



**Air Quality Permitting  
Statement of Basis**

**January 30, 2008**

**Tier I Operating Permit No. T1-030513**

**Idaho Supreme Potatoes, Inc., Firth**

**Facility ID No. 011-00013**

**Prepared by:**

**Michael Stambulis, Permit Writer  
Air Quality Division**

A handwritten signature in black ink, appearing to read "MS", is written over the printed name of Michael Stambulis.

**FINAL**

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## Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British thermal unit
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	Environmental Protection Agency
FBD	fluidized bed dryer
gpm	gallons per minute
gr	grain (1 lb = 7,000 grains)
HAPs	Hazardous Air Pollutants
hp	horsepower
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
m	meter(s)
MACT	Maximum Available Control Technology
MMBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O <sub>3</sub>	ozone
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTE	Potential to Emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
T/yr	tons per year
µg/m <sup>3</sup>	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

## 1. PURPOSE

The purpose of this memorandum is to explain the legal and factual basis for this Tier I Operating Permit in accordance with IDAPA 58.01.01.362.

The Department of Environmental Quality (DEQ) has reviewed the information provided by Idaho Supreme Potatoes, Inc. regarding the operation of its facility located in Firth. This information was submitted based on the requirements to submit a Tier I Operating Permit application in accordance with IDAPA 58.01.01.301.

## 2. FACILITY DESCRIPTION

Idaho Supreme Potatoes, Inc. (Idaho Supreme) is a potato processing company. Its process primarily involves potato dehydration to make potato flakes. This process includes dryers, flakers, and silos, which are also sources of emissions.

Initially, potatoes are received at the plant on trucks and are unloaded across pilers into temporary storage bins. They are taken from the bins for the process using cold water to transport the potatoes. The potatoes then enter a steam peeler, where they are exposed to steam for a brief period of time to loosen the peels prior to washing. The steam is exhausted and quenched in a water bath. Some excess steam may exhaust out the building roof, but most, if not all, of the steam is quenched by cool water and sent to land application.

The peeled and trimmed potatoes are held in a surge bin and released at a metered rate for proper slicing. The product is then blanched in hot water. Potatoes are then cooled and transported into cookers. Once fully cooked, the potatoes are riced, forced through slots, broken into smaller pieces like mash, and added to the dehydration rolls.

The mashed/riced potatoes are spread across the face of the drum dryers with five applicator rolls. The steam drum dryer rotates and drives the moisture from the potato cells. The main dehydrated moisture is removed from the drum dryer stack. Excess moisture is removed by a steam snifter fan.

The dried potato sheet is cut off the drum and broken into smaller pieces. Good flake goes to mills where it is cut into desired particle size and density and air transported to product separation baghouses. The flake is then bagged, placed into large totes for storage and transport, rebled for texture and quality, or sent to silos for storage.

The slice line is identical up to the blanching/cooking stage. The slices are then blown down or up through to dehydrate the slices to a shelf stable product. The potato slices are piled thin in A stage, thicker in B stage, and thickest in C stage. Slices are then sorted and shipped in bags or totes. Slices that are not dehydrated to shelf stable product may be finished or dried in the secondary dryer.

Potato flake is layered into the single unit fluidized bed dryer (FBD). Potato flakes, with moisture content of approximately 7%, are metered from onsite process and storage units into a mixing unit. In the same mixer, liquid additives are applied through pressure sprays at room temperature ahead of the dryer body. The treated moist flake now has a moisture content of approximately 30%. The flake is then metered into the FBD, where it passes through three compartments. The first two are heated, and the third compartment is a cooling stage. The resulting product is collected and repacked. Two Maxon burners, each rated at 3.5 million British thermal units per hour (MMBtu/hr), provide the required heat for final dehydration. Product drying rate sets the actual heat input demand.

Idaho Supreme uses two boilers to provide steam for the process. Fuel for the boilers is stored in aboveground storage tanks (ASTs).

### 3. FACILITY/AREA CLASSIFICATION

This facility is a major facility as defined by IDAPA 58.01.01.008.10 because it emits or has the potential to emit regulated air pollutants in amounts greater than or equal to major facility thresholds listed in Subsection 008.10. Refer to Section 6.2 of this document for a complete emissions inventory of the air pollutants emitted by this facility.

This facility is not a designated facility as defined by IDAPA 58.01.01.006.30.

This facility is not a major facility as defined by IDAPA 58.01.01.205 because it emits or has the potential to emit a regulated criteria air pollutant in amounts less than 250 tons per year.

The Standard Industrial Classification defining the facility is 2034, and the Aerometric Information Retrieval System (AIRS) facility classification is A.

The facility is located in Bingham County in the northern portion of the Pocatello regional district, which is classified as unclassifiable for all regulated criteria air pollutants. There is not a Class I area within 10 kilometers of the facility. This facility is located in Air Quality Control Region 61 and Universal Transverse Mercator Zone 12.

### 4. APPLICATION SCOPE

Idaho Supreme submitted a Tier I Operating Permit application as required under Permit Condition 2.14 of Tier II Operating Permit No. 011-00013, June 7, 2002. The facility requested DEQ remove the New Source Performance Standard (NSPS) requirements pertaining to Boiler No. 3 and Boiler No. 4. The request is further discussed in Section 7.2 of this memorandum.

