



**Air Quality Permitting  
STATEMENT OF BASIS**

August 14, 2003

Permit to Construct No. P-030410

**WestFarm Foods  
Jerome, Idaho**

AIRS Facility No. 053-00006

Prepared by:

Harbi Elshafei  
Permit Writer

Air Quality Division

**FINAL PERMIT**

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## ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
CO	carbon monoxide
DEQ	Department of Environmental Quality
Btu	British thermal units
HAPs	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Available Control Technology
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
TAP	toxic air pollutants
T/yr	tons per year
VOC	volatile organic compound
WFF	WestFarm Foods

## 1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, *Rules for the Control of Air Pollution in Idaho (Rules)*, for issuing permits to construct (PTC).

## 2. PROJECT DESCRIPTION

On April 23, 2003, the DEQ received an application from WFF, located in Jerome, to modify the facility's March 22, 2002, PTC. The March 22, 2002 PTC was amended August 18, 2003 by changing the operating and monitoring requirements of fuel usage for the facility's boilers from annual to a consecutive 12-month period. WestFarm Foods now proposes to modify the permit by increasing the allowable PM and PM<sub>10</sub> emissions limits for the Carlisle Friesland dryer based on the results of a March 11, 2003 performance test. Supporting information includes the April 23, 2003 permit application and the technical memorandum developed for the March 22, 2002 PTC, Appendices A and B, respectively, of this document.

## 3. FACILITY DESCRIPTION

The WFF facility is located approximately one mile south of Jerome, Idaho, at 1703 South Buchanan Street. Currently WFF produces condensed nonfat milk and cream from whole milk.

Fresh milk is transported by truck from area dairies to the WFF facility. Milk is offloaded and stored at the facility for use as a feedstock for the milk condensing and drying operations. The fresh milk is separated into cream and nonfat milk. The cream is shipped in tank trucks to other food processing plants for further processing. The nonfat milk is either condensed and shipped in tank trucks to other food processing plants or (following completion of the planned expansion) dried in a natural gas fired dryer. Whey or other food products (such as potato starch or non-dairy coffee creamer) are dried in the dryer. Dried milk or whey will be transported from the dryer to storage bins, then bagged in 25 kilograms bags. In the future, additional bagging equipment may be installed to allow dried products to be packed in 2,000-pound totes.

Although the facility does not currently produce cheese, it has the capability for cheese manufacturing. Whey from the cheese manufacturing can be dried in the dryer described above. No new emission sources will be installed

The facility has two boilers that are used to produce steam, which, in turn, is utilized as a heat source in the milk condensing process.

## 4. SUMMARY OF EVENTS/PERMIT HISTORY

March 22, 2002	DEQ issued PTC No. 053-00006 for WFF.
February 10, 2003	WFF submitted an application to amend PTC No. 053-00006 to change the operating and monitoring requirements of fuel usage for the facility's boilers from annual to a consecutive 12-month period.
April 18 to May 19, 2003	Public comment period for proposed PTC No. P-020423. Note, the permit number changed at this time so DEQ can more accurately track permitting actions. The old permit number system (e.g. PTC No. 053-00006) was based on a facility's AIRS number. The new permit number (e.g. PTC No. P-020423) is based on a chronological project number system.
April 23, 2003	DEQ received the PM and PM <sub>10</sub> performance tests report for the Carlisle Friesland dryer required by PTC No. 053-00006. The tests were

conducted on March 11, 2003. The test results indicate emissions exceeded the permit allowables during the testing period.

April 23, 2003	WFF submitted an application to modify PTC No. 053-00006.
May 22, 2003	DEQ determined the modification application complete. The permit number assigned for the modification was PTC No. P-030410.
June 6, 2003	An opportunity for public comment period was provided for PTC No. 030410. No comments were received.
June 12, 2003	WFF requested to review draft PTC No. P-030410.
July 30, 2003	DEQ sent WFF an electronic copy of draft PTC No. P-030410 for review.
August 4, 2003	WFF submitted comments to DEQ on draft PTC No. P-030410.
August 18, 2003	DEQ issued amended PTC No. P-020423.
August 25, 2003	DEQ issued modified PTC No. P-030410.

## 5. TECHNICAL ANALYSIS

### *Process Description*

The emissions units existing at the facility are the Carlisle Friesland dryer, dry product conveyance system and powder bagging, Kewanee boiler, and the Cleaver Brooks boiler. A detailed process description for each of these existing emissions units is found in the PTC No. P-030410.

### *Equipment Listing*

#### a. Carlisle Friesland Dryer

Manufacturer	Carlisle Friesland Company
Model	G 002
Burner Manufacturer	Maxon Corporation
Burner Model	Model 5600 Crossfire Line Burner
Input Heat Capacity (million British thermal units [Btu]/hour)	23.5
Stack Height (feet)	151 (above floor of building)
Stack Diameter (inches)	91
Exit Gas Temperature (°F)	110 to 180
Maximum Condensed Product Throughput (pounds/hour)	34,000
Maximum Stack Flow Rate (standard cubic meters/hour)	190,000
Maximum Hours of Operation (hours/year)	8,760

b. Dry Product Conveyance System and Bagging Machine

Manufacturer	Colby Powder Systems
Stack Height (feet)	48 (above floor of building)
Stack Diameter (inches)	12
Exit Gas Temperature (°F)	68 to 150
Maximum Stack Flow Rate (standard cubic meters/hour)	4,770
Maximum Hours of Operation (hours/year)	8,760

c. Kewanee Boiler

Manufacturer	Kewanee
Model	H3S-750-KG02 Classic III
Heat Input Capacity (million Btu/hour)	31.383
Fuel	Natural Gas or No. 2 Fuel Oil
Stack Height (feet)	35
Stack Diameter (feet)	2
Exhaust Temperature (°F)	375
Exhaust Flow Rate (actual cubic feet per minute)	10,490

c. Cleaver Brooks Boiler

Manufacturer	Cleaver Brooks
Model	CBLE 200-800-150ST
Heat Input Capacity (million Btu/hour)	28.537
Fuel	Natural Gas or No. 2 Fuel Oil
Stack Height (feet)	35
Stack Diameter (feet)	2
Exhaust Temperature (°F)	365
Exhaust Flow Rate (actual cubic feet per minute)	9,424

***Emission Estimates***

The WFF's PTC No. 053-00006 issued on March 22, 2002, established the following hourly and annual emission limits for the Carlisle Friesland dryer:

PM: 4.2 pounds per hour (lb/hr) and 18.3 tons per year (T/yr)  
PM<sub>10</sub>: 1.9 lb/hr and 8.2 T/yr

On March 11, 2003, WFF conducted performance tests to measure the PM and PM<sub>10</sub> emissions from the Carlisle Friesland dryer stack as required by PTC No. 053-00006 issued on March 22, 2002. The performance tests report was received by DEQ on March 23, 2003. Based on the performance tests report, the PM and PM<sub>10</sub> emission rates are as follows:

PM: 4.6 lb/hr and 20.2 T/yr  
PM<sub>10</sub>: 4.15 lb/hr and 18.2 T/yr

The measured dryer PM and PM<sub>10</sub> emission rates were greater than those allowed by PTC No. 053-00006. As a result, WFF requested (on April 23, 2003) to modify the hourly and annual PM and PM<sub>10</sub> emission limits based on source tests results. The requested hourly and annual PM and PM<sub>10</sub> emissions from the Carlisle Friesland dryer are the following:

PM: 5.8 lb/hr and 25.3 T/yr  
PM<sub>10</sub>: 5.2 lb/hr and 22.8 T/yr

The requested hourly PM and PM<sub>10</sub> emission limits are 25% higher than those measured during the performance tests to account for operating fluctuations.

The requested annual PM and PM<sub>10</sub> emission rates were obtained based on the dryer's operation of 8,760 hours per year. An example of PM<sub>10</sub> annual emission rate calculations is as follows:

$$5.2 \text{ lbs/hr} \times 8,760 \text{ hrs/yr} \times 1/2,000 \text{ ton/lbs} = 22.8 \text{ T/yr}$$

The PM and PM<sub>10</sub> emissions submitted with WFF's application were checked for accuracy by Mike Stambulis, P.E., Staff Engineer, in DEQ's Division of Technical Services. The Technical Service's engineering memorandum for the dryer's emissions estimates is provided in Appendix C of this document. The PM and PM<sub>10</sub> source test emission results and the requested limits provided the basis for the emissions limits that are incorporated in the modified PTC. They also provided the basis for the NAAQS analysis – see Appendix D of this document.

It should be noted that the increase in the annual emissions of PM and PM<sub>10</sub> from the Carlisle Friesland dryer did not result in triggering a major source classification for the facility. The PM emissions were increased from the previously permitted 18.3 T/yr to 25.3 T/y. The PM<sub>10</sub> emissions were increased from the previously permitted 8.2 T/yr to 22.8 T/yr. Therefore, the total PM and PM<sub>10</sub> emissions from all emissions units at the facility are 33.10 T/yr and 30.60 T/yr, respectively – see Table 6.1 (summary of emission limits) in PTC No. P-030410. Each pollutant is emitted in amount below the major source thresholds (100 T/yr and 250 T/yr).

All other emissions limits and estimates of pollutants from other sources at the facility are the same as in PTC No. P-020423, issued on August 18, 2003, and are not discussed again here. Please refer to Appendix B of this document which has the technical memorandum for the previous PTC No. 053-00006, issued on March 22, 2002, and contains all emission estimates for this facility.

### ***Modeling***

A modeling analysis using the EPA's ISCST3 model was provided by Millennium Science & Engineering, Inc., WFF's consultant. Kevin Schilling of the Division of the Technical Services reviewed the modeling analysis. The modeling determined that the facility's emissions meet the ambient PM<sub>10</sub> standard.

Toxic air pollutant (TAP) emissions from the facility were not modeled for this project because the TAP emissions were previously addressed in the PTC issued on March 22, 2002 (PTC No. 053-00006). There are no TAP emissions identified for this project.

For details, refer to the modeling review memorandum that is included in Appendix D of this document.

### ***Facility Classification***

WestFarm Foods, Jerome, is not a major facility as defined in IDAPA 58.01.01.006.55, nor is it a designated facility as defined in IDAPA 58.01.01.006.27. The primary SIC code for the Jerome facility is 2023, a condensed and evaporated milk production facility. The facility also produces cheese as a secondary product. The SIC for natural cheese production is 2022. The AIRS facility classification is SM (potential uncontrolled emissions are greater than 100 T/yr but permitted potential emissions are less than 100 T/yr). The facility is not subject to PSD requirements because its potential to emit is less than all applicable PSD major source thresholds.

### ***Area Classification***

The WFF plant is located at 1703 S. Buchanan St., Jerome, Idaho. Jerome is located within AQCR 63 and UTM Zone 11. The area is designated unclassifiable for all regulated criteria air pollutants.

## 6. PERMIT REQUIREMENTS

Most of the permit requirements are the same as in the previous permits (PTC Nos. 053-00006 and P-020423) and are addressed in the March 6, 2002, technical analysis (Appendix B). This section addresses only the PTC requirements that were not included in those PTCs.

### ***Regulatory Review***

#### PM and PM<sub>10</sub> Emission Limits (Permit Condition 2.3)

The PM and PM<sub>10</sub> emissions limits established by this permitting action are based on the results of a source test conducted on March 11, 2003 as required by PTC No. 053-00006. The PM and PM<sub>10</sub> measured during the source test exceeded those allowed by the existing permit. The PM and PM<sub>10</sub> emissions measured during the source test were 4.6 lb/hr and 4.15 lb/hr, respectively. The allowable PM and PM<sub>10</sub> emissions were 4.2 lb/hr and 1.9 lb/hr, respectively. In order to account for operational fluctuations, WFF requested that DEQ increase the measured PM and PM<sub>10</sub> emissions by 25%. To determine if the increase plus an additional 25% could be allowed, the source test results multiplied by 1.25 were modeled to assess NAAQS compliance. The modeling results (see Appendix D) show the increase in emissions will not cause or significantly contribute to a violation of the PM<sub>10</sub> NAAQS. Consequently, the increase was granted. The new PM and PM<sub>10</sub> emissions limits are 5.8 lb/hr and 5.2 lb/hr, respectively. Assuming the dryer operates continuously, and PM and PM<sub>10</sub> emissions would be 25.3 and 22.8 T/yr, respectively.

