



**Air Quality Permitting
Statement of Basis**

February 12, 2008

**Permit to Construct and Tier II Operating Permit
No. T2-2007.0233**

McCain Foods, Inc., Burley

Facility ID No. 031-00014

Prepared by:

CZ
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FINAL

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
HAPs	Hazardous Air Pollutants
H ₂ S	Hydrogen sulfide
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Available Control Technology
MMBtu/hr	million British thermal units per hour
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM ₁₀	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTC/T2	permit to construct and Tier II operating permit
Rules	Rules for the Control of Air Pollution in Idaho
NSPS	New Source Performance Standards
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor with emissions limit at 80% or more of major source level
SO ₂	sulfur dioxide
T/yr	Tons per year
TAPS	toxic air pollutants
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 201 and 404.04, Rules for the Control of Air Pollution in Idaho (Rules) for Permits to Construct and Tier II operating permits.

2. FACILITY DESCRIPTION

McCain Foods USA, Inc. is a processing facility that produces frozen potato products such as french fries and tater tots for retail and institutional distribution. The facility, which is located in Burley, Idaho, is comprised of two plants: Burley Plant 1 and Burley Plant 2. The plants were constructed in the late 1950s to early 1960s. Originally, the plants were owned and operated by separate companies (Ore-Ida Foods, Inc. and Idaho Potato Processors, Inc.). The two plants were combined under the common ownership of Ore-Ida Foods in 1965. McCain acquired the facility on July 1, 1997.

The emissions from McCain are generated by four boilers, three dryers, four fryers, a dust collection system, emergency fire pump, and an anaerobic lagoon biogas flare.

3. FACILITY / AREA CLASSIFICATION

McCain Foods, Inc. is defined as a synthetic minor facility because without permit limits on the potential to emit, the SO₂, CO, and PM₁₀ emissions would each exceed 100 tons per year. The AIRS classification is "SM80" because the potential to emit of SO₂, CO, and PM₁₀ are each limited to less than major source levels.

The facility is located within AQCR 64 and UTM zone 12. The facility is located in Cassia County, which is designated as unclassifiable for all criteria pollutants (PM₁₀, CO, NO_x, SO₂, lead, and ozone).

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

4. APPLICATION SCOPE

The scope of this application is to renew the PTC/Tier II operating permit. There are no changes in equipment or emissions.

4.1 *Application Chronology*

December 24, 2007	DEQ receives application to renew permit
January 15, 2008	DEQ issues completeness letter
January 18, 2008	DEQ issues facility draft permit
January 18, 2008	DEQ receives comments from the Twin Falls Regional Office
February 12, 2008	DEQ receives e-mail from facility stating that there were no comments

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this permit to construct and Tier II operating permit (PTC/T2).

5.1 Equipment Listing

Table 5.1 EQUIPMENT LISTING

Permit Sections	Source Description	Emissions Control(s)
3	(B101)Murray 1 boiler, Model: MCF4-78, 100 MMBtu/hr, natural gas and/or biogas	None
	(B102) Nebraska 1 boiler, Model: NS-E-68, 95.58 MMBtu/hr, natural gas and/or biogas	None
	(B202) Nebraska 2 boiler, Model: NS-E-57, 78.05 MMBtu/hr, natural gas	None
	(B203) Murray 2 boiler, Model: MCF2-38, 39.1 MMBtu/hr, natural gas	None
	(C001) Biogas flare, Varec, Model: 244W	None
4	(D109 – D111) Prime 1 dryer, Wolverine Proctor, steam heated	None
	(D107) Tot dryer, Rey Industries, 4 MMBtu/hr, direct-fired dryer, natural gas	None
	(D205- D208) Prime 2 dryer, National, 48 MMBtu/hr, direct-fired dryer, natural gas	None
5	(F103) Tot fryer, Shockey Model: Ore-Ida	Air washer, Rey Industries Model: G12/24, 20 gpm
	(F104) Prime 1 fryer, Shockey Model: Ore-Ida	Air washer, Ore-Ida, 20 gpm
	(F108) Parfry fryer, Idaho Steel Products Model: Ore-Ida	Air washer, Rey Industries, 20 gpm
	(F204) Prime 2 fryer, heat and control	Air washer, Ore-Ida, 20 gpm
6	(E209) Batter Room collector	Dust collector
7	(E001) Emergency fire pump, Detroit Diesel Model: 6061-A2, No. 1 or No. 2 fuel oil	None

5.2 Emissions Inventory

There are no changes to the emissions with this PTC/T2 permit renewal.

Table 5.2 EMISSIONS INVENTORY

MCCAIN FOODS, BURLEY												
Source Description	PM ₁₀ ^d		NO _x		CO		VOC		SO ₂		TAPs	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
(B101) Murray 1 boiler	0.75	4.88	9.8	64.16	8.2	53.90	0.5	3.53	22.8	99.86	0.444	2.49 ng, 1.50 biogas
(B102) Nebraska 1 boiler	0.71		9.4		7.9		0.5		22.8		0.424	
(B202) Nebraska 2 boiler	0.58		7.7		6.4		0.4		0.0		0.346	
(B203) Murray 2 boiler	0.29		3.8		3.2		0.2		0.0		0.173	
(C001) Biogas Flare	0.16		2.1		1.8		0.1		22.7		0.341	
(D109, D110, D111) Prime 1 dryer	6.69	21.67	--	--	--	--	--	--	--	--	--	--
(D107) Tot dryer	2.00	6.48	0.6	2.30	1.5	5.60	0.0	0.08	0.0	0.01	0.0177	0.0679
(D205 – D208) Prime 2 dryer	5.63	18.23	7.2	9.18	17.6	22.38	0.3	0.33	0.0	0.04	0.213	0.272
(F103) Tot fryer	4.08	13.22	--	--	--	--	1.2	3.89	--	--	--	--
(F104) Prime 1 fryer	2.68	8.67	--	--	--	--	2.7	8.67	--	--	--	--
(F108) Parfry fryer	1.30	4.21	--	--	--	--	0.4	1.24	--	--	--	--
(F204) Prime 2 fryer	2.25	7.29	--	--	--	--	2.3	7.29	--	--	--	--
(E209) Batter Room collector	0.12	0.53	--	--	--	--	--	--	--	--	--	--
(E001) Emergency fire pump	0.37	0.02	5.3	0.27	1.1	0.06	0.4	0.02	0.3	0.02	0.0025	0.0001
Total:	27.61	85.2	45.9	75.91	47.7	81.94	9.0	25.05	68.6	99.93	1.96	2.83

5.3 Modeling

No air dispersion modeling is required because there is no increase in emissions.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC/T2.

IDAPA 58.01.01.201 Permit to Construct Required

A permit to construct is required for the sources and permit conditions identified in the permit as “PTC Condition” because the sources require limitations on emissions, production, fuel type, and control equipment to ensure compliance with the National Ambient Air Quality Standards (NAAQS) and to establish emissions limits below the major source threshold facility-wide.

IDAPA 58.01.01.401 Tier II Operating Permit Required

A Tier II operating permit is required for the sources and permit conditions that are not identified in the permit as “PTC Condition” because the sources require limitations on emissions and regulation of control equipment to ensure compliance with the National Ambient Air Quality Standards (NAAQS) and to ensure that emissions remain below the major source threshold facility-wide.

IDAPA 58.01.01.300 Procedures and Requirements for Tier I Operating Permits

McCain Foods, Inc. is a synthetic minor Tier I source. Enforceable limitations were taken on PM₁₀, NO_x, and CO emissions that are below the applicability thresholds. This facility’s status is synthetic minor, SM-80, (synthetic minor source limited to 80% or above of the threshold for each regulated air pollutant) designation with permit allowable emissions of 99.93 T/yr of SO₂, 81.94 T/yr of CO, and 85.20 T/yr for PM₁₀. Major source Tier I permitting requirements do not apply to this facility.

40 CFR 60 Subpart Dc Standards of Performance for Small Industrial-commercial-Institutional Steam Generating Units

This subpart does not apply because the boilers were installed prior to June 9, 1989, and have not been modified since then.

40 CFR 60 Subpart IIII Standard of Performance for Stationary Compression Ignition Internal Combustion Engines

The emergency fire pump is an emergency generator with a 170 horsepower pump.

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines,

(ii) The model year listed in table 3 to this subpart or later model year, for fire pump engines.

The starting model year that engine manufacturers must certify new stationary fire pump engines according to §60.4202(d) for fire pump engine power between 100 and 175 horsepower is 2010.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are:

(i) Manufactured after April 1, 2006 and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005.

The facility’s emergency fire pump is in the November 7, 2002 T2/PTC No. 031-00014, and it was constructed prior to the date of permit issuance. Therefore, Subpart IIII does not apply to this emergency fire pump.

5.5 Fee Review

A Tier II operating permit processing fee must be paid to DEQ in accordance with IDAPA 58.01.01.407 by the permittee receiving a Tier II operating permit. McCain Foods, Inc.'s fee is \$10,000 because the facility's emissions of SO₂, CO, and PM₁₀ are each limited below the corresponding major source threshold. The TAPS/HAPS were included in the total permitted emissions value listed below as part of VOC and PM₁₀ so that there is no double-counting of TAPS/HAPS, which are also VOC or PM₁₀. There is no difference in the fee due as a result of not double-counting. The processing fee is payable upon receipt of an assessment from DEQ at the time of permit issuance.

Table 5.1 Tier II Processing Fee Summary

Emissions Inventory	
Pollutant	Permitted Emissions
NO _x	75.91
SO ₂	99.93
CO	81.94
PM ₁₀	85.2
VOC	25.05
TAPS/HAPS	2.83
Total:	368
Fee Due	\$ 10,000.00

6. PERMIT CONDITIONS

This section summarizes only the changes made to the existing Tier II operating permit and permit to construct.

Facility-Wide Conditions

The excess emissions and the monitoring and reporting permit conditions have been relocated to the general provisions section of the permit. In addition, a portion of the excess emissions rule from IDAPA 58.01.01.130-136 has been incorporated as part of the general provision.

An obligation to comply provision has been added to the facility-wide requirements.

Revised Permit Conditions

Updates to the following permit conditions have been made based on a DEQ inspection that was done on March 15, 2005:

Permit Condition 3.5 required the installation of a biogas flare. Permit Condition 3.6 required the installation of a flame detector and alarm. The inspection report states, "A fluemeter of hot anemometer type has been installed. It is factory calibrated. A horn and warning light have also been installed." Permit Condition 3.8 and Permit Condition 4.6 required the installation of natural gas flow meters. Permit Condition 3.11 requires that a biogas flow meter be installed. Permit Condition 5.8 required the development of an O&M manual. These requirements have been met. These permit conditions were revised to reflect that the required tasks have been completed.

Permit Condition 7.8 was revised to remove the record maintenance requirement because it is already included in General Provision 7.

Revised Permit Condition 3.12

The O&M manual was required to have been prepared and send in to the regional office within 120 days of issuance of Tier II Operating Permit and Permit to Construct No. P-060405, issued July 28, 2006. This deadline is past, so the requirement to prepare and send in by that date is not applicable in this revised permit. The requirement was changed to “maintain” the O&M manual.

7. PERMIT REVIEW

7.1 *Regional Review of Draft Permit*

The DEQ Twin Falls Regional Office was provided with a draft of the permit for review on January 18, 2008. The region had no comments.

7.2 *Facility Review of Draft Permit*

McCain Foods, Inc. was provided with a draft of the permit for review on January 18, 2008. The facility had a few comments, which were incorporated.

7.3 *Public Comment*

In accordance with IDAPA 58.01.01.404.04, no public comment period is required because this permit renewal does not result in an increase in allowable emissions, so the requirements of Subsection 404.01.c do not apply.

CZ/hp

Permit No. T2-2007.0233

APPENDIX A – AIRS INFORMATION

AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

Facility Name: McCain Foods, Inc.
Facility Location: Burley, Idaho
AIRS Number: 031-00014

