

Statement of Basis

**Permit to Construct No. P-2011.0120
Project ID 61528**

Lamb Weston, Inc. - Twin Falls Plant

Twin Falls, Idaho

Facility ID 083-00062

Final

April 2, 2018
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The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Bhp	brake horsepower
BMP	best management practices
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS No.	Chemical Abstracts Service registry number
CBP	concrete batch plant
CEM	continuous emission monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
FEC	Facility Emissions Cap
GACT	Generally Available Control Technology
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HHV	higher heating value
HMA	hot mix asphalt
hp	horsepower
hr	hour
hr/yr	hours per consecutive 12 calendar month period
IC	internal combustion
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
iwg	inches of water gauge
km	kilometers
lb/hr	pounds per hour
lb/qtr	pound per quarter
L1	Line 1
L1-SP	Line 1 and Specific Products
L2	Line 2
L4	Line 4
m	meters

MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
NSR	new source review
O&M	operation and maintenance
O ₂	oxygen
PAH	polyaromatic hydrocarbons
PC	permit condition
PCB	polychlorinated biphenyl
PERF	Portable Equipment Relocation Form
PM	particulate matter
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
PW	process weight rate
RAP	recycled asphalt pavement
RFO	reprocessed fuel oil
RICE	reciprocating internal combustion engines
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
scfh	standard cubic feet per hour
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SP	Special Product
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
tons/hr	tons per hour
T2	Tier II operating permit
TAP	toxic air pollutants
TEQ	toxicity equivalent
T-RACT	Toxic Air Pollutant Reasonably Available Control Technology
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compounds
yd ³	cubic yards
µg/m ³	micrograms per cubic meter

FACILITY INFORMATION

Description

The Lamb Weston, Inc. - Twin Falls Plant (the facility) processes raw potatoes into frozen, fried, hash brown, mashed, and special potato products for consumer sales. The facility has four direct fired dryers, four fryers that use steam from two boilers for heat, a natural gas or biogas-fired water heater, two emergency diesel-fired internal combustion (IC) engines, and miscellaneous heaters and burners.

The facility also has a process water treatment plant with two anaerobic digesters and a flare. The treatment plant treats process water from the facility. In 2017, Lamb Weston Inc. acquired the anaerobic wastewater treatment plant from the City of Twin Falls.

Because the potato processing operation and the process water treatment operation have the same owner, are adjacent to each other, and the process water treatment activity supports the potato processing activities, these two operations are considered as one facility for the Title V program and new source review (NSR) program.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

Lamb Weston, Inc. – Potato processing plant

May 4, 2012	P-2011.0120 project 60909, removing a Facility Emissions Cap (FEC), creating a facility-wide limit on CO ₂ e emissions, and removing diesel and vegetable oil as fuel in Boilers No. 1 and 2. No modeling was done. (A, but will become S upon issuance of this permit)
June 20, 2010	P-2009.0093, allowing burning biogas in Boiler No. 1, but the total amount of biogas allowed to be burned at the facility is still kept the same, SO ₂ emissions were modeled. The SO ₂ impact from the facility was about 95% of 24-hr NAAQS, 81% of 3-hr NAAQS, and 62% of annual NAAQS, Permit status (S)
June 4, 2007	Tier II operating permit No. T2-050420, placing the facility under an FEC, PM ₁₀ emissions were modeled. The impact was 97% of NAAQS for both 24-hr and annual averaging time, Permit status (S)
March 8, 2005	Tier II operating permit No. T2-040422, facility name change, Permit status (S)
April 1, 2003	Tier II operating permit No. T2-020425, changing reporting due dates, Permit status (S)
May 24, 2002	Tier II operating permit No. 083-00062, installing a natural gas or biogas-fired water heater, allowing burning diesel and cooking oil in the boilers, removing Boiler No.1 restriction and re-rating back to its design capacity and installing a NO _x CEMS, emissions of SO ₂ , PM ₁₀ and annual NO _x were modeled facility-wide. Permit status (S)
October 17, 2000	Tier II operating permit No. 083-00062, limiting PTE below major source thresholds to avoid subject to Title V program, derating Boiler No.1, and issuing an initial air permit for emissions units installed without obtaining PTCs, PM ₁₀ and NO _x were modeled facility-wide. Permit status (S)
August 1, 1994	Lamb Weston Inc. merged with Universal Frozen Foods. The air permit process was initiated shortly thereafter.

Lamb Weston, Inc. – Wastewater treatment plant (Previous Facility ID: 083-00085)

May 12, 2017	P-2017.0026 project 61881, ownership change from City of Twin Falls to Lamb Weston, Inc. (A, but will become S upon issuance of this permit)
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May 28, 2002

P-000417, 083-00085, initial PTC for an existing flare used to burn biogas from anaerobic digesters at the wastewater treatment plant. (S)

Application Scope

- The main purpose for this permitting action is to revise the existing PTC No. P-2011.0120 project 60909 issued on May 4, 2012 as required by the consent order signed on September 9, 2014. Specifically, this PTC addresses the requirements under item 12A of the consent order.
- In addition, the applicant has proposed the following changes through this permitting action:
 - Improve the performance of the air washers serving Line 2 Fryer and Line 4 Fryer, The planned improvements include:
 - Optimizing air flow and level of water saturation in the exhaust air stream
 - Installing additional mist eliminators (vane separators & mesh pads) in the air washer
 - Optimizing water sprays within the air washers, and
 - Increasing the Line 4 Fryer stack height to 50 feet.
 - Replace the air washers for the Line 1 (L1) Fryer and Special Products (SP) Fryer with a Venturi scrubber. The scrubber will combine the exhausts from the Line 1 and SP fryers into a single 50-foot tall stack at the same location as the existing Line 1 Fryer stack. The existing Line 1 Fryer and SP Fryer stacks will be eliminated.
- This permitting action integrates the PTC for the biogas flare of the adjacent anaerobic process water treatment plant into this PTC because Lamb Weston, Inc. has owned and operated the anaerobic wastewater treatment facility plant since May 2017. Both plants are considered as one facility for NSR program and for Title V program purposes.
- This PTC includes facility-wide emissions limits to keep the facility as a minor source to avoid being subject to Title V program (i.e., Tier I operating permitting program).
- The applicant has requested increased VOC emissions limits for the fryers due to the greater VOC EF obtained from the 2014 source test and due to the potential dryer throughput increases.
- The applicant has also requested substantial changes to the existing permit, such as compliance demonstration methods. Detailed discussions of the changes can be found in Permit Conditions Review section.

Application Chronology

September 9, 2014	DEQ signed the consent order, which required submittal of an application for revision of the existing PTC (Enforcement Case No. E-2013.0014).
June 2, 2015	DEQ received an application and an application fee.
July 2, 2015	DEQ determined that the application was incomplete.
February 28, 2017	DEQ received a revised PTC application from the applicant.
March 27, 2017	DEQ determined that the application was incomplete.
March 24 & 25, 2017	DEQ received supplemental information from the applicant.
May 23, 2017	DEQ determined that the application was complete.
July 17 – August 1, Year	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
September 24, 2017	DEQ received a revised application that included the biogas flare of the anaerobic wastewater treatment plant
October 18, 2017	DEQ received a revised EI spreadsheet

November 8, 2017 DEQ made available the draft permit and statement of basis for peer and regional office review.

December 1, 2017 DEQ made available the draft permit and statement of basis for applicant review.

December 19, 2017 DEQ received the permit processing fee.

February 15 – March 19, 2018 DEQ provided a public comment period on the proposed action.

April 2, 2018 DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION ^(a)

SourceID No.	Sources	Control Equipment	Emission Point ID No.
Line 1 Fryer	<u>Line 1 Fryer:</u> Manufacturer: Heat and Control Installed/Modified: 1988 Finished Product Rate: 18.23 tons per hour (tons/hr) in 2012 permit, 30 tons/hr in the EI for this permitting action	<u>Venturi Scrubber (L1-SP Scrubber):</u> Manufacturer: SLY Inc. Model: Model 9 Pressure Drop Across Venturi Throat: 12-20 inch of H ₂ O Water Flow Rate to Venturi Throat: 252 - 308 gpm	<u>Venturi Scrubber Exhaust</u> Height: 50 feet Diameter: 3.7 feet Stack Flow Rate: 29,455 acfm
Special Products Fryer	<u>Special Products Fryer:</u> Manufacturer: Heat and Control Installed/Modified: 1977 Finished Product Rate: 3.15 tons/hr in 2012 permit, 5 tons/hr in the EI for this permitting action		
Line 2 Fryer	<u>Line 2 Fryer:</u> Manufacturer: Heat and Control Installed/Modified: 1970 Finished Product Rate: 17.93 tons/hr in 2012 permit, 42 tons/hr in the EI for this permitting action	<u>Air Washer:</u> Manufacturer: Galbert Company Model: Custom Pressure Drop: NA Water Flow Rate: 134 gpm	<u>Air Washer Stack</u> Height: 55 feet Diameter: 3.00 feet Stack Flow Rate: 18,060 acfm
Line 4 Fryer	<u>Line 4 Fryer:</u> Manufacturer: Heat and Control Installed/Modified: 1989 Finished Product Rate: 26.58 tons/hr in 2012 permit, 37 tons/hr in the EI for this permitting action	<u>Air Washer:</u> Manufacturer: Rico Model: Custom Pressure Drop: NA Water Flow Rate: 146 gpm	<u>Air Washer Stack</u> Height: 50 feet Diameter: 3.1 feet Stack Flow Rate: 19,938 acfm
Line 1 Dryer	<u>Line 1 Dryer:</u> Manufacturer: National Installed/Modified: 1986 Finished Product Rate: 18.2 tons/hr in 2012 permit, 30 tons/hr in the EI for this permitting action Rated Burner Capacity: 36.0 MMBtu/hr Fuel: natural gas only	None	Four Stacks, each with: Exit Height: 45 ft (13.72 m) Exit Diameter: 2.76 ft (0.84 m) Exit Flow Rate: 25,000 acfm Exit Temperature: 100 °F (37.8 °C)
Line 2 Dryer	<u>Line 2 Dryer:</u> Manufacturer: National Installed/Modified: 1988/2002 Finished Product Rate: 17.93 tons/hr in 2012 permit, 42 tons/hr in the EI for this permitting action Rated Burner Capacity: 4.0 MMBtu/hr Fuel: natural gas only	None	Seven stacks: Height: Stack 1: 38 feet Stacks 2-7: 35.8 feet (max) Diameter (all): 2.26 feet Flow Rate: Stack 1: 11,839 acfm Stacks 2-7: 10,395 acfm Exit Temperature: 100 °F (37.8 °C)

SourceID No.	Sources	Control Equipment	Emission Point ID No.
Line 4 Dryer	<u>Line 4 Dryer:</u> Manufacturer: National Installed/Modified: 1989 Finished Product Rate: 26.6 tons/hr in 2012 permit, 37 tons/hr in the EI for this permitting action Rated Burner Capacity: 27.5 MMBtu/hr Fuel: natural gas only	None	Five Stacks: Height: 44 feet (stack 1) Height: 36 feet (stacks 2 thru 5) Diameter: 3.9 feet Exit Flow Rate (each stack): 22,175 acfm Exit Temperature: 100 °F (37.8 °C)
Special Products Dryer	<u>Special Products Dryer:</u> Manufacturer: B Eagle Installed/Modified: 1976/2007 Finished Product Rate: 3.2 tons/hr in 2012 permit, 5 tons/hr in the EI for this permitting action Rated Burner Capacity: 5.0 MMBtu/hr Fuel: natural gas only	None	Exit Height: 38 ft (11.58 m) Exit Diameter: 2.6 ft (0.80 m) Exit Flow Rate: 8,049 acfm Exit Temperature: 200 °F (93.3 °C)
Boiler No. 1	<u>Boiler No. 1:</u> Manufacturer: Combustion Engineering Model: 26-A-15 Installed/Modified: 1989 Maximum Fuel Throughput: 176,471 scf/hr natural gas Rated Burner Capacity: 180.0 MMBtu/hr Fuel: natural gas and/or biogas only	None	Exit Height: 46 ft (14.02 m) Exit Diameter: 6.0 ft (1.83 m) Exit Flow Rate: 34,304 acfm Exit Temperature: 600 °F (315.6 °C)
Boiler No. 2	<u>Boiler No. 2:</u> Manufacturer: Murray-Trane Model: MCF4-57 Installed/Modified: 1982 Maximum Fuel Throughput: 70,588 scf/hr natural gas Rated Burner Capacity: 72.0 MMBtu/hr Fuel: natural gas only	None	Exit Height: 40 ft (12.19 m) Exit Diameter: 4.0 ft (1.22 m) Exit Flow Rate: 25,327 acfm Exit Temperature: 590 °F (310.0 °C)
Effluent Heater	<u>Effluent heater:</u> Manufacturer: American Heating Co. Model: AHC-1500 Installed/Modified: 2002 Rated Burner Capacity: 19 MMBtu/hr Fuel: natural gas and/or biogas only	None	Exit Height: 42 ft (12.80 m) Exit Diameter: 2.17 ft (0.66 m) Exit Flow Rate: 4,048 acfm Exit Temperature: 400 °F (204.4 °C)
L4 Emergency IC Engine	<u>L4 Emergency IC Engine:</u> Manufacturer: Cummins Model: NT855C Manufacture Date: 1982 Max. Power Rating: 355 bhp (230 kw genset) Fuel: diesel Annual use limit: 52 hrs/yr	None	Exit Height: 7.0 ft (2.13 m) Exit Diameter: 0.5 ft (0.15 m) Exit Flow Rate: 2,370 acfm Exit Temperature: 970 °F (521.1 °C)
L1 Emergency IC Engine	<u>L1 Emergency IC Engine:</u> Manufacturer: Cummins Model: 6BT5.9 G-2 Manufacture Date: 1997 Max. Power Rating: 166 bhp (100 kw genset) Fuel: diesel Annual use limit: 52 hrs/yr	None	Exit Height: 13.0 ft (3.96 m) Exit Diameter: 0.25 ft (0.08 m) Exit Flow Rate: 800 acfm Exit Temperature: 1,060 °F (571.1 °C)
Miscellaneous heaters and burners	<u>Miscellaneous heaters and burners</u> Combined Maximum Fuel Throughput: 106,667 scf/hr Combined Maximum Heat Input: 109 MMBtu/hr	None	N/A
Biogas Flare	<u>Biogas Flare</u> Manufacturer: Groth Corp. Model No.: 8391 Installed: 1991 Design Biogas Feed Rate: 13,500 scfh biogas The flare is rated at 13 MMBtu/hr	Uncontrolled	NA

^(a) The footnote in 10/19/2017 EI states that the fryer and dryer production are Lamb Weston's assessment of possible operating rates for the lines and that since the new permit will not include production rate limits, those data are provided for information purposes only

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a “Synthetic Minor” source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAPs above the applicable Major Source threshold without permit limits. Because the facility classification was previously determined for PTC No. P-2009.0093 dated January 14, 2010 and because this permitting action does not change facility’s classification, the uncontrolled PTE will not be presented for this project.

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

The following table presents the pre-project potential to emit for all criteria pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. The pre-project PTE is taken from the SOBs for the current or previous permits as described in the footnote of the following table.

