December 20, 2013

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DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE A Q PROGRAM

Environmental
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59 Park Place Suite 200
Appleton, WI 54914
(920) 749-8935
(920) 749-8936 (fax)
http://www.erm.com

Air Quality Program Office – Application Processing
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706-1255

Subject: Permit To Construct, McCain Foods, 218 West Highway 30, Burley, Idaho

Dear Sir or Madam:

Enclosed is one hard copy, and one compact disc (CD) with a pdf version of the application of an Air Pollution Permit to Construct application and air dispersion modeling files (NOx Annual) for McCain Foods, 218 West Highway 30, Burley, Idaho. The application was prepared by Environmental Resources Management on behalf of McCain Foods. Also enclosed is the IDEQ Cover Sheet for Air Permit Application – Permit to Construct **Form CSPTCA,** a signed copy of the IDEQ General Information **Form GI,** and a check for $1,000.00 for the application fee.

If you have any questions, please call Doug Hahn, Director of Environmental Engineering at 715-342-8182 or Ron VanHandel with Environmental Resources Management at 920-749-8922.

Sincerely,

ERM

Ron VanHandel
Project Manager

Daniel R. Guido
Senior Project Manager

Enclosures

cc: Doug Hahn – McCain Foods
Kelli Wetzel, IDEQ
Cheryl Robinson, IDEQ

Permit #_____
Project #_____
Facility ID #_____
Regional Office_____
Logged: [ ]

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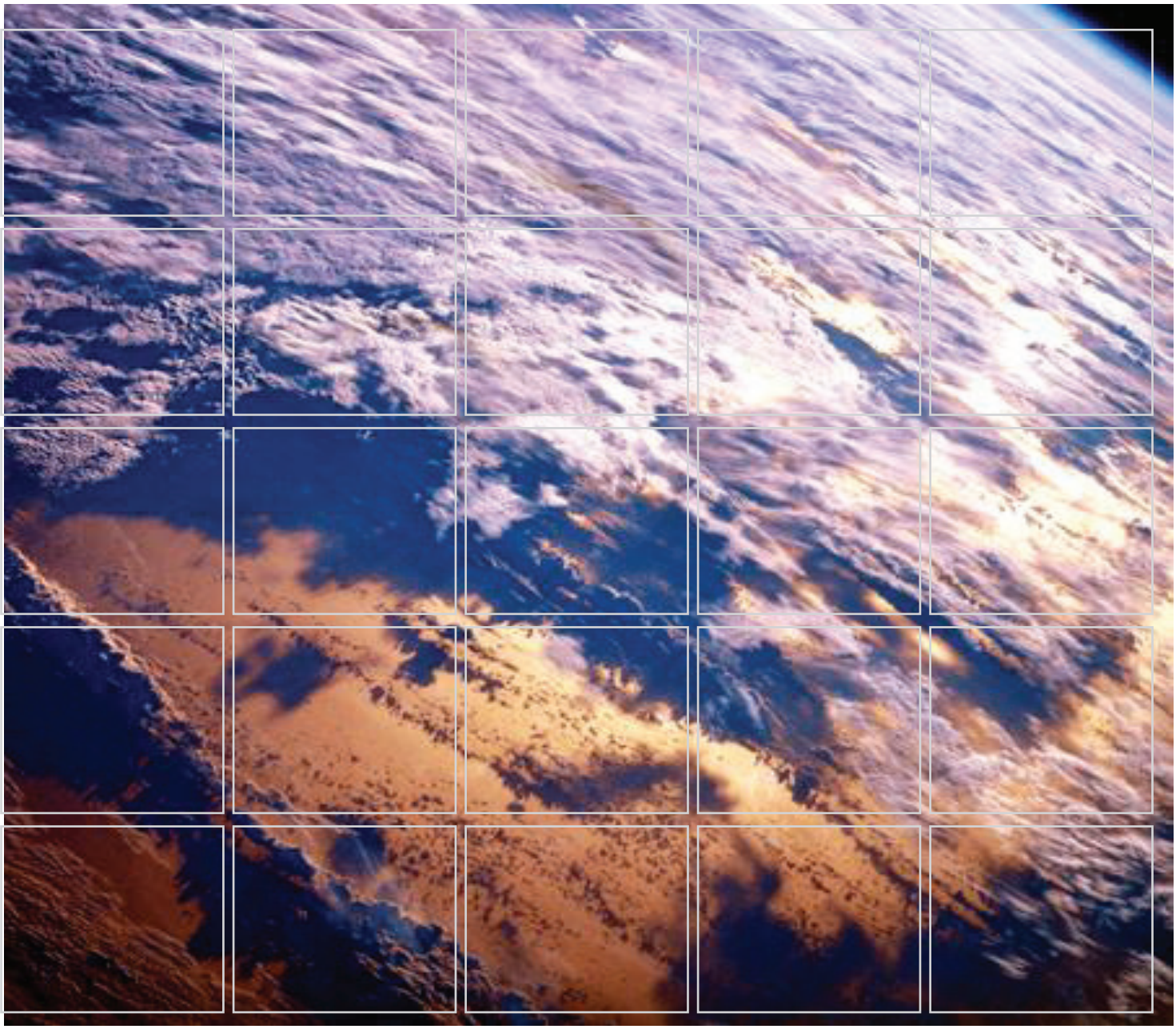

Permit to Construct Application

B2 Fryer and Dryer Reconfiguration, Modification to Facility-Wide Boiler Bubble Permit Condition

McCain Foods - Burley, Idaho

Prepared for:
Idaho Department of Environmental Quality

December 20, 2013

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Delivering sustainable solutions in a more competitive world

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Senior Project Manager

Enclosures

cc: Doug Hahn – McCain Foods
Kelli Wetzel, IDEQ
Cheryl Robinson, IDEQ

Idaho Department of Environmental Quality

Permit to Construct Application –B2 Fryer and Dryer Reconfiguration AND Increase Boiler Bubble

McCain Foods
Burley, Idaho

December 20, 2013

Project No. 0218289

Ron VanHandel
Project Manager

Daniel R. Guido
Senior Project Manager

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Appleton, WI 54914

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1.0 INTRODUCTION

McCain Foods is submitting a Permit to Construct application for a project that consists of reconfiguring an existing process line and modification to the boiler bubble permit limit. The site is located in Burley, Idaho and the Facility ID number is 031-00014. The facility is currently operating under a Permit to Construct (PTC) issued to the facility on August 16, 2012. The permit number is P-2012.0043 and the Project ID, as assigned by IDEQ is 61085.

This application package includes the information necessary for the Idaho Department of Environmental Quality (DEQ) to process and issue the Permit to Construct (PTC) for this source.

A marked-up copy of the current PTC (with proposed changes) is also enclosed with this application.

1.1 APPLICATION SUMMARY

The proposed project is for reconfiguring the existing Prime 2 (B2) process line. The B2 dryer reconfiguration project will not result in an increase to the currently permitted emission rates or production rates from the process line. The reconfiguration will result in the Fryer stack (identified as B2 Fryer) height being increased, and the stacks associated with the B2 Dryer being relocated and the stack height increased. This PTC application also addresses a modification to the current boiler bubble permit limit. This change to the boiler bubble limit would result in an increase for annual average of pollutants associated with the combustion of natural gas.

The required facility description, project description, emissions information and description of changes in emissions, proposed source configuration and description of changes versus current configuration, and impacts of changes on air dispersion modeling follow this introduction. Section 2.0 of this application describes the physical characteristics of the existing facility and a description of the proposed project and reconfigured facility. Section 3.0 discusses the Emissions of particulate and toxic air pollutant (TAP) and a description of the changes

in emissions and discharge characteristics. Section 4.0 discusses the likely impacts of the proposed changes on air dispersion modeling. Section 5.0 includes the anticipated schedule for construction.

Figure 1 is a plan view of the entire site with building locations and property lines shown. It also shows the current location of the four stacks associated with Prime Dryer 2. Appendix A includes IDEQ Permit to Construct Forms. Appendix B includes a marked-up copy of the current PTC (with proposed changes). Appendix C includes a Process flow Diagram for Prime 2 Process. Appendix D includes a drawing showing the stack location for the three new dryer stacks. Appendix E includes a letter from IDEQ with an evaluation of the modeling required with this PTC application. Appendix F includes a copy of the modeling protocol and Appendix G includes the air dispersion modeling results.

1.2 FEES

The Permit to Construct Application Fee of $1,000 will be submitted concurrently with this application.

2.0 *DESCRIPTION OF FACILITY OPERATION AND THE RECONFIGURED PROCESS LINE PROJECT*

This section includes the facility description followed by the planned changes to the Prime 2 Dryer, Fryer, and buildings at the Burley facility. Section 2.2 summarizes the changes at the facility and requested permit changes.

2.1 *FACILITY DESCRIPTION*

The McCain – Burley potato processing facility consists of two production plants, Burley 1 and Burley 2, operating on the same site. These plants, which were once individual factories, were built in the late 1950's and early 1960's by independent owners. Burley 1 was originally owned by Ore-Ida Foods, Inc. and Burley 2 was owned by Idaho Potato Processors, Inc. In 1965, the HJ Heinz Company purchased both factories and began operating them as part of Ore-Ida Foods, Inc., a wholly owned subsidiary of HJ Heinz. McCain purchased the Burley facility effective July 1, 1997. While both factories are capable of operating independently, some materials are transferred from one to another to minimize waste and maximize raw material use efficiency.

The Burley facility is located on Highway 30 to the southwest of the City of Burley, Idaho. The facility is comprised of approximately 98 acres of land situated to the south of the Snake River. The facility consists of the following primary components:

- Truck Loading And Unloading Areas
- Potato Storage Buildings
- Burley 1 Potato Processing Plant
- Burley 2 Potato Processing Plant
- Americold Freezer Buildings
- Chemical Storage Building
- Wastewater Treatment Plant And Associated Structures
- Water Supply System And Building
- Office Buildings
- Miscellaneous Small Buildings

Description Of Current Air Emission Sources

Major equipment associated with air emissions at the facility can be classified as either fuel-burning or processing emissions. The fuel burning and process emissions are listed as follows:

Boilers and Flare

There are four boilers existing at the facility, and they are used to generate steam for the manufacturing process. Two of the units, the Murray 1 boiler and the Nebraska 1 boiler, are located in Burley Plant 1. The Murray 1 boiler has a maximum heat input capacity of 100 MMBtu/hr. The Nebraska 1 boiler has a maximum heat input capacity of 95.58 MMBtu/hr. The Murray 1 boiler and Nebraska 1 boiler combust both natural gas as primary fuel and biogas as secondary fuel. The remaining two boilers, the Nebraska 2 boiler and the Murray 2 boiler, are located in Burley Plant 2. The Nebraska 2 boiler has a maximum heat input capacity of 78.05 MMBtu/hr. The Murray 2 boiler has a maximum heat input capacity of 39.1 MMBtu/hr. The Murray 2 boiler and Nebraska 2 boiler combust only natural gas as fuel.

The biogas flare incinerates the gases created in McCain Foods' anaerobic lagoon. The flare is a Varec Model 244W Series.

Dryers

Dryers are utilized to reduce the moisture content of potato products prior to frying. The two dryers that are operated in conjunction with the Prime Products lines are as follows: the Prime 1 dryer is steam heated (Burley Plant 1) and the Prime 2 dryer (Burley Plant 2) is currently direct-fired dryer and fueled by natural gas.

> Note: upon completion of the proposed reconfiguration, the Prime 2 dryer will be heated using steam produced from existing boilers and the direct fired natural gas burners currently installed and operated with the Prime 2 dryer will be eliminated.

The Prime 1 dryer vents directly to the atmosphere via three separate stacks (D109 - D111). The Prime 2 dryer currently vents to the atmosphere through four separate stacks (D205 - D208).

> Note: upon completion of the proposed reconfiguration, the Prime 2 dryer will be vented through 3 stacks (D209 – D211).

Tater Tots are manufactured in Burley Plant 1. The Tot dryer is a direct, natural gas-fired dryer that removes moisture from the potatoes. The Tot dryer vents directly to the atmosphere via a vertical stack (D107).

Prime 2 Dryer Emissions: **Comparison of Current versus Proposed Reconfiguration**	
Current source of Air emissions	Source of Air emissions after Proposed Reconfiguration
Process Emissions and emissions of contaminants associated with combustion of natural gas.	Process Emissions Only

Fryers

After being dried, the potato products are conveyed to the fryers in which they are cooked in hot vegetable oil. The two fryers used for Prime Products are as follows: Prime 1 fryer (Burley Plant 1) and the Prime 2 fryer (Burley Plant 2). The fryers are heated by steam. Each fryer is equipped with an air washer that is essentially a spray-chamber scrubber. In the air washer, exhaust from the fryer is passed through a chamber and contacted with a water spray that saturates the air stream. This allows the PM to attach to the water droplets. The water droplets carrying the PM are separated from the exhaust stream by a bank of stainless steel eliminator blades. The Prime 1 fryer air washer vents to the atmosphere through a single vertical stack (F104). The Prime 2 fryer air washer vents to the atmosphere through a single vertical stack (F204). The tots are conveyed to the Tot fryer where they are cooked in hot vegetable oil. The fryer is heated by steam. The fryer is equipped with an air washer that removes PM from the exhaust stream. The Tot fryer air washer vents to the atmosphere through a single vertical stack (F103).

The Parfry fryer (F108) has been removed and is no longer operated by the facility.

Batter Room

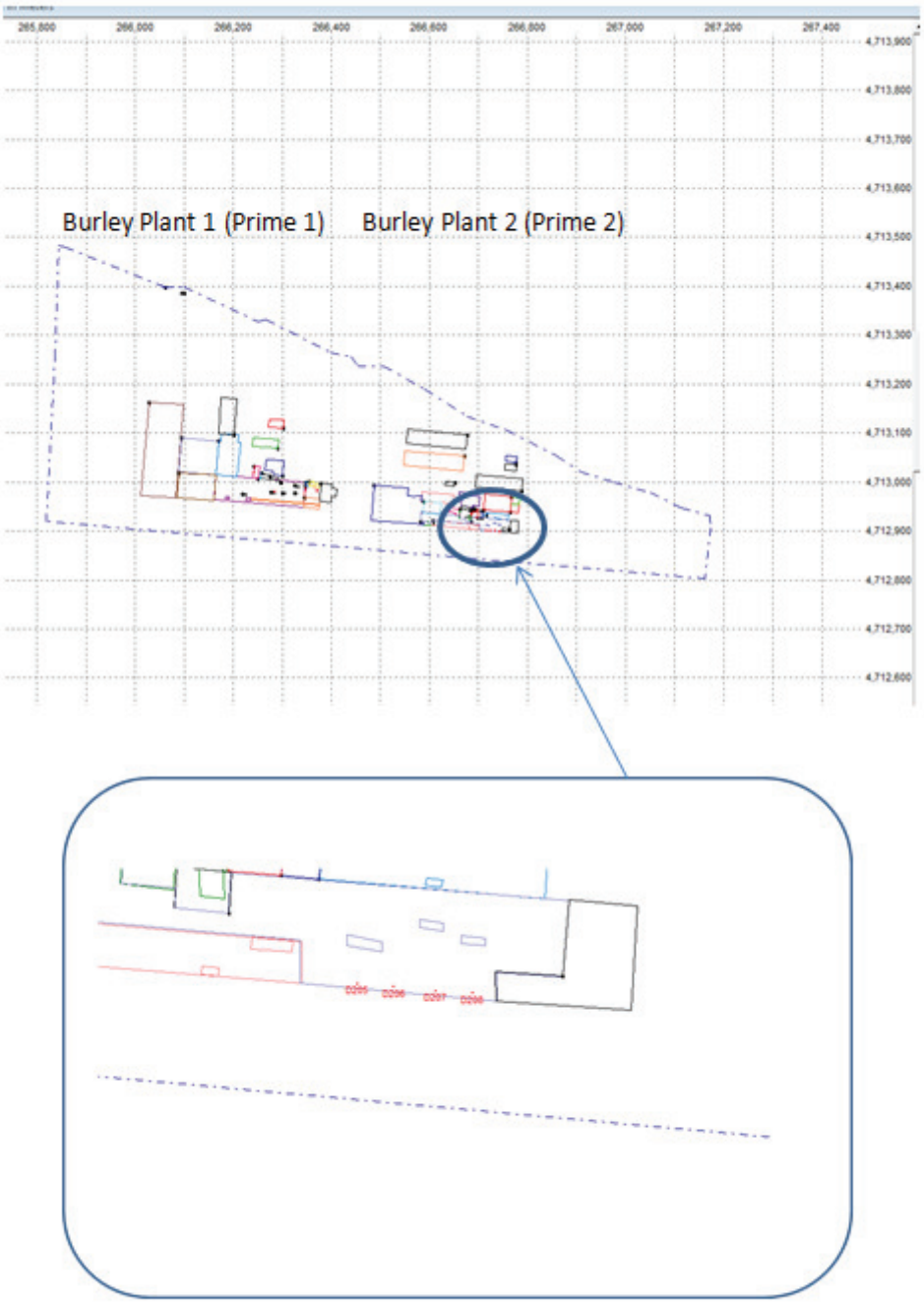
Several of the potato products are battered. The batter is prepared from various dry ingredients, such as flour and seasonings, in a designated room located in Burley Plant 2. Particulate matter is filtered from the air in the Batter Room by a dust-collection system.

Emissions from the Batter Room are controlled by a package baghouse unit that consists of a group of filter elements that are mounted in an airbox. Exhaust from the dust-collection system is vented to the atmosphere via a horizontal duct (E209).

Emergency fire Pump

A diesel fire pump is utilized to create water pressure for emergency fire-fighting efforts. The 170- horsepower pump is connected to the Snake River and is located in a small building north of Burley Plant 1. In addition to emergency situations, the emergency fire pump is operated once a week for approximately two hours to insure that the unit is functioning properly. The exhaust is discharged to the atmosphere by means of a horizontal stack (E001) located on the north side of the fire pump house.

FIGURE 1 McCain Foods Site Layout and Current Location of Prime 2 Dryer Stacks



Current Location of Prime 2 Dryer Stacks (Burley Plant 2).

Identified as D205, D206, D207, and D208

FIGURE 1

2.2 *PROJECT DESCRIPTION AND PROPOSED RECONFIGURED FACILITY*

Proposed Project Description – Burley Plant 2 Equipment Replacement

The Burley Plant 2 infrastructure and equipment is of significant age. The existing buildings and roof structure requires rehabilitation. The existing buildings are being rebuilt structurally with higher ceilings and accessibility for safety, quality, and maintenance activities. Key pieces of processing equipment are being replaced due to age, quality attributes, and maintenance issues. The factory changes will not result in an increase of production throughput or air emissions.

The pieces of equipment considered air emission sources that are planned to be replaced in Burley Plant 2 are the prime line dryer and fryer. The dryer and fryer will be replaced with like for like equipment with equal or less air emissions.

The fryer will be replaced with a like for like fryer with identical throughput characteristics. The production rate through-put limit, air emissions permit conditions, emission control technology, and other permit conditions will not change. The only change associated with this replacement is a slight modification in stack location and height.

The dryer will be replaced with a like for like dryer with identical throughput characteristics. The significant change is that this new dryer will be heated using steam instead of natural gas. Thus, the emissions will be reduced to only like for like process emissions and the fuel burning emissions will be eliminated.

> Note: The Prime 2 dryer currently permitted includes a 48MMBtu per hour direct fired burners. This combustion equipment will be eliminated upon completion of the proposed reconfiguration. The proposed Prime 2 dryer will be heated using steam produced from existing boilers.

The production rate through-put limit and other permit conditions will not change. The only change associated with this replacement is a change in quantity and location of stacks and heights.

Summary of Key Changes

The proposed Prime 2 Dryer (B2) and Fryer Reconfiguration being permitted in this application will result in the following changes:

- The stacks associated with the B2 Prime Dryer will change from 4 stacks to 3 stacks. The discharge height for each of the 3 new stacks will be 120 feet above ground level. The diameter at the discharge for each of these stacks will be 2 feet. (Reference Table 1 (below) for a summary and comparison of the proposed versus existing stacks heights and diameters.)

- The relocation of the Dryer Stacks associated with the B2 Prime Dryer. The existing four stacks are currently identified in the permit as D205, D206, D207, and D208. The three new stacks are identified in this PTC submittal as D209, D210, and D211.

- The Prime 2 dryer will be steam heated by the existing boilers and the natural gas burners (48 MM Btu/hr) currently associated will the B2 dryer will be eliminated.

- The stack associated with the B2 Prime Fryer (currently identified as F204) will be increased so that the discharge height is 120 feet above ground level. There will be no physical change or change in the method of operation of B2 Prime fryer. The total emissions of Particulate Matter and PM-10 from the stack and other discharge characteristics will be unchanged. (Reference Table 1 (below) for a summary and comparison of the proposed versus existing stacks heights and diameters.)

- The total Process emissions of Particulate Matter and PM-10 from the Prime 2 dryer will be unchanged. However, the total emissions of PM and PM-10 associated with the Prime 2 dryer stacks will be reduced by elimination of the direct fired natural gas combustion equipment. Based upon a maximum capacity of 48,000,000 BTU per hour and an AP-42 emission factor of 7.6 pounds per million cubic feet of natural gas. It is calculated that total PTE for hourly PM emissions will be reduced by 0.3648 pounds per hour as a result of the combustion equipment being eliminated.

Other Permit Change – Boiler Bubble Modification

McCain Foods requests that the boiler natural gas permit limit (bubble) be increased to 1,650 MM scf/yr. The facility's current Tier II status will remain unchanged with this new limit.

Information pertaining to this desired permit change was previously submitted to IDEQ and guidance was requested to determine the extent of air dispersion modeling required prior to making this change. As indicated on the enclosed letter from IDEQ, dated November 18, 2013, it was concluded that the requested permit change would exceed the 14 TPY modeling threshold for NOx. Thus, air dispersion modeling must be performed to determine the impact in regards to the NOx, annual standards. A copy of IDEQ's response and the air dispersion modeling determination is included in Appendix E.

Air dispersion modeling was performed by ERM on behalf of McCain Foods to verify the NAAQS for NOx – annual, can be obtained by the facility if the permit limit (bubble) is increased to 1650 MM scf/yr for the boilers. A copy of the Modeling Protocol and Air Dispersion Modeling results are included in Appendix F and G.

A marked-up copy of the current PTC with proposed changes, including the change to increase annual natural gas usage from the boilers to 1,650 MM scf/yr is enclosed and included in Appendix B.

3.0 EMISSIONS

3.1 PARTICULATE EMISSIONS FROM THIS PROJECT AND DESCRIPTION OF CHANGES IN DISCHARGE CHARACTERISTICS

Emissions:

Process Emissions of Particulate Matter (PM) and PM-10 from the B2 Prime Dryer and Fryer reconfiguration will not change since the proposed process line reconfiguration project does NOT result in a change to the currently permitted production or the emission rates from the Prime 2 process line (identified as B2).

It is calculated that the total maximum theoretical PM emissions currently permitted for the B2 Prime Dryer will actually be reduced by approximately 0.3648 pounds per hour due to the elimination of the direct fired burners currently permitted for the B2 Prime Dryer.

Discharge Characteristics:

The Fryer Stack associated with the B2 Prime Fryer (currently identified as F204) will be increased so that the discharge height is 120 feet above ground level. The total emissions of Particulate Matter and PM-10 from the Fryer stack and other discharge characteristics will be unchanged.

The number of stacks associated with the B2 Prime Dryer will change from 4 stacks to 3 stacks. The discharge height for each of these stacks will be increased to 120 feet above ground level. The diameter at the discharge will be 2 feet. The proposed location for the B2 Prime Dryer stacks is such that the distance to the nearest property line is increased in comparison to the existing stacks.

Reference the enclosed Figure 1 for the location of the existing B2 Dryer Stacks. Appendix D includes a drawing showing the location of the three new B2 Dryer Stacks. A discussion pertaining to the likely impact of the proposed changes in regards to air dispersion modeling is included in Section 4.0. Table 1 Summarizes the stacks changes associated with this project.

Table 1
-Stack Parameters- Comparison of Existing versus Proposed

Existing Stack Description and ID Number	Existing Stack Height	Existing Stack Diameter	Proposed Stack Description	Proposed Stack Height	Proposed Stack Diameter
B2 Prime Fryer (F204)	44.62 ft	3.18 ft	B2 Prime Fryer (F204)	120 ft	3.18 ft
B2 Prime Dryer (D205) 1 of 4 stacks	39.37 ft	4.79 ft	B2 Prime Dryer **(D209)** 1 of 3 stacks	120 ft	2.0 ft
B2 Prime Dryer (D206) 1 of 4 stacks	39.37 ft	4.79 ft	B2 Prime Dryer **(D210)** 1 of 3 stacks	120 ft	2.0 ft
B2 Prime Dryer (D207) 1 of 4 stacks	39.37 ft	4.79 ft	B2 Prime Dryer **(D211)** 1 of 3 stacks	120 ft	2.0 ft
B2 Prime Dryer (D208) 1 of 4 stacks	39.37 ft	4.79 ft	n/a	n/a	n/a

3.2 EMISSIONS OF TOXIC AIR POLLUTANTS

The proposed B2 process line reconfiguration project has no impact on any Toxic Air Pollutant Emissions from the facility. A prior Permit to construct application addressed the potential TAP emissions from the facility.

The requested change to the boiler bubble permit limit does address Toxic Air Pollutant Emissions from the boilers from natural gas combustion.

4.0 MODELING DISCUSSION

4.1 DISCUSSION OF AIR DISPERSION MODELING IMPACTS FROM PROPOSED CHANGES FROM B2 DRYER PROJECT AND PROCESS RECONFIGURATION

Upon review of the State of Idaho current Air Quality Modeling Guideline, dated 12/31/2002 and an initial evaluation of the likely impacts from the proposed B2 Fryer and Dryer Reconfiguration, the proposed modification does not appear to warrant the completion of an air quality modeling analysis for particulate matter (PM) in order to obtain a PTC for the proposed project. This conclusion is based upon the following:

- No Increase in PTE Hourly Air Emissions: The proposed project does not result in an increase in hourly air emission.

- Stack Heights Increasing: The stacks affected by the proposed project will discharge at a significantly greater height than the existing arrangement. The existing 5 stacks impacted by this project currently discharge at a height of between 40 and 45 feet. In comparison, upon completion of the project, the replacement stacks will discharge at a height of 120 feet above ground level. Ref Table 1 for additional detailed information.

- Stack Diameters the same or decreasing: The stacks affected by the proposed project will either maintain the same diameter at the point of discharge, or have a diameter that is smaller than the existing stack discharge.

- Stack Locations further from the Nearest Property Line: The Fryer stack location is unchanged. However, the Dryer stacks are moving to a location that is further from the nearest property line. Reference Figure 1 for information on the current dryer stack location and site property boundaries. The proposed stacks will be located approximately 20 to 30 feet further north and currently the south property line is the nearest property line for these stacks.

- Minimal Change in Building Heights: A few building heights in the area of the B2 Prime Process Line (Plant 2) are changing and increasing

slightly. However, these changes in heights appear to be relatively minimal and result in the building heights at the property becoming more uniform. When comparing the proposed stack height of 120 feet for the Prime 2 Dryer and Fryer to the building heights of approximately 40 feet and considering that the buildings are at a more uniform height. It is not anticipated that the slight increase in building height will result in any significant impact on air dispersion modeling for the facility. Emissions

4.2 MODELING FOR BOILER BUBBLE MODIFICATION

As part of this PTC, McCain Foods also requests that the boiler natural gas permit limit (bubble) be increased to 1,650 MM scf/yr. Information pertaining to this desired permit change was previously submitted to IDEQ and guidance was requested to determine the extent of air dispersion modeling required prior to making this change. As indicated on the enclosed letter from IDEQ, dated November 18, 2013, it was concluded that the requested permit change would exceed the 14 TPY modeling threshold for NOx. Thus, air dispersion modeling must be performed to determine the impact in regards to the NOx, annual standards. A copy of IDEQ's response and the air dispersion modeling determination is included in Appendix E.

Air dispersion modeling was performed by ERM on behalf of McCain Foods to verify the NOx – annual ambient air quality standard is attained by the facility if the permit limit (bubble) is increased to 1650 MM scf/yr for the boilers.

To simulate the annual average NO_2 air quality impacts associated with the requested increase in fuel use for the facility boilers (boiler bubble), the NO_X emissions associated with the requested fuel use increase was determined using standard US EPA emission factors for natural gas combustion in boilers. In order to assess worst-case impacts from this increase (27.5 tons per year, or 6.28 pounds per hour), the emissions were assigned to EACH boiler individually (as if that one boiler were to have consumed all of the requested fuel use increase). The predicted impacts were compared to SIL thresholds. This was repeated for all four boilers, and the scenario with the greatest impacts was taken as the predicted impacts for comparison to the SIL threshold. The analysis was done for annual impacts only, as there is no increase in short-term emission rates or boiler capacities, and only an increase in boiler fuel use over an annual average period would occur. The results from this analysis were found to

be above the applicable SIL threshold. Detailed results are provided in Appendix G.

Next, each of these scenarios was re-run to account for the emission decrease associated with the removal of the Prime 1 Dryer and Prime 2 Dryer gas combustion equipment. The model simulated the "net effect" of the increased fuel use in the boiler with the decrease in emissions from the elimination of the natural gas burners previously used (and modeled) with Prime 1 and Prime 2 dryers. The result of this "net" analysis was compared to and found to be above the applicable SIL threshold.