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

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

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

APPENDIX B – EMISSIONS INVENTORY

Potential Emissions
McCain Foods, Burley Facility
January 11, 2008

Pollutant	Potential to Emit																				Total *												
	Murray 1 Boiler (B101)		Nebraska 1 Boiler (B102)		Nebraska 2 Boiler (B202)		Murray 2 Boiler (B203)		NG Bubble (B204)		Flare (B205)		Biogas Bubble (B206)		Prime 1 Dryer (D109-D111)		Tot Dryer (D107)		Prime 2 Dryer (D205-D209)			Tot Fryer (F102)		Prime 1 Fryer (F104)		Party Fryer (F105)		Prime 2 Fryer (F204)		Emergency Fire Pump (E03)		Water Room Dust Collector (C03)	
	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)		(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)	(lb/yr)	(t/yr)
PM ₁₀	0.7	a,b	0.7	a,b	0.6	a	0.3	a	4.2	0.2	b	0.7	0.7	21.7	2.0	6.5	5.6	18.2	4.1	13.2	2.7	8.7	1.3	4.2	2.3	7.3	0.4	0.0	0.1	0.5	85.2		
SO ₂	22.8	a,b	22.8	a,b	0.0	a	0.0	a	0.3	22.7	b	99.5	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.93	
NO _x	9.9	a,b	9.4	a,b	7.7	a	3.8	a	55.9	2.1	b	8.2	NA	NA	0.6	2.3	7.2	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.90	
CO	8.2	a,b	7.9	a,b	6.4	a	3.2	a	49.2	1.8	b	7.7	NA	NA	1.5	5.6	17.8	22.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.82	
VOC	0.5	a,b	0.5	a,b	0.4	a	0.2	a	3.0	0.1	b	0.5	NA	NA	0.0	0.1	0.3	1.2	3.9	2.7	8.7	0.4	1.2	2.3	7.3	0.4	0.0	0.0	0.0	0.0	25.05		
Lead	0.0	a,b	0.0	a,b	0.0	a	0.0	a	0.0	0.0	b	0.0	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
Arsenic	1.95E-03	--	1.87E-03	--	1.53E-03	--	7.97E-04	--	0.000	4.16E-04	--	0.000	--	--	7.84E-07	0.000	0.000	2.41E-06	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Barium	4.31E-04	--	4.12E-04	--	3.37E-04	--	1.69E-04	--	0.000	9.21E-05	--	0.000	--	--	1.73E-05	0.000	0.000	2.07E-04	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Benzene	2.09E-04	--	1.97E-04	--	1.61E-04	--	8.15E-05	--	0.000	4.30E-05	--	0.000	--	--	8.24E-06	0.000	0.000	6.66E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Beryllium	1.16E-08	--	1.12E-08	--	9.16E-09	--	4.62E-09	--	0.000	2.51E-09	--	0.000	--	--	4.71E-08	0.000	0.000	5.65E-07	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Benz(a)pyrene	1.16E-07	--	1.12E-07	--	9.16E-08	--	4.62E-08	--	0.000	2.51E-08	--	0.000	--	--	4.71E-06	0.000	0.000	5.65E-06	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Chromium	1.98E-04	--	1.93E-04	--	1.57E-04	--	7.97E-05	--	0.000	4.29E-05	--	0.000	--	--	8.24E-06	0.000	0.000	6.66E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Chromium	1.37E-04	--	1.31E-04	--	1.07E-04	--	5.37E-05	--	0.000	2.93E-05	--	0.000	--	--	5.49E-06	0.000	0.000	6.59E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Cobalt	8.24E-05	--	7.87E-05	--	6.43E-05	--	3.22E-05	--	0.000	1.78E-05	--	0.000	--	--	3.29E-07	0.000	0.000	3.65E-06	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Copper	8.33E-05	--	7.97E-05	--	6.56E-05	--	3.28E-05	--	0.000	1.78E-05	--	0.000	--	--	3.33E-06	0.000	0.000	4.00E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Dibenz(a,h)anthracene	FNA	--	FNA	--	FNA	--	FNA	--	0.000	FNA	--	0.000	--	--	FNA	0.000	FNA	0.000	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Dichlorobenzene	1.16E-04	--	1.12E-04	--	9.16E-05	--	4.62E-05	--	0.000	2.51E-05	--	0.000	--	--	4.71E-06	0.000	0.000	5.65E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Ethylbenzene	FNA	--	FNA	--	FNA	--	FNA	--	0.000	FNA	--	0.000	--	--	FNA	0.000	FNA	0.000	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Fluorene	2.72E-07	--	2.62E-07	--	2.14E-07	--	1.07E-07	--	0.000	5.85E-08	--	0.000	--	--	1.03E-08	0.000	0.000	1.23E-07	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Formaldehyde	7.35E-03	--	7.03E-03	--	5.74E-03	--	2.87E-03	--	0.000	1.57E-03	--	0.000	--	--	2.94E-04	0.000	0.000	3.53E-03	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Hexane	1.76E-01	--	1.69E-01	--	1.36E-01	--	6.80E-02	--	0.000	3.77E-02	--	0.185	--	--	7.06E-03	0.000	0.000	8.47E-02	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.047
Hydrogen Sulfide	FNA	--	FNA	--	FNA	--	FNA	--	0.000	2.41E-01	--	0.61	--	--	FNA	0.027	FNA	0.109	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	1.125
Manganese	3.72E-03	--	3.58E-03	--	2.91E-03	--	1.46E-03	--	0.000	7.95E-04	--	0.000	--	--	1.49E-05	0.000	0.000	1.79E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Mercury	2.55E-05	--	2.44E-05	--	1.99E-05	--	9.97E-06	--	0.000	5.44E-06	--	0.000	--	--	1.02E-06	0.000	0.000	1.22E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Molybdenum	1.38E-04	--	1.33E-04	--	1.07E-04	--	5.37E-05	--	0.000	2.93E-05	--	0.000	--	--	4.31E-06	0.000	0.000	5.19E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Naphthalene	5.98E-05	--	5.78E-05	--	4.67E-05	--	2.34E-05	--	0.000	1.28E-05	--	0.000	--	--	2.36E-06	0.000	0.000	2.87E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Nickel	2.09E-04	--	1.97E-04	--	1.61E-04	--	8.15E-05	--	0.000	4.30E-05	--	0.000	--	--	8.24E-06	0.000	0.000	6.66E-05	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Octane	2.55E-01	--	2.44E-01	--	1.99E-01	--	9.97E-02	--	0.000	5.44E-02	--	0.238	--	--	1.02E-02	0.000	0.000	1.22E-01	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	1.629
Phenol	FNA	--	FNA	--	FNA	--	FNA	--	0.000	FNA	--	0.000	--	--	FNA	0.000	FNA	0.000	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Selenium	2.36E-08	--	2.28E-08	--	1.84E-08	--	9.20E-09	--	0.000	5.02E-09	--	0.000	--	--	9.41E-08	0.000	0.000	1.13E-06	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Toluene	3.33E-04	--	3.19E-04	--	2.66E-04	--	1.33E-04	--	0.000	7.11E-05	--	0.000	--	--	1.33E-05	0.000	0.000	1.60E-04	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
Vanadium	2.25E-04	--	2.16E-04	--	1.75E-04	--	8.75E-05	--	0.000	4.81E-05	--	0.000	--	--	9.02E-06	0.000	0.000	1.05E-04	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
o-Xylene	FNA	--	FNA	--	FNA	--	FNA	--	0.000	FNA	--	0.000	--	--	FNA	0.000	FNA	0.000	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
zinc	2.81E-03	--	2.72E-03	--	2.22E-03	--	1.11E-03	--	0.000	6.07E-04	--	0.000	--	--	1.14E-04	0.000	0.000	1.38E-03	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	0.016
Total TSP	4.44E-01	--	4.24E-01	--	3.42E-01	--	1.72E-01	--	2.49E-03	5.41E-01	--	1.56E-03	--	--	3.77E-02	0.18E-03	2.13E-01	2.72E-01	0.000	--	--	--	--	--	--	--	--	--	--	--	--	--	2.62E+00
Calc Sheet:	Sheet 1	Sheet 2	Sheet 3	Sheet 4	Sheet 5	Sheet 6	Sheet 8	Sheet 7	Sheet 8	Sheet 8	Sheet 10	Sheet 11	Sheet 11	Sheet 11	Sheet 11	Sheet 11	Sheet 11	Sheet 12	Sheet 13														

Notes:

FNA = Factor Not Available (negligible emission rate, if any)

NA = Not Applicable

(a) To facilitate operational flexibility, the four boilers at the facility are grouped in a natural gas bubble. The annual natural gas consumption of the bubble will be limited, rather than the natural gas consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.

(b) To facilitate operational flexibility, the two boilers (B101 and B102) at Burley Plant 1 and the flare (C001) were grouped into a biogas bubble. The annual biogas consumption of the bubble will be limited rather than the biogas consumption at individual combustion units. Detailed estimates for the "Biogas Bubble" are presented in a separate spreadsheet.

(c) Total = Sum of ton/yr emission rates for all sources except boilers and flare + NG Bubble + Biogas Bubble

Air Pollutant Emissions Burley Plant 1 - Murray 1 Boiler (B101)

Combustion Source Characteristics		Stack Data	
Boiler Manufacturer	Murray Boiler	Stack Height (ft)	40.7
Burner Model	Coon DAZ	Stack Diameter (ft)	5.00
Input Heat Capacity (BTU/hr)	100,000,000	Exit Gas Temperature (°F)	308
Fuel	Natural Gas and Biogas	Wet Actual Flow Rate (scfm)	29,882
Heating Value (BTU/scf)	1,020	Wet Standard Flow Rate (wscfm)	17,683
Max Hourly Fuel Consumption (scf/hr)	98,039	Dry Standard Flow Rate (dscfm)	14,517
Annual NG Fuel Consumption (scf/yr) ^{d,d}	"Bubbled"	Grain Loading Flow Rate (dscfm)	19,691
Max Hourly Biogas Flow Rate (scf/hr)	33,180	Stack Velocity (m/s)	7.73
Max Hourly Biogas NG Equivalency (scf/hr)	20,903	Fd (dscf stack gas/BTU)	0.00871
	0.21321468	Fw (wscf stack gas/BTU)	0.01061
Site Information			
Burley Barometric Pressure (mm Hg)		654.19	

Criteria Pollutants						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
PM ₁₀	NG Combustion	7.6	lb/10 ⁶ scf	0.745	*	0.094
SO ₂	NG Combustion	0.6	lb/10 ⁶ scf	0.059	*	0.007
SO ₂	Biogas and NG	*	*	22.772	*	2.869
NO _x	NG Combustion	100	lb/10 ⁶ scf	9.804	*	1.235
CO	NG Combustion	84	lb/10 ⁶ scf	8.235	*	1.038
VOC	NG Combustion	5.5	lb/10 ⁶ scf	0.539	*	0.068
Lead	NG Combustion	0.0005	lb/10 ⁶ scf	4.90E-05	*	6.18E-06

Non-Criteria Pollutants with Significant Threshold						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
PM	NG Combustion	See PM ₁₀	See PM ₁₀	0.745	*	9.39E-02
Beryllium	NG Combustion	<1.2E-5	lb/10 ⁶ scf	1.18E-06	*	1.48E-07
H ₂ S	Biogas and NG	†	†	2.47E-01	*	3.11E-02
Mercury	NG Combustion	2.60E-04	lb/10 ⁶ scf	2.55E-05	*	3.21E-06

Other Pollutants						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
TOC	NG Combustion	11	lb/10 ⁶ scf	1.08	*	0.136
Methane	NG Combustion	2.3	lb/10 ⁶ scf	0.225	*	0.028
CO ₂	NG Combustion	120,000	lb/10 ⁶ scf	11,765	*	1,482
N ₂ O	NG Combustion	2.2	lb/10 ⁶ scf	0.216	*	0.027

PM Grain Loading Standard ^e					
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Grain Load @ 3% Oxygen (gr/dscf)	PM Grain Standard ^e (gr/dscf)	Meets Standard?
PM	NG Combustion	0.745	0.004	0.015	yes

NSPS PM Emission Rate Standard				
Pollutant	Pollutant Source	Emission Rate (lb/MMBtu)	NSPS Standard (lb/MMBtu)	Meets Standard?
PM ^g	NG Combustion	0.00745	0.030	yes
SO ₂	Biogas and NG	0.228	NA	NA

- Notes:
- (a) To facilitate operational flexibility, the four boilers at the facility are grouped in a natural gas bubble. The annual natural gas consumption of the bubble will be limited, rather than the natural gas consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.
 - (b) Emission factors from AP-42 Chapter 1.4, "Natural Gas Combustion", unless otherwise noted.
 - (c) IDAPA 58.01.01.677
 - (d) To facilitate operational flexibility, the two boilers (B101 and B102) at Burley Plant 1 and the flare (C001) were grouped into a biogas bubble. The annual biogas consumption of the bubble will be limited rather than the biogas consumption at individual combustion units. Detailed estimates for the "Biogas Bubble" are presented in a separate spreadsheet.
 - (e) Max total SO₂ emission rate associated with combustion of natural gas and biogas in the Nebraska 1 Boiler was calculated using the following relationship:

$$SO_2 = (SO_2 \text{ from Biogas Bubble}) + ((\text{Max hourly fuel consumption}) \times (\text{Max hourly biogas NG equivalency})) \times (\text{Potential } SO_2 \text{ Emissions from NG combustion})$$
 - (f) The H₂S emission factor was based on a destruction efficiency of 99% and the concentration of H₂S in the biogas.
 - (g) 40 CFR Part 60 Subpart Dc 60.43c(e)(1)

Sheet 1

Toxic Air Pollutant Emissions
Burley Plant 1 - Murray 1 Boiler (B101)

Combustion Source Characteristics		Stack Data	
Boiler Manufacturer	Murray Boiler	Stack Height (ft)	40.7
Burner Model	Coen DAZ	Stack Diameter (ft)	5.00
Input Heat Capacity (BTU/hr)	100,000,000	Exit Gas Temperature (°F)	308
Fuel	Natural Gas and Biogas	Wet Actual Flow Rate (acfm)	29,882
Heating Value (BTU/scf)	1,020	Wet Standard Flow Rate (wscfm)	17,683
Max Hourly Fuel Consumption (scf/hr)	98,039	Dry Standard Flow Rate (dscfm)	14,517
Annual Fuel Consumption (scf/yr) ^{a,d}	"Bubbled"	Grain Loading Flow Rate (dscfm)	19,691
		Stack Velocity (m/s)	7.73
		Fd (dscf stack gas/BTU)	0.00871
		Fw (wscf stack gas/BTU)	0.01061
Site Information			
Burley Barometric Pressure (mm Hg)	654.18		

Toxic Air Pollutants					
Pollutant	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Emission Limit ^c (lb/hr)
Arsenic	2.00E-04	lb/10 ⁶ scf	1.96E-05	2.47E-06	1.50E-06
Barium	4.40E-03	lb/10 ⁶ scf	4.31E-04	5.44E-05	3.30E-02
Benzene	2.10E-03	lb/10 ⁶ scf	2.06E-04	2.59E-05	8.00E-04
Beryllium	<1.2E-5	lb/10 ⁶ scf	1.18E-06	1.48E-07	2.80E-05
Benzo(a)pyrene	<1.2E-6	lb/10 ⁶ scf	1.18E-07	1.48E-08	2.00E-06
Bis (2-ethylhexyl)phthalate	FNA	lb/10 ⁶ scf	FNA	FNA	2.80E-02
Cadmium	1.10E-03	lb/10 ⁶ scf	1.08E-04	1.36E-05	3.70E-06
Chromium	1.40E-03	lb/10 ⁶ scf	1.37E-04	1.73E-05	3.30E-02
Cobalt	8.40E-05	lb/10 ⁶ scf	8.24E-06	1.04E-06	3.30E-03
Copper	8.50E-04	lb/10 ⁶ scf	8.33E-05	1.05E-05	3.33E-01
Dibutylphthalate	FNA	lb/10 ⁶ scf	FNA	FNA	6.70E-02
Dichlorobenzene	1.20E-03	lb/10 ⁶ scf	1.18E-04	1.48E-05	2.00E+01
Ethylbenzene	FNA	lb/10 ⁶ scf	FNA	FNA	2.90E+01
Fluorene	2.80E-06	lb/10 ⁶ scf	2.75E-07	3.46E-08	1.33E-01
Formaldehyde	7.50E-02	lb/10 ⁶ scf	7.35E-03	9.26E-04	5.10E-04
Hexane	1.80E+00	lb/10 ⁶ scf	1.76E-01	2.22E-02	1.20E+01
Manganese	3.80E-04	lb/10 ⁶ scf	3.73E-05	4.69E-06	3.33E-01
Mercury	2.60E-04	lb/10 ⁶ scf	2.55E-05	3.21E-06	3.00E-03
Molybdenum	1.10E-03	lb/10 ⁶ scf	1.08E-04	1.36E-05	3.33E-01
Naphthalene	6.10E-04	lb/10 ⁶ scf	5.98E-05	7.54E-06	3.33E+00
Nickel	2.10E-03	lb/10 ⁶ scf	2.06E-04	2.59E-05	2.70E-05
Pentane	2.60E+00	lb/10 ⁶ scf	2.55E-01	3.21E-02	1.18E+02
Phend	FNA	lb/10 ⁶ scf	FNA	FNA	1.27E+00
Selenium	<2.4E-5	lb/10 ⁶ scf	2.35E-06	2.96E-07	1.30E-02
Toluene	3.40E-03	lb/10 ⁶ scf	3.33E-04	4.20E-05	2.50E+01
Vanadium	2.30E-03	lb/10 ⁶ scf	2.25E-04	2.84E-05	3.00E-03
o-Xylene	FNA	lb/10 ⁶ scf	FNA	FNA	2.90E+01
Zinc	2.90E-02	lb/10 ⁶ scf	2.84E-03	3.58E-04	6.67E-01