Table 2 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Emissions Activity	PM ₁₀		SO ₂		NO _x		CO		VOC		Pb	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Fryers ^(a)	16.11	64.05							9.05	35.96	-	
Dryers ^(b)												
Line 1 Dryer	1.34	5.9	0.02	0.09	3.53	15.46	2.96	12.99	0.19	0.85		
Line 2 Dryer	1.32	5.8	0.01	0.04	1.67	7.30	1.40	6.13	0.09	0.40		
Line 4 Dryer	1.95	8.6	0.02	0.07	2.70	11.81	2.26	9.92	0.15	0.65		
Special Products Dryer	0.23	1.0	0.00	0.01	0.49	2.15	0.41	1.80	0.03	0.12		
Dryers total:	4.84	19.29 ^(e)	0.05	0.21	8.39	36.72	7.03	30.84	0.46	2.02		
Boiler 1 ^(b)	3.18	13.9	29.87	130.83	36.64	160.49	8.27	36.22	1.08	4.74		
Boiler 2 ^(b)	1.21	5.3	3.73	16.34	13.85	60.65	5.93	25.97	0.39	1.70		
Effluent Heater ^{(b),(c)}	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Heaters and Burners	0.82	3.6	0.06	0.28	10.80	47.30	9.07	39.74	0.59	2.60		
Maximum Fuel Annual ^(e)		8.75		96.95		97.35		81.77		5.35		
Biogas Flare ^(d)	NA	NA	19.10	81.20	NA	NA	NA	NA	NA	NA	NA	NA
230K genset ^(a)	0.78	0.02	0.73	0.02	11.01	0.29	2.37	0.06	0.89	0.02		
100K genset ^(a)	0.37	0.01	0.34	0.01	5.15	0.13	1.11	0.03	0.42	0.01		
PTE ^(e)	26.68	92.11	34.78	96.98	85.82	97.74	33.79	81.87	12.86	41.34	NA	NA
Facility-Wide Emission Caps ^(e)	NA	92.1	NA	96.7	NA	97.7	NA	NA	NA	NA	NA	NA

^(a) From PTC No. P-2011.0120 issued 5/4/2012

^(b) From Statement of Basis for PTC No. P-2009.0093 issued 6/20/2010 "Controlled Emissions Estimates of Criteria Air Pollutants". (Limits from PTC No. P-2011.0120 not applicable because those limits were based on invalidated PSD threshold for GHG emissions.)

^(c) Effluent Heater emissions are included in Boiler No. 1 and maximum fuel annual to avoid double-counting of emissions.

^(d) From PTC No. P-2017.0026 issued to the wastewater treatment plant on 5/12/2017

^(e) From PTC No. P-2009.0093 issued 6/20/2010 "Controlled Emissions Estimates of Criteria Air Pollutants". (Limits from Permit P2011.0120 are not applicable because those limits were based on invalidated PSD threshold for GHG emissions.)

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria pollutants from all emissions units at the facility as submitted by Applicant and reviewed and revised by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit. Additional discussions can be found under Permit Condition Review section of the SOB.

The consent order requires the applicant to submit a PTC application to replace the combined emissions limits in the 2012 permit with individual emissions limits for fryers, dryers, Boiler No. 1, and Boiler No. 2 without changing the total combined emissions limits.

Table 3 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Emissions Activity	PM ₁₀		SO ₂		NO _x		CO		VOC		Pb	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Process Operations	20.95	83.3	-	-	-	-	-	-	28.60	116.93	-	-
<i>Fryers</i>												
L1-SP Scrubber	5.25	23.0	-	-	-	-	-	-	15.1	65.98	-	-
Line 2 Fryer	4.01	11.0	-	-	-	-	-	-	5.8	16.86	-	-
Line 4 Fryer	6.85	30.0	-	-	-	-	-	-	7.8	34.08	-	-
<i>Total for Fryers:</i>	16.11	64.05	-	-	-	-	-	-	28.60	116.93 (52 ^b)	-	-
<i>Dryers</i>												
Line 1 Dryer	1.56	6.2	-	-	-	-	-	-	-	0.00	-	-
Line 2 Dryer	1.09	4.4	-	-	-	-	-	-	-	0.00	-	-
Line 4 Dryer	1.93	7.7	-	-	-	-	-	-	-	0.00	-	-
Special Products Dryer	0.26	1.0	-	-	-	-	-	-	-	0.00	-	-
<i>Total for Dryers:</i>	4.84	19.29	-	-	-	-	-	-	-	0.00	-	-
Fuel Combustion												
<i>Natural Gas</i>												
Boiler 1	1.34	5.9	0.11	0.46	14.78	64.72	5.86	25.66	0.97	4.25	0.00	0.00
Boiler 2	0.54	2.3	0.04	0.19	7.06	30.92	5.93	25.97	0.39	1.70	0.00	0.00
Line 1 Dryer			0.02	0.09	3.53	15.46	2.96	12.99	0.19	0.85	0.00	0.00
Line 2 Dryer			0.00	0.01	0.39	1.72	0.33	1.44	0.02	0.09	0.00	0.00
Line 4 Dryer			0.02	0.07	2.70	11.81	2.26	9.92	0.15	0.65	0.00	0.00
Special Products Dryer			0.00	0.01	0.49	2.15	0.41	1.80	0.03	0.12	0.00	0.00
Effluent Heater (NG)	0.14	0.6	0.01	0.05	1.86	8.16	1.56	6.85	0.10	0.45	0.00	0.00
Miscellaneous Heaters and Burners	0.81	3.6	0.06	0.28	10.69	46.81	8.98	39.32	0.59	2.57	0.00	0.00
<i>Total for Natural Gas:</i>	2.83	12.40	0.27	1.17	41.49	181.73	28.30	123.95	2.44	10.69	0.00	0.00
<i>Biogas</i>												
Effluent Heater (BG)	0.15	0.6	20.50	74.60	2.02	7.35	1.70	6.17	0.11	0.40	0.00	0.00
Biogas Flare	0.15	0.6	20.50	81.20	1.10	4.00	5.98	19.10	10.67	38.81	0.00	0.00
<i>Total for Biogas (Max of Effluent Heater or Biogas Flare)</i>	0.15	0.6	20.50	81.2	2.02	7.4	5.01	19.1	10.67	38.81	0.00	0.00
<i>Diesel</i>												
230K genset	0.78	0.02	0.73	0.02	11.01	0.29	2.37	0.06	0.89	0.02	0.00	0.00

Emissions Activity	PM ₁₀		SO ₂		NO _x		CO		VOC		Pb	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
100K genset	0.37	0.01	0.34	0.01	5.15	0.13	1.11	0.03	0.42	0.01	0.00	0.00
<i>Total for Diesel:</i>	1.15	0.0	1.07	0.03	16.15	0.42	3.48	0.09	1.31	0.03		
Facility-Wide Potential to Emit	25.08	96.3	21.84	82	59.66	190	36.79	143	43.01	166 (102 ^b)	0.00	0.00
Proposed Facility Emissions Limits		90.8		75.2		97.7		81.9		99		

^(a) Maximum fuel combustion emissions assume all biogas is flared.

^(b) The values in the parenthesis are based on fryers' production rates in 2012 permit and using the new VOC EFs based on 2014 source test data

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 4 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM ₁₀ /PM _{2.5}		SO ₂		NO _x		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	26.68	92.11	34.78	96.7	85.82	97.7	33.79	81.9	12.86	41.34
Post Project Potential to Emit	25.08	90.8	21.84	75.2	59.66	97.7	36.79	81.9	43.01	99
Changes in Potential to Emit	-1.60	-1.31	-12.94	-21.50	-26.16	0.00	3.00	0.00	30.15	57.66

TAP Emissions

Historical, only toxic air pollutants emitted from fuel combustions are reviewed and analyzed for potato processing facilities for permitting purpose. Recent internet search reveals that TAP could be emitted from frying food or frying oil at high temperature. Currently, it is not clear whether TAP would emit from the potato fryers at potato processing plants and if emitted, at what level. Therefore this permitting action will not look at TAPs from potato fryers until the potato processing industry and DEQ have better understanding of TAP emissions from industrial potato fryers.

Because no changes are made to the combustion units at the facility and consequently TAP emissions do not change; therefore, TAP analysis is not required for this permitting action.

Ambient Air Quality Impact Analyses

The applicant has proposed to change the control devices of the fryers and the fryers exhaust parameters as described under Application Scope section. The fryers emit PM and VOC.

The applicant provided an analysis of potential PM₁₀ ambient impacts changes as a result of fryer stack exhaust parameters change and the modifications to fryer air emissions controls. Because the PM₁₀ ambient impact of this permitting action is less than the significant impact levels as defined in the Rules, according to the State of Idaho Air Quality Modeling Guideline¹, a full modeling analysis is not required. According to DEQ's modeling memo, the applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard.

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

¹ Criteria pollutant thresholds in Table 2, State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc ID AQ-011, September 2013.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Twin Falls County, which is designated as attainment or unclassifiable for PM_{2.5}, PM₁₀, SO₂, NO₂, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

- A = Use when any one HAP has actual or potential emissions ≥ 10 T/yr or if the aggregate of all HAPS (Total HAPS) has actual or potential emissions ≥ 25 T/yr.
- SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits ≥ 8 T/yr of a single HAP or ≥ 20 T/yr of THAP.
- SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to < 8 T/yr of a single HAP and/or < 20 T/yr of THAP.
- B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold
- UNK = Class is unknown

For All Other Pollutants:

- A = Actual or potential emissions of a pollutant are ≥ 100 T/yr.
- SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are ≥ 80 T/yr.
- SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.
- B = Actual and potential emissions are < 100 T/yr without permit restrictions.
- UNK = Class is unknown.

Table 5 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	>100	<100	100	SM
PM ₁₀	>100	<100	100	SM
PM _{2.5}	>100	<100	100	SM
SO ₂	>100	<100	100	SM
NO _x	>100	<100	100	SM
CO	>100	<100	100	SM
VOC	>100	<100	100	SM
HAP (single)	< 10	< 10	10	B
HAP (total)	< 25	< 25	25	B
Pb	< 100	< 100	100	B

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 Permit to Construct Required

The permittee is required by the 9/9/2014 consent order to revise its PTC to include the requirements under

item 12 of the consent order. The permittee has requested that a PTC be issued for that and for other revisions to the permit. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.7 and 2.8.

Standards for New Sources (IDAPA 58.01.01.676)

IDAPA 58.01.01.676 Standards for New Sources

The fuel burning equipment located at this facility, with a maximum rated input of ten (10) million BTU per hour or more, are subject to a particulate matter limitation of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting gaseous fuels. Fuel-Burning Equipment is defined as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. This requirement is assured by Permit Condition 2.11.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM₁₀, SO₂, NO_x, CO, and VOC, or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility does not have facility-wide emissions of any criteria pollutant that exceed 100 T/yr.

NSPS Applicability (40 CFR 60)

This permitting action does not change the NSPS applicability and the applicable requirements. Refer to the statement of basis for PTC No. P-2011.0120 project 60909 issued May 4, 2012 for details.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

GACT/MACT Applicability (40 CFR 63)

This permitting action does not change the GACT applicability and the applicable requirements. Refer to the statement of basis for PTC No. P-2011.0120 project 60909 issued May 4, 2012 for details.

The boilers are not subject to Boiler MACT because the facility is not a HAP major source. The boilers are not subject to 40 CFR 63 Subpart JJJJJ because they are natural gas-fired boilers and are not affected sources to the subpart.

Permit Conditions Review

This section describes only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action. Currently PTC template is used for this revised permit.

PERMIT SCOPE

Permit Conditions 1.1 to 1.3

Permit Condition 1.1 states the purpose of this permitting action. Permit Condition 1.2 states those permit conditions that have been modified or revised by this permitting action are identified by the permit issue date citation located directly under the permit condition and on the right hand margin. Permit Condition 1.3 states that this PTC replaces PTC No. P-2011.0120 project 60909, issued on May 4, 2012 for the potato processing plant and PTC No. P-2017.0026 project 61881, issued on May 12, 2017 for the wastewater treatment plant flare.

Table 1.1

Table 1.1 is revised to include the new Venturi scrubber to be used to control emissions from Line 1 fryer and Specific Products fryer. The pressure drop across the Venturi throat and the water flow rate to the Venturi throat reflect actual design – see vendor PFD included in the updated application package.

The control device description of Line 2 and Line 4 fryers is changed from "wet scrubber" to "air washer". The minimum flow rates for Line 2 and Line 4 air washers are based on engineering investigation of the test for air washers performed on May 31 – June 2, 2017.

The flare information is taken from the SOB for PTC No. P-000417 issued on 5/28/2002 (2011AAG2399). Since PTC No. P-2017.0026 issued 5/12/2017 was for ownership change, no analysis was performed.

Other changes to the table as requested by the applicant are changing "maximum finished product" to "xx tons per hour finished product" and "maximum heat capacity" to "rated burner capacity".

FACILITY-WIDE CONDITIONS

Facility-wide conditions are taken from the 2012 PTC except that the following permit conditions (PCs) are removed because they duplicate the requirements in the general provisions of the permit. These PCs were titled as Excess Emissions (old PC 13), Performance Testing (old PC 15), Monitoring and Recordkeeping (old PC 16), and Reports and Certifications (old PC 18).

Permit Condition 2.10

The Twin Falls Regional Office address is updated to the new address.

Permit Condition 2.11

As requested by the applicant, "Corrections for altitude shall be made in accordance with IDAPA 58.01.01.680", the language in the Rules, has been added to Fuel Burning Equipment Grain Loading permit condition. "0.050 gr/dscf of effluent gas corrected to 8% oxygen by volume for coal, and 0.080 gr/dscf of effluent gas corrected to 8% oxygen by volume for wood products" is removed as the facility does not use coal or wood on site.

New Permit Condition 2.14

New PC 2.14 states that the facility shall comply with the facility-wide emission limits contained in Appendix A of the permit.

This permitting action does not allow increase of allowable emissions except for VOC because the application did not provide any discussion or information on possible ambient impact of emissions increases. The modeling analysis only addresses redistribution of the combined limits among the three fryer stacks. This permitting action has corrected VOC emissions limits because the facility performed a source test in 2014 and the source test data showed that VOC emissions of fryers were higher than what were originally estimated. Refer to detailed discussions under APPENDIX A – EMISSIONS LIMITS of this section.

New Permit Conditions 2.15 to 2.22

Permit Conditions 2.15 to 2.22 are the monitoring requirements to demonstrate compliance with the facility-wide

emissions limits. They are proposed by the applicant and reviewed and revised by DEQ staff.

Unless specified, the emission factors (EFs) in the permit are taken from AP-42 Section 1.4 for natural gas or biogas combustion, from Section 3.3 for emergency engines, and from Section 13.5 for flares.

Flare EFs

Each flare EF in lb/MMBtu is converted to lb/MMscf by multiplying 800 MMBtu/MMscf, the higher heating value (HHV) of the biogas generated on site according to the applicant.

Generator EFs

Each generator EF in lb/hr is calculated as: (EF in lb/hp-hr from AP-42) * (engine break horse power). The engine for the 230 kw generator is rated as 355 bhp, and the engine for the 100 kw generator is rated as 166 bhp.

Permit Condition 2.16

Flare PM₁₀ EF

PM₁₀ EF in Section 1.4 for natural gas combustion is used as PM₁₀ EF for the flare because PM₁₀ EF for flares in AP-42 Section 13.5 provides a range not a specific value and because PM₁₀ EF in Section 1.4 for natural gas combustion is within that range.

Permit Condition 2.17

Boiler No. 1 NO_x EF

In the EI spreadsheet, the facility uses EF of 83.73 lb NO_x/MMscf to estimate NO_x emissions from Boiler No. 1. The EF was based on 10/14/1999 source test. Because Boiler No. 1 is required to use continuous emission monitoring system (CEMS) to record NO_x emissions in lb/MMBtu in Permit Condition 5.14, the facility will use more current NO_x emissions data obtained from the CEMS.

Permit Condition 2.18

SO₂ EF for burning biogas

The SO₂ EF for burning biogas, including in Boiler No. 1, Effluent Heater, and the flare are calculated as follows:

$$\begin{aligned} \text{SO}_2 \text{ (lb/MMscf)} &= (\text{H}_2\text{S scf / MMscf biogas}) (\text{lb-mol H}_2\text{S}/385 \text{ scf H}_2\text{S}) (1 \text{ lb-mole SO}_2/1 \text{ lb-mole H}_2\text{S}) (64.06 \text{ lb SO}_2/\text{lb-mole}) \\ &= (\text{H}_2\text{S ppmv}) (\text{lb-mol H}_2\text{S}/385 \text{ scf H}_2\text{S}) (1 \text{ lb-mole SO}_2/1 \text{ lb-mole H}_2\text{S}) (64.06 \text{ lb SO}_2/\text{lb-mole}) \\ &= 0.166 * \text{H}_2\text{S ppmv} \end{aligned}$$

Permit Condition 2.19

CO EF for process dryers

CO emissions for the process dryers are calculated using the AP-42 CO EF for natural gas combustion in a boiler. The differences in combustion conditions between boilers and process burners used in potato dryers reduce the reliability of the AP-42 CO EF for calculating CO emissions from the dryers. Because the margin between the facility-wide CO limit of 81.9 T/yr and major source threshold of 100 T/yr is large enough to accommodate potential errors in the CO emissions estimates for dryers, a CO source test for dryers is not required by this permitting action. However, if the facility requests to increase facility-wide CO emissions limit to be closer to the major source threshold of 100 T/yr in the future, a source test to verify dryers' CO emissions factors will be required.