Because the analysis of impacts from emission increases and net emission increases were above SIL thresholds, an analysis of full potential to emit (PTE) emission from all facility sources of NOx was conducted to determine total facility impact and compliance with the annual ambient air quality standard for NO_2. For simplicity, each boiler was simulated at its maximum firing rate, together with the other existing sources of NOx, to simulate a facility-wide predicted impact for NO_2. This result will produce conservatively high results, as it does not simulate an annual fuel use limitation. The annual fuel use limitation for the facility is established solely for the purpose of assigning permit limits needed to maintain Tier II permit status. The "total facility impact" was added to the applicable background level then compared to and found to be in compliance with the annual NAAQS for NOx.

A copy of the Modeling Protocol and Air Dispersion Modeling results are included in Appendix F and G.

5.0 ANTICIPATED SCHEDULE FOR CONSTRUCTION

In regards to construction and reconfiguration of the stacks associated with the Prime 2 Fryer and Dryer. The tentative schedule includes:

- November 1, 2014: The Prime 2 Process Line will be shut down to enable construction of the new Dryer and Fryer.

- January 20, 2015: Start-up Reconfigured Prime 2 Process Line

APPENDIX A

DEQ Forms for Permit to Construct a Modification

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

Cover Sheet for Air Permit Application – Permit to Construct **Form CSPTC**

Please see instructions on page 2 before filling out the form.

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER

1. Company Name	McCain Foods		
2. Facility Name	McCain Foods	3. Facility ID No.	031-00014
4. Brief Project Description - One sentence or less	Reconfigure Prime 2 Dryer and Fryer and modify Boiler Bubble permit limit		

PERMIT APPLICATION TYPE

5. ☐ New Source ☐ New Source at Existing Facility ☐ PTC for a Tier I Source Processed Pursuant to IDAPA 58.01.01.209.05.c
☐ Unpermitted Existing Source ☐ Facility Emissions Cap ☒ Modify Existing Source: Permit No.: P-2012.0043 Date Issued: 8/16/2012
☐ Required by Enforcement Action: Case No.:____

6. ☒ Minor PTC ☐ Major PTC

FORMS INCLUDED

Included	N/A	Forms		DEQ Verify
☒	☐	Form CSPTC – Cover Sheet		☐
☒	☐	Form GI – Facility Information		☐
☐	☐	Form EU0 – Emissions Units General		☐
☐	☐	Form EU1– Industrial Engine Information	Please specify number of EU1s attached: ____	☐
☐	☐	Form EU2– Nonmetallic Mineral Processing Plants	Please specify number of EU2s attached: ____	☐
☐	☐	Form EU3– Spray Paint Booth Information	Please specify number of EU3s attached: ____	☐
☐	☐	Form EU4– Cooling Tower Information	Please specify number of EU3s attached: ____	☐
☐	☐	Form EU5 – Boiler Information	Please specify number of EU4s attached: ____	☐
☐	☐	Form CBP– Concrete Batch Plant	Please specify number of CBPs attached: ____	☐
☐	☐	Form HMAP – Hot Mix Asphalt Plant	Please specify number of HMAPs attached: ____	☐
☐	☐	PERF – Portable Equipment Relocation Form		☐
☐	☐	Form AO – Afterburner/Oxidizer		☐
☐	☐	Form CA – Carbon Adsorber		☐
☐	☐	Form CYS – Cyclone Separator		☐
☐	☐	Form ESP – Electrostatic Precipitator		☐
☐	☐	Form BCE– Baghouses Control Equipment		☐
☐	☐	Form SCE– Scrubbers Control Equipment		☐
☐	☐	Form VSCE – Venturi Scrubber Control Equipment		☐
☐	☐	Form CAM – Compliance Assurance Monitoring		☐
☒	☐	Forms EI-– Emissions Inventory		☐
☐	☐	PP – Plot Plan		☐
☒	☐	Forms MI1 – MI4 – Modeling	(Excel workbook, all 4 worksheets)	☐
☐	☐	Form FRA – Federal Regulation Applicability		☐

Instructions for Form CSPTC

This form is the cover sheet for an air quality permit application. It provides DEQ with basic information regarding the company and the proposed permitting action. This form helps DEQ efficiently determine whether the application is administratively complete. This form also provides the applicant with a list of forms available to aid the applicant to successfully submit a complete application.

Company Name, Facility Name, and Facility ID Number

1-3. Provide the name of your company, the name of the facility (if different than company name), and the facility identification (ID) number (Facility ID No.) in the boxes provided. The facility ID number is also known as the AIRS number or AIRS/AFS number (example: 095-00077). If you already have a permit, the facility ID number is located in the upper right hand corner of the cover page. The facility ID number must be provided unless your facility has not received one, in which case you may leave this box empty. **Use these same names and ID number on all forms**. This is useful in case any pages of the application are separated.

4. Provide a brief description of this permitting project in one sentence or less. Examples might be "Install/construct a new boiler" or "Increase the allowable process throughput." **This description will be used by DEQ as a unique identifier for this permitting project, in conjunction with the name(s) and ID number referenced in 1-3.** You will need to put this description, using the exact same words, on all other forms that are part of this project application. This is useful in case any pages of the application are separated.

Permit Application Type

5. Provide the reason you are submitting the permit application by checking the appropriate box (e.g., a new facility being constructed, a new source being constructed at an existing facility, an unpermitted existing source (as-built) applying for a permit for the first time, a permitted source to be modified, or the permit application is the result of an enforcement action, in which case provide the case number). If you are modifying an existing permitted source, provide the number and issue date of the most recent permit.

   If this PTC is for a Tier I source issued pursuant to the procedures contained at IDAPA 58.01.01.209.05.c, the source or modification may operate upon submittal of a Tier I Administrative Amendment issued pursuant to IDAPA 58.01.01.381.

6. Indicate if the application is a minor permit to construct application or a major permit to construct application by checking the appropriate box (e.g., major PTC or minor PTC). If the permit to construct application is for a major new source or major modification, you must ensure that all necessary information required by IDAPA 58.01.01.202, and .204, or .205, as applicable, is provided.

Forms Included

Check the "Included" box for each form included in this permit to construct application. If there are multiples of a form for multiple units of that type, check the box and fill in the number of forms in the blank provided.

The "N/A" box should only be checked if the form is absolutely unnecessary to complete the application. Additional information may be requested.

Application Fee

All applicants for a PTC shall submit a PTC application fee of $1000.00 to DEQ <u>at the time of the original submission of the application</u> as required by IDAPA 58.01.01.224. An application fee is not required for exemption applicability determinations, typographical errors, and name or ownership changes. An application fee can be paid by check, credit card, or Electronic Funds Transfer (EFT). If you choose to pay by credit card or EFT, call DEQs Fiscal Office to complete the necessary paperwork. Paper checks must be submitted with the original application as described below.

Submit Application

When complete, enclose a check for the application fee along with the hardcopy application certified by a responsible official (as defined in IDAPA 58.01.01.006.94), and send to:

Air Quality Program Office – Application Processing
Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706-1255

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

General Information **Form GI**
Revision 7
6/29/12

Please see instructions on back page before filling out the form. All information is required. If information is missing, the application will not be processed.

Identification

1. Facility name McCain Foods

2. Existing facility identification number 031-00014

☐ **Check if new facility (not yet operating)**

3. Brief project description Reconfigure Prime 2 Dryer and Fryer

Facility Information

4. Primary facility permitting contact name Doug Hahn **Contact type** Facility permitting contact

Telephone number 715-342-8282 **E-mail** doug.hahn@mccain.com

5. Alternate facility permitting contact name Ron VanHandel **Alternate contact type** Facility permitting contact

Telephone number 920-749-8922 **E-mail** ron.vanhandel@erm.com

6. Mailing address where permit will be sent (street/city/county/state/zip code) 218 West Highway 30

7. Physical address of permitted facility (if different than mailing address) (street/city/county/state/zip code)

8. Is the equipment portable? ☐ **Yes*** ☒ **No** ***If yes, complete and attach PERF; see instructions.**

9. NAICS codes: Primary NAICS 311411 **Secondary NAICS**

10. Brief business description and principal product produced Food Processing, French Fries

11. Identify any adjacent or contiguous facility this company owns and/or operates

12. Specify type of application ☒ **Permit to construct (PTC); application fee of $1,000 required. See instructions.**

☐ **Tier I permit** ☐ **Tier II permit** ☒ **Tier II/Permit to construct**

For Tier I permitted facilities only: If you are applying for a PTC then you must also specify how the PTC will be incorporated into the Tier I permit.

☐ **Co-process Tier I modification and PTC** ☐ **Incorporate PTC at the time of Tier I renewal** ☐ **Administratively amend the Tier I permit to incorporate the PTC upon applicant's request (IDAPA 58.01.01.209.05.a, b, or c)**

Certification

In accordance with IDAPA 58.01.01.123 (Rules for the Control of Air Pollution in Idaho), I certify based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

13. Responsible official's name Jon Jones **Official's title** Vice President - Engineering

Official's address 2275 Cabot Drive Lisle, IL 60532-3653

Telephone number 630-857-4713 **E-mail** jon.jones@mccain.com

Official's signature **Date** 12/12/13

☒ **14. Check here to indicate that you want to review the draft permit before final issuance.**

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Version 1, August 2010

McCain Foods – Burley, Idaho

Proposed Minor Modification to an Existing Minor Facility – Change in Potential to Emit

Application Template and Instructions

Applicants proposing to modify an existing minor facility must submit emissions inventories which satisfy all applicable rules. This document is written presuming that the applicant has already determined, using the appropriate definition and emissions inventories, that a modification is occurring and that a permit is required. To determine if a modification is occurring the definition of modification must be used (IDAPA 58.01.01.006.66).

Once it has been determined that a modification will be occurring to an existing minor facility the following regulatory requirements must be satisfied:

1. The existing facility's classification must be known. If the existing facility is not a permitted minor facility submit a pre-project new source review (NSR) pollutant potential to emit (PTE) facility wide emissions inventory documenting that the existing facility is a minor facility (this inventory is different than the *project* emission inventories required and described by this document). Under certain circumstances, with prior DEQ approval, a facility wide PTE inventory may not need to be submitted. Under all circumstances the applicant must prove that the existing facility classification is minor.
2. If the proposed modification (project) is solely due to a relaxation of existing permit condition the PTE after the modification must remain below PSD major source thresholds or the facility is subject to prevention of significant deterioration (PSD) requirements as though construction had not commenced[1].
3. If the proposed modification (project) to an existing PSD minor facility results in an emissions increase equal to or greater than PSD major facility thresholds, the facility is subject to PSD requirements.

Project means a physical change in, or change in the method of operation of, an existing stationary source (40 CFR 52.21(b)). **Sources not being physically modified but which could experience emissions increases that result from the change[2, 3] are required to be included in the project. Emissions inventories for all sources that are part of the project must be included.**

It is critical that applicant submit the necessary emission inventories for the project, if there are questions on the inventories that must be submitted after reading this document contact DEQ's Air Permitting Hotline at 1-877-576-7648. Applicants proposing to modify an existing minor facility must submit the following emission inventories for emission units associated with the project:

---

[1] Obligation to Comply – IDAPA 58.01.01.212.02.

[2] David Neleigh, Chief, Air Permits Section EPA Region 6. Letter to Dawson Lasseter, Air Quality Division, Oklahoma DEQ, January 27, 2005.

[3] R. Douglas Neeley, Chief, Air & Radiation Technology Section, Letter to Rs. Rhonda Banks Thompson, South Carolina Department of Health and Environmental Control, March 14, 1997 ("… when a particular physical change or change in the method of operation would cause an increase in emissions from other emissions units, then those "other" emissions must be included in determining PSD applicability for the particular change.")

- Pre-Project PTE for NSR Regulated Pollutants[4] for emission unit associated with the project. For permitted emissions units provide the PTE under the existing permit conditions, for unpermitted emissions units provide the PTE based on the operational design capacity of the sources that are part of the project.
- Post-Project PTE for NSR Regulated Pollutants for emission unit associated with the project. Provide the requested permitted emission rates as the PTE.

Provided below are templates and instructions for providing the potential to emit summaries for NSR regulated air pollutants for the project.

All emissions inventories must be submitted with thorough documentation. The emissions inventories will be subjected to technical review. Therefore, prepare your application with sufficient documentation so that the public and DEQ can verify the validity of the emissions estimates. Read and follow the instructions provided on page 4.

Templates for NSR Pollutant PTE Summaries

Templates tables to be completed and submitted with the application for the project are provided below (Tables 1-3). The tables may be modified depending on the number of pollutants that are included in the emissions inventory. The tables are for emissions inventory summaries only, the applicant must submit documentation of all emissions calculations used in developing the summaries using the instructions given below.

Table 1 PRE-PROJECT POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS[a]

Emissions Unit	PM-10, PM-2.5	NOx	CO	VOC	SO2	NSR Pollutant[a]
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources						
B01	**4.88**	**64.16**	**53.90**	**3.53**	**99.86**	
B102						
B202						
B203						
C001						
D109, D110, D111	**21.67**	**-**	**-**	**-**	**-**	
D107	**6.48**	**2.3**	**5.6**	**0.08**	**0.01**	
D205, D206, D207, D208	**18.23**	**9.18**	**22.38**	**0.33**	**0.04**	
F103	**13.22**	**-**	**-**	**3.89**	**-**	
F104	**8.67**	**-**	**-**	**8.67**	**-**	
F108	**4.21**	**-**		**1.24**		
F204	**7.29**	**-**	**-**	**7.29**	**-**	
E209	**0.53**	**-**	**-**	**-**	**-**	
E001	**0.02**	**0.27**	**0.06**	**0.02**	**0.02**	
Fugitive Sources *{For listed source categories only, see item 3 below in the instructions}*						
NONE	n/a	n/a	n/a	n/a	n/a	
Totals	**85.20**	**75.91**	**81.94**	**25.05**	**99.93**	**n/a**

a) For permitted emissions units provide the PTE under the existing permit conditions, for unpermitted emissions units provide the PTE based on the operational design capacity of the sources that are part of the project.

b) PM-2.5 assumed to equal PM-10

[4] Pre-project PTE for NSR Regulated Pollutants must be submitted or the applicant must have prior DEQ approval to omit it from the application. In all cases the existing facility's classification must be known.

Table 2 POST PROJECT POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS[a]

Emissions Unit	PM-10, PM-2.5	NOx	CO	VOC	SO2	NSR Pollutant[a]
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources						
B01	6.97	91.66	77.0	5.04	99.86	
B102						
B202						
B203						
C001						
D109, D110, D111	21.67	-	-	-	-	
D107	6.48	2.3	5.6	0.08	0.01	
D205, D206, D207, D208	-	-	-	-	-	
D209, D210, D211	17.93	-	-	-	-	
F103	13.22	-	-	3.89	-	
F104	8.67	-	-	8.67	-	
F108	-	-	-	-	-	
F204	7.29	-	-	7.29	-	
E209	0.53	-	-	-	-	
E001	0.02	0.27	0.06	0.02	0.02	
Fugitive Sources *{For listed source categories only, see item 3 below in the instructions}*						
NONE	n/a	n/a	n/a	n/a	n/a	
Totals	82.78	94.23	82.66	24.99	99.89	n/a

a) Provide the requested permitted emission rates as the PTE.

b) PM-2.5 assumed to equal PM-10

Table 3 CHANGES IN POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

Emissions Unit	PM-10, PM-2.5	NOx	CO	VOC	SO2	NSR Pollutant[a]
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources						
B01	Plus 2.09	Plus 27.50	Plus 23.10	Plus 1.51	-	
B102						
B202						
B203						
C001						
D109, D110, D111	-	-	-	-	-	
D107	-	-	-	-	-	
D205, D206, D207, D208	Minus 18.23	Minus 9.18	Minus 22.38	Minus 0.33	Minus 0.04	
D209, D210, D211	Plus 17.93	-	-	-	-	
F103	-	-	-	-	-	
F104	-	-	-	-	-	
F108	Minus 4.21	-	-	Minus 1.24	-	-
F204	-	-	-	-	-	
E209	-	-	-	-	-	
E001	-	-	-	-	-	
Fugitive Sources *{For listed source categories only, see item 3 below in the instructions}*						
NONE	n/a	n/a	n/a	n/a	n/a	
Totals	Minus 2.42	Plus 18.32	Plus 0.72	Minus 0.06	Minus 0.04	n/a

a) PM-2.5 assumed to equal PM-10

NSR Regulated air Pollutants are defined[5] as:

Particulate Matter (PM, PM-10, PM-2.5)
Carbon Monoxide
Lead
Nitrogen Dioxide
Ozone (VOC)
Sulfur Dioxide
All pollutants regulated by NSPS (40 CFR 60)(i.e. TRS, fluoride, sulfuric acid mist)
Class I & Class II Ozone Depleting Substances (40 CFR 82)(i.e. CFC, HCFC, Halon, etc.)
CO2e[6]
Green House Gases Mass (GHG - carbon dioxide, nitrous oxide, methane, hydrofluorcarbons, perfluorcarbons, sulfur hexafluoride)

[5] 40 CFR 52.21(b)(50), as incorporated by reference at IDAPA 58.01.01.107.03.d

[6] Multiply each green house gas (GHG) by the global warming potential (GWP) listed at 40 CFR 98, Table A- 1 of Subpart A then sum all values to determine CO_2e (GHGs are carbon dioxide, nitrous oxide, methane, hydrofluorcarbons, perfluorcarbons, sulfur hexafluoride). Be sure to show all calculations as described in the instructions.

Instructions:

1. Use the same emission unit name throughout the application (i.e. in air pollution control equipment forms and for modeling purposes).

2. The application must **show in detail all calculations** used to develop the PTE summary and include:
   - Electronic copies of any spreadsheets used to estimate emissions. If a spreadsheet is used submit an electronic copy of the spread sheet (i.e. Excel File).
   - Documentation of all calculations conducted by hand (i.e. show all calculations).
   - Clear statements on all assumptions relied upon in estimating emissions.
   - Documentation of the emissions factors used to estimate emissions. If the emissions factor documentation is readily available to DEQ, such as an EPA AP-42 emissions factor, a simple reference to the emissions factor suffices. If the emissions factor documentation is not readily available to DEQ the applicant must submit the documentation with the application; ask DEQ if you are uncertain. **Applications without sufficient documentation are incomplete.** Documentation may consist of manufacturer guarantees, research conducted by trade organizations, published emission factors, and source test results. **If there are multiple factors for a given operation, note why the factor used is the most representative.**
   - Copies of manufacturer guarantees upon which emission inventories are based.
   - The best available emission information (see DEQ's Guidance on Emission Data Hierarchy).
   - If source tests are used as the basis for emissions estimates the source test report must be submitted. If the source test report is on file with DEQ provide the date of the source test was submitted along with the name of the facility and the emission unit that was tested. Source data from similar emissions units may be considered reliable provided it is clearly described why the sources are similar. Similar sources are those that the applicant has shown serve a similar function, use similar raw materials, and have similar processing rates.

3. Fugitive emissions of NSR regulated air pollutants from the source categories listed below must be included in the emissions inventory.

Table 4 Listed Source Categories for Inclusion of Fugitive Emissions

- Coal cleaning plants (with thermal dryers)
- Kraft pulp mills
- Portland cement plants
- Primary zinc smelters
- Iron and steel mills
- Primary aluminum ore reduction plants
- Primary copper smelters
- Municipal incinerators -250 T/day of refuse
- Hydrofluoric, sulfuric, or nitric acid plants
- Petroleum refineries
- Lime plants
- Phosphate rock processing plants
- Coke oven batteries
- Sulfur recovery plants
- Carbon black plants (furnace process)
- Primary lead smelters
- Fuel conversion plants
- Sintering plants
- Secondary metal production plants
- Chemical process plants (excluding ethanol plants by natural fermentation).
- Fossil-fuel fired boilers totaling more than 250 MMBtu/hr
- Petroleum storage and transfer units with total capacity of 300,000 barrels
- Taconite ore processing plants
- Glass fiber processing plants
- Charcoal production plants
- Fossil fuel-fired steam electric plants greater than 250 MMBtu/hr)
- Categories regulated by NSPS or NESHAP prior to 8/7/80

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Version 1, August 2010

McCain Foods – Burley, Idaho

Facility Wide Potential to Emit Emission Inventory

Application Template and Instructions

For new stationary sources provide the facility's potential to emit for all NSR Regulated Air Pollutants. The potential to emit provided here must match the emissions rates which are requested to be permitted.

For modifications to existing facilities (including the addition of new emissions units), if the existing facility classification is in question an existing facility wide potential to emit emission inventory will be required to be submitted[1]. Contact DEQ to determine if a facility wide emission inventory for the existing facility is required.

All emissions inventories must be submitted with thorough documentation. The emission inventories will be subjected to technical review. Therefore, prepare your application with sufficient documentation so that the public and DEQ can verify the validity of the emission estimates. **Applications submitted without sufficient documentation are incomplete. Follow the instructions provided on page 2; do not proceed until you have read the instructions.**

Applicants must use the Potential to Emit Summary table provided below.

Table 1. POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

Emissions Unit	PM-10 / PM-2.5	NOx	CO	VOC	SO2	NSR Pollutant[a]
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources						
B01	6.97	91.66	77.00	5.04	99.86	
B102						
B202						
B203						
C001						
D109, D110, D111	21.67	-	-	-	-	
D107	6.48	2.30	5.60	0.08	0.01	
D209, D210, D211	17.93	-	-	-	-	
F103	13.22	-	-	3.89	-	
F104	8.67	-	-	8.67	-	
F204	7.29	-	-	7.29	-	
E209	0.53	-	-	-	-	
E001	0.02	0.27	0.06	0.02	0.02	
Fugitive Sources *{For listed source categories only, see item 3 below in the instructions}*						
NONE	n/a	n/a	n/a	n/a	n/a	
Totals	82.78	94.23	82.66	24.99	99.89	0.00

Note: REFERENCE Prior Permit applications for details pertaining to emission calculations. The emissions shown in the above Table 1, are updated to reflect the removal of the Parfry Fryer (F108), the elimination of natural gas combustion equipment associated with the Prime 2 dryer (D205-D208) and the boiler bubble increase from 1100 to 1650 MM scf/yr. AP-42 emission factors are used to determine emissions from additional natural gas combustion in the boilers. PM-2.5 assumed to equal PM-10.

[1] The applicant must determine if the existing facility is a major facility. If the facility is an existing PSD major facility and changes are being made to the facility the major modification test must be conducted.

a) NSR Regulated air Pollutants are defined[2] as: Particulate Matter (PM, PM-10, PM-2.5), Carbon Monoxide, Lead, Nitrogen Dioxide, Ozone (VOC), Sulfur Dioxide, CO_2e[3], Green House Gases (GHG) mass, all pollutants regulated by NSPS (40 CFR 60)(i.e. TRS, fluoride, sulfuric acid mist) & Class I & Class II Ozone Depleting Substances (40 CFR 82)(i.e. CFC, HCFC, Halon, etc.)

Applicants are encouraged to call DEQ's Air Quality Permit Hotline (1-877-573-7648) to ask questions as they prepare the application.**Emission Inventory Instructions:**

1. Use the same emission unit name throughout the application (i.e. in air pollution control equipment forms and for modeling purposes).

2. The application must **show in detail all calculations** used to develop the PTE summary and include:

   - Electronic copies of any spreadsheets used to estimate emissions. If a spreadsheet is used submit an electronic copy of the spread sheet (i.e. Excel File).
   - Documentation of all calculations conducted by hand (i.e. show all calculations).
   - Clear statements on all assumptions relied upon in estimating emissions.
   - Documentation of the emissions factors used to estimate emissions. If the emissions factor documentation is readily available to DEQ, such as an EPA AP-42 emissions factor, a simple reference to the emissions factor suffices. If the emissions factor documentation is not readily available to DEQ the applicant must submit the documentation with the application; ask DEQ if you are uncertain. **Applications without sufficient documentation are incomplete.** Documentation may consist of manufacturer guarantees, research conducted by trade organizations, published emission factors, and source test results. **If there are multiple factors for a given operation, note why the factor used is the most representative.**
   - Copies of manufacturer guarantees upon which emission inventories are based.
   - The best available emission information (see DEQ's Guidance on Emission Data Hierarchy).
   - If source tests are used as the basis for emissions estimates the source test report must be submitted. If the source test report is on file with DEQ provide the date of the source test was submitted along with the name of the facility and the emission unit that was tested. Source data from similar emissions units may be considered reliable provided it is clearly described why the sources are similar. Similar sources are those that the applicant has shown serve a similar function, use similar raw materials, and have similar processing rates.

3. Fugitive emissions of NSR regulated air pollutants from the source categories listed below must be included in the emission inventory.

Listed Source Categories for Inclusion of Fugitive Emissions

- Coal cleaning plants (with thermal dryers)
- Kraft pulp mills
- Portland cement plants
- Primary zinc smelters
- Iron and steel mills
- Primary aluminum ore reduction plants
- Primary copper smelters
- Carbon black plants (furnace process)
- Primary lead smelters
- Fuel conversion plants
- Sintering plants
- Secondary metal production plants
- Chemical process plants (excluding ethanol plants by natural fermentation).
- Fossil-fuel fired boilers totaling more than 250 MMBtu/hr

[2] 40 CFR 52.21(b)(50), as incorporated by reference at IDAPA 58.01.01.107.03.d

[3] Multiply each green house gas (GHG) by the global warming potential (GWP) listed at 40 CFR 98, Table A- 1 of Subpart A then sum all values to determine CO_2e (GHGs are carbon dioxide, nitrous oxide, methane, hydrofluorcarbons, perfluorcarbons, sulfur hexafluoride). Be sure to show all calculations as described in the instructions.

- Municipal incinerators -250 T/day of refuse
- Hydrofluoric, sulfuric, or nitric acid plants
- Petroleum refineries
- Lime plants
- Phosphate rock processing plants
- Coke oven batteries
- Sulfur recovery plants
- Petroleum storage and transfer units with total capacity of 300,000 barrels
- Taconite ore processing plants
- Glass fiber processing plants
- Charcoal production plants
- Fossil fuel-fired steam electric plants greater than 250 MMBtu/hr)
- Categories regulated by NSPS or NESHAP prior to 8/7/80

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Version 2, January 2011

McCain Foods – Burley, Idaho

Ambient Impact Assessment Emission Inventory for New Minor Facilities and Minor Modifications

Application Template and Instructions

New Minor Facilities or Minor Modifications to Existing Facilities

Applicants must demonstrate that the source will not cause or significantly contribute to a violation of an ambient air quality standard for criteria pollutants[1]. As described in the State of Idaho Air Quality Modeling Guideline, there are three methods that an applicant can use to demonstrate compliance:

Method 1. Demonstrate that emissions from the new and/or modified existing facility are below air quality modeling thresholds that are listed in the State of Idaho Air Quality Modeling Guideline.

Method 2. Demonstrate that emissions from the new and/or modified source will not cause ambient impacts at or above significant ambient impact levels (Significant Impact Analysis or Preliminary Analysis).

Method 3. Demonstrate that facility wide emissions, when combined with co-contributing sources and background levels, do not cause an exceedance of ambient standards (Cumulative Analysis).

The type of emission inventory required depends upon which method is used to demonstrate compliance. In the following pages the type of emission inventory that is required to be submitted is discussed for each method. DEQ strongly recommends that the applicant develop and submit for DEQ approval a written modeling protocol prior to submitting the application (refer to the State of Idaho Air Quality Modeling Guideline). The modeling protocol must address what types of emission inventories are required for modeling, and address which fugitive emissions must be included.

All modeling emission inventories must be summarized using the emission inventory summary table provided below (Table 1).

The applicant must document all emission calculations and follow the emission inventory instructions provided. **Applications without sufficient documentation are incomplete; do not proceed until you have read the instructions on page 6.**

[1] Rules for the Control of Air Pollution in Idaho (IDAPA 58.01.01.203 & 403)

Table 1 **Emission Increase and Decreases (used for modeling SCL / SIL)**
(For NOx-Annual, based upon increasing Boiler Bubble from 1100 to 1650 MM scf/yr)

Emissions Unit	Stack or Emissions Point ID[a]	PM_{10}	$PM_{2.5}$		SO_2		NO_x		CO		Lead	
		lb/hr 24-hr Avg.	lb/hr 24-hr Avg.	lb/hr Annual Avg.	lb/hr Max.	lb/hr 3-hr Avg.	lb/hr Max.	lb/hr Annual Avg.	lb/hr Max.	lb/hr 8-hr Avg.	lb/hr monthly Avg.	lb/hr 1/4ly Avg.
Point Sources												
Murray 1 Boiler	**B101**							**6.28***				
Nebraska 1 Boiler	**B102**											
Nebraska 2 Boiler	**B202**											
Murray 2 Boiler	**B203**											
Prime 1 Dryer East	**D105**							**-1.05**				
Prime 1 Dryer West	**D106**							**-1.05**				
Prime 2 Dryer 1of 4	**D205**							**-0.52**				
Prime 2 Dryer 2of 4	**D206**							**-0.52**				
Prime 2 Dryer 3of 4	**D207**							**-0.52**				
Prime 2 Dryer 4 of 4	**D208**							**-0.52**				
Fugitive Sources												
None	n/a						n/a	n/a				

a) Stack or Emissions Point ID must match the ID used in the air dispersion model.

* This emission increase was simulated for each individual boiler to determine worst-case SIL impacts.

Table 1A **Proposed Emissions (used for modeling full facility impact of NOx - Annual)**
(For NOx-Annual, based upon Boiler Bubble of 1650 MM scf/yr)

Emissions Unit	Stack or Emissions Point ID[a]	PM_{10}	$PM_{2.5}$		SO_2		NO_x		CO		Lead	
		lb/hr 24-hr Avg.	lb/hr 24-hr Avg.	lb/hr Annual Avg.	lb/hr Max.	lb/hr 3-hr Avg.	lb/hr Max.	lb/hr Annual Avg.	lb/hr Max.	lb/hr 8-hr Avg.	lb/hr monthly Avg.	lb/hr 1/4ly Avg.
Point Sources												
Murray 1 Boiler	**B101**							**9.8**				
Nebraska 1 Boiler	**B102**							**9.37**				
Nebraska 2 Boiler	**B202**							**7.65**				
Murray 2 Boiler	**B203**							**3.83**				
Tot Dryer	**D107**							**0.6**				
Fugitive Sources												
None	n/a						n/a	n/a				

a) Stack or Emissions Point ID must match the ID used in the air dispersion model.