Notes:

- (a) To facilitate operational flexibility, the four boilers at the facility are grouped in a natural gas bubble. The annual natural gas consumption of the bubble will be limited, rather than the natural gas consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.
 - (b) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
 - (c) IDAPA 58.01.01.585 and 586
 - (d) To facilitate operational flexibility, the two boilers (B101 and B102) at Burley Plant 1 and the flare (C001) were grouped into a biogas bubble. The annual biogas consumption of the bubble will be limited rather than the biogas consumption at individual combustion units. Detailed estimates for the "Biogas Bubble" are presented in a separate spreadsheet.
- * FNA - Factor Not Available

Air Pollutant Emissions
Burley Plant 1 - Nebraska 1 Boiler (B102)

Combustion Source Characteristics		Stack Data	
Boiler Manufacturer	Nebraska Boiler	Stack Height (ft)	64.9
Burner Model	Coen DAZ	Stack Diameter (ft)	4.00
Input Heat Capacity (BTU/hr)	95,580,000	Exit Gas Temperature (°F)	308
Fuel	Natural Gas and Biogas	Wet Actual Flow Rate (acfm)	28,561
Heating Value (BTU/scf)	1,020	Wet Standard Flow Rate (wscfm)	16,902
Max Hourly Fuel Consumption (scf/hr)	93,706	Dry Standard Flow Rate (dscfm)	13,875
Annual Fuel Consumption (scf/yr) ^{3,d}	"Bubbled"	Grain Loading Flow Rate (dscfm)	18,821
Max Hourly Biogas Flow Rate (scf/hr)	33,180	Stack Velocity (m/s)	11.54
Max Hourly Biogas NG Equivalency (scf/hr)	20,903	Fd (dscf stack gas/BTU)	0.00871
		Fw (wscf stack gas/BTU)	0.01061

Criteria Pollutants						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
PM ₁₀	NG Combustion	7.6	lb/10 ⁶ scf	0.712	^a	0.090
SO ₂	NG Combustion	0.6	lb/10 ⁶ scf	0.066	^a	0.007
SO ₂	Biogas and NG	^a	^a	22,770	^d	2,869
NO _x	NG Combustion	100	lb/10 ⁶ scf	9,371	^a	1,181
CO	NG Combustion	84	lb/10 ⁶ scf	7,871	^a	0.992
VOC	NG Combustion	5.5	lb/10 ⁶ scf	0.515	^a	0.065
Lead	NG Combustion	0.0005	lb/10 ⁶ scf	4.69E-05	^a	5.90E-06

Non-Criteria Pollutants with Significant Threshold						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
PM	NG Combustion	See PM ₁₀	See PM ₁₀	0.712	^a	8.97E-02
Beryllium	NG Combustion	<1.2E-5	lb/10 ⁶ scf	1.12E-06	^a	1.42E-07
H ₂ S	Biogas and NG	^f	^f	2.47E-01	^d	3.11E-02
Mercury	NG Combustion	2.60E-04	lb/10 ⁶ scf	2.44E-05	^a	3.07E-06

Other Pollutants						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
TOC	NG Combustion	11	lb/10 ⁶ scf	1.03	^a	0.130
Methane	NG Combustion	2.3	lb/10 ⁶ scf	0.216	^a	0.027
CO ₂	NG Combustion	120,000	lb/10 ⁶ scf	11,245	^a	1,417
N ₂ O	NG Combustion	2.2	lb/10 ⁶ scf	0.206	^a	0.026

PM Grain Loading Standard ^c					
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Grain Load @ 3% Oxygen (gr/dscf)	PM Grain Standard ^c (gr/dscf)	Meets Standard?
PM	NG Combustion	0.712	0.004	0.015	yes

NSPS PM Emission Rate Standard				
Pollutant	Pollutant Source	PM Emission Rate (lb/MMBtu)	NSPS PM Standard (lb/MMBtu)	Meets Standard?
PM ³	NG Combustion	0.00745	0.030	yes
SO ₂	Biogas and NG	0.238	NA	NA

- Notes:
- (a) To facilitate operational flexibility, the four boilers at the facility are grouped in a natural gas bubble. The annual natural gas consumption of the bubble will be limited, rather than the natural gas consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.
 - (b) Emission factors from AP-42 Chapter 1.4, "Natural Gas Combustion", unless otherwise noted.
 - (c) IDAPA 58.01.01.677
 - (d) To facilitate operational flexibility, the two boilers (B101 and B102) at Burley Plant 1 and the flare (C001) were grouped into a biogas bubble. The annual biogas consumption of the bubble will be limited rather than the biogas consumption at individual combustion units. Detailed estimates for the "Biogas Bubble" are presented in a separate spreadsheet.
 - (e) Max total SO₂ emission rate associated with combustion of natural gas and biogas in the Nebraska 1 Boiler was calculated using the following relationship:

$$SO_2 = (SO_2 \text{ from Biogas Bubble}) + ((\text{Max hourly fuel consumption}) - (\text{Max hourly biogas NG equivalency})) / (\text{Max hourly fuel consumption}) \times (\text{Potential } SO_2 \text{ Emissions from NG combustion})$$
 - (f) The H₂S emission factor was based on a destruction efficiency of 99% and the concentration of H₂S in the biogas.
 - (g) 40 CFR Part 60 Subpart Dc 60.43c(e)(1)

Sheet 2

Toxic Air Pollutant Emissions
Burley Plant 1 - Nebraska 1 Boiler (B102)

Combustion Source Characteristics		Stack Data	
Boiler Manufacturer	Nebraska Boiler	Stack Height (ft)	64.9
Burner Model	Coen DAZ	Stack Diameter (ft)	4.00
Input Heat Capacity (BTU/hr)	95,580,000	Exit Gas Temperature (°F)	308
Fuel	Natural Gas and Biogas	Wet Actual Flow Rate (acfm)	28,561
Heating Value (BTU/scf)	1,020	Wet Standard Flow Rate (wscfm)	16,902
Max Hourly Fuel Consumption (scf/hr)	93,706	Dry Standard Flow Rate (dscfm)	13,875
Annual Fuel Consumption (scf/yr) ^{a,d}	"Bubbled"	Grain Loading Flow Rate (dscfm)	18,821
		Stack Velocity (m/s)	11.54
		Fd (dscf stack gas/BTU)	0.00871
		Fw (wscf stack gas/BTU)	0.01061
Site Information			
Burley Barometric Pressure (mm Hg)	654.18		

Toxic Air Pollutants					
Pollutant	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Emission Limit ^c (lb/hr)
Arsenic	2.00E-04	lb/10 ⁶ scf	1.87E-05	2.36E-06	1.50E-06
Barium	4.40E-03	lb/10 ⁶ scf	4.12E-04	5.20E-05	3.30E-02
Benzene	2.10E-03	lb/10 ⁶ scf	1.97E-04	2.48E-05	8.00E-04
Beryllium	<1.2E-5	lb/10 ⁶ scf	1.12E-06	1.42E-07	2.80E-05
Benzo(a)pyrene	<1.2E-6	lb/10 ⁶ scf	1.12E-07	1.42E-08	2.00E-06
Bis (2-ethylhexyl)phthalate	FNA	lb/10 ⁶ scf	FNA	FNA	2.80E-02
Cadmium	1.10E-03	lb/10 ⁶ scf	1.03E-04	1.30E-05	3.70E-06
Chromium	1.40E-03	lb/10 ⁶ scf	1.31E-04	1.65E-05	3.30E-02
Cobalt	8.40E-05	lb/10 ⁶ scf	7.87E-06	9.92E-07	3.30E-03
Copper	8.50E-04	lb/10 ⁶ scf	7.97E-05	1.00E-05	3.33E-01
Dibutylphthalate	FNA	lb/10 ⁶ scf	FNA	FNA	6.70E-02
Dichlorobenzene	1.20E-03	lb/10 ⁶ scf	1.12E-04	1.42E-05	2.00E+01
Ethylbenzene	FNA	lb/10 ⁶ scf	FNA	FNA	2.90E+01
Fluorene	2.80E-06	lb/10 ⁶ scf	2.62E-07	3.31E-08	1.33E-01
Formaldehyde	7.50E-02	lb/10 ⁶ scf	7.03E-03	8.86E-04	5.10E-04
Hexane	1.80E+00	lb/10 ⁶ scf	1.69E-01	2.13E-02	1.20E+01
Manganese	3.80E-04	lb/10 ⁶ scf	3.56E-05	4.49E-06	3.33E-01
Mercury	2.60E-04	lb/10 ⁶ scf	2.44E-05	3.07E-06	3.00E-03
Molybdenum	1.10E-03	lb/10 ⁶ scf	1.03E-04	1.30E-05	3.33E-01
Napthalene	6.10E-04	lb/10 ⁶ scf	5.72E-05	7.20E-06	3.33E+00
Nickel	2.10E-03	lb/10 ⁶ scf	1.97E-04	2.48E-05	2.70E-05
Pentane	2.60E+00	lb/10 ⁶ scf	2.44E-01	3.07E-02	1.18E+02
Phend	FNA	lb/10 ⁶ scf	FNA	FNA	1.27E+00
Selenium	<2.4E-5	lb/10 ⁶ scf	2.25E-06	2.83E-07	1.30E-02
Toluene	3.40E-03	lb/10 ⁶ scf	3.19E-04	4.01E-05	2.50E+01
Vanadium	2.30E-03	lb/10 ⁶ scf	2.16E-04	2.72E-05	3.00E-03
o-Xylene	FNA	lb/10 ⁶ scf	FNA	FNA	2.90E+01
Zinc	2.90E-02	lb/10 ⁶ scf	2.72E-03	3.42E-04	6.67E-01

Notes:

- (a) To facilitate operational flexibility, the four boilers at the facility are grouped in a natural gas bubble. The annual natural gas consumption of the bubble will be limited, rather than the natural gas consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.
 - (b) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
 - (c) IDAPA 58.01.01.585 and 586
 - (d) To facilitate operational flexibility, the two boilers (B101 and B102) at Burley Plant 1 and the flare (C001) were grouped into a biogas bubble. The annual biogas consumption of the bubble will be limited rather than the biogas consumption at individual combustion units. Detailed estimates for the "Biogas Bubble" are presented in a separate spreadsheet.
- * FNA - Factor Not Available

Air Pollutant Emissions
Burley Plant 2 - Nebraska 2 Boiler (B202)

Combustion Source Characteristics		Stack Data	
Boiler Manufacturer	Nebraska Boiler	Stack Height (ft)	66.8
Burner Model	Coen DAZ	Stack Diameter (ft)	3.00
Input Heat Capacity (BTU/hr)	78,050,000	Exit Gas Temperature (°F)	308
Fuel	Natural Gas	Wet Actual Flow Rate (acfm)	23,323
Heating Value (BTU/scf)	1,020	Wet Standard Flow Rate (wscfm)	13,802
Max Hourly Fuel Consumption (scf/hr)	76,520	Dry Standard Flow Rate (dscfm)	11,330
Annual Fuel Consumption (scf/yr) ^a	"Bubbled"	Grain Loading Flow Rate (dscfm)	15,369
		Stack Velocity (m/s)	16.76
		Fd (dscf stack gas/BTU)	0.00871
		Fw (wscf stack gas/BTU)	0.01061
Site Information			
Burley Barometric Pressure (mm Hg)	654.18		

Criteria Pollutants						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
PM ₁₀	NG Combustion	7.6	lb/10 ⁶ scf	0.582	^a	0.073
SO ₂	NG Combustion	0.6	lb/10 ⁶ scf	0.046	^a	0.006
NO _x	NG Combustion	100	lb/10 ⁶ scf	7.652	^a	0.964
CO	NG Combustion	84	lb/10 ⁶ scf	6.428	^a	0.810
VOC	NG Combustion	5.5	lb/10 ⁶ scf	0.421	^a	0.053
Lead	NG Combustion	0.0005	lb/10 ⁶ scf	3.83E-05	^a	4.82E-06

Non-Criteria Pollutants with Significant Threshold						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
PM	NG Combustion	See PM ₁₀	See PM ₁₀	0.582	^a	7.33E-02
Beryllium	NG Combustion	<1.2E-5	lb/10 ⁶ scf	9.18E-07	^a	1.16E-07
Mercury	NG Combustion	2.60E-04	lb/10 ⁶ scf	1.99E-05	^a	2.51E-06

Other Pollutants						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
TOC	NG Combustion	11	lb/10 ⁶ scf	0.84	^a	0.106
Methane	NG Combustion	2.3	lb/10 ⁶ scf	0.176	^a	0.022
CO ₂	NG Combustion	120,000	lb/10 ⁶ scf	9,182	^a	1,157
N ₂ O	NG Combustion	2.2	lb/10 ⁶ scf	0.168	^a	0.021

PM Grain Loading Standard ^c					
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Grain Load @ 3% Oxygen (gr/dscf)	PM Grain Standard ^c (gr/dscf)	Meets Standard?
PM	NG Combustion	0.582	0.004	0.015	yes

Process Weight Rule - Not Applicable^d

Notes:

- (a) To facilitate operational flexibility, the four boilers at the facility are grouped in a bubble. The annual fuel consumption of the bubble will be limited, rather than the fuel consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.
- (b) Emission factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
- (c) IDAPA 58.01.01.676
- (d) IDAPA 58.01.01.710.03 - The Nebraska 2 Boiler (B202) is subject to IDAPA 58.01.01.676; therefore, Subsection 710.08 is not applicable.