Permit Condition 2.20

VOC from fryers

Based on the maximum finished product rates listed in the 2012 permit and using the 2014 source test data for the fryers, the VOC PTE from the fryers are 52 T/yr. The VOC PTE from all combustion sources are 50 T/yr, including the flare. The facility wide VOC PTE would be 52 T/yr + 50 T/yr = 102 T/yr.

However, in the 10/19/2017 EI, the applicant has used higher production rates than those in the 2012 permit, and the estimated VOC PTE of the fryers at these higher operating rates is 117 T/yr. The applicant has requested a

facility-wide VOC limit of 99 T/yr to remain as a synthetic minor source. The footnote in 10/19/2017 EI states that the production rates used in the 10/19/2017 EI are Lamb Weston's assessment of possible operating rates for the lines and that since the new permit will not include production rate limits, those data are provided for information purposes only.

On October 24-26, 2017, Lamb Weston performed source testing on PM₁₀ and VOC after improvements to fryer emissions controls. The new VOC EFs have been reviewed and are approved by DEQ. The EFs are included in Table 3.3 of the permit and will be used for monthly VOC emissions calculations in this section.

Permit Condition 2.21

The requirement in PC 2.21 is proposed by the applicant and reviewed and revised by DEQ staff.

PC 2.21 requires the facility to update EFs once required source tests are done for the dryers, fryers, and Boiler No. 1.

PC 2.21 also allows the facility to request EFs update based on other revised technical information and voluntary source test results.

All revised emissions factors shall be approved by DEQ. Upon approval, the revised emission factor shall be used to complete the calculations required in this permit.

Permit Condition 2.22

The requirement in PC 2.22 is proposed by the applicant and reviewed by DEQ staff.

New Permit Condition 2.23

This condition is standard language taken from DEQ's internal guidance for permits containing federal regulations, such as NSPS.

LINE 1 FRYER, LINE 2 FRYER, LINE 4 FRYER, AND SPECIAL PRODUCTS FRYER

New Permit Conditions 3.1, 3.2 and Table 3.1

Permit Conditions 3.1 and 3.2 and Table 3.1 are revised to include the new Venturi scrubber used to control emissions from Line 1 and Special Products Fryers and to change the pollution control descriptions from "wet scrubber" to "air washer" on Line 2 and Line 4 Fryers. These changes address the consent order item 12 bullet No. 1 requirement.

New Permit Condition 3.3

Refer to discussions under APPENDIX A – EMISSIONS LIMITS for details.

New Permit Condition 3.4

Permit Condition 3.4 states that the stack of Line 4 Fryer shall be raised to 50 feet. This stack height is used in the modeling for this permitting action and is proposed by the applicant. The previous PTCs (e.g., the 2012 PTC) list the Line 4 Fryer stack height as 43.3 feet.

New Permit Condition 3.5

Permit Condition 3.5 includes operating requirements for the Venturi scrubber and air washers to control PM emissions from the fryers. The operating range of the Venturi scrubber is based on vendor's design data. Minimum flow rates for Line 2 and Line 4 air washers are based on Method 5/202 engineering investigation performance testing of air washers May 31 – June 2, 2017. This testing involved measuring particulate emissions while operating the air washers under a variety of operating conditions. The operating requirements are proposed by the applicant and have been reviewed by DEQ staff.

New Permit Condition 3.6

Permit Condition 3.6 establishes monitoring requirements for the Venturi scrubber and air washers. The language is taken from DEQ's internal guidance. The nozzle inspection frequency is developed based on the guidance.

New Permit Condition 3.7

Permit Condition 3.7 specifies the PM₁₀ compliance demonstration method for compliance with the PM₁₀ emissions limits for the fryers as proposed by the applicant and reviewed and revised by DEQ staff.

New Permit Conditions 3.8 to 3.11

Performance testing requirements are proposed by the applicant and reviewed and revised by DEQ staff. These requirements are for demonstrating compliance with the emissions limits and for developing emission factors for the fryers. The proposed performance test schedule is revised to be consistent with DEQ's internal guidance for source testing.

The applicant has requested an enforceable limit of 99 T/yr for VOC to keep the facility as a synthetic minor source. The facility has the potential to emit more than 100 T/yr VOC according to the application. Because the VOC emissions from the fryers varied in the past and because the new Venturi scrubber and the improved air washers may change the VOC emissions rate, a VOC source test is required.

The permit conditions establish a maximum 5-year interval (61 months) between source tests. If the applicant elects to conduct a source test sooner than five years, the five-year interval is based on the date of that source test. The "61-month" specification provides some leeway in scheduling the source test around the required frequency. The provision of an added month is consistent with EPA policies on source testing frequency. For example, a requirement to perform annual compliance testing means testing between 11 months and 13 months after the previous compliance test.

"or at DEQ approved alternative" is included in PC 3.10 to provide DEQ flexibility to change test frequency of every five year based on source test results. Depend on how consistent the EFs are, DEQ may ask for more or less frequent testing.

The permit does not specify which EPA test method to use for VOC source testing; instead it states that the permittee shall test VOC in accordance DEQ approved source test protocol. The following explains why this approach is used:

Method 25A gives ppm of propane because propane is used as calibration gas for the method. To estimate VOC emissions in mass, such as lb/hr or Ton/yr from the tested fryer, a weighted molecular weight of the VOC from the fryer is needed. Method 25A does not provide that information.

When the molecular weight of propane is used to calculate VOC mass emission rate, emission are properly identified as "lb/hr, expressed as propane"; If the weighted molecular weight of the VOC compounds is higher than the molecular weight of propane, the VOC mass rate expressed as propane would underestimate the actual mass of VOC emissions. This creates a potential for the facility to inadvertently become a major source for Title V program or NSR program due to VOC emissions if the VOC emissions are expressed as propane equivalents. This permit section recognizes potential use of EPA Method 18 to estimate VOC emissions from the fryers if facility-wide VOC emissions are sufficiently large that inaccuracies associated with measuring VOC emissions as propane equivalents could potentially trigger the Title V major source threshold. These details can be discussed in a test protocol.

LINE 1 DRYER, LINE 2 DRYER, LINE 4 DRYER, AND SPECIAL PRODUCTS DRYER

Revised Permit Conditions 4.1, 4.2 and Table 4.1

The process description in PC 4.1 is revised to make it easier to understand. PC 4.2 describes the control of the dryers. The stack information for the dryers is removed and is put into Table 1 of this SOB.

Revised Permit Condition 4.3

Refer to discussions under APPENDIX A – EMISSIONS LIMITS for details.

Permit Condition 4.4 (Old PC 40)

Permit Condition 4.4 specifies that the dryers shall only burn natural gas.

New Permit Condition 4.5

Permit Condition 4.5 specifies the heat input rates of the dryers. The heat input rates of the dryers are the surrogates for compliance with the NO_x annual limits. No other monitoring is required.

New Permit Condition 4.6

Permit Condition 4.6 is the compliance method proposed by the applicant and reviewed by DEQ staff.

Revised Permit Condition 4.7

Permit Condition 4.7 is about dryer source testing for PM₁₀. Refer to Permit Condition 4.7 for the requirements. Refer to discussions under Appendix C of the SOB for PC 4.6 for more details.

Permit Conditions 4.8, 4.10, and 4.11

Permit Condition 4.8 is the revised old PC 43, and PC 4.11 is the revised old PC 44. PC 4.10 is the same as PC 4.8 except for VOC. The permit condition contains standard language for source testing procedures and reporting.

Permit Condition 4.9

Consistent with current general DEQ practices for estimating VOC emissions from direct-fired potato dryers, dryer VOC emissions are assumed to result only from fuel combustion. DEQ believes there is also a potential for VOC emissions to occur from the potato drying process itself. For this permit, DEQ has assumed that VOC emissions from drying potatoes are negligible because the dryer temperature is relatively low (100 °F to 200 °F).

Currently, estimated actual facility VOC emissions are sufficiently far below the 100 T/yr major source threshold that the inclusion of potential VOC emissions from potato drying would not cause estimated actual emission to exceed 100 T/yr. Accordingly, at this time there is no need to more completely characterize dryer VOC emissions. However, to avoid the facility potentially exceeding 100 T/yr for VOC, a dryer VOC source test is required when the estimated actual facility-wide VOC emissions exceeds 98 T/yr. The source test can be performed on one dryer that is representative of all the dryers. Method 18 is not required because the VOC emissions from drying the potatoes are expected to be sufficiently low that potential errors associated with measuring VOC emissions as propane equivalents will not be significant.

BOILERS AND HEATERS

Existing Permit Conditions 5.1 and 5.2

The process description for the boilers and heaters are taken from the 2012 PTC. No other changes are made.

Revised Permit Condition 5.3

The combined emissions limits are replaced with individual emissions limits as required by the consent order. Refer to discussions under APPENDIX A – EMISSIONS LIMITS for details.

New Permit Condition 5.4

Permit Condition 5.4 specifies the types of fuels that can be burned in Boiler No.1, Boiler No. 2, Effluent Heater, and miscellaneous heaters & burners and their maximum heat input rates.

Revised Permit Condition 5.5 (revised old PC 51)

This is an existing permit condition that limits the biogas usage at the facility-wide level. This includes the biogas usage at both the potato process plant and the wastewater treatment plant flare.

Revised Permit Condition 5.6 (revised old PC 52)

PC 5.6 is revised to make it clearer.

Revised Permit Condition 5.8 (revised old PC 54)

The monthly calculation method in PC 5.8 is removed as it is now specified in PC 2.18. Hourly calculation method is revised to be consistent with what is in PC 2.18.

New Permit Conditions 5.9 to 5.11

The CO EF of 33.2 lb/MMscf used in Permit Condition 2.19 is based on a 1999 source test. The value is less than half of the EF (i.e., 84 lb/MMscf) listed in AP-42. The CO emissions from Boiler No. 1 would be 30 T/yr more when using AP-42 EF. To avoid possible exceedance of 100 T/yr of facility-wide CO, PC 5.9 requires the permittee to source test CO from Boiler No. 1 when facility-wide actual CO emissions exceed 70 T/yr and to

revise facility-wide CO emissions calculations and emissions calculations for Boiler No. 1 if the new CO EF is higher than the one in PC 2.19. The facility can choose to update EF if it is lower than what is listed in the permit, but this is not required. If the EF is higher than what is listed in the permit, updating the EF is mandatory.

New Permit Conditions 5.10 and 5.11

Permit Conditions 5.10 and 5.11 are standard languages for source testing and reporting requirements.

As requested by DEQ source test staff, the following old permit condition is removed:

“Test Protocols for Nitrogen Oxide Continuous Emission Monitoring System Certification/ Recertification Tests For Boiler No. 1, the permittee is encouraged to submit a performance test protocol to DEQ for approval at least 30 days prior to conducting each certification and recertification test of the NO_x CEMS.”

14 AND 11 EMERGENCY DIESEL-FIRED INTERNAL COMBUSTION ENGINES

Permit Conditions remain as they were in 2012 permit. To follow DEQ’s internal guidance, minor changes to the format are made.

BIOGAS FLARE

Permit Conditions in this section are taken from PTC No. P-2017.0026 project 61881 issued on May 12, 2017. The 2017 PTC is for the ownership transfer of the wastewater treatment plant from City of Twin Falls to Lamb Weston, Inc.

Permit Conditions 7.4 and 7.5

“Two-year” is replaced with “five years” to be consistent with General Provisions 8.10.

Permit Condition 7.5

“Within 60 days of issuance of this permit” is removed as the biogas flowmeter should have been installed.

GENERAL PROVISIONS

General Provisions are updated using the current PTC template.

APPENDIX A – EMISSIONS LIMITS

The post project PTE provided in the revised EI submitted on 10/19/2017 is used as a basis for these emissions limits unless otherwise stated. This permitting action does not allow increase of allowable emissions except for VOC. VOC emissions measured in the 2014 source test for the fryers are higher than the VOC emissions allowed in the previous permits that were based on old source test data. The applicant has used 2014 source test data to estimate VOC emissions from the fryers and requested to remove the existing VOC emissions limit for the fryers and to establish a facility-wide VOC limit of 99 T/yr.

Emissions Limits for PM₁₀

In the revised EI (10-19-2017), the applicant has redistributed the total fryer PM₁₀ emissions from original four fryer stacks to now three fryer stacks and has redistributed the total PM₁₀ emissions from four dryers and Boiler No. 1 and Boiler No. 2 to individual stacks as required by the consent order. The hourly and annual sums are kept the same as those in Table 3 and Table 5 of PTC No. P-2011.0120 issued 5/4/2012 and in Table 3.5 of 2010 permit.

PM₁₀ emissions from other emissions units are unchanged from the rates that were last modeled in Tier II operating permit No. T2-050420, issued on June 4, 2007.

The permittee has requested a PM₁₀ facility-wide limit of 90.8 T/yr for this permitting action.

Emissions Limits for NO_x

Facility-wide NO_x emissions from the potato processing plant were last modeled in Tier II operating permit No. 083-00062 issued on May 24, 2002 for compliance with annual NO_x NAAQS. The modeled rates were the estimated hourly emissions for each source at its capacity at 8,760 hr/yr except for the emergency generators that were modeled for 500 hr/yr.

Because 2012 permitting action was based on a nullified PSD threshold for GHG emissions, the applicant has requested to use emissions in 2010 permit as a baseline for this permitting action. Therefore, when redistributing the total NO_x emissions limits into individual emissions limit for the dryers and boilers as required by the consent order, the NO_x emissions rates in Table 3.5 of the SOB for the 2010 permit are used.

NO_x hourly and annual emissions limits for each emissions unit are included in the permit because now the NO₂ NAAQS includes standards for both 1-hour and annual averaging times, and the hourly and annual emissions limits denote a baseline for future changes. This approach is consistent with provisions of the consent order and the 2012 permit that removed the FEC permit provisions.

The permittee has requested a NO_x facility-wide limit of 97.7 T/yr through this permitting action.

Emissions limits for SO₂

Facility-wide SO₂ emissions from the potato processing plant were last modeled in PTC No. P-2009.0093 issued on June 20, 2010 for compliance with the 3-hr, 24-hr, and annual SO₂ NAAQS.

SO₂ hourly and annual emissions limits for each emissions unit are included in the permit because SO₂ has 3-hr, 24-hr, and annual SO₂ NAAQS, and the hourly and annual emissions limits denote a baseline for future changes. This approach is consistent with provisions of the consent order and the 2012 permit that removed the FEC permit provisions. The annual SO₂ limit for burning biogas in Boiler No. 1 and/or Effluent Heater is calculated based on the facility-wide annual biogas usage limit in the existing permit. The annual SO₂ limit for the flare is taken from the PTC No. P-2017.0026 project 61881 issued on May 12, 2017 for the flare.

The permittee has requested a SO₂ facility-wide limit of 75.2 T/yr for this permitting action based upon facility PTE with current fuel combustion options. In the 2012 permit, the permittee requested that the ability to combust fuel oil and cooking oil in the boilers be removed as part of the strategy to limit CO_{2e} emissions to less than 100,000 ton/yr. Even though this CO_{2e} threshold has been invalidated, the permittee has elected not to restore the ability to combust fuel and cooking oil. This results in a decrease in SO₂ emissions for this permit as compared to the baseline emissions estimates in 2010 permit, which included combustion of fuel and cooking oil.

Emissions limits for CO

CO hourly and annual emissions limits for each emissions unit are included in the permit because CO has 1-hr and 8-hr NAAQS, and the hourly and annual emissions limits denote a baseline for future changes. This approach is consistent with provisions of the consent order and the 2012 permit that removed the FEC permit provisions.

