# Air Quality Permitting
# Statement of Basis

**May 25, 2007**

Tier II Operating Permit
No. T2-050420

ConAgra Foods Lamb Weston, Inc., Twin Falls
Facility ID No. 083-00062

Prepared by:

Michael Stambulis, P.E., Technical I Engineer
Technical Services

FINAL PERMIT

# Table of Contents

# Acronyms, Units, and Chemical Nomenclatures

| | |
|---|---|
| AIRS | Aerometric Information Retrieval System |
| AQCR | Air Quality Control Region |
| ConAgra | ConAgra Foods Lamb Weston, Inc. |
| CO | carbon monoxide |
| IDAPA | a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act |
| $NO_X$ | nitrogen oxides |
| $PM_{10}$ | particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers |
| Rules | Rules for the Control of Air Pollution in Idaho |
| $SO_2$ | sulfur dioxide |
| SIC | Standard Industrial Classification |
| Tier II | Tier II Operating Permit |
| UTM | Universal Transverse Mercator |
| VOC | volatile organic compound |

## 1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.400, *Rules for the Control of Air Pollution in Idaho,* for issuing Tier II operating permits (Tier II).

## 2. FACILITY DESCRIPTION

ConAgra Foods Lamb Weston, Inc. (ConAgra) processes raw potatoes into frozen, fried, hash brown, mashed, and special potato products for consumer sales.

## 3. FACILITY / AREA CLASSIFICATION

ConAgra is classified as a synthetic minor facility because ConAgra's potential to emit is limited to less than major source thresholds. The Aerometric Information Retrieval System (AIRS) facility classification is "SM."

The facility is located within AQCR 63 and UTM zone 11. The facility is located in Twin Falls County, which is designated as unclassifiable for all regulated pollutants ($PM_{10}$, CO, $NO_X$, $SO_2$, lead, and ozone).

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at ConAgra. This required information is entered into the EPA AIRS database.

## 4. APPLICATION SCOPE

The permittee submitted an application requesting a facility emissions cap for $PM_{10}$, $NO_x$, and $SO_2$ emissions and three other changes that affect the Tier II operating permit for ConAgra's Twin Falls facility. The requested changes are a revised fuel use and production limits, removal of Boiler No. 3, and modification of the Line 2 Fryer stack outlet. These changes are for an existing Tier II operating permit issued on March 8, 2005, and are further discussed in Section 6 of the Statement of Basis.

### *4.1 Application Chronology*

| | |
|---|---|
| August 16, 2005 | DEQ received a Tier II revision application submitted by ConAgra. |
| September 14, 2005 | DEQ issued letter declaring the application incomplete. |
| November 21, 2005 | DEQ received modeling analysis. |
| February 23, 2006 | DEQ received additional information in response to the incompleteness determination. |
| July 31, 2006 | DEQ and ConAgra entered into a consent order. |
| September 20, 2006 | DEQ issued a letter requesting additional information regarding emissions calculations. |
| October 2, 2006 | DEQ received additional information regarding emissions calculations. |
| October 13, 2006 | DEQ declared the application complete. |

## 5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this Tier II.

## 5.1 Equipment Listing

The permittee modified one piece of equipment for this project. The permittee raised the stack outlet of the Line 2 Fryer to 20 feet above the building roof, 55 feet above the base height. Emissions from the Line 2 Fryer have been controlled by a low efficiency wet scrubber. The current specifications for the Line 2 Fryer and the associated exhaust from the scrubber are listed below.

Manufacturer: Heat and Control Model: None
Maximum Throughput: 23.38 tons of finished potato products per hour
Stack Height: 50 feet Stack Exit Diameter: 3 feet
Exit Temperature: 150 ºF Stack Flowrate: 31,500 actual cubic feet per minute

## 5.2 Emissions Inventory

The permittee emits criteria pollutants and toxic air pollutants during operation of Boiler No. 1, Boiler No. 2, the biogas heater, the Lines 1, 2, 4, and specialty products fryers and dryers, two emergency generators, and other miscellaneous natural-gas fired heating equipment. A summary of potential criteria pollutant emissions is presented in Table 1.

**Table 1. Maximum Annual Emissions from Boiler No. 1, Boiler No. 2, Biogas Heater, and Other Natural Gas Fuel Burning Equipment**

| Pollutant | Annual Emissions – Fuel Burning (tons per year) | Annual Emissions – Potato Processing (tons per year) | Annual Emissions – Emergency Generators (tons per year) | Facility Wide Annual Emissions (tons per year) |
|---|---|---|---|---|
| Particulate matter | 11.6 | 83.3 | 0.060 | **95.0** |
| $PM_{10}$[a] | 8.8 | 83.3 | 0.060 | **92.2** |
| Carbon monoxide | 38.9 | 0 | 0.18 | **39.1** |
| Nitrogen oxides | 97.4 | 0 | 0.84 | **98.2** |
| Sulfur dioxide | 97.0 | 0 | 0.056 | **97.1** |
| Lead | 1.9E-04 | 0 | 0 | **1.9E-04** |
| Volatile Organic Compounds | 2.2 | 36.0 | 0.067 | **38.3** |

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

A detailed emission inventory is presented in Appendix B. The proposed facility emissions as presented in Table 1 do not represent an emissions increase from the current Tier II Operating Permit No. T2-040422, March 8, 2005.

## 5.3 Modeling

ConAgra submitted an American Meteorology Society/Environmental Protection Agency AERMOD modeling analysis on November 21, 2005. Modeling was conducted by LPG Associates, on behalf of ConAgra. DEQ reviewed and verified the modeling analysis and the complete modeling memorandum generated by DEQ staff is presented in Appendix C.

The ambient air impact analysis submitted by ConAgra, in combination with DEQ's verification analyses, demonstrated to DEQ's satisfaction that emissions from the facility, as represented by the applicant in the permit application, will not cause or significantly contribute to a violation of any air quality standard.

The results of DEQ's verification analyses are shown in Table 2. DEQ's results matched the projected ambient impacts presented by ConAgra.

**Table 2. Results of Full Impact Analysis**

| Pollutant | Averaging Period | Modeled Design Concentration[a] (μg/m$^3$ [b]) | Background Concentration (μg/m3) | Total Ambient Impact (μg/m3) | NAAQS[c] (μg/m3) | Percent of NAAQS |
|---|---|---|---|---|---|---|
| $PM_{10}$[d] | 24-hour | 90.3 (90.28) | 55 | 145.3 | 150 | 96.9% |
| | Annual | 22.6 (22.60) | 26 | 48.6 | 50 | 97.2% |

[a] Values in parentheses were obtained from DEQ verification modeling using AERMOD, Version 07026 and BPIP- PRIME.
[b] Micrograms per cubic meter.
[c] National ambient air quality standards.
[d] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

The modeling analysis used in DEQ's review incorporated the following requests, consistent with the permit application.

- Annual product throughput for all dryer and fryers was limited to 525,000 tons per year of finished product.
- Fuel throughput limits were revised for natural gas, biogas, vegetable oil, and distillate oil in boilers, biogas heater, various space heaters and burners, and emergency distillate fuel-fired generators.
- Allowable $PM_{10}$ emission limits were increased for dryers and fryers based on past performance test results and the requested throughput limit of 525,000 tons per year. The permittee did not request short term emission rate limits.
- An increased stack release height of 20 feet for the Line 2 Fryer was used.
- Boiler 3, which was removed from service in 2005 and should be removed from the Tier II permit, was not included in the modeling analysis.

Table 3 presents key assumptions and results that should be considered in the development of the permit.

**Table 3. Key Assumptions Used In Modeling Analyses**

| Criteria/Assumption/Result | Explanation/Consideration |
|---|---|
| The Line 2 fryer (model input name LINE2FRY) stack release height was increased to a height of 55 feet from base elevation, resulting in increased dispersion of emissions from this source. | $PM_{10}$[a] NAAQS[b] compliance relied in part on this increase in stack height. |
| Boiler 3 was removed from service in 2005. | Boiler 3 is not included in the ambient impact demonstration. |
| The two emergency electrical generators were each assumed to operate for 8.5 hours per day and 52 hours per year. | Daily operations remain the same as currently permitted. Annual allowable operating hours were reduced from 500 hours per year per generator to 52 hours per year per generator.<br>These limitations should be reflected in the permit because they are assumptions used in the $PM_{10}$ NAAQS compliance demonstration. |

[a] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
[b] National ambient air quality standards.

## *5.4 Regulatory Review*

This section describes the regulatory analysis of the applicable air quality rules with respect to this Tier II operating permit revision.

IDAPA 58.01.01.175 through 01.181 .....Procedures and Requirements for Permits Establishing a Facility Emissions Cap

The permittee requested a facility emissions cap for $PM_{10}$, $NO_x$, and $SO_2$ emissions. Therefore, the

requirements and procedures for establishing facility emissions caps are applicable to the permit.

IDAPA 58.01.01.401.01.d.....Tier II Operating Permits—Optional Tier II Operating Permits

The permittee requested this Tier II operating permit to establish potential to emit limitations to exempt the facility from Tier I permitting requirements.