Sheet 3

Toxic Air Pollutant Emissions
Burley Plant 2 - Nebraska 2 Boiler (B202)

Combustion Source Characteristics		Stack Data	
Boiler Manufacturer	Nebraska Boiler	Stack Height (ft)	66.8
Burner Model	Coen DAZ	Stack Diameter (ft)	3
Input Heat Capacity (BTU/hr)	78,050,000	Exit Gas Temperature (°F)	308
Fuel	Natural Gas	Wet Actual Flow Rate (acfm)	23,323
Heating Value (BTU/scf)	1,020	Wet Standard Flow Rate (wscfm)	13,802
Max Hourly Fuel Consumption (scf/hr)	76,520	Dry Standard Flow Rate (dscfm)	11,330
Annual Fuel Consumption (scf/yr) ^a	"Bubbled"	Grain Loading Flow Rate (dscfm)	15,369
		Stack Velocity (m/s)	16.76
		Fd (dscf stack gas/BTU)	0.00871
		Fw (wscf stack gas/BTU)	0.01061

Toxic Air Pollutants						
Pollutant	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Emission Limit ^c (lb/hr)	Modeling Required? ^d
Arsenic	2.00E-04	lb/10 ⁶ scf	1.53E-05	1.93E-06	1.50E-06	yes
Barium	4.40E-03	lb/10 ⁶ scf	3.37E-04	4.24E-05	3.30E-02	no
Benzene	2.10E-03	lb/10 ⁶ scf	1.61E-04	2.02E-05	8.00E-04	no
Beryllium	<1.2E-5	lb/10 ⁶ scf	9.18E-07	1.16E-07	2.80E-05	no
Benz(a)pyrene	<1.2E-6	lb/10 ⁶ scf	9.18E-08	1.16E-08	2.00E-06	no
Bis (2-ethylhexyl)phthalate	FNA	lb/10 ⁶ scf	FNA	FNA	2.80E-02	no
Cadmium	1.10E-03	lb/10 ⁶ scf	8.42E-05	1.06E-05	3.70E-06	yes
Chromium	1.40E-03	lb/10 ⁶ scf	1.07E-04	1.35E-05	3.30E-02	no
Cobalt	8.40E-05	lb/10 ⁶ scf	6.43E-06	8.10E-07	3.30E-03	no
Copper	8.50E-04	lb/10 ⁶ scf	6.50E-05	8.20E-06	3.33E-01	no
Dibutylphthalate	FNA	lb/10 ⁶ scf	FNA	FNA	6.70E-02	no
Dichlorobenzene	1.20E-03	lb/10 ⁶ scf	9.18E-05	1.16E-05	2.00E+01	no
Ethylbenzene	FNA	lb/10 ⁶ scf	FNA	FNA	2.90E+01	no
Fluorene	2.80E-06	lb/10 ⁶ scf	2.14E-07	2.70E-08	1.33E-01	no
Formaldehyde	7.50E-02	lb/10 ⁶ scf	5.74E-03	7.23E-04	5.10E-04	yes
Hexane	1.80E+00	lb/10 ⁶ scf	1.38E-01	1.74E-02	1.20E+01	no
Manganese	3.80E-04	lb/10 ⁶ scf	2.91E-05	3.66E-06	3.33E-01	no
Mercury	2.60E-04	lb/10 ⁶ scf	1.99E-05	2.51E-06	3.00E-03	no
Molybdenum	1.10E-03	lb/10 ⁶ scf	8.42E-05	1.06E-05	3.33E-01	no
Napthalene	6.10E-04	lb/10 ⁶ scf	4.67E-05	5.88E-06	3.33E+00	no
Nickel	2.10E-03	lb/10 ⁶ scf	1.61E-04	2.02E-05	2.70E-05	yes
Pentane	2.60E+00	lb/10 ⁶ scf	1.99E-01	2.51E-02	1.18E+02	no
Phend	FNA	lb/10 ⁶ scf	FNA	FNA	1.27E+00	no
Selenium	<2.4E-5	lb/10 ⁶ scf	1.84E-06	2.31E-07	1.30E-02	no
Toluene	3.40E-03	lb/10 ⁶ scf	2.60E-04	3.28E-05	2.50E+01	no
Vanadium	2.30E-03	lb/10 ⁶ scf	1.76E-04	2.22E-05	3.00E-03	no
o-Xylene	FNA	lb/10 ⁶ scf	FNA	FNA	2.90E+01	no
Zinc	2.90E-02	lb/10 ⁶ scf	2.22E-03	2.80E-04	6.67E-01	no

Notes:

(a) To facilitate operational flexibility, the four boilers at the facility are grouped in a bubble. The annual fuel consumption of the bubble will be limited, rather than the fuel consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.

(b) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".

(c) IDAPA 58.01.01.585 and 586

(d) IDAPA 58.01.01.210.05(b)

* FNA - Factor Not Available

Air Pollutant Emissions
Burley Plant 2 - Murray 2 Boiler (B203)

Combustion Source Characteristics		Stack Data	
Boiler Manufacturer	Murray Boiler	Stack Height (ft)	37.9
Burner Model	Coen DAZ	Stack Diameter (ft)	3.00
Input Heat Capacity (BTU/hr)	39,100,000	Exit Gas Temperature (°F)	308
Fuel	Natural Gas	Wet Actual Flow Rate (acfm)	11,684
Heating Value (BTU/scf)	1,020	Wet Standard Flow Rate (wscfm)	6,914
Max Hourly Fuel Consumption (scf/hr)	38,333	Dry Standard Flow Rate (dscfm)	5,676
Annual Fuel Consumption (scf/yr) ^a	"Bubbled"	Grain Loading Flow Rate (dscfm)	7,699
		Stack Velocity (m/s)	8.39
		Fd (dscf stack gas/BTU)	0.00871
		Fw (wscf stack gas/BTU)	0.01061

Site Information	
Burley Barometric Pressure (mm Hg)	654.18

Criteria Pollutants						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
PM ₁₀	NG Combustion	7.6	lb/10 ⁶ scf	0.291	^a	0.037
SO ₂	NG Combustion	0.6	lb/10 ⁶ scf	0.023	^a	0.003
NO _x	NG Combustion	100	lb/10 ⁶ scf	3.833	^a	0.483
CO	NG Combustion	84	lb/10 ⁶ scf	3.220	^a	0.406
VOC	NG Combustion	5.5	lb/10 ⁶ scf	0.211	^a	0.027
Lead	NG Combustion	0.0005	lb/10 ⁶ scf	1.92E-05	^a	2.42E-06

Non-Criteria Pollutants with Significant Threshold						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
PM	NG Combustion	See PM ₁₀	See PM ₁₀	0.291	^a	3.67E-02
Beryllium	NG Combustion	<1.2E-5	lb/10 ⁶ scf	4.60E-07	^a	5.80E-08
Mercury	NG Combustion	2.60E-04	lb/10 ⁶ scf	9.97E-06	^a	1.26E-06

Other Pollutants						
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
TOC	NG Combustion	11	lb/10 ⁶ scf	0.42	^a	0.053
Methane	NG Combustion	2.3	lb/10 ⁶ scf	0.088	^a	0.011
CO ₂	NG Combustion	120,000	lb/10 ⁶ scf	4,600	^a	580
N ₂ O	NG Combustion	2.2	lb/10 ⁶ scf	0.084	^a	0.011

PM Grain Loading Standard ^c					
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Grain Load @ 3% Oxygen (gr/dscf)	PM Grain Standard ^d (gr/dscf)	Meets Standard?
PM	NG Combustion	0.291	0.004	0.015	yes

Process Weight Rule - Not Applicable^d

Notes:

- (a) To facilitate operational flexibility, the four boilers at the facility are grouped in a bubble. The annual fuel consumption of the bubble will be limited, rather than the fuel consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.
- (b) Emission factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
- (c) IDAPA 58.01.01.677
- (d) IDAPA 58.01.01.710.03 - The Murray 2 Boiler (B202) is subject to IDAPA 58.01.01.677; therefore, Subsection 710.08 is not applicable.

Sheet 4

Toxic Air Pollutant Emissions
Burley Plant 2 - Murray 2 Boiler (B203)

Combustion Source Characteristics	
Boiler Manufacturer	Murray Boiler
Burner Model	Coen DAZ
Input Heat Capacity (BTU/hr)	39,100,000
Fuel	Natural Gas
Heating Value (BTU/scf)	1,020
Max Hourly Fuel Consumption (scf/hr)	38,333
Annual Fuel Consumption (scf/yr) ^a	"Bubbled"

Stack Data	
Stack Height (ft)	37.9
Stack Diameter (ft)	3.00
Exit Gas Temperature (°F)	308
Wet Actual Flow Rate (acfm)	11,684
Wet Standard Flow Rate (wscfm)	6,914
Dry Standard Flow Rate (dscfm)	5,676
Grain Loading Flow Rate (dscfm)	7,699
Stack Velocity (m/s)	8.39
Fd (dscf stack gas/BTU)	0.00871
Fw (wscf stack gas/BTU)	0.01061

Site Information	
Burley Barometric Pressure (mm Hg)	654.18

Toxic Air Pollutants						
Pollutant	Emission Factor ^b	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Emission Limit ^c (lb/hr)	Modeling Required? ^d
Arsenic	2.00E-04	lb/10 ⁸ scf	7.67E-06	9.66E-07	1.50E-06	yes
Barium	4.40E-03	lb/10 ⁸ scf	1.69E-04	2.13E-05	3.30E-02	no
Benzene	2.10E-03	lb/10 ⁸ scf	8.05E-05	1.01E-05	8.00E-04	no
Beryllium	<1.2E-5	lb/10 ⁸ scf	4.60E-07	5.80E-08	2.80E-05	no
Benzo(a)pyrene	<1.2E-6	lb/10 ⁸ scf	4.60E-08	5.80E-09	2.00E-06	no
Bis (2-ethylhexyl)phthalate	FNA	lb/10 ⁸ scf	FNA	FNA	2.80E-02	no
Cadmium	1.10E-03	lb/10 ⁸ scf	4.22E-05	5.31E-06	3.70E-06	yes
Chromium	1.40E-03	lb/10 ⁸ scf	5.37E-05	6.76E-06	3.30E-02	no
Cobalt	8.40E-05	lb/10 ⁸ scf	3.22E-06	4.06E-07	3.30E-03	no
Copper	8.50E-04	lb/10 ⁸ scf	3.26E-05	4.11E-06	3.33E-01	no
Dibutylphthalate	FNA	lb/10 ⁸ scf	FNA	FNA	6.70E-02	no
Dichlorobenzene	1.20E-03	lb/10 ⁸ scf	4.60E-05	5.80E-06	2.00E+01	no
Ethylbenzene	FNA	lb/10 ⁸ scf	FNA	FNA	2.90E+01	no
Fluorene	2.80E-06	lb/10 ⁸ scf	1.07E-07	1.35E-08	1.33E-01	no
Formaldehyde	7.50E-02	lb/10 ⁸ scf	2.88E-03	3.62E-04	5.10E-04	yes
Hexane	1.80E+00	lb/10 ⁸ scf	6.90E-02	8.69E-03	1.20E+01	no
Manganese	3.80E-04	lb/10 ⁸ scf	1.46E-05	1.84E-06	3.33E-01	no
Mercury	2.60E-04	lb/10 ⁸ scf	9.97E-06	1.26E-06	3.00E-03	no
Molybdenum	1.10E-03	lb/10 ⁸ scf	4.22E-05	5.31E-06	3.33E-01	no
Napthalene	6.10E-04	lb/10 ⁸ scf	2.34E-05	2.95E-06	3.33E+00	no
Nickel	2.10E-03	lb/10 ⁸ scf	8.05E-05	1.01E-05	2.70E-05	yes
Pentane	2.60E+00	lb/10 ⁸ scf	9.97E-02	1.26E-02	1.18E+02	no
Phend	FNA	lb/10 ⁸ scf	FNA	FNA	1.27E+00	no
Selenium	<2.4E-5	lb/10 ⁸ scf	9.20E-07	1.16E-07	1.30E-02	no
Toluene	3.40E-03	lb/10 ⁸ scf	1.30E-04	1.64E-05	2.50E+01	no
Vanadium	2.30E-03	lb/10 ⁸ scf	8.82E-05	1.11E-05	3.00E-03	no
o-Xylene	FNA	lb/10 ⁸ scf	FNA	FNA	2.90E+01	no
Zinc	2.90E-02	lb/10 ⁸ scf	1.11E-03	1.40E-04	6.67E-01	no

Notes:

(a) To facilitate operational flexibility, the four boilers at the facility are grouped in a bubble. The annual fuel consumption of the bubble will be limited, rather than the fuel consumption of the individual boilers. Detailed annual emission estimates for the "Boiler Bubble" are presented in a separate spreadsheet.

(b) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".