#### Compliance Demonstration (Permit Conditions 2.6, 2.7, 2.8, and 2.9)

An additional source test is not required as a result of this modification due to the recent date of the last source test and the fact that the additional 25% increase in emissions doesn't violate any ambient air quality standard. What is required to demonstrate compliance with the emissions rate limits is operate the dryer baghouse within the baghouse manufacturers' operating range, and to monitor and record the pressure drop once per day. So long as the permittee maintains the baghouse in good working order, maintains its pressure drop within the recommended pressure drop operating range, and monitors the pressure drop daily to assure the pressure drop is in range, it can be reasonably assured that emissions are equal to or less than those allowed by the permit.

#### IDAPA 58.01.01.577 (Ambient Air Quality Standards for Specific Pollutants)

The permittee has demonstrated compliance with the PM<sub>10</sub> NAAQS through modeling. Please refer to the modeling memorandum in Appendix D of this document.

#### Notification (Permit Conditions 4.12 and 5.12 of PTC No. 053-00006, issued on August 18, 2003, were removed)

The WFF satisfied the NSPS notification requirement for the Kewanee boiler on August 30, 2001, and the Cleaver Brooks boiler on April 29, 2002 (see DEQ source file).

## 7. AIRS INFORMATION

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

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

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

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

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- 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 are below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

## 8. FEES

A PTC processing fee is required as per IDAPA 58.01.01.225. The requested increase in PM<sub>10</sub> emissions from the dryer is 14.6 T/yr (22.8 T/yr in PTC No. P-030410 – 8.2 T/yr from PTC No. 053-00006 and PTC No. 020423). Thus, the emissions increase is between 10 and 100 T/yr. Therefore, a PTC processing fee of \$5,000 is required.

The WFF Jerome facility is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration fees are not applicable in accordance with IDAPA 58.01.01.387.

The fee assessment spreadsheet is in Appendix E of this memo.

## 9. RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, staff recommends that DEQ issue modified PTC No. P-030410 to WFF for their Jerome facility. An opportunity for public comment on the air quality aspects of the proposed revised permit to construct was provided in accordance with IDAPA 58.01.01.209.01.c.

**APPENDIX A**

**WestFarm Foods, Jerome**

**Project No. P-030410**

**Permit Application**

P-030910



Millennium Science & Engineering, Inc.

1605 North 13<sup>th</sup> Street  
Boise, Idaho 83702  
Phone: (208) 345-8292  
Fax: (208) 344-8007

April 22, 2003

RECEIVED

APR 23 2003

Department of Environmental Quality  
State Air Program

Mr. Bill Rogers  
Regional Permit Program Coordinator  
Idaho Department of Environmental Quality  
1410 N. Hilton  
Boise, ID 83706-1255

RE: Request to Amend Permit to Construct No. 053-00006, WestFarm Foods, 1703 South Buchanan Street, Jerome, Idaho

Dear Mr. Rogers:

A performance test of the Carlisle Friesland Dryer was performed on March 11, 2003 at the WestFarm Foods facility referenced above. The results of this performance test are enclosed with this letter. Actual emissions of total particulate matter (PM) and particulate matter with aerodynamic diameter less than or equal to 10 microns (PM10) were measured at the Carlisle Friesland Dryer stack. The measured PM and PM10 emission rates were greater than those reported by the manufacturer, which were relied upon in the facility's July 6, 2001 application for a permit to construct. The following table summarizes the Carlisle Friesland Dryer emissions of PM and PM10 as permitted, emissions measured during the source test, and projected emissions at 125% of the throughput during the performance test. This includes a 20% increase allowed as General Permit Provision No. 6 and a 5% safety factor to account for possible non-linearity in the relationship between throughput and emission rates.

Emissions Scenario	PM (Ton/yr)	PM10 (Ton/yr)
Permitted	18.3	8.2
Performance Test at 28,364 pounds per hour	20.2	18.2
Projected at 125% of source test	25.3	22.8

The facility requests an amendment to their existing Permit to Construct (PTC) No. 053-00006 to allow the following emissions from the Carlisle Friesland Dryer:

PM emission limits:

- 5.8 lb/hr = 125% of performance test at 28,364 lb/hr.
- 25.3 ton/yr. = 125% of performance test at 28,364 lb/hr.

PM10 emission limits:

- 5.2 lb/hr = 125% of performance test at 28,364 lb/hr.
- 22.8 ton/yr = 125% of performance test at 28,364 lb/hr.

Air dispersion modeling was performed and the facility classification was evaluated to determine if the proposed amendments to the existing PTC would result in violation of State of Idaho air quality rules (IDAPA 58.01.01). This evaluation is summarized below.

### **AMBIENT AIR QUALITY ASSESSMENT**

Air dispersion modeling was performed to verify that increased PM10 emissions from the dryer would not cause an exceedance of the National Ambient Air Quality Standards (NAAQS). The modeling was performed utilizing the same input parameters used for the original permit application with the exception of PM10 emissions from the Carlisle Friesland Dryer. The following is a summary of the general modeling approach, the important model input parameters, and the results from the assessment. Complete input and output data for the model is included in the enclosed CD-ROM.

### **Selected Model**

Air dispersion modeling was performed using the short term dispersion model Industrial Source Complex 3 (ISCST3) (version 00101). ISCST3 is an EPA preferred refined model listed in Appendix W of 40 CFR Ch. I, Part 51 – Guideline on Air Quality Models.

### **Building Downwash**

Building downwash was accounted for in the ISCST3 model. Building dimensions were entered into the Building Parameter Input Program (BPIP) to calculate appropriate building profiles to import into ISCST3. The scaled site plan attached to this letter includes building and stack elevations.

### **Emission Sources**

Four point sources were modeled at the site. Point sources include two boilers that can combust diesel fuel or natural gas, the Carlisle Friesland Dryer (a food product dryer) exhaust, and a bagging machine dust collector/vacuum pump exhaust. No fugitive emissions were modeled in this analysis.

### **Emission Source Configuration/Operational Parameters**

The following table summarizes many of the variables included in the ambient air assessment.

Emission Source Configuration and Operational Parameters	Carlisle Friesland Dryer	Dust Collector/Vacuum Pump Exhaust	Kewanee Boiler	Cleaver Brooks Boiler
Stack Elevation, ft	151	48	35	35
Stack Orientation	vertical	vertical	vertical	vertical
Stack Diameter, in	91	12	30	24
Exhaust Flow Rate, CFM	111,829	3,900	10,490	9,424
Exhaust Velocity, m/s	12.706	19.82	10.859	15.243
Min Exhaust Temperature, deg F	110	68	375	365
Max Exhaust Temperature, deg F	180	68	375	390

**Emission Rates**

Estimated PM10 emissions from each emission unit were included as inputs to the model. Only PM10 emissions were modeled for this evaluation since the modeling of other criteria and toxic air pollutants performed for the facility's July 6, 2001 permit application remains valid. The following table summarizes the PM10 emission rates modeled for this permit amendment request. The PM10 emission rate modeled for the Carlisle Friesland Dryer emission unit is 125% of the emission rate measured during the performance test. This factor includes a 20% increase allowed as General Permit Provision No. 6 and a 5% safety factor to account for possible non-linearity in the relationship between throughput and emission rates.

Emission Unit	Existing Permit	Proposed Amendment
	PM10 Emission Rate (g/s)	
Carlisle Friesland Dryer	0.2356	0.6536
Dry Product Conveyance System/ Powder Bagging	0.0563	Same as Permit
Kewanee Boiler	0.0791	Same as Permit
Cleaver Brooks Boiler	0.0863	Same as Permit

**Meteorological Data**

Meteorological data was obtained from the EPA SCRAM website for the time period of 1987 through 1991, which is the current default time period selected by the DEQ to represent the worse case five year meteorological period. Since there is no acceptable meteorological data available for the Jerome area, a combined data set comprised of Boise upper air data and Pocatello surface data was prepared per guidance from DEQ. The datasets were formatted for use in ISCST3 using the EPA meteorological preprocessor PCRAMMET.

**Ambient Impacts Assessment Results**

The following table summarizes the results of the ambient impact assessment of PM10 performed for this PTC amendment request.

Averaging Period	Existing Permit		Proposed Amendment	
	24-hr, 2 <sup>nd</sup> high	Annual, 1 <sup>st</sup> high	24-hr, 2 <sup>nd</sup> high	Annual, 1 <sup>st</sup> high
Max. Modeled Ambient Concentration	22.25 <sup>(a)</sup>	3.20	22.27	3.47
Background Concentration <sup>(b)</sup>	54	24.1	54	24.1
Modeled + Background Concentration	76	27	76	27
Ambient Air Quality Standards	150	50	150	50
Meteorological Dataset	1990	1988	1990	1988

Notes:

- (a) Due to a typographical error in the facility's July 6, 2001 permit application, the model predicted ambient air concentration for PM10 (24-hr average, 2<sup>nd</sup> high) was incorrectly reported as 22.85 µg/m<sup>3</sup>.
  - (b) Background concentrations provided by Mary Anderson of the DEQ by e-mail on June 25, 2001.
- NA: Not Applicable  
 All units are reported in µg/m<sup>3</sup>.

The NAAQS for PM10 were not exceeded by the model predicted ambient air concentration plus background concentration for either the 24-hour or annual averaging periods. Based on this ambient impact assessment for PM10, the emission units can operate at the design capacity without any controls required.

**FACILITY CLASSIFICATION**

The maximum total emissions of particulate matter from the four emission units at the facility are 31.8 tons PM per year and 29.1 ton PM10 per year (at the maximum throughput of 34,000 pounds per year of condensed product). The facility is not considered to be major for PM or PM10 because maximum emissions of either pollutant are less than 100 tons per year.

To summarize, the proposed amendments to the existing PTC will not result in reclassification of the facility as major and will not result in an exceedance of the NAAQS for PM10.

**PERMIT MODIFICATION REQUEST**

On behalf of our client, Westfarm Foods, we request that Air Quality Permit to Construct No. 053-00006 be modified as follows:

The pound per hour and ton per year emission limits for the Carlisle Friesland Drier included in the Appendix should be changed to:

PM emission limits:

- 5.8 lb/hr
- 25.3 ton/yr

PM10 emission limits:

- 5.2 lb/hr
- 22.8 ton/yr

No other changes are requested.

A certification signed by a responsible official of Westfarm Foods is enclosed with this request.

WestFarm Foods has received your letter of April 9, 2003 regarding other proposed changes to their PTC. Their review of this letter and the proposed permit is still underway. Written comments will be submitted under separate cover prior to the May 19, 2003 deadline.

We appreciate your assistance with this matter. Please feel free to contact Mr. Joseph Muller at (206) 286-6772 or the undersigned at (208) 345-8292 if you have any questions.

