tr>
<tr>
<td></td>
<td>3-hour</td>
<td>25</td>
<td>1,300</td>
<td>Maximum 2&lt;sup&gt;nd&lt;/sup&gt; highest</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>1-hour</td>
<td>4 ppb (7.5 µg/m³)</td>
<td>100 ppb (188 µg/m³)</td>
<td>Mean of maximum 8&lt;sup&gt;th&lt;/sup&gt; highest</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>1.0</td>
<td>100</td>
<td>Maximum 1&lt;sup&gt;st&lt;/sup&gt; highest</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>3-month</td>
<td>NA</td>
<td>0.15</td>
<td>Maximum 1&lt;sup&gt;st&lt;/sup&gt; highest</td>
</tr>
<tr>
<td>Ozone (O&lt;sub&gt;3&lt;/sub&gt;)</td>
<td>8-hour</td>
<td>40 TPY VOC</td>
<td>70 ppb</td>
<td>Not typically modeled</td>
</tr>
</tbody>
</table>

### 3.2 CRITERIA POLLUTANT MODELING APPLICABILITY

Table 3-2 compares the post-project Facility-wide potential-to-emit (PTE) emissions rates to the “Modeling Applicability Thresholds” listed in Table 2 of DEQ’s “Guidelines for Air Quality Impact Analysis”. As shown in Table 3-2, only PM<sub>2.5</sub> PTE emissions are above the one quarter
significant emission rate (SER) threshold. Therefore, Heiskell performed PM$_{2.5}$ air quality modeling to demonstrate compliance with the PM$_{2.5}$ NAAQS.

### 3.3 TAP MODELING APPLICABILITY

The Facility is not required to demonstrate compliance with toxic air pollutant (TAP) Acceptable Ambient Concentration or the Acceptable Ambient Concentration for a Carcinogen per IDAPA 58.01.01.210.20(b) since the boilers are a source category addressed by a New Source Performance Standard (NSPS) and a National Emissions Standard for Hazardous Air Pollutants (NESHAP).

### 3.4 MODELING PROTOCOL

A Protocol was submitted to DEQ on February 25, 2022, prior to the submittal of the PTC application and this Report. Comments identified by DEQ in the protocol approval notice provided on April 7, 2022, have been addressed as part of this Report.
## Table 3-2
### Modeling Applicability
J.D. Heiskell & Co. Gooding Facility - Gooding, ID

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Facility-Wide PTE Rate</th>
<th>Unit</th>
<th>Threshold</th>
<th>Modeled (yes/no)</th>
<th>Basis for Exclusion from Modeling</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{2.5}$ 24-hour</td>
<td>0.73 lb/hr</td>
<td>lb/hr</td>
<td>0.57 lb/hr - 1/4 SER</td>
<td>Yes</td>
<td>N/A - Emissions above 1/4 SER Thresholds.</td>
</tr>
<tr>
<td>PM$_{2.5}$ annual</td>
<td>3.26 tpy</td>
<td>tpy</td>
<td>2.5 tpy - 1/4 SER</td>
<td>Yes</td>
<td>N/A - Emissions above 1/4 SER Thresholds.</td>
</tr>
<tr>
<td>PM$_{10}$ 24-hour</td>
<td>0.73 lb/hr</td>
<td>lb/hr</td>
<td>0.86 lb/hr - 1/4 SER</td>
<td>No</td>
<td>Emissions Below 1/4 SER Thresholds.</td>
</tr>
<tr>
<td>NO$_2$ 1-hour</td>
<td>0.6 lb/hr</td>
<td>lb/hr</td>
<td>0.91 lb/hr - BRC</td>
<td>No</td>
<td>Emissions Below 1/4 SER Thresholds.</td>
</tr>
<tr>
<td>NO$_2$ annual</td>
<td>2.64 tpy</td>
<td>tpy</td>
<td>4.0 tpy - BRC</td>
<td>No</td>
<td>Emissions Below 1/4 SER Thresholds.</td>
</tr>
<tr>
<td>SO$_2$ 1-hour, 3-hour</td>
<td>0.004 lb/hr</td>
<td>lb/hr</td>
<td>0.91 lb/hr - BRC</td>
<td>No</td>
<td>Emissions Below 1/4 SER Thresholds.</td>
</tr>
<tr>
<td>CO 1-hour, 8-hour</td>
<td>0.09 lb/hr</td>
<td>lb/hr</td>
<td>2.3 lb/hr - BRC</td>
<td>No</td>
<td>Emissions Below 1/4 SER Thresholds.</td>
</tr>
</tbody>
</table>

Note: Lead and ozone are not included because lead emissions are not anticipated and ozone is not a pollutant that is directly emitted.
4. MODELED EMISSIONS SOURCES

This section of the Report discusses the emissions inventory and the physical stack characteristics that were included in the air quality modeling analyses.