### 5. SUMMARY OF EVENTS

May 5, 2003	DEQ received application.
July 3, 2003	DEQ determined application incomplete and requested further information.
February 10, 2004	DEQ received response to incompleteness letter.
April 7, 2004	DEQ determined application complete.
February 25, 2005	DEQ received Tier II Operating Permit application. DEQ decided to delay Tier I Operating Permit in attempt to incorporate Tier II permit into document.
February 9, 2007	Idaho Supreme withdrew Tier II Operating Permit application.

#### 5.1 *Permitting History*

January 19, 1983	DEQ issued initial PTC for facility
May 4, 1995	DEQ issued PTC No. 011-00013
September 22, 1995	DEQ issued PTC No. 011-00013
January 16, 1996	DEQ issued initial Tier II Operating Permit No. 011-00013
December 23, 1998	DEQ issued Tier II Operating Permit No. 011-00013
April 22, 2002	DEQ issued Tier II Operating Permit No. 011-00013
June 7, 2002	DEQ issued Tier II Operating Permit No. 011-00013
December 20, 2004	DEQ entered into Consent Order with Idaho Supreme Potatoes, Inc.

Of these permits and Consent Orders, Tier II Operating Permit No. 011-00013, issued June 7, 2002, and the December 20, 2004, Consent Order are active. DEQ has canceled or superseded all other permits issued to this facility.

## 6. PERMIT ANALYSIS

### 6.1 Basis of Analysis

The following documents were relied upon in preparing this memorandum and the Tier I Operating Permit:

- Tier II Operating Permit No. 011-00013, issued June 7, 2002
- Consent Order between Idaho Supreme and DEQ; signed by DEQ on December 20, 2004
- Tier I Operating Permit application received May 5, 2003
- Guidance developed by the U.S. Environmental Protection Agency (EPA) and DEQ

### 6.2 Emissions Description and Emissions Inventory

#### Fuel-burning Equipment

Air pollution emission rates from fuel burning equipment were calculated using EPA Air Pollution Emission Factors (AP-42 emissions factors). Tables 6.1 and 6.2 present hourly and annual emissions, respectively, of criteria pollutants from all fuel-burning equipment at the facility. Criteria pollutants include nitrogen oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter with an aerodynamic diameter of 10 micrometers or less (PM<sub>10</sub>), carbon monoxide (CO), volatile organic compounds (VOCs), and lead.

**Table 6.1 Hourly Emissions of Criteria Pollutants – Fuel-burning Equipment  
(pounds per hour)**

Process	PM <sub>10</sub> <sup>a</sup>	Sulfur Dioxide	Nitrogen Oxides	Carbon Monoxide	VOCs <sup>b</sup>	Lead
Fluidized Bed Dryer	0.76	4.0E-03	1.10	0.57	0.04	3.0E-06
Boiler #4	7.48	127.6	31.0	11.0	0.75	1.0E-03
Boiler #3	0.32	2.5E-02	6.08	3.55	0.24	2.1E-05
Secondary Dryers	4.1E-03	3.0E-04	5.9E-02	4.5E-02	2.9E-03	3.0E-07
Dryers - Stage A	0.06	4.7E-03	0.63	0.65	0.05	3.9E-06
Dryer - Stage B	0.02	1.9E-03	0.25	0.26	0.04	1.6E-06
Dryers - Stages C	0.02	1.9E-03	0.25	0.26	0.05	1.6E-06
Space Heater - North	0.06	4.8E-03	0.80	0.68	0.04	4.0E-06
Space Heater - South	0.06	4.8E-03	0.80	0.68	0.04	4.0E-06
Space Heater - East	0.11	9.0E-03	1.50	1.26	0.11	7.5E-06
Space Heater - Misc.	0.01	1.2E-03	0.21	0.16	0.02	9.7E-07

<sup>a</sup> Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers. Includes condensables.

<sup>b</sup> Volatile organic compounds.

Emissions from Boiler No. 4 were evaluated with Nos. 4, 5, and 6 residual fuels, No. 2 distillate fuel oil, natural gas, and propane as fuels. Emissions from Boiler No. 3, the fluidized bed dryer, the secondary dryers, dryer Stages A, B, and C, and the space heaters were evaluated with natural gas and propane as fuels. The emissions reported in Table 6.1 represent the hourly emissions from fuel-burning equipment operating at maximum capacity, with the exception of sulfur dioxide emissions from Boiler No. 4. Sulfur dioxide emissions from Boiler No. 4 presented in Table 6.1 represent allowable emissions established in the existing Consent Order.

**Table 6.2 Annual Emissions of Criteria Pollutants – Fuel-burning Equipment  
(tons per consecutive 12-month period)**

Process	PM <sub>10</sub> <sup>a</sup>	Sulfur Dioxide	Nitrogen Oxides	Carbon Monoxide	VOCs <sup>b</sup>	Lead
Fluidized Bed Dryer	3.3	1.8E-02	4.8	2.5	0.2	1.3E-05
Boiler #4	32.8	248	135.8	48.2	3.3	4.4E-03
Boiler #3	1.4	0.11	26.6	15.5	1.0	9.2E-05
Secondary Dryers	1.8E-02	1.3E-03	0.3	0.2	1.3E-02	1.3E-06
Dryers - Stage A	0.3	2.0E-02	2.8	2.9	0.2	1.7E-05
Dryer - Stage B	0.1	8.2E-03	1.1	1.1	0.2	6.8E-06
Dryers - Stages C	0.1	8.2E-03	1.1	1.1	0.2	6.8E-06
Space Heater - North	0.2	1.5E-02	2.4	2.0	0.1	1.2E-05
Space Heater - South	0.2	1.5E-02	2.4	2.0	0.1	1.2E-05
Space Heater - East	0.3	2.7E-02	4.5	3.8	0.3	2.3E-05
Space Heater - Misc.	4.5E-02	3.5E-03	0.6	0.5	0.1	2.9E-06

<sup>a.</sup> Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers. Includes condensables.