Sincerely,



Christopher Lammer, P.E.  
Senior Engineer

cc: Joseph Muller – WestFarm Foods  
Kris Kostelecky – WestFarm Foods  
Mr. Steve VanZandt - Idaho Department of Environmental Quality  
601 Pole Line Road, Suite 2  
Twin Falls, Idaho 83301-3035

Attachments:

Certification Letter  
\$1000 Check for Application Fee  
Performance Test Report  
Site Plan

**APPENDIX B**

**WestFarm Foods, Jerome**

**Project No. P-030410**

**March 6, 2002, Technical Memorandum**



**Air Quality Permitting**  
**Technical Memorandum**

**Permit To Construct No. 053-00006**

**WESTFARMS FOODS**  
**JEROME, IDAHO**

**Prepared By:**

**Stephen Coe**  
**Associate Air Quality Engineer**

**Project No: P-990043**

**Date Prepared:**

**March 6, 2002**

**Permit Status:**

**FINAL**

## Equipment List

a. Carlisle Friesland Dryer

Manufacturer	Carlisle Friesland Company
Model	G 002
Burner Manufacturer	Maxon Corporation
Burner Model	Model 5600 Crossfire Line Burner
Input Heat Capacity (million Btu/hour)	23.5
Stack Height (feet)	151 (above floor of building)
Stack Diameter (inch)	91
Exit Gas Temperature (°F)	110°F to 180°F
Maximum Condensed Product Throughput (pounds/hour)	34,000
Maximum Stack Flow Rate (standard cubic meter/hour)	190,000
Maximum Hours of Operation (hours/year)	8,760

b. Dry Product Conveyance System and Bagging Machine

Manufacturer	Colby Powder Systems
Stack Height (ft)	48 (above floor of building)
Stack Diameter (inch)	12
Exit Gas Temperature (°F)	68°F to 150°F
Maximum Stack Flow Rate (standard cubic meter/hour)	4,770
Maximum Hours of Operation (hours/year)	8,760

c. Kewanee Boiler

Manufacturer	Kewanee
Model	H3S-750-KG02 Classic III
Heat Input Capacity (million Btu/hour)	31.383
Fuel	Natural Gas or No. 2 Fuel Oil
Stack Height (feet)	35
Stack Diameter (feet)	2
Exhaust Temperature (°F)	375
Exhaust Flow Rate (actual cubic feet per minute)	10,490

c. Cleaver Brooks Boiler

Manufacturer	Cleaver Brooks
Model	CBLE 200-800-150ST
Heat Input Capacity (million BTU/hour)	28.537
Fuel	Natural Gas or No. 2 Fuel Oil
Stack Height (feet)	35
Stack Diameter (feet)	2
Exhaust Temperature (°F)	365
Exhaust Flow Rate (actual cubic feet per minute)	9,424

### Carlisle Friesland Food Product Dryer

Particulate Matter (PM) emission rates for the Carlisle Friesland Dryer were calculated based on information provided by the manufacturer, Carlisle Friesland Company. Emission rates for carbon monoxide and nitrogen oxides were obtained from Maxon Corporation, the manufacturer of the burner used to provide heat for the dryer. Sulfur dioxide (SO<sub>2</sub>), volatile organic compound, and toxic air pollutant (TAP) emission rates were based on the Environmental Protection Agency Compilation of Air Pollution Emission Factors AP-42 (EPA) AP-42, Table 1.4-2.

### 3.2 Dry Product Conveyance System and Bagging Machine

The dry product conveyance system and bagging machine exhaust is limited to air and a small amount of entrained PM. Therefore, PM was identified as the only emission of concern. The maximum PM emission rate for the dry product conveyance system and bagging machine was calculated as 0.5 pounds per hour (lb/hr) based on information provided by the manufacturer, Colby Powder Systems.

### 3.3 Kewanee Boiler and Cleaver Brooks Boiler

Emissions from the Kewanee boiler and Cleaver Brooks boiler were estimated using emission factors (EF) provided by the equipment manufacturer and using EF listed in AP-42. Emission estimates were performed considering both the combustion of natural gas and diesel fuel. To provide conservative estimates and provide the facility with flexibility in its operation activities, emission estimates were performed for two scenarios. The first scenario was combustion of natural gas and the second scenario was combustion of diesel fuel. The maximum emission rate for each pollutant was selected from the two scenarios and utilized as the representative potential to emit (PTE) for each pollutant.

The PTE for all pollutants except arsenic is predicted to result in ambient air concentrations less than all air quality standards (including National Ambient Air Quality Standards [NAAQS], Acceptable Ambient Concentration [AAC], and Acceptable Ambient Concentration for a Carcinogen [AACC]) without any operational limits or physical controls required. If both boilers are operated at full capacity the entire year, combusting diesel fuel only, air dispersion modeling indicates that there is a potential to exceed the AACC for arsenic. Also, if both boilers operate continuously the entire year combusting diesel fuel, emission estimates indicate that the facility will be classified as major for sulfur oxides (SO<sub>x</sub>). No emission limits or ambient air standards are predicted to be exceeded when both boilers operate continuously at capacity while combusting natural gas only. Limits on the PTE for SO<sub>x</sub> and arsenic are necessary for the two boilers when No. 2 fuel oil is used as a fuel. These limits are described in the following discussion. No limits on natural gas combustion were required.

#### 3.3.1 Prevent Major Classification for SO<sub>x</sub>

To prevent classification of the facility as major for SO<sub>x</sub>, the facility must combust only low sulfur fuel (sulfur content less than or equal to 0.05%). The facility must receive certification from the fuel supplier that states the sulfur content of the fuel does not exceed 0.05%. The facility must maintain records of the fuel oil certification for a period of two years. Records must be made available for review by DEQ upon request.

#### 3.3.2 Prevent Exceedance of Arsenic AACC

The proposed emission limits for these boilers are the maximum emission rates calculated using AP-42 for each boiler combusting diesel fuel. The proposed arsenic emission limit is 7.75E-7 gram/second (g/sec) for the Kewanee boiler and 7.05E-5 g/sec for the Cleaver Brooks Boiler. The boilers should not be operated at these emission rates for the entire year since air dispersion modeling indicates the AACC for arsenic could be exceeded.

To prevent exceedance of the arsenic AACC, either the volume of fuel combusted or the concentration of arsenic contained in the fuel must be limited. The following sections describe the two alternatives proposed by the applicant for limiting the potential to emit arsenic.

**TABLE 4-1 RESULTS OF AMBIENT IMPACT ASSESSMENT FOR CRITERIA POLLUTANTS**  
 (all concentrations reported in units of  $\mu\text{g}/\text{m}^3$ )

	SO <sub>2</sub>			PM <sub>10</sub>		CO		NO <sub>x</sub>	Pb
	3-hr	24-hr	Annual	24-hr	Annual	1-hr	8-hr	Annual	Quarterly
Max. Modeled Ambient Concentration	131.45	47.47	4.95	22.85	3.20	204.96	67.74	18.08	NA
Background Concentration <sup>(1)</sup>	374	120	18.3	54	24.1	11,450	5,130	40	0.15
Modeled + Background Concentration	505	167	23	77	27	11,655	5,198	58	NA
Ambient Air Quality Standards	1,300	365	80	150	50	40,000	10,000	100	1.5
Meteorological Dataset	1991	1990	1989	1990	1988	1989	1989	1988	NA

<sup>1</sup> Background concentrations provided by Mary Anderson of the DEQ by e-mail on June 25, 2001.

NA: Not Applicable

SO<sub>2</sub>: Sulfur dioxide

PM<sub>10</sub>: Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

CO: Carbon monoxide

NO<sub>x</sub>: Nitrogen dioxide

Pb: Lead

$\mu\text{g}/\text{m}^3$ : Micrograms per cubic meter

**TABLE 4-2**

**RESULTS OF AMBIENT IMPACT ASSESSMENT FOR TOXIC AIR POLLUTANTS**  
 (all concentrations reported in units of  $\mu\text{g}/\text{m}^3$ )

	Arsenic <sup>(1,2)</sup>	Cadmium <sup>(1)</sup>	Formaldehyde <sup>(1)</sup>	Nickel <sup>(1)</sup>	Vanadium <sup>(3)</sup>
Max. Modeled Ambient Concentration	0.00023	0.00032	0.025	0.00032	0.21
AAC/AACC	0.00023	0.00056	0.077	0.0042	2.5
Meteorological Dataset	1989	1989	1989	1989	1990

<sup>1</sup> Annual averaging period, 1<sup>st</sup> high.

<sup>2</sup> Arsenic assessment performed for emissions estimated for various operational scenarios listed in PTC application, Table 7-4.

<sup>3</sup> 24-hour averaging period, 2<sup>nd</sup> high.

$\mu\text{g}/\text{m}^3$  Micrograms per cubic meter

AAC Acceptable Ambient Concentration

AACC Acceptable Ambient Concentration for a Carcinogen

60.40c Applicability

Affected Emission Units:

- 1) Kewanee Boiler
- 2) Cleaver Brooks Boiler

Both boilers are subject to requirements of Subpart Dc because the boilers are steam-generating units with heat input capacity greater than 10 million Btu/hr and will be constructed or modified after June 9, 1989.

60.42c(d)

60.42c Standard for Sulfur Dioxide

"Any affected facility that combusts oil shall not cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> [sulfur dioxide] in excess of 215 ng/J [nano-grams/joule] (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in that facility that contains greater than 0.5 weight percent sulfur."

Affected Emission Units:

- 1) Kewanee Boiler
- 2) Cleaver Brooks Boiler

Because both boilers will be configured to combust diesel fuel (a distillate oil), each boiler is subject to the standard for SO<sub>2</sub>.

60.42c(h)(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 million Btu/hr).

Affected Emission Units:

- 1) Kewanee Boiler
- 2) Cleaver Brooks Boiler

Compliance with the standard for SO<sub>2</sub> will be determined by only combusting diesel fuel in either boiler at the facility with less than 0.5% sulfur content (by weight).

60.43c Standard for Particulate Matter

60.43c(c)

"...[N]o facility that combusts...oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20% opacity (six-minute average), except for one 6-minute period per hour of not more than 27% opacity."

Affected Emission Unit:

- 1) Kewanee Boiler

The heat input capacity provided by the manufacturer for the Kewanee boiler is 31.38 million Btu/hr, so this standard applies to the Kewanee boiler. The heat input capacity provided by the manufacturer for the Cleaver Brooks boiler is 28.54 million Btu/hr so this standard does not apply to the Cleaver Brooks boiler. Except for the averaging periods, this standard is similar to the visible emissions standard of IDAPA 58.01.01.625 that applies to all of the emission sources at the facility.

60.48c Reporting and Recordkeeping Requirements

60.48c(a)

Affected Emission Units:

- 1) Kewanee Boiler
- 2) Cleaver Brooks Boiler

The owner or operator of the facility shall submit to DEQ notification of the date of construction or modification, anticipated startup, and actual startup for each boiler. This notification shall include the design heat input capacity of the affected boiler and identification of fuels to be combusted in the affected facility. This permit application submittal to DEQ is considered to fulfill all requirements under this section except the notification of the actual startup date. Notification will be submitted to DEQ of the actual startup date after initial startup of each boiler.

60.48c(b)

Affected Emission Units:

- 1) Kewanee Boiler
- 2) Cleaver Brooks Boiler

The owner or operator of the facility shall submit to DEQ performance test data from the initial and any subsequent performance tests completed at the facility. Performance tests will include fuel supplier certification to demonstrate compliance with the standard for SO<sub>2</sub> for the Kewanee boiler and the Cleaver Brooks boiler and results of the Method 9 performance test to demonstrate compliance with the opacity standard for the Kewanee boiler. Performance tests will be only required if and when No. 2 fuel oil is utilized.

60.48c(d)

Affected Emission Units:

- 1) Kewanee Boiler
- 2) Cleaver Brooks Boiler

The facility owner or operator shall submit reports to DEQ as required by this section.

60.48c(e)

This section does not apply to any emission sources at the facility since none of the sources are subject to the SO<sub>2</sub> emission limits, fuel sulfur limits, or percent reduction requirements under 40 CFR 60.43c.

60.48c(f)(1)

Affected Emission Units:

- 1) Kewanee Boiler
- 2) Cleaver Brooks Boiler

The fuel supplier certification to demonstrate compliance with the standard for SO<sub>2</sub> shall include the name of the oil supplier and a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41c.

1.2 State Requirements

Applicable state requirements are listed below. All citations refer to specific sections of IDAPA 58.01.01, *Rules for the Control of Air Pollution in Idaho*.

123. CERTIFICATION OF DOCUMENTS.

Affected Emission Units:

- 1) Carlisle Friesland Dryer
- 2) Dry Product Conveyance System/Powder Bagging
- 3) Kewanee Boiler
- 4) Cleaver Brooks Boiler

All documents, including, but not limited to, application forms for permits to construct, application forms for operating permits, progress reports, records, monitoring data, supporting information, testing reports or compliance certifications submitted to DEQ shall contain a certification by a responsible official.

126. CONFIDENTIAL INFORMATION

Not applicable as no confidential information is being submitted.

156. TOTAL COMPLIANCE:

Affected Emission Units:

- 1) Carlisle Friesland Dryer
- 2) Dry Product Conveyance System/Powder Bagging
- 3) Kewanee Boiler
- 4) Cleaver Brooks Boiler

Where more than one section of the rules apply to a particular situation, all such rules shall be met for total compliance, unless otherwise provided for in the rules.