4.1 CRITERIA POLLUTANTS

Facility wide PM$_{2.5}$ emissions represent PTE emissions rates. A summary of the PM$_{2.5}$ emissions calculations is provided in Appendix A. It was assumed that all emissions sources operated for 8,760 hours per year.

4.1.1 Modeled Emissions Rates for Significant Impact Level Analyses

Normally for the Significant Impact Analysis (SIA), project-related emissions from the modified and affected emissions units are used to model concentrations for comparison to the SILs. For this Project, a conservative approach was taken, and the SIA emissions rates were set to be the post-Project PTE rates of all emissions units at the Facility. A summary of Facility-wide PM$_{2.5}$ emissions rates from the emissions units at the Facility are presented in Table 4-1.

4.1.2 Modeled Emissions Rates for Cumulative Impact Analyses

The SIA determined that modeled concentrations were greater than the PM$_{2.5}$ SIL and therefore, a NAAQS air quality modeling demonstration was required. As a result, the, Facility-wide PM$_{2.5}$ emissions inventory developed for the SIA was also be used to demonstrate compliance with the NAAQS. The PTE rates are based on permit limits or an emissions unit’s maximum capacity and worst-case emission factor. A summary of the Facility-wide NAAQS emissions inventory utilized for the evaluation is the same as that for the SIA and is shown in Table 4-1.

The Facility also included local PM$_{2.5}$ PTE emissions from the adjacent Glanbia Nutritional (Glanbia) facility. A summary of the PM$_{2.5}$ PTE emissions and physical stack and fugitive dispersion characteristics for the provided by DEQ for the Glanbia Facility is summarized in Table 4-2.
### Table 4-1

**Modeled Emissions Rates for SIL and Cumulative NAAQS Impact Analyses**

**J.D. Heiskell & Co. Gooding Facility - Gooding, ID**

<table>
<thead>
<tr>
<th>Source</th>
<th>$\text{PM}<em>{10}/\text{PM}</em>{2.5}$</th>
<th>lb/hr</th>
<th>tpy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boilers A and D (total emissions from both units)</td>
<td></td>
<td>0.124</td>
<td>0.55</td>
</tr>
<tr>
<td>Grain Receiving System – Dairy Feed Supplement</td>
<td></td>
<td>0.28</td>
<td>1.25</td>
</tr>
<tr>
<td>Vitamin Mineral Plant - Receiving</td>
<td></td>
<td>0.01</td>
<td>0.045</td>
</tr>
<tr>
<td>Vitamin Mineral Plant - Loading</td>
<td></td>
<td>0.003</td>
<td>0.014</td>
</tr>
<tr>
<td>Internal Handling</td>
<td></td>
<td>0.289</td>
<td>1.3</td>
</tr>
<tr>
<td>Cyclones 1 and 2 (total emissions from both units)</td>
<td></td>
<td>0.024</td>
<td>0.103</td>
</tr>
<tr>
<td><strong>Post Project Totals</strong></td>
<td></td>
<td>0.73</td>
<td>3.26</td>
</tr>
</tbody>
</table>
Table 4-2
Modeled Glanbia Emissions Rates and Release Characteristics for Cumulative NAAQS Impact Analysis