<sup>b.</sup> Volatile organic compounds.

Emissions from Boiler No. 4 were evaluated with Nos. 4, 5, and 6 residual fuels, No. 2 distillate fuel oil, natural gas, and propane as fuels. Emissions from Boiler No. 3, the fluidized bed dryer, the secondary dryers, dryer Stages A, B, and C, and the space heaters were evaluated with natural gas and propane as fuels. The emissions reported in Table 6.2 represent the hourly emissions from fuel-burning equipment operating at maximum capacity, with the exception of sulfur dioxide emissions from Boiler No. 4 and emissions from Boiler No. 3 and the space heaters. Sulfur dioxide emissions from Boiler No. 4 presented in Table 6.1 represent allowable emissions established in the existing Consent Order. Emissions from Boiler No. 3 are based on 3,185 hours of operation per consecutive 12-month period as limited in the existing Tier II Operating Permit permit. Emissions from the space heaters are based on 6,048 hours of operation per consecutive 12-month period for each unit as limited in the existing Tier II Operating Permit.

Emissions of toxic and hazardous air pollutants (TAPs and HAPs) were also calculated using AP-42 emission factors. Please refer to Appendix B for details regarding the potential TAP and HAP emissions.

### Potato Processing

In addition to fuel-burning equipment, particulate matter (PM) and PM<sub>10</sub> are emitted from material processing and handling operations at the facility. Aggregate dehydration process emissions of PM were based on a mass balance previously completed by Idaho Supreme. The results of the mass balance were originally submitted to DEQ in April 1995. The maximum PM emissions identified were approximately 0.00995% of the raw potato throughput. The throughput limits were established as 72,338 pounds per hour and 287,000 tons per consecutive 12-month period. Based on these throughputs, PM emissions are 7.19 pounds per hour and 28.6 tons per consecutive 12-month period.

The mass balance discussed above established PM emission rates from potato processing; however, no emissions factors for PM<sub>10</sub> from potato dehydration processing are reported in AP-42. Therefore, to estimate PM<sub>10</sub> emissions, it was assumed that the process is most similar to cereal drying. Emission factors for cereal drying in AP-42 indicate PM<sub>10</sub> emissions are approximately 44% of PM emissions. Based on this assumption, PM<sub>10</sub> emissions are 3.2 pounds per hour and 12.6 tons per year from all 12 flaker lines.

In addition, PM is also emitted from 10 storage silos at the facility. The PM emissions limits as established in the existing Tier II Operating Permit are 0.064 pounds per hour per silo. It is assumed that all PM was emitted as PM<sub>10</sub>.

The facility requested an emission limit for the aggregate dehydration process (the dehydration line, storage silos, and process emissions from the secondary dryers and Dryers A, B, and C) of 14.5 pounds per hour of PM and 6.4 pounds per hour of PM<sub>10</sub>.

### Facility-wide Emissions

A summary of annual emissions at the facility is presented in Table 6.3.

**Table 6.3 Facility-wide Annual Emissions of Criteria Pollutants  
(tons per consecutive 12-month period)**

PM <sub>10</sub> <sup>a</sup>	Sulfur Dioxide	Nitrogen Oxides	Carbon Monoxide	VOCs <sup>b</sup>	Lead
60.7	248.2	182.5	79.9	5.7	5.E-03

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers. Includes condensables.

b. Volatile organic compounds.

## **7. REGULATORY ANALYSIS**

### **7.1 IDAPA 58.01.01.301 – Requirement to Obtain Tier I Operating Permit**

In accordance with IDAPA 58.01.01.301.01, “No owner or operator shall operate, or allow or tolerate the operation of, any Tier I source without an effective Tier I Operating Permit.” The facility is defined as a Tier I source because the facility emits or has the potential to emit one hundred (100) tons per year or more of any regulated air pollutant.

### **7.2 New Source Performance Standards (NSPS) – 40 CFR 60**

DEQ previously determined that NSPS Subpart Db and Subpart Dc applied to the No. 4 Bigelow boiler and the No. 3 Cleaver Brooks boiler, respectively. However, on November 26, 2004, the Environmental Protection Agency (EPA) issued a determination that neither NSPS Subparts Db nor Dc apply to the No. 4 Bigelow boiler or No. 3 Cleaver Brooks boiler. The determination information from EPA’s online Applicability Determination Index is included as Appendix C of this SOB.

The facility is equipped with one 10,000-gallon AST, one 16,000-gallon AST, one 20,000-gallon AST, and two 30,000-gallon ATSS. The ASTs contain either distillate or residual fuel oil. These storage tanks are subject to the provisions of NSPS Subpart Kb (40 CFR 60.110b through 60.117b).

Portions of 60.110b(b) and 110b(c) apply to the ASTs at the Idaho Supreme Potatoes facility. Specifically, storage vessels with a capacity of less than approximately 19,800 gallons, and storage vessels with a capacity of greater than about 19,800 gallons and less than about 40,000 gallons and with a maximum true vapor pressure of less 15 kilopascals (kPa), are exempt from the general provisions of 40 CFR 60 and from most of the portions of Subpart Kb. The three ASTs greater than 19,800 gallons in storage capacity contain liquids with a vapor pressure less than 15 kPa. Therefore, the ASTs at the facility qualify for the exemptions.