201. PERMIT TO CONSTRUCT REQUIRED

Affected Emission Units:

- 1) Carlisle Friesland Dryer
- 2) Dry Product Conveyance System/Powder Bagging
- 3) Kewanee Boiler
- 4) Cleaver Brooks Boiler

The WFF facility is proposing to modify a stationary source and is not exempt in accordance with IDAPA 58.01.01.220. A PTC is required to allow this proposed modification of the source.

203. PERMIT REQUIREMENTS FOR NEW AND MODIFIED STATIONARY SOURCES

Affected Emission Units:

- 1) Carlisle Friesland Dryer
- 2) Dry Product Conveyance System/Powder Bagging
- 3) Kewanee Boiler
- 4) Cleaver Brooks Boiler

Permit requirements were proposed for the facility to protect the NAAQS, to comply with TAP standards, and to reasonably control fugitives.

213.01(a) The owner or operator shall apply for a PTC.

An application has been submitted to satisfy this requirement.

213.01(b) The owner or operator shall consult with DEQ representatives prior to submitting a pre-permit construction approval application.

This requirement was satisfied by meeting between Dan Salgado and Steve VanZandt, of DEQ, and Joseph Muller of WWF.

213.01(c): The owner or operator shall submit a pre-permit construction approval application which must contain, but not be limited to: a letter requesting the ability to construct before obtaining therequired permit to construct, a copy of the notice referenced in Subsection 213.02; proof of eligibility; process description(s); equipment list(s); proposed emission limits and modeled ambient concentrations for all regulated air pollutants, such that they demonstrate compliance with all applicable air quality rules and regulations. The models shall be conducted in accordance with Subsection 202.02 and with written DEQ approved protocol and submitted with sufficient detail so that modeling can be duplicated by the DEQ.

These required elements are included in this application package.

213.01(d): Owners or operators seeking limitations on a source's potential to emit such that permitted emissions will be either below major source levels or below a significant increase must describe in detail in the pre-permit construction application the proposed restrictions and certify in accordance with Section 123 that they will comply with the restrictions, including any applicable monitoring and reporting requirements. The required description of PTE limitations is included in Section 4.

The required certification is included in the cover letter accompanying this application.

213.02. Permit To Construct Procedures For Pre-Permit Construction

**Affected Emission Units:**

- 1) Carlisle Friesland Dryer
- 2) Dry Product Conveyance System/Powder Bagging
- 3) Kewanee Boiler
- 4) Cleaver Brooks Boiler

Within ten days after the submittal of the pre-permit construction approval application, the owner or operator shall hold an informational meeting in at least one location in the region in which the stationary source or facility is to be located. The informational meeting shall be made known by notice published at least ten days before the meeting in a newspaper of general circulation in the county(ies) in which the stationary source or facility is to be located. A copy of such notice shall be included in the application.

The required public meeting was held on July 12, 2001. A copy of the required notice is included in the PTC application, Appendix 3-1.

625. **VISIBLE EMISSIONS.**

**Affected Emission Units:**

- 1) Carlisle Friesland Dryer
- 2) Dry Product Conveyance System/Powder Bagging
- 3) Kewanee Boiler
- 4) Cleaver Brooks Boiler

A person shall not discharge any air pollutant into 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 this section.

This requirement is applicable to all emission units listed above. Appropriate language regarding visible emissions is included in the proposed permit language.

650. **RULES FOR CONTROL OF FUGITIVE DUST.**

All reasonable precautions shall be taken to prevent particulate matter from becoming airborne. 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 which might affect the movement of particulate matter. Some of the reasonable precautions may include, but are not limited to, the following:

01. **Use of Water or Chemicals.** Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land.
02. **Application of Dust Suppressants.** 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.
03. **Use of Control Equipment.** Installation and use, where practical, of hoods, fans and fabric filters or equivalent systems to enclose and vent the handling of dusty materials.
04. **Covering of Trucks.** Covering, when practical, open bodied trucks transporting materials likely to give rise to airborne dusts.
05. **Paving.** Paving of roadways and their maintenance in a clean condition, where practical. Note: all truck traffic areas will be paved.

675. **FUEL BURNING EQUIPMENT – PARTICULATE MATTER.**

And

676. **STANDARDS FOR NEW SOURCES.**

And

**710.06. Averaging Period.**

For the purposes of Section 710, emissions shall be averaged according to the following:

- 1) One complete cycle of operation; or
- 2) One hour of operation representing maximum emissions of particulate matter.

The Carlisle Friesland dryer operates for continuous cycles of operation up to 40 hours long. In order to allow throughput monitoring to simultaneously satisfy this requirement and also the 24-hour PM<sub>10</sub> NAAQS, a 24-hour averaging period will be utilized. This is the same averaging period as used for WFF's Caldwell Plant. Section 2.1 of the second amended voluntary consent order for this facility, dated April 11, 2001, addresses this as follows:

**2.1. Throughput Limits**

The maximum hourly throughput (based on a 24-hour average) of the Anhydro Dryer shall not exceed 18,000 lb/hr of condensed product.

This same approach to averaging throughput will be used in the permit for the Jerome facility.

**710.07 Test Methods And Procedures.**

A performance test utilizing EPA Method 5 will be required in order to demonstrate that the Carlisle Friesland dryer complies with the particulate emission rate limit stipulated by IDAPA58.01.01.710.08(b). Test methods and procedures shall comply with IDAPA 58.01.01.157.

**710.08. Emission Standard.**

No person shall emit to the atmosphere from any point of emission particulate matter in excess of:

- 1) Two tenths (0.2) grains per dry standard cubic foot for process equipment for which construction or modification has commenced prior to July 1, 2000; or
- 2) One tenth (0.1) grains per dry standard cubic foot for process equipment for which construction or modification has commenced on or after July 1, 2000; or
- 3) For material transfer and storage equipment with design gas flow rates less than or equal to 10,000 dry standard cubic feet per minute:

Since the proposed modification did not commence prior to July 1, 2000, (a) is not applicable. Compliance with (b) is shown in the calculations included in the PTC application, Appendix 4-1. Because the Carlisle Friesland dryer is not a material transfer or storage device (c) is not applicable. The dry product conveyance system/powder bagging emission unit is addressed above in the discussion for Section 710.02

**710.09. Common Stacks**

See discussion (above) for Section 710.02. This is not applicable to Carlisle Friesland dryer.

Monitoring and recordkeeping applicable to both boilers includes tracking fuel composition, daily fuel consumption, and annual consumption of No. 2 fuel oil. This is necessary to demonstrate compliance with NSPS (40 CFR 60.48c(f)(1) for fuel composition and 40 CFR 60.48c(g) for daily fuel consumption). Annual consumption monitoring of No. 2 fuel oil is necessary to demonstrate compliance with the arsenic AACC as described above.

9. Permit Coordination

The WFF facility is not a major facility as defined by IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. However, the applicant has indicated that it is an NSPS-affected facility, and as such, it is a Tier I source as defined by IDAPA 58.01.01.301.02(b). Those Tier I sources not located at major facilities do not require Tier I operating permits until June 1, 2006, provided a deferral is requested by registering the source in accordance with IDAPA 58.01.01.313.01.e.

ES

The WFF facility is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration fees are not applicable in accordance with IDAPA 58.01.01.527.

RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, DEQ staff recommend that WFF be issued PTC No. 053-00006 for the proposed facility expansion. The project does not involve PSD requirements.

SC:bm/bh

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**APPENDIX C**

**WestFarm Foods, Jerome**

**Project No. P-030410**

**Emission Estimate Calculations (Division of Technical Services Memo)**



# Engineering Memorandum

July 23, 2003

**WestFarm Foods Company  
Jerome, Idaho**

P-030410

*Prepared by:*

*Michael Stambulis, P.E.  
Staff Engineer  
Division of Technical Services*

## PURPOSE

The purpose for this memorandum is to verify the validity of the emissions estimates from an application to amend WestFarm Foods Company (WestFarm) Permit to Construct (PTC) Number 053-00006. The permit is for WestFarm's Jerome facility.

## PROJECT DESCRIPTION

On April 23, 2003, the Department of Environmental Quality (DEQ) received an application submitted by Millennium Science & Engineering, Inc. (MSE) on behalf of WestFarm to amend existing PTC No. 053-00006. In the application the permittee proposes revised emission factors for particulate emissions from the Carlisle Friesland Dryer located at WestFarm's Jerome facility. Based on the revised emission factors, the permittee requested revised emissions limits for particulate matter (PM) and particulate matter with an aerodynamic diameter equal to or less than 10 microns (PM<sub>10</sub>) emissions from the Carlisle Friesland Dryer.

## TECHNICAL ANALYSIS

### *Process Description*

The WestFarm facility currently produces condensed nonfat milk and cream from whole milk. The Carlisle Friesland Dryer is used to dry milk at the facility. Milk is sprayed into the drying unit through atomizing nozzles. Most of the dry powder falls to the bottom of the unit and is collected. Powder that is carried over from the dryer is collected in a fabric filter baghouse. The baghouse is utilized to reduce PM emissions from the dryer.

### *Equipment Listing*

The manufacturer for the Carlisle Friesland Dryer listed the stack parameters provided below.

Manufacturer	Carlisle Friesland Company
Model	G 002
Burner Manufacturer	Maxon Corporation
Burner Model	Model 5600 Crossfire Line Burner
Input Heat Capacity (million Btu/hour)	23.5
Stack Height (feet)	151 (above floor of building)
Stack Diameter (inches)	91
Exit Gas Temperature (°F)	110 to 180
Maximum Condensed Product Throughput (pounds/hour)	34,000
Maximum Stack Flow Rate (standard cubic meter/hour)	190,000
Maximum Hours of Operation (hours/year)	8,760

### *Emission Estimates*

#### Emissions Basis

WestFarm's PTC issued on March 22, 200<sup>2</sup>~~3~~ established the following emissions limits:

PM: 4.2 pounds per hour; 18.3 tons per year  
PM<sub>10</sub>: 1.9 pounds per hour; 8.2 tons per year

The permittee's application requested revised emissions limits for hourly and annual PM and PM<sub>10</sub> emissions based on a source test conducted at the facility on March 11, 2003. The permittee contracted MSE to perform EPA Test Methods 1, 2, 3, 4, 5, 9, 201A, and 202 on the dryer stack. DEQ received a source test report from MSE on April 23, 2003. DEQ reviewed the PM and PM<sub>10</sub> emissions calculations presented in the report. A summary of DEQ's calculations based on the data provided in the report for Methods 5, 201A, and 202 are presented in Appendix A.

The permittee conducted EPA Method 201A to determine PM<sub>10</sub> emissions. Method 201A alone does not quantify all PM<sub>10</sub> emissions from a source; the method quantifies filterable PM<sub>10</sub> emissions. To calculate condensable PM<sub>10</sub> emissions, it is necessary to use Method 202 or a similar method in conjunction with Method 201A. A Method 202 analysis was not performed on the impingers in the Method 201A sampling train. Therefore, the results from the Method 202 test performed in conjunction with the Method 5 tests were used to quantify condensable PM<sub>10</sub> emissions.

The following emission rates were calculated by DEQ based on the source test data presented in MSE's report. Annual emissions were calculated assuming 8,760 hours of operation.

**Table 1. Particulate Matter Emissions (*Carlisle Friesland Dryer*)**

<b>EPA Test Method</b>	<b>Result</b>
<b>Method 5 – (Front Half/Filterable) (lb/hr)</b>	1.12
<b>Method 202 – (Back Half/Condensables) (lb/hr)</b>	3.70
<b>Total PM Emissions (lb/hr)</b>	4.82
<b>Total PM Emissions (T/yr)</b>	21.1

**Table 2. PM<sub>10</sub> Emissions (*Carlisle Friesland Dryer*)**

<b>EPA Test Method</b>	<b>Result</b>
<b>Method 201A – (Front Half/Filterable) (lb/hr)</b>	0.27
<b>Method 202 – (Back Half/Condensables) (lb/hr)</b>	3.70
<b>Total PM<sub>10</sub> Emissions (lb/hr)</b>	3.97
<b>Total PM<sub>10</sub> Emissions (T/yr)</b>	17.4

### **Source Testing**

On April 23, 2003, the Department received a source test report submitted by MSE on behalf of WestFarm. The report presents details regarding source tests performed by MSE at the Jerome facility on March 11, 2003. The source test report was reviewed by the Department. The results of the source test are presented in Tables 1 and 2 of this memorandum.