<table>
<thead>
<tr>
<th>Modeling ID</th>
<th>Source Type</th>
<th>Easting (m)</th>
<th>Northing (m)</th>
<th>Elevation (m)</th>
<th>PM$_{2.5}$ (g/s)</th>
<th>Stack Height (m)</th>
<th>Exit Temperature (K)</th>
<th>Velocity (m/s) or $Y_0$ (m)</th>
<th>Diameter (m) or $Z_0$ (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOILER1</td>
<td>POINTCAP</td>
<td>693,147</td>
<td>4,757,746</td>
<td>1,107</td>
<td>0.0239</td>
<td>9.45</td>
<td>455.37</td>
<td>12.77</td>
<td>0.61</td>
</tr>
<tr>
<td>BOILER2</td>
<td>POINT</td>
<td>693,153</td>
<td>4,757,743</td>
<td>1,107</td>
<td>0.0214</td>
<td>10.97</td>
<td>455.37</td>
<td>12.14</td>
<td>0.61</td>
</tr>
<tr>
<td>BOILER3</td>
<td>POINT</td>
<td>693,159</td>
<td>4,757,742</td>
<td>1,107</td>
<td>0.0214</td>
<td>10.97</td>
<td>455.37</td>
<td>12.14</td>
<td>0.61</td>
</tr>
<tr>
<td>BOILER4</td>
<td>POINT</td>
<td>693,166</td>
<td>4,757,744</td>
<td>1,107</td>
<td>0.0227</td>
<td>9.45</td>
<td>455.37</td>
<td>7.82</td>
<td>0.76</td>
</tr>
<tr>
<td>BOILER5</td>
<td>POINT</td>
<td>693,431</td>
<td>4,757,911</td>
<td>1,108</td>
<td>0.0176</td>
<td>6.40</td>
<td>460.93</td>
<td>8.19</td>
<td>0.61</td>
</tr>
<tr>
<td>DRYER1</td>
<td>POINT</td>
<td>693,217</td>
<td>4,757,828</td>
<td>1,107</td>
<td>0.0088</td>
<td>26.00</td>
<td>349.82</td>
<td>16.70</td>
<td>1.07</td>
</tr>
<tr>
<td>FBEDBH</td>
<td>POINT</td>
<td>693,208</td>
<td>4,757,860</td>
<td>1,107</td>
<td>0.2142</td>
<td>26.97</td>
<td>345.93</td>
<td>14.20</td>
<td>0.76</td>
</tr>
<tr>
<td>FLARE</td>
<td>POINT</td>
<td>693,445</td>
<td>4,757,876</td>
<td>1,107</td>
<td>0.0126</td>
<td>8.17</td>
<td>1033.15</td>
<td>20.00</td>
<td>0.71</td>
</tr>
<tr>
<td>GEN1</td>
<td>POINT</td>
<td>693,152</td>
<td>4,757,807</td>
<td>1,107</td>
<td>0.0090</td>
<td>4.27</td>
<td>750.43</td>
<td>50.37</td>
<td>0.41</td>
</tr>
<tr>
<td>LACBAG</td>
<td>POINT</td>
<td>693,208</td>
<td>4,757,869</td>
<td>1,108</td>
<td>0.0958</td>
<td>26.15</td>
<td>333.15</td>
<td>8.71</td>
<td>0.51</td>
</tr>
<tr>
<td>LACREC Bh</td>
<td>POINTHOR</td>
<td>693,202</td>
<td>4,757,869</td>
<td>1,108</td>
<td>0.0101</td>
<td>9.14</td>
<td>304.26</td>
<td>50.10</td>
<td>0.10</td>
</tr>
<tr>
<td>LUFTBH</td>
<td>POINT</td>
<td>693,267</td>
<td>4,757,824</td>
<td>1,107</td>
<td>0.0958</td>
<td>17.37</td>
<td>338.71</td>
<td>14.86</td>
<td>0.69</td>
</tr>
<tr>
<td>MREC Bh</td>
<td>POINT</td>
<td>693,218</td>
<td>4,757,849</td>
<td>1,107</td>
<td>0.0126</td>
<td>25.85</td>
<td>317.04</td>
<td>30.10</td>
<td>0.15</td>
</tr>
<tr>
<td>PBINBH</td>
<td>POINT</td>
<td>693,217</td>
<td>4,757,869</td>
<td>1,108</td>
<td>0.0101</td>
<td>26.15</td>
<td>310.93</td>
<td>34.40</td>
<td>0.15</td>
</tr>
<tr>
<td>PDRYBH</td>
<td>POINT</td>
<td>693,209</td>
<td>4,757,858</td>
<td>1,107</td>
<td>0.1525</td>
<td>27.07</td>
<td>338.15</td>
<td>15.20</td>
<td>0.86</td>
</tr>
<tr>
<td>WPCNUS Bh</td>
<td>POINTHOR</td>
<td>693,232</td>
<td>4,757,888</td>
<td>1,108</td>
<td>0.0139</td>
<td>6.10</td>
<td>299.82</td>
<td>8.85</td>
<td>0.52</td>
</tr>
<tr>
<td>WPCSCRBH</td>
<td>POINTHOR</td>
<td>693,210</td>
<td>4,757,887</td>
<td>1,108</td>
<td>0.0038</td>
<td>7.62</td>
<td>299.82</td>
<td>5.08</td>
<td>0.34</td>
</tr>
<tr>
<td>HEATVOL1</td>
<td>VOLUME</td>
<td>693,080</td>
<td>4,757,821</td>
<td>1,107</td>
<td>0.0076</td>
<td>16.76</td>
<td>--</td>
<td>2.13</td>
<td>7.10</td>
</tr>
</tbody>
</table>
4.2 EMISSIONS RELEASE PARAMETERS

A listing of the physical stack and fugitive dispersion characteristics for emissions units at the Facility are provided in Table 4-3 and Table 4-4 respectively. Information related to the physical stack characteristics, which includes unit location, base elevation, release height, stack temperature, stack diameter, and stack exit velocity, is provided. Fugitive PM$_{2.5}$ emissions from unloading of grain from railcar, loading of trucks with feed inside of the Commodity Barn, and loading and unloading of minerals at the Mineral Plant was represented as volume sources as follows.

- For receiving system (Model ID: RCVSYS) at the rail pit, the initial sigma $\gamma$ ($\sigma_y$) was based on the minimum lateral width of the railcar the initial sigma $\zeta$ ($\sigma_z$) was based on the height of the railcar above the receiving pit. The release height was set to half the rail car height. As an elevated-based volume source, the minimum lateral width and vertical height were divided by 4.3 to calculate initial $\sigma_y$ and $\sigma_z$ values.