The permittee has requested a CO facility-wide limit of 81.9 T/yr in this permitting action.

Emissions limits for VOC

Based on the maximum finished product rates listed in the 2012 permit and using the 2014 source test data for the fryers, the VOC PTE from the fryers is 52 T/yr. The VOC PTE from all combustion sources are 50 T/yr, including the flares. The facility wide VOC PTE will be 52 T/yr + 50 T/yr = 102 T/yr. The applicant has requested a facility-wide VOC limit of 99 T/yr to remain as a synthetic minor source.

In the 10/19/2017 EI, the applicant used higher production rates than those used in the 2012 permit. At these higher production rates, the VOC PTE from the fryers becomes 117 T/yr. The footnote for the 10/19/2017 EI states that these are Lamb Weston's assessment of possible operating rates for the lines and that since the new permit will not include production rate limits, those data are provided for information purposes only.

While the facility keeps the total PM₁₀ emissions from the fryers as they are in the existing permit to avoid triggering full modeling analysis for PM₁₀ and PM_{2.5}, the permit would allow potential increases in fryer production rates as long as PM₁₀ emissions remain below emissions limits at the higher operating rates. The increased operating rates could increase fryer VOC emissions. Using the 2014 fryer VOC source test data and the production rates contained in the 2012 permit, fryer VOC emissions would increase from 35.96 T/yr to 52 T/yr. In contrast, when using Lamb Weston's assessment of possible operating rates for the lines, the revised EI spreadsheet shows fryer VOC emissions increasing to 117 T/yr. This is due to the increase in fryer production rates above the rate limits contained in the 2012 permit.

While VOC hourly and annual emission rates for fryers, dryers, Boiler No. 1, and Boiler No. 2 are included in Appendix A of the SOB, the permit only includes the facility-wide VOC limit of 99 T/yr. This is because no ambient impact modeling for hourly or annual VOC emissions was needed for establishing compliance with NAAQS.

POST PROJECT EMISSIONS RATES ^(e)										
Emissions Unit	PM ₁₀		NO _x		SO ₂		CO		VOC	
	lb/day	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
L1-SP Scrubber	125.9	23.01	-	-	-	-	-	-	15.1	65.98
Line 2 Fryer	96.2	11.00	-	-	-	-	-	-	5.8	16.86
Line 4 Fryer	164.4	30.04	-	-	-	-	-	-	7.8	34.08
Line 1 Dryer	37.4	6.21	3.53	15.46	0.02	0.09	2.96	12.99	0.19	0.85
Line 2 Dryer	26.2	4.36	0.39	1.72	2.35E-03	0.0103	0.33	1.44	0.02	0.09
Line 4 Dryer	46.3	7.68	2.70	11.81	0.02	0.07	2.26	9.92	0.15	0.65
Special Products Dryer	6.3	1.04	0.49	2.15	2.94E-03	0.01	0.41	1.80	0.03	0.12
Boiler 1 ^(d)	32.19	5.87	14.78	64.72	0.11	0.46	5.86	25.66	0.97	4.25
Boiler 2 ^(d)	12.88	2.35	7.06	30.92	0.04	0.19	5.93	25.97	0.39	1.70
Boiler No. 1 and Boiler No. 2, combined	-	5.89 ^(a)	-	-	-	-	-	-	-	-
Effluent Heater	4.06	0.74	1.86	8.16	0.01	0.05	1.56	6.85	0.10	0.45
Miscellaneous Heaters and Burners	19.68	3.59	10.69	46.81	0.06	0.28	8.98	39.32	0.59	2.57
Biogas (when burned in Boiler No. 1 and/or the Effluent Heater) ^(b)	-	-	-	-	20.54	74.60 ^(f)	-	-	-	-
Biogas Flare	-	-	1.10	4.00	20.54	81.20 ^(g)	5.01	19.10 ^(g)	10.67	38.81
230K genset*	6.64 ^(c)	0.02 ^(c)	11.01	0.29	0.73	0.02	2.37	0.06	0.89	0.02
100K genset*	3.10 ^(c)	0.01 ^(c)	5.15	0.13	0.34	0.01	1.11	0.03	0.42	0.01
Facility Wide Emissions	-	90.8	-	97.7	-	75.2	-	81.9	-	99.0

^(a) Boiler No. 1 and Boiler No. 2, combined for PM₁₀ = the total PM₁₀ emissions from four dryers and Boiler No. 1 and Boiler No. 2 in 2012 permit - the total PM₁₀ emissions from four dryers = 25.18 T/yr – 19.29 T/yr = 5.89 T/yr.

^(b) Emissions have already been counted under when the boiler No. 1 and Effluent Heater burn natural gas.

^(c) PM₁₀ lb/day = 0.781 lb/hr at rated capacity x 8.5 hr/day, permitted daily hours for 230K genset. T/yr = 0.781 lb/hr at rated capacity x 52 hr/yr, permitted annual hours / (2000 lb/T) for 230K genset. PM₁₀ lb/day = 0.365 lb/hr at rated capacity x 8.5 hr/day, permitted daily hours for 100K genset. T/yr = 0.365 lb/hr at rated capacity x 52 hr/yr, permitted annual hours / (2000 lb/T) for 100K genset. These were the rates modeled in the 2007 permit.

^(d) Proposed for this permitting action. The applicant requested to void the limits for the boilers in the 2012 permit as that permit was based on nullified PSD threshold for GHG emissions and to use 2010 permit as a base for emissions changes. Emissions are calculated using boilers' rated capacity and EF for natural gas combustion.

^(e) All emissions are taken from the EI spreadsheet submitted on 10/19/2017 unless otherwise stated.

^(f) Based on the biogas throughput limit initially established in the 2002 permit and being carried to the current permit.

^(g) Existing permit limit from PTC No. P-2017.0026 project 61881 issued on May 12, 2017 for the flare.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c. During this time, there were comments on the application and there was a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

Public Comment Period

A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.01.c. During this time, comments were submitted in response to DEQ's proposed action. Refer to the chronology for public comment period dates.

A response to public comments document has been crafted by DEQ based on comments submitted during the public comment period. That document is part of the final permit package for this permitting action.

APPENDIX A – EMISSIONS INVENTORIES

Table 1
Lamb-Weston, Twin Falls
Process Emissions - PM10 and VOC

Stack	Operating Rate, tons*			PM10					VOC				
				Emission Factor		Potential Emissions			Emission Factor		Potential Emissions		
	Daily	hourly	Annual	lb/ton	Basis	lb/hr	lb/day	ton/yr	lb/ton	Basis	lb/hr	lb/day	ton/yr
L1-SP Scrubber	835	35	304,775	Proposed Enforceable Limits		5.25	125.9	23.01	0.433	2014 stack test. Weighted average for L1 and Special Products fryers	15	362	66
Line 2 Fryer	1,000	42	244,404		4.01	96.2	11.00	0.138	2014 Stack test.	6	138	17	
Line 4 Fryer	885	37	323,025		6.85	164.4	30.04	0.211	2014 Stack test.	8	187	34	
Line 1 Dryer	715	30	260,975		1.56	37.4	6.21	-	NA	-	-	-	
Line 2 Dryer	1,000	42	183,126		1.09	26.2	4.36	-	NA	-	-	-	
Line 4 Dryer	885	37	323,025		1.93	46.3	7.68	-	NA	-	-	-	
Special Products Dryer	120	5	43,800		0.26	6.3	1.04	-	NA	-	-	-	
<i>Uncontrolled Total:</i>						20.95	502.68	83.34			29	686	117

Notes:

* Finished product. Operating rates are provided for emission estimating purposes and are not throughput limits.

Table 2
Lamb-Weston, Twin Falls
Fuel Combustion Emission Factors

EMISSION FACTORS																			
Emissions Unit	Fuel	PM10			SO2			NOx			CO			VOC			Pb		
		Value	Units	Basis	Value	Units	Basis	Value	Units	Basis	Value	Units	Basis	Value	Units	Basis	Value	Units	Basis
Boiler 1	NG	7.6	lb/MMscf	AP-42, §1.4	0.6	lb/MMscf	AP-42, §1.4	83.73	lb/MMscf	Source test ^a	33.2	lb/MMscf	Source test	5.5	lb/MMscf	AP-42, §1.4 [†]	0.0005	lb/MMscf	AP-42, §1.4
Boiler 2	NG	7.6	lb/MMscf	AP-42, §1.4	0.6	lb/MMscf	AP-42, §1.4	100	lb/MMscf	AP-42, §1.4	84	lb/MMscf	AP-42, §1.4	5.5	lb/MMscf	AP-42, §1.4	0.0005	lb/MMscf	AP-42, §1.4
Effluent Heater (NG)	NG	7.6	lb/MMscf	AP-42, §1.4	0.6	lb/MMscf	AP-42, §1.4	100	lb/MMscf	AP-42, §1.4	84	lb/MMscf	AP-42, §1.4	5.5	lb/MMscf	AP-42, §1.4	0.0005	lb/MMscf	AP-42, §1.4
Effluent Heater (BG)	Biogas	7.6	lb/MMscf	AP-42, §1.4	1015	lb/MMscf	H2S content of biogas [*]	100	lb/MMscf	AP-42, §1.4	84.0000	lb/MMscf	AP-42, §1.4	5.5	lb/MMscf	AP-42, §1.4	0.0000	lb/MMscf	Not anticipated [‡]
Biogas Flare	Biogas	7.6	lb/MMscf	AP-42, §1.4	1015	lb/MMscf	H2S content of biogas [*]	54.4	lb/MMscf	AP-42, §13.5 [§]	248	lb/MMscf	AP-42, §13.5 [§]	528	lb/MMscf	AP-42, §13.5 [§]	0.0000	lb/MMscf	Not anticipated [‡]
Process Dryers	NG	Included in process emission factor.			0.6	lb/MMscf	AP-42, §1.4	100	lb/MMscf	AP-42, §1.4	84	lb/MMscf	AP-42, §1.4	5.5	lb/MMscf	AP-42, §1.4	0.0005	lb/MMscf	AP-42, §1.4
Miscellaneous Heaters and Burners	NG	7.6	lb/MMscf	AP-42, §1.4	0.6	lb/MMscf	AP-42, §1.4	100	lb/MMscf	AP-42, §1.4	84	lb/MMscf	AP-42, §1.4	5.5	lb/MMscf	AP-42, §1.4	0.0005	lb/MMscf	AP-42, §1.4
230K genset	Diesel	0.00220	lb/hp-hr	AP-42, §3.3	0.00205	lb/hp-hr	AP-42, §3.3	0.03100	lb/hp-hr	AP-42, §3.3	0.00668	lb/hp-hr	AP-42, §3.3	0.00251	lb/hp-hr	AP-42, §3.3	0.00000	lb/hp-hr	No emissions factors available. Expected to be insignificant. [‡]
100K genset	Diesel	0.00220	lb/hp-hr	AP-42, §3.3	0.00205	lb/hp-hr	AP-42, §3.3	0.03100	lb/hp-hr	AP-42, §3.3	0.00668	lb/hp-hr	AP-42, §3.3	0.00251	lb/hp-hr	AP-42, §3.3	0.00000	lb/hp-hr	be insignificant. [‡]

Notes:

^a Based on source test conducted October 14, 1999. See October 6, 2000 DEQ "Technical Analysis for Tier II Operating Permit (#083-00062)".

^{*} Assumes 6100 ppmv H2S in biogas and 100% conversion of H2S to SO2.

[§] AP-42 emission factor stated in lb/MMBtu. Converted to lb/MMscf based on biogas HHV = 800 Btu/scf.

[†] Based on 0.2 gr S/Ccf natural gas.

[‡] Based on review of AP-42, EPA Webfire database, and CARB Air Toxic Emission Factors Search.

[‡] Not expected to be present based on process knowledge.

Table 3
Lamb-Weston, Twin Falls
Fuel Combustion Emissions

Fuel	Emissions Unit	Operating Rate			Fuel Combustion Rate			PM10		SO2		NOx		CO		VOC		Pb		
		Hourly	Annually	Units	Hourly	Annually	Units	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	
Natural Gas																				
	Boiler 1	180	1,576,800	MMBtuh	0.1765	1,546	MMscf	1.34	5.87	0.11	0.46	14.78	64.72	5.86	25.66	0.97	4.25	0.00009	0.00039	
	Boiler 2	72	630,720	MMBtuh	0.0706	618	MMscf	0.54	2.35	0.04	0.19	7.06	30.92	5.93	25.97	0.39	1.70	0.00004	0.00015	
	Line 1 Dryer	36	315,360	MMBtuh	0.0353	309	MMscf	Included in process emissions		0.02	0.09	3.53	15.46	2.96	12.99	0.19	0.85	0.00002	0.00008	
	Line 2 Dryer	4	35,040	MMBtuh	0.0039	34	MMscf			2.35E-03	0.0103	0.3922	1.72	0.33	1.44	0.02	0.09	0.00000	0.00001	
	Line 4 Dryer	27.5	240,900	MMBtuh	0.0270	236	MMscf			0.02	0.07	2.70	11.81	2.26	9.92	0.15	0.65	0.00001	0.00006	
	Special Products Dryer	5	43,800	MMBtuh	0.0049	43	MMscf			2.94E-03	0.01	0.49	2.15	0.41	1.80	0.03	0.12	0.00000	0.00001	
	Effluent Heater (NG)	19	166,440	MMBtuh	0.0186	163	MMscf	0.14	0.62	0.01	0.05	1.86	8.16	1.56	6.85	0.10	0.45	0.00001	0.00004	
	Miscellaneous Heaters and Burners	109	954,840	MMBtuh	0.1069	936	MMscf	0.81	3.56	0.06	0.28	10.69	46.81	8.98	39.32	0.59	2.57	0.00005	0.00023	
	<i>Total - Natural Gas:</i>				0.4436	3,886	MMscf	2.83	12.40	0.27	1.17	41.49	181.73	28.30	123.95	2.44	10.69	0.00022	0.00097	
Biogas																				
	Effluent Heater (BG)	-	-	-	0.0202	147†	MMscf	0.15	0.56	20.50	74.60	2.02	7.35	1.70	6.17	0.11	0.40	0.00000	0.00000	
	Biogas Flare	-	-	-	0.0202	147†	MMscf	0.15	0.56	20.50	81.20†	1.10	4.00	5.01	19.10†	10.67†	38.81	0.00000	0.00000	
	<i>Total - Biogas (Max of Effluent Heater or Biogas Flare)</i>				0.0202	147	MMscf	0.15	0.56	20.50	81.20	2.02	7.35	5.01	19.10	10.67	38.81	0.00	0.00	
Diesel																				
	230K genset*	355	18,460	hp-hrs	-	-	-	0.781	0.02	0.73	0.02	11.01	0.29	2.37	0.06	0.89	0.02	0.00000	0.00000	
	100K genset*	166	8,632	hp-hrs	-	-	-	0.365	0.01	0.34	0.01	5.15	0.13	1.11	0.03	0.42	0.01	0.00000	0.00000	
	<i>Total - Diesel</i>				-	-	-	1.15	0.03	1.07	0.03	16.15	0.42	3.48	0.09	1.31	0.03	0.00000	0.00000	
	<i>Potential Emissions from Fuel Combustio†‡:</i>								4.13	12.99	21.84	82.39	58.74	186.15	36.79	143.14	14.41	49.53	0.00022	0.00097

Notes:

- * gensets limited to maximum of 52 hr/yr non-emergency operations
- † Biogas usage limited to 147 MMscf/yr
- ‡ Potential emissions assume that all biogas is combusted in the flare and the effluent combusts only natural gas.
- † Enforceable emissions limit. PTC P-2017.0026.