(c) IDAPA 58.01.01.585 and 586

(d) IDAPA 58.01.01.210.05(b)

* FNA - Factor Not Available

Sheet 5

Annual Air Pollutant Emissions Boiler Natural Gas Bubble

Combustion Source Characteristics

Fuel	Natural Gas
Heating Value (BTU/scf)	1,020
Annual Fuel Consumption (scf/yr) ^a	1,100,000,000

Criteria Pollutants							
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (TPY)	Significant Level ^c (TPY)	Below Regulatory Concern? ^d	Significant Contribution? ^e
PM ₁₀	NG Combustion	7.6	lb/10 ⁶ scf	4.180	15	no	no
SO ₂	NG Combustion	0.6	lb/10 ⁶ scf	0.330	40	yes	no
NO _x	NG Combustion	100	lb/10 ⁶ scf	55.000	40	no	yes
CO	NG Combustion	84	lb/10 ⁶ scf	46.200	100	no	no
VOC	NG Combustion	5.5	lb/10 ⁶ scf	3.025	40	yes	no
Lead	NG Combustion	0.0005	lb/10 ⁶ scf	2.75E-04	0.6	yes	no

Non-Criteria Pollutants with Significant Threshold							
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (TPY)	Significant Level ^c (TPY)	Below Regulatory Concern? ^d	Significant Contribution? ^e
PM	NG Combustion	See PM ₁₀	See PM ₁₀	4.180	25	no	no
Beryllium	NG Combustion	<1.2E-5	lb/10 ⁶ scf	6.60E-06	0.0004	yes	no
Mercury	NG Combustion	2.60E-04	lb/10 ⁶ scf	1.43E-04	0.1	yes	no

Other Pollutants				
Pollutant	Pollutant Source	Emission Factor ^b	Emission Factor Unit	Potential Emissions (TPY)
TOC	NG Combustion	11	lb/10 ⁶ scf	6.050
Methane	NG Combustion	2.3	lb/10 ⁶ scf	1.265
CO ₂	NG Combustion	120,000	lb/10 ⁶ scf	66,000
N ₂ O	NG Combustion	2.2	lb/10 ⁶ scf	1.210

Notes:

- (a) To facilitate operational flexibility, the four boilers at the facility are grouped in a natural gas bubble. The annual natural gas consumption of the bubble will be monitored and limited to 1,100,000,000 scf/yr
- (b) Emission factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
- (c) IDAPA 58.01.01.006.92
- (d) IDAPA 58.01.01.221.01

Sheet 5

Annual Toxic Air Pollutant Emissions Boiler Natural Gas Bubble

Combustion Source Characteristics

Fuel	Natural Gas
Heating Value (BTU/scf)	1,020
Annual Fuel Consumption (scf/yr) ^a	1,100,000,000

Toxic Air Pollutants			
Pollutant	Emission Factor ^b	Emission Factor Unit	Potential Emissions (TPY)
Arsenic	2.00E-04	lb/10 ⁶ scf	1.10E-04
Barium	4.40E-03	lb/10 ⁶ scf	2.42E-03
Benzene	2.10E-03	lb/10 ⁶ scf	1.16E-03
Beryllium	<1.2E-5	lb/10 ⁶ scf	6.60E-06
Benzo(a)pyrene	<1.2E-6	lb/10 ⁶ scf	6.60E-07
Bis (2-ethylhexyl)phthalate	FNA	lb/10 ⁶ scf	FNA
Cadmium	1.10E-03	lb/10 ⁶ scf	6.05E-04
Chromium	1.40E-03	lb/10 ⁶ scf	7.70E-04
Cobalt	8.40E-05	lb/10 ⁶ scf	4.62E-05
Copper	8.50E-04	lb/10 ⁶ scf	4.68E-04
Dibutylphthalate	FNA	lb/10 ⁶ scf	FNA
Dichlorobenzene	1.20E-03	lb/10 ⁶ scf	6.60E-04
Ethylbenzene	FNA	lb/10 ⁶ scf	FNA
Fluorene	2.80E-06	lb/10 ⁶ scf	1.54E-06
Formaldehyde	7.50E-02	lb/10 ⁶ scf	4.13E-02
Hexane	1.80E+00	lb/10 ⁶ scf	9.90E-01
Manganese	3.80E-04	lb/10 ⁶ scf	2.09E-04
Mercury	2.60E-04	lb/10 ⁶ scf	1.43E-04
Molybdenum	1.10E-03	lb/10 ⁶ scf	6.05E-04
Napthalene	6.10E-04	lb/10 ⁶ scf	3.36E-04
Nickel	2.10E-03	lb/10 ⁶ scf	1.16E-03
Pentane	2.60E+00	lb/10 ⁶ scf	1.43E+00
Phenol	FNA	lb/10 ⁶ scf	FNA
Selenium	<2.4E-5	lb/10 ⁶ scf	1.32E-05
Toluene	3.40E-03	lb/10 ⁶ scf	1.87E-03
Vanadium	2.30E-03	lb/10 ⁶ scf	1.27E-03
o-Xylene	FNA	lb/10 ⁶ scf	FNA
Zinc	2.90E-02	lb/10 ⁶ scf	1.60E-02

Notes:

- (a) To facilitate operational flexibility, the four boilers at the facility are grouped in a natural gas bubble. The annual natural gas consumption of the bubble will be monitored and limited to 1,100,000,000 scf/yr
- (b) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".

* FNA - Factor Not Available

Air Pollutant Emissions Biogas Flare (C001)

Biogas & Pilot Fuel Information

Peak Daily Biogas Flow Rate (scfm) ⁽¹⁾	553
Biogas Methane Content (%v) ⁽²⁾	63.0%
Methane Molecular Weight (lb/mol)	16.0
Methane Density (lb/ft ³) ⁽³⁾	0.0415
Natural Gas Flow Rate (scfm) ⁽⁴⁾	348.69
Biogas H ₂ S Content (%v) ⁽²⁾	0.42%
H ₂ S Molecular Weight (lb/mol)	34.1
H ₂ S Density (lb/ft ³) ⁽³⁾	0.0885
SO ₂ Molecular Weight (lb/mol)	64.1
Biogas Density (lb/ft ³)	0.0562

Stack Parameters & Exit Gas Data

Flare Shroud Diameter (ft)	2.00
Flare Height (ft)	25.0
Flare Exit Gas Temperature (K)	1,173
Oxygen Molecular Weight (lb/mol)	32.0
Oxygen Density (lb/ft ³) ⁽³⁾	0.0831
Air Oxygen Content (%v)	21%
Combustion Air Flow Rate (scfm) ⁽⁵⁾	3,321
Maximum Shroud Exit Gas Flow Rate (scfm) ⁽⁶⁾	3,874
Maximum Shroud Exit Gas Flow Rate (acfm)	18,010
Maximum Shroud Exit Gas Velocity (fps)	96

Site Information

Burley Barometric Pressure (atm)	0.86
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Miscellaneous Support Data

Pressure at Standard Conditions (atm)	1
Temperature at Standard Conditions (K)	293
Ideal Gas Constant (atm-ft ³ /mol-K)	1.314

Criteria Pollutants							
Pollutant	Emission Factor ⁽⁷⁾	Emission Factor Unit	Emission Rate (lb/hr)	Emission Rate (TPY)	Emission Rate (g/s)	Significant Level ⁽⁹⁾ (TPY)	Below Regulatory Concern? ⁽⁹⁾
PM ₁₀	See PM	See PM	0.16	0.70	0.020	15	yes
SO ₂	0.98	mol SO ₂ /mol H ₂ S in biogas	22.7	99.5	2.863	40	no
NO _x	100	lb/10 ⁶ scf	2.09	9.2	0.26	40	no
CO	84	lb/10 ⁶ scf	1.76	7.7	0.22	100	yes
VOC	5.5	lb/10 ⁶ scf	0.12	0.50	0.014	40	yes
Lead	0.0005	lb/10 ⁶ scf	1.05E-05	4.58E-05	1.32E-06	0.6	yes

Non-Criteria Pollutants with Significant Threshold							
Pollutant	Emission Factor ⁽⁷⁾	Emission Factor Unit	Emission Rate (lb/hr)	Emission Rate (TPY)	Emission Rate (g/s)	Significant Level ⁽⁹⁾ (TPY)	Below Regulatory Concern? ⁽⁹⁾
PM	7.6	lb/10 ⁶ scf	0.16	0.70	0.020	25	yes
Beryllium	<1.2E-05	lb/10 ⁶ scf	2.51E-07	1.10E-06	3.16E-08	0.0004	yes
Mercury	2.60E-04	lb/10 ⁶ scf	5.44E-06	2.38E-05	6.85E-07	0.1	yes
H ₂ S	2.00	% _m of H ₂ S in biogas	0.25	1.08	0.031	10	no

Incinerator PM Rule ⁽¹⁰⁾			
Pollutant	Emission Rate (lb/hr)	Emission Rate (lb/100 lb of biogas)	Below Limit? ⁽¹⁰⁾
PM	0.16	0.009	yes

Process Weight Rule - Not Applicable ⁽¹¹⁾

PM Grain Loading Standard - Not Applicable ⁽¹²⁾

Notes:

- (1) Peak daily biogas flow rate selected to prevent triggering the Major classification for SO₂ emissions and is less than the maximum observed daily flowrate measured at the site.
- (2) Biogas composition was based on source test data from samples collected at the site on April 28, 2005.
- (3) The densities of methane, oxygen and H₂S were calculated at standard conditions using the Ideal Gas Law.
- (4) Natural gas equivalent flow rate was estimated as 63%v of the biogas flow rate (based on methane) plus pilot gas flow rate (0.3 scfm).
- (5) The combustion air flow rate was calculated from the methane flow rate based on the quantity of oxygen required to convert methane to carbon dioxide i.e., 2 moles of oxygen per 1 mole of methane.
- (6) The maximum flare exit gas flow rate was calculated as the sum of the maximum biogas flow rate and the combustion air flow rate.
- (7) The SO₂ emission factor was based on a 1:1 molar conversion ratio of H₂S in the biogas to SO₂ and a flare destruction efficiency of 98%_m for H₂S. The H₂S emission factor was based on a flare destruction efficiency of 98%_m and the concentration of H₂S in the biogas. Emission factors for other pollutants were obtained from AP-42 Chapter 1.4, "Natural Gas Combustion". PM₁₀ emissions were assumed to equal PM.
- (8) IDAPA 58.01.01.006.92
- (9) IDAPA 58.01.01.221.01
- (10) IDAPA 58.01.01.786.01 limits PM emissions from incinerators to ≤ 0.2 lb/100 lb of refuse burned.
- (11) IDAPA 58.01.01.710. The flare is considered an incinerator per IDAPA 58.01.01.006.5, which does not meet the definition of process equipment presented in IDAPA 58.01.006.79. Therefore, the process weight rule is not applicable.
- (12) IDAPA 58.01.01.676 or 677 - The primary purpose of the flare is to treat waste gas generated in the covered anaerobic lagoon not to produce heat or power by indirect heat transfer. Therefore, the flare does not satisfy the definition of "fuel burning equipment" as presented in IDAPA 58.01.01.006.4 and is not subject to the PM Grain Loading Standard.

Sheet 6

Toxic Air Pollutant Emissions
Biogas Flare (C001)

Biogas & Pilot Fuel Information	
Peak Daily Biogas Flow Rate (scfm) ⁽¹⁾	553
Biogas Methane Content (%v) ⁽²⁾	63.0%
Methane Molecular Weight (lb/mol)	16.0
Methane Density (lb/ft ³) ⁽³⁾	0.0415
"Natural Gas" Flow Rate (scfm) ⁽⁴⁾	349
Biogas H ₂ S Content (%v) ⁽²⁾	0.42%
H ₂ S Molecular Weight (lb/mol)	34.1
H ₂ S Density (lb/ft ³) ⁽³⁾	0.0885
SO ₂ Molecular Weight (lb/mol)	64.1
Biogas Density (lb/ft ³)	0.0562

Stack Parameters & Exit Gas Data	
Flare Shroud Diameter (ft)	2.00
Flare Height (ft)	25.0
Flare Exit Gas Temperature (K)	1,173
Oxygen Molecular Weight (lb/mol)	32.0
Oxygen Density (lb/ft ³) ⁽³⁾	0.0831
Air Oxygen Content (%v)	21%
Combustion Air Flow Rate (scfm) ⁽⁵⁾	3,321
Maximum Shroud Exit Gas Flow Rate (scfm) ⁽⁶⁾	3,874
Maximum Shroud Exit Gas Flow Rate (acfm)	18,010
Maximum Shroud Exit Gas Velocity (fps)	95.5

Site Information	
Burley Barometric Pressure (atm)	0.88

Miscellaneous Support Data	
Pressure at Standard Conditions (atm)	1
Temperature at Standard Conditions (K)	293
Ideal Gas Constant (atm-ft ³ /m ³ -K)	1.314

Toxic Air Pollutants						
Pollutant	Emission Factor ⁽⁷⁾	Emission Unit	Emission Rate (lb/hr)	Emission Rate (TPY)	Emission Rate (g/s)	Emission Limit ⁽⁸⁾ (lb/hr)
Arsenic	2.00E-04	lb/10 ⁶ scf	4.18E-06	1.83E-05	5.27E-07	1.50E-06
Barium	4.40E-03	lb/10 ⁶ scf	9.21E-05	4.03E-04	1.16E-05	3.30E-02
Benzene	2.10E-03	lb/10 ⁶ scf	4.39E-05	1.92E-04	5.54E-06	8.00E-04
Beryllium	<1.2E-5	lb/10 ⁶ scf	2.51E-07	1.10E-06	3.16E-08	2.80E-05
Benzo(a)pyrene	<1.2E-6	lb/10 ⁶ scf	2.51E-08	1.10E-07	3.16E-09	2.00E-06
Cadmium	1.10E-03	lb/10 ⁶ scf	2.30E-05	1.01E-04	2.90E-06	3.70E-06
Chromium	1.40E-03	lb/10 ⁶ scf	2.93E-05	1.28E-04	3.69E-06	3.30E-02
Cobalt	8.40E-05	lb/10 ⁶ scf	1.76E-06	7.70E-06	2.21E-07	3.30E-03
Copper	8.50E-04	lb/10 ⁶ scf	1.78E-05	7.79E-05	2.24E-06	3.33E-01
Dichlorobenzene	1.20E-03	lb/10 ⁶ scf	2.51E-05	1.10E-04	3.16E-06	2.00E+01
Fluorene	2.80E-06	lb/10 ⁶ scf	5.86E-08	2.57E-07	7.38E-09	1.33E-01
Formaldehyde	7.50E-02	lb/10 ⁶ scf	1.57E-03	6.87E-03	1.98E-04	5.10E-04
Hexane	1.80E+00	lb/10 ⁶ scf	3.77E-02	1.65E-01	4.74E-03	1.20E+01
Hydrogen Sulfide	2.00	% _m of biogas	0.25	1.08	0.031	9.33E-01
Manganese	3.80E-04	lb/10 ⁶ scf	7.95E-06	3.48E-05	1.00E-06	3.33E-01
Mercury	2.60E-04	lb/10 ⁶ scf	5.44E-06	2.38E-05	6.85E-07	3.00E-03
Molybdenum	1.10E-03	lb/10 ⁶ scf	2.30E-05	1.01E-04	2.90E-06	3.33E-01
Napthalene	6.10E-04	lb/10 ⁶ scf	1.28E-05	5.59E-05	1.61E-06	3.33E+00
Nickel	2.10E-03	lb/10 ⁶ scf	4.39E-05	1.92E-04	5.54E-06	2.70E-05
Pentane	2.60E+00	lb/10 ⁶ scf	5.44E-02	2.38E-01	6.85E-03	1.18E+02
Selenium	<2.4E-5	lb/10 ⁶ scf	5.02E-07	2.20E-06	6.33E-08	1.30E-02
Toluene	3.40E-03	lb/10 ⁶ scf	7.11E-05	3.12E-04	8.96E-06	2.50E+01
Vanadium	2.30E-03	lb/10 ⁶ scf	4.81E-05	2.11E-04	6.06E-06	3.00E-03
Zinc	2.90E-02	lb/10 ⁶ scf	6.07E-04	2.66E-03	7.64E-05	6.67E-01