Applicants are encouraged to call DEQ's Air Quality Permit Hotline (1-877-573-7648) to ask questions as they prepare the application.

Following are descriptions of the types of emission inventories that are required for each of the three methods that can be used to demonstrate that the source will not cause or significantly contribute to a violation of ambient air quality standards for criteria pollutants. These descriptions are also covered in the State of Idaho Air Quality Modeling Guideline. The following descriptions are intended to be general guidelines that apply to the vast majority of situations. Even though they cover the vast majority of situations they are not intended to act in place of a DEQ approved modeling protocol that is developed based on consideration of site specific emissions units and air pollution dispersion characteristics.

Method 1

Demonstrate that emissions from the new and/or modified existing facility are below air quality modeling thresholds that are listed in the State of Idaho Air Quality Modeling Guideline.

New facilities	Calculate proposed allowable, or potential to emit, of all new emissions units. "All" emissions units includes those units that would have otherwise qualified for an exemption (do not omit any sources). Provide an emission inventory summary table for proposed allowable emissions using the template provided above.
Modified Facilities	***New Emission Units (including Replacement units)*** – This includes new units that are replacing existing emission units. Calculate the proposed allowable emissions, or potential to emit, of all new emissions units. "All" emissions units includes those units that would have otherwise qualified for an exemption (do not omit any sources). The emission reduction associated with removal of an existing emission unit will not typically be considered in the evaluation of whether emissions exceed modeling thresholds. Prior written DEQ approval is necessary for any emission reduction to be credited in evaluation of whether emissions exceed modeling thresholds. Provide an emission inventory summary table for proposed allowable emissions using the template provided. ***Modified Existing Non-permitted Emission Units –*** Non-permitted means those emission units not included in a PTC or Tier II operating permit. The emissions units that must be included are all of the emissions units that are part of the project. ***Project*** means a physical change in, or change in the method of operation of, an existing stationary source. **Sources not being physically modified but which could experience emissions increases that result from the change[2, 3] are required to be included in the project.**

[2] David Neleigh, Chief, Air Permits Section EPA Region 6. Letter to Dawson Lasseter, Air Quality Division, Oklahoma DEQ, January 27, 2005.

[3] R. Douglas Neeley, Chief, Air & Radiation Technology Section, Letter to Rs. Rhonda Banks Thompson, South Carolina Department of Health and Environmental Control, March 14, 1997 ("… when a particular physical change or change in the method of operation would cause an increase in emissions from other emissions units, then those "other" emissions must be included in determining PSD applicability for the particular change.")

For emission units that air pollution dispersion characteristics do not change (i.e. stack height, diameter, flow rate, temperature), calculate the emission increase as the difference of proposed allowable emissions and actual emissions. Actual emissions shall be calculated using the units actual operating hours, production rates, types of materials processed, stored, or combusted during the two during a two year period prior to submitting the application. Actual emissions should represent normal source operations, DEQ may grant written approval of a different time period provided it is demonstrated that it is more representative of normal source operation.

For emission units that air pollution dispersion characteristics do change, comparison to the modeling threshold should be based on the total allowable emissions rate of the modified source.

Provide an emission inventory summary table for proposed allowable emissions using the template provided. For emission units that air pollution dispersion characteristics do not change also provide an emission inventory summary table for actual emissions and emission increase.

Modified Existing Permitted Emission Units – Permitted means those units included in a PTC or Tier II operating permit.

For emission units that air pollution dispersion characteristics do not change (i.e. stack height, diameter, flow rate, temperature), calculate the emission increase as the difference of proposed allowable emissions and the previous allowable emissions.

For emission units that air pollution dispersion characteristics do change, comparison to the modeling threshold should be based on the total allowable emissions rate of the modified source.

Provide an emission inventory summary table for proposed allowable emissions and the emissions increase using the template provided. For emission units that air pollution dispersion characteristics do not change also provide an emission inventory summary table for existing allowable emissions.

Method 2

Demonstrate that emissions from the new and/or modified source will not cause ambient impacts at or above significant ambient impact levels (Significant Impact Analysis or Preliminary Analysis).

New Facilities

Calculate proposed allowable emissions, or potential to emit, of all new emissions units. "All" emissions units includes those units that would have otherwise qualified for an exemption (do not omit any sources). Model the emission rate(s) following a DEQ approved Modeling Protocol and determine if a significant impact occurs.

Modified Facilities

New Emission Units (including Replacement units) – This includes new units that are replacing existing emission units.

Calculate proposed allowable emissions, or potential to emit, of all new emissions units. "All" emissions units includes those units that would have otherwise qualified for an exemption (do not omit any sources).

Calculate the emission reduction associated with removal of an existing emission unit.

- For existing permitted emission units the reduction is equal to the permitted emission rate or the potential to emit. Permitted means those units included in a PTC or Tier II operating permit.

- For existing non-permitted emission units the reduction is based on actual emission of the unit. Actual emissions shall be calculated using the units actual operating hours, production rates, types of materials processed, stored, or combusted during a two during a two year period prior to submitting the application. Actual emissions should represent normal source operations, DEQ may grant written approval of a different time period provided it is demonstrated that it is more representative of normal source operation.

Model the emission rate(s) following a DEQ approved Modeling Protocol and determine if a significant impact occurs. Shutdown emission units are typically modeled as negative emission rates.

Modified Existing Non-permitted Emission Units – Non-permitted means those units not included in a PTC or Tier II operating permit. The emissions units that must be included are all of the emissions units that are part of the project. ***Project*** means a physical change in, or change in the method of operation of, an existing stationary source. **Sources not being physically modified but which could experience emissions increases that result from the change[4, 5] are required to be included in the project.**

For emission units that air pollution dispersion characteristics do not change (i.e. stack height, diameter, flow rate, temperature), calculate the emission increase as the difference of proposed allowable emissions and actual emissions. Actual emissions shall be calculated using the units actual operating hours, production rates, types of materials processed, stored, or combusted during a two during a two year period prior to the modification. Actual emissions should represent normal source operations, DEQ may grant written approval of a different time period provided it is demonstrated that it is more representative of normal source operation. Provide the proposed allowable, actual emissions and emission increase using the template provided.

For emission units that air pollution dispersion characteristics do change, modeling is based on the total allowable emissions rate of the modified source. Provide the proposed allowable emissions rates using the template provided. Model the emission rate(s) following a DEQ approved Modeling Protocol and determine if a significant impact occurs.

Modified Existing Permitted Emission Units – Permitted means those units included in a PTC or Tier II operating permit.

For emission units that air pollution dispersion characteristics do not change (i.e. stack height, diameter, flow rate, temperature), calculate the emission increase as the difference of proposed allowable emissions and the previous allowable emissions. Provide the proposed allowable emissions rates, previous allowable emission rates, and emission increase using the template provided.

---

[4] David Neleigh, Chief, Air Permits Section EPA Region 6. Letter to Dawson Lasseter, Air Quality Division, Oklahoma DEQ, January 27, 2005.

[5] R. Douglas Neeley, Chief, Air & Radiation Technology Section, Letter to Rs. Rhonda Banks Thompson, South Carolina Department of Health and Environmental Control, March 14, 1997 ("… when a particular physical change or change in the method of operation would cause an increase in emissions from other emissions units, then those "other" emissions must be included in determining PSD applicability for the particular change.")

For emission units that air pollution dispersion characteristics do change, modeling should be based on the total allowable emissions rate of the modified source. Provide the proposed allowable emissions rates using the template provided.

Model the emission rate(s) following a DEQ approved Modeling Protocol and determine if a significant impact occurs.

Method 3

Demonstrate that facility wide emissions, when combined with co-contributing sources and background levels, do not cause an exceedance of ambient standards (Cumulative Analysis).

Calculate proposed allowable emissions of all emissions units. All emissions units includes those units that would have otherwise qualified for an exemption if they were the only unit being constructed (do not omit any sources). Provide the proposed allowable emissions rates using the template provided. Model the emission rate(s) following a DEQ approved Modeling Protocol, add the appropriate background concentration value, and determine if violation of a standard occurs.

Modeling Emission Inventory Instructions:

1. Use the same emission unit name throughout the application (i.e. in air pollution control equipment forms and for modeling purposes).
2. The application must **show in detail all calculations** used to develop the PTE summary and include:
   - Electronic copies of any spreadsheets used to estimate emissions. If a spreadsheet is used submit an electronic copy of the spread sheet (i.e. Excel File).
   - Documentation of all calculations conducted by hand (i.e. show all calculations).
   - Clear statements on all assumptions relied upon in estimating emissions.
   - Documentation of the emissions factors used to estimate emissions. If the emissions factor documentation is readily available to DEQ, such as an EPA AP-42 emissions factor, a simple reference to the emissions factor suffices. If the emissions factor documentation is not readily available to DEQ the applicant must submit the documentation with the application; ask DEQ if you are uncertain. **Applications without sufficient documentation are incomplete.** Documentation may consist of manufacturer guarantees, research conducted by trade organizations, published emission factors, and source test results. **If there are multiple factors for a given operation, note why the factor used is the most representative.**
   - Copies of manufacturer guarantees upon which emission inventories are based.
   - The best available emission information (see DEQ's Guidance on Emissions Data Hierarchy).
   - If source tests are used as the basis for emissions estimates the source test report must be submitted. If the source test report is on file with DEQ provide the date of the source test was submitted along with the name of the facility and the emission unit that was tested. Source data from similar emissions units may be considered reliable provided it is clearly described why the sources are similar. Similar sources are those that the applicant has shown serve a similar function, use similar raw materials, and have similar processing rates.
3. **Input to the computer model must match the emission inventory in the summary table(s).** Additionally, the emissions inventory calculations that are submitted must also match the summary table. It would seem that this could go without saying, **but there are a surprising number of applications received where emission calculations do not match the input to the computer model**. DEQ recommends that the applicant print the emission inventory input file in the model and compare it to this summary table (this is one of the first things that DEQ will check during the completeness review). If the inventories do not match the application is incomplete.

4. DEQ highly recommends that a written modeling protocol be submitted for approval prior to conducting modeling. The modeling protocol should address which fugitive emissions must be included. Idaho's Air Quality Modeling Guideline states the following types of fugitive emissions sources should be included:

> "**Process fugitive emissions from material handling, processing, etc.**
>
> Fugitive emissions from vehicle traffic on facility roadways and wind erosion emissions from storage piles will not typically be considered for minor source permitting unless DEQ determines such sources may have a substantial contribution."

5. The applicant must complete the Modeling Information Workbook (Form MI) to provide other modeling input parameters.

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Version 1, August 2010

McCain Foods – Burley, Idaho

Facility Wide Hazardous Air Pollutant Potential to Emit
Application Template and Instructions

Provide the facility wide potential to emit for all Hazardous Air Pollutants (HAPs). **The potential to emit provided here must match the emissions rates which are requested to be permitted.**

HAPs are pollutants that are required to be regulated under the Clean Air Act. A list of the HAPs may be found by following this link: HAP list; review the list carefully to be sure you have included all listed HAPs.

All emissions inventories must be submitted with thorough documentation. The emission inventories will be subjected to technical review; prepare your application with sufficient documentation so that either the public or DEQ can verify the validity of the emission estimates. **Applications submitted without sufficient documentation are incomplete. Follow the instructions provided on the following page; do not proceed until you have read the instructions.**

Applicants must use the Potential to Emit Summary table provided below. Identify the individual HAP with the highest emissions and total HAP emissions. The potential to emit provided here must match the emissions rates which are requested to be permitted. **All fugitive emissions of HAPs must be included.**

Table 1 HAP POTENTIAL TO EMIT EMISSIONS SUMMARY

HAP Pollutants	PTE (T/yr)
Benzene	**1.73E-03**
Formaldehyde	**6.19E-02**
Hexane *	**1.49E+00**
Naphthalene	**5.03E-04**
Toluene	**2.81E-03**
Total	**1.55**

* Maximum Individual HAP

NOTE: The HAP's shown in Table 1 result from the combustion of natural gas and were calculated using AP-42 emission factors and an annual boiler bubble limit of 1650 MM scf/yr. Hydrogen Sulfide (from wastewater treatment) no longer classified as a HAP, thus not shown in the table above.The facility is unaware of any additional HAP's emitted by the facility.

Applicants are encouraged to call DEQ's Air Quality Permit Hotline (1-877-573-7648) to ask questions as they prepare the application.

Table 2 HAP POTENTIAL TO EMIT EMISSIONS SUMMARY

HAP Pollutants	PTE (T/yr)
Benzene	**5.78E-04**
Formaldehyde	**2.06E-02**
Hexane *	**4.95E-01**
Naphthalene	**1.68E-04**
Toluene	**9.35E-04**
Total	**0.517**

* Maximum Individual HAP

NOTE: The HAP's shown in Table 2 result from the combustion of an additional 550 MM scf/yr natural gas and are calculated using AP-42 emission factors.

Emission Inventory Instructions:

1. Use the same emission unit name throughout the application (i.e. in air pollution control equipment forms and for modeling purposes).

2. The application must **show in detail all calculations** used to develop the PTE summary and include:

- Electronic copies of any spreadsheets used to estimate emissions. If a spreadsheet is used submit an electronic copy of the spread sheet (i.e. Excel File).
- Documentation of all calculations conducted by hand (i.e. show all calculations).
- Clear statements on all assumptions relied upon in estimating emissions.
- Documentation of the emissions factors used to estimate emissions. If the emissions factor documentation is readily available to DEQ, such as an EPA AP-42 emissions factor, a simple reference to the emissions factor suffices. If the emissions factor documentation is not readily available to DEQ the applicant must submit the documentation with the application; ask DEQ if you are uncertain. **Applications without sufficient documentation are incomplete.** Documentation may consist of manufacturer guarantees, research conducted by trade organizations, published emission factors, and source test results. **If there are multiple factors for a given operation, note why the factor used is the most representative.**
- Copies of manufacturer guarantees upon which emission inventories are based.
- The best available emission information (see DEQ's Guidance on Emissions Data Hierarchy).

- If source tests are used as the basis for emissions estimates the source test report must be submitted. If the source test report is on file with DEQ provide the date of the source test was submitted along with the name of the facility and the emission unit that was tested. Source data from similar emissions units may be considered reliable provided it is clearly described why the sources are similar. Similar sources are those that the applicant has shown serve a similar function, use similar raw materials, and have similar processing rates.

2. **All fugitive emissions of HAPs must be included[1].**

[1] November 27, 2001 (66 FR 59161), EPA published a rule, "Change to Definition of Major Source," that requires the fugitive emissions of all hazardous air pollutants ("HAPs") listed under section 112(b) of the Act in determining whether the source is a major source.

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Version 1, August 2010

McCain Foods – Burley, Idaho

Toxic Air Pollutant Emissions Inventory

Application Template and Instructions

Applicants must demonstrate preconstruction compliance with toxic air pollutant (TAP) standards contained in IDAPA 58.01.01.210 (*Rules for the Control of Air Pollution in Idaho*). DEQ has developed a TAP completeness checklist in order to assist applicants. DEQ strongly recommends that applicants complete and submit this checklist as part of the application. **Applications which do not follow one of the available methods for demonstrating compliance described in the checklist will be determined incomplete or denied.** Follow this link to the checklist: Toxic Air Pollutant Application Completeness Checklist. Be sure to calculate emissions correctly for the averaging periods as described in the checklist and in the instructions on page 3.

The type of TAP emissions inventory required depends upon which method is used to demonstrate compliance (see the Toxic Air Pollutant Application Completeness Checklist). **All TAP emissions inventories must be summarized using the emissions inventory summary tables provided below** (Table 1 and Table 2).

The applicant must **document all emission calculations as described in the instructions provided on the following page. Applications without sufficient documentation are incomplete; do not proceed until you have read the instructions.**

Applicants are encouraged to call DEQ's Air Quality Permit Hotline (1-877-573-7648) to ask questions as they prepare the application.

Table 1. PRE- AND POST PROJECT NON-CARCINOGENIC TAP EMISSIONS SUMMARY
POTENTIAL TO EMIT

Non-Carcinogenic Toxic Air Pollutants (sum of all emissions)	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Barium	**Reference the prior permit applications for details pertaining to emission calculations. The emissions shown in the "Change in 24-hour Average column" reflect the increase in emissions associated with the boiler bubble increase from 1100 to 1650 MM scf/yr. AP-42 emission factors are used to calculate these emissions.**	**Reference the prior permit applications for the pre-project emission rates. The emissions shown in the "Change in 24-hour Average column" reflect the increase in emissions associated with the boiler bubble increase from 1100 to 1650 MM scf/yr. Thus, can be added to the pre-project emissions to determine post project emission rates.**	2.76E-04	0.033	**No**
Chromium (assume Cr-III)			8.79E-05	0.033	**No**
Cobalt			5.27E-06	0.0033	**No**
Copper			5.34E-05	1.30E-02	**No**
Fluorine			1.76E-07	0.133	**No**
Hexane			1.13E-01	12.0	**No**
Manganese			2.39E-05	0.667	**No**
Mercury			1.63E-05		**No**
Molybdenum			6.91E-05	0.333	**No**
Naphthalene			3.83E-05	3.33	**No**
Pentane			1.63E-01	118.0	**No**
Selenium			1.51E-06	0.013	**No**
Toluene			2.13E-04	25	**No**
Vanadium			1.44E-04	0.003	**No**
Zinc			1.82E-03	0.333	**No**
PAH compounds (except 7-PAH group)			4.82E-06	9.10E-05	**No**
POM compounds (7-PAH group)			7.16E-07	2.00E-06	**No**
Ammonia	**0.917**	**NO CHANGE - These pollutants are from the wastewater treatment system and the values shown were obtained from the application material submitted January 2002**	0	**N/A. No increase associated with this PTC.**	**N/A. No increase associated with this PTC.**
Acetic acid	**0.804**		0		
Formic Acid	**0.016**		0		
Propionic Acid	**0.661**		0		
Hydrogen sulfide	**4.829**		0		

Table 2. PRE- AND POST PROJECT CARCINOGENIC TAP EMISSIONS SUMMARY POTENTIAL TO EMIT

Carcinogenic Toxic Air Pollutants (sum of all emissions)	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Arsenic	**Reference the prior permit applications for details pertaining to emission calculations. The emissions shown in the "Change in 24-hour Average column" reflect the increase in emissions associated with the boiler bubble increase from 1100 to 1650 MM scf/yr. AP-42 emission factors are used to calculate these emissions.**	**Reference the prior permit applications for the pre-project emission rates. The emissions shown in the "Change in 24-hour Average column" reflect the increase in emissions associated with the boiler bubble increase from 1100 to 1650 MM scf/yr. Thus, can be added to the pre-project emissions to determine post project emission rates.**	1.26E-05	1.50E-06	**Yes**
Benzene			1.32E-04	8.00E-04	**No**
Benzo(a)pyrene			7.53E-08	2.00E-06	**No**
Beryllium			7.53E-07	2.80E-05	**No**
Cadmium			6.91E-05	3.70E-06	**Yes**
Formaldehyde			4.71E-03	5.10E-04	**Yes**
3-Methylchloranthrene			1.13E-07	2.50E-06	**No**
Nickel			1.32E-04	2.70E-05	**Yes**

a) *{If you have POM include the following footnote.}* Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Pre-project average emissions are the existing allowable emission rates.

Post-project average emissions are the new proposed emission rates.

Emission Inventory Instructions:

1. The averaging period for the emission rate depends upon whether the TAP is non-carcinogenic or carcinogenic. Non-carcinogenic TAP emissions are averaged over 24 hours, carcinogenic TAP emissions are averaged over 8760 hours.

   For more explanation on averaging periods, see the Toxic Air Pollutant Application Completeness Checklist.

2. **Pre**-project average emissions are the existing allowable emission rates.

   Post-project average emissions are the new proposed emission rates.

3. Use the same emission unit name/designation throughout the application (i.e. air pollution control equipment forms and modeling forms).

4. The emission inventories will be subjected to technical review; prepare your application with sufficient documentation so that the public and DEQ can verify the validity of the emission estimates. The application must **show in detail all emission calculations** used to develop the emission inventory summary and must include the following:

   - **Clear documentation of any emissions averaging that was used.** For instance if a source only operates 8 hours during any day and the emissions during that 8 hour period are averaged over 24 hours then this must be clearly described in the application. The emissions averaging calculations must also be shown.
   - Electronic copies of any spreadsheets used to estimate emissions. If a spreadsheet is used submit an electronic copy of the spread sheet (i.e. Excel File).
   - Documentation of all calculations conducted by hand (i.e. show all calculations).
   - Clear statements on all assumptions relied upon in estimating emissions.
   - Documentation of the emissions factors used to estimate emissions. If the emissions factor documentation is readily available to DEQ, such as an EPA AP-42 emissions factor, a simple reference to the emissions factor suffices. If the emissions factor documentation is not readily available to DEQ the applicant must submit the documentation with the application; ask DEQ if you are uncertain. **Applications without sufficient documentation are incomplete.** Documentation may consist of manufacturer guarantees, research conducted by trade organizations, published emission factors, and source test results. **If there are multiple factors for a given operation, note why the factor used is the most representative.**
   - Copies of manufacturer guarantees upon which emission inventories are based.
   - The best available emission information (see DEQ's Guidance on Emissions Data Hierarchy).
   - If source tests are used as the basis for emissions estimates the source test report must be submitted. If the source test report is on file with DEQ provide the date of the source test was submitted along with the name of the facility and the emission unit that was tested. Source test data from similar emissions units may be considered reliable provided it is clearly described why the sources are similar. Similar sources are those that the applicant has shown serve a similar function, use similar raw materials, and have similar processing rates.

APPENDIX B

Marked-up copy of the current

PTC (with proposed changes)

Air Quality

PERMIT TO CONSTRUCT

Permittee	**McCain Foods**
Permit Number	**P-2012.0043**
Project ID	**61085**
Facility ID	**031-00014**
Facility Location	**218 West Highway 30** **Burley, Idaho, 83318**

Permit Authority

This permit (a) is issued according to the *Rules for the Control of Air Pollution in Idaho (Rules)*, IDAPA 58.01.01.200-228; (b) pertains only to emissions of air contaminants regulated by the state of Idaho and to the sources specifically allowed to be constructed or modified by this permit; (c) has been granted on the basis of design information presented with its application; (d) does not affect the title of the premises upon which the equipment is to be located; (e) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (f) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; (g) in no manner implies or suggests that the Department of Environmental Quality (DEQ) or its officers, agents, or employees, assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment. Changes in design, equipment or operations may be considered a modification subject to DEQ review in accordance with IDAPA 58.01.01.200-228.

Date Issued	**August 16, 2012**

Dan Pitman, P.E., Permit Writer

Mike Simon, Stationary Source Manager

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1. PERMIT SCOPE

Purpose

1.1 The purpose of this permit action is to ~~convert the existing permit to construct and Tier II operating permit to a permit to construct. The facility has not proposed any changes to the existing facility~~provide McCain with a Permit to Construct for reconfiguring an existing process line - identified as Prime 2 (B2~~P2~~). The reconfiguration does not result in a change to the previously permitted production thruput or emission rates. However, as part of this PTC, it is also requested that the boiler natural gas permit limit (bubble) be increased to 1,650 MM scf/yr.

1.2 This PTC replaces Permit to Construct ~~and Tier II Operating Pdrmit No. T2-2007.0233, issued on February 25, 2008~~Permit Number P-2012.0043, issued on August 16, 2012.

Regulated Sources

1.3 Table 1.1 lists all sources of regulated emissions in this permit.

Table 1.1 REGULATED SOURCES

Permit Section	Source Description	Emissions Control(s)
2	Facility-wide (fugitive and point sources)	Reasonable control
3	(B101)Murray 1 boiler, Model: MCF4-78, 100 MMbtu/hr, natural gas and biogas	None
	(B102) Nebraska 1 boiler, Model: NS-E-68, 95.58 MMBtu/hr, natural gas and biogas	None
	(B202) Nebraska 2 boiler, Model: NS-E-57, 78.05 MMBtu/hr, natural gas	None
	(B203) Murray 2 boiler, Model: MCF2-38, 39.1 MMBtu/hr, natural gas	None
	(C001) Biogas flare, Varec, Model: 244W	None
4	(D109 – D111) Prime 1 dryer, Wolverine Proctor, steam heated	None
	(D107) Tot dryer, Rey Industries, 4 MMBtu/hr, direct-fired dryer, natural gas	None
	~~(D205–D208)~~ Prime 2 dryer, National, ~~48 MMBtu/hr, direct-fired dryer, natural gas~~	None
5	(F103) Tot fryer, Shockey Model: Ore-Ida	Air washer, Rey Industries Model: G12/24, 20 gpm
	(F104) Prime 1 fryer, Shockey Model: Ore-Ida	Air washer, Ore-Ida, 20 gpm
	~~(F108) Parfry fryer, Idaho Steel Products Model: Ore-Ida~~	~~Air washer, Rey Industries, 20~~
	(F204) Prime 2 fryer, heat and control	Air washer, Ore-Ida, 20 gpm
6	(E209) Batter Room collector	Dust collector
7	(E001) Emergency fire pump, Detroit Diesel Model: 6061-A2, No. 1 or No. 2 fuel oil	None
8	NESHAP Requirements Fire Pump Engine, 170 Horsepower, Diesel Fuel, Compresion Ignition ~~2~~Three-Emergency Generators, ~~30 Horsepower each~~Two at 30 HP, One rated at 25 KW, Natural Gas, Spark Ignition	None

Comment [A1]: The reconfigured dryer for Prime 2 will include 3 stacks The new stacks will be identified as D209, D210, and D211.

Comment [A2]: This combustion equipment will be eliminated upon completion of the reconfiguration. The Prime 2 dryer will be heated using steam produced from an existing boiler

Comment [A3]: This Process line has been removed. Thus stack F108 has been eliminated.

Comment [A4]: Three stand-by emergency generators are currently operated by the facility. The third generator has a rating of 25 KW (maximum fuel input is 375,000 btu/hr) and was added for the Biogas Flare system.

2. FACILITY-WIDE CONDITIONS

Fugitive Emissions

2.1 All reasonable precautions shall be taken to prevent PM from becoming airborne in accordance with IDAPA 58.01.01.650-651. In determining what is reasonable, consideration will be given to factors such as the proximity of dust-emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of particulate matter. Some of the reasonable precautions 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 lands.
- Application, where practical, of asphalt, oil, water, or suitable chemicals to, or covering of, dirt roads, material stockpiles, 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, where practical, of open-bodied trucks transporting materials likely to give rise to airborne dusts.
- Paving of roadways and their maintenance in a clean condition, where practical.
- Prompt removal of earth or other stored material from streets, where practical.

2.2 The permittee shall monitor and maintain records of the frequency and the method(s) used (i.e., water, chemical dust suppressants, etc.) to reasonably control fugitive emissions.

2.3 The permittee shall maintain records of all fugitive dust complaints received. The permittee shall take appropriate corrective action as expeditiously as practicable after receipt of a valid complaint. The records shall include, at a minimum, the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

2.4 The permittee shall conduct a quarterly facility-wide inspection of potential sources of fugitive emissions, during daylight hours and under normal operating conditions to ensure that the methods used to reasonably control fugitive emissions are effective. If fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive emissions inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive emissions, and the date the corrective action was taken.

Odors

2.5 The permittee shall not allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution.

2.6 The permittee shall maintain records of all odor complaints received. If the complaint has merit, the permittee shall take appropriate corrective action as expeditiously as practicable. The records shall, at a minimum, include the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Visible Emissions

2.7 The permittee shall not discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined by procedures contained in IDAPA 58.01.01.625. These provisions shall not apply when the presence of uncombined water, NO_x, and/or chlorine gas is the only reason for the failure of the emission to comply with the requirements of this section.

2.8 The permittee shall conduct a quarterly facility-wide inspection of potential sources of visible emissions, during daylight hours and under normal operating conditions. The visible emissions inspection shall consist of a see/no see evaluation for each potential source. If any visible emissions are present from any point of emission, the permittee shall either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee shall take all necessary corrective action and report the exceedance in accordance with IDAPA 58.01.01.130-136. The permittee shall maintain records of the results of each visible emissions inspection and each opacity test when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

Open Burning

2.9 The permittee shall comply with the requirements of IDAPA 58.01.01.600-616, Rules for Control of Open Burning.

Reports and Certifications

2.10 Any reporting required by this permit, including but not limited to, records, monitoring data, supporting information, requests for confidential treatment, notifications of intent to test, testing reports, or compliance certifications, shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete. Any reporting required by this permit shall be submitted to the following address:

Air Quality Permit Compliance
Twin Falls Regional Office
Department of Environmental Quality
1363 Fillmore Street
Twin Falls, ID 83301
Phone: (208) 736-2190
Fax: (208) 736-2194

Obligation to Comply

2.11 Receiving a permit shall not relieve any owner or operator of the responsibility to comply with all applicable local, state, and federal rules and regulations.

Fuel-burning Equipment

2.12 The permittee shall not discharge to the atmosphere from any fuel-burning equipment PM in excess of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume for gas.