IDAPA 58.01.01.404.04.....Procedure For Issuing Permits—Permit Revision or Renewal

This project involves revising fuel and production limits with no resulting increase in emissions. The project also involves removal of an emission unit and modification of one stack.

As the project shall does not result in an increase in allowable emissions, DEQ does not need to provide an opportunity for public comment.

## 5.5 Fee Review

In accordance with IDAPA 58.01.01.407.01, a permit processing fee of $10,000 is required because the Tier II operating permit is being issued to a synthetic minor stationary source with permitted emissions below a major threshold level.

**Table 4. Tier II Processing Fee Summary**

| Emissions Inventory | |
|---|---|
| **Pollutant** | **Permitted Emissions** |
| $PM_{10}$ | 92.2 |
| CO | 39.1 |
| $NO_X$ | 98.2 |
| $SO_2$ | 97.1 |
| VOC | 38.3 |
| TAPs/HAPs | 1.8 |
| Total | 366.7 |
| Fee Due | **$ 10,000.00** |

## 5.6 Regional Review of Draft Permit

The permit writer provided Twin Falls regional office a copy of the draft permit and SOB for regional review on Friday, April 20th. The regional office provided comments on the draft permit and SOB on Tuesday, April 24th. DEQ incorporated the comments and responded via email on Wednesday, April 25th.

## 5.7 Facility Review of Draft Permit

The permit writer provided the facility a copy of the draft permit and SOB for review on Thursday, April 26th. DEQ received the facility's comments on the draft permit and SOB on Wednesday, May 9th.

The facility provided four comments; three of which were descriptive clarifications. The one technical comment pertained to the $PM_{10}$ performance tests on the Line 4 fryer stack. The draft permit required the permittee to conduct annual performance tests to measure $PM_{10}$ emissions from the Line 4 fryer stack. DEQ required annual tests in the draft permit because previous performance tests results for the fryer varied widely.

The facility requested the frequency of the tests be linked to the results of the next performance test. The facility maintains the variability in the results was due in some part to scrubber performance. Prior to the most recently conducted test on the fryer (November 2004), the facility had the scrubber manufacturer perform maintenance on the scrubber, and the results from this test were substantially less than the results from a September 2004 test. The facility requested tiered approach to determine test frequency consistent with DEQ permits issued to other facilities. DEQ changed the permit frequency from annual performance tests to:

- If the $PM_{10}$ emissions rate measured in 2007 performance test is less than or equal to 75% of the emissions standard in Permit Condition 10, no further testing shall be required during the life of the permit.
- If the $PM_{10}$ emissions rate measured in 2007 performance test is greater than 75%, but less than or equal to 90% of the emissions standard in Permit Condition 10, a second test shall be required in the third year of the permit term.
- If the $PM_{10}$ emissions rate measured in 2007 performance test is greater than 90% of the emissions standard in Permit Condition 10, the permittee shall conduct a compliance test annually.

## 6. PERMIT CONDITIONS

DEQ has made the proposed changes to existing Tier II Operating Permit No. T2-040422, March 8, 2005, as described within this section.

**Section 3 – Line 1 Fryer, Line 2 Fryer, Line 4 Fryer, and Specialty Products Fryer**

Permit Condition 3.3 of Tier II Operating Permit No. T2-040422, March 8, 2005, established a throughput limit for each individual fryer line. The permittee requested an overall plant production limit rather than individual throughput limits on each fryer line. Therefore, Permit Condition 3.3 of the existing permit was replaced by proposed Permit Condition 3.4, which refers to the facility-wide finished potato product production limits established in Permit Conditions 9.7 and 9.8.

In conjunction with the revision discussed in the previous paragraph, the finished potato production monitoring and recording established in Permit Condition 3.10 was revised to require the permittee to monitor facility-wide finished potato product production rather than finished potato product production for each fryer line.

Permit Condition 3.9 of Tier II Operating Permit No. T2-040422, March 8, 2005, was removed from the proposed Tier II operating permit. This permit condition previously established the requirement to perform VOC performance tests on the Line 4 Fryer. The permittee satisfied the existing permit condition by conducting a VOC performance test to establish a VOC emission factor for the fryers. Based on the calculated emission factor and the facility-wide finished potato product production limit, DEQ asserts VOC emissions will be well below Tier I permitting requirements. Therefore, DEQ asserts further VOC performance tests are not required for the operating scenarios covered by this permit.

Permit Condition 3.9 of the proposed Tier II operating permit establishes $PM_{10}$ performance test requirements for the Line 4 fryer. The permittee indicated that based on internal studies the Line 4 fryer emits the most pollutants out of the four fryer lines. Therefore, the permittee is required to test the Line 4 fryer and use the results of the test to establish emissions for all fryer lines.

Permit Condition 3.9 was modified from its previous version, as follows.

- DEQ clarified that the $PM_{10}$ emission factor established by the performance test results must incorporate the current test and all previous DEQ-approved performance test results.
- The requirement to operate the fryer at “normal production rates” was modified to state the

permittee must operate the tested fryer at worst-case normal operating conditions during testing as required by IDAPA 58.01.01.157.

- The requirements for scrubber monitoring during the test were modified to include scrubber media flowrate in addition to pressure drop across the scrubber.

**Section 4 – Line 1 Dryer, Line 2 Dryer, Line 4 Dryer, and Specialty Products Dryer**

Permit Condition 4.3 of Tier II Operating Permit No. T2-040422, March 8, 2005, established a throughput limit for each individual dryer line. The permittee requested an overall plant production limit rather than individual throughput limits on each dryer line. Therefore, existing Permit Condition 4.3 was replaced by proposed Permit Condition 4.4, which refers to the facility-wide finished potato product production limits established in Permit Conditions 9.7 and 9.8.

In conjunction with the revision discussed in the previous paragraph, the finished potato product production monitoring and recording established in Permit Condition 4.7 was revised to require the permittee to monitor facility-wide finished potato product production rather than finished potato production for each dryer line.

Permit Condition 4.6 of the proposed Tier II operating permit establishes $PM_{10}$ performance test requirements for the dryers. The permittee indicated that based on internal studies the Line 4 dryer emits the most pollutants out of the four dryer lines. Therefore, the permittee is required to test the Line 4 dryer and use the results of the test to establish emissions for all dryer lines.

Permit Condition 4.6 was modified from its previous version, as follows.

- DEQ clarified that the $PM_{10}$ emission factor established by the performance test results must incorporate the current test and all previous DEQ-approved performance test results.
- The requirement to operate the dryer at "normal production rates" was modified to state the permittee must operate the tested dryer at worst-case normal operating conditions during the test as required by IDAPA 58.01.01.157.

**Section 5 – Boiler No. 1**

Permit Condition 5.5 of Tier II Operating Permit No. T2-040422, March 8, 2005, states, "The requirements of 40 CFR 60 Subparts A and Db shall not be in effect until the boiler is operated above 100 MMBtu/hr." The permittee currently operates the boiler above 100 MMBtu/hr; therefore, this permit condition was removed from the proposed Tier II operating permit, and the applicable requirements of Subpart Db are in the proposed permit.

**Section 6 – Boiler No. 2**

Section 6 of Tier II Operating Permit No. T2-040422, March 8, 2005, regulated Boiler No. 2 and Boiler No. 3. DEQ received a letter dated February 7, 2005, indicating the permittee removed Boiler No. 3 from operation at the Twin Falls facility. Therefore, all references to Boiler No. 3 were removed from the proposed Tier II operating permit.

**Section 7 – Emergency Diesel Generators**

Permit Conditions 8.1 and 8.2 of Tier II Operating Permit No. T2-040422, March 8, 2005, established emissions limits for the two emergency diesel generators at the facility. Based on the allowable hours of operation of the diesel generators, DEQ asserts the emissions limits are not necessary to ensure compliance with the Rules for Control of Air Pollution in Idaho; therefore, these permit conditions were removed from the proposed Tier II operating permit.

The allowable hours of operation of the two emergency diesel generators were revised as requested by the permittee.

**Section 8 – Biogas Heater**

Annual emissions limits are not established specifically for the biogas heater. The permittee requested facility-wide fuel use limitations on all fuel-burning equipment at the facility. The fuel use limitations were established for all fuel-burning equipment to limit annual emissions to less than 100 tons per year and subsequently exempt the facility from Tier I permitting requirements.

Permit Condition 10.5 was added to the proposed permit because the application used 147,000,000 standard cubic feet of biogas in the analysis of annual emissions.

Permit Condition 10.6 was added to the proposed permit to ensure the permittee monitored and recorded fuel use in the biogas heater. The fuel use limitation is the permitting mechanism utilized to ensure the permittee complies with the annual NOx and SO2 emissions limits and remains exempt from Tier I permitting requirements.

**Section 9 – Operating Conditions – Multiple Emissions Units**

Permit Conditions 9.1 through 9.8 were added to the proposed permit at the request of the permittee. These permit conditions were added to this section because they apply to multiple emissions units, but not to the entire facility.

