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creating solutions for today's environment

October 10, 2012

Mr. William Rogers
Stationary Source Permit Program Coordinator
Idaho Department of Environmental Quality
1410 N. Hilton Street
Boise, Idaho 83706

Re: Idaho Dehydration & Processing, LLC dba IdaPro, LLC, Rupert, Idaho
15 Day Pre-Construction Approval and Permit to Construct Application

Dear Mr. Rogers,

JBR Environmental Consultants, Inc. (JBR), on behalf of Idaho Dehydration & Processing, LLC dba IdaPro LLC – Firth (IdaPro), is submitting a 15 Day Pre-Construction Approval and Permit to Construct Application. This application has been developed to ensure all applicable state requirements as defined in IDAPA 58.01.01 are met. In addition, applicable federal requirements have been included.

This submittal includes the application, a detailed emissions inventory (both hardcopy and electronic) and ambient air quality analysis.

Pursuant to IDAPA.01.01.123, all information contained within this application has been certified to be true, accurate and complete by Harry Budke of IdaPro.

Should you have any questions please do not hesitate to call Harry Budke at (208) 650-7414 or myself at the number below.

Sincerely,
JBR Environmental Consultants, Inc.

Eric Clark, EIT
Environmental Analyst II
(208) 853-0883
Enclosures: PTC Application, CD containing all data in electronic format

Idaho Dehydration and Processing, LLC
dba IdaPro, LLC
15 day Construction Approval Permit to Construct Application
Rupert Plant

Submitted to:
Idaho Department of Environmental Quality
Division of Air Quality
1410 North Hilton
Boise, ID 83706
208.373.0502

Prepared for:
IdaPro, LLC
1305 Albion Avenue
Burley, ID 83318
Contact: Harry Budke
Ph: 208.650.7414

Prepared by:
JBR Environmental Consultants, Inc.
7669 West Riverside Drive, Suite 101
Boise, ID 83714
Contact: Eric Clark
Ph: 208.853.0883

October 2012

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Idaho Dehydration and Processing, LLC – Rupert (IdaPro) is applying for pre-construction approval and an initial Permit to Construct that will include the following emission units.

- 55 MMBtu/hr QuadPass Drum Dryer
- 8 MMBtu/hr Air makeup unit

A site location map and a plot plan are included in Appendix A. The purpose of this document is to present all necessary and applicable information regarding the facility in support of a 15-Day Pre-Permit Construction Approval Application and Permit to Construct (PTC) Application for the facility.

Appendix B contains a copy of the public notice of the informational meeting to be held in accordance with IDAPA 58.01.01.213.02. All applicable required DEQ PTC forms and checklists are included in Appendix B.

IdaPro will be a minor facility regarding Title V with a potential to emit (PTE) less than 100 tons per year (tpy) for all criteria pollutants and hazardous air pollutant (HAP) thresholds of 10 tpy of a single HAP and 25 tpy for all aggregated HAP emissions.

1.0 PROCESS DESCRIPTION

1.1 Overview

IdaPro is a potato processing company that processes peels and other potato waste products via dehydration. The Rupert facility will produce dehydrated potato flakes and other dehydrated potato products. Products are dried to 8% moisture and are broken up and ground to customer specifications, packaged or stored, and then sold. Wet solids enter at the largest diameter of the drum, away from hot gases. Hot air enters the feed zone at the centerline while the wet solids enter away from the center, landing directly on the flighting. As the drum rotates, the flights lift the wet feed upward. With further rotation, the particles are gradually released to fall downward through the hot gases in a thin curtain.

1.2 Process Flow

Raw peels and potato waste products are trucked to the facility. Material is shredded and routed to the QuadPass Drum Dryer. The dryer emissions are sent through a cyclone prior to be exhausted out the stack. The cyclone is used to minimize the moisture and recover starch from waste water. The remaining particulates are then sent to a stack which will be located at the northern end of the facility. The finished product is then trucked offsite. An 8.0 MMBtu/hr natural-gas fired air makeup unit (AMU) is also used onsite for comfort air circulation and heating within the facility. Natural gas combustion emissions from the AMU are routed through the same stack as the drum dryer. Appendix D includes a flowchart that outlining the general process flow.

1.3 Emission Sources

Emissions sources at the facility will include the following:

<u>QuadPass Drum Dryer</u>
The IdaPro facility will utilize one (1) 55 MMBtu/hr natural gas fired drum dryer to produce steam for the potato processing. The dryer will have a Kinedizer low NO_x burner for control of NO_x and CO. The size of the burner will be 14 inches. Emission factors from AP-42, Section 1.4 were used to calculate natural gas combustion emissions. The dryer is assumed to operate continually throughout the year. Manufacturer information regarding the drum dryer is included in Appendix E.

<u>Air makeup Unit</u>
One 8.0 MMBtu/hr King Air Makeup Unit (AMU) will be used to provide fresh air into the facility, provide heating for employee comfort, and maintain positive pressure inside the processing areas. The air makeup unit burners will be natural gas fired and will exhaust through the same stack as the drum dryer. The air makeup unit burner will be a source of natural gas combustion emissions. Emission factors from AP-42, Section 1.4 were used to calculate natural

gas combustion emissions. For conservatism, the AMU is assumed to operate continually.

2.0 REGULATORY APPLICABILITY

A review of state and local air quality regulations is provided in Table 2-1. Each regulation is described in the following sections. Included in Appendix C is the completed federal regulatory applicability PTC form.

Table 2-1 Regulatory Applicability Summary

	Program Description	Regulatory Citation	Applicable
2.1	National Ambient Air Quality Standards (NAAQS)- (dispersion modeling)	40 CFR Part 50	Yes
2.2	Title V Operating Permit	40 CFR Part 70	No
2.3	Air Pollutants (NESHAPs)	40 CFR Parts 61, 63	No
2.4	New Source Review (NSR)	40 CFR Part 52	No
2.5	New Source Performance Standards (NSPS)	40 CFR Part 60	No
2.6	Acid Rain Requirements	40 CFR Parts 72–78	No
2.7	Risk Management Programs For Chemical Accidental Release Prevention	40 CFR Part 68	No
2.8.	State Rules		
2.8.1	Certification of Documents	IDAPA 58.01.01.123	Yes
2.8.2	Excess Emissions	IDAPA 58.01.01.130-136	Yes
2.8.3	Demonstration of Preconstruction Compliance with Toxic Standards	IDAPA 58.01.01.210	Yes
2.8.4	Ambient Air Quality Standards for Specific Air Pollutants	IDAPA 58.01.01.577	Yes
2.8.5	Toxic Air Pollutants	IDAPA 58.01.01.585 and 586	Yes
2.8.6	Open Burning	IDAPA 58.01.01.600-616	Yes
2.8.7	Visible Emissions	IDAPA 58.01.01.625	Yes
2.8.8	Rules for Control of Fugitive Dust	IDAPA 58.01.01.650	Yes
2.8.9	Odors	IDAPA 58.01.01.775-776	Yes

2.1 National Ambient Air Quality Standards (NAAQS)

Primary National Ambient Air Quality Standards (NAAQS) are identified in 40 CFR Part 50 and define levels of air quality, which the United States Environmental Protection Agency (USEPA) deems necessary to protect the public health. Secondary NAAQS define levels of air quality, which the USEPA judges necessary to protect public welfare from any known, or anticipated adverse effects of a pollutant. Examples of public welfare include protecting wildlife, buildings, national monuments, vegetation, visibility, and property values from degradation due to excessive emissions of criteria pollutants.