- For mineral loading and unloading (Model ID: MINRLPLT) and internal handling in the Commodity Barn (Model ID: BARNFEED), the initial sigma $\gamma$’s ($\sigma_y$) were based on the minimum lateral width of the adjacent buildings and the initial sigma $\zeta$’s ($\sigma_z$) were based on the heights of the adjacent buildings. The release height was set to half the adjacent buildings height. As an elevated-based volume source, the minimum lateral widths and vertical heights were divided by 4.3 to calculate initial $\sigma_y$ and $\sigma_z$ values.

- For truck loading from the east and west Commodity Barn (Model IDs TRUCKLUW and TRUCKLUE) doors fugitive emissions were characterized as a capped point source (i.e., no vertical momentum) positioned within the door openings in order to account for building downwash. The point source exit temperature was set to ambient conditions, the point source release height was set to half the height of the door, and the point source diameter was set to an effective diameter based on the door opening area.

A summary of physical stack and fugitive dispersion characteristics for the Glanbia Facility provided by DEQ is provided in Table 4-2 above.
### Table 4-3

**Point Source Stack Parameters**

**J.D. Heiskell & Co. Gooding Facility - Gooding, ID**

<table>
<thead>
<tr>
<th>Description</th>
<th>Modeling ID</th>
<th>Easting</th>
<th>Northing</th>
<th>Elevation</th>
<th>Stack Height</th>
<th>Exit Temperature</th>
<th>Exit Velocity</th>
<th>Stack Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler A Stack</td>
<td>BL_ST1</td>
<td>692,673.41</td>
<td>4,757,946.21</td>
<td>1,108.00</td>
<td>4.27</td>
<td>314.26</td>
<td>16.49</td>
<td>0.61</td>
</tr>
<tr>
<td>Boiler D Stack</td>
<td>BL_ST2</td>
<td>692,673.44</td>
<td>4,757,953.77</td>
<td>1,108.00</td>
<td>4.27</td>
<td>314.26</td>
<td>16.49</td>
<td>0.61</td>
</tr>
<tr>
<td>Cyclone 1</td>
<td>CYC1</td>
<td>692,661.38</td>
<td>4,757,955.36</td>
<td>1,108.00</td>
<td>3.66</td>
<td>322.04</td>
<td>12.94</td>
<td>0.61</td>
</tr>
<tr>
<td>Cyclone 2</td>
<td>CYC2</td>
<td>692,661.26</td>
<td>4,757,948.87</td>
<td>1,108.00</td>
<td>3.66</td>
<td>322.04</td>
<td>12.94</td>
<td>0.61</td>
</tr>
<tr>
<td>Truck Loading West Door - Commodity Barn</td>
<td>TRUCKLUW</td>
<td>692,658.01</td>
<td>4,757,920.79</td>
<td>1,108.00</td>
<td>1.83</td>
<td>0.00</td>
<td>0.001</td>
<td>4.51</td>
</tr>
<tr>
<td>Truck Loading East Door - Commodity Barn</td>
<td>TRUCKLUE</td>
<td>692,752.47</td>
<td>4,757,880.14</td>
<td>1,108.00</td>
<td>1.83</td>
<td>0.00</td>
<td>0.001</td>
<td>4.51</td>
</tr>
</tbody>
</table>
### Table 4-4

**Volume Source Release Parameters**

**J.D. Heiskell & Co. Gooding Facility - Gooding, ID**

<table>
<thead>
<tr>
<th>Description</th>
<th>Modeling ID</th>
<th>Easting (m)</th>
<th>Northing (m)</th>
<th>Elevation (m)</th>
<th>Release Height (m)</th>
<th>Lateral Dimension (m)</th>
<th>Vertical Dimension (m)</th>
<th>Sigma Y₀ (m)</th>
<th>Sigma Z₀ (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving System - Rail Pit Grain Receiving</td>
<td>RCVSYS</td>
<td>692,660.20</td>
<td>4,757,929.46</td>
<td>1,108.00</td>
<td>1.65</td>
<td>2.90</td>
<td>3.30</td>
<td>0.674</td>
<td>1.349</td>
</tr>
<tr>
<td>Internal Handling Commodity Barn</td>
<td>BARNFEED</td>
<td>692,658.51</td>
<td>4,757,847.94</td>
<td>1,108.00</td>
<td>9.15</td>
<td>73.19</td>
<td>18.29</td>
<td>17.02</td>
<td>8.507</td>
</tr>
<tr>
<td>Mineral Plant receiving</td>
<td>MINRLPLR</td>
<td>692,635.68</td>
<td>4,757,997.97</td>
<td>1,108.00</td>
<td>7.62</td>
<td>16.32</td>
<td>15.24</td>
<td>3.795</td>
<td>7.088</td>
</tr>
</tbody>
</table>
5. MODELING METHODOLOGY

This section of the Report presents the technical approach that was used to demonstrate compliance with the PM$_{2.5}$ NAAQS. The air dispersion model selection is discussed, as well as the options that were used in the air quality modeling process. Supporting information such as building downwash analyses, meteorological data, and terrain data along with land use discussion is also presented in this section. The guidance provided in 40 CFR Part 51 Appendix W “Guideline on Air Quality Models”\(^2\) as well as guidance IDEQ’s “Guideline for Performing Air Quality Impact Analyses” (DEQ Modeling Guideline) was used to conduct the air impact analyses.