Air Pollution Emergency Rule

2.13 The permittee shall comply with the Air Pollution Emergency Rule, in accordance with IDAPA 58.01.01.550-562.

3. BOILERS AND BIOGAS FLARE

3.1 Process Description

There are four boilers existing at the facility, and they are used to generate steam for the manufacturing process. Two of the units, the Murray 1 boiler and the Nebraska 1 boiler, are located in Burley Plant 1. The Murray 1 boiler has a maximum heat input capacity of 100 MMBtu/hr. The Nebraska 1 boiler has a maximum heat input capacity of 95.58 MMBtu/hr. The Murray 1 boiler and Nebraska 1 boiler combust both natural gas as primary fuel and biogas as secondary fuel. The remaining two boilers, the Nebraska 2 boiler and the Murray 2 boiler, are located in Burley Plant 2. The Nebraska 2 boiler has a maximum heat input capacity of 78.05 MMBtu/hr. The Murray 2 boiler has a maximum heat input capacity of 39.1 MMBtu/hr. The Murray 2 boiler and Nebraska 2 boiler combust only natural gas as fuel.

The biogas flare incinerates the gases created in McCain Foods' anaerobic lagoon. The flare is a Varec Model 244W Series.

3.2 Control Description

Emissions from all the boilers are uncontrolled.

Table 3.1 EMISSIONS UNIT DESCRIPTION

Emissions Unit(s) / Process(es)	Emissions Control Device	Emissions Point
Murray 1 boiler	None	B101
Nebraska 1 boiler	None	B102
Nebraska 2 boiler	None	B202
Murray 2 boiler	None	B203
Biogas flare	None	C001

Emissions Limits

3.3 Emissions Limits

- The aggregate PM_{10}, NO_x, CO, and VOC emissions from the boiler stacks (B101, B102, B202, B203) shall not exceed any corresponding emissions rate limits listed in the appendix of this permit.
- The aggregate SO_2 emissions from the boiler stacks (B101, B102, B202, and B203) and the biogas flare (C001) shall not exceed 99.86 tons per any consecutive 12-month period (T/yr).
- Emissions of H_2S from the boiler stacks (B101 and B102) and the biogas flare (C001) shall not exceed 6.0 lb/day
- Emissions of H_2S from the boiler stacks (B101 and B102) and the biogas flare (C001) shall not exceed 1.1 T/yr.

3.4 Biogas Flare Particulate Matter Emissions Limit

Particulate matter (PM) emissions from the biogas flare shall not exceed 0.2 pounds per 100 pounds of biogas burned, as required by IDAPA 58.01.01.785.

Operating Requirements

3.5 Requirements for Biogas Flare and Combustion of Anaerobic Lagoon Emissions

The permittee shall maintain and operate a biogas flare for the combustion of the biogas emitted from the anaerobic lagoon. All emissions of air pollutants from the anaerobic lagoon shall be combusted in either boilers (B101 or B102) or the biogas flare.

3.6 Pilot Flame and Alarm

The flare shall be operated with a pilot flame present during the operation of the digester. In the event of a flame failure, the permittee shall follow a standard operating procedure to reinitiate the pilot flame as expeditiously as practicable.

The permittee shall periodically calibrate and shall operate at all times when the flare is operating a hot wire anemometer or similar device that detects the presence of a flame in the biogas flare. In addition, the permittee shall maintain an alarm that notifies the operator in the case of a flameout. The permittee shall follow the excess emissions procedures in IDAPA 58.01.01.130-136 and in General Provision 8 of this permit in the event of an excess emissions event caused by the biogas flare.

3.7 Natural Gas Fuel Usage Limit

The maximum amount of natural gas combusted by the boilers collectively shall not exceed ~~1,100~~1650 MMscf/yr for any consecutive 12-month period.

Comment [A5]: McCain Foods requests that the total annual natural gas consumption limitation from the boilers be increased from 1100 to 1650 MMscf. Information pertaining to this change was previously communicated to IDEQ and air dispersion modeling performed to verify the NAAQS for NOx – annual, is maintained.
Note: This change does not increase potential hourly emissions from the facility and results in the facility maintaining minor source (Tier II) status.
Additional information, including a copy of IDEQ's letter and air dispersion modeling results are enclosed.

3.8 Natural Gas Fuel Meter

The permittee shall calibrate, maintain, and operate a natural-gas flow meter to measure the amount of natural gas combusted in the boilers (B101, B102, B202, B203) collectively.

3.9 Fuel Type

- The Murray 1 boiler and Nebraska 1 boiler, with a maximum total rated heat input capacity of 196 MMBtu/hr, shall be fueled with either natural gas or a mixture of biogas and natural gas exclusively.
- The Murray 2 boiler and Nebraska 2 boiler, with a maximum total rated heat input capacity of 117 MMBtu/hr, shall be fueled on natural gas exclusively.

Monitoring and Recordkeeping Requirements

3.10 Natural Gas Fuel Usage Monitoring Requirement

The permittee shall monitor and record the amount of natural gas combusted by the boilers, collectively, daily, monthly, and annually to demonstrate compliance with Permit Condition 3.7. The amount of natural gas combusted shall be recorded in units of standard cubic feet. Each daily amount of natural gas combusted shall be summed monthly, and then each month's amount of natural gas combusted shall be summed over the previous consecutive 12-month period.

3.11 Biogas Flow Rate and H_2S Concentrations Monitoring

Unless an alternative monitoring and recordkeeping method is approved by DEQ, the permittee shall comply with the following requirements:

Biogas H_2S Concentrations

The permittee shall perform the following to determine the quantity of hydrogen sulfide (H_2S) produced by the anaerobic lagoon:

- The permittee shall install, calibrate, maintain, and operate an H_2S gas monitor that shall be placed upstream of boilers (B101 and B102) and the biogas flare to measure the H_2S concentrations in the biogas produced by the anaerobic lagoon. The monitor shall be installed in accordance with the O&M manual and the manufacturer specifications.
- Calibration of the H_2S monitor shall be performed and recorded semi-annually.
- The results of the H_2S concentrations from the H_2S monitor shall be recorded once per week.

Biogas Flow Rate Monitoring

The permittee shall calibrate and operate a biogas flow meter that shall be placed after the outlet of the covered anaerobic lagoon to determine the quantity of biogas produced by the lagoon. The permittee shall monitor and record the total biogas flow rate on a weekly basis.

H_2S and SO_2 Emission Estimates

The permittee shall estimate H_2S and SO_2 emissions according to the following methods:

- The monthly SO_2 emissions and H_2S emissions from the flare and the boilers (B101 and B102) shall be calculated using the average H_2S concentration readings of all H_2S samples taken for each week, and the corresponding weekly biogas flow. The calculations shall be conducted using a similar method as in the permit application, including a molar conversion of H_2S to SO_2, a 98% H_2S control efficiency and 98% conversion of H_2S to SO_2 for the flare; and, a 98% H_2S control efficiency, and a 98% conversion of H_2S to SO_2 emissions for the boilers (B101 and B102).
- Monthly SO_2 emissions shall be used to determine rolling 12-month total SO_2 emissions.
- Monthly H_2S emissions shall be used to determine the rolling 12-month H_2S emissions.

3.12 Operations and Maintenance Manual

The permittee shall maintain an operations and maintenance (O&M) manual which describes the procedures that will be followed to maintain the anaerobic lagoon in good working order and assure operation as efficiently as practical for the H_2S monitor and the pilot flame detector. The procedures and specifications described in the O&M manual shall address, at a minimum, the following topics:

H_2S Monitor

- Standard operational procedure for H_2S sampling
- Frequency and method of calibration
- Operational maintenance
- Procedures for upset/breakdown conditions and for correcting equipment malfunctions

Pilot Flame Detector

- Method of ensuring continuous operation
- Operational maintenance

4. DRYERS

4.1 Process Description

McCain Foods currently operates two process lines for Prime Products, one in each plant. Dryers are utilized to reduce the moisture content of potato products prior to frying. The two dryers that are operated in conjunction with the Prime Products lines are as follows: the Prime 1 dryer is steam heated (Burley Plant 1) and the Prime 2 dryer (Burley Plant 2) is ~~direct-fired dryer and fueled by natural gas~~steam heated.. The Prime 1 dryer vents directly to the atmosphere via three separate stacks (D109 - D111). The Prime 2 dryer vents to the atmosphere through ~~four~~ Three separate stacks ~~(D205 – D208)~~(D209, D210, and D211). Tater Tots are manufactured in Burley Plant 1. The Tot dryer is a direct, natural gas-fired dryer that removes moisture from the potatoes. The Tot dryer vents directly to the atmosphere via a vertical stack (D107).

4.2 Control Description

Emissions from the Prime Product dryers are uncontrolled.

Table 4.1 EMISSIONS UNIT DESCRIPTION

Emissions Unit(s) /Process(es)	Emissions Control Device	Emissions Point
Prime 1 dryer	None	D109, D110, D111
Prime 2 dryer	None	~~D205, D206, D207, D208~~D209, D210, D211
Tot dryer	None	D107

Comment [A6]: The reconfigured Prime 2 Dryer will include 3 separate stacks (D209, D210, D211)

Emissions Limits

4.3 Emissions Limits

Particulate matter, PM_{10}, SO_2, NO_x, CO, and VOC emissions from the dryer stacks (D109 - D111, ~~D205, D206, D207, D208~~D209, D210, D211, D107) shall not exceed any corresponding emissions rate limits listed in the appendix of this permit.

Operating Requirements

4.4 Throughput Limits

Prime 1 Dryer

- The maximum throughput of the Prime 1 dryer shall not exceed 642 T/day of finished potato product based on a monthly average.
- The maximum annual throughput of the Prime 1 dryer shall not exceed 173,340 tons of finished potato product per any consecutive 12-month period.

Prime 2 Dryer

- The maximum throughput of the Prime 2 dryer shall not exceed 540 T/day of finished potato product based on a monthly average.
- The maximum annual throughput of the Prime 2 dryer shall not exceed 145,800 tons of finished potato product per any consecutive 12-month period.

Tot Dryer

- The maximum throughput of the Tot dryer shall not exceed 192 T/day of finished potato product based on a monthly average.
- The maximum annual throughput of the Tot dryer shall not exceed 51,840 tons of finished potato product per any consecutive 12-month period.

4.5 Fuel Usage Limits

- ~~The maximum amount of natural gas combusted in the Prime 2 dryer shall not exceed 120 MMscf, or 1,224,000 therms, per any consecutive 12-month period~~.
- The maximum amount of natural gas combusted in the Tot dryer shall not exceed 30 MMscf, or 306,000 therms, per any consecutive 12-month period.

Comment [A7]: This condition can be eliminated. Prime 2 Dryer will be heated by steam that will be provided from an existing boiler.

4.6 Fuel Meter

The permittee shall calibrate, maintain, and operate a natural-gas flow meter to measure the amount of natural gas combusted in the ~~Prime 2 dryer and the~~ Tot dryer.

Comment [A8]: This text can be deleted, the Prime 2 dryer will be heated by steam provided from an existing boiler

4.7 Fuel Type

The ~~Prime 2 dryer and~~ Tot dryer shall be fueled on natural gas exclusively.

Comment [A9]: This text can be deleted, the Prime 2 dryer will be heated by steam provided from an existing boiler

Monitoring and Recordkeeping Requirements

4.8 Throughput Monitoring

The permittee shall monitor and record the finished potato product throughput of the Prime 1 dryer, the Prime 2 dryer, and the Tot dryer daily, monthly, and annually to demonstrate compliance with Permit Condition 4.4. Throughput shall be measured at the packaging step of each process line, and "day" shall mean a 24-hour period. The throughput of each dryer shall be monitored and recorded daily. The daily throughputs of each dryer shall be summed and recorded monthly. The monthly throughputs of each dryer shall be summed and recorded for the previous consecutive 12-month period.

4.9 Fuel Usage Monitoring Requirement – ~~Prime 2 Dryer and~~ Tot Dryer

Comment [A10]: This text can be deleted, the Prime 2 dryer will be heated by steam provided from an existing boiler

The permittee shall monitor and record the amount of natural gas combusted by the ~~Prime 2 dryer and the~~ Tot dryer daily, monthly, and annually to demonstrate compliance with Permit Condition 4.5. The amount of natural gas combusted shall be recorded in units of standard cubic feet or therms. Each daily amount of natural gas combusted shall be summed monthly, and then each month's amount of natural gas combusted shall be summed over the previous consecutive 12-month period.

Comment [A11]: This text can be deleted, the Prime 2 dryer will be heated by steam provided from an existing boiler

5. FRYERS

5.1 Process Description

After being dried, the potato products are conveyed to the fryers in which they are cooked in hot vegetable oil. The two fryers used for Prime Products are as follows: Prime 1 fryer (Burley Plant 1) and the Prime 2 fryer (Burley Plant 2). The fryers are heated by steam. Each fryer is equipped with an air washer that is essentially a spray-chamber scrubber. In the air washer, exhaust from the fryer is passed through a chamber and contacted with a water spray that saturates the air stream. This allows the PM to attach to the water droplets. The water droplets carrying the PM are separated from the exhaust stream by a bank of stainless steel eliminator blades. The Prime 1 fryer air washer vents to the atmosphere through a single vertical stack (F104). The Prime 2 fryer air washer vents to the atmosphere through a single vertical stack (F204). The tots are conveyed to the Tot fryer where they are cooked in hot vegetable oil. The fryer is heated by steam. The fryer is equipped with an air washer that removes PM from the exhaust stream. The Tot fryer air washer vents to the atmosphere through a single vertical stack (F103). ~~The parfry patties are cooked in the Parfry fryer. The fryer is heated by steam. The fryer is equipped with an air washer that removes PM from the exhaust stream. The Parfry fryer air washer vents to the atmosphere through a single vertical stack (F108)~~.

Comment [A12]: The Parfry fryer has been removed. Thus, this text can be removed from the permit.

5.2 Control Description

Emissions from the Prime dryers are uncontrolled.

Table 5.1 EMISSIONS UNIT DESCRIPTION

Emissions Unit(s)/ Process(es)	Emissions Control Device	Emissions Point
Prime 1 fryer	Air washer	F104
Prime 2 fryer	Air washer	F204
Tot fryer	Air washer	F103
~~Parfry fryer~~	~~Air washer~~	~~F108~~

Comment [A13]: This process has been removed.

Emissions Limits

5.3 Emissions Limits

Particulate matter, PM_{10}, and VOC emissions from the fryer stacks (F104, F204, F103, ~~F108)~~ shall not exceed any corresponding emissions rate limits listed in the appendix of this permit.

Comment [A14]: Stack F108 no longer exists at the facility. This stack was for the Parfry Fryer.

Operating Requirements

5.4 Throughput Limits

Prime 1 Fryer

- The maximum throughput of finished potato product for the Prime 1 fryer shall not exceed 642 T/day based on a monthly average.

- The maximum throughput of finished potato product for the Prime 1 fryer shall not exceed 173,340 tons per any consecutive 12-month period.

Prime 2 Fryer

- The maximum throughput of finished potato product for the Prime 2 fryer shall not exceed 540 T/day based on a monthly average.
- The maximum throughput of finished potato product for the Prime 2 fryer shall not exceed 145,800 tons per any consecutive 12-month period.

Tot Fryer

- The maximum throughput of finished potato product for the Tot fryer shall not exceed 192 T/day based on a monthly average
- The maximum throughput of finished potato product for the Tot fryer shall not exceed 51,840 tons per any consecutive 12-month period.

~~*ParFry Fryer*~~

- ~~The maximum throughput of finished potato product for the Parfry fryer shall not exceed 61.2 T/day based on a monthly average.~~
- ~~The maximum throughput of finished potato product for the Parfry fryer shall not exceed 16,524 tons per any consecutive 12-month period.~~

Comment [A15]: This Process line has been removed. Thus these conditions can be removed from the permit.

5.5 Air Pollution Control Equipment

The fan and the spray-water pump associated with each air washer shall be operated per the instructions provided in the O&M manual. The pressure at the header of the air washer shall also be set per the specifications identified in the O&M manual by adjusting the pump discharge valve.

The air-washer system shall be maintained on a routine basis in accordance with the schedule recommended in the O&M manual. Maintenance activities shall include, but not be limited to, the following: cleaning and replacing the spray-water nozzles, pressure pump maintenance, and cleaning the eliminator blades.

Monitoring and Recordkeeping Requirements

5.6 Throughput Monitoring

The permittee shall monitor and record the finished potato product throughput of the Prime 1 fryer, the Prime 2 fryer, the Tot fryer, ~~and the ParFry fryer~~ daily, monthly, and annually to demonstrate compliance with Permit Condition 5.4. Throughput shall be measured at the packaging step of each process line, and "day" shall mean a 24-hour period. The throughput of each fryer shall be monitored and recorded daily. The daily throughputs of each fryer shall be summed and recorded monthly. The monthly throughputs of each fryer shall be summed and recorded for the previous consecutive 12-month period.

5.7 Air Pollution Control Parameters

The permittee shall monitor and record the parameters listed below to demonstrate compliance with air pollution control equipment requirements for Prime 1 fryer air washer, Prime 2 fryer air washer, the Tot fryer air washer~~, and the Parfry fryer air washer~~.

Air-washer fan is operable. Verify once daily and record status.

Spray-water pump is operable. Verify once daily and record status.

Spray-water pump pressure. Measure once daily and record pressure.

Maintenance activities. Record date and description.

5.8 Operations and Maintenance Manual

The permittee shall have an O&M manual for the fryer air washers (air pollution control devices). The O&M manual shall describe the procedures that will be followed to insure proper operation of the fryer air washers.

6. BATTER ROOM

6.1 Process Description

Several of the potato products are battered. The batter is prepared from various dry ingredients, such as flour and seasonings, in a designated room located in Burley Plant 2. Particulate matter is filtered from the air in the Batter Room by a dust-collection system.

6.2 Control Description

Emissions from the Batter Room are controlled by a package baghouse unit that consists of a group of filter elements that are mounted in an airbox. Exhaust from the dust-collection system is vented to the atmosphere via a horizontal duct (E209).

Table 6.1 EMISSIONS UNIT DESCRIPTION

Emissions Unit(s) / Process(es)	Emissions Control Device	Emissions Point
Batter Room	Dust collector (baghouse)	E209

Emissions Limits

6.3 Emissions Limits

The PM_{10} emissions from the Batter Room stack shall not exceed any corresponding emissions rate limits listed in the appendix of this permit.

Operating Requirements

6.4 Baghouse Pressure Drop

The pressure drop across the baghouse shall be maintained within manufacturer specifications.

Monitoring and Recordkeeping Requirements

6.5 Baghouse

The permittee shall inspect the Batter Room dust-collector filters once per month for tears and holes. The filters shall be replaced as needed. The filter status shall be recorded.

7. EMERGENCY FIRE PUMP

7.1 Process Description

A diesel fire pump is utilized to create water pressure for emergency fire-fighting efforts. The 170-horsepower pump is connected to the Snake River and is located in a small building north of Burley Plant 1. In addition to emergency situations, the emergency fire pump is operated once a week for approximately two hours to insure that the unit is functioning properly. The exhaust is discharged to the atmosphere by means of a horizontal stack (E001) located on the north side of the fire pump house.

7.2 Control Description

Emissions from the emergency fire pump are uncontrolled.

Table 7.1 EMISSIONS UNIT DESCRIPTION

Emissions Unit(s) / Process(es)	Emissions Control Device	Emissions Point
Emergency fire pump	None	E001

Emissions Limits

7.3 Emissions Limits

Particulate matter, PM_{10}, SO_2, NO_x, CO, and VOC emissions from the emergency fire pump stack (E001) shall not exceed any corresponding emissions rate limits listed in this permit.

Operating Requirements

7.4 Hours of Operation

The maximum hours of operation for the emergency fire pump shall not exceed two hours per week, except during an emergency. The total number of hours of operation for the emergency fire pump shall not exceed 104 hours for any consecutive 12-month period, except during an emergency.

7.5 Fuel Specification

The emergency fire pump shall be fired exclusively by distillate fuel oil exclusively.

7.6 Distillate Fuel Oil Sulfur Content Limit

- The sulfur content of ASTM Grade 1 fuel oil shall not exceed 0.3% by weight.
- The sulfur content of ASTM Grade 2 fuel oil shall not exceed 0.5% by weight.

Monitoring and Recordkeeping Requirements

7.7 Hours of Operation Monitoring Requirement

The permittee shall monitor and record the date and the number of hours of operation of the emergency fire pump to demonstrate compliance with Permit Condition 7.4.

7.8 Fuel Oil Sulfur Content Monitoring Requirement

The permittee shall demonstrate compliance with Permit Condition 7.6 by obtaining documentation of the sulfur content analysis for each shipment of distillate fuel oil (ASTM Grade 1 fuel oil and ASTM Grade 2 fuel oil) on an as-received basis.

8. NATIONAL EMISSION STANDARDS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

8.1 Process Description

The facility uses 3 reciprocating internal combustion engines that are subject to 40 CFR 63 Subpart ZZZZ.

Table 8.1 EMISSIONS UNIT DESCRIPTION

Engine	Controls
Fire Pump Engine 170 Horsepower Diesel Fuel Compresion Ignition	None
2-Emergency Generators 30 Horsepower each Natural Gas Spark Ignition	None

8.2 § 63.6595 When do I have to comply with this subpart?

In accordance with 40 CFR 63.6595:

- the compression ignition fire pump engine must comply with the applicable emission limitations and operating limitations no later than May 3, 2013.
- the two spark ignition emergency generators must comply with the applicable emission limitations and operating limitations no later than October 19, 2013.

8.3 § 63.6603 What emission limitations and operating limitations must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

In accordance with 40 CFR 63.6603 and Table 2d to Subpart ZZZZ the compression ignition fire pump engine must comply with the following requirements:

- Change oil and filter every 500 hours of operation or annually, whichever comes first;
- Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

In accordance with 40 CFR 63.6603 and Table 2d to Subpart ZZZZ the two spark ignition emergency engines must comply with the following requirements:

- Change oil and filter every 500 hours of operation or annually, whichever comes first;
- Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; and
- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

8.4 § 63.6605 What are my general requirements for complying with this subpart?

In accordance with 40 CFR 63.6605(a) the permittee must be in compliance with the operating limitations in this subpart that apply to you at all times.

In accordance with 40 CFR 63.6605(b) At all times the permitttee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

8.5 § 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

In accordance with 40 CFR 63.6625(e) the reciprocating internal combustion engines (RICE) must be operated and maintained according to the manufacturer's emission-related written instructions or the permittee may develop it's own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

In accordance with 40 CFR 63.6625(f) the permittee must install a non-resettable hour meter on the RICE if they are not already installed.

In accordance with 40 CFR 63.6625(i)&(j) the permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2d to this subpart.

8.6 § 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

In accordance with 40 CFR 63.6635 the permittee shall monitor continuously at all times that the stationary RICE is operating.

8.7 § 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?

In accordance with 40 CFR 63.6640(a) and Table 6 to this subpart the permitteee shall comply by operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

In accordance with 40 CFR 63.6640(b) You must report each instance in which you did not meet each operating limitation in Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650.

In accordance with 40 CFR 63.6640(f) (1) you must operate the emergency stationary RICE according to the requirements listed below. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described below, is prohibited. If you do not operate the engine according to the requirements listed below, the engine will not be considered an emergency engine under this subpart and will need to meet all requirements for non-emergency engines.

(i) There is no time limit on the use of emergency stationary RICE in emergency situations.

(ii) You may operate your emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year.

(iii) You may operate your emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph (f)(1)(iii), as long as the power provided by the financial arrangement is limited to emergency power.

8.8 <u>§ 63.6655 What records must I keep?</u>

In accordance with 40 CFR 63.6655(a) the permittee must keep the following records:

- A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).
- Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
- Records of all required maintenance performed on the air pollution control and monitoring equipment.
- Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

In accordance with 40 CFR 63.6655(d) the permittee must keep the records required in Table 6 of this subpart to show continuous compliance with each operating limitation that applies. Table 6 requires operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or developing and following your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

In accordance with 40 CFR 63.6655(e) you must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan.

In accordance with 40 CFR 63.6655(f) for RICE that do not meet the standards applicable to non-emergency engines you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.

8.9 § 63.6660 In what form and how long must I keep my records?

In accordance with 40 CFR 63.6660:

(a) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1).

8.10 NESHAP 40 CFR 63, Subpart A – General Provisions

The permittee shall comply with the requirements of 40 CFR 63, Subpart A – General Provisions. A summary of applicable requirements for affected sources is provided in Table 8.2.

Table 8.2 Summary of NESHAP 40 CFR 63, Subpart A – General Provisions

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.1	General applicability of the General Provisions	Yes.	
§63.2	Definitions	Yes	Additional terms defined in §63.6675.
§63.3	Units and abbreviations	Yes.	
§63.4	Prohibited activities and circumvention	Yes.	
§63.5	Construction and reconstruction	Yes.	
§63.6(a)	Applicability	Yes.	
§63.6(b)(1)–(4)	Compliance dates for new and reconstructed sources	Yes.	
§63.6(b)(5)	Notification	Yes.	
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§63.6(c)(1)–(2)	Compliance dates for existing sources	Yes.	

§63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§63.6(d)	[Reserved]		
§63.6(f)(2)	Methods for determining compliance	Yes.	
§63.6(f)(3)	Finding of compliance	Yes.	
§63.6(g)(1)–(3)	Use of alternate standard	Yes.	
§63.6(i)	Compliance extension procedures and criteria	Yes.	
§63.6(j)	Presidential compliance exemption	Yes.	
§63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§63.9(b)(1)–(5)	Initial notifications	Yes	Except that §63.9(b)(3) is reserved.
		Except that §63.9(b) only applies as specified in §63.6645.	
§63.9(c)	Request for compliance extension	Yes	Except that §63.9(c) only applies as specified in §63.6645.
§63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that §63.9(d) only applies as specified in §63.6645.
§63.9(h)(1)–(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. §63.9(h)(4) is reserved.
			Except that §63.9(h) only applies as specified in §63.6645.
§63.9(i)	Adjustment of submittal deadlines	Yes.	
§63.9(j)	Change in previous information	Yes.	
§63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	
§63.10(b)(1)	Record retention	Yes.	
§63.10(b)(2)(vi)–(xi)	Records	Yes.	
§63.10(b)(2)(xii)	Record when under waiver	Yes.	
§63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	
§63.10(b)(3)	Records of applicability determination	Yes.	
§63.10(d)(1)	General reporting requirements	Yes.	
§63.10(d)(4)	Progress reports	Yes.	
§63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§63.12	State authority and delegations	Yes.	
§63.13	Addresses	Yes.	Director Air and Waste US EPA 1200 Sixth Avenue Seattle, WA 98101
§63.14	Incorporation by reference	Yes.	

§63.15	Availability of information	Yes.	

8.11 Unless expressly provided otherwise, any reference in this permit to any document identified in IDAPA 58.01.01.107.03 shall constitute the full incorporation into this permit of that document for the purposes of the reference, including any notes and appendices therein. Documents include, but are not limited to:

- National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63

For permit conditions referencing or cited in accordance with any document incorporated by reference (including permit conditions identified as NSPS or NESHAP), should there be any conflict between the requirements of the permit condition and the requirements of the document, the requirements of the document shall govern, including any amendments to that regulation.

9. SUMMARY OF EMISSION RATE LIMITS

The following table provides the emission rate limits for specific sources regulated in this permit:

Table 8.1 EMISSIONS RATE LIMITS

MCCAIN FOODS, BURLEY Emission Limits[a] - Hourly[b] (lb/hr), and Annually[c] (T/yr)										
Source Description	**PM_{10}[d]**		**NO_x**		**CO**		**VOC**		**SO_2**	
	lb/hr	**T/yr**	**lb/hr**	**T/yr**	**lb/hr**	**T/yr**	**lb/hr**	**T/yr**	**lb/hr**	**T/yr**
(B101) Murray 1 boiler	0.75	~~4.88~~6.97	~~--~~	~~64.16~~ 91.66	~~--~~	~~53.90~~ 77.0	~~--~~	~~3.53~~5.04	--	99.86
(B102) Nebraska 1 boiler	0.71		--		--		--		--	
(B202) Nebraska 2 boiler	0.58		--		--		--		--	
(B203) Murray 2 boiler	0.29		--		--		--		--	
(C001) Biogas Flare	0.16		--		--		--		--	
(D109, D110, D111) Prime 1 dryer	6.69	21.67	--	--	--	--	--	--	--	--
(D107) Tot dryer	2.00	6.48	--	2.30	--	5.60	--	0.08	--	0.01
(~~D205 – D208~~D209-D211) Prime 2 dryer	~~5.63~~5.54	~~18.23~~ 17.93	--	~~9.18~~zero	--	~~22.38~~ Zero	--	~~0.33~~zero	--	~~0.04~~zero
(F103) Tot fryer	4.08	13.22	--	--	--	--	--	3.89	--	--
(F104) Prime 1 fryer	2.68	8.67	--	--	--	--	--	8.67	--	--
~~(F108) Parfry fryer~~	~~1.30~~zero	~~4.21~~zero	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~1.24~~zero	--	--
(F204) Prime 2 fryer	2.25	7.29	--	--	--	--	--	7.29	--	--
(E209) Batter Room collector	0.12	0.53	--	--	--	--	--	--	--	--
(E001) Emergency fire pump	0.37	0.02	--	0.27	--	0.06	--	0.02	--	0.02

[a] 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.
[b] Hourly limits are a 24-hour average.
[c] 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.
[d] Includes condensibles.

Comment [A16]: TPY values for PM-10, NOx, CO and VOC increased to reflect the permit change that increases allowable annual fuel usage from 1100 to 1650 MM scf/yr. AP-42 emission factors used. PM-10 increase = 2.09 TPY, NOx increase = 27.5 TPY, VOC increase = 1.51 TPY, CO increase = 23.1 TPY. Note: The existing annual SO2 limit will be maintined by the facility thus no change is required for the 99.86 TPY limit.