Permit Condition 9.2 establishes facility-wide emissions limits for $PM_{10}$, $NO_x$, and $SO_2$. The permittee requested the emissions limits to avoid Tier I operating permitting requirements. Proposed Permit Condition 9.2 replaces the emissions limits established in Permit Conditions 5.3, 6.3, 7.2, 8.2, and 9.2 of Tier II Operating Permit No. T2-040422, March 8, 2005. The permittee previously demonstrated compliance with ambient emissions standards by modeling maximum hourly and annual emissions from all emissions units at the facility. Therefore, DEQ asserts hourly emissions limits are not required for the boilers, heaters and burners, biogas heater, and emergency generators. DEQ maintained hourly $PM_{10}$ emissions limits for the fryers and dryers because previous performance test results indicate a wide range of potential $PM_{10}$ emissions from these emissions units.

Permit Conditions 9.3 through 9.5 establish limits on the amount of natural gas, diesel fuel, and vegetable oil the permittee is allowed to burn at the facility. The permittee requested the limits to ensure criteria pollutant emissions remained less than the major source threshold of 100 tons per year. The natural gas limit applies to all natural-gas burning emissions units at the facility. The diesel fuel and vegetable oil limits apply to Boiler No. 1 and Boiler No. 2 as these are the only emissions units for which the permittee is allowed to burn diesel fuel and vegetable oil.

DEQ agreed to the fuel use limits based on the modeling analysis. The permittee performed the analysis with all fuel burning emissions units at the facility operating at maximum fuel throughput, using whatever fuel produced the highest hourly emissions, for 8,760 hours. The permittee performed the analysis for $PM_{10}$ emissions only because hourly emissions of other pollutants did not increase as a result of this permit revision.

Permit Condition 9.6 establishes the monitoring requirements to ensure compliance with the fuel burning limits established in Permit Conditions 9.3 through 9.5. The permittee is required to monitor and record the use of natural gas, diesel fuel, and vegetable oil on a monthly basis and total the use for every consecutive 12-month period.

Permit Conditions 9.1 through 9.6 of the proposed Tier II operating permit replace Permit Conditions

2.9 through 2.13 of the facility's current Tier II Operating Permit No. T2-040422, March 8, 2005.

**Removed Permit Conditions – Section 7 of Tier II Operating Permit No. T2-040422, March 8, 2005 – Heaters and Burners**

Section 7 of the facility's current Tier II Operating Permit No. Tw-040422, March 8, 2005, was removed from the proposed Tier II permit. DEQ asserts the permit conditions in Section 7 are incorporated into the facility-wide permit conditions in the proposed permit; therefore, a separate section was not necessary for the miscellaneous heaters and burners at the facility.

## 7. PUBLIC COMMENT

A public comment period is not required for revised Tier II operating permits in accordance with IDAPA 58.01.01.404.04 because there is no increase in emissions.

## 8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommends that ConAgra be issued a Tier II operating permit for establishing a facility emissions cap for $PM_{10}$, $NO_x$, and $SO_2$ emissions, revising fuel use and production limits, removing Boiler No. 3 from the permit, and modification of the Line 2 Fryer stack outlet. No public comment period is required and the project does not involve PSD requirements.

MS/mjs/slm Permit No. T2-050420

# Appendix A

## *AIRS Information*

## T2-050420

**AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM**

**Facility Name:** ConAgra Foods Lamb Weston, Inc.
**Facility Location:** Twin Falls
**AIRS Number:** 083-00062

| AIR PROGRAM POLLUTANT | SIP | PSD | NSPS (Part 60) | NESHAP (Part 61) | MACT (Part 63) | SM80 | TITLE V | AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment |
|---|---|---|---|---|---|---|---|---|
| **$SO_2$** | SM | | SM | | | Y | SM | U |
| **$NO_x$** | SM | | SM | | | Y | SM | U |
| **CO** | SM | | | | | | SM | U |
| **$PM_{10}$** | SM | | | | | Y | SM | U |
| **PT (Particulate)** | SM | | SM | | | Y | SM | |
| **VOC** | B | | | | | | | U |
| **THAP (Total HAPs)** | B | | | | | | | |
| | | | **APPLICABLE SUBPART** | | | | | |
| | | | Db | | | | | |

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)
[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, **or** each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

# Appendix B

## *Emissions Inventory*

## T2-050420

## Hourly Emissions

The permittee requested the authority to combust natural gas, diesel fuel, and vegetable oil in Boilers No. 1 and 2. DEQ evaluated hourly emissions from each boiler for each fuel. The maximum hourly emissions are summarized in Table B-1.

**Table B-1. Maximum Hourly Emissions – Boilers**

| **Boiler No. 1, heat input rating of 180 Million British thermal units per hour. Maximum combustion rates are 176,471 standard cubic feet per hour of natural gas; 1,314 gallons per hour of diesel fuel; and 1,385 gallons per hour of vegetable oil.** | | | |
|---|---|---|---|
| **Pollutant** | **Emission Factor** | **Hourly Emissions (pounds per hour)** | **Fuel and Emission Factor Source** |
| Particulate matter | 3.3 lbs/Mgal[a] | 4.34 | Diesel Fuel, AP-42[b], Tables 1.3-1, 1.3-2 and 1.3-5 |
| $PM_{10}$[c] | 2.3 lbs/Mgal | 3.02 | Diesel Fuel, AP-42, Tables 1.3-1, 1.3-2 and 1.3-5 |
| Carbon monoxide | 5 lbs/Mgal | 6.92 | Vegetable Oil, AP-42, Table 1.3-1 |
| Nitrogen oxides | 25 lbs/Mgal | 34.62 | Vegetable Oil, Facility Performance Test |
| Sulfur dioxide | 7.85 lbs/Mgal | 10.31 | Diesel Fuel, AP-42, Table 1.3-1 |
| Lead | 9 lbs/MMMMBtu[d] | 0.00162 | Diesel Fuel, AP-42, Table 1.3-10 |
| Volatile Organic Compounds | 5.50 lbs/MMscf[e] | 0.971 | Natural Gas, AP-42, Table 1.4-2 |
| **Boiler No. 2, heat input rating of 72 Million British thermal units per hour. Maximum combustion rates are 70,588 standard cubic feet per hour of natural gas; 526 gallons per hour of diesel fuel; and 554 gallons per hour of vegetable oil.** | | | |
| **Pollutant** | **Emission Factor** | **Hourly Emissions (pounds per hour)** | **Fuel and Emission Factor Source** |
| Particulate matter | 3.3 lbs/Mgal | 1.73 | Diesel Fuel, AP-42, Tables 1.3-1, 1.3-2 and 1.3-5 |
| $PM_{10}$ | 2.3 lbs/Mgal | 1.21 | Diesel Fuel, AP-42, Tables 1.3-1, 1.3-2 and 1.3-5 |
| Carbon monoxide | 84.0 lbs/MMscf | 5.93 | Natural Gas, AP-42, Table 1.4-1 |
| Nitrogen oxides | 25 lbs/Mgal | 13.85 | Vegetable Oil, Facility Performance Test |
| Sulfur dioxide | 7.10 lbs/Mgal | 3.73 | Diesel Fuel, AP-42, Table 1.3-1 |
| Lead | 9 lbs/MMMMBtu | 0.000648 | Diesel Fuel, AP-42, Table 1.3-10 |
| Volatile Organic Compounds | 5.50 lbs/MMscf | 0.388 | Natural Gas, AP-42, Table 1.4-2 |

[a] Pounds per thousand gallons.
[b] AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Source*.
[c] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
[d] Pounds per 1,000,000,000,000 British thermal units.
[e] Pounds per million standard cubic feet.

The permittee utilizes a biogas heater to combust a portion of the waste gas generated during facility operations. The maximum throughputs to the biogas heater are 20,200 standard cubic feet per hour of waste gas and 2,000 standard cubic feet per hour of natural gas. The maximum hourly emissions are presented in Table B-2.

**Table B-2. Maximum Hourly Emissions – Biogas Heater**

| **Pollutant** | **Emission Factor (lb/MMscf [a])** | **Hourly Emissions (pounds per hour)** | **Emission Factor Source** |
|---|---|---|---|
| Particulate matter | 7.60 | 0.17 | AP-42[b], Table 1.4-2 |
| $PM_{10}$[c] | 7.60 | 0.17 | AP-42, Table 1.4-2 |
| Carbon monoxide | 84.0 | 1.9 | AP-42, Table 1.4-1 |
| Nitrogen oxides | 100 | 2.2 | AP-42, Table 1.4-1 |
| Sulfur dioxide | 1,015 | 20.5 | Facility Performance Tests |
| Lead | 5.00E-04 | 1.1E-5 | AP-42, Table 1.4-2 |
| Volatile Organic Compounds | 5.50 | 0.12 | AP-42, Table 1.4-2 |

[a] Pounds per million standard cubic feet.
[b] AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Source*.
[c] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

The permittee utilizes other natural gas burning equipment at the facility. The permittee used emission factors used from Section 1.4 of AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Source*, to calculate maximum hourly emissions. The calculations are summarized in Table B-3.