Specific standards for the following pollutants have been promulgated by USEPA: PM_{10}, SO_2, NO_x, CO, ozone, lead, and $PM_{2.5}$. The IdaPro facility will emit $PM_{10,}$, $PM_{2.5,}$ SO_2, NO_x, CO, and VOCs, a precursor to ozone. Five NAAQS standards were modeled to determine compliance. These include: 1-hr and annual NO_2, 24-hr PM_{10} and 24-hr and annual $PM_{2.5}$; ambient concentrations of these pollutants emitted from the Idapro facility are below the NAAQs. For further detail please refer to the Modeling Report? in Appendix G.

2.2 Title V (Part 70) Operating Permit

Title V of the Clean Air Act (CAA) created the federal operating permit program. These permitting requirements are codified in 40 CFR Part 70. These permits are required for major sources with a PTE (considering federally enforceable limitations) greater than 100 tpy for any criteria pollutant, 25 tpy for all hazardous air pollutants (HAPs) in aggregate, or 10 tpy of any single HAP. IdaPro is a minor source because the potential to emit of all criteria emissions does not exceed 100 tons per year, nor are the HAPs thresholds exceeds. Therefore, a Title V Operating permit is not needed.

2.3 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

Two sets of National Emissions Standards for Hazardous Air Pollutants (NESHAPs) may potentially apply to IdaPro. The first NESHAP regulations were developed under the auspices of the original CAA. These standards are codified in 40 CFR Part 61, and address a limited number of pollutants and industries. 40 CFR Part 61 regulations do not apply to this facility.

Newer regulations are codified in 40 CFR Part 63 under the authority of the 1990 Clean Air Act Amendments (CAAA). These standards regulate HAP emissions from specific source categories and typically affect only major sources of HAPs, however some affect minor sources of HAPs. Part 63 regulations are frequently called Maximum Achievable Control Technology (MACT) standards. Major HAP sources have the PTE 10 tpy or more of any single HAP or 25 tpy or more of all combined HAP emissions. At the IdaPro, Rupert facility, potential emissions of individual HAPs will be less than 10 tpy and combined HAP emissions will be less than 25 tpy. A review of all potential NESHAPS concluded that there are no subparts applicable to IdaPro.

2.4 New Source Review (NSR) Requirements

Minidoka County is designated as an attainment/unclassifed area for all criteria pollutants. Therefore, the prevention of significant deterioration (PSD) regulations codified in 40 CFR Part 52 could potentially apply to the proposed facility. The PSD rule applies to: (1) a new major source that has the potential to emit 100 tons per year or more for any criteria pollutant for a facility that is one of the 28 industrial source categories listed in 40 CFR § 52.21(b)(1)(i)(a); or (2) a new major source that has the potential to emit 250 tons per year or more if the facility is not on the list of industrial source categories; or (3) a modification to an existing major source that results in a net emission increase greater than a PSD significant emission rate as specified in 40 CFR § 52.21 (b)(23)(i); or (4) a modification to an existing minor source that is major in itself. The proposed permitting action does not trigger any PSD actions.

2.5 New Source Performance Standards (NSPS)

New Source Performance Standards (NSPS) in 40 CFR Part 60 are applicable to new, modified, or reconstructed stationary sources that meet or exceed specified applicability thresholds. There are no applicable requirements for either the drum dryer or AMU.

2.6 Acid Rain Requirements

The acid rain requirements codified in 40 CFR Parts 72-78 apply only to utilities and other facilities that combust fossil fuel and generate electricity for wholesale or retail sale. The proposed facility will not produce electrical power for sale. Therefore, the facility is not subject to the acid rain provisions and will not require an acid rain permit.

2.7 Risk Management Programs for Chemical Accidental Release Prevention

The facility is not subject to the Chemical Accidental Release Prevention Program and will not be required to develop a Risk Management Plan (RMP). Facilities that produce, process, store, or use any regulated toxic or flammable substance in excess of the thresholds listed in 40 CFR Part 68 must develop a RMP. The facility does not store any regulated toxic or flammable substances in excess of the applicable thresholds. A RMP is not necessary for this facility.

2.8 State Rules

The Idaho Administrative Procedure Act (IDAPA) promulgates several emissions regulations that apply to IdaPro in addition to those listed above.

2.8.1 Certification of Documents

IDAPA 58.01.01.123 requires all documents including application forms for permits to construct, records, and monitoring reports submitted to the Department shall contain a certification by a responsible official. IdaPro will comply with this requirement and the appropriate certifications by a responsible official are being submitted with this application.

2.8.2 Excess Emissions

IDAPA 58.01.01.130-136 establishes procedures and requirements to be implemented in all excess emissions events. IdaPro will comply with the procedures and requirements outlined in Section 131-136 and submit the necessary information and reports to DEQ related to excess emissions due to startup, shutdown, scheduled maintenance, safety measures, upsets and breakdowns.

2.8.3 Demonstration of Preconstruction Compliance with Toxic Standards

IDAPA 58.01.01.210 establishes requirements for preconstruction compliance with toxic standards. IdaPro will comply with this rule by identifying and calculating the toxic pollutant emission rates from the new drum dryer and new air makeup unit.

As described in Section 3.0 Emission Summary, IdaPro calculated the total amount of Toxic Air Pollutant (TAP) emission rates from all units and compared them to the screening levels. IdaPro then modeled the ambient concentrations for those toxics which exceeded their respective emission screening levels. These included only those pollutants within IDAPA section 586. Arsenic, cadmium, formaldehyde, POM (7-PAH) and nickel were determined to be below the Acceptable Ambient Concentration. A complete modeling report is included in Appendix F which documents how IdaPro demonstrates preconstruction compliance with toxic air quality preconstruction standards.

2.8.4 Ambient Air Quality Standards for Specific Air Pollutants

IDAPA 58.01.01.577 establishes ambient air quality standards for specific air pollutants including fluorides. IdaPro is below the IDEQ modeling emissions threshold for all pollutants of which there is a standard. Therefore, modeling was not conducted for this pollutant.