Comment [A17]: D209, D210, and D211 are used to identify the new B2 Dryer stacks

Comment [A19]: Based upon a maximum capacity of 48,000,000 BTU per hour and an AP-42 emission factor of 7.6 pounds per million cubic feet of natural gas. It is calculated that total PM-10 emissions will be reduced by approximately 0.3648 pounds per hour. Based upon a permit limit of 120 MMscf/yr annual emissions of PM-10 from Prime 2 dryer stacks will be reduced by approximately 0.456 tons per year.
Note: The Comment A19 and A20 result in slightly different TPY value for PM-10 from the Prime 2 Dryer. Thus, the higher value (17.93 TPY) is shown with this mark-up. (Ref Comment A20 for calcs)

Comment [A18]: The PM-10 emission factor from the dryer process is 0.246 pounds per finished ton. Based upon a maximum thruput of 22.5 TPH finished product, the maximum hourly PM-10 from the process is calculated as 5.535 pounds per hour. Note: PM-10 from combustion equipment is no longer exhausted thru the dryer stacks since the direct fired burners will be removed and steam heat from an existing boiler will be utilized.

Comment [A21]: The emissions of NOx, CO, VOC, and SO2from the stacks associated with Prime 2 dryer will be ZERO. Steam heat will be provided from an existing boiler.

Comment [A20]: The PM-10 emission factor from the dryer process is 0.246 pounds per finished ton. Based upon a maximum permitted thruput of 145,800 tons per year finished product (ref section 4.4 of permit), the maximum annual PM-10 from the process is calculated as 17.93 tons per year. Note: PM-10 from combustion equipment is no longer exhausted thru the dryer stacks since the direct fired burners will be removed and steam heat from an existing boiler will be utilized.

Comment [A22]: This Process line has been removed. Thus stack F108 has been eliminated.

10. GENERAL PROVISIONS

General Compliance

10.1 The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the *Rules for the Control of Air Pollution in Idaho*. The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the *Rules for the Control of Air Pollution in Idaho*, and the Environmental Protection and Health Act, Idaho Code §39-101, et seq.

[Idaho Code §39-101, et seq.]

10.2 The permittee shall at all times (except as provided in the Rules for the Control of Air Pollution in Idaho) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

[IDAPA 58.01.01.211, 5/1/94]

10.3 Nothing in this permit is intended to relieve or exempt the permittee from the responsibility to comply with all applicable local, state, or federal statutes, rules and regulations.

[IDAPA 58.01.01.212.01, 5/1/94]

Inspection and Entry

10.4 Upon presentation of credentials, the permittee shall allow DEQ or an authorized representative of DEQ to do the following:

- Enter upon the permittee's premises where an emissions source is located or emissions related activity is conducted, or where records are kept under conditions of this permit;
- Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
- Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
- As authorized by the Idaho Environmental Protection and Health Act, sample or monitor, at reasonable times, substances or parameters for the purpose of determining or ensuring compliance with this permit or applicable requirements.

[Idaho Code §39-108]

Construction and Operation Notification

10.5 This permit shall expire if construction has not begun within two years of its issue date, or if construction is suspended for one year.

[IDAPA 58.01.01.211.02, 5/1/94]

10.6 The permittee shall furnish DEQ written notifications as follows:

- A notification of the date of initiation of construction, within five working days after occurrence; except in the case where pre-permit construction approval has been granted then notification shall be made within five working days after occurrence or within five working days after permit issuance whichever is later;

- A notification of the date of any suspension of construction, if such suspension lasts for one year or more;
- A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty days or less than thirty days prior to such date; and
- A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date; and
- A notification of the initial date of achieving the maximum production rate, within five working days after occurrence - production rate and date.

[IDAPA 58.01.01.211.03, 5/1/94]

Performance Testing

10.7 If performance testing (air emissions source test) is required by this permit, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test date or shorter time period as approved by DEQ. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests that such testing not be performed on weekends or state holidays.

10.8 All performance testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, at least 30 days prior to conducting any performance test, the permittee is encouraged to submit a performance test protocol to DEQ for approval. The written protocol shall include a description of the test method(s) to be used, an explanation of any or unusual circumstances regarding the proposed test, and the proposed test schedule for conducting and reporting the test.

10.9 Within 60 days following the date in which a performance test required by this permit is concluded, the permittee shall submit to DEQ a performance test report. The written report shall include a description of the process, identification of the test method(s) used, equipment used, all process operating data collected during the test period, and test results, as well as raw test data and associated documentation, including any approved test protocol.

[IDAPA 58.01.01.157, 4/5/00]

Monitoring and Recordkeeping

10.10 The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this permit. Records of monitoring information shall include, but not be limited to the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.

[IDAPA 58.01.01.211, 5/1/94]

Excess Emissions

10.11 The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130-136 for excess emissions due to startup, shutdown, scheduled maintenance, safety measures, upsets and breakdowns.

[IDAPA 58.01.01.130-136, 4/5/00]

Certification

10.12 All documents submitted to DEQ, including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

[IDAPA 58.01.01.123, 5/1/94]

False Statements

10.13 No person shall knowingly make any false statement, representation, or certification in any form, notice, or report required under this permit, or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.125, 3/23/98]

Tampering

10.14 No person shall knowingly render inaccurate any monitoring device or method required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.126, 3/23/98]

Transferability

10.15 This permit is transferable in accordance with procedures listed in IDAPA 58.01.01.209.06.

[IDAPA 58.01.01.209.06, 4/11/06]

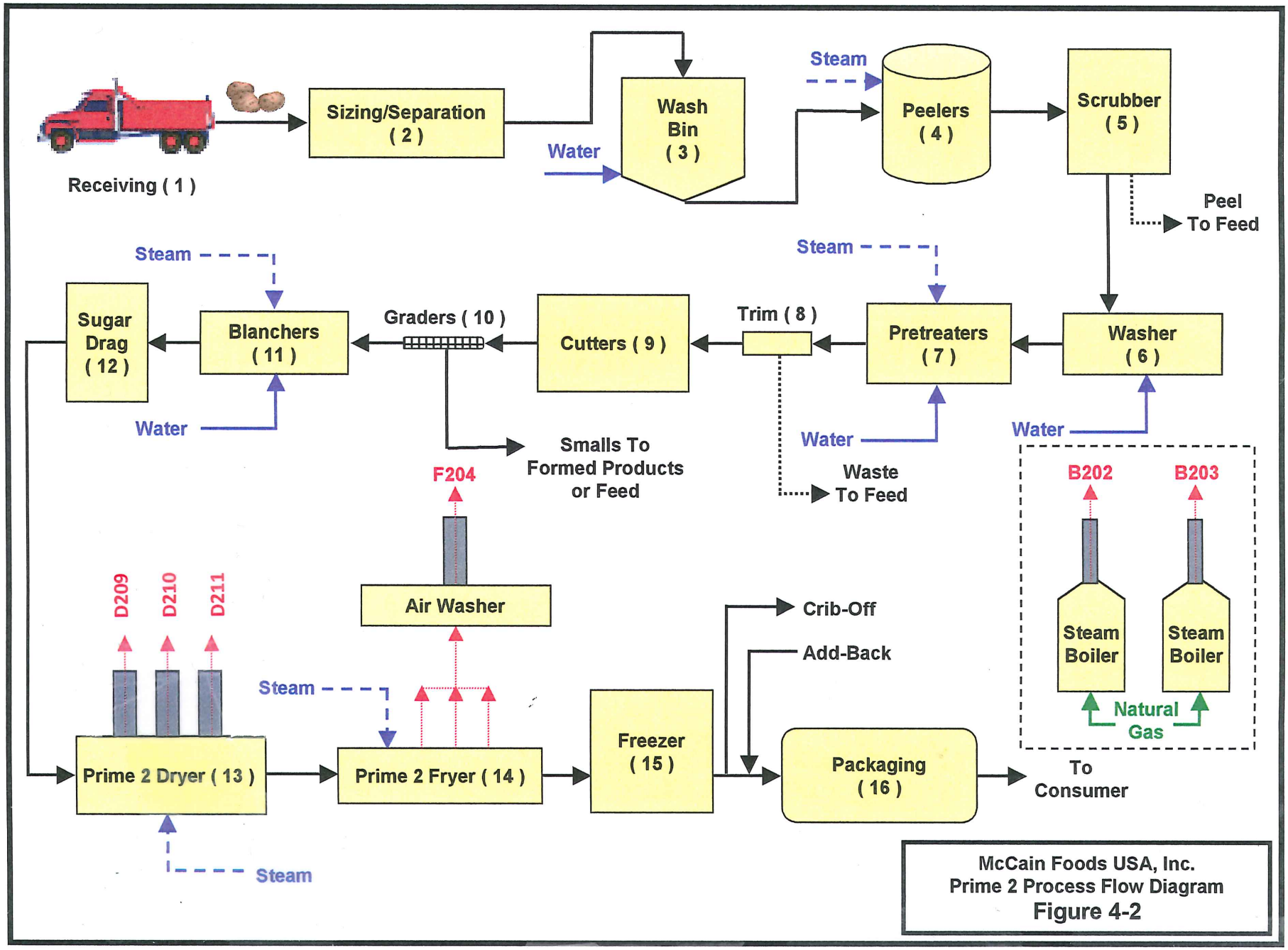
Severability

10.16 The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

[IDAPA 58.01.01.211, 5/1/94]

APPENDIX C

Process Flow Diagram - Prime 2 Process Line



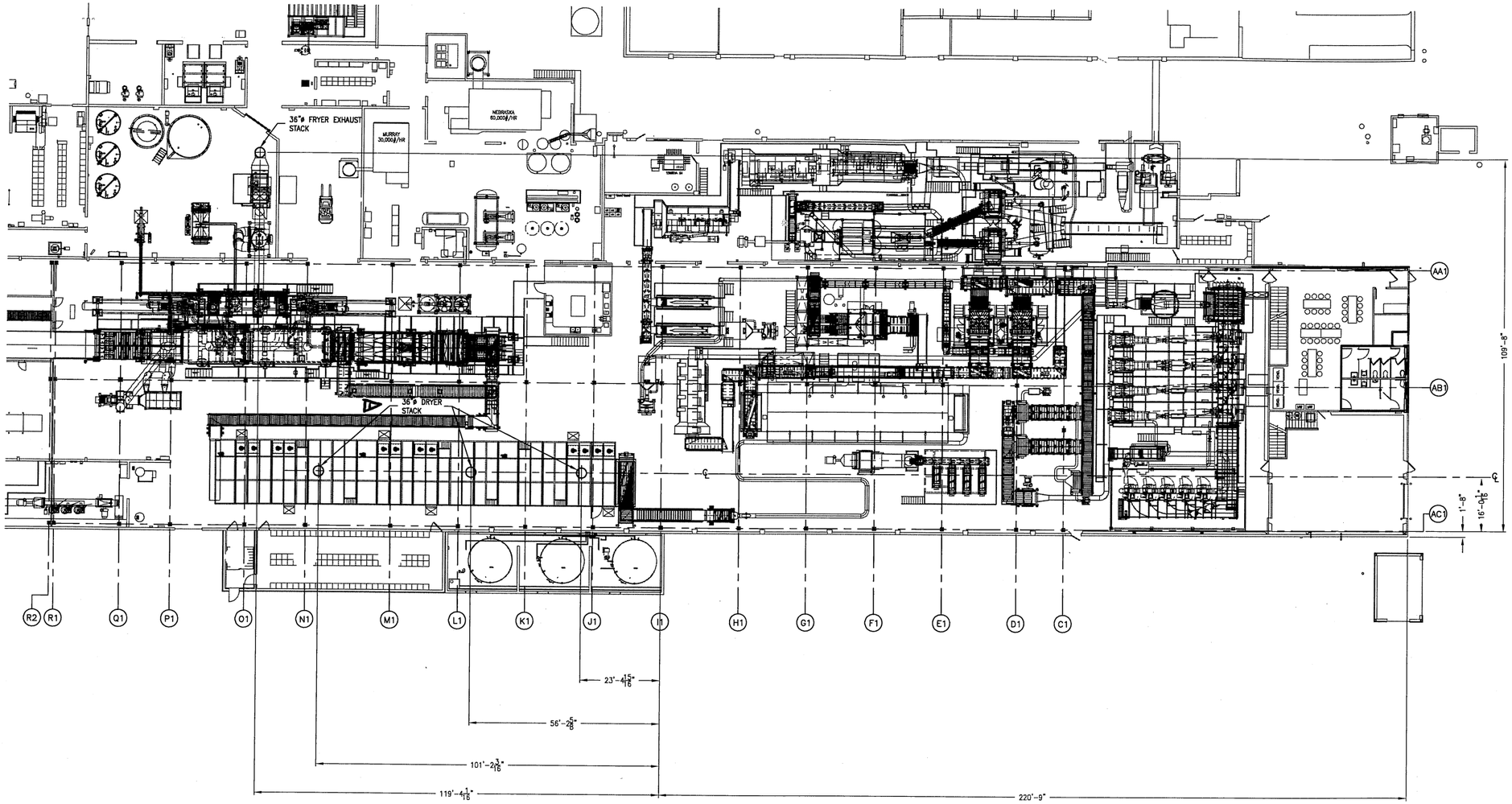
Revised October 2013 to Reflect Prime 2 Dryer Reconfiguration.

- Source of dryer heat was natural gas (updated for steam).
- Was 4 discharge stacks (D205-D208), updated to show 3 stacks (D209-D211)

APPENDIX D

Drawing - Plant 2

Dryer and Fryer Stack Locations



GENERAL NOTE:
ROOF HEIGHT OF NEW OVERBUILD AND FRYER EXHAUST AREA = 40'-0"

DRYER AND FRYER STACK LOCATIONS

NO SCALE

Note: Each of the three stacks for the B2 Prime dryer will include a 24 inch diameter exit cone.

PRIVATE AND CONFIDENTIAL
This Drawing is not to be reproduced in any manner whatsoever, without written authorization of
McCAIN FOODS LIMITED
Florenceville, Canada

REVISIONS

NO.	DATE	REVISION	BY

REFERENCE DWGS.

DWG. NO.	DWG. TITLE	BY

- ☐ PRELIMINARY - NOT FOR CONSTRUCTION
- ☐ APPROVED FOR CONSTRUCTION
- ☐ SUPERSEDES ALL PREVIOUS ISSUES

McCain Foods USA
Engineering Department
319 Richardson Road
Easton, ME 04740
Phone: (207)-488-2561

McCain Foods North America
Burley Idaho

DWG. TITLE: Plant II
Processing Upgrade
Dryer and Fryer Stack Locations

DRN. BY	A. Martin	DATE	02 Oct 2013
SHT. SIZE	22 x 34	SCALE	As Noted
PROJ. NO.	2110-PT-1322	DWG. NO.	4040-G501
REV	B		

SHT. NO. 1 OF 1

C:\Users\MEDELONG\Dropbox\B2 Upgrade - Drawings\1000\2110-PT-1328 Stack Locations Plan.dwg

Oct 02,2013-4:26pm medelong

APPENDIX E

IDEQ Modeling Determination letter dated November 18, 2013

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 NORTH HILTON, BOISE, ID 83706 • (208) 373-0502

C. L. "BUTCH" OTTER, GOVERNOR
CURT FRANSEN, DIRECTOR

November 18, 2013

VIA EMAIL

Mr. Jeff McCray, Plant Manager
McCain Foods USA, Inc.
218 West Highway 30
Burley, Idaho 83318

RE: Facility ID No. 031-00014, McCain Foods USA, Inc., Burley Plant
Modeling Determination for Prime 2 (B2) Dryer Reconfiguration Project and
Increase in Maximum Annual Natural Gas/Biogas Usage

Dear Mr. McCray:

On October 15, 2013 the Department of Environmental Quality (DEQ) received a description of the proposed reconfiguration for the existing Prime 2 (B2) process line, prepared on your behalf by Ron VanHandel of Environmental Resource Management's (ERM) Appleton, Wisconsin office. Modeling considerations for the Prime 2 (B2) dryer reconfiguration project include:

- Removal of the existing 48 MMBtu/hr National direct-fired dryer, fueled by natural gas.
- Removal of the existing steam-heated Parfry fryer (F108).
- Increase combined maximum natural gas use in the four existing boilers from 1,100 to 1,650 MMscf/yr.
  - Murray 1 boiler (100 MMBtu/hr) and Nebraska 1 boiler (95.98 MMBtu/hr), fueled by natural gas or a mixture of natural gas and biogas. The amount of biogas that may be combusted is restricted by daily and annual limits on emissions of H_2S and SO_2.
  - Murray 2 boiler (39.1 MMBtu/hr) and Nebraska 2 boiler (78.05 MMBtu/hr), fueled exclusively by natural gas.

Previous modeling and permit changes relevant to this project include:

- Previous facility-wide modeling conducted for Tier II/PTC No 031-00014, issued November 7, 2002 used the approved regulatory model (ISC-PRIME) and emissions based on all boilers and dryers operating at maximum rated capacity 24 hours per day. Annual natural gas usage was limited to 1,100 MMscf/yr for all four boilers, combined. Natural gas usage was limited to 30 MMscf/yr for the Tot dryer, 75 MMscf/yr for the Prime 1 dryer, and 120 MMscf/yr for the Prime 2 dryer.
- Modeling was conducted only for emissions of SO_2 when the use of biogas was approved for the Prime1 process line boilers, permit no. T2-050423, issued July 28, 2006.
- The Tier II Operating Permit T2-2007.0233, issued on February 25, 2008, was converted to a Permit to Construct, P-2012.0043, Project ID 61085, issued August 16, 2012. DEQ did not require facility-wide modeling for this permit conversion.

In accordance with Section 3.3.2 of DEQ's modeling guideline,[1] determining whether modeling is needed for a modification is based only on the *increase* in emissions. In this case, the increase in emissions is calculated based on the increase in the maximum combined natural gas usage each year for all four boilers, i.e., combustion of an additional 550 MMscf/yr of natural gas. Using emission factors from AP-42, the annual increase in emissions of criteria pollutants is expected to be in the ranges shown in Table P-1. Please note that project emissions should be based on the best-available emission factors for these boilers, which may be different from AP-42 values.

Table P-1. COMPARISON OF EMISSIONS INCREASE WITH MODELING THRESHOLDS
550 MMscf/yr natural gas

Criteria Air Pollutants	AP-42 Emission Factor	Emissions		2011 DEQ Modeling Guidance					
	lb/MMscf	T/yr	lb/mo	Modeling Threshold Level I		Modeling Required?	Modeling Threshold Level II		Modeling Required?
$PM_{2.5}$, annual	7.6	2.09	---	0.35	T/yr	YES	4.1	T/yr	No
NOx, annual	100	27.5	---	1.2	T/Yr	YES	14	T/yr	**YES**
SO_2, annual	0.6	0.165	---	1.2	T/yr	No	14	T/yr	No
VOC	5.5	1.51	---	40	T/yr	No			
Lead , rolling 3-month	0.0005	1.37E-04	6.87E-02	14	lb/mo	No			

Comment 1. Modeled stack parameters used in the 2002 modeling analyses are shown in Table P-2, for comparison with assumptions used to generate the modeling thresholds. As shown in the table, the Level II modeling thresholds are appropriate for this project.

Table P-2. COMPARISON OF SITE AND THRESHOLD MODELED PARAMETERS

	Stack Height (m)	Exit Dia. (m)	Exit Temp ($^oF/K$)	Exit Velocity (m/s)	Downwash?	Distance to Ambient Air (m)
Murray 1 Boiler (B101)	12.41	1.52	307/426	7.73	Yes	~100 m (south)
Murray 2 Boiler (B203)	11.56	0.91	307/426	8.39	Yes	~100 m (south)
Nebraska 1 Boiler (B102)	19.79	1.22	307/426	16.76	Yes	~60 m (south)
Nebraska 2 Boiler (B202)	20.38	0.91	307/426	16.76	Yes	~60 m (south)
Level I Threshold	10	0.3 m	150/339	10	Yes	Minimum 100 m
Level II Threshold	15	1.0 m	260/400	20	Yes	Minimum 100 m

Comment 2. At this time, the best readily-available AERMOD-ready meteorological data set for this project is contained in a DEQ file called Burley_KBYI_2008-2012t.zip, with surface NWS and ASOS data collected at the Burley Airport and upper air data collected at the Boise NWS station. The zipped file containing SFC and PFL files for each year, five-year

[1] State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc. ID AQ-011, rev. 2, July 2011, accessible at http://www.deq.idaho.gov/media/355037-modeling-guideline.pdf

concatenated SFC and PFL files, wind rose, wind class frequency profile graphic, and a met data processing report, was sent by email today to Dan Guido's attention at ERM.

Comment 3. The $PM_{2.5}$ 24-hour and annual significant impact levels (SILs) were vacated and remanded by the D.C. Circuit of the U.S. Court of Appeals in a decision issued on January 22, 2013. This decision directly affects "major" projects subject to the Prevention of Significant Deterioration (PSD) program. For minor source permitting, however, DEQ has determined the SILs for $PM_{2.5}$ and other criteria pollutants will still be used as a screening tool to evaluate when a cumulative impact analysis must be performed. The SILs may be used as a *screening level* below which impacts of a new source or modification can be considered to not cause or significantly contribute to a NAAQS violation only if other criteria are met.

Additional considerations used to evaluate the need for a cumulative impact analysis include the following:

1. Other potentially co-contributing sources in the area. Industrial facilities in the Burley area include grain elevators and handling facilities, an ethanol plant, milk powder processing, corrugated container manufacturing, auto body painting, RV manufacturing, a municipal landfill, and wastewater treatment plant. Larger sources of emissions in Burley include the Sinclair bulk petroleum products terminal (VOC emissions), Northwest Pipeline's natural gas pipeline compressor station (~66 TPY NO_x), the Amalgamated Sugar Company's (TASCO) processing plant in nearby Paul (~1300 TPY NO_x), Gem State Processing's potato processing plant in Heyburn (~40 TPY NO_x), and the TASCO Twin Falls processing plant (~1160 TPY NO_x), which is generally upwind from Burley.

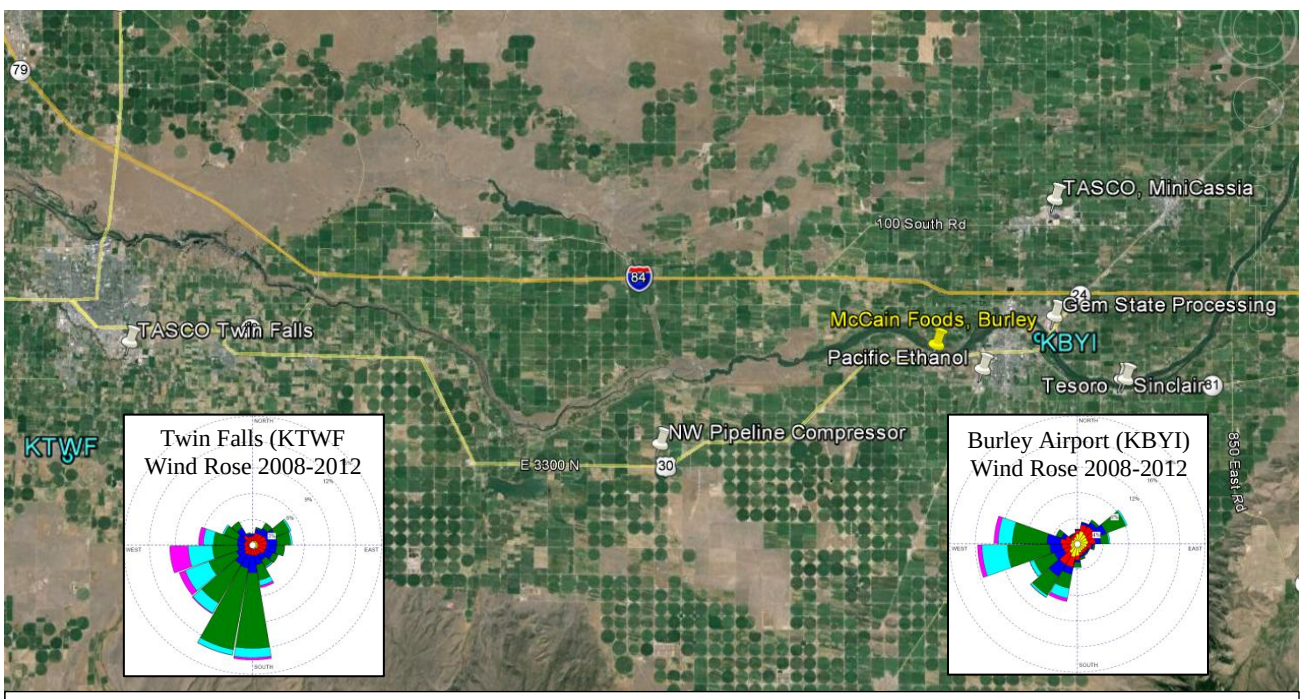


Figure P-1. MCCAIN FOODS BURLEY - NEARBY NOx SOURCES

2. Background concentrations for the area impacted.

   NW Airquest Tool, http://lar.wsu.edu/nw-airquest/lookup.html, 42.5278°N, 113.8304 °W
   Annual NO_2 background: 2.4 ppb (ppb/1000) x MW_{46} / 0.02445 = 4.5 µg/m^3

   DEQ default rural/agricultural: [2] 9 ppb =**17 µg/m^3**

   DEQ default small town/suburban (Pocatello). [2] 17 ppb = 32 µg/m^3

   Based on the locations of potential co-contributing NOx sources and the relatively small magnitude of the increase in NO_x emissions from the proposed project, DEQ recommends using an annual NO_x background value equal to 17 µg/m^3.

3. Results of the SIL analysis in relation to other sources and background concentrations.

   The SIL for the annual NO_2 NAAQS is 1.0 µg/m^3. A combination of the SIL with a recommended background value equal to17 µg/m^3 is less than 20% of the applicable 100 µg/m^3 annual NO_2 NAAQS.

4. The presence of sensitive receptors in the area such as residences, schools, hospitals, and parks. No nearby sensitive receptors were identified in DEQ's brief review.

If the high 1st high ambient impact is less than 1.0 µg/m^3 from the annual increase in NO_2 emissions associated with the proposed project, a full-impact analysis will not be required to demonstrate compliance with the annual NO_2 NAAQS.

Comment 4. Significance Analyses. "Netting" may be done as part of the significance analyses, with increases in emissions modeled as positive values, and decreases in emissions modeled as negative values.

Comment 5. The annual NO_2 NAAQS is set at 53 ppb (100 µg/m^3), annual average concentration. Because of the form of the standard, full-impact modeling to demonstrate compliance with the annual NO_2 NAAQS must be conducted by running each year of met data as a separate run.

Comment 6. State-regulated Toxic Air Pollutants (TAPs). In accordance with Section 210.20 of the Idaho Air Rules, a compliance demonstration with state-only TAPs standards (see Sections 585 and 586 of the Rules) is not required for:

- TAPs emitted from engines subject to NSPS 40 CFR 60 Subpart IIII or JJJJ and/or NESHAP 40 CFR 63 Subpart ZZZZ, or
- TAPs that are regulated under the Area Source Boiler MACT, 40 CFR 63 Subpart JJJJJJ (6J).

Comment 7. For a combined limit on natural gas usage in the four boilers, dispersion modeling must demonstrate compliance with applicable air quality standards regardless of which boiler or boilers combust the additional 550 MMscf/yr of natural gas.

Comment 8. Terrain. DEQ requires that terrain elevation data be obtained from the National Elevation Dataset (NED, datum NAD83) rather than using older digital elevation model (DEM, datum NAD27 or NAD83) data. DEMs are no longer being updated and are less likely to reflect current terrain/elevation conditions than the NED. Surveyed elevations or planned grading elevations are acceptable in lieu of NED data for areas that will be disturbed as part of this project.

---

[2] Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling.* Idaho DEQ, Memorandum to Mary Anderson, March 14, 2003.

Comment 9. Receptor Grid. It is the applicant's responsibility to ensure that the extent and spacing of the receptor network assures that the maximum modeled concentration is reasonably resolved. If DEQ conducts verification modeling analyses with a larger or tighter receptor grid and compliance with standards is no longer demonstrated, the permit will be denied.

Comment 10. The application should provide documentation and justification for all stack parameters used in the modeling analyses, clearly showing how stack gas temperatures and flow rates were estimated. In most instances, applicants should use typical parameters, not maximum temperatures and flow rates. Please include the documentation provided by equipment vendors if this is used as the basis for exhaust parameters. If the justification for stack parameters was provided in an application submitted for a previous project, please reproduce that information and include it with the application for this project.

Comment 11. Provide a detailed plot plan with the application, clearly describing the ambient air boundary. If the ambient air boundary is not defined by a fence, describe how members of the public will be excluded from the area.

A modeling protocol was not submitted for this project. It should be noted that compliance with the recommendations in this modeling determination is not meant to imply approval of a completed dispersion modeling analysis. Please refer to the State of Idaho Air Quality Modeling Guideline, which is available on the Internet at http://www.deq.idaho.gov/media/355037-modeling-guideline.pdf, for further guidance.

To ensure a complete and timely review of the final analysis, our modeling staff requests an analysis report be submitted along with electronic copies of all modeling input and output files, including BPIP and AERMAP input and output files. If you have used a graphical user interface (GUI) such as BEEST, BREEZE, or Lakes AERMOD View, please submit the modeling files in the GUI format. If you have any further questions or comments, please contact me at (208) 373-0220 or cheryl.robinson@deq.idaho.gov.