**Lamb-Weston, Twin Falls
Emissions Inventory**

Table 4. PRE-PROJECT POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

Emissions Activity	PM10		SO2		NOx		CO		VOC		Pb	
	lb/hr	ton/yr										
Fryers ^(a)	16.11	64.1							9.05	36	-	
Dryers ^(b)												
Line 1 Dryer	1.34	5.9	0.02	0.09	3.53	15.46	2.96	12.99	0.19	0.85		
Line 2 Dryer	1.32	5.8	0.01	0.04	1.67	7.30	1.40	6.13	0.09	0.40		
Line 4 Dryer	1.95	8.6	0.02	0.07	2.70	11.81	2.26	9.92	0.15	0.65		
Special Products Dryer	0.23	1.0	-	0.01	0.49	2.15	0.41	1.80	0.03	0.12		
<i>Dryers total:</i>	4.84	19.3	0.05	0.21	8.39	36.72	7.03	30.84	0.46	2.02		
Boiler 1 ^(b)	3.18	13.9	29.87	130.83	36.64	160.49	8.27	36.22	1.08	4.74		
Boiler 2 ^(b)	1.21	5.3	3.73	16.34	13.85	60.65	5.93	25.97	0.39	1.70		
Effluent Heater ^(c)	NA	NA										
Miscellaneous Heaters and Burners	0.82	3.6	0.06	0.28	10.80	47.30	9.07	39.74	0.59	2.60		
Biogas Flare ^(d)	NA	NA	19.10	81.20	NA	NA	NA	NA	NA	NA	NA	NA
230K genset ^(a)	0.78	0.02	0.73	0.02	11.01	0.29	2.37	0.06	0.89	0.02		
100K genset ^(a)	0.37	0.01	0.34	0.01	5.15	0.13	1.11	0.03	0.42	0.01		
Facility-Wide Emission Caps ^(e)	NA	92.1	NA	96.7	NA	97.7	NA	NA	NA	NA	NA	NA
PTE ^(b)	26.68	92.11	34.78	96.98	85.82	97.74	33.79	81.87	12.86	41.34	NA	NA

Notes:

(a) From Permit P-2011.0120

(b) From Statement of Basis for Permit P-2009.0093. "Controlled Emissions Estimates of Criteria Air Pollutants". (Limits from Permit P2011.0120 not applicable because those limits were based on invalidated PSD threshold for GHG emissions.)

(c) Effluent Heater emissions included in Boiler emissions to avoid double-counting of emissions.

(d) from Permit P-2017.0026

(e) From Permit P-2009.0093. "Controlled Emissions Estimates of Criteria Air Pollutants". (Limits from Permit P2011.0120 not applicable because those limits were based on invalidated PSD threshold for GHG emissions.)

Table 5. POST-PROJECT POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

Emissions Activity	PM10		SO2		NOx		CO		VOC		Pb	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Process Operations	20.95	83.3	-	-	-	-	-	-	28.60	116.93	-	-
<i>Fryers</i>												
L1-SP Scrubber	5.25	23.0	-	-	-	-	-	-	15.1	65.98	-	-
Line 2 Fryer	4.01	11.0	-	-	-	-	-	-	5.8	16.86	-	-
Line 4 Fryer	6.85	30.0	-	-	-	-	-	-	7.8	34.08	-	-
<i>Total for Fryers:</i>	16.11	64.05	-	-	-	-	-	-	28.60	116.93	-	-
<i>Dryers</i>												
Line 1 Dryer	1.56	6.2	-	-	-	-	-	-	0.00	0.00	-	-
Line 2 Dryer	1.09	4.4	-	-	-	-	-	-	0.00	0.00	-	-
Line 4 Dryer	1.93	7.7	-	-	-	-	-	-	0.00	0.00	-	-
Special Products Dryer	0.26	1.0	-	-	-	-	-	-	0.00	0.00	-	-
<i>Total for Dryers:</i>	4.84	19.29	-	-	-	-	-	-	0.00	0.00	-	-
Fuel Combustion												
<i>Natural Gas</i>												
Boiler 1	1.34	5.9	0.11	0.46	14.78	64.72	5.86	25.66	0.97	4.25	0.00	0.00
Boiler 2	0.54	2.3	0.04	0.19	7.06	30.92	5.93	25.97	0.39	1.70	0.00	0.00
Line 1 Dryer	Included in process emissions		0.02	0.09	3.53	15.46	2.96	12.99	0.19	0.85	0.00	0.00
Line 2 Dryer			0.00	0.01	0.39	1.72	0.33	1.44	0.02	0.09	0.00	0.00
Line 4 Dryer			0.02	0.07	2.70	11.81	2.26	9.92	0.15	0.65	0.00	0.00
Special Products Dryer			0.00	0.01	0.49	2.15	0.41	1.80	0.03	0.12	0.00	0.00
Effluent Heater (NG)	0.14	0.6	0.01	0.05	1.86	8.16	1.56	6.85	0.10	0.45	0.00	0.00
Miscellaneous Heaters and Burners	0.81	3.6	0.06	0.28	10.69	46.81	8.98	39.32	0.59	2.57	0.00	0.00
<i>Total for Natural Gas:</i>	2.83	12.40	0.27	1.17	41.49	181.73	28.30	123.95	2.44	10.69	0.00	0.00
<i>Biogas</i>												
Effluent Heater (BG)	0.15	0.6	20.50	74.60	2.02	7.35	1.70	6.17	0.11	0.40	0.00	0.00
Biogas Flare	0.15	0.6	20.50	81.20	1.10	4.00	5.01	19.10	10.67	38.81	0.00	0.00
<i>Total for Biogas (Max of Effluent Heater or Biogas Flare)</i>	0.15	0.6	20.50	81.2	2.02	7.4	5.01	19.1	10.67	38.81	0.00	0.00
<i>Diesel</i>												
230K genset	0.78	0.02	0.73	0.02	11.01	0.29	2.37	0.06	0.89	0.02	0.00	0.00
100K genset	0.37	0.01	0.34	0.01	5.15	0.13	1.11	0.03	0.42	0.01	0.00	0.00
<i>Total for Diesel:</i>	1.15	0.0	1.07	0.03	16.15	0.42	3.48	0.09	1.31	0.03	0.00	0.00
Facility-Wide Potential to Emit	25.08	96.3	21.84	82	59.66	190	36.79	143	43.01	166	0.00	0.00
Proposed Facility Emissions Limits		90.8		75.2		97.7		81.9		99		
<i>Controlled Potential to Emit:</i>	25.1	90.8	21.8	75.2	59.7	97.7	36.8	81.9	43.0	99.0	0.00	0.00

Notes:

(a) Maximum fuel combustion emissions assume all biogas is flared.

Table 6. POST-PROJECT CHANGES IN POTENTIAL TO EMIT

Emissions Activity	PM10		SO2		NOx		CO		VOC		Pb	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Fryers	0.00	0.00	NA	NA	NA	NA	NA	NA	19.55	80.97	NA	NA
Dryers	0.00	0.00	-0.01	-0.02	-1.28	-5.59	-1.06	-4.69	-0.07	-0.31	NA	NA
Boiler 1	-1.84	-8.04	-29.76	-130.37	-21.86	-95.77	-2.41	-10.56	-0.11	-0.49	NA	NA
Boiler 2	-0.67	-2.94	-3.69	-16.15	-6.79	-29.73	0.00	0.00	0.00	0.00	NA	NA
Effluent Heater	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Heaters and Burners	-0.01	-0.04	0.00	0.00	-0.11	-0.49	-0.09	-0.42	0.00	-0.03	NA	NA
Biogas Flare	NA	NA	19.10	81.20	NA	NA	NA	NA	NA	NA	NA	NA
250k Genset	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA
100k Genset	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA
Facility-Wide Emissions	NA	-1.3	NA	-21.5	NA	-0.0	NA	0.0	NA	57.7	NA	NA

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: June 26, 2017

TO: Shawnee Chen, P.E., Permit Writer, Air Program

FROM: Darrin Mehr, Analyst, Air Program

PROJECT: P-2010.0183 PROJ 61528 – Permit to Construct (PTC) Modification Application for ConAgra Foods Lamb Weston Twin Falls’ PTC

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs)

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Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a Non-Carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
ACFM	Actual cubic feet per minute
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
ARM	Ambient Ratio Method
ASOS	Automated Surface Observing System
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
Btu/hr	British Thermal Units per hour
CAPCOA	California Air Pollution Control Officers Association
CFR	Code of Federal Regulations
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon Monoxide
Coal Creek	Coal Creek Environmental (ConAgra Foods Lamb Weston’s permitting and modeling consultant)
CAFLW	ConAgra Foods Lamb Weston (permittee)
°F	Degrees Fahrenheit
DEQ	Idaho Department of Environmental Quality
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
ft	Feet
fps	Feet per second
GEP	Good Engineering Practice
hr	Hours
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
K	Kelvin
m	Meters
m/s	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NO	Nitrogen Oxide
NO ₂	Nitrogen Dioxide
NO _x	Oxides of Nitrogen
NWS	National Weather Service
O ₃	Ozone
OLM	Ozone Limiting Method
Pb	Lead

PM ₁₀	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
PM _{2.5}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	Parts Per Billion
PRIME	Plume Rise Model Enhancement
PTC	Permit to Construct
PTE	Potential to Emit
PVMRM	Plume Volume Molar Ratio Method
SIL	Significant Impact Level
SO ₂	Sulfur Dioxide
TAP	Toxic Air Pollutant
tons/year	Ton(s) per year
T/yr	Tons per year
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VCU	Vapor Control Unit
VOCs	Volatile Organic Compounds
<u>µg/m³</u>	<u>Micrograms per cubic meter</u>

1.0 Summary

1.1 General Project Summary

DEQ received a Permit to Construct (PTC) application on June 2, 2015, to modify ConAgra Foods Lamb Weston (CAFLW) Twin Falls PTC P-2011.0120 Project 60909, issued January 20, 2010, and revised on May 4, 2012. The project scope is to modify the existing PTC to establish enforceable PM₁₀ emission limits for four process fryer emission units to resolve consent order requirements.

This project will affect emission rate and product throughput limitations, with the emission rate limitations being the relevant concern for this modeling evaluation and memorandum. Project-specific air quality impact analyses involving atmospheric dispersion modeling of estimated emissions associated with the facility were submitted to DEQ to demonstrate that the facility would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02 and 203.03 [Idaho Air Rules Section 203.02 and 203.03]).

Coal Creek Environmental (Coal Creek), CAFLW's permitting and modeling consultant, submitted analyses and applicable information and data to enable DEQ to evaluate potential impacts to ambient air. The DEQ review summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the pollutant dispersion modeling analyses used to demonstrate that the estimated emissions associated with operation of the facility as modified will not cause or significantly contribute to a violation of the applicable air quality standards. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. This modeling review also did not evaluate the accuracy of emissions estimates. Evaluation of emissions estimates was the responsibility of the permit writer and is addressed in the main body of the DEQ Statement of Basis.

The submitted air quality impact analyses: 1) utilized appropriate methods and models according to established DEQ/EPA rules, policies, guidance, and procedures; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that estimated potential/allowable emissions are at a level defined as below regulatory concern (BRC) and do not require a NAAQS compliance demonstration; b) that predicted pollutant concentrations from emissions associated with the facility as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or c) that predicted pollutant concentrations from applicable emissions associated with the project as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable National Ambient Air Quality Standards (NAAQS) at ambient air locations where and when the project has a significant impact; 5) showed that Toxic Air Pollutant (TAP) emissions increases associated with the project do not result in ambient air impacts exceeding allowable TAPs increments. Table 1 presents key assumptions and results to be considered in the development of the permit.

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES	
Criteria/Assumption/Result	Explanation/Consideration
The project's PM ₁₀ and PM _{2.5} emissions for the project were evaluated for compliance with the significant contribution values for the applicable 24-hour PM ₁₀ and PM _{2.5} SILs and the annual PM _{2.5} SIL. Ambient impacts were predicted to be below the allowable SILs.	<p>Facility-wide allowable emissions were not required to be modeled to demonstrate compliance with the PM_{2.5} and PM₁₀ NAAQS based on the project's SIL compliance demonstration.</p> <p>Modeled future case stack parameters relied upon include:</p> <ul style="list-style-type: none"> • Release temperatures and exhaust flow rates should not be substantially less than those relied upon in the ambient impact analyses. • Stack diameters at the point of release to the atmosphere should not be greater than the values listed in Table 7. • Stack release height for the Line 4 Fryer (model ID L4FRY) will be increased from the existing height of 43.3 feet to 50 feet above grade.

Air impact analyses are required by Idaho Air Rules to be conducted according to methods outlined in 40 CFR 51, Appendix W (Guideline on Air Quality Models). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses demonstrated to the satisfaction of the Department, using DEQ/EPA established guidance, policies, and procedures, that operation of the proposed facility or modification will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition.

1.2 Summary of Submittals and Actions

- June 2, 2015: DEQ received an application for a permit modification including an ambient impact analysis.
- July 2, 2015: DEQ declared the application incomplete.
- July 17, 2015: Representatives of CAFLW, Coal Creek, and DEQ met to discuss the project.
- July 31, 2015: Coal Creek submitted a summary document of the main points of the July 17, 2015 meeting.
- September 15, 2015: DEQ issued a letter to CAFLW and Coal Creek containing DEQ's response to Coal Creek's July 31, 2015 letter and providing clarification for the project's analyses.
- November 4, 2015: Coal Creek submitted a modeling protocol for the project.
- January 20, 2016: DEQ issued a conditional modeling protocol approval letter in response to the November 4, 2015 protocol.

- February 4, 2016: DEQ received a request from Coal Creek for clarification of the January 20, 2016 modeling protocol approval letter, via email.
- August 29, 2016: DEQ provided additional clarification to CAFLW and Coal Creek for the project's modeling demonstration.
- February 23, 2017: DEQ received a PTC application for the project.
- February 24, 2017: DEQ received the modeling files for the February 23, 2017 application.
- March 27, 2017: DEQ declared the application incomplete.
- April 24 & 25, 2017: DEQ received incompleteness determination response documentation including release parameter documentation.
- May 23, 2017: DEQ declared the application complete.

2.0 Background Information

2.1 Permit Requirements for Permits to Construct

PTCs are issued to authorize the construction of a new source or modification of an existing source or permit. Idaho Air Rules Section 203.02 requires that applicable emissions from the new source or modification not cause or significantly contribute to a violation of an air quality standard, and Idaho Air Rules Section 203.03 requires that emissions from a new source or modification comply with applicable toxic air pollutant (TAP) increments of Idaho Air Rules Sections 585 and 586.

2.2 Project Location and Area Classification

The facility is located in Twin Falls, Idaho, in Twin Falls County. The area is designated as attainment or unclassifiable for all criteria pollutants.

2.3 Modeling Applicability for Criteria Pollutants

This section describes the applicability requirements for providing a demonstration of compliance with air quality standards.

2.3.1 Project Pollutant Modeling Applicability

Idaho Air Rules Section 203.02 state that a PTC cannot be issued unless the application demonstrates to the satisfaction of DEQ that the new source or modification will not cause or significantly contribute to a NAAQS violation. Atmospheric dispersion modeling is used to evaluate the potential impact of a proposed project to ambient air and demonstrate NAAQS compliance. The existing permit includes PM₁₀ emissions limits. PM_{2.5} emission limits are not included in the permit; however, because the PM_{2.5} emissions are directly related to the PM₁₀ emissions, and the PM_{2.5} SIL and NAAQS are applicable ambient standards at this time, the proposed changes to the permitted PM₁₀ emission limits

required a demonstration for PM_{2.5} ambient standards.

Modeling applicability is established on a project-specific basis. This project was initiated as part of a compliance action, Consent Order Case number E-2013.0014. The scope of the permitting project and the general NAAQS compliance demonstration approach required were established through DEQ/BAF pre-application meetings. Specific data and methods were further established in a modeling protocol submitted to DEQ, a DEQ protocol approval, additional requests from Coal Creek and CAFLW for revised scenarios and clarifications, and DEQ clarification responses. Direct PM₁₀ and direct PM_{2.5} were the only pollutants requiring dispersion modeling analyses for this project based on the outcome of those proceedings. The affected emissions units and exhaust stacks for the emissions units were limited to four fryer lines—Lines 1, 2, 4, and Special Products (SP). The facility's dryer lines, combustion equipment consisting of boilers and dryer line heaters, and emergency generator engines were not required to be included in the ambient impact analyses unless the project's Fryer Line modifications or revisions exceeded any significant impact level.