**Table B-3. Maximum Hourly Emissions – Natural Gas Combustion Equipment**

| Pollutant | Emission Factor (lb/MMscf [a]) | Line 1 Dryer - Hourly Emissions (lbs/hr [b]) | Line 2 Dryer - Hourly Emissions (lbs/hr) | Line 4 Dryer - Hourly Emissions (lbs/hr) | Special Products Dryer - Hourly Emissions (lbs/hr) | Misc. Equip. - Hourly Emissions (lbs/hr) |
|---|---|---|---|---|---|---|
| Particulate matter | 7.60 | 1.34[c] | 1.32 [c] | 1.95 [d] | 0.23 [c] | 0.811 |
| $PM_{10}$ [e] | 7.60 | 1.34 [c] | 1.32 [c] | 1.95 [d] | 0.23 [c] | 0.811 |
| Carbon monoxide | 84.0 | 2.96 | 0.329 | 2.26 | 0.165 | 8.96 |
| Nitrogen oxides | 100 | 3.53 | 0.392 | 2.70 | 0.196 | 10.67 |
| Sulfur dioxide | 0.60 | 0.0212 | 0.00235 | 0.0162 | 0.00118 | 0.0640 |
| Lead | 5.00E-04 | 1.8E-05 | 2.0E-06 | 1.3E-05 | 9.8E-07 | 5.3E-05 |
| Volatile Organic Compounds | 5.50 | 0.194 | 0.0216 | 0.148 | 0.0108 | 0.587 |

[a] Pounds per million standard cubic feet.
[b] Pounds per hour.
[c] Emissions based on performance tests conducted by permittee on similar process.
[d] Emissions based on performance tests conducted by permittee.
[e] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

The permittee generates particulate matter and volatile organic compound emissions from operation of the fryers and dryers during potato processing. The permittee has conducted several performance tests to determine emissions from these operations. DEQ issued a letter on December 21, 2004, which summarized the performance test results available up to that date. Table B-4 summarizes the estimated maximum hourly emissions based on maximum throughput to the fryers and dryers and the emission factors established in DEQ's December 21, 2004, letter.

**Table B-4. Maximum Hourly Particulate Matter Emissions – Potato Processing**

| Emission Unit | Maximum Hourly Throughput (tons per hour) | Particulate Matter Emission Factor (pounds per ton produced) | Particulate Matter Hourly Emissions (pounds per hour) | Volatile Organic Compound Emission Factor (pounds per ton produced) | Volatile Organic Compound Hourly Emissions (pounds per hour) |
|---|---|---|---|---|---|
| Line 1 Dryer | 18.23 | 0.0735 | 1.34 | Not Applicable | Not Applicable |
| Line 1 Fryer | 18.23 | 0.244 | 4.45 | 0.137 | 2.50 |
| Line 2 Dryer | 17.93 | 0.0735 | 1.32 | Not Applicable | Not Applicable |
| Line 2 Fryer | 17.93 | 0.244 | 4.37 | 0.137 | 2.46 |
| Line 4 Dryer | 26.58 | 0.0735 | 1.95 | Not Applicable | Not Applicable |
| Line 4 Fryer | 26.58 | 0.244 | 6.49 | 0.137 | 3.64 |
| Specialty Products Dryer | 3.15 | 0.0735 | 0.23 | Not Applicable | Not Applicable |
| Specialty Products Fryer | 3.15 | 0.244 | 0.77 | 0.137 | 0.43 |

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

## Annual Emissions

The permittee submitted the following requested limits and formulas to determine annual fuel use in Boilers No. 1 and No. 2, the biogas heater, and the other natural gas combustion equipment at the facility.

- No more than 1,800,000,000 standard cubic feet per year of natural gas shall be burned when no diesel or vegetable oil is burned in the boilers.

- When diesel or vegetable oil is burned in the boilers, the annual limit for natural gas shall be reduced in accordance with the formula:

  *Allowable Natural Gas Burned (MMscf per consecutive 12-month period) = 1,800 MMscf – (gallons diesel fuel burned in 12-month period * 0.00024) – (gallons vegetable oil burned in 12-month period * 0.00025*

- No more than 5, 660,000 gallons per year of diesel shall be burned in the boilers when no vegetable oil is burned in the boilers.

- When vegetable oil is burned in the boilers, the annual limit for diesel fuel shall be reduced in accordance with the following formula:

  *Allowable Diesel Fuel Burned (gallons per consecutive 12-month period) = 5,660,000 gallons – (gallons vegetable oil burned in 12-month period * 1.04)*

The permittee also requested an annual plant production limit of 525,000 tons finished product per year.

Based on these limits and formulas, the information presented in Tables B-1 through B-4, and emissions calculations for the two emergency diesel generators at the facility, the maximum annual emissions shown in Table B-5 were calculated.

**Table B-5. Maximum Annual Emissions from Boiler No. 1, Boiler No. 2, Biogas Heater, and Natural Gas Fuel Burning Equipment**

| Pollutant | Annual Emissions – Fuel Burning (tons per year) | Annual Emissions – Potato Processing (tons per year) | Annual Emissions – Emergency Generators (tons per year) | Facility Wide Annual Emissions (tons per year) |
|---|---|---|---|---|
| Particulate matter | 11.6 | 83.3 | 0.060 | **95.0** |
| $PM_{10}$[a] | 8.8 | 83.3 | 0.060 | **92.2** |
| Carbon monoxide | 38.9 | 0 | 0.18 | **39.1** |
| Nitrogen oxides | 97.4 | 0 | 0.84 | **98.2** |
| Sulfur dioxide | 97.0 | 0 | 0.056 | **97.1** |
| Lead | 1.9E-04 | 0 | 0 | **1.9E-04** |
| Volatile Organic Compounds | 2.2 | 36.0 | 0.067 | **38.3** |

## Toxic Air Pollutants and Hazardous Air Pollutants

The permittee has the potential to emit toxic air pollutants (TAPs) and hazardous air pollutants (HAPs) during combustion of natural gas and diesel fuel at the facility.

The maximum hourly emissions while combusting natural gas were calculated assuming all natural gas burning equipment is operating concurrently at maximum capacity. The combustion rates are 176,471 standard cubic feet per hour (scfh) for Boiler No. 1, 70,588 scfh for Boiler No. 2, 22,200 scfh for the biogas heater, 35,294 scfh for Line 1 dryers, 3,922 scfh for Line 2 dryers, 26,961 scfh for Line 4 dryers, 1,961 scfh for specialty products dryers, and 106,667 scfh for miscellaneous natural gas burning equipment at the facility. Table B-6 summarizes the maximum potential hourly emissions while combusting natural gas. The emission factors listed in Table B-6 are from Tables 1.4-3 and 1.4-4 of AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Source*.

**Table B-6. Hourly Toxic and Hazardous Air Pollutant Emissions – Natural Gas Combustion**

| Pollutant | Emission Factor (pounds per MMscf[a]) | Hourly Emissions (pounds per hour) | Screening Level (pounds per hour) |
|---|---|---|---|
| 2-Methylnaphthalene[b, c] | 2.4E-05 | 1.1E-05 | Not Applicable |
| 3-Methylchloranthrene[b,c,d] | 1.8E-06 | 8.0E-07 | 2.5E-06 |
| 7,12-Dimethylbenz(a)anthracene[b, c] | 1.6E-05 | 7.1E-06 | Not Applicable |
| Acenaphthene[b, c] | 1.8E-06 | 8.0E-07 | Not Applicable |
| Acenaphthylene[b, c] | 1.8E-06 | 8.0E-07 | Not Applicable |
| Anthracene[b, c] | 2.4E-06 | 1.1E-06 | Not Applicable |
| Arsenic[b,d] | 2.0E-04 | **8.9E-05** | **1.5E-06** |
| Barium[e] | 4.4E-03 | 2.0E-03 | 3.3E-02 |
| Benzene[b,d] | 2.1E-03 | **9.3E-04** | **8.0E-04** |
| Benzo(g,h,i)pyrelene[b,c] | 1.2E-06 | 5.3E-07 | Not Applicable |
| Beryllium[b,d] | 1.2E-05 | 5.3E-06 | 2.8E-05 |