The other applicable section of Subpart Kb is 60.116b(b). To comply with this requirement, the facility will keep readily accessible records showing the dimensions of the ASTs and an analysis showing the capacity of the ASTs. These records will be kept at the facility for the life of the ASTs as provided in 60.116b(a).

### **7.3 National Emission Standards for Hazardous Air Pollutants (NESHAPS) – 40 CFR Parts 61 & 63**

There are no currently promulgated National Emissions Standards for Hazardous Air Pollutants or Maximum Achievable Control Technology rules that apply to this facility, because the facility does not emit or have the potential to emit a single HAP in amounts greater than 10 tons per year (T/yr) or a combination of HAPs in amounts greater than 25 T/yr.

## 7.4 Compliance Assurance Monitoring – 40 CFR Part 64

The permittee does not operate emissions control devices on any emissions units at the facility; therefore, the permittee is not subject to the Compliance Assurance Monitoring requirements contained in 40 CFR Part 64.

As stated previously, the permittee operates 10 storage silos at the facility. Each silo is pneumatically loaded and is fitted with a fabric filter. DEQ evaluated whether the fabric filters are defined as control devices or inherent process equipment for the purposes of 40 CFR Part 64.

In accordance with guidance published by EPA, the following list of questions was considered in assessing whether the fabric filters should be treated as control devices or as inherent process equipment:

1. Is the primary purpose of the equipment to control air pollution?
2. Where the equipment is recovering product, how do the cost savings from the product recovery compare to the cost of the equipment?
3. Would the equipment be installed if no air quality regulations are in place?

If the answers to these questions suggest that the fabric filters should be considered as an inherent part of the process, then the effect of the fabric filters can be taken into account in calculating potential emissions regardless of whether enforceable limitations are in effect.

Based on the information submitted in the permit application, DEQ has the following comments on the three questions listed above.

1. The primary purpose of the fabric filters on pneumatically loaded silos is not to control air pollution but to provide a restricted air flow from the silo so that the silo will fill properly without excessive loss of product.
2. No information supplied to date by Idaho Supreme quantifies the value of product recovery by the fabric filters.
3. Air quality regulations are not the driving factor for installation of the fabric filters. The fabric filters were installed on the silos prior to DEQ establishing emissions limits on the silos.

DEQ believes the first and third criteria are satisfied. Based upon a review of the information presented, DEQ asserts the fabric filters are considered to be inherent process equipment and can be considered in potential emission calculations without federally enforceable requirements.

## 8. **PERMIT CONDITIONS**

This section describes only the changes made to the permit as a result of this permitting action. Existing applicable requirements are identified as “Existing Permit Conditions” or “Existing Consent Order Conditions,” and revised permit conditions are identified as “Revised Permit Conditions.”

Two common changes to applicable requirements from Tier II Operating Permit No. 011-00013, June 7, 2002, and the Consent Order signed December 20, 2004 were made consistently throughout the Tier I Operating Permit

First, the Tier I Operating Permit requires records to be maintained onsite for five-year periods whereas many PTCs require that records be maintained for two-year periods. This is because IDAPA 58.01.01.322.07(c) requires that Tier I Operating Permit records be maintained for a five-year period.

Second, the Tier I permit establishes annual emissions limits and throughput limits “per consecutive 12-month period,” whereas some Tier II permit conditions and Consent Order conditions limit emissions to “yearly.” The Tier I permit now makes it clear that “yearly” emissions means any consecutive 12-month period. The change from the original form is the direct result of a change in DEQ/EPA policy.

## ***Emissions Unit 1 – Boiler No. 4 (Bigelow Boiler)***

### **8.1 Emission Unit Description**

Boiler No. 4 is used in the dehydration process and has a maximum rated heat capacity of approximately 140 MMBtu/hr.

### **8.2 Removed Permit Conditions**

Permit Conditions 3.2 through 3.13 of Tier II Operating Permit No. 011-00013, June 7, 2002, were established per NSPS Subpart Db. As discussed in Section 7.2 of this SOB, EPA issued a determination stating the requirements of NSPS Subpart Db do not apply to Boiler No. 4; therefore, these permit conditions were removed from the Tier I Operating Permit.

### **8.2 Existing Consent Order Conditions 8, 9, and 10**

The applicable requirements from the Consent Order signed by DEQ on December 20, 2004, listed above, were not revised. They appear in the Tier I Operating Permit as Permit Conditions 3.1, 3.2, and 3.3.

### **8.3 Existing Consent Order Condition 7**

*Idaho Supreme Potatoes shall not combust coal in the No. 4 Bigelow boiler without first performing a DEQ-approved PSD analysis and an EPA approved NSPS Subpart Db applicability analysis.*

### **Revised Permit Condition 3.4**

*The permittee is prohibited from combusting coal in the No. 4 Bigelow boiler without first obtaining a permit to construct and performing a DEQ-approved PSD analysis and an EPA-approved NSPS Subpart Db applicability analysis.*

The applicable requirement from the December 20, 2004 Consent Order was revised to clarify that the PSD analysis and Subpart Db analysis were to be part of a PTC application. On September 14, 2006, DEQ issued a letter asserting that Idaho Supreme does not have a current permit for coal combustion in Boiler No. 4. Therefore, Idaho Supreme must apply to obtain a PTC, and the application must include, but is not limited to, a PSD analysis and NSPS Subpart Db analysis.