2.8.5 Toxic Air Pollutants

IDAPA 58.01.01.585 and 586 establishes requirements for compliance with toxic air pollutants. IdaPro demonstrates compliance with the standards in the modeling report included in Appendix F.

2.8.6 Open Burning

IDAPA 58.01.01.600 and 616 establishes requirements for open burning. IdaPro does not expect to conduct open burning at the facility however will comply with the requirements under Section 600-616 if any allowable burning is to be conducted at the facility.

2.8.7 Visible Emission Limitation

IDAPA 58.01.01.625 restricts discharge of air pollutants into the atmosphere which is greater than 20% opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period. IdaPro will comply with this rule by conducting monthly facility-wide inspections of potential sources of visible emissions, during daylight hours and under normal operating conditions. The inspection will consist of a see/no see evaluation for each potential source. If any visible emissions are observed IdaPro will take corrective action or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. IdaPro will keep records onsite documenting the monthly visible emission inspection and Method 9 test conducted.

2.8.8 Rules for Control of Fugitive Dust

IDAPA 58.01.01.650 requires that all reasonable precautions be taken to prevent the generation of fugitive dust. IdaPro will comply with fugitive particulate matter regulations.

2.8.9 Odors

IDAPA 58.01.01.775-776 requires no emissions of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution. IdaPro will comply with this requirement by keeping records of all odor complaints received and will take appropriate action for each complaint which has merit.

3.0 EMISSION SUMMARY

3.1 Emission Calculations

A summary of the emissions based on the potential to emit of the following equipment are presented in Table 3-1.

- 55 MMBtu/hr QuadPass Drum Dryer
- 8 MMBtu/hr AMU

The particulate emissions from the drum dryer ($PM_{2.5}$ and PM_{10}) are based on source test results from a similar process performed at Gem State Processing, LLC. The emission factor of 0.63 lb/ton was established from a June 21, 2011 performance test which has been subsequently accepted by Idaho DEQ.

Idaho DEQ provided a spreadsheet outlining the results of several performance test conducted at various potato processing facilities throughout the state. In looking at the source test data from all other drum dryers as well as source test data for other types of dryers and equipment, it appears that on a relatively consistent basis, stack testing done by Spidell was significantly higher than stack testing done by other source testing companies such as the Avogadro Group. Secondly, the QuadPass Drum Dryer is not a fluidized bed or National Stage A1. Therefore, they are not representative.

In our opinion, we felt more comfortable with omitting the test information from Spidell because it seems to be consistently higher for unknown reasons. After discussion with source testing experts in the JBR Tempe office, we felt more comfortable using source test results from Avogadro and other groups as opposed to using the source test data from Spidell.

In addition, the QuadPass is a newer technology that promotes lower emissions than some of the previously tested dryers. While, the dryer used by IdaPro is not equivalent to those used by Gem State, both are newer technologies. The Gem State dryers initially assumed a higher emission factor, which was tested and shown to be quite a high overestimation. Basing the emissions for IdaPro on the most recent and accurate test results is more appropriate than using an assumed value that is not at all representative.

Lastly, as stated by the manufacturer, the "lift and fall" technique used by the QuadPass all occurs all within the dryer, limiting the potential particulate emissions escaping into the atmosphere prior to entering the cyclone for further drying. This should promote fewer particulate emissions than even Gem State because the process used by Gem State allows for the flake rollers to be exposed outside the dryer.

Detailed emission calculations are included in Appendix F. Permit application forms are included in Appendix C.

Table 3-1 PTC for Facility-Wide Emissions

Source	NO_x		CO		$PM_{2.5}/PM_{10}$		SO_2		VOC		Lead		GHG
	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(tpy)
Drum Dryer	2.696	11.81	4.529	19.84	0.410	1.79	0.032	0.142	0.297	1.30	2.70E-05	1.18E-04	29,630
Air Makeup Unit	0.784	3.44	0.659	2.89	0.060	0.26	0.005	0.021	0.043	0.19	3.92E-06	1.72E-05	
Processing	--	--	--	--	3.83	16.77	--	--	--	--	--	--	--
Total PTE	**3.48**	**15.24**	**5.19**	**22.72**	**4.30**	**18.83**	**0.04**	**0.16**	**0.34**	**1.49**	**3.09E-05**	**1.35E-04**	**29,630**

3.2 Toxic Air Pollutants

A summary of the increase in Toxic Air Pollutant (TAP) emissions resulting from the PTC modification are presented in Table 3-2 and Table 3-3 below. Detailed emission calculations are included in Appendix E. All non-carcinogens meet their respective EL. The carcinogens exceeding the EL are Arsenic, Cadmium, Formaldehyde, nickel and POM (7-PAH).

Table 3-2 TAPs PTE
NON-CARCINOGENS

Pollutant	CAS #	TAP Emissions (lb/hr)	Pre-Project TAP Emissions (lb/hr)	Difference (lb/hr)	Screening Level (lb/hr)	Modeling (Yes/No)	TAP Emissions (tpy)
Barium	7440-39-3	2.72E-04	0.0	2.72E-04	3.30E-02	No	1.19E-03
Chromium	7440-47-3	8.65E-05	0.0	8.65E-05	3.30E-02	No	3.79E-04
Cobalt	7440-48-4	5.19E-06	0.0	5.19E-06	3.30E-03	No	2.27E-05
Copper	7440-50-8	5.25E-05	0.0	5.25E-05	6.70E-02	No	2.30E-04
Hexane	110-54-3	1.11E-01	0.0	1.11E-01	12	No	4.86E-01
Manganese	7439-96-5	2.35E-05	0.0	2.35E-05	3.33E-01	No	1.03E-04
Molybdenum	7439-98-7	6.79E-05	0.0	6.79E-05	3.33E-01	No	2.97E-04
Naphthalene	91-20-3	3.77E-05	0.0	3.77E-05	2.00E-06	No	1.65E-04
Pentane	109-66-0	1.61E-01	0.0	1.61E-01	118	No	7.05E-01
Selenium	7782-49-2	1.48E-06	0.0	1.48E-06	1.30E-02	No	6.48E-06
Vanadium	71-43-2	1.42E-04	0.0	1.42E-04	3.00E-03	No	6.22E-04
Toluene	108-88-3	2.10E-04	0.0	2.10E-04	25	No	9.20E-04
Zinc	7440-66-6	1.79E-03	0.0	1.79E-03	6.67E-01	No	7.84E-03