| Pollutant | Emission Factor (pounds per MMscf[a]) | Hourly Emissions (pounds per hour) | Screening Level (pounds per hour) |
|---|---|---|---|
| Cadmium[b,d] | 1.1E-03 | **4.9E-04** | **3.7E-06** |
| Chromium[b,e] | 1.4E-03 | 6.2E-04 | 3.3E-02 |
| Cobalt[b,e] | 8.4E-05 | 3.7E-05 | 3.3E-03 |
| Copper[e] | 8.5E-04 | 3.8E-04 | 1.3E-02 |
| Dichlorobenzene[b] | 1.2E-03 | 5.3E-04 | Not Applicable |
| Fluoranthene[b,c] | 3.0E-06 | 1.3E-06 | Not Applicable |
| Fluorene[b,c] | 2.8E-06 | 1.2E-06 | Not Applicable |
| Formaldehyde[b,d] | 7.5E-02 | **3.3E-02** | **5.1E-04** |
| Hexane[b,e] | 1.8E+00 | 8.0E-01 | 1.2E+01 |
| Manganese[b,e] | 3.8E-04 | 1.7E-04 | 6.7E-01 |
| Mercury[b,e] | 2.6E-04 | 1.2E-04 | 3E-03 |
| Molybdenum[e] | 1.1E-03 | 4.9E-04 | 3.33E-01 |
| Naphthalene[b,e] | 6.1E-04 | 2.7E-04 | 3.33 |
| Nickel[b,d] | 2.1E-03 | **9.3E-04** | **2.7E-05** |
| Pentane[e] | 2.6E+00 | 1.2E+00 | 1.18E+02 |
| Phenanthrene[b,c] | 1.7E-05 | 7.5E-06 | Not Applicable |
| Pyrene[b,c] | 5.0E-06 | 2.2E-06 | Not Applicable |
| Selenium[b,e] | 2.4E-05 | 1.1E-05 | 1.3E-02 |
| Toluene[b,e] | 3.4E-03 | 1.5E-03 | 2.5E+01 |
| Zinc[e] | 2.9E-02 | 1.3E-02 | 6.67E-01 |
| Benzo(a)pyrene[b,c,d] | 1.2E-06 | 5.3E-07 | 2.0E-06 |
| Benz(a)anthracene[b,c,d] | 1.8E-06 | 8.0E-07 | 2.0E-06 |
| Benzo(b)fluoranthene[b,c,d] | 1.8E-06 | 8.0E-07 | 2.0E-06 |
| Benzo(k)fluoranthene[b,c,d] | 1.8E-06 | 8.0E-07 | 2.0E-06 |
| Chrysene[b,c,d] | 1.8E-06 | 8.0E-07 | 2.0E-06 |
| Dibenzo(a,h)anthracene[b,c,d] | 1.2E-06 | 5.3E-07 | 2.0E-06 |
| Indeno(1,2,3-cd)pyrene[b,c,d] | 1.8E-06 | 8.0E-07 | 2.0E-06 |
| Total PAHs | 1.1E-05 | 5.1E-06 | **2.0E-06** |

[a] Pounds per million standard cubic feet combusted.
[b] Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.
[c] Hazardous Air Pollutant because it is Polycyclic Organic Matter. Polycyclic Organic Matter is a HAP as defined by Section 112(b) of the Clean Air Act.
[d] Toxic Air Pollutant – carcinogen as defined by IDAPA 58.01.01.586.
[e] Toxic Air Pollutant – non-carcinogen as defined by IDAPA 58.01.01.585.

The maximum hourly emissions while combusting diesel fuel were calculated assuming Boiler No. 1 and Boiler No. 2 are combusting diesel fuel concurrently at maximum capacity. The combustion rates are 1,314 gallons per hour (gph) for Boiler No. 1 and 526 gph for Boiler No. 2. Table B-7 summarizes the maximum potential hourly emissions while combusting diesel fuel. The emission factors listed in Table B-7 are from EPA's Factor Information Retrieval (FIRE) Data System, a database management system containing EPA's recommended emission estimation factors for criteria and hazardous air pollutants.

**Table B-7. Hourly Toxic and Hazardous Air Pollutant Emissions – Diesel Fuel Combustion**

| Pollutant | Emission Factor (pounds per MMscf[a]) | Hourly Emissions (pounds per hour) | Screening Level (pounds per hour) |
|---|---|---|---|
| Arsenic[b,d] | 4.0E-06[f] | **1.01E-03** | **1.5E-06** |
| Benzene[b,d] | 2.8E-03 | **5.1E-03** | **8.0E-04** |
| Beryllium[b,d] | 3.0E-06[f] | **7.56E-04** | **2.8E-05** |
| Cadmium[b,d] | 3.0E-06[f] | **7.56E-04** | **3.7E-06** |
| Chromium[b,e] | 3.0E-06[f] | 7.56E-04 | 3.3E-02 |
| Copper[e] | 6.0E-06[f] | 1.51E-03 | 1.3E-02 |
| Fluoranthene[b,c] | 3.2E-06 | 5.8E-06 | Not Applicable |
| Formaldehyde[b,d] | 6.1E-02 | **1.1E-01** | **5.1E-04** |
| Manganese[b,e] | 6.0E-06[f] | 1.51E-03 | 6.7E-01 |
| Mercury[b,e] | 3.0E-06[f] | 7.56E-04 | 3E-03 |
| Naphthalene[b,e] | 3.3E-04 | 6.1E-04 | 3.33 |
| Nickel[b,d] | 3.0E-06[f] | **7.56E-04** | **2.7E-05** |
| Selenium[b,e] | 1.5E-05[f] | 3.78E-03 | 1.3E-02 |

| Pollutant | Emission Factor (pounds per MMscf[a]) | Hourly Emissions (pounds per hour) | Screening Level (pounds per hour) |
|---|---|---|---|
| Zinc[e] | 4.0E-06 [f] | 1.01E-03 | 6.67E-01 |
| Benzo(a)pyrene[b,c,d] | 1.3E-06 | **2.5E-06** | **2.0E-06** |
| Benz(a)anthracene[b,c,d] | 9.4E-07 | 1.7E-06 | 2.0E-06 |
| Chrysene[b,c,d] | 1.4E-06 | **2.6E-06** | **2.0E-06** |
| Total Polycyclic Organic Matter | 3.3E-03 | **6.1E-03** | **2.0E-06** |

[a] Pounds per million standard cubic feet combusted.
[b] Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.
[c] Hazardous Air Pollutant because it is Polycyclic Organic Matter. Polycyclic Organic Matter is a HAP as defined by Section 112(b) of the Clean Air Act.
[d] Toxic Air Pollutant – carcinogen as defined by IDAPA 58.01.01.586.
[e] Toxic Air Pollutant – non-carcinogen as defined by IDAPA 58.01.01.585.
[f] Units of emission factor are pounds per million British thermal units heat input.

Annual HAP emissions were calculated based on the annual fuel throughputs presented in the application. Table B-8 summarizes potential annual HAP emissions.

**Table B-8. Potential Annual Hazardous Air Pollutant Emissions**

| Pollutant | Emissions (tons per year) |
|---|---|
| 2-Methylnaphthalene | 2.2E-05 |
| 3-Methylchloranthrene | 1.6E-06 |
| 7,12-Dimethylbenz(a)anthracene | 1.4E-05 |
| Acenaphthene | 1.6E-06 |
| Acenaphthylene | 1.6E-06 |
| Anthracene | 2.2E-06 |
| Benzo(g,h,i)pyrelene | 1.1E-06 |
| Chromium | 1.5E-03 |
| Cobalt | 7.6E-05 |
| Dichlorobenzene | 1.1E-03 |
| Fluoranthene | 9.6E-06 |
| Fluorene | 2.5E-06 |
| Hexane | 1.6E+00 |
| Manganese | 2.4E-03 |
| Mercury | 1.2E-03 |
| Naphthalene | 1.1E-03 |
| Phenanthrene | 1.5E-05 |
| Pyrene | 4.5E-06 |
| Selenium | 5.8E-03 |
| Toluene | 3.1E-03 |
| Arsenic | 1.6E-03 |
| Benzene | 8.2E-03 |
| Beryllium | 1.2E-03 |
| Cadmium | 1.4E-03 |
| Formaldehyde | 1.9E-01 |
| Nickel | 1.9E-03 |
| Benzo(a)pyrene | 4.1E-06 |
| Benz(a)anthracene | 3.1E-06 |
| Benzo(b)fluoranthene | 1.6E-06 |
| Benzo(k)fluoranthene | 1.6E-06 |
| Chrysene | 4.3E-06 |
| Dibenzo(a,h)anthracene | 1.1E-06 |
| Indeno(1,2,3-cd)pyrene | 1.6E-06 |
| **Total Potential Annual Hazardous Air Pollutant Emissions** | **1.8** |

# Appendix C

## *Modeling Review*

## T2-050420

**MEMORANDUM**

**DATE:** May 29, 2007

**TO:** Michael Stambulis, P.E., Plans and Specifications Discipline Lead, Technical Services

**FROM:** Darrin Mehr, Air Quality Analyst, Air Program

**PROJECT NUMBER:** T2-050420

**SUBJECT:** Modeling Review for ConAgra Foods Lamb Weston, Inc. Tier II Operating Permit Modification to Revise Emission and Production Limits in the Tier II Operating Permit for their facility in Twin Falls, Idaho.

---

## 1.0 Summary

ConAgra Foods Lamb Weston, Inc. (ConAgra), submitted a Tier II Operating Permit (Tier II) application for proposed revisions to the permit on August 6, 2005. The original modeling analysis based on ISC3-PRIME was replaced with an AERMOD (American Meteorology Society/Environmental Protection Agency) modeling analysis, which was received on November 21, 2005. Modeling was conducted by LPG Associates, on behalf of ConAgra.

The facility was issued Tier II Operating Permit No. T2-040422, on March 8, 2005.