Notes:

Total HAPs 0.008 TPY

- Peak daily biogas flow rate selected to prevent triggering the Major classification for SO₂ emissions and is less than the maximum observed daily flowrate measured at the site.
- Biogas composition was based on source test data from samples collected at the site on April 28, 2005.
- The densities of methane, oxygen and H₂S were calculated at standard conditions using the Ideal Gas Law.
- Natural gas equivalent flow rate was estimated as 63%v of the biogas flow rate (based on methane) plus pilot gas flow rate (0.3 scfm).
- The combustion air flow rate was calculated from the methane flow rate based on the quantity of oxygen required to convert methane to carbon dioxide i.e., 2 moles of oxygen per 1 mole of methane.
- The maximum flare exit gas flow rate was calculated as the sum of the maximum biogas and the combustion air flow rates.
- The H₂S emission factor was based on a flare destruction efficiency of 98% and the concentration of H₂S in the biogas.
Emission factors for other pollutants were obtained from AP-42 Chapter 1.4, "Natural Gas Combustion".
- IDAPA 58.01.01.585 and 586
- IDAPA 58.01.01.210.05(b)
- HAPs are designated by blue fill:

Sheet 7

Air Pollutant Emissions Biogas Bubble

Biogas Fuel Information

Peak Daily Biogas Flow Rate (scfm) ⁽¹⁾	553
Biogas Methane Content (%v) ⁽²⁾	63.0%
Methane Molecular Weight (lb/mol)	16.0
Methane Density (lb/ft ³) ⁽³⁾	0.0415
"Natural Gas Equivalency" Flow Rate (scfm) ⁽⁴⁾	348.39
Biogas H ₂ S Content (%v) ⁽²⁾	0.42%
H ₂ S Molecular Weight (lb/mol)	34.1
H ₂ S Density (lb/ft ³) ⁽³⁾	0.0885
SO ₂ Molecular Weight (lb/mol)	64.1
Biogas Density (lb/ft ³)	0.0562

Miscellaneous Support Data

Pressure at Standard Conditions (atm)	1
Temperature at Standard Conditions (K)	293
Ideal Gas Constant (atm-ft ³ /mol-K)	1.314
Burley Barometric Pressure (atm)	0.86

Criteria Pollutants							
Pollutant	Emission Factor ⁽⁵⁾	Emission Factor Unit	Emission Rate (lb/hr)	Emission Rate (TPY)	Emission Rate (g/s)	Significant Level ⁽⁶⁾ (TPY)	Below Regulatory Concern? ⁽⁷⁾
PM ₁₀	See PM	See PM	0.16	0.70	0.020	15	yes
SO ₂	0.98	mol SO ₂ /mol H ₂ S in biogas	22.7	99.5	2.863	40	no
NO _x	100	lb/10 ⁶ scf	2.09	9.2	0.26	40	no
CO	84	lb/10 ⁶ scf	1.76	7.7	0.22	100	yes
VOC	5.5	lb/10 ⁶ scf	0.11	0.50	0.014	40	yes
Lead	0.0005	lb/10 ⁶ scf	1.05E-05	4.58E-05	1.32E-06	0.6	yes

Non-Criteria Pollutants with Significant Threshold							
Pollutant	Emission Factor ⁽⁵⁾	Emission Factor Unit	Emission Rate (lb/hr)	Emission Rate (TPY)	Emission Rate (g/s)	Significant Level ⁽⁶⁾ (TPY)	Below Regulatory Concern? ⁽⁷⁾
PM	7.6	lb/10 ⁶ scf	0.16	0.70	0.020	25	yes
Beryllium	<1.2E-05	lb/10 ⁶ scf	2.51E-07	1.10E-06	3.16E-08	0.0004	yes
Mercury	2.60E-04	lb/10 ⁶ scf	5.43E-06	2.38E-05	6.85E-07	0.1	yes
H ₂ S	2.00	% _m of H ₂ S in biogas	0.25	1.08	0.031	10	no

Notes:

- Peak daily biogas flow rate selected to prevent triggering the Major classification for SO₂ emissions and is less than the maximum observed daily flowrate measured at the site.
- Biogas composition was based on source test data from samples collected at the site on April 28, 2005.
- The densities of methane, oxygen and H₂S were calculated at standard conditions using the Ideal Gas Law.
- Natural gas equivalent flow rate was estimated as 63%v of the biogas flow rate (based on methane) plus pilot gas flow rate (0.3 scfm).
- The SO₂ emission factor was based on a 1:1 molar conversion ratio of H₂S in the biogas to SO₂ and a flare destruction efficiency of 98%_m for H₂S. The H₂S emission factor was based on a flare destruction efficiency of 98%_m and the concentration of H₂S in the biogas. Emission factors for other pollutants were obtained from AP-42 Chapter 1.4, "Natural Gas Combustion". PM₁₀ emissions were assumed to equal PM.
- IDAPA 58.01.01.006.92
- IDAPA 58.01.01.221.01

Sheet 7

Toxic Air Pollutant Emissions Biogas Bubble

Biogas Fuel Information

Peak Daily Biogas Flow Rate (scfm) ⁽¹⁾	553
Biogas Methane Content (%v) ⁽²⁾	63.0%
Methane Molecular Weight (lb/mol)	16.0
Methane Density (lb/ft ³) ⁽³⁾	0.0415
"Natural Gas Equivalency" Flow Rate (scfm) ⁽⁴⁾	348
Biogas H ₂ S Content (%v) ⁽²⁾	0.42%
H ₂ S Molecular Weight (lb/mol)	34.1
H ₂ S Density (lb/ft ³) ⁽³⁾	0.0885
SO ₂ Molecular Weight (lb/mol)	64.1
Biogas Density (lb/ft ³)	0.0562

Miscellaneous Support Data

Pressure at Standard Conditions (atm)	1
Temperature at Standard Conditions (K)	293
Ideal Gas Constant (atm-ft ³ /mol-K)	1.314
Burley Barometric Pressure (atm)	0.86

Toxic Air Pollutants						
Pollutant	Emission Factor ⁽⁵⁾	Emission Factor Unit	Emission Rate (lb/hr)	Emission Rate (TPY)	Emission Rate (g/s)	Emission Limit ⁽⁶⁾ (lb/hr)
Arsenic	2.00E-04	lb/10 ⁶ scf	4.18E-06	1.83E-05	5.27E-07	1.50E-06
Barium	4.40E-03	lb/10 ⁶ scf	9.20E-05	4.03E-04	1.16E-05	3.30E-02
Benzene	2.10E-03	lb/10 ⁶ scf	4.39E-05	1.92E-04	5.53E-06	8.00E-04
Beryllium	<1.2E-5	lb/10 ⁶ scf	2.51E-07	1.10E-06	3.16E-08	2.80E-05
Benzo(a)pyrene	<1.2E-6	lb/10 ⁶ scf	2.51E-08	1.10E-07	3.16E-09	2.00E-06
Cadmium	1.10E-03	lb/10 ⁶ scf	2.30E-05	1.01E-04	2.90E-06	3.70E-06
Chromium	1.40E-03	lb/10 ⁶ scf	2.93E-05	1.28E-04	3.69E-06	3.30E-02
Cobalt	8.40E-05	lb/10 ⁶ scf	1.76E-06	7.69E-06	2.21E-07	3.30E-03
Copper	8.50E-04	lb/10 ⁶ scf	1.78E-05	7.78E-05	2.24E-06	3.33E-01
Dichlorobenzene	1.20E-03	lb/10 ⁶ scf	2.51E-05	1.10E-04	3.16E-06	2.00E+01
Fluorene	2.80E-06	lb/10 ⁶ scf	5.85E-08	2.56E-07	7.37E-09	1.33E-01
Formaldehyde	7.50E-02	lb/10 ⁶ scf	1.57E-03	6.87E-03	1.98E-04	5.10E-04
Hexane	1.80E+00	lb/10 ⁶ scf	3.76E-02	1.65E-01	4.74E-03	1.20E+01
Hydrogen Sulfide	2.00	% _m of biogas	0.25	1.08	0.031	9.33E-01
Manganese	3.80E-04	lb/10 ⁶ scf	7.94E-06	3.48E-05	1.00E-06	3.33E-01
Mercury	2.60E-04	lb/10 ⁶ scf	5.43E-06	2.38E-05	6.85E-07	3.00E-03
Molybdenum	1.10E-03	lb/10 ⁶ scf	2.30E-05	1.01E-04	2.90E-06	3.33E-01
Napthalene	6.10E-04	lb/10 ⁶ scf	1.28E-05	5.58E-05	1.61E-06	3.33E+00
Nickel	2.10E-03	lb/10 ⁶ scf	4.39E-05	1.92E-04	5.53E-06	2.70E-05
Pentane	2.60E+00	lb/10 ⁶ scf	5.43E-02	2.38E-01	6.85E-03	1.18E+02
Selenium	<2.4E-5	lb/10 ⁶ scf	5.02E-07	2.20E-06	6.32E-08	1.30E-02
Toluene	3.40E-03	lb/10 ⁶ scf	7.11E-05	3.11E-04	8.96E-06	2.50E+01
Vanadium	2.30E-03	lb/10 ⁶ scf	4.81E-05	2.11E-04	6.06E-06	3.00E-03
Zinc	2.90E-02	lb/10 ⁶ scf	6.06E-04	2.66E-03	7.64E-05	6.67E-01

Notes:

Total HAPs 0.008 TPY

- (1) Peak daily biogas flow rate selected to prevent triggering the Major classification for SO₂ emissions and is less than the maximum observed daily flowrate measured at the site.
- (2) Biogas composition was based on source test data from samples collected at the site on April 28, 2005.
- (3) The densities of methane, oxygen and H₂S were calculated at standard conditions using the Ideal Gas Law.
- (4) Natural gas equivalent flow rate was estimated as 63%v of the biogas flow rate (based on methane).
- (5) The H₂S emission factor was based on a flare destruction efficiency of 98% and the concentration of H₂S in the biogas. Emission factors for other pollutants were obtained from AP-42 Chapter 1.4, "Natural Gas Combustion".
- (6) IDAPA 58.01.01.585 and 586
- (7) HAPs are designated by blue fill:

Sheet 8

Air Pollutant Emissions
Burley Plant 1 - Prime 1 Dryer (D109 - D111)

		Stack Data ^b			
Manufacturer	Wolverine Proctor	Source ID	D109	D110	D111
Model	Three Stage (15 Ton) Steam Heated	Process Stage	Stage A	Stage B	Stage C
Process Characteristics		Proposed Stack Height (m)	18.0	18.0	18.0
Max Hourly Production Rate (lb/hr)	53,500	Stack Diameter (ft)	2.84	2.84	2.84
Annual Production Rate (TPY) ^a	173,340	Exit Gas Temperature (°F)	142.5	143.5	143.5
		Exit Gas Moisture Content	50.20%	51.82%	51.56%
		Wet Actual Flow Rate (acfm)	15,162	14,973	15,073
		Stack Velocity (m/s)	12.16	12.01	12.09

Criteria Pollutants									
Pollutant	Pollutant Source	Emission Factor ^c	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level ^d (TPY)	Below Regulatory Concern? ^e	Significant Contribution? ^d
PM ₁₀	Process	See PM	See PM	6.688	21.668	0.843	15	no	yes

Non-Criteria Pollutants with Significant Threshold									
Pollutant	Pollutant Source	Emission Factor ^c	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level ^d (TPY)	Below Regulatory Concern? ^e	Significant Contribution? ^d
PM	Process	0.25	lb/finished ton	6.688	21.668	0.843	25	no	no

Process Weight Rule ^f				
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Allowable Emissions (lb/hr)	PW Meets Standard?
PM	Process	6.688	16.729	yes

Notes:

- (a) The annual production rate associated with this emission unit will be limited. Estimate is equivalent to operating 300 days per year at 90% of maximum hourly production rate.
 - (b) This emission unit vents to the atmosphere via three stacks.
 - (c) Emission factors for PM generated by the process and natural gas combustion based on October 1994 Ore-Ida Source Test (Burley, ID - Prime 1 Dryer), April 1995 Ore-Ida Source Test (Ontario, OR - P1 Dryer) and February 1997 Ore-Ida Source test (Ontario, OR - P2 & P3 Dryers). As a conservative approach, emissions that were measured as PM during the source tests were considered to equal PM₁₀.
 - (d) IDAPA 58.01.01.006.92
 - (e) IDAPA 58.01.01.221.01
 - (f) IDAPA 58.01.01.701.01.
- * NA - Not Applicable

Air Pollutant Emissions
Burley Plant 1 - Tot Dryer (D107)