### **Operating Parameters**

The operating parameters of the Carlisle Friesland dryer were recorded during the source test. The maximum hourly throughput (based on a 24-hour average) of the dryer shall not exceed 34,000 pounds per hour of condensed product per the existing PTC. This permitted operating rate represents the maximum capacity of the

dryer. According to the source test report, the average flow of condensed product to the dryer during the source test was 28,364 pounds per hour. Therefore, the permittee operated the dryer at approximately 83% of the permitted limit during the source test.

The pressure drop of the north and south baghouses ranged from 5.6" of water column to 6.6" of water column. The existing PTC for the Jerome facility requires the pressure drop across the baghouse to be greater than 0.75 inches of water column at all times during dryer operation.

MJS P-030410

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REVIEWS\WESTFARM FOODS - JEROME APRIL '03\REVISED FINAL WESTFARM FOODS - EI  
MEMORANDUM.DOC

**Idaho Department of Environmental Quality  
Source Test Average Results**

Test Reviewed by      M. Stambulis  
Date(s)                      June 4, 2003

Method                      5/202  
Test Location            WestFarm Food Company  
Source                      Carlisle Friesland Dryer  
Test Co.                    Valid Results Inc.  
Date(s)                    3/11/2003  
Run(s)                      1,2,3

Stack Diam in.            91  
As square feet            45.17  
Bws                        0.0661  
Cp                         0.84  
Kp                         85.49  
  
%CO2                      0.0  
%O2                        20.6  
%N2 +CO                79.4

Md lb/lb-mole            28.8  
Ms lb/lb-mole            28.1  
Y                            0.9810

Delta H                    1.47  
Pb in Hg                 26.07  
Pm in Hg                 26.17  
Static Pres in H2O      -0.24  
Ps in Hg                 26.05  
Ts degrees R            619.69  
Tm degrees R            513.44

SQRT ^P                 0.641  
Dn inches                0.254  
An square feet           0.00035

vs feet/sec               42.3  
Qsd dry scfm            79457.3  
Vm cubic feet            43.6  
Vm(std) dscf            38.4  
Time minutes            60

%I                        103.6

O2 and Altitude Correction

O2 Measured	20.6
O2 Desired	3.0
Altitude	3,765
Altitude Correction Factor	0.87
O2 Correction Factor	59.67
 Mn (mgs)	 17.6
 Cs (gr/dscf)	 0.007
Corrected Cs (gr/dscf)	0.3689
M (lbs/hr)	4.82
T/yr	21.1

**Idaho Department of Environmental Quality  
Source Test Results**

Test Reviewed by	M. Stambulis
Date of Review	June 4, 2003
Method	5/202
Test Location	WestFarm Food Company
Source	Carlisle Friesland Dryer
Test Co.	Valid Results Inc.
Date	3/11/2003
Run	1
Stack Diam in.	91
As square feet	45.166
Bws	0.0678
Cp	0.84
Kp	85.49
%CO2	0.0
%O2	20.6
%N2 +CO	79.4
Md lb/lb-mole	28.82
Ms lb/lb-mole	28.09
Y	0.9810
Delta H	1.470
Pb in Hg	26.1
Pm in Hg	26.21
Static Pres in H20	-0.24
Ps in Hg	26.08
Ts degrees R	620.54
Tm degrees R	513.23
SQRT ΔP	0.6412
Dn inches	0.254
An square feet	0.00035
vs feet/sec	42.376
Qsd dry scfm	79399.39
Vm cubic feet	43.245
Vm(std) dscf	38.230
Time minutes	60
%I	103.06

Sample Point	Meter Temp In	Meter Temp Out	Stack Temp	Gas Volume	Gas Vol Difference	Delta P	Sqrt Delta P	Delta H
N12	50.00	52.00	161.00	132.014	1.988	0.462	0.6797	1.63
N11	50.00	52.00	160.00	134.002	2.019	0.500	0.7071	1.76
N10	51.00	52.00	160.00	136.021	1.979	0.501	0.7078	1.77
N9	50.00	53.00	160.00	138.000	1.721	0.570	0.7550	2.00
N8	50.00	53.00	160.00	139.721	2.03	0.521	0.7218	1.83
N7	51.00	54.00	161.00	141.751	1.898	0.503	0.7092	1.77
N6	50.00	54.00	161.00	143.649	2.038	0.483	0.6950	1.70
N5	52.00	54.00	160.00	145.687	1.966	0.339	0.5822	1.20
N4	52.00	55.00	160.00	147.653	1.736	0.320	0.5657	1.07
N3	52.00	55.00	160.00	149.389	1.407	0.289	0.5376	1.02
N2	53.00	54.00	162.00	150.796	1.691	0.267	0.5167	0.94
N1	53.00	54.00	162.00	152.487	1.254	0.270	0.5196	0.95
W12	53.00	53.00	157.00	153.741	1.979	0.429	0.6550	1.52
W11	53.00	53.00	157.00	155.720	1.696	0.440	0.6633	1.56
W10	53.00	54.00	159.00	157.416	1.875	0.437	0.6611	1.55
W9	53.00	54.00	160.00	159.291	1.836	0.441	0.6641	1.56
W8	53.00	54.00	161.00	161.127	1.902	0.497	0.7050	1.76
W7	54.00	55.00	160.00	163.029	2.073	0.502	0.7085	1.78
W6	54.00	55.00	161.00	165.102	1.73	0.472	0.6870	1.67
W5	54.00	55.00	162.00	166.832	1.972	0.449	0.6701	1.59
W4	54.00	55.00	162.00	168.804	2.016	0.427	0.6535	1.51
W3	55.00	55.00	163.00	170.820	1.441	0.369	0.6075	1.31
W2	55.00	55.00	162.00	172.261	1.896	0.278	0.5273	0.99
W1	55.00	55.00	162.00	173.957	1.302	0.239	0.4889	0.85
<b>Average</b>	Meter Temp In 52.50 53.23	Meter Temp Out 53.96 avg	Stack Temp 160.54	Gas Volume 175.259	Gas Volume 43.245	Delta P 0.4169	Sqrt Delta P 0.6412	Delta H 1.4704

Emissions Results		
	Front	Back
Mn (mgs)	6.80	22.30
Cs (gr/dscf)	0.0027	0.0090
M (lbs/hr)	1.87	6.13
T/yr	8.18	26.83
<b>Total</b>	<b>29.10</b>	<b>0.012</b>
	<b>7.99</b>	<b>35.01</b>

**Idaho Department of Environmental Quality  
Source Test Results**

Test Reviewed by M. Stambulis  
Date of Review June 4, 2003

Method 5/202  
Test Location WestFarm Food Company  
Source Carlisle Friesland Dryer  
Test Co. Valid Results Inc.  
Date 37691  
Run 1

	Moisture	Collected	Weight gain
	Initial weight	Final weight	
Impinger 1	583.2	636.1	52.9
Impinger 2	610.6	609.5	-1.1
Impinger 3	603.1	601.7	-1.4
Impinger 4			0
SG	639.7	648.4	8.7

Total gain 59.1

Vwc(std) 2.3723  
Wwg(std) 0.4102

Bws 0.0678

	Particulate		Collected		Weight gain mg	Weight gain g
	Tare weight mg	Final weight mg	Blank Correction mg	Weight gain mg		
Filter	341.7	341.7	0.0	0.0000	0.0000	0.0000
Probe wash	2,354.8	2,361.5	-0.1	6.8000	0.0068	0.0068
Back Half - Inorganic	48,566.3	48,581.1	0.2	14.6000	0.0146	0.0146
Back Half - Organic	48,521.0	48,529.3	0.6	7.7000	0.0077	0.0077
Total front half catch				6.8	0.0068	0.0068
Total back half catch				22.3	0.0223	0.0223
Total catch				29.1	0.0291	0.0291

Idaho Department of Environmental Quality  
Source Test Results

Test Reviewed by	M. Stambulis
Date of Review	June 4, 2003
Method	5/202
Test Location	WestFarm Food Company
Source	Carlisle Friesland Dryer
Test Co.	Valid Results Inc.
Date	3/11/2003
Run	2
Stack Diam. in.	91
As square feet	45.166
Bws	0.0629
Cp	0.84
Kp	85.49
%CO2	0.0
%O2	20.6
%N2 +CO	79.4
Md lb/lb-mole	28.82
Ms lb/lb-mole	28.14
Y	0.9810
Delta H	1.456
Pb in Hg	26.1
Pm in Hg	26.21
Static Pres in H2O	-0.24
Ps in Hg	26.08
Ts degrees R	619.58
Tm degrees R	514.46
SQRT ΔP	0.6365
Dn inches	0.254
An square feet	0.00035
vs feet/sec	41.996
Qsd dry scfm	79230.47
Vm cubic feet	43.227
Vm(sid) dscf	38.121
Time minutes	60
%I	102.99

Sample Point	Meter Temp In	Meter Temp Out	Stack Temp	Gas Volume	Gas Vol Difference	Delta P	Sqrt Delta P	Delta H
W12	52.00	47.00	157.00	175.783	1.904	0.435	0.6595	1.54
W11	53.00	46.00	159.00	179.524	1.837	0.432	0.6573	1.52
W10	53.00	46.00	159.00	181.472	1.948	0.451	0.6716	1.58
W9	54.00	47.00	158.00	183.199	1.727	0.453	0.6731	1.60
W8	55.00	48.00	159.00	185.046	1.847	0.450	0.6708	1.59
W7	55.00	49.00	160.00	187.029	1.983	0.502	0.7085	1.78
W6	56.00	49.00	160.00	188.873	1.844	0.504	0.7099	1.78
W5	57.00	50.00	161.00	190.753	1.88	0.474	0.6885	1.68
W4	57.00	51.00	158.00	192.634	1.881	0.467	0.6834	1.66
W3	57.00	52.00	158.00	194.462	1.828	0.398	0.6309	1.42
W2	57.00	52.00	159.00	196.231	1.769	0.343	0.5857	1.22
W1	58.00	54.00	159.00	197.780	1.549	0.291	0.5394	1.04
N12	59.00	54.00	160.00	199.743	1.963	0.470	0.6856	1.68
N11	58.00	54.00	160.00	201.298	1.555	0.481	0.6935	1.71
N10	57.00	54.00	161.00	203.751	2.453	0.495	0.7036	1.76
N9	58.00	54.00	160.00	205.591	1.84	0.501	0.7078	1.79
N8	59.00	55.00	161.00	207.526	1.935	0.498	0.7057	1.78
N7	60.00	55.00	162.00	209.502	1.976	0.432	0.6573	1.54
N6	59.00	54.00	160.00	211.153	1.651	0.337	0.5805	1.20
N5	59.00	54.00	159.00	212.832	1.679	0.314	0.5604	1.12
N4	59.00	54.00	159.00	214.391	1.559	0.303	0.5505	1.08
N3	59.00	55.00	160.00	216.137	1.746	0.301	0.5486	1.07
N2	59.00	55.00	161.00	217.571	1.434	0.257	0.5070	0.92
N1	60.00	55.00	160.00	219.010	1.439	0.248	0.4980	0.89
<b>Average</b>	Meter Temp In 57.08	Meter Temp Out 51.83 avg	Stack Temp 159.58	Gas Volume	Gas Volume 43.227	Delta P 0.4099	Sqrt Delta P 0.6365	Delta H 1.4563

	Emissions Results		
	Front	Back	Total
Mn (mgs)	2.30	7.90	10.20
Cs (gr/dscf)	0.0009	0.0032	0.004
M (lbs/hr)	0.63	2.17	2.80
T/yr	2.77	9.51	12.28

**Idaho Department of Environmental Quality  
Source Test Results**

Test Reviewed by  
Date of Review

M. Stambulis  
June 4, 2003

Method  
Test Location  
Source  
Test Co.  
Date  
Run

5/202  
WestFarm Food Company  
Carlisle Friesland Dryer  
Valid Results Inc.  
37691  
2

	Moisture		Collected		Weight gain
	Initial weight	Final weight	Final weight	Weight gain	
Impinger 1	626.9	673.4	673.4	46.5	
Impinger 2	567.2	565.8	565.8	-1.4	
Impinger 3	623.5	621.9	621.9	-1.6	
Impinger 4				0	
SG	660.8	671.6	671.6	10.8	
		Total gain		54.3	