The four existing fryer lines were each equipped with a single exhaust stack. The requested permit modification will combine two exhaust streams for Fryer Line 1 and Fryer Line SP, and then route emissions to a new wet scrubber emissions control device. This emissions point was modeled with an emission rate reflecting combined emissions from individual Fryer Line 1 and Fryer Line SP. The combined stack for Fryer Lines 1 and SP will be placed in the same location as the original Fryer Line 1 exhaust stack. Locations for individual exhaust stacks for Fryer Line 2 and Fryer Line 4 will not be changed.

2.3.2 Ozone Modeling Applicability

Ozone (O₃) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O₃ is formed in the atmosphere through reactions of VOCs, NO_x, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses (see Section 3.3.3) cannot be used to estimate O₃ impacts resulting from VOC and NO_x emissions from an industrial facility. O₃ concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting.

Addressing secondary formation of O₃ has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

... footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."

The EPA believes it unlikely a source emitting below these levels would contribute to such a

violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY.”

Ozone impacts were not included in the scope of review for this project because VOC emissions were not affected by the modification.

2.3.3 Secondary Particulate Formation Modeling Applicability

The impact from secondary particulate formation resulting from emissions of NO_x, SO₂, and/or VOCs was assumed by DEQ to be negligible based on the magnitude of emissions and the short distance from emissions sources to modeled receptors where maximum PM₁₀ and PM_{2.5} impacts would be anticipated.

2.4 Significant and Cumulative NAAQS Impact Analyses

If maximum modeled pollutant impacts to ambient air from emissions sources associated with a new facility or the emissions increase associated with a modification exceed the SILs of Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02. A cumulative NAAQS impact analysis may also be required for permit revisions driven by compliance/enforcement actions, any correction of emissions limits or other operational parameters that may affect pollutant impacts to ambient air, or other cases where DEQ believes NAAQS may be threatened by the emissions associated with the facility or proposed project.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts from applicable facility-wide emissions and emissions from any nearby co-contributing sources. A DEQ-approved background concentration value is then added to the modeled result that is appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis.

Table 2. APPLICABLE REGULATORY LIMITS

Pollutant	Averaging Period	Significant Impact Levels ^a (µg/m ³) ^b	Regulatory Limit ^c (µg/m ³)	Modeled Design Value Used ^d
PM ₁₀ ^e	24-hour	5.0	150 ⁱ	Maximum 6 th highest ^g
PM _{2.5} ^h	24-hour	1.2	35 ⁱ	Mean of maximum 8 th highest ^j
	Annual	0.3	12 ^k	Mean of maximum 1 st highest ^l
Carbon monoxide (CO)	1-hour	2,000	40,000 ^m	Maximum 2 nd highest ⁿ
	8-hour	500	10,000 ^m	Maximum 2 nd highest ⁿ
Sulfur Dioxide (SO ₂)	1-hour	3 ppb ^o (7.8 µg/m ³)	75 ppb ^p (196 µg/m ³)	Mean of maximum 4 th highest ^q
	3-hour	25	1,300 ^m	Maximum 2 nd highest ⁿ
Nitrogen Dioxide (NO ₂)	1-hour	4 ppb (7.5 µg/m ³)	100 ppb ^s (188 µg/m ³)	Mean of maximum 8 th highest ^t
	Annual	1.0	100 ^r	Maximum 1 st highest ⁿ
Lead (Pb)	3-month ^u	NA	0.15 ^r	Maximum 1 st highest ⁿ
	Quarterly	NA	1.5 ^r	Maximum 1 st highest ⁿ
Ozone (O ₃)	8-hour	40 TPY VOC ^v	70 ppb ^w	Not typically modeled

- ^a Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
- ^b Micrograms per cubic meter.
- ^c Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
- ^d The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
- ^e Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
- ^f Not to be exceeded more than once per year on average over 3 years.
- ^g Concentration at any modeled receptor when using five years of meteorological data.
- ^h Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
- ⁱ 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
- ^j 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
- ^k 3-year mean of annual concentration.
- ^l 5-year mean of annual averages at the modeled receptor.
- ^m Not to be exceeded more than once per year.
- ⁿ Concentration at any modeled receptor.
- ^o Interim SIL established by EPA policy memorandum.
- ^p 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
- ^q 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
- ^r Not to be exceeded in any calendar year.
- ^s 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
- ^t 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
- ^u 3-month rolling average.
- ^v An annual emissions rate of 40 ton/year of VOCs is considered significant for O₃.
- ^w Annual 4th highest daily maximum 8-hour concentration averaged over three years.

If the cumulative NAAQS impact analysis shows a violation of the standard, the permit cannot be issued if the proposed project or facility has a significant contribution (exceeding the SIL) to the modeled violation. This evaluation is made specific to both time and space. The facility or project does not have a significant contribution to a violation if impacts are below the SIL at all specific receptors showing violations during the time periods when modeled violations occurred.

Compliance with Idaho Air Rules Section 203.02 is demonstrated if: a) specific applicable criteria pollutant emissions increases are at a level defined as Below Regulatory Concern (BRC), using the criteria established by DEQ regulatory interpretation¹; or b) all modeled impacts of the SIL analysis

are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or c) modeled design values of the cumulative NAAQS impact analysis (modeling applicable emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or d) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

2.5 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.

Per Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 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 Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP. The DEQ permit writer evaluates the applicability of specific TAPs to the Section 210.20 exclusion. No TAPs emissions were expected to increase as a result of this project.

3.0 Analytical Methods and Data

3.1 Modeling Methodology

This section describes the modeling methods used by the applicant's consultant, Coal Creek, to demonstrate compliance with applicable air quality standards.

3.1.1 Overview of Analyses

Coal Creek performed project-specific air impact analyses that were determined by DEQ to be reasonably representative of the facility, using established DEQ policies, guidance, and procedures. Results of the submitted analyses, in combination with DEQ’s analyses, demonstrated compliance with applicable air quality standards to DEQ’s satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 3 provides a brief description of parameters used in the modeling analyses.

Table 3. MODELING PARAMETERS		
Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Twin Falls, Idaho	The area is an attainment or unclassified area for all criteria pollutants.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 15181.
Meteorological Data	Twin Falls	2008-2012—See Section 3.3 of this memorandum. Surface and ASOS data from the Burley airport and upper air data from Boise, Idaho.
Terrain	Considered	Receptor elevations were determined using USGS 1 arc second National Elevation Dataset (NED) files based on the NAD27 datum. The NAD27 datum was confirmed. The facility is located within Zone 11.
Building Downwash	Considered	Plume downwash was considered for the structures associated with the facility and appropriate nearby structures.
Receptor Grid	Grid 1	10-meter spacing along the ambient air boundary.
	Grid 2	10-meter spacing outward from the ambient air boundary for a distance of at least 40 meters surrounding the entire facility.
	Grid 3	25-meter spacing in a 1,025-meter (x) by 1,050-meter (y) grid centered on the facility.
	Grid 4	50-meter spacing in an 2,450-meter (x) by 2,450-meter (y) grid centered on Grid 3.
	Grid 5	200-meter spacing in a 12,600-meter (x) by 12,400-meter (y) grid centered on Grid 4.

3.1.2 Modeling Protocol

Coal Creek, on behalf of CAFLWTF, submitted a modeling protocol to DEQ on November 4, 2015. DEQ issued a conditional modeling protocol approval letter in response to the protocol on January 20, 2017. DEQ received a request from Coal Creek for clarification of the modeling protocol approval letter on February 4, 2016. DEQ provided additional clarification on the project’s NAAQS compliance demonstration via email on August 29, 2016. Project-specific modeling was conducted using data and methods described in the modeling protocol and the *Idaho Air Modeling Guideline*².

3.1.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of air pollutant concentrations in ambient air be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple-source, Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

Coal Creek used AERMOD version 15181 to evaluate pollutant impacts to ambient air from the

facility. Version 16216r is the current version of the AERMOD; however, AERMOD, version 15181 was the current version for AERMOD at the time the modeling protocol was submitted by Coal Creek, responded to, and clarified by DEQ during February, March, and August 2016. PM₁₀ and PM_{2.5} impact analyses are not expected to be affected by the changes EPA has made to AERMOD versions 16216 and 16216r, and DEQ approved the use of Version 15181 for this project.

3.2 Background Concentrations

DEQ-approved ambient background values were not requested based on Coal Creek's modeling protocol, which limited the scope of the project to significant impact analyses for PM₁₀ and PM_{2.5}. The project's ambient impact analyses demonstrated that impacts remained below the SILs and cumulative impact analyses requiring DEQ-approved ambient backgrounds were not needed.

3.3 Meteorological Data

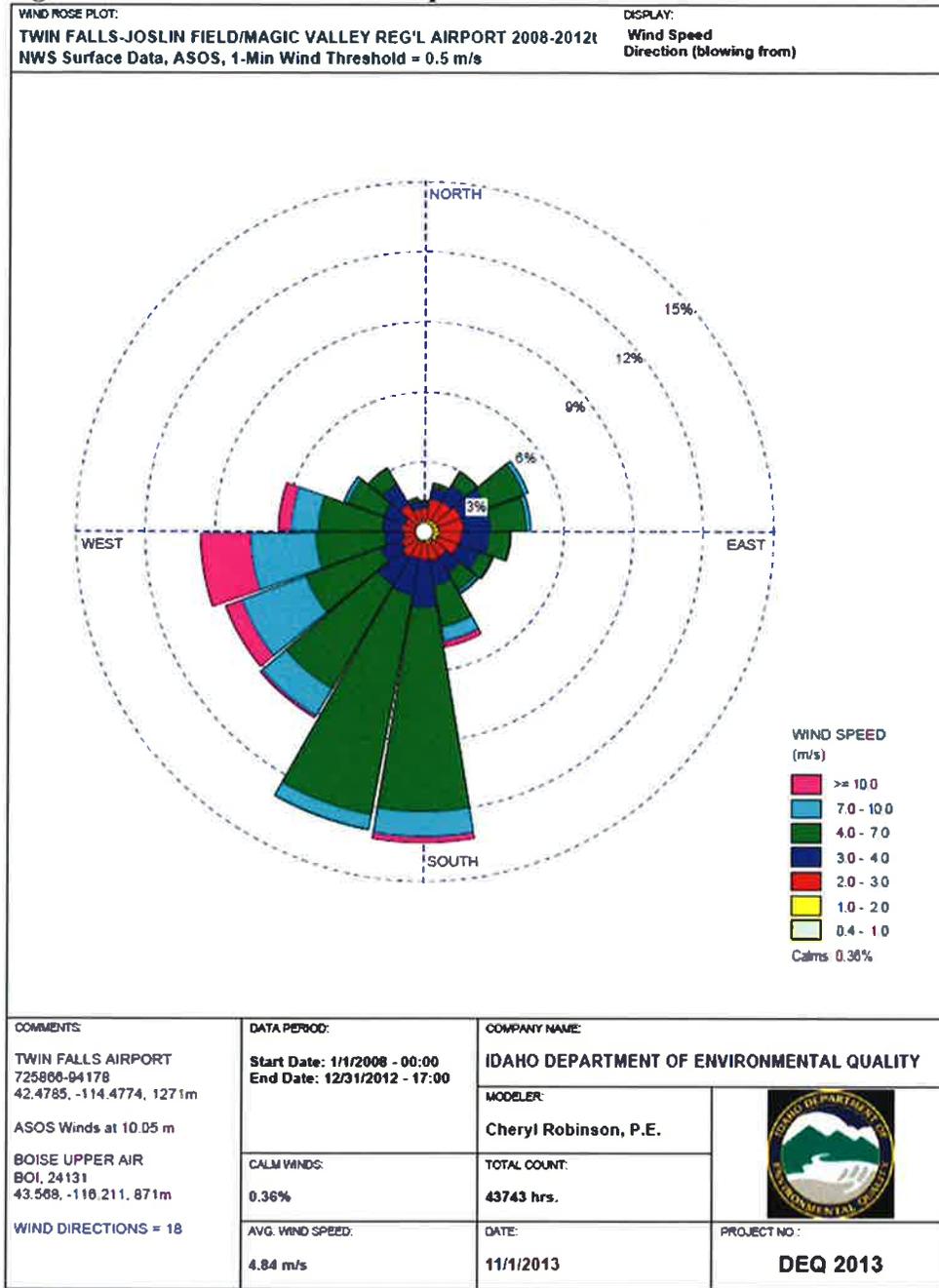
DEQ provided Coal Creek with a model-ready meteorological dataset processed from Twin Falls Joslin Field airport surface data and ASOS station data was used for data fill. The data record spanned 2008 through 2012. Contemporaneous data from the National Weather Service (NWS) site near the Boise airport was used for the upper air data. Burley surface data and Boise upper air data were processed using AERMET version 11059. DEQ determined these data were reasonably representative for the CAFLW facility site and approved use of this dataset for this project. Surface characteristics including albedo, surface roughness length, and Bowen ratio for use in running AERMET were calculated for the dataset using AERSURFACE Version 13016. AERMINUTE Version 11325 was used to process the one-minute ASOS data used for filling missing NWS data. A minimum threshold wind velocity of 0.5 meters per second was specified for processing.

Figure 1 presents a Google earth® image showing the CAFLW facility and Joslin Field. The modeled facility is approximately 5 miles due north of Joslin Field. A wind rose of the meteorological dataset is shown in Figure 2. A histogram of various wind speed groups showing the frequency of certain wind speeds is shown in Figure 3.

Figure 1. Locations of the CAFLW Twin Falls Facility and Joslin Field

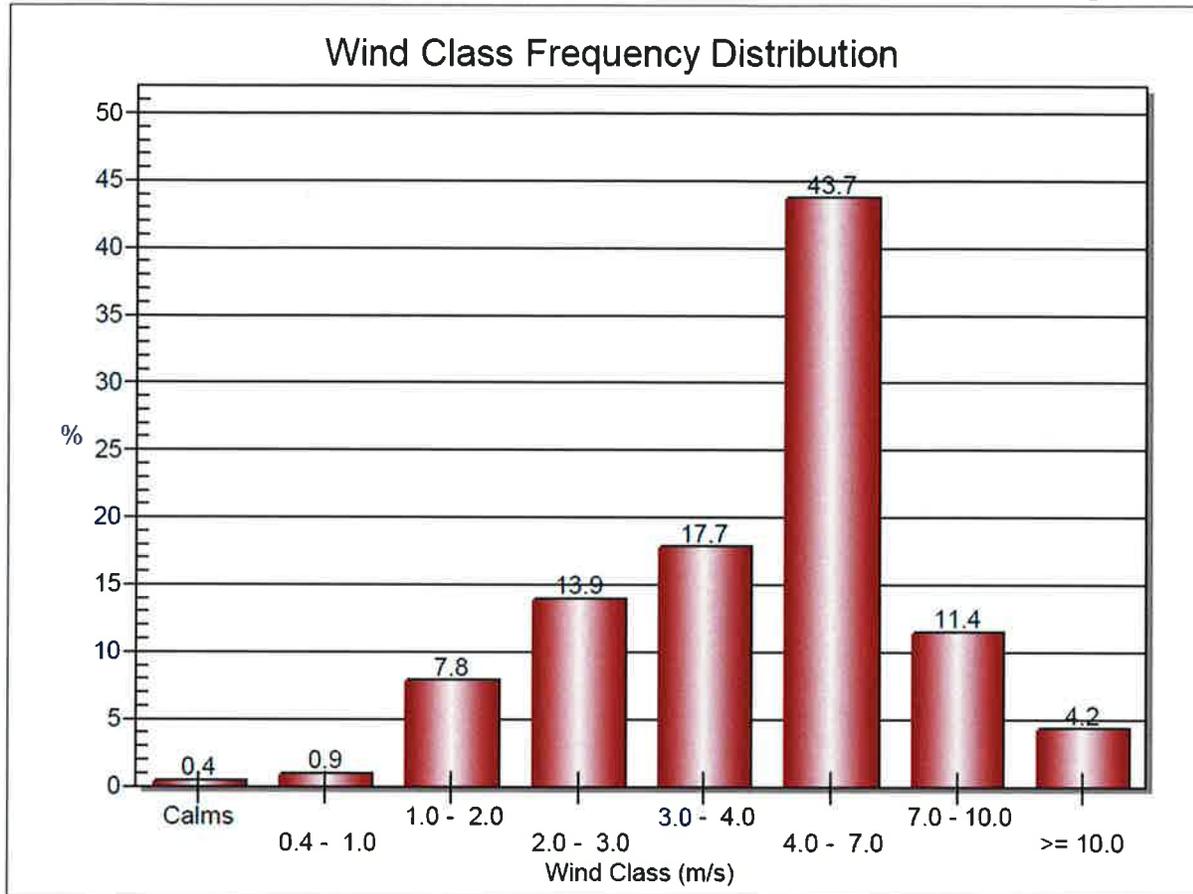


Figure 2. 2008-2012 Twin Falls Airport Surface and ASOS Fill Wind Rose



WRPLOT View - Lakes Environmental Software

Figure 3. Histogram of 2008-2012 Twin Falls Airport Surface and ASOS Fill Wind Frequency



WRPLOT View #20 - Lakes Environmental Software Twin Falls-Joslin Field / Magic Valley Regional Airport, KTWF, 2008-2012t 11/1/13

3.4 Terrain Effects

Coal Creek used four National Elevation Dataset (NED) files, in “tif” format in the NAD27 datum, to calculate elevations of receptors. The 1.0 arc second files provided 30-meter horizontal resolution of elevation data. The terrain preprocessor AERMAP version 11103 was used to extract the elevations from the NED file for receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain.