Sincerely,

Cheryl Robinson

Cheryl A. Robinson, P.E.
NSR Modeling Analyst, Air Quality Division

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APPENDIX F

Modeling Protocol

December 2, 2013

Protocol for Dispersion Modeling Analysis
For NO_2 Emissions from Existing Boilers and Dryers
B101, B102, B202, B203,
D105, D106, D107,
D205, D206, D207, D208
McCain Foods USA Burley, Idaho

This document presents a dispersion modeling protocol to the Idaho Department of Environmental Quality (DEQ) for performing an air quality impact analysis for NO_2 resulting from existing emission units (B101, B102, B202, B203, D105, D106, D107, D205, D206, D207, and D208) that will increase the annual limitation of natural gas usage at the McCain Foods facility located in Burley, Idaho. The increase in natural gas usage applies to the sources identified as: B101, B102, B202, and B203. A dispersion modeling analysis is required as part of a permit-to-construct (PTC) application (IDAPA 58.01.01.200) that includes requesting a permit condition change that increases annual NO_2 emissions in an amount greater than the DEQ modeling guidance threshold.

The facility is located at 218 West Highway 30 along the south side of the Snake River, in the city of Burley, Idaho 83318. The UTM coordinates at the approximate center of the property are 266470 m E, 4713050 m N (NAD 83, zone 12). An aerial view of the facility is provided in Figure 1.

The dispersion modeling analysis will include atmospheric dispersion modeling using a U.S. EPA-approved model to simulate the downwind transport and predicted off-site concentrations of NO_2.

Maximum annual emissions will be estimated for the sources identified in the permit-to-construct (PTC) application to be submitted to the state. Modeled air contaminant concentrations for the modification will be compared against state significant contribution levels (SCLs) or EPA significant impact levels (SILs). If the impact from the net increase in emissions exceeds the SCL / SIL then all existing sources of NO_2 from the facility will be included in the modeling and the total facility impact compared against the annual NO_2 national ambient air quality standard (NAAQS).

The dispersion model protocol for the air quality analysis is presented as follows.

Figure 1

Aerial View of the McCain Facility – Burley, ID

Dispersion Model Protocol

The air quality modeling analyses will employ the AMS/EPA Regulatory Model (AERMOD), version 12345. The following settings will be used in the AERMOD model:

- complex terrain – receptor elevations and hill scales
- rural dispersion coefficients
- regulatory default model parameters, including:
    - calm correction
    - buoyancy induced dispersion
    - final plume rise
    - default wind profile coefficients
    - default vertical potential temperature gradients.
    - stack-tip downwash
    - direction specific building downwash

AERMOD allows for simulation of multiple sources (and source types) simultaneously, while making the correct accounting for building downwash and building cavity effects.

The BPIPPRM program (04274) will be used to assess the influence of building wake effects. Each source location and height above ground will be input into the BPIPPRM program along with locations and heights of nearby structures. The BPIPPRM program will determine the wind direction specific building parameters used by the AERMOD model to account for downwash effects of nearby buildings, including cavity effects.

Emission Inventory

The emission inventory for changes to existing sources as described in the PTC for the plant is presented in Table 1. To simulate the annual average NO_2 air quality impacts associated with the requested increase in fuel use for the facility boilers (boiler bubble), the NO_X emissions associated with the requested fuel use increase was determined using standard US EPA emission factors for natural gas combustion in boilers. In order to assess worst-case impacts from this increase (27.5 tons per year, or 6.28 pounds per hour), the emissions were assigned to EACH boiler individually (as if that one boiler were to have consumed all of the requested fuel use increase). This was repeated for all four boilers, and the scenario with the greatest impacts was taken as the predicted impacts for comparison to the SIL threshold. If needed, each of these scenarios was re-run to account for the 'net effect' of emission decreases associated with

the removal of the Prime 1 Dryer and Prime 2 Dryer gas combustion. Finally, if these initial assessments predict impacts above SIL thresholds, an analysis of full potential to emission from all facility sources was conducted for comparison to the annual ambient air quality standard. The emission inventory for total emissions of NO_2 from all existing sources as described in the PTC for the plant is presented in Table 2. Figure 3 depicts the location of the building structures and new sources in relation to the property boundary and as configured in the model.

Table 1
Emission Inventory of the Modification Sources
(Emission increase requested for Boiler Bubble and decreases for elimination of gas fired burners on Prime 1 and Prime 2 Dryers)

MODELING PARAMETERS USED TO PERFORM "NET INCREASE" IMPACT ANALYSIS - FOR COMPARISON TO SCL / SIL

Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	N02 (lb/hr)
B101	Murray 1 Boiler	266243.9	4713033.1	1270.4064	12.41	426	7.73	1.52	6.28
B102	Nebraska 1 Boiler	266241.58	4713021.02	1270.4064	19.79	426	11.54	1.22	6.28
B202	Nebraska 2 Boiler	266699.96	4712945.21	1270.4064	20.38	426	16.76	0.91	6.28
B203	Murray 2 Boiler	266685.98	4712937.17	1270.4064	11.56	426	8.39	0.91	6.28
D105	Prime 1 Dryer Stack East	266287.9	4713001.02	1270	18.5	344	8.19	1.03	-1.05
D106	Prime 1 Dryer Stack West	266279.82	4713001.58	1270	18.5	375	9.27	1.03	-1.05
D205	Prime 2 Dryer Stack - 1 of 4	266716.46	4712903.11	1270.4064	12	318	11.38	1.46	-0.52
D206	Prime 2 Dryer Stack - 2 of 4	266724.89	4712902.34	1270.4064	12	314	12.16	1.46	-0.52
D207	Prime 2 Dryer Stack - 3 of 4	266734.63	4712901.35	1270.4064	12	319	10.12	1.46	-0.52
D208	Prime 2 Dryer Stack - 4 of 4	266743.17	4712900.92	1270.4064	12	309	11.34	1.46	-0.52

To simulate the annual average NO_2 air quality impacts associated with the requested increase in fuel use for the facility boilers (boiler bubble), the NO_X emissions associated with the requested fuel use increase was determined using standard US EPA emission factors for natural gas combustion in boilers. In order to assess worst-case impacts from this increase (27.5 tons per year, or 6.28 pounds per hour), the emissions were assigned to EACH boiler individually (as if that one boiler were to have consumed all of the requested fuel use increase).

Table 2
Emission Inventory of the Facility Sources
(Full Potential to Emit for NO_X Sources)

MODELING PARAMETERS USED TO PERFORM "TOTAL FACILITY" IMPACT ANALYSIS - FOR COMPARISON TO NAAQS									
Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	N02 (lb/hr)
B101	Murray 1 Boiler	266243.9	4713033.1	1270	12.41	426	7.73	1.52	9.8
B102	Nebraska 1 Boiler	266241.58	4713021.02	1270	19.79	426	11.54	1.22	9.37
D107	Tot Dryer	266284.81	4712981.95	1270	16	321	13.92	0.91	0.6
B202	Nebraska 2 Boiler	266699.96	4712945.21	1270	20.38	426	16.76	0.91	7.65
B203	Murray 2 Boiler	266685.98	4712937.17	1270	11.56	426	8.39	0.91	3.83

Figure 3a
Emissions Sources in Relation to Building Structures and Property Boundary

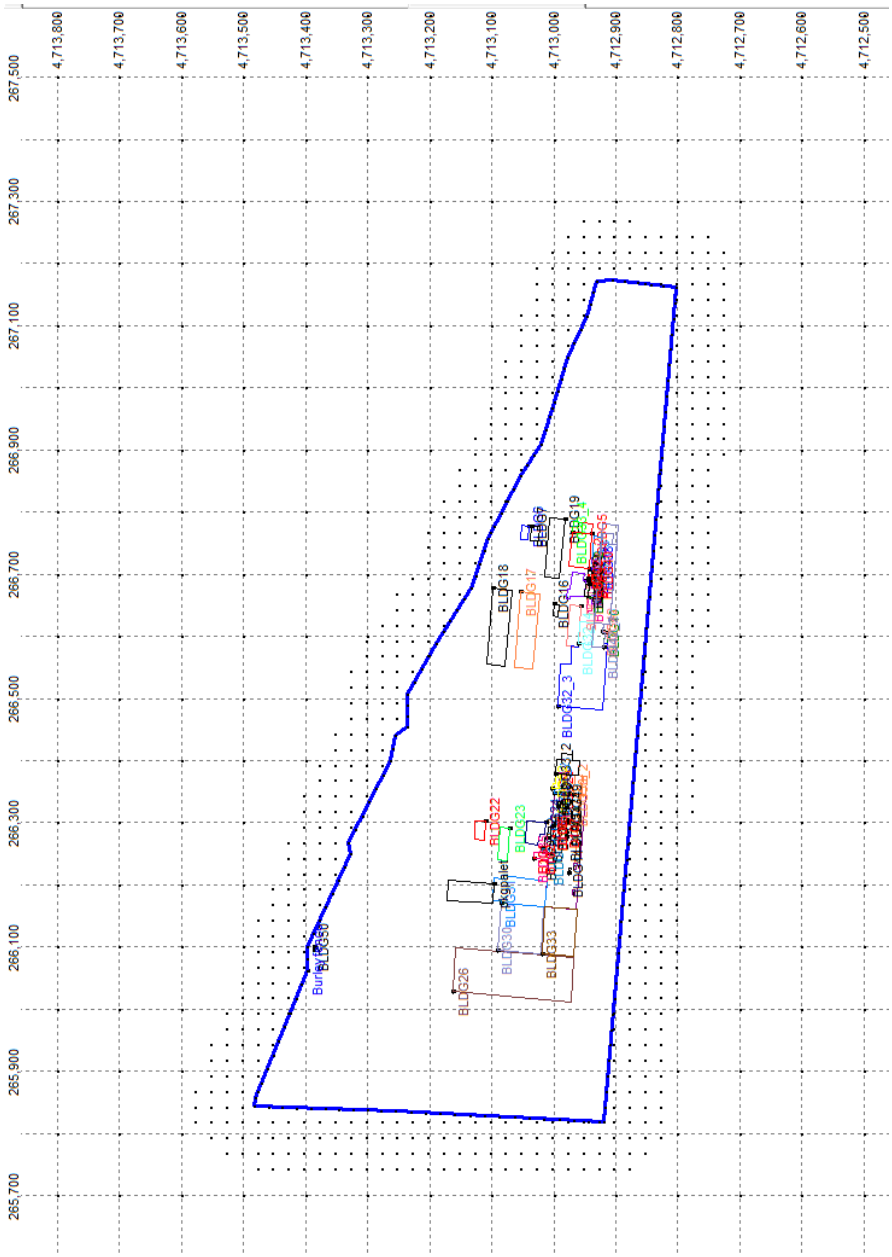


Figure 3b
Emissions Sources (B101, B102, D105, D106, and D107)
in Relation to Building Structures

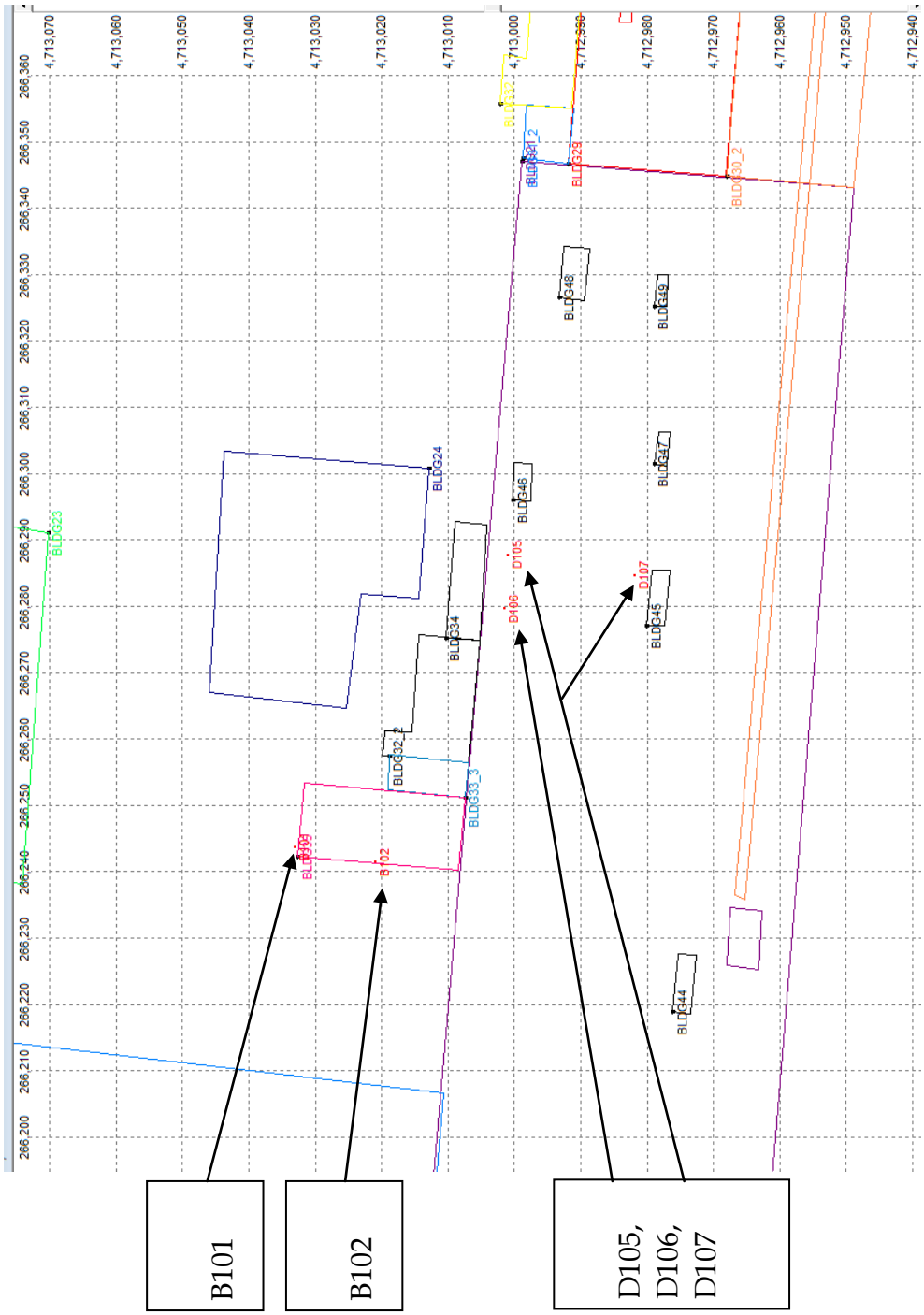


Figure 3c
Emissions Sources (B202 and B203) in Relation to Building Structures

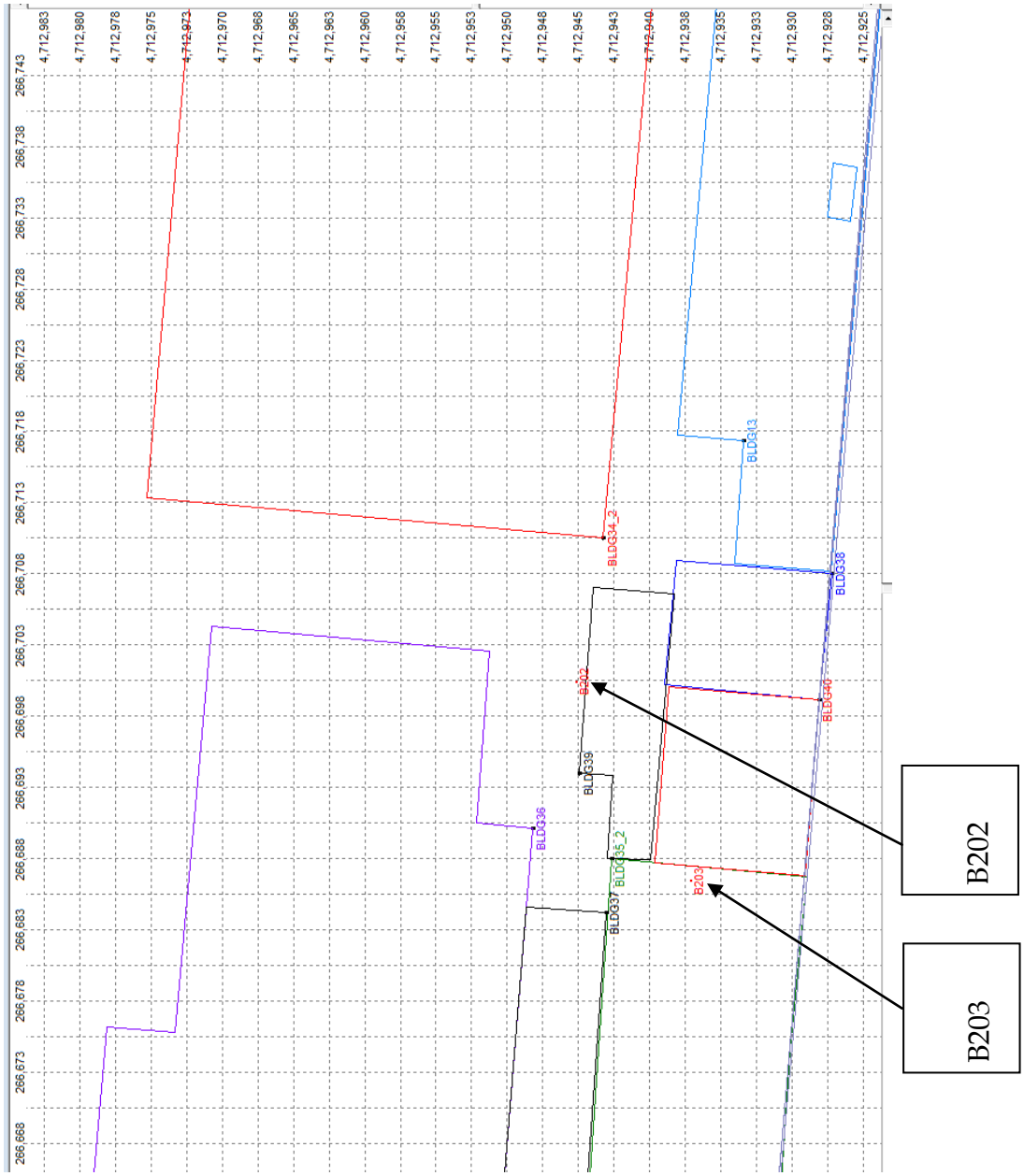
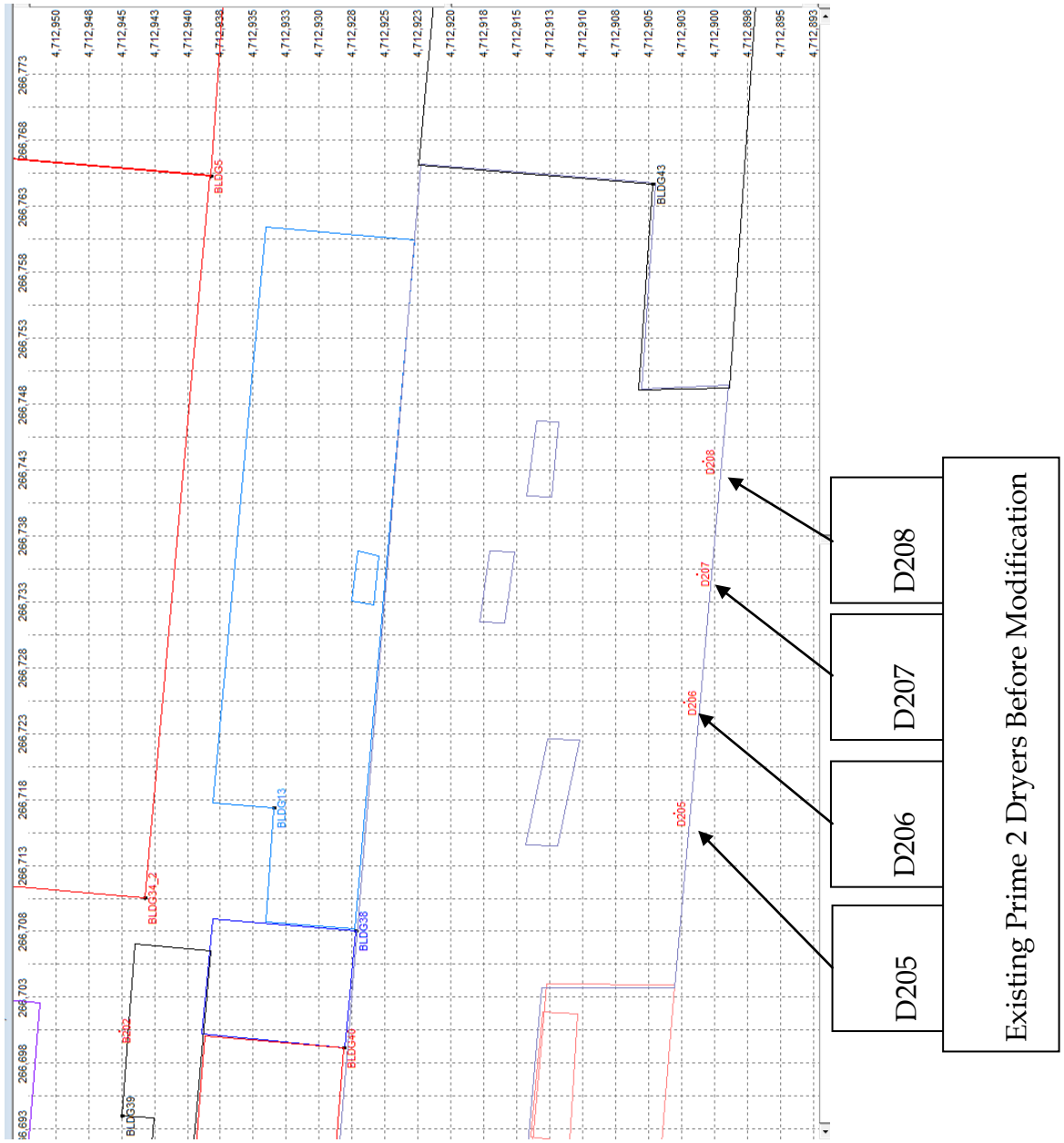


Figure 3d
Emissions Sources (D205, D206, D207 and D208) in Relation to Building Structures
(Used for SCL / SIL Analysis Only)



Meteorological Data/Receptor Grid

The meteorological database used in the dispersion model will consist of five years (2008 - 2012) meteorological data, with surface NWS and ASOS data collected at the Burley Airport and upper air data collected at the Boise NWS station. This data has been provided by DEQ, processed with AERMET version 12345.

The dispersion modeling analyses will be performed using a receptor grid (refer to Figure 4) consisting of approximately 3,313 receptors, extending to 2 kilometers from the plant. The receptor spacing is proposed as follows:

1. 25-meter (m) spacing along the facility fence-line;
2. 25-meter (m) spacing fence-line to 100m;
3. 100-m spacing from 100m to 2,000 m;

The latest version of the AERMAP program (version 11103), with NED terrain files will be used to develop hill scale and terrain elevation inputs for each receptor. All coordinates will be are based on the NAD83 datum. Rural dispersion will be assumed.

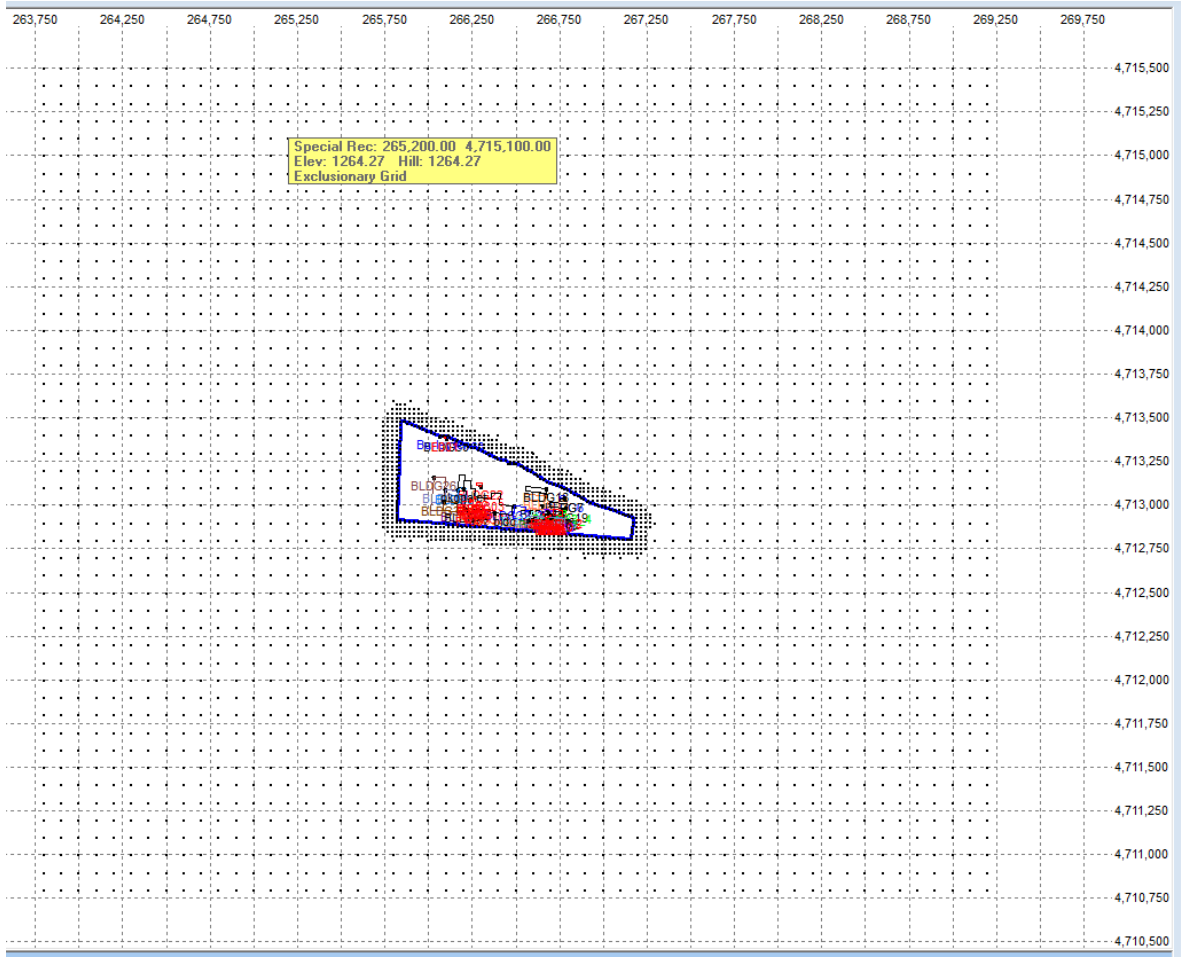
Figure 4
Receptor Grid for Ambient Air Quality Impact Analyses

Receptor Spacing

Along Fenceline
25 m

Fenceline to 100 m
25 m

100 m to 2,000 m
100 m



3313 Receptors

Dispersion Modeling Analyses

The potential to emit from the PTC sources will be modeled with AERMOD to determine maximum predicted off-site concentrations.

For Nitrogen Dioxide (NO_2): The maximum annual NO_2 concentration predicted for 5 years of meteorology will be compared against DEQ's SCL.

The important air quality thresholds are provided in Table 5.