Table 5-1 summarizes the key air quality modeling parameters used in the AIA. The parameters are described in more detail in the subsections below.

5.1 MODEL SELECTION

The AERMOD (AERMIC MODel) air dispersion model was used to predict ambient air concentrations from the Facility. AERMOD is a 40 CFR Part 51 Appendix W air dispersion model approved for regulatory air quality modeling applications. The current regulatory version of AERMOD is 21112.

The AERMOD modeling system consists of two pre-processors and the dispersion model. AERMET (Version 19191) is the meteorological pre-processor component and AERMAP (Version 18081) is the terrain pre-processor component. The AERMAP pre-processor characterizes the surrounding terrain and generates receptor elevations. The AERMET pre-processor is used to generate an hourly profile of the atmosphere and uses a pre-processor, AERSURFACE (Version 20060), to process land use data for determining micrometeorological variables that are inputs to AERMET.

## Key Modeling Parameters

**J.D. Heiskell & Co. Gooding Facility - Gooding, ID**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description/Values</th>
<th>Documentation/Additional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Facility Location</td>
<td>692,697 m E, 4,757,947 m N NAD83 Zone 11</td>
<td>Located within AQCR No. 63 - In attainment or unclassifiable/attainment for all regulated NSR pollutants.</td>
</tr>
<tr>
<td>Model</td>
<td>AERMOD</td>
<td>AERMOD with the PRIME downwash algorithm, version 21112.</td>
</tr>
<tr>
<td>Meteorological Data</td>
<td>KJER surface data</td>
<td>The meteorological model input files for this project were developed by DEQ. See Section 5.2 of this Protocol for additional details of the meteorological data.</td>
</tr>
<tr>
<td></td>
<td>KBOI upper air data</td>
<td></td>
</tr>
<tr>
<td>Terrain</td>
<td>Considered</td>
<td>Receptor elevations will be obtained from USGS National Elevation Dataset (NED) files and will be used to establish elevation of ground level receptors. AERMAP will be used to determine each receptor elevation and hill height scale.</td>
</tr>
<tr>
<td>Building Downwash</td>
<td>Considered</td>
<td>Plume downwash was considered for the structures associated with the facility. BPIP-PRIME was used to evaluate building dimensions for consideration of downwash effects in AERMOD.</td>
</tr>
<tr>
<td>Receptor Grid</td>
<td><strong>Air Impact Analyses</strong></td>
<td></td>
</tr>
<tr>
<td>Grid 1</td>
<td>25-meter spacing along the ambient air boundary and out 200 meters from the ambient air boundary</td>
<td></td>
</tr>
<tr>
<td>Grid 2</td>
<td>100-meter spacing in a 1,500 meter (easting) by 1,500 meter (northing) grid centered on the facility</td>
<td></td>
</tr>
<tr>
<td>Grid 3</td>
<td>250-meter spacing in a 3,000 meter (easting) by 3,000 meter (northing) grid centered on the facility</td>
<td></td>
</tr>
<tr>
<td>Grid 4</td>
<td>500-meter spacing in a 5,000 meter (easting) by 5,000 meter (northing) grid centered on the facility</td>
<td></td>
</tr>
<tr>
<td>Grid 5</td>
<td>1,000-meter spacing in a 10,000 meter (easting) by 10,000 meter (northing) grid centered on the facility</td>
<td></td>
</tr>
</tbody>
</table>

The AERMOD air dispersion model has various user selectable options that must be considered. U.S. EPA has recommended that certain options be selected when performing air quality modeling studies for regulatory purposes. The following regulatory default options were used in the AERMOD air quality modeling study:

- Stack-Tip Downwash (default)
- Elevated Terrain Effects (default)
- Calms Processing (default)
- No Exponential Decay for Rural Mode (default)
- Missing Data Processing (default)
- Adjust U* (ADJ_U*, default)

A review of the aerial imagery that is available for the Facility location indicates that the land use in the area is almost exclusively rural. Therefore, the urban option was not be utilized for the air quality analyses.

5.2 METEOROLOGICAL DATA

The DEQ Modeling Guideline recommends the use of one year of onsite meteorological data or five years of representative off-site meteorological data. Since onsite data are not available for the Facility, meteorological data from the National Weather Service (NWS) was used in this analysis.