Table 3-3 TAPs Increase
CARCINOGENS

Pollutant	CAS #	TAP Emissions (lb/hr)	Pre-Project TAP Emissions (lb/hr)	Difference (lb/hr)	Screening Level (lb/hr)	Modeling (Yes/No)	TAP Emissions (tpy)
3-Methylcholanthrene	56-49-5	1.11E-07	0.0	1.11E-07	2.50E-06	No	1.10E-04
Arsenic	7440-38-2	1.24E-05	0.0	1.24E-05	1.50E-06	Yes	5.43E-05
Benzene	74-43-2	1.30E-04	0.0	1.30E-04	8.00E-04	No	5.69E-04
Beryllium	7440-41-7	1.20E-05	0.0	1.20E-05	2.80E-05	No	5.26E-05
Cadmium	7440-43-9	6.79E-05	0.0	6.79E-05	3.70E-06	Yes	2.97E-04
Formaldehyde	50-00-0	4.63E-03	0.0	4.63E-03	5.10E-04	Yes	2.03E-02
Naphthalene	91-20-3	3.77E-05	0.0	3.77E-05	9.10E-05	No	1.65E-04
Nickel	7440-02-0	1.30E-04	0.0	1.30E-04	2.70E-05	Yes	5.69E-04
POM (7-PAH)	50-32-8	1.14E-05	0.0	1.14E-05	2.00E-06	Yes	4.99E-05

4.0 LIMITATIONS ON POTENTIAL TO EMIT

IdaPro proposes the following limits on the operations and equipment parameters at the facility. These proposed emissions limits coincide with the data utilized in the ambient air modeling included in Appendix G which demonstrates compliance with ambient air quality standards. Idapro is requesting limits on fuel type, material throughputs and specific stack parameters.

4.1 Fuel Type and Material Throughput

- The air makeup unit and drum dryer will operate exclusively on, and combust only, natural gas. The emission inventory is based on maximum facility-wide fuel consumption of 540.8 million standard cubic feet per year natural gas.

- The total number of potato waste processed will not exceed 12,174 lb per hour of dry material. The facility shall keep a record of the hourly material throughput.

4.2 Control Equipment

- The drum dryer shall be equipped with Low NO_x burners, with control of NO_x as specified by the manufacturer. The reduction of 50% is assumed in the emissions inventory which is consistent with Maxon specifications, the manufacturer (see Appendix E).

4.3 Stack Parameters

- Constructed stack heights shall be no lower than the stack heights specified in the ambient air modeling analysis included in Appendix G.