Combustion Source Characteristics		Stack Data ^c	
Manufacturer	Rey Industries	Proposed Stack Height (ft)	52.5
Model	None	Stack Diameter (ft)	2.99
Input Heat Capacity (BTU/hr)	4,000,000	Exit Gas Temperature (°F)	118.1
Fuel	Natural Gas	Exit Gas Moisture Content	4.82%
Heating Value (BTU/scf)	1,020	Wet Actual Flow Rate (acfm)	19,173
Max Hourly Fuel Consumption (scf/hr)	3,922	Wet Standard Flow Rate (wscfm)	15,297
Annual Fuel Consumption (scf/yr) ^a	30,000,000	Dry Standard Flow Rate (dscfm)	14,590
		Stack Gas Velocity (m/s)	13.92
		Stack Gas Pressure (mm Hg)	663.96
Process Characteristics			
Max Hourly Production Rate (lb/hr)	18,000		
Annual Production Rate (TPY) ^b	51,840		

Criteria Pollutants									
Pollutant	Pollutant Source	Emission Factor ^d	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level ^e (TPY)	Below Regulatory Concern? ^f	Significant Contribution? ^g
PM ₁₀	NG Combustion & Process	See PM	See PM	2.000	6.480	0.252	15	no	no
SO ₂	NG Combustion	0.6	lb/10 ⁶ scf	0.002	0.009	2.96E-04	40	yes	no
NO _x	NG Combustion & Process	153	lb/10 ⁶ scf	0.600	2.295	0.076	40	yes	no
CO	NG Combustion & Process	373	lb/10 ⁶ scf	1.483	5.595	0.194	100	yes	no
VOC	NG Combustion	5.5	lb/10 ⁶ scf	0.022	0.083	0.003	40	yes	no
Lead	NG Combustion	0.0005	lb/10 ⁶ scf	1.96E-06	7.50E-06	2.47E-07	0.6	yes	no

Non-Criteria Pollutants with Significant Threshold									
Pollutant	Pollutant Source	Emission Factor ^d	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level ^e (TPY)	Below Regulatory Concern? ^f	Significant Contribution? ^g
PM	NG Combustion & Process	0.25	lb/finished ton	2.000	6.480	0.252	25	no	no
Beryllium	NG Combustion	<1.2E-5	lb/10 ⁶ scf	4.71E-08	1.80E-07	5.93E-09	0.0004	yes	no
Mercury	NG Combustion	2.60E-04	lb/10 ⁶ scf	1.02E-06	3.90E-06	1.28E-07	0.1	yes	no

Other Pollutants						
Pollutant	Pollutant Source	Emission Factor ^d	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
TOC	NG Combustion	11	lb/10 ⁶ scf	0.043	0.165	0.005
Methane	NG Combustion	2.3	lb/10 ⁶ scf	0.009	0.035	0.001
CO ₂	NG Combustion	120,000	lb/10 ⁶ scf	471	1800	59.3
N ₂ O	NG Combustion	2.2	lb/10 ⁶ scf	0.009	0.033	0.001

Process Weight Rule ^h					
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Potential Emissions (gr/dscf)	Allowable Emissions (gr/dscf)	Meets Standard?
PM	Process	2.000	0.016	0.2	yes

PM Grain Loading Standard - Not Applicable^h

Notes:

- (a) The annual natural gas consumption for this emission unit will be limited.
- (b) The annual production rate associated with this emission unit will be limited. Estimate is equivalent to operating 300 days per year at 90% of maximum hourly production rate.
- (c) Stack gas flow data obtained from testing conducted in November 2001.
- (d) Emission factors for NO_x and CO generated by the process and natural gas combustion based on April 1994 Ore-Ida Source Test (Ontario, OR - Prime 1 North Dryer). Emission factors for PM generated by the process and natural gas combustion based on October 1994 Ore-Ida Source Test (Burley, ID - Prime 1 Dryer), April 1995 Ore-Ida Source Test (Ontario, OR - P1 Dryer) and February 1997 Ore-Ida Source test (Ontario, OR - P2 & P3 Dryers). As a conservative approach, emissions that were measured as PM during the source tests were considered to equal PM₁₀. Emission factors for other pollutants from AP-42 Chapter 1.4, "Natural Gas Combustion".
- (e) IDAPA 58.01.01.006.92
- (f) IDAPA 58.01.01.221.01
- (g) IDAPA 58.01.01.710.08. Process weight rule standard is 0.2 gr/dscf for units constructed or modified prior to July 1, 2000.
- (h) IDAPA 58.01.01.678 or 677 - The Tot Dryer is a direct heat transfer system. Therefore, it does not satisfy the definition of "fuel burning equipment" as presented in IDAPA 58.01.01.006.41.

Sheet 9

Toxic Air Pollutant Emissions Burley Plant 1 - Tot Dryer (D107)

Combustion Source Characteristics	
Burner Manufacturer	Rey Industries
Model	None
Input Heat Capacity (BTU/hr)	4,000,000
Fuel	Natural Gas
Heating Value (BTU/scf)	1,020
Max Hourly Fuel Consumption (scf/hr)	3,922
Annual Fuel Consumption (scf/yr) ^a	30,000,000

Stack Data ^c	
Proposed Stack Height (ft)	52.5
Stack Diameter (ft)	2.99
Exit Gas Temperature (°F)	118.1
Exit Gas Moisture Content	4.62%
Wet Actual Flow Rate (acfm)	19,173
Wet Standard Flow Rate (wscfm)	15,297
Dry Standard Flow Rate (dscfm)	14,590
Stack Velocity (m/s)	13.92
Stack Gas Pressure (mm Hg)	663.96

Process Characteristics	
Max Hourly Production Rate (lb/hr)	16,000
Annual Production Rate (TPY) ^b	51,840

Toxic Air Pollutants							
Pollutant	Emission Factor ^d	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Emission Limit ^e (lb/hr)	Modeling Required? ^f
Arsenic	2.00E-04	lb/10 ⁶ scf	7.84E-07	3.00E-06	9.88E-08	1.50E-06	no
Barium	4.40E-03	lb/10 ⁶ scf	1.73E-05	6.60E-05	2.17E-06	3.30E-02	no
Benzene	2.10E-03	lb/10 ⁶ scf	8.24E-06	3.15E-05	1.04E-06	8.00E-04	no
Beryllium	<1.2E-5	lb/10 ⁶ scf	4.71E-08	1.80E-07	5.93E-09	2.80E-05	no
Benzo(a)pyrene	<1.2E-6	lb/10 ⁶ scf	4.71E-09	1.80E-08	5.93E-10	2.00E-06	no
Bis (2-ethylhexyl)phthalate	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	2.80E-02	no
Cadmium	1.10E-03	lb/10 ⁶ scf	4.31E-06	1.65E-05	5.44E-07	3.70E-06	yes
Chromium	1.40E-03	lb/10 ⁶ scf	5.49E-06	2.10E-05	6.92E-07	3.30E-02	no
Cobalt	8.40E-05	lb/10 ⁶ scf	3.29E-07	1.26E-06	4.15E-08	3.30E-03	no
Copper	8.50E-04	lb/10 ⁶ scf	3.33E-06	1.28E-05	4.20E-07	3.33E-01	no
Dibutylphthalate	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	6.70E-02	no
Dichlorobenzene	1.20E-03	lb/10 ⁶ scf	4.71E-06	1.80E-05	5.93E-07	2.00E+01	no
Ethylbenzene	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	2.90E+01	no
Fluorene	2.80E-06	lb/10 ⁶ scf	1.10E-08	4.20E-08	1.38E-09	1.33E-01	no
Formaldehyde	7.50E-02	lb/10 ⁶ scf	2.94E-04	1.13E-03	3.71E-05	5.10E-04	no
Hexane	1.80E+00	lb/10 ⁶ scf	7.06E-03	2.70E-02	8.89E-04	1.20E+01	no
Manganese	3.80E-04	lb/10 ⁶ scf	1.49E-06	5.70E-06	1.88E-07	3.33E-01	no
Mercury	2.60E-04	lb/10 ⁶ scf	1.02E-06	3.90E-06	1.28E-07	3.00E-03	no
Molybdenum	1.10E-03	lb/10 ⁶ scf	4.31E-06	1.65E-05	5.44E-07	3.33E-01	no
Naphthalene	6.10E-04	lb/10 ⁶ scf	2.39E-06	9.15E-06	3.01E-07	3.33E+00	no
Nickel	2.10E-03	lb/10 ⁶ scf	8.24E-06	3.15E-05	1.04E-06	2.70E-05	no
Pentane	2.60E+00	lb/10 ⁶ scf	1.02E-02	3.90E-02	1.28E-03	1.18E+02	no
Phend	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	1.27E+00	no
Selenium	<2.4E-5	lb/10 ⁶ scf	9.41E-08	3.60E-07	1.19E-08	1.30E-02	no
Toluene	3.40E-03	lb/10 ⁶ scf	1.33E-05	5.10E-05	1.68E-06	2.50E+01	no
Vanadium	2.30E-03	lb/10 ⁶ scf	9.02E-06	3.45E-05	1.14E-06	3.00E-03	no
o-Xylene	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	2.90E+01	no
Zinc	2.90E-02	lb/10 ⁶ scf	1.14E-04	4.35E-04	1.43E-05	6.67E-01	no

Notes:

- (a) The annual natural gas consumption for this emission unit will be limited.
- (b) The annual production rate associated with this emission unit will be limited. Estimate is equivalent to operating 300 days per year at 90% of maximum hourly production rate.
- (c) Stack gas flow data obtained from testing conducted in November 2001.
- (d) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
- (e) IDAPA 58.01.01.585 and 586
- (f) IDAPA 58.01.01.210.05(b)

* FNA - Factor Not Available

Air Pollutant Emissions
Burley Plant 2 - Prime 2 Dryer (D205 - D208)

Combustion Source Characteristics		Stack Data ^e				
Burner Manufacturer	National	Proposed Stack Height (ft)	39.4	39.4	39.4	39.4
Model	None	Stack Diameter (ft)	4.78	4.78	4.78	4.78
Input Heat Capacity (BTU/hr)	48,000,000	Exit Gas Temperature (°F)	112.0	106.0	114.6	96.8
Fuel	Natural Gas	Exit Gas Moisture Content	5.51%	6.69%	6.39%	6.78%
Heating Value (BTU/scf)	1,020	Wet Actual Flow Rate (acfm)	40,152	42,877	35,678	40,006
Max Hourly Fuel Consumption (scf/hr)	47,059	Wet Standard Flow Rate (wscfm)	32,231	34,794	28,611	33,006
Annual Fuel Consumption (scf/yr) ^a	120,000,000	Dry Standard Flow Rate (dscfm)	30,455	32,466	28,699	30,768
		Stack Velocity (m/s)	11.38	12.16	10.12	11.34
		Stack Gas Pressure (mm Hg)	680.91	661.16	660.91	661.16
			Stack #1	Stack #2	Stack #3	Stack #4
Process Characteristics						
Max Hourly Production Rate (lb/hr)	45,000					
Annual Production Rate (TPY) ^b	145,800					

Criteria Pollutants									
Pollutant	Pollutant Source	Emission Factor ^d	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level ^a (TPY)	Below Regulatory Concern ^c	Significant Contribution ^e
PM ₁₀	NG Combustion & Process	See PM	See PM	5.625	18,225	0.709	15	no	yes
SO ₂	NG Combustion	0.6	lb/10 ⁶ scf	0.028	0.036	0.004	40	yes	no
NO _x	NG Combustion & Process	153	lb/10 ⁶ scf	7.200	9.180	0.907	40	no	no
CO	NG Combustion & Process	373	lb/10 ⁶ scf	17.583	22.380	2.212	100	no	no
VOC	NG Combustion	5.5	lb/10 ⁶ scf	0.259	0.330	0.033	40	yes	no
Lead	NG Combustion	0.0005	lb/10 ⁶ scf	2.35E-05	3.00E-05	2.98E-06	0.8	yes	no

Non-Criteria Pollutants with Significant Threshold									
Pollutant	Pollutant Source	Emission Factor ^d	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level ^a (TPY)	Below Regulatory Concern ^c	Significant Contribution ^e
PM	NG Combustion & Process	0.25	lb/finished ton	5.625	18,225	0.709	25	no	no
Beryllium	NG Combustion	<1.2E-5	lb/10 ⁶ scf	5.65E-07	7.20E-07	7.12E-08	0.0004	yes	no
Mercury	NG Combustion	2.80E-04	lb/10 ⁶ scf	1.22E-05	1.56E-05	1.54E-06	0.1	yes	no

Other Pollutants						
Pollutant	Pollutant Source	Emission Factor ^d	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
TOC	NG Combustion	11	lb/10 ⁶ scf	0.518	0.660	0.065
Methane	NG Combustion	2.3	lb/10 ⁶ scf	0.108	0.138	0.014
CO ₂	NG Combustion	120,000	lb/10 ⁶ scf	5647	7200	711.5
N ₂ O	NG Combustion	2.2	lb/10 ⁶ scf	0.104	0.132	0.013

Process Weight Rule ^g								
Pollutant	Pollutant Source	Potential Emissions (lb/hr)	Stack #1 Emissions (gr/dscf)	Stack #2 Emissions (gr/dscf)	Stack #3 Emissions (gr/dscf)	Stack #4 Emissions (gr/dscf)	Allowable Emissions (gr/dscf)	All Stacks Meet Standard?
PM	Process	5.625	0.022	0.020	0.025	0.021	0.2	yes

PM Grain Loading Standard - Not Applicable^h

Notes:

- (a) The annual natural gas consumption for this emission unit will be limited.
 - (b) The annual production rate associated with this emission unit will be limited. Estimate is equivalent to operating 300 days per year at 90% of maximum hourly production rate.
 - (c) This emission unit vents to the atmosphere via four stacks. Stack gas flow data obtained from testing conducted in November 2001.
 - (d) Emission factors for NO_x and CO generated by the process and natural gas combustion based on April 1994 Ore-Ida Source Test (Ontario, OR - Prime 1 North Dryer). Emission factors for PM generated by the process and natural gas combustion based on October 1994 Ore-Ida Source Test (Burley, ID - Prime 1 Dryer), April 1995 Ore-Ida Source Test (Ontario, OR - P1 Dryer) and February 1997 Ore-Ida Source test (Ontario, OR - P2 & P3 Dryers). As a conservative approach, emissions that were measured as PM during the source tests were considered to equal PM₁₀. Emission factors for other pollutants from AP-42 Chapter 1.4, "Natural Gas Combustion".
 - (e) IDAPA 58.01.01.006.92
 - (f) IDAPA 58.01.01.221.01
 - (g) IDAPA 58.01.01.710.08. Process weight rule standard is 0.2 gr/dscf for units constructed or modified prior to July 1, 2000.
 - (h) IDAPA 58.01.01.876 or 677 - The Prime 2 Dryer is a direct heat transfer system. Therefore, it does not satisfy the definition of "fuel burning equipment" as presented in IDAPA 58.01.01.006.41.
- * NA - Not Applicable