An AERMET file provided by Idaho DEQ was used for the air quality modeling. Five consecutive years (2016-2020) of surface observations from the NWS tower at Jerome County Airport (KJER) Idaho (station ID 726816-04110) and concurrent upper air data from Boise Airport station, Boise, Idaho (KBOI; station ID 24131) were provided by ID DEQ for use in Gooding County. Sub-hourly (1-minute and 5-minute) winds were added to the analysis using AERMINUTE (Version 15272). Surface parameters were extracted from land cover, impervious surfaces, and canopy data provided by USGS as part of the 2016 National Land Cover Database and processed with AERSURFACE.

Moisture content was assessed for the last 22 years (1999-2020) of data at the Jerome County Airport. Three of the five years, 2017, 2018, and 2019, were assessed as having average moisture
content, defined as total annual precipitation that is within the 30th and 70th percentiles of the 22-year precipitation data; 2016 was classified as wet and 2020 as dry.

The meteorological data were processed with AERMET and the ADJ_U* option was applied. The percent calm distribution for the period from 2016-2020 is 0.25%. Missing data account for 1.56% of the data period.

KJER is located approximately 31 km SSW of the Facility in similarly rural environment. The base elevations of the two locations are also similar. The base elevation of the Facility is 1,108 m and the base elevation of the surface station is 1,225 m, with no major terrain features in between. Therefore, the KJER meteorological data are considered representative of the Facility site.

5.3 EFFECTS OF TERRAIN

The air quality modeling domain covers a 10 km-by-10 km square area, centered at UTM coordinate 692,655 m East, 4,757,940 m North and exhibits relatively slight terrain variations from 1,053 to 1,190 m. The highest terrain is located to the northeast, and it gradually decreases towards the southwest with one localized peak on the western edge, 4 to 6 km north of the southwest domain corner.

Terrain elevations were extracted with AERMAP using 1/3 arcsecond National Elevation Data (NED).

5.4 FACILITY LAYOUT

The Facility layout plot plan is provided in Figure 5-1 and shows the buildings, emissions points, and the ambient air boundary at the Facility. The following sections describe the building downwash analysis and the determination of the ambient air boundary. The emissions points were discussed in Section 4.2.

5.5 EFFECTS OF BUILDING DOWNWASH

The stacks at the Facility were analyzed for the potential influence of building downwash on emissions and resulting ambient concentrations. Guidance contained in the U.S. EPA “Guideline
for Determination of Good Engineering Practice (GEP) Stack Height (Revised)”³ and the U.S. EPA Building Profile Input Program (BPIP) for PRIME (BPIPPRM, 04274) was followed. To perform the building downwash analysis, a Facility diagram showing the Facility buildings, structures, and stacks was digitized using GIS software. Buildings with multiple tiers are digitized as a single building with multiple tiers rather than multiple buildings with a single tier. Using the approach that incorporates building tiers preserves the actual representation of the physical characteristic of the buildings. The results of the GIS digitization of the Facility are presented in Figure 5-1.

### 5.6 AMBIENT AIR BOUNDARY

The DEQ Modeling Guideline recommends that any part of the Facility property demarcated with a physical fence or properly marked as private property with established access control could be considered as non-ambient air and no placement of model receptors is required within that area.

According to available tax assessor maps for Gooding County, Heiskell owns a property of approximately 91 acres. To the north the Facility property is bound by the Union Pacific railroad, to the west by local road S2200E, to the east by local road S2300E, and to the south the property is delineated by the edge of two crop fields. For air quality modeling purposes, a smaller and therefore conservative ambient air boundary was adopted, which mainly accommodates an area containing the primary operations. The active operations area is posted with no trespassing signs and employees are instructed to report trespassers which are immediately escorted off the property.

### 5.7 RECEPTOR NETWORK

The receptor grid for the air impact analyses covers a 20 km square area that is centered on the Facility. Receptors are referenced to the UTM coordinate system, Zone 11 using NAD 1983 datum. Rectangular coordinates were used to identify each receptor location. The rectangular receptor grid has the following grid spacing:

- 25 m out to 0.2 km from the ambient air boundary,
- 100 m out to ± 1.5 km,

- 250 m out to ± 3 km,
- 500 m out to ± 5 km, and
- 1,000 m out to ± 10 km.

In addition to the main rectangular Cartesian coordinate receptor grid, property line receptors were used in the AIA. The property line receptors were spaced approximately every 25 meters. A plot of the inner portion of the receptor grid is shown in Figure 5-2.

As discussed in Section 5.3 (Effects of Terrain), the air quality modeling domain is relatively flat. The stacks included in the air quality modeling are relatively short and subject to downwash, hence it is not expected that the emitted plumes would travel very far from the boundary before reaching the ground. Therefore, it is assumed that the receptor grid has adequate spacing to determine peak concentration levels.

### 5.8 BACKGROUND CONCENTRATIONS

The PM$_{2.5}$ background concentrations were added to modeled concentrations as part of the cumulative NAAQS air AIA were extracted from the DEQ background concentrations 2014-2017 tool\(^4\). The two closest grid points are located approximately two km north and south of the Facility; therefore, the representative background value was calculated as the average of the two readings:

- **24-hour:** Northern grid point – 13.20 micrograms per cubic meter (µg/m$^3$), Southern grid point – 13.65 µg/m$^3$, design value 13.43 µg/m$^3$.
- **Annual:** Northern grid point – 4.74 µg/m$^3$, Southern grid point – 5.11 µg/m$^3$, design value 4.93 µg/m$^3$.