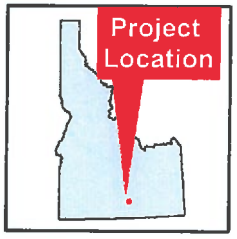
APPENDIX A

SITE LOCATION MAP AND PLOT PLAN

BASE MAP: U.S. Imagery accessed at nationalmap.gov/viewer/

Legend

Property Boundary



N

0 125 250 500 Feet

Client logo

IDAPRO, LLC - RUPERT PTC APPLICATION

FIGURE 1
PROJECT LOCATION

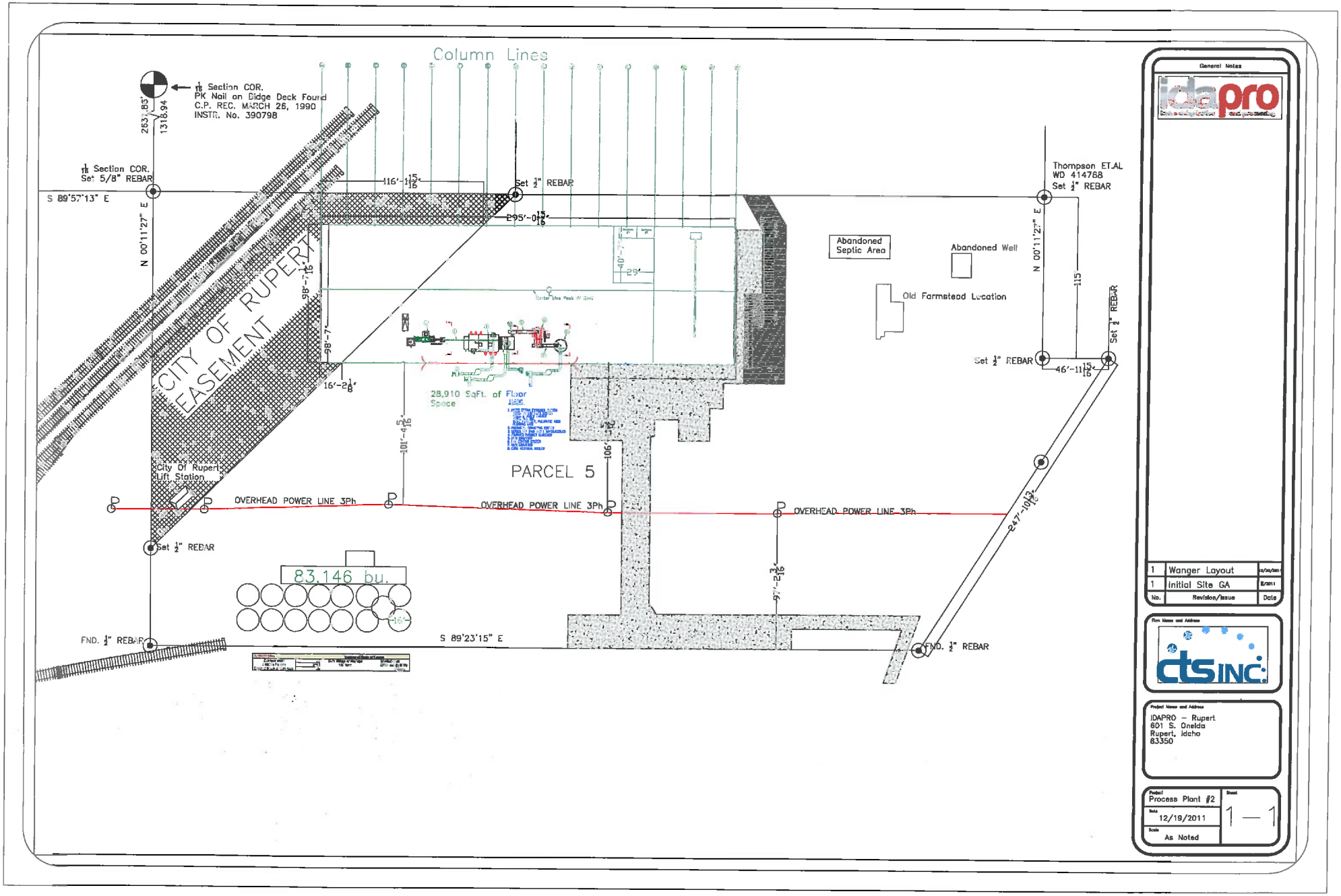
JBR

DRAWN BY: Eric Clark

DATE DRAWN: 8/8/2012

SCALE: 1 in = 329 feet

Path: M:\STATES\ID\Clients\Idapro\fig1.mxd


Column Lines
1/16 Section COR.
PK Nail on Bidge Deck Found
C.P. REC. MARCH 26, 1990
INSTR. No. 390798
263.83'
1318.94
1/16 Section COR.
Set 5/8" REBAR
S 89°57'13" E
N 00°11'27" E
116'-11 15/16"
Set 1/2" REBAR
295'-0 15/16"
CITY OF RUPERT
EASEMENT
98'-7 15/16"
98'-7"
16'-2 1/8"
40'-7"
29'
28,910 SqFt. of Floor Space
Abandoned Septic Area
Abandoned Well
Old Farmstead Location
Thompson ET.AL
WD 414788
Set 1/2" REBAR
N 00°11'27" E
115'
Set 1/2" REBAR
46'-11 15/16"
Set 1/2" REBAR
101'-4 5/16"
106'
PARCEL 5
City Of Rupert
Lift Station
OVERHEAD POWER LINE 3Ph
OVERHEAD POWER LINE 3Ph
OVERHEAD POWER LINE 3Ph
247'-10 1/2"
Set 1/2" REBAR
83,146 bu.
97'-2 3/16"
FND. 1/2" REBAR
S 89°23'15" E
FND. 1/2" REBAR
General Notes
idapro
1 Wanger Layout
1 Initial Site GA
No. Revision/Issue Date
ctsINC.
IDAPRO - Rupert
601 S. Oneida
Rupert, Idaho
83350
Process Plant #2
12/19/2011
As Noted
1 — 1

APPENDIX B

PUBLIC NOTICE OF THE INFORMATIONAL MEETING

Affidavit of Publication

STATE OF IDAHO)
COUNTY OF TWIN FALLS) SS.

I, Ruby Aufderheide, being first duly sworn upon oath, depose and say that I am Legal Clerk of the TIMES-NEWS,published daily at, Twins Falls, Idaho, and do solemnly swear that a copy of the notice of advertisement, as per clipping attached, was published in the regular and entire issue of said newspaper, and not in any supplement thereof, for one ~~consecutive~~ publication, commencing with the issue dated 16th day of August, 2012 and ending with the issue dated 16th day of August, 2012

And I do further certify that said newspaper is a consolidation, effective February 16, 1942, of the Idaho Evening Times, published theretofore daily except Sunday, and the Twin Falls News, published theretofore daily except Monday, both of which newspapers prior to consolidation had been published under said names in said city and county continuously and uninterruptedly during a period of more than twelve consecutive months, and said TIMES-NEWS, since such consolidation, has been published as a daily newspaper except Saturday, until July 31, 1978, at which time said newspaper began daily publication under said name in said city and county continuously and uninterrupted.

And I further certify that pursuant to Section 60-108 Idaho Code, Thursday of each week has been designated as the day on which legal notice by law or by order of any court of competent jurisdiction within the state of Idaho to be issued thereof Thursday is announced as the day on which said legal will be published.

Ruby Aufderheide

Ruby Aufderheide, Legal Clerk

STATE OF IDAHO
COUNTY OF TWIN FALLS

On this 16th day of August, 2012, before me,

a Notary Public, personally appeared Ruby Aufderheide,
known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that he executed the same.

Norma De Voe

Notary Public for Idaho
Residing at Twin Falls, Idaho.

My commision expires: 3/6/13

NORMA DE VOE
NOTARY PUBLIC
STATE OF IDAHO

Legal Notice

Idaho Dehydration & Processing LLC Plans a public informations meeting. Idaho Dehydration & Processing LLC in accordance with the Department of Idaho Environmental Quality rules, hold a information meeting on Aug 30, 2012 at the Fairfield Inn & Suites 230 W 7th St North Burley, ID 83318 at 2:30 p.m. (M.S.T.). The purpose of the meeting will be to discuss the air quality related aspects of a proposed manufacturing facility to be located in Rupert, ID.

PUBLISH: August 16, 2012

APPENDIX C

PTC APPLICATION FORMS AND CHECKLISTS

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

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

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

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER		
1. Company Name	IdaPro, LLC	
2. Facility Name	Rupert Facility	3. Facility ID No.
4. Brief Project Description - One sentence or less	Potato Processing facility	

PERMIT APPLICATION TYPE

5. ☒ New Source ☐ New Source at Existing Facility ☐ PTC for a Tier I Source Processed Pursuant to IDAPA 58.01.01.209.05.c
☐ Unpermitted Existing Source ☐ Facility Emissions Cap ☐ Modify Existing Source: Permit No.:_____ Date Issued:_____
☐ Required by Enforcement Action: Case No.:_____

6. ☒ Minor PTC ☐ Major PTC

FORMS INCLUDED

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

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

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

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

Identification

1. Facility name IdaPro, LLC

2. Existing facility identification number

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

3. Brief project description Potato Processing Facility

Facility Information

4. Primary facility permitting contact name Harry Budke **Contact type** Responsible official

Telephone number (208) 650-7414 **E-mail** hbudke@idapro.biz

5. Alternate facility permitting contact name Harry Budke **Alternate contact type** Responsible official

Telephone number (208) 650-7414 **E-mail** hbudke@idapro.biz

6. Mailing address where permit will be sent (street/city/county/state/zip code) 1305 Albion Ave, Burley, Minidoka, Idaho 83318

7. Physical address of permitted facility (if different than mailing address) (street/city/county/state/zip code) 501 S. Oneida, Rupert, Mindoka, Idaho 83350

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

9. NAICS codes: Primary NAICS 311423 **Secondary NAICS**

10. Brief business description and principal product produced Potato Processing, dehydration of peels and other potato waste products

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

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

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

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

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

Certification

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

13. Responsible official's name Harry Budke **Official's title** Engineering Manager

Official's address 1305 Albion Ave, Burley, ID 83318

Telephone number (208)650-7414 **E-mail** hbudke@idapro.biz

Official's signature Harry Budke **Date** August 14, 2012

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

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

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
IdaPro, LLC	Rupert Facility	

4. Brief Project Description: Potato Processing facility

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	AIR MAKE-UP UNIT
6.	EU ID Number:	AMU
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	THE KING CO.
9.	Model:	2180-7F-F HRS
10..	Maximum Capacity:	7.975 MMBTU/HR
11.	Date of Construction:	MANUFACTURED IN 1995
12.	Date of Modification (if any):	
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	ASSUMING 8760 HR/YR
23.	Maximum Operation:	8760 HR/YR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☐ Yes ☒ No (If Yes, indicate all that apply below)

- ☐ Operation Hour Limit(s):
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s):

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

Cyclone Separator - **Form CYS**
Revision 2
08/28/08

Please see instructions on page 3 before filling out the form.