### **8.4 Existing Consent Order Condition 12**

*Within 30 days of startup of combusting residual fuel oil with a sulfur content greater than 0.5 weight percent, Idaho Supreme Potatoes shall conduct a particulate matter emission test to demonstrate compliance with the 0.05 grain per dry standard cubic foot at 3% oxygen standard per IDAPA 58.01.01.677 and Section 2.11 of Tier II Operating Permit No. T2-010314, issued June 7, 2002. The emissions test shall be conducted in accordance with IDAPA 58.01.01.157. The following information shall be recorded during the emission test and included in the performance test report:*

- *The fuel feed rate to the boiler shall be recorded.*
- *Visible emissions shall be observed and recorded using the methods specified in IDAPA 58.01.01.625.*

- *A sample of the boiler fuel shall be taken during the test and analyzed for fuel density, sulfur content, and ash content using appropriate methods identified in ASTM D 396-02a, or DEQ approved alternative test methods.*

*Idaho Supreme Potatoes shall immediately cease combusting fuel oil with a sulfur content greater than 0.5% by weight if either Idaho Supreme Potatoes or DEQ determines that particulate matter emissions are in excess of the 0.05 grain per dry standard cubic foot at 3% oxygen standard per IDAPA 58.01.01.677 and Section 2.11 of Tier II Operating Permit No. T2-010314, issued June 7, 2002.*

### **Revised Permit Condition 3.5**

*Idaho Supreme Potatoes shall immediately cease combusting fuel oil with a sulfur content greater than 0.5% by weight if either Idaho Supreme Potatoes or DEQ determines that particulate matter emissions are in excess of the 0.05 grain per dry standard cubic foot at 3% oxygen standard per IDAPA 58.01.01.677 and Section 2.13 of this permit.*

The applicable requirement from the December 20, 2004 Consent Order was revised because Idaho Supreme Potatoes satisfied the requirement to conduct a particulate matter emission test. DEQ received the test report on March 2, 2005. DEQ approved the emission test in a letter issued on April 5, 2005.

## ***Emissions Unit 2 – Boiler No. 3 (Clever Brooks Boiler)***

### **8.5 Emission Unit Description**

Boiler No. 3 is used in the dehydration process and has a maximum rated heat capacity of approximately 43.0 MMBtu/hr.

### **8.6 Removed Permit Conditions**

Permit Conditions 4.5 through 4.13 of Tier II Operating Permit No. 011-00013, June 7, 2002, were established per NSPS Subpart Dc. As discussed in Section 7.2 of this SOB, EPA issued a determination stating the requirements of NSPS Subpart Dc do not apply to Boiler No. 3; therefore, these permit conditions were removed from the Tier I Operating Permit.

Permit Conditions 4.2, 4.3, and 4.4 of Tier II Operating Permit No. 011-00013, June 7, 2002, were established to limit emissions of PM<sub>10</sub> and SO<sub>2</sub> from Boiler No. 3 and to limit the hours of operation of Boiler No. 3 on a consecutive 12-month basis. These limits were established when the permittee was allowed to burn fuel oil in Boiler No. 3. The PM<sub>10</sub> emissions limit was established to maintain compliance with the PM<sub>10</sub> NAAQS, and the SO<sub>2</sub> emissions limit was established to ensure facility-wide SO<sub>2</sub> emissions remained less than 250 tons per consecutive 12-month period.

The Consent Order signed by DEQ on December 20, 2004 established a requirement for the permittee to operate Boiler No. 3 while burning exclusively natural gas or propane. This requirement rendered the PM<sub>10</sub> and SO<sub>2</sub> emissions limits and the limit on hours of operation obsolete; therefore, these permit conditions were removed from the Tier I Operating Permit.

### **8.7 Existing Consent Order Condition 6**

The applicable requirements listed above from the December 20, 2004 Consent Order were not revised. They appear in the Tier I Operating Permit as Permit Conditions 4.1 and 4.2.

## ***Emissions Units 3 - Dryers and Other Natural Gas-Burning Equipment***

### **8.8 Emission Unit Description**

The permittee utilizes one fluidized bed dryer, one dryer with three stages (A, B, and C), one secondary dryer, three industrial space heaters, and other miscellaneous space heaters in the dehydration process. The permittee combusts natural gas in all this equipment, and uses propane as the backup fuel.

### **8.9 Existing Permit Conditions 5.3 through 5.7, 5.7.1, and 5.7.2**

The applicable requirements from Tier II Operating Permit No. 011-00013, June 7, 2002, listed above were not revised. They appear in the Tier I Operating Permit as Permit Conditions 5.2 through 5.6, 5.6.1, and 5.7.1.

### **8.10 Existing Permit Condition 5.2**

*Emissions of  $PM_{10}$  and  $SO_2$  from the listed natural gas-burning equipment shall not exceed any applicable emissions limit listed in Table 7.1 in the appendix.*

### **Revised Permit Condition 5.1**

*The permittee shall not cause  $PM_{10}$  or  $SO_2$  emissions from the fluidized bed dryer, secondary dryer, dryer Stage A, B, and C, space heaters north, south, and east, and miscellaneous space heaters to exceed any corresponding emissions rate limits listed in Table 5.2.*

**Table 5.2 Emissions Limits<sup>a</sup> - Dryers and Other Natural Gas-Burning Equipment**

Source Description	PM <sub>10</sub> <sup>a</sup>		Sulfur Dioxide	
	Pounds per hour	Tons per consecutive 12-month period <sup>f</sup>	Pounds per hour	Tons per consecutive 12-month period
Fluidized Bed Dryer	0.76	3.30	4E-03	2E-02
Secondary Dryer	4.1E-03	0.02	3E-04	1E-03
Dryer – Stage A	5.9E-02	0.26	5E-03	2E-02
Dryer – Stage B	2.4E-02	0.10	2E-03	8E-03
Dryer – Stage C	2.4E-02	0.10	2E-03	8E-03
Space Heater - North	6.1E-02	0.18	5E-03	1.5E-02
Space Heater - South	6.1E-02	0.18	5E-03	1.5E-02
Space Heater - East	0.11	0.34	9E-03	2.7E-02
Misc. Space Heaters	1.5E-02	0.045	1E-03	3.5E-03

<sup>a</sup> As determined by a pollutant-specific U.S. EPA reference method, a Department-approved alternative, or as determined by the Department's emissions estimation methods used in this permit analysis.