\(^4\) [https://idahodeq.maps.arcgis.com/apps/MapSeries/index.html?appid=0c8a006e11fe4ec593804b873098dfe](https://idahodeq.maps.arcgis.com/apps/MapSeries/index.html?appid=0c8a006e11fe4ec593804b873098dfe)
Figure 5-1
Facility Building Downwash Analysis

J.D. Heiskell & Co.
Gooding, ID

PREPARED BY: REB
CHECKED BY: DPD
DATE: April 2022
PROJECT NO.: 01526-0001.00

Aerial Imagery Courtesy of Microsoft Bing
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Figure 5-2
Facility Inner Receptor Grid

J.D. Heiskell & Co.
Gooding, ID

PREPARED BY: REB
CHECKED BY: DPD
DATE: April 2022
PROJECT NO.: 01526-0001.00

Aerial Imagery Courtesy of Microsoft Bing Copyright Vexel Imaging
6. PRESENTATION OF AIR QUALITY MODELING RESULTS AND DISCUSSION

This section of the Report summarizes the results from the AIA. The analyses included a SIL and NAAQS analyses. The air quality modeling results demonstrate that the Facility impacts are below the PM$_{2.5}$ NAAQS.

6.1.1 Significant Impact Level Analysis

The SIL analysis was conducted to determine if Facility-wide PM$_{2.5}$ emissions results in predicted concentrations above the PM$_{2.5}$ SIL. The results from the PM$_{2.5}$ SIL analysis are provided in Table 6-1. Since Facility-wide PM$_{2.5}$ emissions resulted in modeled concentrations greater than the 24-hour PM$_{2.5}$ SIL and annual PM$_{2.5}$ SIL a NAAQS modeling demonstration was conducted at receptors that were determined to be greater than the PM$_{2.5}$ SIL.

6.1.2 Cumulative NAAQS Impact Analysis

For the PM$_{2.5}$ NAAQS analysis, the PTE emissions rates for all of the emissions units at the Facility and local Glanbia sources were evaluated. Representative PM$_{2.5}$ background concentrations were added to modeled concentrations. The results of the PM$_{2.5}$ NAAQS analysis is presented in Table 6-2. The PM$_{2.5}$ NAAQS analysis was conducted at receptors that were determined to be greater than the respective 24-hour and annual PM$_{2.5}$ SIL. In addition, the receptors were split into the following two separate model runs:

1. those covering Glanbia property and
2. those outside Glanbia property.

Modeled impacts only from Heiskell sources were evaluated on the receptors covering Glanbia property. Glanbia sources were not included in the analysis of group (1) receptors, because this area is not considered “ambient air” for Glanbia. Glanbia and Heiskell source were included in the impact analysis of receptor group (2) outside Glanbia property. The Glanbia ambient air boundary was provided by DEQ. A figure identifying the receptors greater than the 24-hour or annual PM$_{2.5}$ SIL and the Glanbia ambient air boundary are presented in Figure 6-1.
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Period</th>
<th>Maximum Modeled Concentration (µg/m³)</th>
<th>Significant Contribution Level (µg/m³)</th>
<th>Impact Percentage of Significant Contribution Level</th>
<th>Cumulative NAAQS Analysis Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{2.5}$</td>
<td>24-hour</td>
<td>23.99$^{(a)}$</td>
<td>1.2</td>
<td>1,999%</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>3.45$^{(a)}$</td>
<td>0.3</td>
<td>1,150%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

$^{(a)}$ Maximum 5-year means (or a lesser averaging period if less than 5 years of meteorological data were used in the analyses) of the maximum modeled concentration for each year modeled.
### Table 6-2
PM$_{2.5}$ NAAQS Analysis Results

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Period</th>
<th>Modeled Design Concentration (µg/m$^3$)</th>
<th>Background Concentration (µg/m$^3$)</th>
<th>Total Impact (µg/m$^3$)</th>
<th>NAAQS (µg/m$^3$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{2.5}$</td>
<td>24-hour</td>
<td>15.68$^{(a)}$</td>
<td>13.43</td>
<td>29.11$^{(a)}$</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>4.27$^{(b)}$</td>
<td>4.93</td>
<td>9.20$^{(b)}$</td>
<td>12</td>
</tr>
</tbody>
</table>

(a) Maximum of 5-year means (or a lesser averaging period if less than 5 years of meteorological data were used in the analyses) of 8th highest modeled concentrations for each year modeled.