IDENTIFICATION

1. Company Name:	IdaPro, LLC	2. Facility Name:	Rupert Facility	3. Facility ID No.:	
4. Brief Project Description:	Potato Processing Facility				

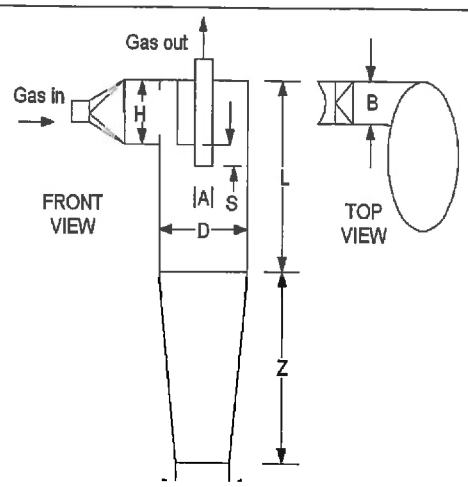
CYCLONE SEPARATOR INFORMATION

Equipment Description

5. Manufacturer: Unknown

6. Model Number: N/A

7. Dimensions



Give dimensions of cyclone. (See sample diagram above.)

1. B: 35 in.
2. H: 64 in.
3. S: in.
4. L: 81 in.
5. Z: 252 in.
6. D: 144 in.
7. A: 72 in.
8. J: 20 in.

8. Particulate Size Distribution Data

Micron range	Particle size distribution weight %	Manufacturer's guaranteed removal efficiency for each micron range
0.5-1.0		
1.0-5.0		
5-10		
10-20		
Over 20		

9. Type of Cyclone: ☐ Wet ☐ Dry

10. Type of Cyclone Unit: ☐ Single ☐ Quadruple ☐ Dual ☐ Multiclone

11. Blower
Blower horsepower: hp
Design flow rate: scfm
Draft: ☐ Forced ☐ Induced

12. Design Criteria: Cyclone configuration: ☐ Positive pressure ☒ Negative pressure

13. Pre-Treatment Device: ☒ Cyclone ☐ Knock-out chamber ☐ Precooler ☐ None ☐ Preheater

14. Post-Treatment Device: ☐ Baghouse/Cartridge ☐ HEPA ☐ Other:

Process Stream Characteristics	
15. Brief Description of Process	.
16. Flow Data	Gas stream temperature: degrees F Moisture content: grams of water/cubic feet (ft^3) of dry air Pressure drop range High: in. H_2O Low: in. H_2O Dew point temperature of process stream: degrees F Inlet flow rate: ACFM
17. Dust Collection Device	☐ Pneumatic conveyor ☐ Rotary airlock values ☐ Screw conveyors ☐ Closed container ☐ Double dump ☐ Drag conveyor ☐ Manual discharge device: ☐ Slide gate OR ☐ Hinged doors or drawers
18. Operating Schedule	Normal: hours/day days/week weeks/year Maximum: hours/day days/week weeks/year

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

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
IdaPro, LLC	Rupert Facility	

4. Brief Project Description: Potato Processing Facility

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	QUADPASS DRUM DRYER
6.	EU ID Number:	
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	DUPPS
9.	Model:	QUADPASS FOUR ZONE ROTARY DRUM DRYER
10..	Maximum Capacity:	55 MMBTU/HR
11.	Date of Construction:	
12.	Date of Modification (if any):	
13.	Is this a Controlled Emission Unit?	☐ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID: Kinedizer LE 14" low NOx burner

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number: Maxon

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☒ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☒ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency				50%		

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency. The manufacture specs indicate an assumed NOx reduction of 50%. This is also consistent with AP-42 assumptions for low NOx burners.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	ASSUMING 8760 HR/YR
23.	Maximum Operation:	8760 HR/YR

REQUESTED LIMITS

24.	Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
	☐ Operation Hour Limit(s):	
	☐ Production Limit(s):	
	☒ Material Usage Limit(s):	THROUGHPUT LIMIT OF 12,174 LB/HR DRY MATERIAL,
	☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
	☒ Other:	STACK PARAMETER MINIMUM HEIGHT OF 66 FT
25.	Rationale for Requesting the Limit(s):	TO DEMONSTRATE COMPLIANCE WITH PM2.5 NAAQS REQUIREMENTS

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

AIR PERMIT APPLICATION

Revision 6
10/7/09

For each box in the table below, CTRL+click on the blue underlined text for instructions and information.

IDENTIFICATION	
1. Company Name: IdaPro, LLC	2. Facility Name: Rupert Facility
3. Brief Project Description: Potato Processing Facility	

APPLICABILITY DETERMINATION	
4. List applicable subparts of the New Source Performance Standards (NSPS) (40 CFR part 60). Examples of NSPS affected emissions units include internal combustion engines, boilers, turbines, etc. The applicant must thoroughly review the list of affected emissions units.	List of applicable subpart(s): ☑ Not Applicable
5. List applicable subpart(s) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) found in 40 CFR part 61 and 40 CFR part 63. Examples of affected emission units include solvent cleaning operations, industrial cooling towers, paint stripping and miscellaneous surface coating. EPA has a web page dedicated to NESHAP that should be useful to applicants.	List of applicable subpart(s): ☑ Not Applicable
6. For each subpart identified above, conduct a complete a regulatory analysis using the instructions and referencing the example provided on the following pages. **Note** - Regulatory reviews must be submitted with sufficient detail so that DEQ can verify applicability and document in legal terms why the regulation applies. Regulatory reviews that are submitted with insufficient detail will be determined incomplete.	☐ A detailed regulatory review is provided (Follow instructions and example). ☐ DEQ has already been provided a detailed regulatory review. Give a reference to the document including the date.

IF YOU ARE UNSURE HOW TO ANSWER ANY OF THESE QUESTIONS, CALL THE AIR PERMIT HOTLINE AT 1-877-5PERMIT

It is emphasized that it is the applicant's responsibility to satisfy all technical and regulatory requirements, and that DEQ will help the applicant understand what those requirements are prior to the application being submitted but that DEQ will not perform the required technical or regulatory analysis on the applicant's behalf.

Department of Environmental Quality
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline - 1-877-5PERMIT

15- Day Pre-Permit Construction Approval Application Completeness Checklist

This checklist is designed to aid the applicant in submitting a complete pre-permit construction approval application. This checklist should be completed and submitted with the pre-permit construction approval application.

I. Actions Needed Before Submitting Application

☒ Refer to the Rule. Read the Pre-Permit Construction requirements contained in IDAPA 58.01.01.213, Rules for the Control of Air Pollution in Idaho.

☒ Refer to DEQ's Pre-Permit Construction Approval Guidance Document. DEQ has developed a guidance document to aid applicants in submitting a complete pre-permit construction approval application. The guidance document is located on DEQ's website (go to http://www.deq.idaho.gov/air/permits_forms/permitting/ptc_prepermit_guidance.pdf

☒ Consult with DEQ Representatives. Schedule a pre-application meeting with DEQ to discuss application requirements before submitting the pre-permit construction approval application. Schedule the meeting by contacting the DEQ Air Permit Hotline at **877-5PERMIT**. The meeting can be in person or on the phone. Refer to IDAPA 58.01.01.213.01b.