<sup>b</sup> Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers. Includes condensables.

<sup>c</sup> As determined by multiplying the actual or allowable (if actual is not available) pound per hour emission rate by the allowable hours per year that the process(es) may operate(s), or by actual annual production rates.

Permit Condition 5.2 of the existing Tier II Operating Permit was revised only to move the applicable requirement into the permit section applicable to these emissions units. DEQ did not revise any emissions limits applicable to fluidized bed dryer, secondary dryer, dryer Stage A, B, and C, space heaters north, south, and east, and miscellaneous space heaters.

## ***Emissions Units 4 – Process Dehydration Lines***

### **8.11 Emission Unit Description**

Raw potatoes are received at the facility and traverse through several pre-processing steps including peeling and slicing. After these initial steps, the potatoes are dehydrated to produce several final products.

### **8.12 Existing Permit Conditions 6.3 and 6.4**

The applicable requirements listed above from Tier II Operating Permit No. 011-00013, issued June 7, 2002, were not revised. They appear in the Tier I Operating Permit as Permit Conditions 6.2 through 6.4.

### **8.13 Existing Permit Condition 6.2**

*Emissions of PM and PM<sub>10</sub> from the process dehydration lines and storage silos shall not exceed the pounds per hour or tons per any consecutive 12-month period values in Table 7.1 in the appendix.*

### **Revised Permit Condition 5.1**

*The permittee shall not cause PM or PM<sub>10</sub> emissions from the process dehydration lines and storage silos to exceed any corresponding emissions rate limits listed in Table 6.2.*

**Table 6.2 Emissions Limits<sup>a</sup> – Process Dehydration Lines**

Source Description	PM <sub>10</sub> <sup>b</sup>	
	Pounds per hour	Tons per consecutive 12-month period <sup>c</sup>
Aggregate Processing <sup>d</sup>	6.40	22.0

<sup>a</sup> As determined by a pollutant-specific U.S. EPA reference method, a Department-approved alternative, or as determined by the Department's emissions estimation methods used in this permit analysis.

<sup>b</sup> Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers. Includes condensables.

<sup>c</sup> As determined by multiplying the actual or allowable (if actual is not available) pound per hour emission rate by the allowable hours per year that the process(es) may operate(s), or by actual annual production rates.

<sup>d</sup> Aggregate processing emissions include emissions from material handling and throughput, and emissions from storage silos.

Permit Condition 6.2 of the existing Tier II Operating Permit was revised only to move the applicable requirement into the permit section applicable to these emissions units. DEQ did not revise any emissions limits applicable to potato processing operations.

## 9. INSIGNIFICANT ACTIVITIES

**Table 9.1. Insignificant Activities**

Emission Point No.	Description	Citation – 58.01.317.01.b
15	Receiving area heater exhaust	b.i.5
23	Maintenance heater exhaust	b.i.5
24	Maintenance heater exhaust	b.i.5
95	WTP heater exhaust	b.i.5
98	Truck shop area heater	b.i.5
Tank 4	1,000-gallon propane tank	b.i.4
Tank 6	10,000-gallon diesel tank	b.i.3
Tank 7	5,000-gallon day tank	b.i.3
18	A & B line peelers	b.i.30
31 through 46, 77 through 84	Snifter tubes (eight total)	b.i.30
27 through 30, 73 through 76	Cookers (eight total)	b.i.30

## 10. ALTERNATIVE OPERATING SCENARIOS

The facility did not request any alternative operating scenarios.

## 11. TRADING SCENARIOS

The facility did not request any trading scenarios.

## 12. COMPLIANCE SCHEDULE

### 12.1 Compliance Certification

Idaho Supreme Potatoes, Firth is required to periodically certify compliance in accordance with General Provision 21. The facility shall submit an annual compliance certification for each emissions unit to DEQ and EPA, in accordance with IDAPA 58.01.01.322.11. The compliance certification report shall address the compliance status of each emissions unit with the terms and conditions of this permit.

## **13. PERMIT REVIEW**

### ***13.1 Regional Review of Draft Permit***

DEQ provided the draft permit to its Pocatello Regional Office on September 27, 2007. The regional office did not have any comments regarding the draft permit.

### ***13.2 Facility Review of Draft Permit***

DEQ provided the draft permit to Idaho Supreme for its review on November 28, 2007. The facility provided written comments on the draft permit on December 7, 2007.

### ***13.3 Public Comment***

DEQ provided the draft permit for public comment on December 17, 2007. The public comment period was provided from December 17, 2007 through January 16, 2008. No comments were submitted in response to DEQ's draft permit.

## **14. ACID RAIN PERMIT**

This facility is not an affected facility as defined in 40 CFR 72 through 75; therefore, acid rain permit requirements do not apply.