Vwc(std) 2.0475  
Wwg(std) 0.5092  
Bws 0.0629

	Particulate		Collected		Weight gain mg	Weight gain g
	Tare weight mg	Final weight mg	Blank Correction mg	Weight gain mg		
Filter	347.2	347.5	0.0	0.3000	0.0003	
Probe wash	2,342.1	2,344.0	-0.1	2.0000	0.0020	
Back Half - Inorganic	49,301.5	49,303.9	0.2	2.2000	0.0022	
Back Half - Organic	49,542.4	49,548.7	0.6	5.7000	0.0057	
Total front half catch				2.3	0.0023	
Total back half catch				7.9	0.0079	
Total catch				10.2	0.0102	

Idaho Department of Environmental Quality  
Source Test Results

Test Reviewed by	M. Stambulis
Date of Review	June 4, 2003
Method	5/202
Test Location	WestFarm Food Company
Source	Carlisle Friesland Dryer
Test Co.	Valid Results Inc.
Date	3/11/2003
Run	3
Stack Diam in.	91
As square feet	45,166
Bws	0.0676
Cp	0.84
Kp	85.49
%CO2	0.0
%O2	20.6
%N2 +CO	79.4
Md lb/lb-mole	28.82
Ms lb/lb-mole	28.09
Y	0.9810
Delta H	1.486
Pb in Hg	26.0
Pm in Hg	26.11
Static Pres in H2O	-0.24
Ps in Hg	25.98
Ts degrees R	618.96
Tm degrees R	512.65
SQRT ^P	0.6442
Dn inches	0.254
An square feet	0.00035
vs feet/sec	42.601
Qsd dry scfm	79742.16
Vm cubic feet	44.217
Vm(std) dscf	38.986
Time minutes	60
%I	104.65

Sample Point	Meter Temp In	Meter Temp Out	Stack Temp	Gas Volume	Gas Vol Difference	Delta P	Sqrt Delta P	Delta H
				220.418				
N12	52.00	47.00	157.00	222.371	1.953	0.471	0.6863	1.67
N11	53.00	47.00	158.00	224.272	1.901	0.486	0.6971	1.72
N10	52.00	46.00	159.00	226.351	2.079	0.480	0.6928	1.69
N9	52.00	47.00	160.00	228.166	1.815	0.492	0.7014	1.73
N8	54.00	47.00	159.00	230.214	2.048	0.510	0.7141	1.80
N7	54.00	49.00	160.00	232.268	2.054	0.447	0.6686	1.58
N6	54.00	49.00	157.00	233.922	1.654	0.414	0.6434	1.47
N5	54.00	49.00	159.00	235.667	1.745	0.309	0.5559	1.09
N4	55.00	51.00	160.00	237.199	1.532	0.292	0.5404	1.03
N3	55.00	51.00	160.00	238.771	1.572	0.290	0.5385	1.03
N2	55.00	51.00	160.00	240.347	1.576	0.254	0.5040	0.90
N1	55.00	51.00	160.00	241.907	1.56	0.256	0.5060	0.91
W12	55.00	51.00	156.00	243.828	1.921	0.437	0.6611	1.56
W11	55.00	52.00	159.00	245.641	1.813	0.432	0.6573	1.53
W10	55.00	52.00	160.00	247.552	1.911	0.433	0.6580	1.54
W9	56.00	52.00	160.00	249.368	1.816	0.457	0.6760	1.60
W8	56.00	52.00	159.00	251.250	1.882	0.504	0.7099	1.79
W7	56.00	52.00	159.00	253.127	1.877	0.501	0.7078	1.78
W6	56.00	52.00	160.00	255.161	2.034	0.486	0.6971	1.73
W5	56.00	52.00	160.00	257.098	1.937	0.464	0.6812	1.65
W4	56.00	53.00	158.00	259.147	2.049	0.449	0.6701	1.60
W3	56.00	53.00	158.00	261.136	1.989	0.435	0.6595	1.55
W2	56.00	53.00	158.00	263.094	1.958	0.382	0.6181	1.36
W1	57.00	53.00	159.00	264.635	1.541	0.380	0.6164	1.35
<b>Average</b>	Meter Temp In 54.79	Meter Temp Out 50.50 avg	Stack Temp 158.96	Gas Volume	Gas Volume 44.217	Delta P 0.4192	Sqrt Delta P 0.6442	Delta H 1.4858

Emissions Results		
	Front	Back
Mn (mgs)	3.20	10.30
Cs (gr/dscf)	0.0013	0.0041
M (lbs/hr)	0.87	2.79
T/yr	3.79	12.20
		<b>Total</b>
		13.50
		0.005
		3.65
		16.00

**Idaho Department of Environmental Quality  
Source Test Results**

Test Reviewed by  
Date of Review

M. Stambulic  
June 4, 2003

Method  
Test Location  
Source  
Test Co.  
Date  
Run

5/202  
WestFarm Food Company  
Carlisle Friesland Dryer  
Valid Results Inc.  
37691  
3

	Moisture		Collected	
	Initial weight	Final weight	Final weight	Weight gain
Impinger 1	670.7	723.1	52.4	
Impinger 2	593.3	592.8	-0.5	
Impinger 3	584.6	583.5	-1.1	
Impinger 4			0	
SG	659.5	668.7	9.2	

Total gain 60  
Vwc(std) 2.3912  
Wwg(std) 0.4338  
Bws 0.0676

	Particulate		Collected		Weight gain mg	Weight gain g
	Tare weight mg	Final weight mg	Blank Correction mg	Weight gain mg		
Filter	348.8	349.3	0.0	0.5000	0.0005	
Probe wash	2,345.5	2,348.1	-0.1	2.7000	0.0027	
Back Half - Inorganic	48,413.6	48,417.3	0.2	3.5000	0.0035	
Back Half - Organic	47,946.8	47,954.2	0.6	6.8000	0.0068	
Total front half catch				3.2	0.0032	
Total back half catch				10.3	0.0103	
Total catch				13.5	0.0135	

**Idaho Department of Environmental Quality  
Source Test Average Results**

Test Reviewed by M. Stambulis  
Date(s) June 4, 2003

Method 201A  
Test Location WestFarm Food Company  
Source Carlisle Friesland Dryer  
Test Co. Valid Results Inc.  
Date(s) 3/11/2003  
Run(s) 1,2,3

Stack Diam in. 91  
As square feet 45.17  
Bws 0.0705  
Cp 0.84  
Kp 85.49  
  
%CO2 0.0  
%O2 20.6  
%N2 +CO 79.4

Md lb/lb-mole 28.8  
Ms lb/lb-mole 28.1  
Y 0.9904

Delta H 0.45  
Pb in Hg 26.10  
Pm in Hg 26.13  
Static Pres in H2O -0.24  
Ps in Hg 26.08  
Ts degrees R 620.06  
Tm degrees R 528.14

SQRT ^P 0.631  
Dn inches 0.186  
An square feet 0.00019

vs feet/sec 41.7  
Qsd dry scfm 78046.5  
Vm cubic feet 26.4  
Vm(std) dscf 22.8  
Time minutes 60

%I 117.4

O2 and Altitude Correction

O2 Measured	20.6
O2 Desired	3.0
Altitude	3,765
Altitude Correction Factor	0.87
O2 Correction Factor	59.67
Mn (mgs) - PM	1.5
Mn (mgs) - PM10	0.600
Cs (gr/dscf) - PM	0.0010
Cs (gr/dscf) - PM10	0.0004
Corrected Cs (gr/dscf) - PM	0.0516
Corrected Cs (gr/dscf) - PM10	0.0211
M (lbs/hr) - PM	0.66
M (lbs/hr) - PM10	0.27
T/yr - PM	2.9
T/yr - PM10	1.2

Idaho Department of Environmental Quality  
Source Test Results

Test Reviewed by M. Stambulis  
Date of Review June 4, 2003

Method 201A  
Test Location WestFarm Food Company  
Source Carlisle Friesland Dryer  
Test Co. Valid Results Inc.  
Date 3/11/2003  
Run 1

Stack Diam.in.	91
As square feet	45.166
Bws	0.0563
Cp	0.84
Kp	85.49
%CO2	0.0
%O2	20.6
%N2 +CO	79.4
Md lb/lb-mole	28.82
Ms lb/lb-mole	28.21
Y	0.9904
Delta H	0.460
Pb in Hg	26.1
Pm in Hg	26.13
Static Pres in H2O	-0.24
Ps in Hg	26.08
Ts degrees R	620.08
Tm degrees R	523.79
SQRT ^P	0.6407
Dn inches	0.186
An square feet	0.00019
vs feet/sec	42.234
Qsd dry scfm	80174.34
Vm cubic feet	26.252
Vm(std) dscf	22.892
Time minutes	59.5
%I	114.93

Sample Point	Meter Temp In	Meter Temp Out	Stack Temp	Gas Volume	Gas Vol Difference	Delta P	Sqrt Delta P	Delta H
W6	60.00	58.00	160.00	260.944	1.808	0.420	0.6481	0.46
W5	60.00	58.00	160.00	264.860	2.108	0.430	0.6557	0.46
W4	62.00	59.00	161.00	266.542	1.682	0.430	0.6557	0.46
W3	62.00	59.00	161.00	268.392	1.85	0.360	0.6000	0.46
W2	62.00	59.00	160.00	270.683	2.291	0.320	0.5657	0.46
W1	62.00	59.00	160.00	272.493	1.81	0.310	0.5568	0.46
N6	66.00	67.00	160.00	275.720	3.227	0.430	0.6557	0.46
N5	66.00	67.00	159.00	277.903	2.183	0.450	0.6708	0.46
N4	67.00	69.00	160.00	279.721	1.818	0.440	0.6633	0.46
N3	67.00	69.00	160.00	281.697	1.976	0.520	0.7211	0.46
N2	67.00	69.00	160.00	284.273	2.576	0.450	0.6708	0.46
N1	68.00	69.00	160.00	287.196	2.923	0.390	0.6245	0.46
<b>Average</b>								
	Meter Temp In 64.08	Meter Temp Out 63.50	Stack Temp 160.08	Gas Volume 26.252	Gas Volume 26.252	Delta P 0.4125	Sqrt Delta P 0.6407	Delta H 0.4600

Emissions Results

	Front - PM	Front - PM10	Back - PM	Total PM	Total PM10
Mn (mgs)	0.60	0.40	0.00	0.60	0.40
Cs (gr/dscf)	0.0004	0.0003	0.0000	0.0004	0.0003
M (lbs/hr)	0.28	0.19	0.00	0.28	0.19
T/yr	1.22	0.81	0.00	1.22	0.81

**Idaho Department of Environmental Quality  
Source Test Results**

Test Reviewed by  
Date of Review

M. Stambulic  
June 4, 2003

Method  
Test Location  
Source  
Test Co.  
Date  
Run

201A  
WestFarm Food Company  
Carlisle Friesland Dryer  
Valid Results Inc.  
37691  
1

	Moisture		Collected		Weight gain
	Initial weight	Final weight	Final weight	Weight gain	
Impinger 1	617.2	642.7	642.7	25.5	
Impinger 2	582.0	582.0	582.0	0.0	
Impinger 3	555.7	553.1	553.1	-2.6	
Impinger 4	680.9	687.0	687.0	6.1	
SG				0.0	

Total gain 29  
Vwc(std) 1.3650  
Wwg(std) 0.0000  
Bws 0.0563

	Particulate		Collected		Weight gain mg	Weight gain g
	Tare weight mg	Final weight mg	Final weight mg	Blank Correction mg		
Cyclone - PM	2,347.4	2,347.6	2,347.6	0.0	0.2000	0.0002
Probe wash - PM10	2,356.7	2,357.1	2,357.1	0.0	0.4000	0.0004
Filter - PM10	123.1	121.1	121.1	0.0	0.0000	0.0000
Back Half - Inorganic PM					0.0000	0.0000
Back Half - Organic PM					0.0000	0.0000
Total front half catch - PM					0.6000	0.0006
Total front half catch - PM10					0.4000	0.0004
Total back half catch - PM					0.0000	0.0000
Total catch					0.6	0.0006