☒ Schedule Informational Meeting. Schedule an informational meeting before submitting the pre-permit construction approval application for the purposes of satisfying IDAPA 58.01.01.213.02.a. The purpose for the informational meeting is to provide information about the proposed project to the general public. Refer to IDAPA 58.01.01.213.01.c.

☒ Submit Ambient Air Quality Modeling Protocol. It is required that an ambient air quality modeling protocol be submitted to DEQ at least two (2) weeks before the pre-permit construction approval application is submitted. Contact DEQ's Air Quality Hotline at **877-5PERMIT** for information about the protocol.

☒ Written DEQ Approved Protocol. Written DEQ approval of the modeling protocol must be received before the pre-permit construction approval application is submitted. Refer to IDAPA 58.01.01.213.01.c.

II. Application Content

Application content should be prepared using the checklist below. The checklist is based on the requirements contained in IDAPA 58.01.01.213 and DEQ's Pre-Permit Construction Approval Guidance Document.

☒ Pre-Permit Construction Eligibility and Proof of Eligibility. Pre-permit construction approval is not available for any new Prevention of Significant Deterioration (PSD) major source, any proposed PSD major modification, or any proposed major NSR project in a non-attainment area. Emissions netting and emissions offsets are not allowed to be used. A certified proof of pre-permit construction eligibility must be submitted with the pre-permit construction approval application. Refer to IDAPA 58.01.01.213.01.

☒ Request to Construct Before Obtaining a Permit to Construct. A letter requesting the ability to construct before obtaining the required permit to construct must be submitted with the pre-permit construction approval application. Refer to IDAPA 58.01.01.213.01.c.

☒ Apply for a Permit to Construct. Submit a Permit to Construct application using forms available on DEQ's website at http://www.deq.idaho.gov. Refer to IDAPA 58.01.01.213.01.a.

☒ Permit to Construct Application Fee. The permit to construct application fee of $1000 must be submitted at the time the original pre-permit construction approval application is submitted. Refer to IDAPA 58.01.01.224. If the pre-permit construction approval is denied and a new application is submitted, a new $1,000 application fee will be required to be submitted. The application fee is not transferable or refundable. The application fee can be paid by check, credit card or Electronic Funds Transfer (EFT). If you choose to pay by credit card or EFT, please refer to the following Access Idaho link:
https://www.accessidaho.org/secure/deq/payport/item.html?id=511
If you choose to pay by check, enclose the check with your pre-permit construction approval application.

☒ Notice of Informational Meeting. Within 10 days after the submittal of the pre-permit construction approval application, an informational meeting must be held in at least one location in the region where the stationary source will be located. The information meeting must be made known by notice published at least 10 days before the informational meeting in a newspaper of general circulation in the county in which the stationary source will be located. A copy of this notice, as published, must be submitted with the pre-permit construction approval application. Refer to IDAPA 58.01.01.213.02.a. Additional information regarding the informational meeting is included in DEQ's Pre-Permit Construction Approval Guidance Document. (go to http://www.deq.idaho.gov/air/permits_forms/permitting/ptc_prepermit_guidance.pdf)

☒ Process Description(s). The process or processes for which pre-permit construction approval is requested must be described in sufficient detail and clarity such that a member of the general public not familiar with air quality can clearly understand the proposed project. A process flow diagram is required for each process for which pre-permit construction approval is requested. Refer to IDAPA 58.01.01.213.01.c.

☒ Equipment List. All equipment that will be used for which pre-permit construction approval is requested must be described in detail. Such description includes, but is not limited to, manufacturer, model number or other descriptor, serial number, maximum process rate, proposed process rate, maximum heat input capacity, stack height, stack diameter, stack gas flowrate, stack gas temperature, etc. All equipment that will be used for which pre-permit construction approval is requested must be clearly labeled on the process flow diagram. Refer to IDAPA 58.01.01.213.01.c.

☒ Scaled Plot Plan. It is required a scaled plot plan be included in the permit to construct application and it must clearly label the location of each proposed process and the equipment that will be used in the process.

☒ Proposed Emissions Limits and Modeled Ambient Concentration for All Regulated Air Pollutants. All proposed emission limits and modeled ambient concentrations for all regulated air pollutants must demonstrate compliance with all applicable air quality rules and regulations. Regulated air pollutants include criteria air pollutants (PM_{10}, SO_x, NO_2, O_3, CO, lead), toxic air pollutants listed pursuant to IDAPA 58.01.01.585 and 586, and hazardous air pollutants listed pursuant to Section 112 of the 1990 Clean Air Act Amendments (go to http://www.epa.gov/ttn/atw/188polls.html). Describe in detail how the proposed emissions limits and modeled ambient concentrations demonstrate compliance with each applicable air quality rule and regulation. It is requested that emissions calculations, assumptions, and documentation be submitted with sufficient detail so DEQ can verify the validity of the emissions estimates. Refer to IDAPA 58.01.01.213.01.c.

☒ Restrictions on a Source's Potential to Emit. Any proposed restriction on a source's potential to emit such that permitted emissions will be either below major source levels or below a significant increase must be described in detail in the pre-permit construction approval application. Refer to IDAPA 58.01.01.213.01.d.

☒ List all Applicable Air Quality Rules and Regulations. All applicable rules and regulations must be cited by the rule or regulation section/subpart that applies for each emissions unit. Refer to IDAPA 58.01.01.213.01.c.

☒ Certification of Pre-Permit Construction Approval Application. The pre-permit construction approval application must be signed by the Responsible Official and must contain a certification signed by the Responsible Official. The certification must state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Refer to IDAPA 58.01.01.213.01.d and IDAPA 58.01.01.123.