Table 5
Idaho DEQ SCL and U.S. EPA SIL Thresholds

POLLUTANT	**AVERAGING PERIOD**	**SCL/SIL (µg/m³)**
NO_2	Annual	1.0

National Ambient Air Quality Standards (NAAQS)

(If Facility wide modeling is required)

POLLUTANT	**AVERAGING PERIOD**	**SCL/SIL (µg/m³)**
NO_2	Annual	100.0

Note: Background Concentration for NO_2 Annual is 17.0 *

(* Provided by IDEQ for level II analysis)

The method of the modeling analysis will follow the guidance provided in the State of Idaho Air Quality Modeling Guidance document. The steps defined as a "Preliminary Analysis" and the applicability to this project are:

1. If the modification is not "major", model the net emission increase of the proposed modification. **Applicability:** *The net emissions increase from the project associated with the PTC sources will first be modeled to determine if the project impact exceeds the appropriate SCL / SIL for* NO_2 *annual.*

2. Determine if the maximum impact is greater than the significant contribution level (for criteria pollutants). **Applicability:** *To Be Determined.*

3. If the impacts are below all applicable thresholds, then no further analysis is required. If impacts are above the applicable threshold, then a full impact analysis, including all emissions from the full facility for the applicable pollutant, must be modeled. **Applicability:** *If the "net emissions increase" of* NO_2 *–annual exceeds the SCL / SIL, then all sources of* NO_2 *at the facility will be modeled and the results (plus appropriate background levels) compared to the NAAQS for* NO_2*–annual.*

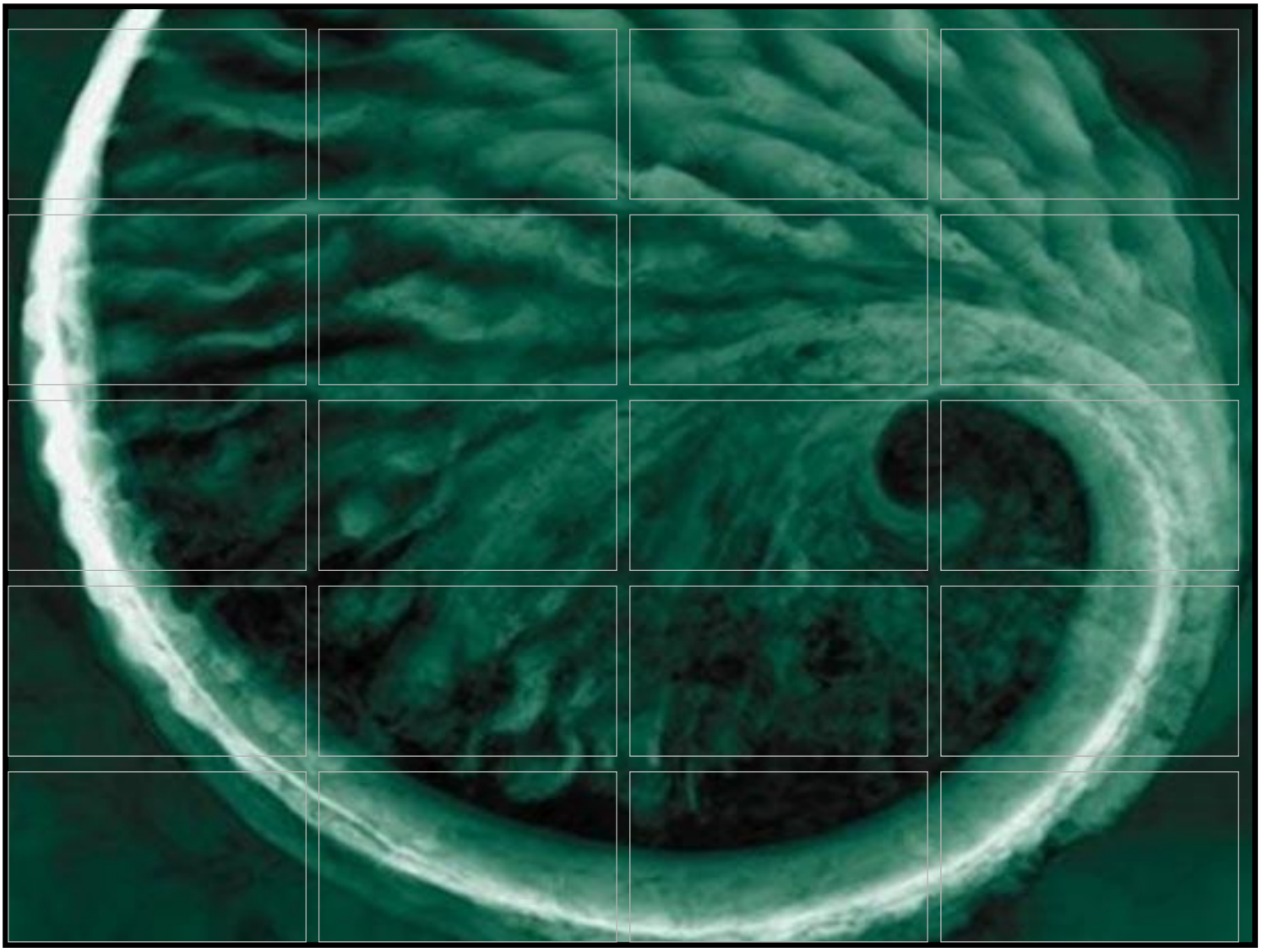
4. If the full impact analysis predicted concentrations, when added with background (from a representative monitor) are below the applicable Standard (i.e. NAAQS), then the impact analysis is complete. If concentrations are predicted to exceed the applicable thresholds, then further design considerations may need to be performed to predict values below the applicable thresholds. **Applicability:** *If the "net emissions increase" of* NO_2 *–annual exceeds the SCL, then all sources of* NO_2 *at the facility will be modeled and the results (plus appropriate background levels) compared to the NAAQS for* NO_2 *–annual.*

The air quality impact analysis (including all model input and output files on a CD) will be summarized in a technical support document and submitted to DEQ as an attachment to the PTC application.

APPENDIX G

Air Dispersion Modeling

Results for NOx, annual



Technical Support Document

Air Quality Impact Analyses for Modification to Prime 2 Processing Line and Facility-wide Boiler Bubble Limits

McCain Foods USA
Cassia County, Burley, Idaho

DECEMBER 2013

The World's Leading Sustainability Consultancy

ERM

Air Quality Impact Analyses for Modification to Prime 2 Processing Line and Facility-wide Boiler Bubble Limits

Burley Plant
Cassia County, Burley, Idaho

December 2013

Project # 0218289

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1.0 *INTRODUCTION*

McCain Foods is submitting a Permit to Construct application for a project that consists of reconfiguring an existing process line and modification to the boiler bubble permit limit. The site is located in Burley, Idaho and the Facility ID number is 031-00014. The facility is currently operating under a Permit to Construct (PTC) issued to the facility on August 16, 2012. The permit number is P-2012.0043 and the Project ID, as assigned by IDEQ is 61085.

This document presents the results of an air quality impact analysis performed based on a dispersion modeling protocol submitted for approval by the Idaho Department of Environmental Quality (DEQ). The analysis included dispersion modeling for annual average impacts of nitrogen dioxide (NO_2) resulting a modified bubble limit for the facility boilers at Burley, Idaho. The modeling analysis was required as part of a permit-to-construct (PTC) application (IDAPA 58.01.01.200).

The Burley facility is located on Highway 30 to the southwest of the City of Burley, Idaho. The facility is comprised of approximately 98 acres of land situated to the south of the Snake River. The facility consists of the following primary components:

- Truck Loading And Unloading Areas
- Potato Storage Buildings
- Burley 1 Potato Processing Plant
- Burley 2 Potato Processing Plant
- Americold Freezer Buildings
- Chemical Storage Building
- Wastewater Treatment Plant And Associated Structures
- Water Supply System And Building
- Office Buildings
- Miscellaneous Small Buildings

The dispersion modeling analysis included atmospheric dispersion modeling using a U.S. EPA-approved model to simulate the downwind transport and predicted off-site annual average concentrations of NO_2.

Figure 1

Aerial View of the McCain Facility – Burley, ID

The increase in annual emissions of NOx from the facility boilers were estimated. Modeled NO_2 concentrations for the modification were compared against state significant contribution levels (SCLs) and EPA significant impact levels (SILs).

Section 2.0 presents a brief description of the Project. Section 3.0 provides a description of the dispersion model protocol, including databases, characterization of the study area, and an emissions inventory for the air quality impacts assessment. Section 4.0 reports the results of the ambient air quality impact analysis.

2.0 PROJECT DESCRIPTION

Proposed Project Description – Burley Plant 2 Equipment Replacement

The Burley Plant 2 infrastructure and equipment is of significant age. The existing buildings and roof structure requires rehabilitation. The existing buildings are being rebuilt structurally with higher ceilings and accessibility for safety, quality, and maintenance activities. Key pieces of processing equipment are being replaced due to age, quality attributes, and maintenance issues. The factory changes will not result in an increase of production throughput or air emissions.

The pieces of equipment considered air emission sources that are planned to be replaced in Burley Plant 2 are the prime line dryer and fryer. The dryer and fryer will be replaced with like for like equipment with equal or less air emissions.

The fryer will be replaced with a like for like fryer with identical throughput characteristics. The production rate through-put limit, air emissions permit conditions, emission control technology, and other permit conditions will not change. The only change associated with this replacement is a slight modification in stack location and height.

The dryer will be replaced with a like for like dryer with identical throughput characteristics. The significant change is that this new dryer will be heated using steam instead of natural gas. Thus, the emissions will be reduced to only like for like process emissions and the fuel burning emissions will be eliminated.

> Note: The Prime 2 dryer currently permitted includes a 48MMBtu per hour direct fired burners. This combustion equipment will be eliminated upon completion of the proposed reconfiguration. The proposed Prime 2 dryer will be heated using steam produced from existing boilers.

The production rate through-put limit and other permit conditions will not change. The only change associated with this replacement is a change in quantity and location of stacks and heights.

Summary of Key Changes

The proposed Prime 2 Dryer (B2) and Fryer Reconfiguration being permitted in this application will result in the following changes:

- The stacks associated with the B2 Prime Dryer will change from 4 stacks to 3 stacks. The discharge height for each of the 3 new stacks will be 120 feet above ground level. The diameter at the discharge for each of these stacks will be 2 feet. (Reference Table 1 (below) for a summary and comparison of the proposed versus existing stacks heights and diameters.)

- The relocation of the Dryer Stacks associated with the B2 Prime Dryer. The existing four stacks are currently identified in the permit as D205, D206, D207, and D208. The three new stacks are identified in this PTC submittal as D209, D210, and D211.

- The Prime 2 dryer will be steam heated by the existing boilers and the natural gas burners (48 MM Btu/hr) currently associated will the B2 dryer will be eliminated.

- The stack associated with the B2 Prime Fryer (currently identified as F204) will be increased so that the discharge height is 120 feet above ground level. There will be no physical change or change in the method of operation of B2 Prime fryer. The total emissions of Particulate Matter and PM-10 from the stack and other discharge characteristics will be unchanged. (Reference Table 1 (below) for a summary and comparison of the proposed versus existing stacks heights and diameters.)

- The total Process emissions of Particulate Matter and PM-10 from the Prime 2 dryer will be unchanged. However, the total emissions of PM and PM-10 associated with the Prime 2 dryer stacks will be reduced by elimination of the direct fired natural gas combustion equipment. Based upon a maximum capacity of 48,000,000 BTU per hour and an AP-42 emission factor of 7.6 pounds per million cubic feet of natural gas. It is calculated that total PTE for hourly PM emissions will be reduced by 0.3648 pounds per hour as a result of the combustion equipment being eliminated.

Upon review of the State of Idaho current Air Quality Modeling Guideline, dated 12/31/2002 and an initial evaluation of the likely impacts from the proposed B2 Fryer and Dryer Reconfiguration, the

proposed modification does not appear to warrant the completion of an air quality modeling analysis for particulate matter (PM) in order to obtain a PTC for the proposed project. This conclusion is based upon the following:

- No Increase in PTE Hourly Air Emissions: The proposed project does not result in an increase in hourly air emission.

- Stack Heights Increasing: The stacks affected by the proposed project will discharge at a significantly greater height than the existing arrangement. The existing 5 stacks impacted by this project currently discharge at a height of between 40 and 45 feet. In comparison, upon completion of the project, the replacement stacks will discharge at a height of 120 feet above ground level. Ref Table 1 for additional detailed information.

- Stack Diameters the same or decreasing: The stacks affected by the proposed project will either maintain the same diameter at the point of discharge, or have a diameter that is smaller than the existing stack discharge.

- Stack Locations further from the Nearest Property Line: The Fryer stack location is unchanged. However, the Dryer stacks are moving to a location that is further from the nearest property line. Reference Figure 1 for information on the current dryer stack location and site property boundaries. The proposed stacks will be located approximately 20 to 30 feet further north and currently the south property line is the nearest property line for these stacks.

- Minimal Change in Building Heights: A few building heights in the area of the B2 Prime Process Line (Plant 2) are changing and increasing slightly. However, these changes in heights appear to be relatively minimal and result in the building heights at the property becoming more uniform. When comparing the proposed stack height of 120 feet for the Prime 2 Dryer and Fryer to the building heights of approximately 40 feet and considering that the buildings are at a more uniform height. It is not anticipated that the slight increase in building height will result in any significant impact on air dispersion modeling for the facility. Emissions

Other Permit Change – Boiler Bubble Modification

McCain Foods requests that the boiler natural gas permit limit (bubble) be increased to 1,650 MM scf/yr. The facility's current Tier II status will remain unchanged with this new limit.

Information pertaining to this desired permit change was previously submitted to IDEQ and guidance was requested to determine the extent of air dispersion modeling required prior to making this change. As indicated on the enclosed letter from IDEQ, dated November 18, 2013, it was concluded that the requested permit change would exceed the 14 TPY modeling threshold for NOx. Thus, air dispersion modeling must be performed to determine the impact in regards to the NOx, annual standards. A copy of IDEQ's response and the air dispersion modeling determination is included the permit application materials.

Air dispersion modeling was performed by ERM on behalf of McCain Foods to verify the NAAQS for NOx – annual, can be obtained by the facility if the permit limit (bubble) is increased to 1650 MM scf/yr for the boilers.

3.0 *DISPERSION MODEL, DATABASES, AND ANALYSES FOR AIR QUALITY IMPACT EVALUATION*

Air quality modeling analyses were performed to assess the ambient air quality impact of the proposed project. The dispersion modeling analysis included atmospheric dispersion modeling using a U.S. EPA-approved model to simulate the downwind transport and predicted off-site concentrations of NO_2. In addition, the downwind transport and predicted off-site concentration of arsenic, cadmium, formaldehyde and nickel, the only toxic air pollutants (TAPs) with a potential to emit exceeding the IDAPA screening emission levels (EL) as described in Idaho Administrative Procedure Act (IDAPA) 35.01.01.585, were also modeled.

The increase in annual emissions from the proposed modified bubble limit for the facility boilers were estimated for NO_X. Modeled NO_2 concentrations for the modification were compared against state significant contribution levels (SCLs) and EPA significant impact levels (SILs).

A detailed description of the modeling approach and data requirements for the assessment of the air quality impact due to the increase in emissions from the proposed project is included below.

3.1 *DESCRIPTION OF AIR QUALITY DISPERSION MODEL*

The air quality modeling analyses employed the AMS/EPA Regulatory Model (AERMOD), version 12345. The following settings were used in the AERMOD model:

- complex terrain – receptor elevations and hill scales
- rural dispersion coefficients
- regulatory default model parameters, including:
    - calm correction
    - buoyancy induced dispersion
    - final plume rise
    - default wind profile coefficients
    - default vertical potential temperature gradients
    - stack-tip downwash
    - direction specific building downwash

AERMOD allows for simulation of multiple sources (and source types) simultaneously, while making the correct accounting for building downwash and building cavity effects.

The BPIPPRM program (04274) was used to assess the influence of building wake effects. Each source location and height above ground was input into the BPIPPRM program along with locations and heights of nearby structures. The BPIPPRM program determined the wind direction specific building parameters used by the AERMOD model to account for downwash effects of nearby buildings, including cavity effects.

3.2 *DATABASES FOR AIR QUALITY EVALUATION*

The databases required for input to the dispersion model included source emission data, meteorological data, receptor points, and terrain heights for all sources, buildings, and receptors.

3.2.1 *Emission Inventory Data*

The emission inventory for changes to existing sources as described in the PTC for the plant is presented in Table 1. To simulate the annual average NO_2 air quality impacts associated with the requested increase in fuel use for the facility boilers (boiler bubble), the NO_X emissions associated with the requested fuel use increase was determined using standard US EPA emission factors for natural gas combustion in boilers. In order to assess worst-case impacts from this increase (27.5 tons per year, or 6.28 pounds per hour), the emissions were assigned to EACH boiler individually (as if that one boiler were to have consumed all of the requested fuel use increase). This was repeated for all four boilers, and the scenario with the greatest impacts was taken as the predicted impacts for comparison to the SIL threshold. If needed, each of these scenarios was re-run to account for the 'net effect' of emission decreases associated with the removal of the Prime 1 Dryer and Prime 2 Dryer gas combustion. Finally, if these initial assessments predict impacts above SIL thresholds, an analysis of full potential to emission from all facility sources was conducted for comparison to the annual ambient air quality standard. The emission inventory for total emissions of NO_2 from all existing sources as described in the PTC for the plant is presented in Table 2. Table 3 provides the estimated emission details that indicates the analysis for TAPs, and the conclusion that four contaminants (arsenic, cadmium, formaldehyde, and nickel) should be evaluated for modeling impacts. Figure 3 depicts the location of the building structures and new sources in relation to the property boundary and as configured in the model.

Table 1
Emission Inventory of the Modification Sources
(Emission increase requested for Boiler Bubble and decreases for elimination of gas fired burners on Prime 1 and Prime 2 Dryers)

MODELING PARAMETERS USED TO PERFORM "NET INCREASE" IMPACT ANALYSIS - FOR COMPARISON TO SCL / SIL

Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	N02 (lb/hr)
B101	Murray 1 Boiler	266243.9	4713033.1	1270.4064	12.41	426	7.73	1.52	6.28
B102	Nebraska 1 Boiler	266241.58	4713021.02	1270.4064	19.79	426	11.54	1.22	6.28
B202	Nebraska 2 Boiler	266699.96	4712945.21	1270.4064	20.38	426	16.76	0.91	6.28
B203	Murray 2 Boiler	266685.98	4712937.17	1270.4064	11.56	426	8.39	0.91	6.28
D105	Prime 1 Dryer Stack East	266287.9	4713001.02	1270	18.5	344	8.19	1.03	-1.05
D106	Prime 1 Dryer Stack West	266279.82	4713001.58	1270	18.5	375	9.27	1.03	-1.05
D205	Prime 2 Dryer Stack - 1 of 4	266716.46	4712903.11	1270.4064	12	318	11.38	1.46	-0.52
D206	Prime 2 Dryer Stack - 2 of 4	266724.89	4712902.34	1270.4064	12	314	12.16	1.46	-0.52
D207	Prime 2 Dryer Stack - 3 of 4	266734.63	4712901.35	1270.4064	12	319	10.12	1.46	-0.52
D208	Prime 2 Dryer Stack - 4 of 4	266743.17	4712900.92	1270.4064	12	309	11.34	1.46	-0.52

To simulate the annual average NO_2 air quality impacts associated with the requested increase in fuel use for the facility boilers (boiler bubble), the NO_x emissions associated with the requested fuel use increase was determined using standard US EPA emission factors for natural gas combustion in boilers. In order to assess worst-case impacts from this increase (27.5 tons per year, or 6.28 pounds per hour), the emissions were assigned to EACH boiler individually (as if that one boiler were to have consumed all of the requested fuel use increase).

Table 2
Emission Inventory of the Facility Sources
(Full Potential to Emit for NOx Sources)

MODELING PARAMETERS USED TO PERFORM "TOTAL FACILITY" IMPACT ANALYSIS - FOR COMPARISON TO NAAQS									
Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	N02 (lb/hr)
B101	Murray 1 Boiler	266243.9	4713033.1	1270	12.41	426	7.73	1.52	9.8
B102	Nebraska 1 Boiler	266241.58	4713021.02	1270	19.79	426	11.54	1.22	9.37
D107	Tot Dryer	266284.81	4712981.95	1270	16	321	13.92	0.91	0.6
B202	Nebraska 2 Boiler	266699.96	4712945.21	1270	20.38	426	16.76	0.91	7.65
B203	Murray 2 Boiler	266685.98	4712937.17	1270	11.56	426	8.39	0.91	3.83

Table 3
Estimated Emissions for Boiler Bubble Increase
(including detailed emission increases in TAPs)

Boiler Bubble Modification											
	Stack Ht		**feet**								
	Natural gas	1000	MMBtu/MMCf								
			550	mmcf/yr							
			0.063	mmcf/hr							
Air Pollution Control											
	None						58.01.01 Section 585 and 586 EL and AAC Levels				
	Emission factor	unit	EF source	PTE lb/hr	PTE tpy		PTE g/sec				
Particulate Matter	7.6	lb/mmCF	2	0.48	2.09						
Sulfur Dioxide	0.6	lb/mmCF	2	0.04	0.17						
Nitrogen oxides	100	lb/mmCF	1	6.28	27.50		0.79				
Organic Compounds	5.5	lb/mmCF	2	0.35	1.51						
Carbon monoxide	84.0	lb/mmCF	1	5.27	23.10						
PM10	0.52	lb/mmCF	2	0.033	0.14						
PM2.5	0.43	lb/mmCF	2	0.027	0.12						
							EL (lb/hr)	PTE Below 10% EL (Y/N)		PTE Below EL (Y/N)	
Arsenic	2.0E-04	lb/mmCF	4	1.26E-05	5.50E-05		1.50E-06	N		N	**need to model**
Benzene	2.1E-03	lb/mmCF	3	1.32E-04	5.78E-04		8.00E-04	N		Y	Level I Exemption
Benzo(a)pyrene	1.20E-06	lb/mmCF	3	7.53E-08	3.30E-07		2.00E-06	Y	BRC	Y	
Beryllium	0.000012	lb/mmCF	4	7.53E-07	3.30E-06		2.80E-05	Y	BRC	Y	
Cadmium	0.0011	lb/mmCF	4	6.91E-05	3.03E-04		3.70E-06	N		N	**need to model**
Formaldehyde	0.075	lb/mmcf	3	4.71E-03	2.06E-02		5.10E-04	N		N	**need to model**
3-Methylchloranthrene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07		2.50E-06	Y	BRC	Y	
Nickel	0.0021	lb/mmCF	4	1.32E-04	5.78E-04		2.70E-05	N		N	**need to model**
PAH compounds (except 7-PAH group)											
2-Methylnaphthalene	2.40E-05	lb/mmcf	3	1.51E-06	6.60E-06						
3-Methylchloranthrene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07						
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/mmcf	3	1.00E-06	4.40E-06						
Acenaphthene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07						
Acenaphthylene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07						
Anthracene	2.40E-06	lb/mmcf	3	1.51E-07	6.60E-07						
Benzo(g,h,i)perylene	1.20E-06	lb/mmcf	3	7.53E-08	3.30E-07						
Fluoranthene	3.00E-06	lb/mmcf	3	1.88E-07	8.25E-07						
Fluorene	2.80E-06	lb/mmcf	3	1.76E-07	7.70E-07						
Phenanathrene	1.70E-05	lb/mmcf	3	1.07E-06	4.68E-06						
Pyrene	5.00E-06	lb/mmcf	3	3.14E-07	1.38E-06						
				4.82E-06	2.11E-05	total	9.10E-05	Y	BRC	Y	
POM compounds (7-PAH group)											
Benz(a)anthracene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07						
Benzo(a)pyrene	1.20E-06	lb/mmcf	3	7.53E-08	3.30E-07						
Benzo(b)fluoranthene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07						
Benzo(k)fluoranthene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07						
Chrysene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07						
Dibenzo(a,h)anthracene	1.20E-06	lb/mmcf	3	7.53E-08	3.30E-07						
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/mmcf	3	1.13E-07	4.95E-07						
				7.16E-07	3.14E-06		2.00E-06	N		Y	Level I Exemption
Emission Factor Sources:											
	1	US EPA AP-42 Table 1.4-1									
	2	US EPA AP-42 Table 1.4-2									
	3	US EPA AP-42 Table 1.4-3									
	4	US EPA AP-42 Table 1.4-4									

Figure 3a
Emissions Sources in Relation to Building Structures and Property Boundary

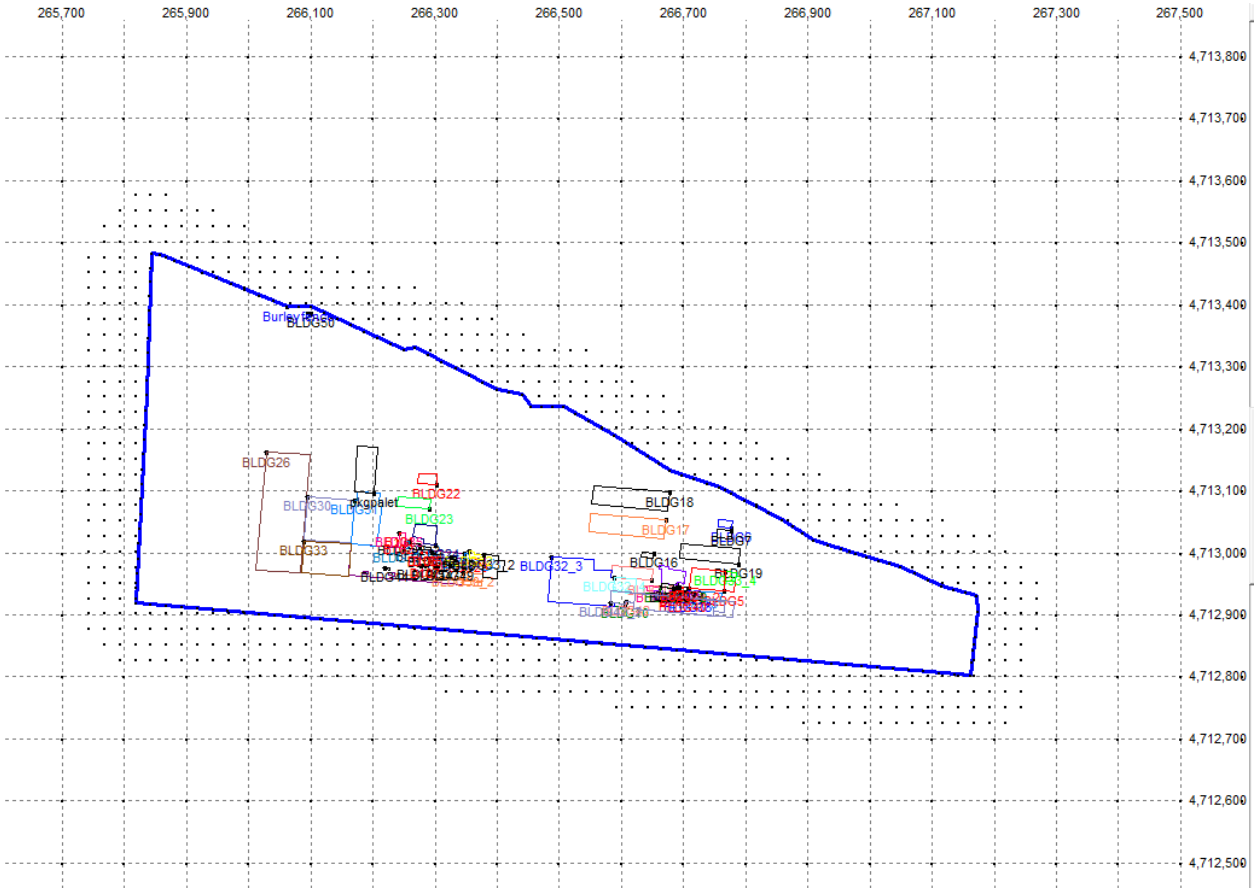


Figure 3b
Emissions Sources (B101, B102, D105, D106, and D107)
in Relation to Building Structures