Sheet 10

Toxic Air Pollutant Emissions
Burley Plant 2 - Prime 2 Dryer (D205 - D208)

Combustion Source Characteristics		Stack Data ^e				
Burner	National	Proposed Stack Height (ft)	39.4	39.4	39.4	39.4
Model	None	Stack Diameter (ft)	4.78	4.78	4.78	4.78
Input Heat Capacity (BTU/hr)	48,000,000	Exit Gas Temperature (°F)	112.0	106.0	114.6	96.8
Fuel	Natural Gas	Exit Gas Moisture Content	5.51%	6.69%	6.39%	6.78%
Heating Value (BTU/scf)	1,020	Wet Actual Flow Rate (acfm)	40,152	42,877	35,678	40,006
Max Hourly Fuel Consumption (scf/hr)	47,059	Wet Standard Flow Rate (wscfm)	32,231	34,794	28,511	33,006
Annual Fuel Consumption (scf/yr) ^a	120,000,000	Dry Standard Flow Rate (dscfm)	30,455	32,466	26,689	30,768
		Stack Velocity (m/s)	11.38	12.16	10.12	11.34
		Stack Gas Pressure (mm Hg)	660.91	661.16	660.91	661.16
		Stack #1	Stack #2	Stack #3	Stack #4	
Process Characteristics						
Max Hourly Production Rate (lb/hr)	45,000					
Annual Production Rate (TPY) ^b	145,800					

Toxic Air Pollutants							
Pollutant	Emission Factor ^d	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Emission Limit ^e (lb/hr)	Modeling Required ^f
Arsenic	2.00E-04	lb/10 ⁶ scf	9.41E-06	1.20E-05	1.19E-06	1.50E-06	yes
Barium	4.40E-03	lb/10 ⁶ scf	2.07E-04	2.64E-04	2.61E-05	3.30E-02	no
Benzene	2.10E-03	lb/10 ⁶ scf	9.88E-05	1.26E-04	1.25E-05	8.00E-04	no
Beryllium	<1.2E-5	lb/10 ⁶ scf	5.65E-07	7.20E-07	7.12E-08	2.80E-05	no
Benzo(a)pyrene	<1.2E-6	lb/10 ⁶ scf	5.65E-08	7.20E-08	7.12E-09	2.00E-06	no
Bis (2-ethylhexyl)phthalate	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	2.80E-02	no
Cadmium	1.10E-03	lb/10 ⁶ scf	5.18E-05	6.60E-05	6.52E-06	3.70E-06	yes
Chromium	1.40E-03	lb/10 ⁶ scf	6.59E-05	8.40E-05	8.30E-06	3.30E-02	no
Cobalt	8.40E-05	lb/10 ⁶ scf	3.95E-06	5.04E-06	4.98E-07	3.30E-03	no
Copper	8.50E-04	lb/10 ⁶ scf	4.00E-05	5.10E-05	5.04E-06	3.33E-01	no
Dibutylphthalate	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	6.70E-02	no
Dichlorobenzene	1.20E-03	lb/10 ⁶ scf	5.65E-05	7.20E-05	7.12E-06	2.00E+01	no
Ethylbenzene	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	2.90E+01	no
Fluorene	2.80E-06	lb/10 ⁶ scf	1.32E-07	1.68E-07	1.66E-08	1.33E-01	no
Formaldehyde	7.50E-02	lb/10 ⁶ scf	3.53E-03	4.50E-03	4.45E-04	5.10E-04	yes
Hexane	1.80E+00	lb/10 ⁶ scf	8.47E-02	1.08E-01	1.07E-02	1.20E+01	no
Manganese	3.80E-04	lb/10 ⁶ scf	1.79E-05	2.28E-05	2.25E-06	3.33E-01	no
Mercury	2.60E-04	lb/10 ⁶ scf	1.22E-05	1.56E-05	1.54E-06	3.00E-03	no
Molybdenum	1.10E-03	lb/10 ⁶ scf	5.18E-05	6.60E-05	6.52E-06	3.33E-01	no
Naphthalene	6.10E-04	lb/10 ⁶ scf	2.87E-05	3.66E-05	3.62E-06	3.33E+00	no
Nickel	2.10E-03	lb/10 ⁶ scf	9.88E-05	1.26E-04	1.25E-05	2.70E-05	yes
Pentane	2.60E+00	lb/10 ⁶ scf	1.22E-01	1.56E-01	1.54E-02	1.18E+02	no
Phend	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	1.27E+00	no
Selenium	<2.4E-5	lb/10 ⁶ scf	1.13E-06	1.44E-06	1.42E-07	1.30E-02	no
Toluene	3.40E-03	lb/10 ⁶ scf	1.60E-04	2.04E-04	2.02E-05	2.50E+01	no
Vanadium	2.30E-03	lb/10 ⁶ scf	1.08E-04	1.38E-04	1.36E-05	3.00E-03	no
o-Xylene	FNA	lb/10 ⁶ scf	FNA	FNA	FNA	2.90E+01	no
Zinc	2.90E-02	lb/10 ⁶ scf	1.36E-03	1.74E-03	1.72E-04	6.67E-01	no

Notes:

- (a) The annual natural gas consumption for this emission unit will be limited.
 - (b) The annual production rate associated with this emission unit will be limited. Estimate is equivalent to operating 300 days per year at 90% of maximum hourly production rate.
 - (c) This emission unit vents to the atmosphere via four stacks. Stack gas flow data obtained from testing conducted in November 2001.
 - (d) Emission Factors from AP-42 Chapter 1.4, "Natural Gas Combustion".
 - (e) IDAPA 58.01.01.585 and 586
 - (f) IDAPA 58.01.01.210.05(b)
- * FNA - Factor Not Available

Air Pollutant Emissions
Fryers

Emission Source	Pollutant	Emission Factor ^a (lb/finished ton)	Maximum Production Rate (finished lb/hr)	Emission Rate (lb/hr)	Emission Rate ^b (TPY)	Significant Level ^c (TPY)	Below Regulatory Concern ^d	Significant ^e	Allowable PM Emissions (gr/dscf)	Meets Standard? ^f (gr/dscf)
Parfry Fryer Air Washer (F108)	PM ₁₀	0.51	5,100	1.301	4,214	15	no	no	0.026	yes
	VOC	0.15	5,100	0.363	1,239	40	yes	no	NA	NA
Tot Fryer Air Washer (F103)	PM ₁₀	0.51	16,000	4.080	13,219	15	no	no	0.043	yes
	VOC	0.15	16,000	1.200	3,888	40	yes	no	NA	NA
Prime 1 Fryer Air Washer (F104)	PM ₁₀	0.10	53,500	2.675	8,667	15	no	no	0.053	yes
	VOC	0.10	53,500	2.675	8,667	40	no	no	NA	NA
Prime 2 Fryer Air Washer (F204)	PM ₁₀	0.10	45,000	2.250	7,290	15	no	no	0.023	yes
	VOC	0.10	45,000	2.250	7,290	40	no	no	NA	NA

Emission Source ^f	Stack Height (ft)	Stack Diameter (ft)	Exit Gas Temperature (°F)	Exit Gas Moisture	Wet Flow Rate (acfm)	Dry Flow Rate (dscfm)	Stack Gas Velocity (m/s)	Stack Gas Pressure (mm Hg)
Parfry Fryer Air Washer (F108)	52.5	2.61	101.0	5.58%	7,587	5,886	7.20	663.45
Tot Fryer Air Washer (F103)	53.6	3.71	131.0	17.89%	17,268	11,059	8.13	663.45
Prime 1 Fryer Air Washer (F104)	59.0	3.12	175.1	39.40%	13,390	5,887	8.91	663.19
Prime 2 Fryer Air Washer (F204)	44.6	3.17	156.4	26.75%	20,729	11,262	13.38	658.11

Notes:

- (a) Emission factors for Parfry Fryer and Tot Fryer based on October 1994 Ore-Ida Source Test (Plover, WI - P2 Specialty 3 Fryer with Air Washer)
- Emission factors for Prime 1 Fryer and Prime 2 Fryer based on October 1994 Ore-Ida Source Test (Burley, ID - Prime 1 Fryer with Air Washer) and April 1994 Ore-Ida Source Test (Ontario, OR - Prime 1 French Fryer with Air Washer). As a conservative approach, emissions that were measured as PM during the source tests were considered to equal PM₁₀.
- (b) Annual emissions based on limited annual production rate that is equivalent to operating 300 days per year at 90% of maximum hourly production rate.
- (c) IDAPA 58.01.01.006.92
- (d) IDAPA 58.01.01.221.01
- (e) IDAPA 58.01.01.710.08. Process weight rule standard is 0.2 gr/dscf for units constructed or modified prior to July 1, 2000.
- (f) Stack gas flow data obtained from testing conducted in November 2001.
- * Grain Loading Standard - IDAPA 58.01.01.676 is not applicable because these emission sources are not "fuel burning equipment".

Sheet 12

Air Pollutant Emissions Emergency Fire Pump (E001)

Combustion Source Characteristics

Manufacturer	Detroit Diesel
Model	6061-A2
Power Output (hp)	170
Fuel	Diesel
Rated Input (MMBTU/hr)	0.844
Heating Value (BTU/lb)	19,300

Stack Data

Stack Height (ft)	6.08
Stack Diameter (ft)	0.33
Exit Gas Temperature (°F)	445
Wet Actual Flow Rate (acfm)	289
Wet Standard Flow Rate (wscfm)	145
Dry Standard Flow Rate (dscfm)	129
Stack Velocity (m/s)	16.8
Fd (dscf stack gas/BTU)	0.00919
Fw (wscf stack gas/BTU)	0.01032

Site Information

Burley Barometric Pressure (mm Hg)	654.18
Actual Hours of Operation (hr/yr)	104

Criteria Pollutants

Pollutant	Pollutant Source	Emission Factor ^a	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level ^b (TPY)	Below Regulatory Concern? ^c	Significant Contribution ^b
PM ₁₀	Diesel Combustion	2.20E-03	lb/hp-hr	0.374	0.019	0.047	15	yes	no
SO ₂ (SO _x Basis)	Diesel Combustion	2.05E-03	lb/hp-hr	0.349	0.018	0.044	40	yes	no
NO _x	Diesel Combustion	0.031	lb/hp-hr	5.270	0.274	0.664	40	yes	no
CO	Diesel Combustion	6.68E-03	lb/hp-hr	1.136	0.059	0.143	100	yes	no
VOC (TOC Basis)	Diesel Combustion	2.51E-03	lb/hp-hr	0.427	0.022	0.054	40	yes	no
Lead	Diesel Combustion	FNA	FNA	FNA	FNA	FNA	0.6	yes	no

Non-Criteria Pollutants with Significant Threshold

Pollutant	Pollutant Source	Emission Factor ^a	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level ^b (TPY)	Below Regulatory Concern? ^c	Significant Contribution ^b
PM	Diesel Combustion	See PM ₁₀	See PM ₁₀	0.374	0.019	0.047	25	yes	no
Beryllium	Diesel Combustion	FNA	FNA	FNA	FNA	FNA	0.0004	FNA	FNA
Mercury	Diesel Combustion	FNA	FNA	FNA	FNA	FNA	0.1	FNA	FNA

Other Pollutants

Pollutant	Pollutant Source	Emission Factor ^a	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)
TOC	Diesel Combustion	2.51E-03	lb/hp-hr	0.427	0.022	0.054
Methane	Diesel Combustion	FNA	FNA	FNA	FNA	FNA
CO ₂	Diesel Combustion	1.15	lb/hp-hr	196	10.166	24.633
N ₂ O	Diesel Combustion	FNA	FNA	FNA	FNA	FNA

PM Grain Loading Standard^d - Not Applicable

Process Weight Rule - Exempt^e

Notes:

- (a) Emission Factors from AP-42 Chapter 3.3, "Gasoline and Diesel Industrial Engines".
- (b) IDAPA 58.01.01.006.92
- (c) IDAPA 58.01.01.221.01
- (d) IDAPA 58.01.01.676 or 677.- The fire pump does not satisfy the definition of "fuel burning equipment" as presented in IDAPA 58.01.01.006.41.
- (e) IDAPA 58.01.01.710.02 - This emission source qualifies for the De Minimis Exception

* FNA - Factor Not Available

Sheet 13

Emission Calculations - Batter Room Dust Collector (E209)

Description

Several of the potato products processed at the McCain Foods facility in Burley, Idaho are battered. Batters are prepared from various dry ingredients, such as starch and seasonings, in the Batter Room in the Burley 2 Plant. Particulate matter is filtered from the air in the Batter Room via a dust control system that is manufactured by DCE, Inc. The system consists of a cased group of filter elements and is equipped with its own fan and discharge arrangements.

PM / PM₁₀ Emission Rates

Equipment Data:

Model: Dalamatic Dust Control Unit
Unit Desig DU204F6AD
Outlet Err 0.00437-0.00874 gr/dscf
Fan Desig F6 Fan Size
Fan Air V_l 1,600 dscfm
No. of Filt 20
Envelope 39.5"
Dust Cont 4 ft³

Calculations:

$$\text{PM}_{10} \text{ Hourly Emission Rate} = \frac{(0.00874 \text{ gr/dscf}) \times (1,600 \text{ dscfm}) \times (60 \text{ min/hr})}{(7,000 \text{ gr/lb})}$$

$$\text{PM}_{10} \text{ Hourly Emission Rate} = 0.120 \text{ lb/hr}$$

$$\text{PM}_{10} \text{ Annual Emission Rate} = \frac{(0.120 \text{ lb/hr}) \times (8,760 \text{ hr/yr})}{(2000 \text{ lb/ton})}$$

$$\text{PM}_{10} \text{ Annual Emission Rate} = 0.525 \text{ ton/yr}$$

Process Weight Rule Compliance - Exempt

This emission source qualifies for the De Minimis Exception per IDAPA 58.01.01.710.02.