This permit application requests the following:

- Annual product throughput for all dryer and fryers limited to 525,000 tons per year of finished product;
- Revised fuel throughput limits for natural gas, biogas, vegetable oil, and distillate oil in boilers, biogas heater, various space heaters and burners, and emergency distillate fuel-fired generators;
- An increase in allowable $PM_{10}$ emission limits on dryers and fryers based on past performance test results and the requested throughput of 525,000 tons per year. Short term emission rate limits were not requested in the application.
- The modeling used a increased stack release height of 20 feet for the Line 2 Fryer; and,
- Boiler 3 was been removed from service in 2005, and should be removed from the Tier II permit.

A technical review of the submitted air quality analyses was conducted by DEQ. The submitted modeling analyses in combination with DEQ's staff analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed that predicted pollutant concentrations from emissions associated with the facility, when appropriately combined with background concentrations, were below applicable air quality standards at all receptor locations. Table 1 presents key assumptions and results that should be considered in the development of the permit.

| Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES | |
|---|---|
| **Criteria/Assumption/Result** | **Explanation/Consideration** |
| The Line 2 fryer (model input name LINE2FRY) stack release height was increased to a height of 55 feet from base elevation to increase dispersion of emissions from this source. | $PM_{10}$ NAAQS compliance relied in part on this increase in stack height. |
| Boiler 3 was removed from service in 2005. | Boiler 3 is not included in the ambient impact demonstration. |
| The two emergency electrical generators were each assumed to operate for 8.5 hours per day and 52 hours per year. | Daily operations remain the same as currently permitted. Annual allowable operating hours were reduced from 500 hours per year per generator to 52 hours per year per generator.<br><br>These limitations should be reflected in the permit because they are assumptions used in the $PM_{10}$ NAAQS compliance demonstration. |
| $PM_{10}$ NAAQS compliance was demonstrated using emissions that corresponded to hourly production rates (based on finished product) of each line as follows:<br><br>Line 1—18.23 tons per hour (T/hr)<br>Line 2—17.94 T/hr<br>Line 4—26.58 T/hr<br>SP Line—3.15 T/hr<br>Total = 65.9 T/hr<br><br>Emissions from the lines were modeled for 24 hours per day, which equates to 1,581.6 tons per day.<br><br>Emissions were modeled for 365 days per year, which equates to 577,284 tons per year. | The permit should include a daily production limit of 1,581.6 tons per day or less because the modeled scenario was predicted to cause ambient impacts of 97% of the $PM_{10}$ 24-hr avg NAAQS.<br><br>The facility requested an annual production limit of 525,000 T/yr. This production limit is less than the 577,284 T/yr production rate that was reflected in the modeling demonstration. The modeling demonstration's predicted ambient impact was 97% of the annual $PM_{10}$ NAAQS, so a permitted production limit of 525,000 T/yr would comply with the annual $PM_{10}$ NAAQS. |

## 2.0 Background Information

### 2.1 *Applicable Air Quality Impact Limits and Modeling Requirements*

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance.

#### *2.1.1 Area Classification*

The ConAgra facility is located in Twin Falls County, designated as an attainment or unclassifiable area for sulfur dioxide ($SO_2$), nitrogen dioxide ($NO_2$), carbon monoxide (CO), lead (Pb), ozone ($O_3$), and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers ($PM_{10}$). There are no Class I areas within 10 kilometers of the facility.

#### *2.1.2 Significant and Full Impact Analyses*

If estimated maximum pollutant impacts to ambient air from the emissions sources at the facility exceed the significant contribution levels (SCLs) of IDAPA 58.01.01.006.90, then a full impact analysis is necessary to demonstrate compliance with IDAPA 58.01.01.203.02. A full impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions to DEQ-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting maximum pollutant concentrations in ambient air are then compared to the National Ambient Air Quality Standards (NAAQS) listed in Table 2. Table 2 also lists SCLs and specifies the modeled value that must be used for comparison to the NAAQS.

| Table 2. CRITERIA AIR POLLUTANTS APPLICABLE REGULATORY LIMITS | | | | |
|---|---|---|---|---|
| Pollutant | Averaging Period | Significant Contribution Levels[a] ($\mu g/m^3$)[b] | Regulatory Limit[c] ($\mu g/m^3$) | Modeled Value Used[d] |
| $PM_{10}$[e] | Annual | 1.0 | 50[f] | Maximum 1st highest[g] |
| | 24-hour | 5.0 | 150[h] | Maximum 6th highest[i] |
| Carbon monoxide (CO) | 8-hour | 500 | 10,000[j] | Maximum 2nd highest[g] |
| | 1-hour | 2,000 | 40,000[j] | Maximum 2nd highest[g] |
| Sulfur Dioxide ($SO_2$) | Annual | 1.0 | 80[f] | Maximum 1st highest[g] |
| | 24-hour | 5 | 365[j] | Maximum 2nd highest[g] |
| | 3-hour | 25 | 1,300[j] | Maximum 2nd highest[g] |
| Nitrogen Dioxide ($NO_2$) | Annual | 1.0 | 100[f] | Maximum 1st highest[g] |

[a] IDAPA 58.01.01.006.90
[b] Micrograms per cubic meter
[c] IDAPA 58.01.01.577 for criteria pollutants
[d] The maximum 1st highest modeled value is always used for significant impact analysis
[e] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[f] Never expected to be exceeded in any calendar year
[g] Concentration at any modeled receptor
[h] Never expected to be exceeded more than once in any calendar year
[i] Concentration at any modeled receptor when using five years of meteorological data
[j] Not to be exceeded more than once per year

### *2.1.3 TAPs Analyses*

There are no increases in TAPs emissions from the proposed modification. Therefore, per IDAPA 58.01.01.210, additional analyses are not required to demonstrate compliance with the toxic air pollutant (TAP) increments.

## 2.2 Background Concentrations

Ambient background concentrations were revised for all areas of Idaho by DEQ in March 2003[1]. Background concentrations in areas where no monitoring data are available were based on monitoring data from areas with similar population density, meteorology, and emissions sources. Background concentrations used in these analyses are listed in Table 3. Background concentrations for $PM_{10}$ were based on monitored values for the Twin Falls area.

| Table 3. BACKGROUND CONCENTRATIONS | | |
|---|---|---|
| Pollutant | Averaging Period | Background Concentration ($\mu g/m^3$)[a] |
| $PM_{10}$[b] | 24-hour | 55 |
| | Annual | 26 |

[a] Micrograms per cubic meter
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers

# 3.0 Modeling Impact Assessment

## 3.1 Modeling Methodology

Table 4 provides a summary of the modeling parameters used in the DEQ verification analyses.

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

| Table 4. MODELING PARAMETERS | | |
|---|---|---|
| **Parameter** | **Description/ Values** | **Documentation/Additional Description** |
| Model | AERMOD | AERMOD, Version 07026 (ConAgra's analysis used AERMOD, Version 04300, which was current on the date of submittal) |
| Meteorological data | 1999-2003 Surface Data<br>1999-2003 Upper Air Data | LPG Associates obtained surface meteorological data from National Climate Data Center for 1999-2003 for Joslin Field near Twin Falls, Idaho. Surface data was obtained in the TD-3505 format.<br><br>1999-2003 upper air meteorological data was obtained from the Radiosonde Data of North America archives for Boise, Idaho.<br><br>This data was processed in AERMET. DEQ did not re-run the raw data in AERMET. |
| Land Use (urban or rural) | Rural | Urban area surface heating was not used in this analysis based on the land use at the site. |
| Terrain | Considered | 3-dimensional receptor coordinates were utilized. Each receptor was assigned an elevation.<br><br>LPG Associates processed the receptor data in AERMAP to identify hill-heights. DEQ did not re-import the DEM files or re-run AERMAP. |
| Building downwash | Downwash algorithm | Building dimensions obtained from modeling files submitted, and BPIP-PRIME and AERMOD were used to evaluate downwash effects. |
| Receptor grid | Grid 1 | A 720 meter by 720 meter grid with 30-meter spacing centered on the main production building. All receptors were exterior to the ambient air boundary. |
| | Grid 2 | A 1980 meter by 1980 meter grid with 90-meter spacing centered on the main production building. |
| | Grid 3 | Additional discrete receptors were placed at a number of locations for sensitive receptors. |

### *3.1.1 Modeling protocol*

A protocol was not submitted by ConAgra to DEQ prior to submission of the ISCST3 and AERMOD modeling demonstrations.

Modeling was conducted using methods required by the *State of Idaho Air Quality Modeling Guideline*.

### *3.1.2 Model Selection*

AERMOD, Version 04300, was used by ConAgra to conduct the final ambient air impact analyses for this project.

### *3.1.3 Meteorological Data*

Twin Falls surface data and Boise upper air meteorological data were used for the ConAgra site in Twin Falls.