**Aerodynamic Cut Size**  
Stack Viscosity (micropoise) 206.99  
Cyclone PM10 Flow (cfm) 0.5583  
D50 (microns) 10.00

Idaho Department of Environmental Quality  
Source Test Results

Test Reviewed by M. Stambulitis  
Date of Review June 4, 2003

Method 201A  
Test Location WestFarm Food Company  
Source Carlisle Friesland Dryer  
Test Co. Valid Results Inc.  
Date 3/11/2003  
Run 2

Sample Point	Meter Temp In	Meter Temp Out	Stack Temp	Gas Volume	Gas Vol Difference	Delta P	Sqrt Delta P	Delta H
N6	68.00	66.00	154.00	287.684	2.068	0.362	0.6017	0.45
N5	68.00	68.00	157.00	289.752	2.242	0.370	0.6083	0.45
N4	69.00	68.00	159.00	294.344	2.35	0.371	0.6091	0.45
N3	72.00	69.00	160.00	296.572	2.228	0.359	0.5992	0.45
N2	76.00	69.00	162.00	298.871	2.299	0.273	0.5225	0.45
N1	77.00	70.00	162.00	300.895	2.024	0.269	0.5187	0.45
W6	77.00	70.00	160.00	302.682	1.787	0.443	0.6656	0.45
W5	78.00	71.00	161.00	304.885	2.203	0.457	0.6760	0.45
W4	78.00	72.00	161.00	307.002	2.117	0.455	0.6745	0.45
W3	79.00	72.00	160.00	308.966	1.964	0.502	0.7085	0.45
W2	79.00	74.00	160.00	312.031	3.065	0.489	0.6993	0.45
W1	79.00	76.00	160.00	314.125	2.094	0.394	0.6277	0.45
<b>Average</b>	75.00	70.42 avg	159.67		Gas Volume 26.441	Delta P 0.3953	Sqrt Delta P 0.6259	Delta H 0.4500

Emissions Results			
	Front - PM	Front - PM10	Total PM10
Mn (mgs)	0.40	0.20	0.20
Cs (gr/dscf)	0.0003	0.0001	0.0003
M (lbs/hr)	0.18	0.09	0.18
T/yr	0.79	0.39	0.79
	Back - PM	Total PM	Total PM10
	0.00	0.40	0.20
	0.0000	0.0003	0.0001
	0.00	0.18	0.09
	0.00	0.79	0.39

%CO2	0.0
%O2	20.6
%N2 +CO	79.4
Md lb/lb-mole	28.82
Ms lb/lb-mole	28.01
Y	0.9904
Delta H	0.450
Pb in Hg	26.1
Pm in Hg	26.13
Static Pres in H2O	-0.24
Ps in Hg	26.08
Ts degrees R	619.67
Tm degrees R	532.71
SQRT ^P	0.6259
Dn inches	0.186
An square feet	0.00019
vs feet/sec	41.397
Qsd dry scfm	77055.71
Vm cubic feet	26.441
Vm(std) dscf	22.671
Time minutes	60
%I	117.44

**Idaho Department of Environmental Quality  
Source Test Results**

Test Reviewed by  
Date of Review

M. Stambulis  
June 4, 2003

Method  
Test Location  
Source  
Test Co.  
Date  
Run

201A  
WestFarm Food Company  
Carlisle Friesland Dryer  
Valid Results Inc.  
37691  
2

	Moisture	Collected	Weight gain
	Initial weight	Final weight	
Impinger 1	615.7	645.3	29.6
Impinger 2	643.5	644.0	0.5
Impinger 3	496.4	498.2	1.8
Impinger 4	648.6	655.9	7.3
SG			0.0

Total gain 39.2  
Vwc(std) 1.8451  
Wwg(std) 0.0000  
Bws 0.0753

	Particulate		Collected		Weight gain mg	Weight gain g
	Tare weight mg	Final weight mg	Blank Correction mg	Weight gain mg		
Cyclone - PM	2356.7	2356.9	0.0	0.2000	0.0002	0.0002
Probe wash - PM10	2,349.5	2,349.7	0.0	0.0000	0.0000	0.0000
Filter - PM10	125.3	124.7	0.0	0.0000	0.0000	0.0000
Back Half - Inorganic				0.0000	0.0000	0.0000
Back Half - Organic				0.0000	0.0000	0.0000
Total front half catch - PM				0.4000	0.0004	0.0004
Total front half catch - PM10				0.2000	0.0002	0.0002
Total back half catch				0	0	0.0000
Total catch				0.4	0.0004	0.0004

**Aerodynamic Cut Size**  
Stack Viscosity (micropoise) 208.29  
Cyclone PM10 Flow (cfm) 0.5629  
D50 (microns) 10.00

Idaho Department of Environmental Quality  
Source Test Results

Test Reviewed by M. Stambulic  
Date of Review June 4, 2003

Method 201A  
Test Location WestFarm Food Company  
Source Carlisle Friesland Dryer  
Test Co. Valid Results Inc.  
Date 3/11/2003  
Run 3

Stack Diam in. 91  
As square feet 45.166  
Bws 0.0798  
Cp 0.84  
Kp 85.49  
%CO2 0.0  
%O2 20.6  
%N2 +CO 79.4  
Md lb/lb-mole 28.82  
Ms lb/lb-mole 27.96  
Y 0.9904

Delta H 0.450  
Pb in Hg 26.1  
Pm in Hg 26.13  
Static Pres in H2O -0.24  
Ps in Hg 26.08  
Ts degrees R 620.42  
Tm degrees R 527.92

SQRT ΔP 0.6277  
Dn inches 0.186  
An square feet 0.00019

vs feet/sec 41.573  
Qsd dry scfm 76909.55  
Vm cubic feet 26.463  
Vm(std) dscf 22.895  
Time minutes 59.5  
%I 119.83

Sample Point	Meter Temp In	Meter Temp Out	Stack Temp	Gas Volume	Gas Vol Difference	Delta P	Sqrt Delta P	Delta H
W6	68.00	67.00	160.00	314.762				
W5	67.00	67.00	158.00	317.064	2.302	0.401	0.6332	0.45
W4	67.00	67.00	158.00	318.861	1.797	0.395	0.6285	0.45
W3	68.00	67.00	162.00	321.352	2.491	0.382	0.6181	0.45
W2	69.00	67.00	162.00	323.436	2.084	0.498	0.7057	0.45
W1	69.00	67.00	162.00	325.715	2.279	0.500	0.7071	0.45
N6	69.00	67.00	160.00	327.343	1.628	0.337	0.5805	0.45
N5	69.00	67.00	160.00	329.616	2.273	0.446	0.6678	0.45
N4	69.00	67.00	160.00	332.008	2.392	0.427	0.6535	0.45
N3	69.00	67.00	161.00	334.295	2.287	0.441	0.6641	0.45
N2	69.00	68.00	161.00	336.637	2.342	0.379	0.6156	0.45
N1	70.00	68.00	160.00	338.791	2.154	0.298	0.5459	0.45
				341.225	2.434	0.262	0.5119	0.45
<b>Average</b>	Meter Temp In 68.58	Meter Temp Out 67.25 avg	Stack Temp 160.42	Gas Volume	Gas Volume 26.463	Delta P 0.3972	Sqrt Delta P 0.6277	Delta H 0.4500

Emissions Results				
	Front - PM	Front - PM10	Back - PM	Total PM10
Mn (mgs)	3.40	1.20	0.00	3.40
Cs (gr/dscf)	0.0023	0.0008	0.0000	0.0023
M (lbs/hr)	1.51	0.53	0.00	1.51
T/yr	6.62	2.34	0.00	6.62
				2.34

**Idaho Department of Environmental Quality  
Source Test Results**

Test Reviewed by  
Date of Review

M. Stambulis  
June 4, 2003

Method  
Test Location  
Source  
Test Co.  
Date  
Run

201A  
WestFarm Food Company  
Carlisle Friesland Dryer  
Valid Results Inc.  
37691  
3

	Moisture		Collected		Weight gain
	Initial weight	Final weight	Final weight	Weight gain	
Impinger 1	642.7	677.7	677.7	35.0	
Impinger 2	582.0	583.5	583.5	1.5	
Impinger 3	553.1	554.7	554.7	1.6	
Impinger 4	687.0	691.1	691.1	4.1	
SG				0.0	

Total gain 42.2  
Vwc(std) 1.9864  
Wwg(std) 0.0000  
Bws 0.0798

	Particulate		Collected		Weight gain mg	Weight gain g
	Tare weight mg	Final weight mg	Blank Correction mg	Weight gain mg		
Cyclone - PM	2340.9	2343.1	0	2.2000	0.0022	
Probe wash - PM10	2,351.4	2,352.6	0.0	1.2000	0.0012	
Filter - PM10	121.1	116.8	0.0	0.0000	0.0000	
Back Half - Inorganic				0.0000	0.0000	
Back Half - Organic				0.0000	0.0000	
Total front half catch - PM				3.4000	0.0034	
Total front half catch - PM10				1.2000	0.0012	
Total back half catch				0	0.0000	
Total catch				3.4	0.0034	

**Aerodynamic Cut Size**  
Stack Viscosity (micropoise) 208.81  
Cyclone PM10 Flow (cfm) 0.5648  
D50 (microns) 10.00

**APPENDIX D**

**WestFarm Foods, Jerome**

**Project No. P-030410**

**Modeling Memo**

## **MEMORANDUM**

**TO:** Harbi Elshafei, Air Permit Analyst, Air Program Division  
Mary Anderson, Air Modeling Coordinator, Air Program Division

**FROM:** Kevin Schilling, Air Quality Scientist, State Office of Technical Services 

**SUBJECT:** Atmospheric Dispersion Modeling Review for the WestFarm Foods Jerome Facility Permit to Construct Amendment

**DATE:** July 24, 2003

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### **1.0 SUMMARY:**

WestFarm Foods (WestFarm) submitted a Permit to Construct (PTC) application to amend PM<sub>10</sub> emissions limits in a previously issued PTC at their facility in Jerome, Idaho. Air quality analyses involving atmospheric dispersion modeling of emissions were submitted in support of the PTC application to demonstrate that the stationary source would not cause or significantly contribute to a violation of the PM<sub>10</sub> ambient air quality standard (IDAPA 58.01.01.203.02).

The Department of Environmental Quality (the Department) received a PTC application from WestFarm on April 23, 2003. Millennium Science & Engineering, Inc. (MSE), WestFarm's consultant, conducted the ambient air quality analyses for the application. Facility-wide PM<sub>10</sub> emissions were used to demonstrate compliance with IDAPA 58.01.01.203.02. The application was declared complete by the Department on May 22, 2003.

A technical review of the submitted air quality analyses was conducted by the Department's Technical Services Division. The modeling analyses: 1) utilized appropriate methods and models; 2) was conducted using proper model parameters and accurate input data; 3) adhered to established Departmental guidelines for new source review dispersion modeling; 4) demonstrated that predicted pollutant concentrations from facility-wide emissions, when appropriately combined with background concentrations, were below applicable air quality standards.

### **2.0 DISCUSSION:**

#### **2.1 Applicable Air Quality Impact Limits and Required Analyses**

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

##### ***2.1.1 Area Classification***

The WestFarm facility is located in Jerome County, designated as an attainment or unclassifiable area for sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), lead (Pb), ozone (O<sub>3</sub>), and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>). There are no Class I areas within 10 kilometers of the facility.

##### ***2.2.2 Significant Impact and Full Impact Analyses***

If estimated maximum impacts to ambient air from the emissions sources associated with the proposed modification exceed the "significant contribution" levels of IDAPA 58.01.01.006.93, then a full impact analysis may be 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 Department-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location. The resulting maximum pollutant concentrations in

ambient air are then compared to the NAAQS listed in Table 1. Table 1 also lists significant contribution levels and specifies the modeled value that must be used for comparison to the NAAQS.