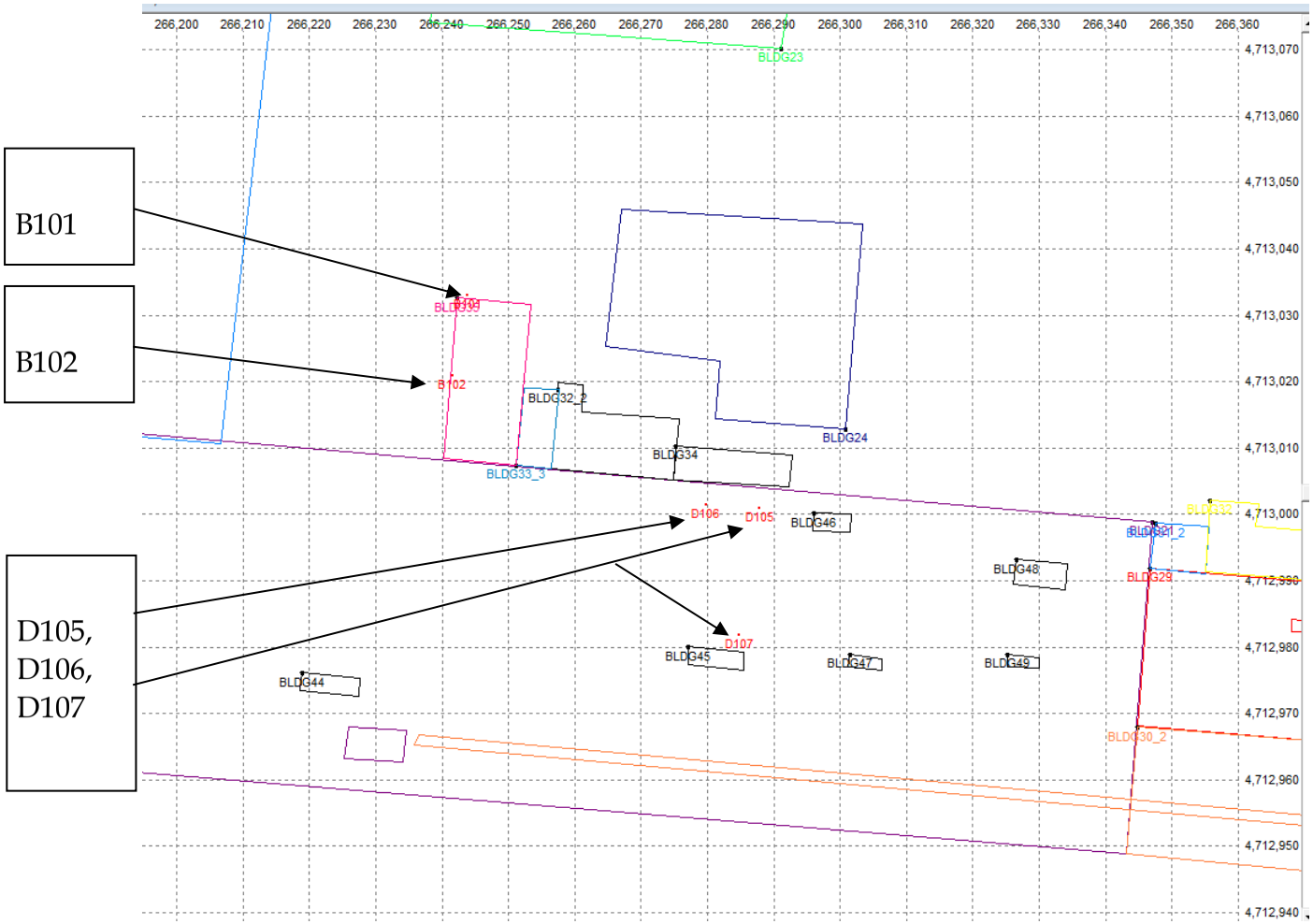


Figure 3c
Emissions Sources (B202 and B203) in Relation to Building Structures

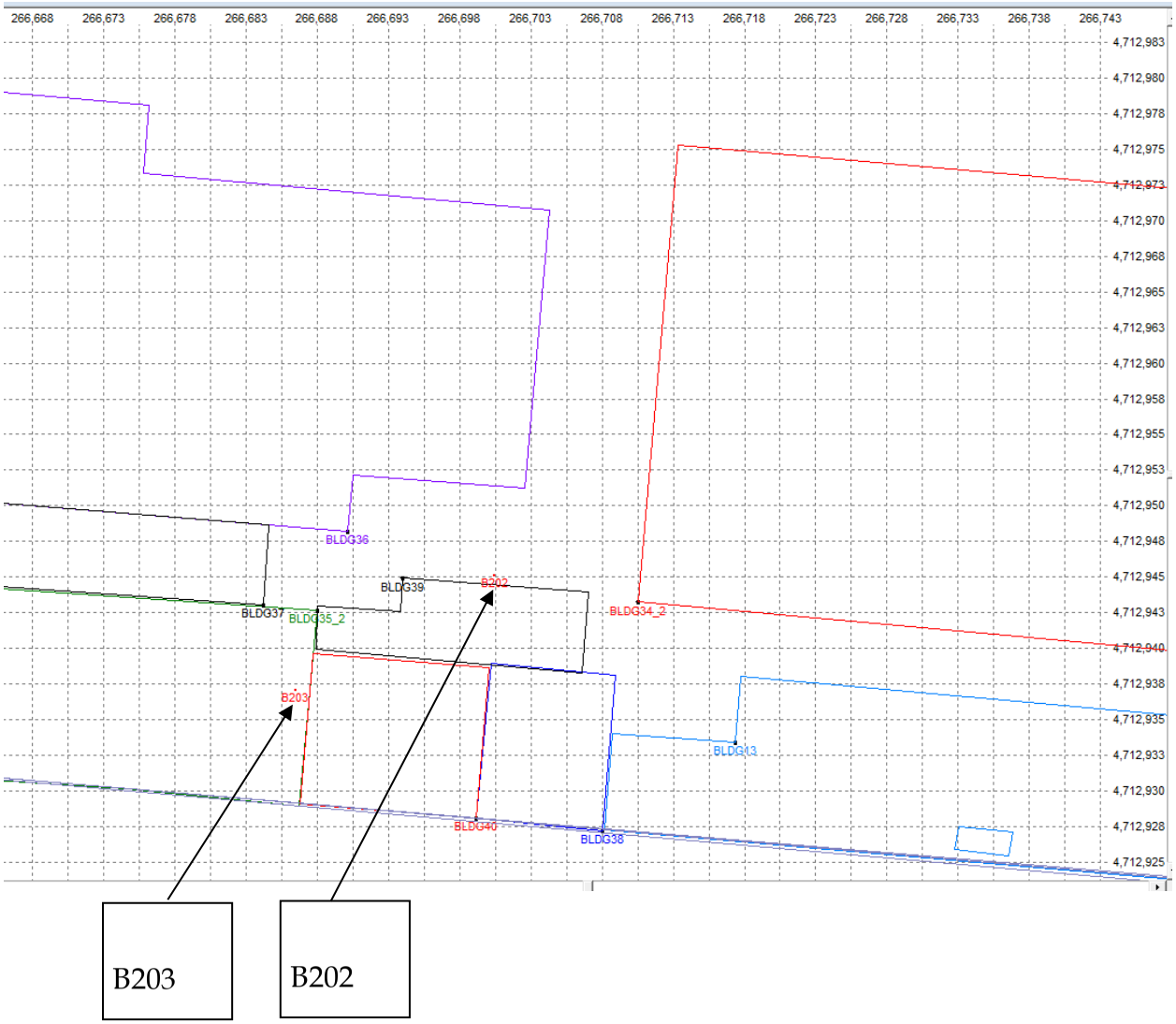
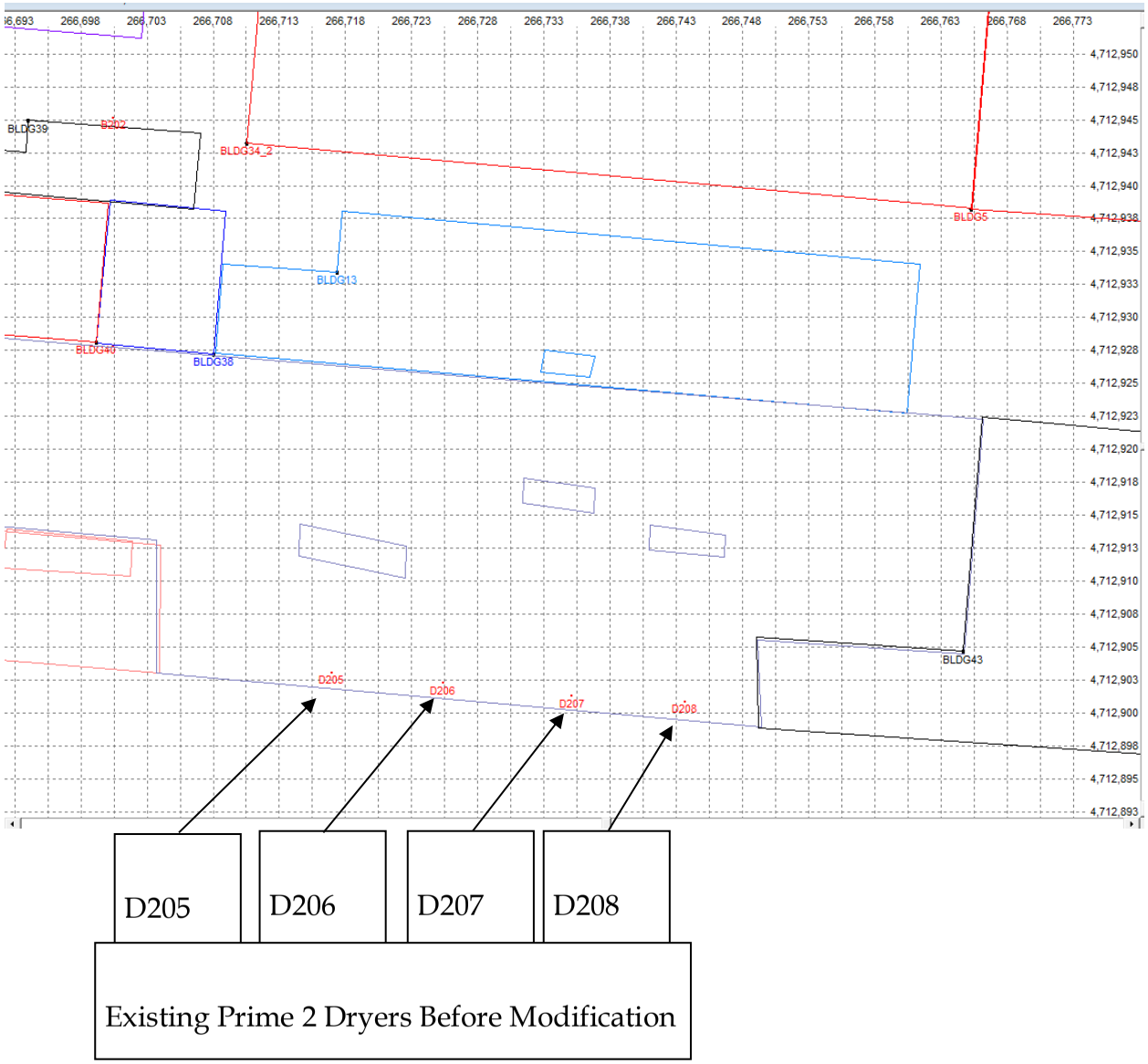


Figure 3d
Emissions Sources (D205, D206, D207 and D208) in Relation to Building Structures
(Used for SCL / SIL Analysis Only)



3.2.2 *Meteorological Data*

The meteorological database used in the dispersion model consisted of five years (2008 - 2012) of surface observations from Burley Municipal Airport and coincident upper air observations from the Boise Air Terminal, Idaho National Weather Service site. This data was provided by DEQ and processed with AERMET version 12345.

National Weather Service (NWS) surface Hourly Met Data (ISHD, 24133, GMT-7) and 1-minute ASOS winds (KBYI, LST) were collected at the Burley Municipal Airport for the years 2008 through 2012. The locations of surface and upper air stations were determined using Google Earth and Bing Maps. The ASOS has been upgraded to an Ice Free Wind (IFW) sensor. NWS winds were not randomized, NWS data were supplemented by ASOS winds, ASOS winds were adjusted upward by 0.5 m/s to account for truncation, and the ASOS wind threshold was set to the EPA-recommended value of 0.5 m/sec. Upper air soundings collected at the Boise NWS station (24131, BOI, GMT-7) were obtained in FSL format for the same period.

3.2.3 *Receptor Grids*

The dispersion modeling analyses was performed using a receptor grid (refer to Figure 4) consisting of approximately 3,313 receptors, extending to 2 kilometers from the plant. The receptor spacing was as follows:

1. 25-meter (m) spacing along the facility fence-line;
2. 25-meter (m) spacing fence-line to 100m;
3. 100-m spacing from 100m to 2,000 m;

The latest version of the AERMAP program (version 11103), with NED terrain files was used to develop hill scale and terrain elevation inputs for each receptor. All coordinates were based on the NAD83 datum. Rural dispersion was assumed.

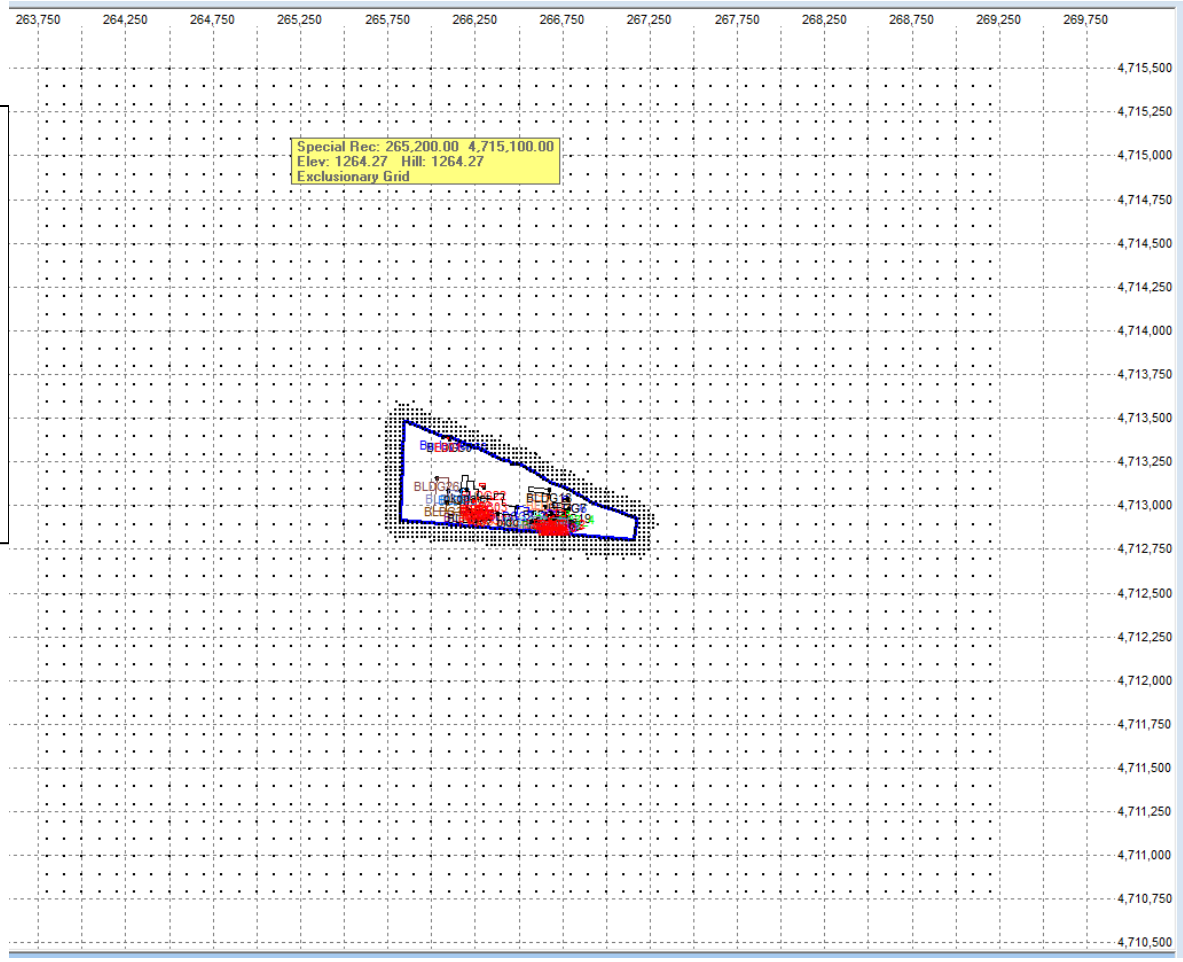
Figure 4
Receptor Grid for Ambient Air Quality Impact Analyses

Receptor Spacing

Along Fenceline
25 m

Fenceline to 100 m
25 m

100 m to 2,000 m
100 m



3313 Receptors

3.3 *METHODOLOGY FOR AIR QUALITY MODELING*

The method of the modeling analysis followed the guidance provided in the State of Idaho Air Quality Modeling Guidance document. The steps defined as a "Preliminary Analysis" and the applicability to this project are:

1. If the modification is not "major", model the net emission increase of the proposed modification.

2. Determine if the maximum impact is greater than the significant contribution level (for criteria pollutants).

3. If the impacts are below all applicable thresholds, then no further analysis is required. If impacts are above the applicable threshold, then a full impact analysis, including all emissions from the full facility for the applicable pollutant, must be modeled.

4. If the full impact analysis predicted concentrations, when added with background (from a representative monitor) are below the applicable Standard (i.e. NAAQS), then the impact analysis is complete. If concentrations are predicted to exceed the applicable thresholds, then further design considerations may need to be performed to predict values below the applicable thresholds.

To simulate the annual average NO_2 air quality impacts associated with the requested increase in fuel use for the facility boilers (boiler bubble), the NO_X emissions associated with the requested fuel use increase was determined using standard US EPA emission factors for natural gas combustion in boilers. In order to assess worst-case impacts from this increase (27.5 tons per year, or 6.28 pounds per hour), the emissions were assigned to EACH boiler individually (as if that one boiler were to have consumed all of the requested fuel use increase). The predicted impacts were compared to SIL thresholds. This was repeated for all four boilers, and the scenario with the greatest impacts was taken as the predicted impacts for comparison to the SIL threshold.

This analysis was done for annual impacts only, as there is no increase in short-term emission rates or boiler capacities, and only an increase in boiler fuel use over an annual average period would occur.

This was compared to and found to be above the applicable SIL threshold. Detailed results are provided in the next section

Next, each of these scenarios was re-run to account for the emission decrease associated with the removal of the Prime 1 Dryer and Prime 2 Dryer gas combustion. The model simulated the 'net effect' of the increased fuel use in the boiler with the decrease in emissions from no longer operating gas burners in Prime 1 and Prime 2 dryers. The result of this "net" analysis was compared to and found to be above the applicable SIL threshold.

Because the analysis of impacts from emission increases and net emission increases were above SIL thresholds, an analysis of full potential to emission from all facility sources was conducted to compare to the annual ambient air quality standard. For simplicity, each boiler was simulated at its maximum firing rate, together with the other existing sources of NO_X, to simulate a facility-wide predicted impact for NO_2. This result will produce conservatively high results, as it does not simulate an annual fuel use limitation. The annual fuel use limitation is established solely for the purpose of assigning permit limits needed to maintain Tier II permit status.

4.0 AMBIENT AIR QUALITY IMPACT ASSESSMENT

A summary of the air quality dispersion modeling analyses supporting the proposed PTC at the P4 plant is presented below. A compact disk of the model input and output is included with this report.

4.1 SUMMARY OF MODELING RESULTS

To simulate the annual average NO_2 air quality impacts associated with the requested increase in fuel use for the facility boilers (boiler bubble), the NO_X emissions associated with the requested fuel use increase was determined using standard US EPA emission factors for natural gas combustion in boilers. In order to assess worst-case impacts from this increase (27.5 tons per year, or 6.28 pounds per hour), the emissions were assigned to EACH boiler individually (as if that one boiler were to have consumed all of the requested fuel use increase). The predicted impacts were compared to SIL thresholds. This was repeated for all four boilers, and the scenario with the greatest impacts was taken as the predicted impacts for comparison to the SIL threshold.

This analysis was done for annual impacts only, as there is no increase in short-term emission rates or boiler capacities, and only an increase in boiler fuel use over an annual average period would occur.

Based on this analysis, the maximum annual average impacts from the requested fuel use increase was predicted to be 13.9 $\mu g/m^3$. This was compared to and found to be above the applicable SIL threshold.

Next, each of these scenarios was re-run to account for the emission decrease associated with the removal of the Prime 1 Dryer and Prime 2 Dryer gas combustion. The model simulated the 'net effect' of the increased fuel use in the boiler with the decrease in emissions from no longer operating gas burners in Prime 1 and Prime 2 dryers. Based on this "net" analysis, the maximum annual average impacts from the requested fuel use increase (and decrease from Dryer burner elimination) was predicted to be 13.9 $\mu g/m^3$. This was compared to and found to be above the applicable SIL threshold.

Because the analysis of impacts from emission increases and net emission increases were above SIL thresholds, an analysis of full potential to emission from all facility sources was conducted to compare to the annual ambient air quality standard. For simplicity, each boiler was simulated at

its maximum firing rate, together with the other existing sources of NO_X, to simulate a facility-wide predicted impact for NO_2. This result will produce conservatively high results, as it does not simulate an annual fuel use limitation. The annual fuel use limitation is established solely for the purpose of assigning permit limits needed to maintain Tier II permit status.

The facility-wide predicted annual average NO_2 impact was predicted to be 18.7 $\mu g/m^3$. This value was added to the ambient background concentration of 17 $\mu g/m^3$ (provided by IDEQ) to determine the predicted total NO_2 impact to compare to the ambient air quality standard. The maximum total annual average NO_2 impact was predicted to be 35.7 $\mu g/m^3$. The annual average ambient air quality standard for NO_2 is 100 $\mu g/m^3$. The predicted total facility-wide impact is 35.7% of the AAQS.

Detailed tabulation of modeling results for NO_2 are presented in Form MI-1 (see appendix G of the application materials).

The evaluation of predicted maximum annual impacts for the TAPs that exceeded the applicable ELs was conducted by applying the ratio of emission rates (NO2:TAP) for the worst-case SIL impacts and multiplying that result by the maximum predicted NO_2 SIL concentration. The resulting concentration of each seleced TAP was then compared to the applicable Acceptable Ambient Concentration (AAC).

These details are presented in Table 4 below. All TAPs which exceeded the EL thresholds were predicted to have maximum annual average concentrations below their respective AAC.

Table 4
Evaluation of Predicted maximum annual concentration for Selected TAPs

												Annual Max Impact (NO2)				
												13.93405	µg/m3			
												0.013934	mg/m3			
						PTE Below	PTE Below									
			PTE		EL	10% EL	EL		AAC	URF		Max Predicted Concentration				
			lb/hr	tpy	(lb/hr)	(Y/N)	(Y/N)		(mg/m3)			(mg/m3)				
Arsenic	2.0E-04	lb/mmCF	1.26E-05	5.50E-05	1.50E-06	N	N	**need to model**	2.3E-04	2.2E-06	annual average	2.79E-08	mg/m3	OK	Level I Exemption OK	
Cadmium	0.0011	lb/mmCF	6.91E-05	3.03E-04	3.70E-06	N	N	**need to model**	5.6E-04	1.8E-03	annual average	1.53E-07	mg/m3	OK	Level I Exemption OK	
Formaldehyde	0.075	lb/mmcf	4.71E-03	2.06E-02	5.10E-04	N	N	**need to model**	0.077	1.3E-05	annual average	1.05E-05	mg/m3	OK	Level I Exemption OK	
Nickel	0.0021	lb/mmCF	1.32E-04	5.78E-04	2.70E-05	N	N	**need to model**	0.0042	2.4E-04	annual average	2.93E-07	mg/m3	OK	Level I Exemption OK	

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton, Boise, ID 83706 For assistance, call the **Air Permit Hotline - 1-877-5PERMIT**	**PERMIT TO CONSTRUCT APPLICATION** Revision 3 4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	McCain Foods
Facility Name:	McCain Foods
Facility ID No.:	031-00014
Brief Project Description:	Reconfigure Prime 2 Dryer and Fryer AND increase boiler natural gas bubble from 1100 MM scf/yr to 1650 MM scf/yr

SUMMARY OF AIR IMPACT ANALYSIS RESULTS - CRITERIA POLLUTANTS

		1.		2.	3.	4.		5.
Criteria Pollutants	**Averaging Period**	**Significant Impact Analysis Results (µg/m3)**	**Significant Contribution Level (µg/m3)**	**Full Impact Analysis Results (µg/m3)**	**Background Concentration (µg/m3)**	**Total Ambient Impact (µg/m3)**	**NAAQS (µg/m3)**	**Percent of NAAQS**
PM_{10}	24-hour	n/a	5	n/a			150	
	Annual	n/a	1	n/a			50	
SO_2	3-hr	n/a	25	n/a			1300	
	24-hr	n/a	5	n/a			365	
	Annual	n/a	1	n/a			80	
NO_2	Annual	13.90	1	18.70	17.00	35.70	100	35.7%
CO	1-hr	n/a	2000	n/a			10000	
	8-hr	n/a	500	n/a			40000	

Instructions for Form MI1

This form is designed to provide the air quality modeler with a summary of the air impact analysis results for the criteria pollutants. This information will be used by IDEQ to determine compliance demonstration with the national ambient air quality standards (NAAQS).

Please fill in the same company name, facility name, facility ID number, and brief project description as on Form CS in the boxes provided. This is useful in case any pages of the application get separated.

Significant Impact Analysis - Evaluates the emissions increase from the proposed project only. This analysis determines whether or not a proposed project has a significant impact on ambient air, and therefore, requires a full impact analysis.

Full Impact Analysis - Only required if the significant impact analysis exceeds the significant contribution level - evaluates the emissions from the facility, including the emissions increase from the proposed project. This analysis determines whether the facility, with the emissions increase, complies with the NAAQS.

1. Provide the results of the significant impact analysis in $\mu g/m^3$.
2. Provide the results of the full impact analysis in $\mu g/m^3$ (if required).
3. List the background concentration in mg/m3. Contact the Stationary Source Modeling Coordinator at (208) 373-0502 for the current background concentrations for the area of interest. (Not needed if full impact analysis is not required.)
4. Provide the total ambient impact in mg/m3. The total ambient impact is the sum of the background concentration and the full impact analysis result.
5. Calculate the percent of the NAAQS that the total ambient impact analysis represents.

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton, Boise, ID 83706 For assistance, call the **Air Permit Hotline - 1-877-5PERMIT**	**PERMIT TO CONSTRUCT APPLICATION** Revision 3 3/27/2007

Please see instructions on page 2 before filling out the form.

Company Name:	McCain Foods
Facility Name:	McCain Foods
Facility ID No.:	031-00014
Brief Project Description:	Reconfigure Prime 2 Dryer and Fryer AND increase boiler natural gas bubble from 1100 MM scf/yr to 1650 MM scf/yr

POINT SOURCE STACK PARAMETERS

1.	2.	3a.	3b.	4.	5.	6.	7.	8.	9.	10.
Emissions units	**Stack ID**	**UTM Easting (m)**	**UTM Northing (m)**	**Base Elevation (m)**	**Stack Height (m)**	**Modeled Diameter (m)**	**Stack Exit Temperature (K)**	**Stack Exit Flowrate (acfm)**	**Stack Exit Velocity (m/s)**	**Stack orientation (e.g., horizontal, rain cap)**
Point Source(s)										
B101	PLEASE SEE THE ENCLOSED AIR MODELING FILE FOR POINT SOURCE INFORMATION USED FOR MODELING									
B102	PLEASE SEE THE ENCLOSED AIR MODELING FILE FOR POINT SOURCE INFORMATION USED FOR MODELING									
B202	PLEASE SEE THE ENCLOSED AIR MODELING FILE FOR POINT SOURCE INFORMATION USED FOR MODELING									
B203	PLEASE SEE THE ENCLOSED AIR MODELING FILE FOR POINT SOURCE INFORMATION USED FOR MODELING									
D105	PLEASE SEE THE ENCLOSED AIR MODELING FILE FOR POINT SOURCE INFORMATION USED FOR MODELING									
D106	PLEASE SEE THE ENCLOSED AIR MODELING FILE FOR POINT SOURCE INFORMATION USED FOR MODELING									
D107	PLEASE SEE THE ENCLOSED AIR MODELING FILE FOR POINT SOURCE INFORMATION USED FOR MODELING									

Instructions for Form MI2

This form is designed to provide the air quality modeler with information on the stack characteristics of each point source located at the facility. This information may be used by the IDEQ to perform an air quality analysis or to review an air quality analysis submitted with the permit application or requested by the IDEQ.

Please fill in the same company name, facility name, facility ID number, and brief project description as on Form CS in the boxes provided. This is useful in case any pages of the application get separated.

1. Provide the name of the emission unit. This name should match names on other submittals to IDEQ and within this application.
2. Provide the identification number for the stack which the emission unit exits.
3. Provide the UTM locations for each point source. The UTM Easting and UTM Northing are the coordinates for the center of the point source.
4. Provide the elevation of the base of the stack. This elevation must be calculated by the same method as the buildings and receptor elevation.
5. Provide the height of the stack, from the ground.
6. Provide the stack diameter that is included in the modeling analysis. Refer to the State of Idaho Modeling Guideline for guidance on developing the appropriate diameter.
7. Provide the stack exit temperature. Include documentation and justification for the exit temperature used.
8. Provide the stack exit flowrate. Include documentation and justification for the exit flowrate used.
9. Provide the stack exit velocity. Include documentation and justification for the exit velocity used.
10. Provide the orientation of the stack (horizontal or vertical). Indicate whether there is an obstruction on the stack, such as a raincap.

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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PERMIT TO CONSTRUCT APPLICATION
Revision 3
4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	McCain Foods
Facility Name:	McCain Foods
Facility ID No.:	031-00014
Brief Project Description:	Reconfigure Prime 2 Dryer and Fryer AND increase boiler natural gas bubble from 1100 MM scf/yr to 1650 MM scf/yr

FUGITIVE SOURCE PARAMETERS

1.	2.	3a.	3b.	4.	5.	6.	7.	8.	9.	10.
Emissions units	**Stack ID**	**UTM Easting (m)**	**UTM Northing (m)**	**Base Elevation (m)**	**Release Height (m)**	**Easterly Length (m)**	**Northerly Length (m)**	**Angle from North (°)**	**Initial Vertical Dimension (m)**	**Initial Horizontal Dimension (m)**
Area Source(s)										
NONE. Not Applicable.										
Volume Source(s)										
NONE. Not Applicable.										

Instructions for Form MI3

This form is designed to provide the air quality modeler with information on the characteristics of each fugitive source located at the facility. This information may be used by the IDEQ to perform an air quality analysis or to review an air quality analysis submitted with the permit application or requested by the IDEQ.

Please fill in the same company name, facility name, facility ID number, and brief project description as on Form CS in the boxes provided. This is useful in case any pages of the application get separated.

Fugitive sources are typically modeled as either area or volume sources. Area sources are used to model fugitives from sources such as roads or parking lots, while volume sources are typically used to model fugitives from piles. Refer to the State of Idaho Air Quality Modeling Guideline for additional guidance on modeling fugitive sources.

1. Provide the name of the fugitive source. This name should match names used on other submittals to IDEQ and within this application.
2. Provide the identification number for the fugitive source.
3. Provide the UTM locations of the fugitive source. The UTM Easting and UTM Northing are the coordinates for the center of the fugitive source.
4. Provide the elevation of the base of the fugitive source. This elevation must be calculated by the same method as the buildings and receptor elevation.
5. Provide the height of the fugitive source, from the ground. This is used for an elevated release. If the fugitive source is at ground level enter zero.
6. Provide the easterly length of the fugitive source.
7. Provide the northly length of the fugitive source.
8. Provide the angle from north, in degrees. This allows for accurate evaluation of the alignment of the fugitive source.
9. Provide the initial vertical dimension of the fugitive source. Refer to the State of Idaho Modeling Guideline for guidance on estimating this value.
10. Provide the initial horizontal dimension of the fugitive source. This parameter is only used for volume sources. Refer to the State of Idaho Modeling Guideline for guidance on estimating this value.

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Please see instructions on page 2 before filling out the form.

Company Name:	McCain Foods
Facility Name:	McCain Foods
Facility ID No.:	031-00014
Brief Project Description:	Reconfigure Prime 2 Dryer and Fryer AND increase boiler natural gas bubble from 1100 MM scf/yr to 1650 MM scf/yr

BUILDING AND STRUCTURE INFORMATION

1.	2.	3.	4.	5.	6.	7.
Building ID Number	**Length (ft)**	**Width (ft)**	**Base Elevation (m)**	**Building Height (m)**	**Number of Tiers**	**Description/Comments**
REF ENCLOSED MODELING FILE	PLEASE SEE THE ENCLOSED AIR MODELING FILE FOR BUILDING INFORMATION USED FOR MODELING					
A TOTAL OF 48 BUILDINGS INCLUDED.						

Instructions for Form MI4

This form is designed to provide the air quality modeler with information on the buildings and structures located at the facility. This information may be used by the IDEQ to perform an air quality analysis or to review an air quality analysis submitted with the permit application or requested by the IDEQ.

Please fill in the same company name, facility name, facility ID number, and brief project description in the boxes provided. This is useful in case any pages of the application get separated.

1. Provide the building ID number.
2. Provide the length of the building.
3. Provide the width of the building.
4. Provide the base elevation of the building. This elevation must be calculated by the same method as the sources and receptor elevation.
5. Provide the height of the building, from the ground.
6. Provide the number of tiers on the building. Refer to the State of Idaho Modeling Guideline for guidance on this topic.
7. Provide a description of the building.