(b) Maximum of 5-year means (or a lesser averaging period if less than 5 years of meteorological data were used in the analyses) of maximum modeled concentrations for each year modeled.
Figure 6-1
Significant Receptors and Glanbia Ambient Air Boundary

NAAQS Receptor Grid

- Glanbia-fence
- In GLN
- Out GLN
6.1.3 Submittal of Air Quality Modeling Files

An electronic copy of the air quality modeling input and output files, as well as supporting files (e.g., meteorological data, building downwash analysis, etc.), will be provided to DEQ.
Cyclone x2

PM emission rate = 630 lbs/hr (From Manufacturer)

Grain Handling (Commodity Barn)

30,000 ton barn capacity
240,000 tons per year loaded into barn

30,000 tons * .034lb/tons = 1,020 lb/year = .51 tons/year

240,000 tons/year * .0063 lb/tons = 1,512 lb/year = .756 tons/year

Total = .51 + .756 = 1.3 tons/year
### Table A-1
Cyclone Emissions Calculations  
J.D. Heiskell & Co. Gooding Facility - Gooding, ID

<table>
<thead>
<tr>
<th>Source</th>
<th>Throughput (lb/hr)</th>
<th>Throughput (tpy)</th>
<th>PM Emissions Factor (lb/ton grain)(a)</th>
<th>PM PTE Rate (lb/hr)</th>
<th>PM$_{2.5}$ PTE Rate (lb/hr)(b)</th>
<th>PM$_{2.5}$ PTE (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclone 1</td>
<td>315</td>
<td>1,379.7</td>
<td>0.15</td>
<td>0.024</td>
<td>0.012</td>
<td>0.052</td>
</tr>
<tr>
<td>Cyclone 2</td>
<td>315</td>
<td>1,379.7</td>
<td>0.15</td>
<td>0.024</td>
<td>0.012</td>
<td>0.052</td>
</tr>
</tbody>
</table>

a) Emissions factor from AP-42 Table 9.9.1-2. Cyclone PM emissions factor of 0.15 lb/ton throughput for flaking operations at an animal feed facility.
b) PM$_{2.5}$ emissions are conservatively set to half the PM emissions. Specifically, U.S. EPA AP-42 notes in Table 9.9.1-2 that when PM$_{10}$ data are not available, 50% of the PM data should be used. Heiskell has applied this guidance to PM$_{2.5}$ as well.
<table>
<thead>
<tr>
<th>Throughputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 tons per hour</td>
</tr>
<tr>
<td>36,000 tons per year</td>
</tr>
<tr>
<td>0.0025 lb/ton PM-10 Emissions (Receiving)</td>
</tr>
<tr>
<td>0.0008 lb/ton PM-10 Emissions (Loading)</td>
</tr>
</tbody>
</table>

**PM-10 (Receiving)**

\[36,000 \text{ tons/year} * 0.0025 = 90 \text{ lb/year} = 0.045 \text{ tons/year}\]

**PM-10 (Loading)**

\[36,000 \text{ tons/year} * 0.0008 = 28.8 \text{ lb/year} = 0.0144 \text{ tons/year}\]

Total \[0.0594 \text{ tons/year}\]
Corn is received by railcar
1,000 tons per hour
320,000 tons per year

From Table 9.9.1-1

320,000 tons/year * .0078 lb/ton = 2,496 lbs/year = 1.25 T/yr

1.25 T/yr / 8,760 hrs * 2,000 lbs = .29 lb/yr

* emission rate from AP-42
J.D. Heiskell- PTE Natural Gas Boiler Emissions

2 Natural Gas Boilers
Boiler Max Capacity= 8.368 MMBtu/hr each
Uncontrolled Boiler

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PPM @ 3% O2</th>
<th>Emission Factor lb/MMBtu</th>
<th>lb/hr each</th>
<th>T/yr each</th>
<th>T/yr total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>12 each</td>
<td>0.009</td>
<td>0.075</td>
<td>0.33</td>
<td>0.66</td>
</tr>
<tr>
<td>NOx</td>
<td>50 each</td>
<td>0.06</td>
<td>0.5</td>
<td>2.2</td>
<td>4.4</td>
</tr>
<tr>
<td>SO2</td>
<td>not given by Sellers</td>
<td>0.6*</td>
<td>0.005</td>
<td>0.022</td>
<td>0.043</td>
</tr>
<tr>
<td>PM-10</td>
<td>not given by Sellers</td>
<td>7.6*</td>
<td>0.062</td>
<td>0.273</td>
<td>0.546</td>
</tr>
<tr>
<td>VOC</td>
<td>not given by Sellers</td>
<td>5.5*</td>
<td>0.045</td>
<td>0.198</td>
<td>0.395</td>
</tr>
</tbody>
</table>

Emission Factor (CO & NOx) from Boiler Book Cleaver Brooks based on Manufacturers PPM
Method: Emission Factor * 8.368 * 8,760/2,000^2

* Emission Factor (SO2, PM-10, VOC) from AP-42 Table 1A-1. (lb/10^4*6 scf)
Method: Emission Factor/1,020 * 8.368 * 8,760/2,000^2