3.5 Building Downwash Effects on Modeled Impacts

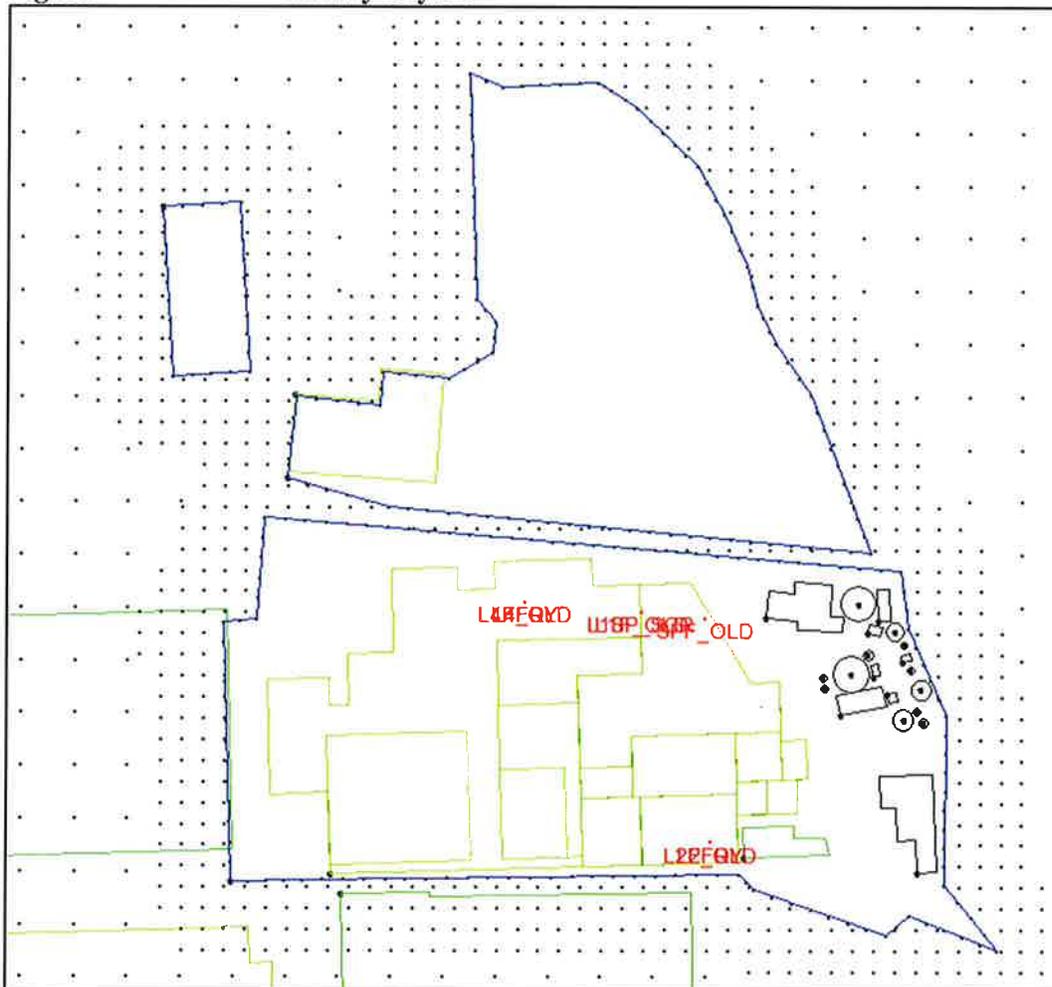
Potential downwash effects on emissions plumes were accounted for in the model by using building dimensions input by Coal Creek in the model setup. The Building Profile Input Program for the PRIME downwash algorithm (BPIP-PRIME) was used to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information for input to AERMOD. Nearby off-site structures were also included in the BPIP setup. DEQ review consisted of a comparison of the setup to

Google earth® imagery and concluded that the building downwash was appropriately evaluated.

3.6 Facility Layout

Figures 4 and 5 below show the facility's emission sources and all structures in the air impact modeling analyses. The ambient air boundary is shown in blue. Modeled emission points are labeled in red in Figure 4. Where the emission point labeling is illegible there are actually two stacks modeled at the same location—one is for the existing exhaust stack and one is for the proposed exhaust stack. Stack locations appeared to be appropriately located when compared to the July 2013 Google Earth® imagery. DEQ compared source, building, and ambient air boundary locations to an updated June 2016 image. The modeled facility layout appeared to match well with Google Earth® images.

Figure 4. CAFLWTF Facility Layout



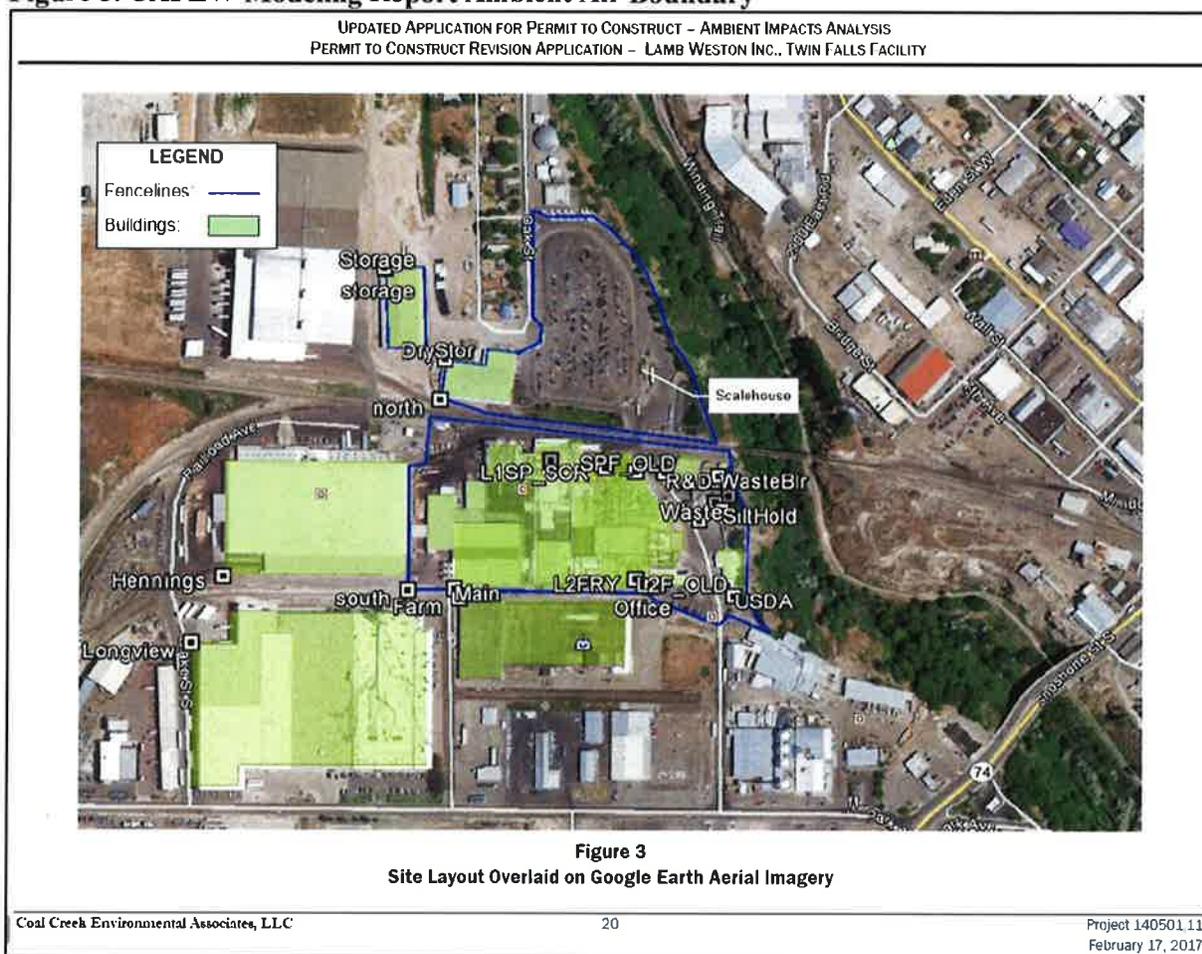
3.7 Ambient Air Boundary

The modeling report provided an enhanced description of the ambient air boundary in response to DEQ comments in the modeling protocol approval. A rail line bisects northern and southern portions

of the facility, and the rail line was treated as ambient air. The northern section of the facility contains a dry storage building, employee parking area, and a scalehouse. The southern section contains the production building, the office, and a USDA building.

A combination of physical obstructions and notifications, including fencing, gates, visual observation, and no trespassing signs will be used by CAFLW to preclude public access to the areas excluded from ambient air. The scale house is continuously occupied by CAFLW personnel and the facility's security personnel will also provide supervision of the facility property. DEQ determined the ambient air boundary described uses appropriate methods to control access as described in DEQ's *Modeling Guideline*².

Figure 5. CAFLW Modeling Report Ambient Air Boundary

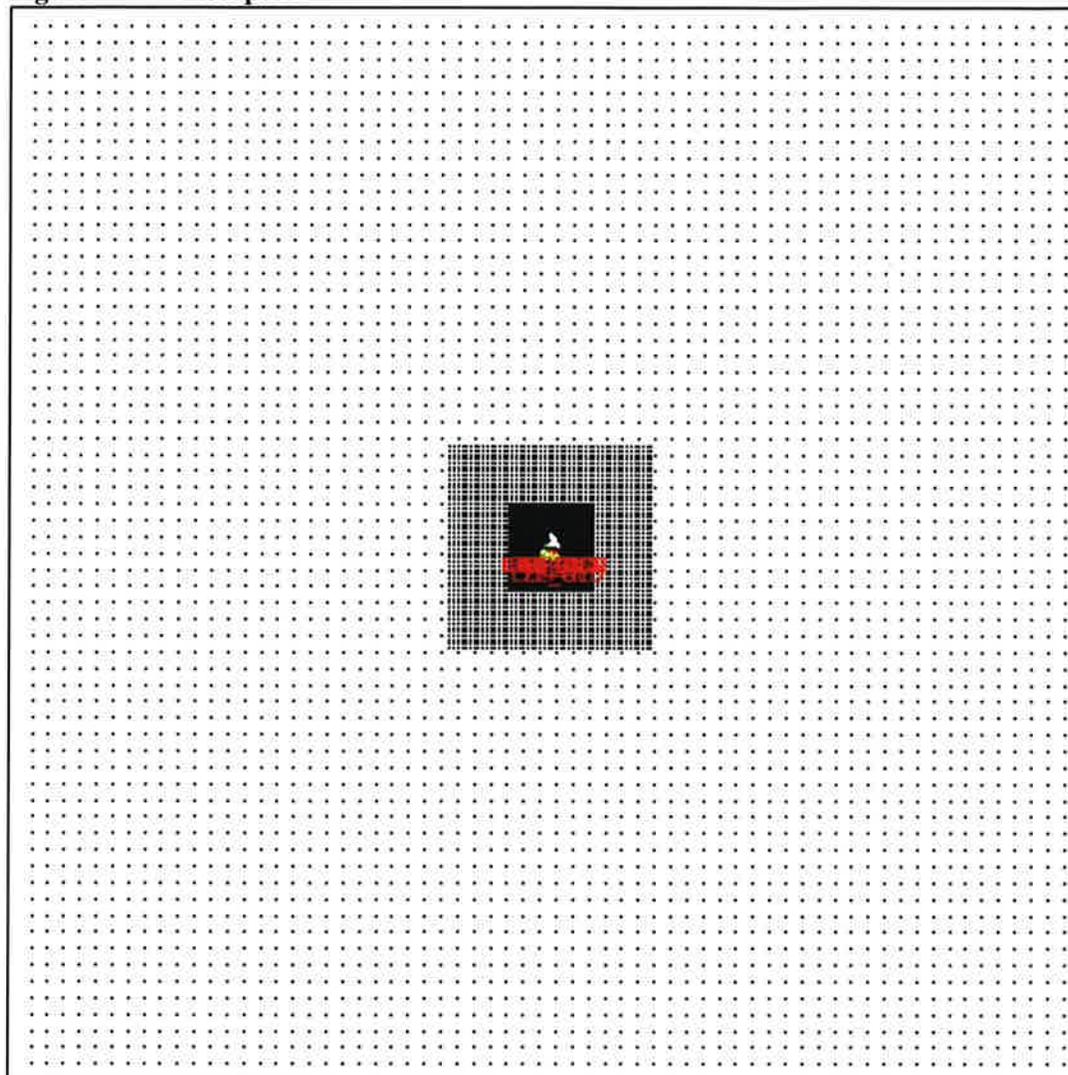


3.8 Receptor Network

Table 3 describes the receptor network used in the submitted modeling analyses. The receptor grids used in the model provided sufficient resolution of the maximum design concentrations for the project. Figure 4 above shows the fine resolution ambient air boundary and near-facility 10-meter receptor spacing. The complete extent of receptor grid coverage is depicted below in Figure 6. DEQ determined

that the receptor network was effective in reasonably assuring compliance with applicable air quality standards at all ambient air locations.

Figure 6. Full Receptor Grid



3.9 Emission Rates

Review and approval of estimated emissions is the responsibility of the DEQ permit writer, and the representativeness and accuracy of emissions estimates is not addressed in this modeling review memorandum. Emissions rates used in the dispersion modeling analyses, as listed in this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emissions inventory. All modeled criteria air pollutant and TAP emissions rates must be equal to or greater than the facility's potential emissions calculated in the PTC emissions inventory, which are requested allowable emissions rates.

3.9.1 Criteria Pollutant Emissions Rates for Significant Impact Level Analyses

Significant impact level (SIL) analyses were submitted to demonstrate the proposed project will not cause impacts in excess of significant impact levels (SILs), thereby requiring a cumulative NAAQS compliance demonstration.

Table 5 lists criteria pollutant continuous (24 hour/day) emissions rates used to evaluate impacts to ambient air for standards with averaging periods of 24 hours or less. Table 6 lists criteria pollutant continuous (8,760 hour/year) emissions rates used to evaluate impacts for standards with an annual averaging period. The positive modeled rates must be equal or greater than permit-allowable emissions for the listed averaging period. The sum of the modeled negative emissions rates equal the existing permit-allowable combined emission rate limit for the four fryer lines.

Modeled Emissions Point	Description	PM₁₀^a (lb/hr)^b	PM_{2.5}^c (lb/hr)
L1SP_SCR	Common scrubber stack for Line 1 and SP Fryers	5.25	5.25
L2FRY	Line 2 Fryer	3.75	3.75
L4FRY	Line 4 Fryer	6.86	6.86
L1F_OLD	Line 1 Fryer - to be removed	-4.45	-4.45
L2F_OLD	Line 2 Fryer - to be removed	-4.38	-4.38
L4F_OLD	Line 4 Fryer - to be removed	-6.49	-6.49
SPF_OLD	Special Products Fryer - to be removed	-0.77	-0.77

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

^b Pounds per hour.