## **15. REGISTRATION FEES**

This facility is a major facility as defined by IDAPA 58.01.01.008.10; therefore, registration and registration fees in accordance with IDAPA 58.01.01.387 apply. The facility is in compliance with registration and registration fee requirements.

MJS/hp Permit No. T1-030513

## **Appendix A - AIRS Data Entry Form**

# AIRS/AFS<sup>a</sup> FACILITY-WIDE CLASSIFICATION<sup>b</sup> DATA ENTRY FORM

**Facility Name:** Idaho Supreme Potatoes, Inc.  
**Facility Location:** Firth, Idaho  
**AIRS Number:** 011-00013

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO <sub>2</sub>	A						A	U
NO <sub>x</sub>	A						A	U
CO	B							U
PM <sub>10</sub>	B							U
PT (Particulate)	B							
VOC	B							U
THAP (Total HAPs)	B							
			APPLICABLE SUBPART					

<sup>a</sup> Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

<sup>b</sup> AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

## **Appendix B - Emission Summary**

**Table B.1. Potential Emissions – Non-carcinogenic Toxic Air Pollutants**

<b>Pollutant</b>	<b>Maximum Hourly Emissions (pounds per hour)</b>	<b>Potential Annual Emissions (tons per consecutive 12-month period)</b>
<b>Antimony</b>	<b>4.5E-03</b>	<b>1.3E-02</b>
Barium	2.4E-03	7.3E-03
<b>Chromium</b>	<b>7.9E-04</b>	<b>2.4E-03</b>
<b>Cobalt</b>	<b>5.1E-03</b>	<b>1.5E-02</b>
Copper	1.5E-03	4.7E-03
<b>Ethylbenzene</b>	<b>5.4E-05</b>	<b>1.6E-04</b>
Fluoride	3.17E-02	9.6E-02
<b>Hexane</b>	<b>9.8E-02</b>	<b>3.0E-01</b>
<b>Manganese</b>	<b>2.57E-03</b>	<b>7.8E-03</b>
<b>Mercury</b>	<b>6.E-04</b>	<b>1.8E-03</b>
Molybdenum	7.29E-04	2.2E-03
<b>Naphthalene</b>	<b>9.94E-04</b>	<b>3.0E-03</b>
Pentane	1.41E-01	4.3E-01
<b>Phosphorous</b>	<b>8.E-03</b>	<b>2.4E-02</b>
<b>Selenium</b>	<b>2.3E-03</b>	<b>6.9E-03</b>
<b>Toluene</b>	<b>5.5E-03</b>	<b>1.6E-02</b>
<b>o-Xylene</b>	<b>9.3E-05</b>	<b>2.8E-04</b>
Zinc	2.63E-02	8.0E-02

Note: Pollutants in bold are also Hazardous Air Pollutants as defined by the Environmental Protection Agency.

**Table B.2. Potential Emissions – Carcinogenic Toxic Air Pollutants**

<b>Pollutant</b>	<b>Maximum Hourly Emissions (pounds per hour)</b>	<b>Potential Annual Emissions (tons per consecutive 12-month period)</b>
<b>Arsenic</b>	<b>1.1E-03</b>	<b>3.4E-03</b>
<b>Benzene</b>	<b>3.0E-04</b>	<b>9.0E-04</b>
<b>Beryllium</b>	<b>5.7E-04</b>	<b>1.7E-03</b>
<b>Cadmium</b>	<b>4.0E-04</b>	<b>1.2E-03</b>
<b>Chromium VI</b>	<b>2.1E-04</b>	<b>6.4E-04</b>
<b>Formaldehyde</b>	<b>3.2E-02</b>	<b>9.7E-02</b>
<b>Nickel</b>	<b>7.2E-02</b>	<b>2.2E-01</b>
<b>Benzo(a)pyrene</b>	<b>6.5E-08</b>	<b>2.0E-07</b>
<b>Benz(a)anthracene</b>	<b>3.5E-06</b>	<b>1.1E-05</b>
<b>Benzo(b)fluoranthene</b>	<b>7.3E-07</b>	<b>2.2E-06</b>
<b>Benzo(k)fluoranthene</b>	<b>7.3E-07</b>	<b>2.2E-06</b>
<b>Chrysene</b>	<b>2.1E-06</b>	<b>6.4E-06</b>
<b>Dibenzo(a,h)anthracene</b>	<b>1.5E-06</b>	<b>4.5E-06</b>
<b>Indeno(1,2,3-cd)pyrene</b>	<b>1.9E-06</b>	<b>5.8E-06</b>
Total PAHs	1.1E-05	3.2E-05

Note: Pollutants in bold are also Hazardous Air Pollutants as defined by the Environmental Protection Agency.

## **Appendix C - EPA Applicability Determination**



Small Commercial Institutional Steam Generating Units" (Subpart Dc) for two boilers (Boilers No. 3 and No. 4) located at the ISP facility in Firth, Idaho.

IDEQ has requested concurrence from the EPA as part of their review in preparation for a response to a request by ISP submitted to IDEQ dated February 5, 2004, to remove NSPS requirements for Boilers No. 3 and No. 4. EPA has determined that Boilers No. 3 and No. 4 are not subject to Subpart Db or Dc. However, if ISP were to burn coal in Boiler No. 4 that could trigger NSPS Subpart Db and the Prevention of Significant Deterioration (PSD) permit program. Background information justifying this determination is detailed further in this letter.