**Table 1. Applicable regulatory limits**

Pollutant	Averaging Period	Significant Contribution Levels <sup>a</sup> ( $\mu\text{g}/\text{m}^3$ ) <sup>b</sup>	Regulatory Limit <sup>c</sup> ( $\mu\text{g}/\text{m}^3$ )	Modeled Value Used <sup>d</sup>
PM <sub>10</sub> <sup>e</sup>	Annual	1.0	50 <sup>f</sup>	Maximum 1 <sup>st</sup> highest <sup>g</sup>
	24-hour	5.0	150 <sup>h</sup>	Maximum 6 <sup>th</sup> highest <sup>i</sup>
Carbon monoxide (CO)	8-hour	500	10,000 <sup>j</sup>	Maximum 2 <sup>nd</sup> highest <sup>g</sup>
	1-hour	2,000	40,000 <sup>j</sup>	Maximum 2 <sup>nd</sup> highest <sup>g</sup>
Sulfur Dioxide (SO <sub>2</sub> )	Annual	1.0	80 <sup>f</sup>	Maximum 1 <sup>st</sup> highest <sup>g</sup>
	24-hour	5	365 <sup>f</sup>	Maximum 2 <sup>nd</sup> highest <sup>g</sup>
	3-hour	25	1,300 <sup>f</sup>	Maximum 2 <sup>nd</sup> highest <sup>g</sup>
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	1.0	100 <sup>f</sup>	Maximum 1 <sup>st</sup> highest <sup>g</sup>
Lead (Pb)	Quarterly	NA	1.5 <sup>h</sup>	Maximum 1 <sup>st</sup> highest <sup>g</sup>

a. IDAPA 58.01.01.006.93

b. Micrograms per cubic meter

c. IDAPA 58.01.01.577 for criteria pollutants, IDAPA 58.01.01.585 for non-carcinogenic toxic air pollutants IDAPA 58.01.01.586 for carcinogenic toxic air pollutants.

d. The maximum 1<sup>st</sup> highest modeled value is always used for significant impact analysis and for all toxic air pollutants

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

### 2.2.3 Toxic Air Pollutant Impact Analysis

Toxic Air Pollutant (TAP) requirements for PTCs are specified in IDAPA 58.01.01.210. If the net emissions increase associated with a new source or modification exceeds screening emission levels (ELs) of IDAPA 58.01.01.585 and IDAPA 58.01.01.586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of IDAPA 58.01.01.585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of IDAPA 58.01.01.586, then compliance with TAP requirements has been demonstrated.

There were no TAP emissions identified for this PTC application.

## 2.2 Background Concentrations

The Department originally provided MSE with background concentration values in June 2001. Background concentrations were revised for all of Idaho by the Department in March 2003<sup>1</sup>. 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 PM<sub>10</sub> concentrations are available for Rupert and Twin Falls. The Rupert background values are 76  $\mu\text{g}/\text{m}^3$  for the 24-hour and 27  $\mu\text{g}/\text{m}^3$  for the annual. Twin Falls values are 55  $\mu\text{g}/\text{m}^3$  for the 24-hour and 26  $\mu\text{g}/\text{m}^3$  for annual. The default background values for rural agricultural areas are 73  $\mu\text{g}/\text{m}^3$  for the 24-hour and 26  $\mu\text{g}/\text{m}^3$  for the annual. MSE used the Twin Falls value for background, as provided by the Department in June 2001.

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

The Department conducted verification modeling using the default values for rural agricultural areas to provide a level of conservativeness. Table 2 lists these revised background concentrations.

**Table 2. Background Concentrations**

Pollutant	Averaging Period	Background Concentration ( $\mu\text{g}/\text{m}^3$ ) <sup>a</sup>
PM <sub>10</sub> <sup>b</sup>	24-hour	73
	Annual	26

a. Micrograms per cubic meter

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

### 2.3 Modeling Impact Assessment

Table 3 provides a summary of the modeling parameters used for the Department's analyses.

**Table 3. Modeling Parameters**

Parameter	Description/Values	Documentation/Additional Description
Model	ISCST3	Version 02035
Meteorological data	Pocatello Surface Data Boise Upper Air Data	1987-1991
Model options	Regulatory Default	
Land use	Rural	Low population density in area and large fraction of unimproved land
Terrain	Not considered	Area surrounding facility is effectively flat
Building downwash	Used building profile input program for ISCST3 (BPIP)	Building dimensions obtained from modeling files submitted
Receptor grid	Grid 1	25 meter spacing along boundary out to 100 meters
	Grid 2	90 meter spacing out to about 600 meters
Facility location (UTM) <sup>a</sup>	Easting	704 kilometers
	Northing	4,731 kilometers

a. Universal Transverse Mercator

#### 2.3.1 Modeling protocol

A modeling protocol was not submitted to the Department prior to the application. However, modeling analyses were reviewed by the Department prior to issuance of the previous PTC.

#### 2.3.2 Model Selection

Ambient air impact analyses were performed by MSE, WestFarm's consultant, using the model ISCST3. The Department concurs with MSE's selection of ISCST3 for these dispersion modeling analyses.

#### 2.3.3 Land Use Classification

Well over 50 percent of the landuse of the surrounding area is rural. Therefore, rural dispersion coefficients were used in the modeling analyses.

#### 2.3.4 Meteorological Data

Surface meteorological data from Pocatello and upper air meteorological data from Boise, for 1987 through 1991, were used in the modeling analyses. The Department determined these data are the most representative data available for the area.

### **2.3.5 Complex Terrain**

The model was run assuming flat terrain. The Department reviewed 7.5 minute USGS maps and concurs with MSE that the area is effectively flat with respect to dispersion modeling for this facility.

### **2.3.6 Facility Layout**

DEQ verified proper identification of the facility boundary and buildings on the site by comparing the modeling input to a facility plot plan submitted with the application.

### **2.3.7 Building Downwash**

Plume downwash effects caused by structures present at the facility were accounted for in the modeling analyses. The Building Profile Input Program for ISCST3 (BPIP) was used to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emissions release parameters. DEQ verification modeling was conducted using regenerated parameters from BPIP.

### **2.3.8 Ambient Air Boundary**

The applicant used the facility property boundary as the ambient air boundary. Although the area is not fenced, public access is prevented by the following:

- The facility is located in an industrial park
- Unauthorized visitors are escorted offsite by facility personnel
- There are no areas intended for general public access or public right-of-ways.

### **2.3.9 Receptor Network**

The originally submitted modeling analyses utilized the following receptor grid:

- 25-meter spacing along the ambient air boundary out to about 100 meters
- 90-meter spacing out to about 600 meters

The Department determined the submitted grid was adequate because:

- Maximum impacts are very close to the facility because of the downwash caused by the presence of the large structures at the facility
- Impacts of PM<sub>10</sub> are well below regulatory thresholds, minimizing the need to assure that slightly higher concentrations would not be observed with a more compact grid

### **2.3.10 Emission Rates**

Emissions rates used in the dispersion modeling analyses submitted by the applicant were reviewed against those in the permit application, the Department's emission inventory review, and the proposed permit. The following approach was used for the Department's verification modeling:

- All modeled emissions rates were equal to the facility's emissions calculated in the PTC application or the permitted allowable rate.
- Modeling results were compared to "significant contribution" thresholds. More extensive review of modeling parameters was not necessary because model results were well below applicable standards.

Table 4 provides criteria pollutant emissions quantities for short-term and long-term averaging periods.

**Table 4. PM<sub>10</sub> Emissions Rates Used for Modeling (24-Hour and Less)**

Source (Id Code)	Location <sup>a</sup> (meters)	PM <sub>10</sub> <sup>b</sup> Hourly Rate Used for Modeling (lb/hr) <sup>c</sup>
Dust Collector/Vacuum Pump Exhaust (STCK1)	E4582, N3192	0.447
Carlisle Friesland Dryer (STCK2)	E4591, N3168	5.2
Kewanee Boiler (STCK3)	E4603, N3108	0.628
Cleaver Brooks Boiler (STCK4)	E4592, N3114	0.685

a. User-specified coordinate system

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

c. Pounds per hour

### 2.3.11 Emission Release Parameters

Table 5 provides emissions release parameters, including stack location, stack height, stack diameter, exhaust temperature, and exhaust velocity.

**Table 5. Emissions and Stack Parameters**

Release Point / Location	Source Type	Stack Height (m) <sup>a</sup>	Modeled Diameter (m)	Stack Gas Temp. (K) <sup>b</sup>	Stack Gas Flow Velocity (m/sec) <sup>c</sup>
Dust Collector/Vacuum Pump Exhaust (STCK1)	Point	14.63	0.31	293	19.8
Carlisle Friesland Dryer (STCK2)	Point	45.94	2.3	316	12.7
Kewanee Boiler (STCK3)	Point	10.67	0.76	464	10.9
Cleaver Brooks Boiler (STCK4)	Point	10.67	0.61	458	15.2

a. Meters

b. Kelvin

c. Meters per second

## 3.0 MODELING RESULTS:

This Section describes dispersion modeling results.

### 3.1 Significant and Full Impact Analysis Results

The applicant conducted a Full Impact Analysis and did not conduct a separate preliminary Significant Impact Analysis. Results of the Full Impact Analysis are presented in Table 6 and Table 7.

**Table 6. Criteria pollutant design concentrations for full impact analysis**

Pollutant	Averaging Period	Year	Design Concentration (µg/m <sup>3</sup> ) <sup>a</sup>	Receptor Location (meters) <sup>b</sup>	
				Easting (m)	Northing (m)
PM <sub>10</sub> <sup>c</sup>	24-hour	1991	20.13	4565	3009
	Annual	1991	3.63	4694	3274

a. Micrograms per cubic meter

b. User-specified coordinate system

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

**Table 7. Full impact analysis results**

Pollutant	Averaging Period	Total Ambient Impact <sup>a</sup> ( $\mu\text{g}/\text{m}^3$ ) <sup>b</sup>	Background Concentration ( $\mu\text{g}/\text{m}^3$ )	Total Ambient Concentration ( $\mu\text{g}/\text{m}^3$ )	NAAQS ( $\mu\text{g}/\text{m}^3$ )	Percent of NAAQS
PM <sub>10</sub>	24-hour	20.13	73	93.1	150	62
	Annual	3.63	26	29.6	50	59

<sup>a.</sup> Impact from facility-wide emissions

<sup>b.</sup> Micrograms per cubic meter

### 3.2 Toxic Air Pollutants Results

Modeling of TAPs was not necessary because TAP emissions were not estimated for the PTC application.

### 4.0 FILES

Electronic copies of the modeling analysis are saved on disk. Table 8 provides a summary of the files used in the modeling analysis. The Permit Writer has reviewed this modeling memo to ensure consistency with the PTC and technical memorandum.

Table 8. Dispersion Modeling Files		
Type of File	Description	File Name
Met data	Surface and upper air data from Boise, Idaho NWS data: January 1987 – December 1991	BoiPocXX.ASC XX = year of met data
BEEST input files	24-hour	WFarmDEQ24Hour.BST
	Annual	WFarmDEQXXAnn.BST; XX = year of met data
Each BST file has the following type of files associated with it:		
	Input file for BPIP program	.PIP
	BPIP output file	.TAB
	Concise BPIP output file	.SUM
	BEE-Line file containing direction specific building dimensions	.SO
	ISCST3 input file for each pollutant	.DTA
	ISCST3 output list file for each pollutant	.LST
	User summary output file for each pollutant	.USF
	Master graphics output file for each pollutant	.GRF
Some modeling files have the following type of graphics files associated with them:		
	Surfer data file	.DAT
	Surfer boundary file	.BLN
	Surfer post file containing source locations	.TXT
	Surfer plot file	.SRF

KS: G:\TECHNICAL SERVICES\MODELING\SCHILLINGWESTFARMJEROME\WFARMJEROME MODELING MEMO.DOC

**APPENDIX E**

**WestFarm Foods, Jerome**

**Project No. P-030410**

**PTC Fee Calculation**

## PTC Fee Calculation

**Instructions:**

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

**Company: WestFarm Foods, Jerome Facility**  
**Address: P.O. Box 79007**  
**City: Seattle**  
**State: WA**  
**Zip Code: 98119**  
**Facility Contact: Mr. Joseph L. Muller**  
**Title: Director of Regulatory Compliance**  
**AIRS No.: 053-00006**

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

<b>Emissions Inventory</b>			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO <sub>x</sub>	0.0	0	0.0
SO <sub>2</sub>	0.0	0	0.0
CO	0.0	0	0.0
PM10	14.6	0	14.6
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
<b>Total:</b>	<b>0.0</b>	<b>0</b>	<b>14.6</b>
<b>Fee Due</b>	<b>\$ 5,000.00</b>		

Comments: Permit to Construct Processing Fee (IDAPA 58.01.01.225).