^c Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

Modeled Emissions Point	Description	PM_{2.5}^a (lb/hr)^b
L1SP_SCR	Common scrubber stack for Line 1 and SP Fryers	5.25
L2FRY	Line 2 Fryer	3.75
L4FRY	Line 4 Fryer	6.86
L1F_OLD	Line 1 Fryer - to be removed	-4.45
L2F_OLD	Line 2 Fryer - to be removed	-4.38
L4F_OLD	Line 4 Fryer - to be removed	-6.49
SPF_OLD	Special Products Fryer - to be removed	-0.77

^a Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

^b Pounds per hour.

3.9.2 Toxic Air Pollutant Emissions

There were no increases in emissions from the proposed project required to demonstrate compliance with toxic air pollutant (TAP) increments (AACs or AACCs).

3.10 Emission Release Parameters

Table 7 lists emissions release parameters for modeled sources for the project.

Table 7. POINT SOURCE EMISSIONS RELEASE PARAMETERS							
Release Point	Description	Universal Transverse Mercator Coordinates ^a		Stack Height (meters)	Modeled Diameter (meters)	Stack Gas Temp ^b (Kelvin)	Stack Flow Velocity (m/s) ^c
		Easting (x) (meters)	Northing (y) (meters)				
L1SP SCR	Combined stack for Line 1 Fryer and Special Products Fryer - new	706,769.0	4,714,023.0	15.24 (50 feet)	1.14 (3.7 feet)	340.4 (153°F ^d)	13.5 (44.4 ft/s ^e)
L2FRY	Line 2 Fryer – new	706,802.0	4,713,914.0	16.76 (55 feet)	0.91 (3.0 feet)	338.2 (149°F)	13.0 (42.6 ft/s)
L4FRY	Line 4 Fryer – new	706,714.0	4,714,028.0	15.24 (50 feet)	0.94 (3.1 feet)	344.3 (160°F)	13.6 (44.6 ft/s)
L1F OLD	Existing Line 1 Fryers stack	706,769.0	4,714,023.0	14.63 (48 feet)	0.81 (2.7 feet)	341.6 (155°F)	17.2 (56.5 ft/s)
L2F OLD	Existing Line 2 Fryer stack	706,802.0	4,713,914.0	16.76 (55 feet)	0.91 (3.0 feet)	347.3 (166°F)	7.6 (25.0 ft/s)
L4F OLD	Existing Line 4 Fryer stack	706,714.0	4,714,028.0	13.21 (43.3 feet)	0.94 (3.1 feet)	345.9 (163°F)	11.6 (38.0 ft/s)
SPF OLD	Existing Special Products Fryer stack	706,799.0	4,714,020.0	13.41 (44 feet)	1.17 (3.8 feet)	310.3 (98.8°F)	8.5 (27.8 ft/s)

^a NAD27 datum, Zone 11.

^b Temperature.

^c Meters per second.

^d Degrees Fahrenheit.

^e Feet per second.

DEQ's permitting policies and guidance require that each permit application have stand-alone documentation to support the appropriateness of release parameters used in the air impact analyses. The modeling report provided justification and documentation of assumptions and data supporting key release parameters used to model point sources.

The new proposed fry line release parameters were supported with project engineering design report for wet spray washer improvements⁴, and manufacturer's specification fan curves and rated design parameters.

Exhaust volumetric flow rates for the new stacks were all modeled at values below the maximum rated flow rates, which is generally considered to be a more conservative approach, and were intended to represent operations at an actual level, with the modeling report discussion caveat that the fans are controlled by variable frequency drives that will match air flows to design conditions. DEQ's understanding of the submitted analyses is that the proposed fan systems and spray washer and wet venture scrubber controls were modeled with volumetric air flow rates and release temperatures that are representative of actual expected operating conditions at the requested allowable emissions rates for the four fryer line emissions units. Table 8 compares the modeled volumetric flow rates to the manufacturer's rated capacities.

Table 8. PROPOSED SOURCE FLOW RATE SUBSTANTIATION

Stack	Volumetric Flow Rate in units of ACFM ^a		Modeled Value Percentage of Rated Value
	Engineering Report ^{4, b} and Modeled Value	Fan Curve and Specification Sheet Rated Value ^b	
Combined Line 1 Fryer and Special Products Line (L1SP_SCR)	29,455	36,700	80%
Line 2 Fryer (L2_FRY)	18,067	19,374	93%
Line 4 Fryer (L4_FRY)	19,938	24,011	83%

^a Actual cubic feet per minute.

^b April 24, 2017 Modeling report support documentation

Proposed source stack release heights and stack diameters at the point of release were all accepted as submitted. Stack release height for the Line 4 Fryer (model ID L4FRY) will be increased from the existing height of 43.3 feet to 50 feet above grade.

Stack diameters for the new sources will be unchanged from the existing stack diameters for the Line 4 Fryer (L4_OLD and L4FRY) and Line 2 Fryer (L2_OLD and L2FRY). Exhaust from the Line 1 Fryer and the Special Products Fryer will be combined into a single stack with emissions being controlled by a new wet scrubber. Stack locations for Line 2 Fryer and Line 4 Fryer will remain unchanged. The combined Line 1 Fryer and Special Products stack will be located at the existing Line 1 Fryer coordinates.

Existing source release parameters were based on the 2014 performance testing data³ and past permitting projects ambient impact analyses. Stack release heights for existing fryer stacks L1F_OLD, L2F_OLD, L4F_OLD, and SPF_OLD were established using the historical ambient impact analyses modeled values. Existing source stack diameters were supported by the performance test as shown below in Figure 7.

Figure 7. September/October 2014 Performance Test Report Stack Diameter Documentation

Source	Dimensions ¹	Equivalent Diameter	Upstream Dist.	Downstream Dist.	Upstream Dist.	Downstream Dist.
	Inches			Equivalent Diameters		
Line 1 Wet Washer	32 (Diam)	32.00	39	24	6.50	0.75
Line 2 Wet Washer	36 (Diam.)	36.00	24	81	4.00	2.25
Line 4 Wet Washer	37 (Diam.)	37.00	24	24	4.00	0.65
Line 4 Dryer Zones 3 & 5	40.5 X 27.25 (Rect.)	32.58	24	22	4.00	0.68
Special Products Wet Washer	46 (Diam.)	46.00	80	26	13.33	0.57

¹ Each source has an "egg crate" straightening vane installed with a cell size of approximately 6 inches square.

DEQ accepted the modeled release parameters as appropriate values for the ambient impact analyses based on the justification CAFLW and Coal Creek presented in the application materials.

4.0 Results for Air Impact Analyses

This section provides discussion of results obtained from the air impact analyses submitted in support of the proposed project.

4.1 Results for Significant Impact Analyses

Table 9 provides the results for the significant impact level (SIL) analyses.

Pollutant	Averaging Period	Modeled Design Value Concentration ($\mu\text{g}/\text{m}^3$)^a	SIL^b ($\mu\text{g}/\text{m}^3$)	Percent of SIL
PM _{2.5} ^c	24-hour	1.15 ^e	1.2	96%
	Annual	0.0064 ^f	0.3	2%
PM ₁₀ ^d	24-hour	1.72 ^g	5.0	34%

^a Micrograms per cubic meter.

^b Significant Impact Level specified as the significant contribution value per Section 006.102 of the Idaho Air Rules.

^c Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

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

^e Modeled design value is the maximum 5-year mean of 1st highest 24-hour values from each year of a 5-year meteorological dataset.

^f Modeled design value is the maximum 5-year mean of annual average values from each year of a 5-year meteorological dataset.

^g Modeled design value is the maximum of 1st highest 24-hour values from a 5-year meteorological dataset.

4.2 Results for Cumulative NAAQS Impact Analyses

Cumulative NAAQS compliance demonstrations were not required for this project because project-specific impacts were below the applicable SILs.

4.3 Results for Toxic Air Pollutant Impact Analyses

TAPs were not required to be modeled for this project.

5.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the CAFLW Twin Falls facility will not cause or significantly contribute to a violation of the applicable SILs.

References

1. *Policy on NAAQS Compliance Demonstration Requirements of IDAPA 58.01.01.203.02 and 01.403.02.* Idaho Department of Environmental Quality Policy Memorandum. Tiffany Floyd, Administrator, Air Quality Division, June 10, 2014.
2. State of Idaho Guideline for Performing Air Quality Impact Analyses. Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at <http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf>.
3. Performance Test Report titled "*PARTICULATE MATTER AND THC SOURCE TESTS CONDUCTED FOR LAMB-WESTON, TWIN FALLS, IDAHO-SOURCE TESTED-LINE 1 FRYER WET WASHER, LINE 2 FRYER WET WASHER, LINE 4 FRYER WET WASHER, LINE 4 DRYER (ZONES 3 & 5), SPECIAL PRODUCTS WET WASHER*", September 16-19, 2014 and October 7, 2014, by TETCO, American Fork, Utah, for Lamb-Weston, Inc., Twin Falls, Idaho. Report Dated October 24, 2014.
4. Report Documentation titled "*WET WASHER IMPROVEMENT ANALYSIS*," prepared for ConAgra Foods Lamb Weston, by CB&I Environmental and Infrastructure, Inc. Knoxville, Tennessee, August 2016.

APPENDIX C – FACILITY DRAFT COMMENTS

The following comments were received from the facility on January 12, 2018:

Permit Condition Number in Facility Draft Permit	Proposed change	Explanation	DEQ's response
1.1	General language clarification		Changed
Table 1.1	Remove historical information into SOB		Done
Table 1.1	Correct dryer modification dates	None of the dryers were physically modified in 2007. Changes in burner capacities occurred in 2007 for two reasons: 1. burner capacities were verified, resulting in some changes, and 2. artificially scaled back rates used in the 2000 permit were adjusted back to reality (see prior comment).	Changed
2.15.3	Independently monitoring natural gas usage is not necessary.	The rationale for the proposed condition 2.15.3 is not clear. Because the emission factors for NG combustion in dryers are the same as for all NG combustion at the facility except for Boiler 1.	Removed
2.16 – 2.20	Express EFs in lb/hr for the two generators	Since we tracks the operating hours of the generator, we just multiply the hours of operation by the emission factor in lb/hr. If the intent is to show where the emission factor comes from that is something that should be addressed in the Statement of Basis for this permit condition.	Done
2.17	Add a footnote “The emission factor used shall be the rolling 30-day average calculated on the last day of the month.”	We agree to use the 30-day average from the CEMS as referenced in condition 5.14. Since condition 5.14 references a rolling 30-day average, it is necessary to indicate that the result to use in the calculation is the average computed on the last day of the month. This can be done with added footnote.	Done
2.17 - 2.20	Express EFs for biogas flared as lb/MMscf	Use correct HHV (800 Btu/scf). Also, since the operating parameter is MMscf, the emission factor should be ##.# lb/MMscf. No need to make it more complicated than that. As with engines, if the additional detail has been added to document the basis for the emission factor, that should be done in the Statement of Basis for this condition.	Done. CO EF is calculated as 0.31 lb CO/MMBtu (AP-42 EF) * 800 MMBtu/MMscf (HHV of digester biogas) = 248 lb CO/MMscf VOC EF is calculated as 0.66 lb VOC/MMBtu * 800 MMBtu/MMscf = 528 lb VOC/MMscf

Permit Condition Number in Facility Draft Permit	Proposed change	Explanation	DEQ's response
3.4	Remove PC 3.4	This is a one-time construction condition from the 2007 permit. This modification was completed ten years ago, and it no longer needs to be retained in permits.	Not changed. 6/4/2007 permit Table 3.1 lists line 4 fryer stack height as 43.3 feet. 2012 PTC continues listing it as 43.3 feet. Permit Condition 3.4 states that the stack of Line 4 Fryer shall be raised to 50 feet. This stack height is used in the modeling for this permitting action and is proposed by the applicant.
3.5.3/Table 3.2	General language clarification		Changed
3.5.6	Add "DEQ shall review the request promptly and not unreasonably withhold approval for revision." and "without triggering a permit modification"		Not changed Current practice: After DEQ approves the new parameters, DEQ will open the affected permit to incorporate the new parameters. No permit application will be required for that.
Table 3.2	General language clarification		Changed
3.5.4	General language clarification		Changed
3.5.6	To add "DEQ shall review the request promptly and not unreasonably withhold approval for revision." and "without triggering a permit modification" into the permit		Not changed. DEQ current practice is that once the alternative operating parameters values are approved by DEQ, DEQ will reopen the permit and put the new values into the permit.
3.6.2	General language clarification		Changed
3.7	Remove 3.7.1 and revise 3.7	First, because recent (October 2017) source test data are now available, there is no need to have the temporary operating limits. The revised language instead incorporates emission factors derived from the October 2017 source testing. October 27, 2017 is then used as the reference date for subsequent performance tests. Second, to enhance readability, text has been rearranged. For example, since this section of the permit describes PM ₁₀ compliance methodology, the basic compliance demonstration methodology is placed as the first element in the section. Later section then describe in more detail how the compliance demonstration is completed using that methodology.	Changed

Permit Condition Number in Facility Draft Permit	Proposed change	Explanation	DEQ's response
3.8	Add EFs that are obtained from the October 2017 source test. Change source test frequency to once every five years.	Lamb Weston believes that a five-year testing schedule is adequate.	Changed
3.9, 3.10	Update permit condition numbers to 3.10 and 3.11		Changed
4.3	Change emissions rate limit to emissions limit		Changed
4.6	Remove 4.6.1 and revise 4.6	Refer to the reasoning for PC 4.8 below.	Changed The applicant has proposed to use 0.05 lb/T EF for the calculation. The proposed EF is higher than the 2014 source test value, but is lower than the 1999 and 2004 test values. DEQ has requested the applicant to perform a source test to verify this proposed EF. Refer to PC 4.7 of the proposed PTC for details.
4.7	Remove dryer fuel usage monitoring	See reasoning for PC 2.15.3	Removed
4.8	Remove PM ₁₀ source testing of the dryers	Because dryer emissions are a small portion of total facility emissions, they don't need to have the same frequency of testing. Records of PM testing from dryers have been relatively consistent at the Twin Falls facility, and agree well with testing conducted at similar dryers at other Lamb Weston facilities. The 0.05 lb PM ₁₀ /ton emission factor selected is higher than any emission factor developed from any other source testing at the Twin Falls facility. Thus, this factor can be used with a high degree of confidence, with no need to conduct additional testing. The revised language does provide an option to retest if Lamb Weston desires. Given the conservatism in the emission factor, retesting would be optional, instead of mandatory	Revised See response to comments on PC 4.6 above.
4.8	General language clarification on dryer VOC testing.	Clarify that this requirement is triggered by actual emissions. More clarity on how the added VOC emissions will be identified and included in the VOC emission calculation procedure.	Changed

Permit Condition Number in Facility Draft Permit	Proposed change	Explanation	DEQ's response
4.9	<p>Add "If the permittee elects to conduct performance testing of a dryer to establish a revised PM₁₀ emission factor, the testing shall be conducted as described below."</p> <p>Remove VOC from PC 4.9.</p>		<p>Not added as it is not necessary.</p> <p>VOC is removed from this permit condition and is included in PC 4.10 of the proposed permit.</p>
4.10	Proposed revised language on test report requirement.		<p>Changed</p> <p>With a minor addition to be consistent with recordkeeping in General Provisions:</p> <p>... for at least five years or until such time as...</p>
5.9	Add "actual" to clarify the intent.		Added
Appendix A	Remove some emissions limits		<p>Not changed.</p> <p>Refer to Permit Conditions Review section under Appendix A – Emissions Limits</p>

APPENDIX D – PROCESSING FEE

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)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	0.0	0	0.0
SO ₂	0.0	21.5	-21.5
CO	0.0	0	0.0
PM ₁₀	0.0	1.31	-1.3
VOC	57.7	0	57.7
TAPS/HAPS	0.0	negligible	0.0
Total:	0.0	22.81	34.9
Fee Due	\$5,000.00		