ConAgra split the area surrounding the Twin Falls ConAgra facility site into 2 sectors. Table 5 lists the albedo, surface roughness length, and Bowen ratio values used as input to AERMET, for processing the modeling analyses meteorological data. These coefficients are selected by ConAgra according to the EPA guidance in the AERMOD Implementation Guidance, dated September 27, 2005, and the AERMET User's Guide. At the time of this application's submittal, albedo and Bowen ratio coefficients selected that were appropriate for the facility's location, and the surface roughness length coefficients were selected for the land use surrounding the surface met monitoring site (Joslin Field).

All land surrounding Joslin Field was assumed to be cultivated land. Land surrounding the ConAgra facility was assumed to be urban for the sector encompassing 330 degrees to 125 degrees (where 0 degrees is due north), and cultivated land for the sector encompassing 125 degrees to 330 degrees. DEQ did not alter any of the AERMET coefficients or sector assumptions presented by ConAgra.

**Table 5. AERMET ALBEDO, BOWEN RATIO, AND SURFACE ROUGHNESS LENGTH COEFFICIENTS**

| Sector (degrees) | | Sector Use | Winter | | | Spring | | | Summer | | | Fall | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | End | | α[a] | β[b] | $z_0$[c] | α | β | $z_0$ | α | β | $z_0$ | α | β | $z_0$ |
| 330 | 125 | Facility-urban and Joslin Field - cultivated land | 0.35 | 2.0 | 0.01 | 0.14 | 2.0 | 0.03 | 0.14 | 4.0 | 0.20 | 0.18 | 4.0 | 0.05 |
| 125 | 330 | Facility and Joslin Field - cultivated land | 0.60 | 2.0 | 0.01 | 0.14 | 1.0 | 0.03 | 0.20 | 1.5 | 0.20 | 0.18 | 2.0 | 0.05 |

[a] Albedo (ConAgra facility)
[b] Bowen ratio (ConAgra facility)
[c] Surface roughness length (Joslin Field—Twin Falls Airport)

### 3.1.4 Terrain Effects

The modeling analyses submitted by Con Agra considered elevated terrain. The elevation was assigned to each receptor. Elevations of emission sources, buildings, and receptors were not regenerated from DEM files for DEQ's verification analyses.

### 3.1.5 Facility Layout

DEQ verified proper identification of the facility boundary and buildings on the site by comparing the modeling input to satellite images of the site obtained from the Google Earth internet site to confirm the facility layout.

### 3.1.6 Building Downwash

Plume downwash effects caused by structures present at the facility were accounted for in the modeling analyses. The Building Profile Input Program-PRIME (BPIP-PRIME) was used by the applicant to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emissions release parameters for AERMOD. AERMOD identified the effects of structure-induced downwash on predicted ambient impacts.

### 3.1.7 Ambient Air Boundary

Ambient air was determined to exist for all areas immediately exterior to all buildings. Public access is allowed onto the facility.

### 3.1.8 Receptor Network

The receptor grids used by ConAgra met the minimum recommendations specified in the *State of Idaho Air Quality Modeling Guideline*. DEQ verification analyses were conducted using the same receptor grid.

### 3.2 Emission Rates

Emissions rates used in the dispersion modeling analyses submitted by the applicant were reviewed against those in the permit application. The following approach was used for DEQ verification modeling:

- All modeled criteria air pollutant emissions rates were equal to or greater than the facility's emissions calculated in the PTC application or requested permit allowable emission rates.

Table 6 lists the $PM_{10}$ air pollutant emissions rates for sources included in the dispersion modeling analyses for short term and annual averaging periods, respectively. Daily emissions were modeled by ConAgra for 24 hours. Annual emissions were modeled over 8,760 hours per year.

Emissions of CO, $SO_2$, and $NO_x$ were not modeled for this permit application.

**Table 6. MODELED CRITERIA SHORT-TERM AND ANNUAL EMISSIONS RATES**

| Source ID | Description | $PM_{10}$[b] Emission Rates | |
|---|---|---|---|
| | | (lb/hr[a]) | (T/yr[c]) |
| BOILER1 | Combustion Engineering Boiler | 3.02 | 13.24 |
| BOILER2 | Murray-Trane Boiler | 1.21 | 5.29 |
| LINE1DR1 | Line 1 Dryer 1 | 0.34 | 1.47 |
| LINE1DR2 | Line 1 Dryer 2 | 0.34 | 1.47 |
| LINE1DR3 | Line 1 Dryer 3 | 0.34 | 1.47 |
| LINE1DR4 | Line 1 Dryer 4 | 0.34 | 1.47 |
| LINE1FRY | Line 1 Fryer | 4.45 | 19.49 |
| LINE2PDR | Line 2 Pre-Dryer | 0.19 | 0.82 |
| LINE2DR1 | Line 2 Dryer 1 | 0.19 | 0.82 |
| LINE2DR2 | Line 2 Dryer 2 | 0.19 | 0.82 |
| LINE2DR3 | Line 2 Dryer 3 | 0.19 | 0.82 |
| LINE2DR4 | Line 2 Dryer 4 | 0.19 | 0.82 |
| LINE2DR5 | Line 2 Dryer 5 | 0.19 | 0.82 |
| LINE2DR6 | Line 2 Dryer 6 | 0.19 | 0.82 |
| LINE2FRY | Line 2 Fryer | 4.38 | 19.17 |
| LINE4DR1 | Line 4 Dryer 1 | 0.39 | 1.71 |
| LINE4DR2 | Line 3 Dryer 2 | 0.39 | 1.71 |
| LINE4DR3 | Line 4 Dryer 3 | 0.39 | 1.71 |
| LINE4DR4 | Line 4 Dryer 4 | 0.39 | 1.71 |
| LINE4DR5 | Line 4 Dryer 5 | 0.39 | 1.71 |
| LINE4FRY | Line 4 Fryer | 6.49 | 28.41 |
| SPDRY | Special Products Dryer | 0.23 | 1.02 |
| SPFRY | Special Products Fryer | 0.77 | 3.37 |
| WASTEBLR | Biogas-fired Boiler (also referred to as a heater) | 0.17 | 0.74 |
| 230KDSL | 230 kilowatt Emergency Electrical Generator | 0.28 | 1.21 |
| 100KDSL | 100 kilowatt Emergency Electrical Generator | 0.13 | 0.57 |
| HEATERS | Aggregated heaters in main building | 0.82 | 3.59 |

[a] Pounds per hour
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[c] Tons per year

### 3. 3 Emission Release Parameters

Table 7 provides emissions release parameters, including stack height, stack diameter, exhaust temperature, and exhaust velocity for point sources. Table 8 provides the parameters used to model the aggregated heaters as an area source. Values used in the analyses appeared reasonable and within expected ranges. Additional documentation for the verification of these parameters was not required.

| Table 7. POINT SOURCE STACK PARAMETERS | | | | | |
|---|---|---|---|---|---|
| Release Point | Release Point Description | Stack Height (m)[a] | Modeled Stack Diameter (m) | Stack Gas Temp (K)[c] | Stack Gas Flow Velocity (m/sec)[d] |
| BOILER1 | Combustion Engineering Boiler | 14.02 | 6.004 | 588.7 | 11.48 |
| BOILER2 | Murray-Trane Boiler | 12.19 | 4.003 | 583.2 | 10.24 |
| LINE1DR1 | Line 1 Dryer 1 | 13.72 | 2.756 | 310.9 | 21.23 |
| LINE1DR2 | Line 1 Dryer 2 | 13.72 | 2.756 | 310.9 | 21.23 |
| LINE1DR3 | Line 1 Dryer 3 | 13.72 | 2.756 | 310.9 | 21.23 |
| LINE1DR4 | Line 1 Dryer 4 | 13.72 | 2.756 | 310.9 | 21.23 |
| LINE1FRY | Line 1 Fryer | 14.63 | 2.264 | 338.7 | 20.27 |
| LINE2PDR | Line 2 Pre-Dryer | 11.58 | 2.264 | 310.9 | 14.93 |
| LINE2DR1 | Line 2 Dryer 1 | 10.9 | 2.264 | 310.9 | 13.12 |
| LINE2DR2 | Line 2 Dryer 2 | 10.9 | 2.264 | 310.9 | 13.12 |
| LINE2DR3 | Line 2 Dryer 3 | 10.9 | 2.264 | 310.9 | 13.12 |
| LINE2DR4 | Line 2 Dryer 4 | 10.9 | 2.264 | 310.9 | 13.12 |
| LINE2DR5 | Line 2 Dryer 5 | 10.9 | 2.264 | 310.9 | 13.12 |
| LINE2DR6 | Line 2 Dryer 6 | 10.9 | 2.264 | 310.9 | 13.12 |
| LINE2FRY | Line 2 Fryer | 16.76 | 2.986 | 338.7 | 22.64 |
| LINE4DR1 | Line 4 Dryer 1 | 13.41 | 3.904 | 310.9 | 9.41 |
| LINE4DR2 | Line 3 Dryer 2 | 10.97 | 3.904 | 310.9 | 9.41 |
| LINE4DR3 | Line 4 Dryer 3 | 10.97 | 3.904 | 310.9 | 9.41 |
| LINE4DR4 | Line 4 Dryer 4 | 10.97 | 3.904 | 310.9 | 9.41 |
| LINE4DR5 | Line 4 Dryer 5 | 10.97 | 3.904 | 310.9 | 9.41 |
| LINE4FRY | Line 4 Fryer | 13.21 | 2.986 | 349.5 | 13.65 |
| SPDRY | Special Products Dryer | 11.58 | 2.592 | 366.5 | 7.75 |
| SPFRY | Special Products Fryer | 13.41 | 4.003 | 315.4 | 11.84 |
| WASTEBLR | Biogas-fired Boiler (also referred to as a heater) | 12.8 | 2.165 | 477.6 | 5.58 |
| 230KDSL | 230 kilowatt Emergency Electrical Generator | 2.13 | 0.499 | 794.3 | 61.32 |
| 100KDSL | 100 kilowatt Emergency Electrical Generator | 3.96 | 0.249 | 844.3 | 82.79 |