Subpart Db is applicable to each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a maximum design heat capacity of greater than 100 MMBtu/hr. Subpart Dc is applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989, and that has a maximum design heat capacity of 100 MMBtu/hr or less. The first step is to determine if the boilers are subject to Subpart Dc or Db based on the date of construction. Boiler No. 3, which is rated at 43 MMBtu/hr and therefore is potentially subject to Subpart Dc with an applicability date of June 9, 1989, was installed at the facility in 1978. Boiler No. 4, which is rated at 140 MMBtu/hr and therefore is potentially subject to Subpart Db with an applicability date of June 19, 1984, was installed at the facility in 1983. Therefore, EPA concurs with IDEQ's findings that based on the initial construction or installation dates, Subparts Db and Dc are not applicable.

Therefore NSPS would only be applicable if it is determined that any changes made to the boilers constituted a modification as defined in the general provisions, in 40 CFR 60.14. In 40 CFR 60.14 a modification is defined as

"any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies"

Boiler No. 3 was originally designed to operate on natural gas. It was also tested to operate on fuel oil, but has operated on natural gas since 1978. Boiler No. 4 was originally designed to operate on either coal, fuel oil, or natural gas. In the letter of February 5, 2004, from ISP to IDEQ, ISP describes several changes that have occurred and the planned reintroduction of higher sulfur fuel oil. It has been determined that these changes were to the fuel delivery systems for each of the boilers and not to the boilers themselves. Physical changes to the fuel delivery systems are not physical changes to the existing facilities (each boiler) and the operational changes of using alternate fuels would not be considered modifications according to 40 CFR 60.14(e)(4) which states that "the use of alternative fuel will not be a modification, if prior to applicability the existing facility was designed to use that fuel." Therefore, there have been no modifications to Boiler No. 3 and the changes to the fuel delivery systems and reintroduction of a fuel would not constitute a modification to Boiler No. 4.

In the letter of February 5, 2004, from ISP to IDEQ, changes that occurred in December 1994, in how Boiler No. 4 operated are described. On or about December 24, 1994, ISP installed a low NOx burner on Boiler No. 4 for burning natural gas. Planning to no longer burn coal, they changed the boiler from a negative to a positive air system by removing the induction fan and the corresponding baghouse. ISP has stated coal has not been fired in Boiler No. 4 since these changes occurred.

On March 13, 1995, in a letter from EPA to ISP, this December 1994 change in operations was addressed. It was determined then that NSPS was not triggered because, despite the fact that the boiler itself was physically modified with the installation of low NOx burners and there was an increase in rated capacity, it was assumed that coal would no longer be burned. It was therefore found that the practice of burning gas and oil with the new burners, without using a baghouse, had lower emissions than the practice of burning coal with the older burners, using a baghouse. Therefore, a determination was made that this modification had no resulting increase in emissions and so it would not trigger NSPS.

On February 13, 2001, ISP submitted a notification letter to EPA stating that they installed new nozzles on the burner in Boiler No. 4 in order to burn very low sulfur #6 fuel oil rather than the #2 fuel oil that they had been firing. ISP believed that this change would be a physical modification to the boiler that would trigger NSPS Subpart Db for Boiler No. 4. The purpose of the February 5, 2004, letter from ISP to IDEQ, in which many changes are described in detail, was to ask IDEQ to remove the NSPS applicability. ISP states that upon their further review of the history of the changes that have occurred, they now do not think that NSPS should have been triggered. This is because ISP states that new nozzles were never installed on Boiler No. 4, but that their plant engineer at that time was misinformed and was incorrect in making that statement in the letter dated February 13, 2001.

In further discussions between ISP and EPA and in the letter from ISP to EPA dated September 16, 2004, ISP has attested that they consider themselves to still have the capability to burn coal. ISP believes that this distinction is important because it verifies that Boiler No. 4 itself did not undergo a modification in regards to burning coal or oil but that all changes relating to the burning of coal and oil were to the fuel delivery systems. ISP has described the changes that would have to occur in order for coal to be burned. The induction fan, which is necessary while burning coal, could easily be reinstalled changing the boiler back to negative air pressure. The coal crusher exists onsite and the section of coal supply line needed could be installed. ISP states that all of these changes could happen easily and that they could burn coal within a very short time period.

Although ISP has the physical ability to burn coal, please be aware that if ISP were to start up the operation of burning coal in Boiler No. 4, that could potentially trigger NSPS Subpart Db and PSD. The analysis of the December 1994 changes to Boiler No. 4 that was performed by EPA and summarized in the March 13, 1995, letter from EPA to ISP where it was determined that NSPS Subpart Db and PSD were not triggered, was based on the assumption that coal would no longer be fired in Boiler No. 4. Therefore, if coal were fired in this boiler that analysis would no longer be valid.

In conclusion, EPA determines that Idaho Supreme's boilers No. 3 and No. 4 are not subject to NSPS Subparts Dc or Db. This determination is based on information provided by Idaho Supreme and IDEQ. Any additional information made available to EPA may invalidate this determination. This determination does not impact any other regulations these boilers may be subject to.

If you have any further questions or concerns, please contact Heather Valdez of the Region 10 Office of Air, Waste and Toxics at (206) 553-6220 or [valdez.heather@epa.gov](mailto:valdez.heather@epa.gov)

Sincerely,

Jeff KenKnight, Manager  
Federal and Delegated Air Programs Unit  
Office of Air, Waste and Toxics

cc: Doug Cole, EPA-IOO  
Dan Pitman, IDEQ  
Mike Simon, IDEQ