[a] Meters
[c] Kelvin
[d] Meters per second

| TABLE 8. AREA SOURCE RELEASE PARAMETERS | | | | | | |
|---|---|---|---|---|---|---|
| Release Point | Source Base Elevation (m[a]) | Release Height (m) | Easterly Length (m) | Northerly Length (m) | Angle From North (degree) | Vertical Dimension (m) |
| HEATERS[b] | 1142.6 | 9.45[c] | 152.4 | 106.68 | -2.0 | 0.0 |

[a] Meters
[b] Emissions from all plant heaters are aggregated into this single area source
[c] All roof elevations are 9.14 meters or lower

### 3.4 Results for Full Impact Analyses

A significant contribution analysis was not submitted for this application. ConAgra submitted a full impact analysis for this Tier II permitting project. DEQ re-ran the AERMOD modeling demonstration for $PM_{10}$ for all met years and both averaging periods.

DEQ's verification analyses are shown in Table 9. DEQ's results matched the ambient impacts presented by ConAgra.

| Table 9. RESULTS OF FULL IMPACT ANALYSES | | | | | | |
|---|---|---|---|---|---|---|
| Pollutant | Averaging Period | Modeled Design Concentration[a] ($\mu g/m^3$)[b] | Background Concentration ($\mu g/m^3$) | Total Ambient Impact[a] ($\mu g/m^3$) | NAAQS[c] ($\mu g/m^3$) | Percent of NAAQS |
| $PM_{10}$[d] | 24-hour | 90.3 (90.28) | 55 | 145.3 | 150 | 96.9% |
| | Annual | 22.6 (22.60) | 26 | 48.6 | 50 | 97.2% |

[a] Values in parentheses were obtained from DEQ verification modeling using AERMOD, Version 07026 and BPIP-PRIME.
[b] Micrograms per cubic meter
[c] National ambient air quality standards
[d] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

### 3.5 DEQ Sensitivity Analysis

DEQ conducted a sensitivity analysis to evaluate whether ConAgra's modeling demonstration adequately supported their request to remove production limitations on the individual processing lines and replace them with an annual facility-wide production limit of 525,000 tons per year of finished product and a daily production limit of 1,581.6 tons per day. The $PM_{10}$ emissions of the production lines and all other sources of $PM_{10}$ emissions at the facility produced ambient impacts that were predicted to cause ambient impacts equal to 97% of the 24-hour and annual $PM_{10}$ NAAQS under ConAgra's modeling scenario.

DEQ examined a scenario where Line 1 was entirely shut down and Lines 2 and 4 were assumed to increase production rates by 20% of their respective production capacities. Production Lines 2 and 4 cause slightly higher ambient impacts than Line 1. Therefore, this approach was expected to cause worst-case ambient impacts for this scenario. Emission rates for all other sources were not adjusted. Exhaust parameters were not adjusted for any sources. Table 10 contains the sensitivity analysis' modeled emission rates and the predicted ambient impacts are listed in Table 11.

The sensitivity analysis reflects production rates as follows:

- Line 1: 0 T/hr
- Line 2: 21.5 T/hr
- Line 4: 31.9 T/hr
- Specialty Line: 3.15 T/hr
- Total Facility Production Rate: 56.6 T/hr

At 24 hours per day and 365 days per year of operation, the facility-wide production rate for this scenario is 1,358 T/day, and 495,600 T/yr of finished product.

This scenario showed that production rate capacity for the individual lines is an important parameter for the NAAQS compliance demonstration. ConAgra indicates that the production rate limits proposed are the maximum capacities of each production line. The facility demonstrates compliance with the $PM_{10}$ 24-hour and annual NAAQS under their proposed scenario. However, the facility may exceed the 24-hour $PM_{10}$ NAAQS if the production rate is increased beyond 20% of the stated capacity for any two production lines out of Lines 1, 2, and 4, and the other remaining production line is operating at a nominal production rate and all other emission sources are operating at the levels established in the emissions inventory.

It is important to note that the 3rd highest predicted ambient impact drops off by approximately 10 $\mu g/m^3$,

24-hour average, from the 2nd highest value, for each modeled year of meteorological data. The relatively high predicted impact values do not occur for a significant number of days within the 5-year period.

The conclusion one can make from this sensitivity analysis is that if the production rates listed in the permit application present the maximum production rate that is achievable for each line, NAAQS compliance has been demonstrated. However, if the stated production rate or rates for one or more lines can be increased above the listed rates, then 24-hour $PM_{10}$ NAAQS compliance is not necessarily guaranteed.

**Table 10. SENSITIVITY ANALYSIS—MODELED CRITERIA SHORT-TERM AND ANNUAL EMISSIONS RATES**

| Source ID | Description | $PM_{10}$[a] Emission Rates | |
|---|---|---|---|
| | | (lb/hr[b]) | (T/yr[c]) |
| BOILER1 | Combustion Engineering Boiler | 3.02 | 13.24 |
| BOILER2 | Murray-Trane Boiler | 1.21 | 5.29 |
| LINE1DR1 | Line 1 Dryer 1 | 0.0 | 0.0 |
| LINE1DR2 | Line 1 Dryer 2 | 0.0 | 0.0 |
| LINE1DR3 | Line 1 Dryer 3 | 0.0 | 0.0 |
| LINE1DR4 | Line 1 Dryer 4 | 0.0 | 0.0 |
| LINE1FRY | Line 1 Fryer | 0.0 | 0.0 |
| LINE2PDR | Line 2 Pre-Dryer | 0.23 | 0.99 |
| LINE2DR1 | Line 2 Dryer 1 | 0.23 | 0.99 |
| LINE2DR2 | Line 2 Dryer 2 | 0.23 | 0.99 |
| LINE2DR3 | Line 2 Dryer 3 | 0.23 | 0.99 |
| LINE2DR4 | Line 2 Dryer 4 | 0.23 | 0.99 |
| LINE2DR5 | Line 2 Dryer 5 | 0.23 | 0.99 |
| LINE2DR6 | Line 2 Dryer 6 | 0.23 | 0.99 |
| LINE2FRY | Line 2 Fryer | 5.25 | 23.00 |
| LINE4DR1 | Line 4 Dryer 1 | 0.47 | 2.05 |
| LINE4DR2 | Line 3 Dryer 2 | 0.47 | 2.05 |
| LINE4DR3 | Line 4 Dryer 3 | 0.47 | 2.05 |
| LINE4DR4 | Line 4 Dryer 4 | 0.47 | 2.05 |
| LINE4DR5 | Line 4 Dryer 5 | 0.47 | 2.05 |
| LINE4FRY | Line 4 Fryer | 7.78 | 34.09 |
| SPDRY | Special Products Dryer | 0.23 | 1.02 |
| SPFRY | Special Products Fryer | 0.77 | 3.37 |
| WASTEBLR | Biogas-fired Boiler (also referred to as a heater) | 0.17 | 0.74 |
| 230KDSL | 230 kilowatt Emergency Electrical Generator | 0.28 | 1.21 |
| 100KDSL | 100 kilowatt Emergency Electrical Generator | 0.13 | 0.57 |
| HEATERS | Aggregated heaters in main building | 0.82 | 3.59 |

[a] Pounds per hour
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[c] Tons per year

| Table 11. RESULTS OF SENSITIVITY ANALYSES | | | | | | |
|---|---|---|---|---|---|---|
| Pollutant | Averaging Period | Modeled Design Concentration ($\mu g/m^3$)[a] | Background Concentration ($\mu g/m^3$) | Total Ambient Impact ($\mu g/m^3$) | NAAQS[b] ($\mu g/m^3$) | Percent of NAAQS |
| $PM_{10}$[c] | 24-hour | 95.9[d] | 55 | 150.9 | 150 | 100.6% |
| | Annual | 20.7 | 26 | 46.7 | 50 | 93.4% |

[a] Micrograms per cubic meter
[b] National ambient air quality standards
[c] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
[d] Highest 2nd high value for five individual years of meteorological data

## 4.0 Conclusions

The ambient air impact analysis submitted, in combination with DEQ's verification analyses, demonstrated to DEQ's satisfaction that emissions from the facility, as represented by the applicant in the permit application, will not cause or significantly contribute to a violation of any air quality standard.