☒ Submit the Pre-Construction Approval Application. Submit the pre-permit construction approval application and application fee to the following address:

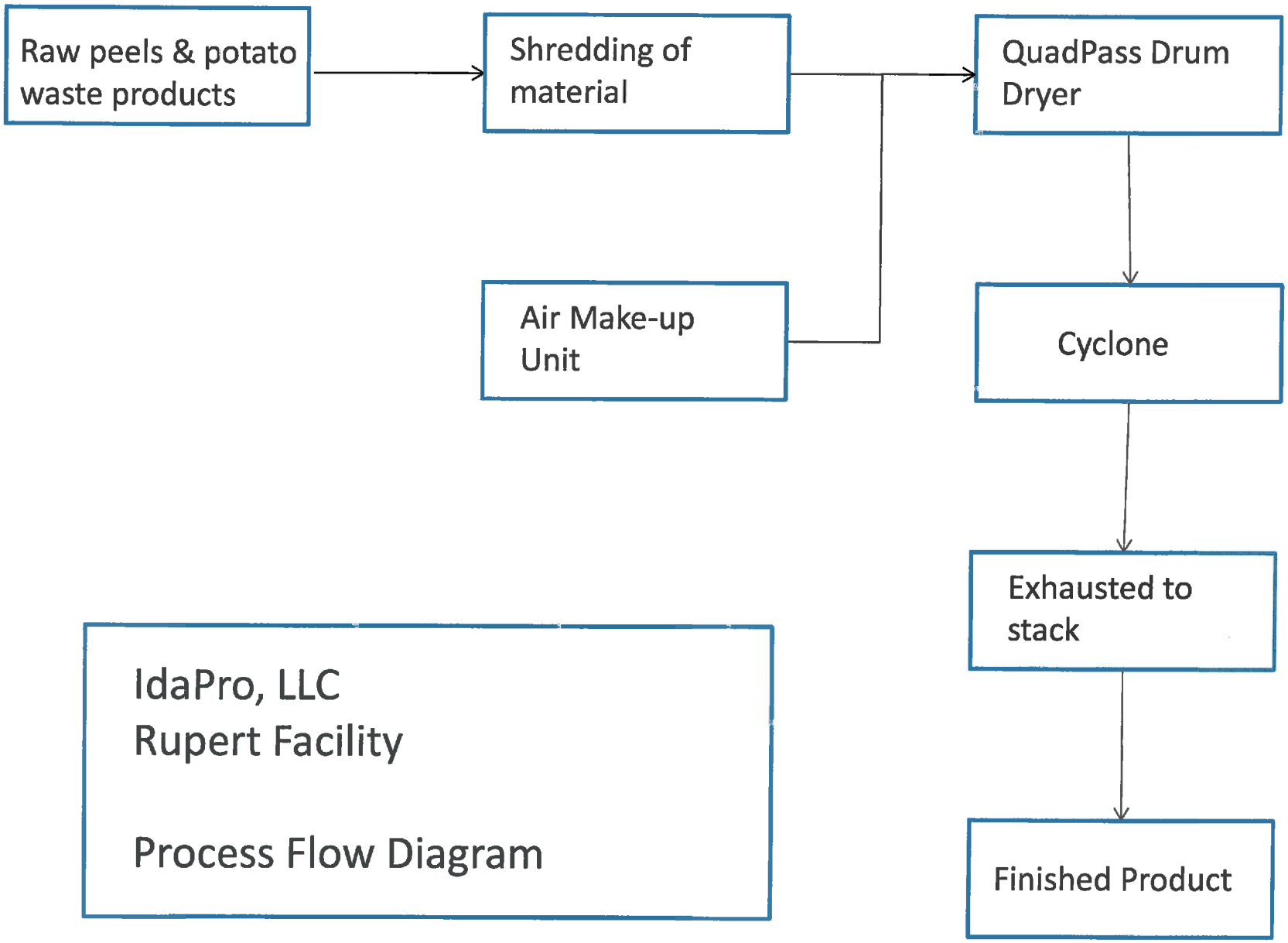
Department of Environmental Quality
Air Quality Division
Stationary Source Program
1410 North Hilton
Boise, ID 83706-1255

APPENDIX D

PROCESS FLOW DIAGRAM

APPENDIX E

MANUFACTURER INFORMATION



IdaPro, LLC
Rupert Facility

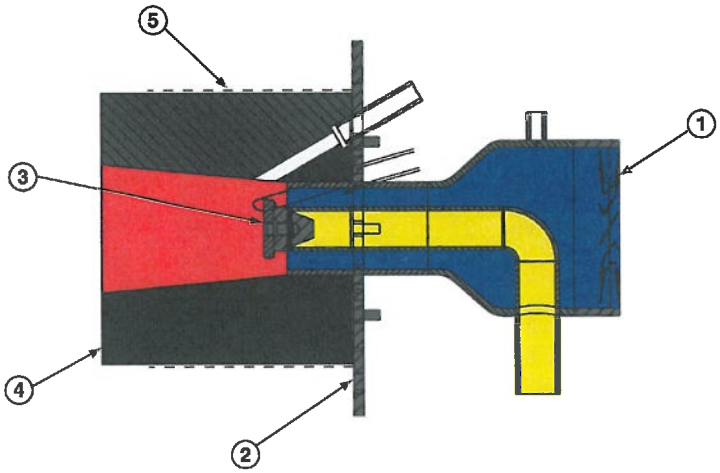
Process Flow Diagram

Specifications of KINEDIZER® LE burners

Typical burner data Fuel: natural gas at 60°F with 1000 Btu/ft³ (st) HHV - sg = 0.6 [1] Combustion air: 60°F - 21% O_2 - 50% humidity - sg = 1.0 [1] Stated pressures are indicative. Actual pressures are a function of air humidity, altitude, type of fuel and gas quality.										
KINEDIZER® LE size		1-1/2"	3"	4"	6"	8"	10"	12"	14"	16"
Max. capacity @ n=1.3 (low NOx) [2]	MBtu/h	0.54	2.4	4.6	9.8	15.8	24.3	34	55	75
Max. capacity @ n=1.1	MBtu/h	0.59	2.6	5.2	11.2	17.7	28.5	39	60	85
Min. capacity	KBtu/h	27	120	230	490	790	1215	1700	2750	3750
Turndown @ n=1.3 [2]		20:1	20:1	20:1	20:1	20:1	20:1	20:1	20:1	20:1
Turndown @ n=1.1		22:1	22:1	22:1	22:1	22:1	22:1	22:1	22:1	22:1
Air flow at max. capacity	scfm	110	500	950	2030	3280	5050	7040	11400	15600
Air flow at min. capacity	scfm	6	26	50	106	171	263	350	596	820
Advised pilot capacity [3]	MBtu/h	0.1	0.2	0.2	0.3	0.5	1.0	1.0	1.0	1.0
Pilot gas pressure [4]	"wc	<0.4	1.0	<0.4	0.6	1.0	4.0	0.5	0.5	0.5
Advised pilot gas piping diameter [5]		1/2"	3/4"	3/4"	3/4"	1"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
Combustion air pressure @ inlet [6]	"wc	28	32	32	32	32	32	32	32	30
Combustion air pressure differential [7] [9]	"wc	26	28	29	31	27	30	30	28	28
Natural gas inlet pressure differential [8]	"wc	55	52	42	64	40	75	76	120	220
Flame length @ n=1.3 [2]	ft	1	1.5	2	4	6	9	9	10	10
Flame diameter @ n=1.3 [2]	ft	0.5	0.75	1	1.5	3	4	4	4	5
Flame length @ n=1.1	ft	1.5	2.5	4	6	8	10	10	11	11
Flame diameter @ n=1.1	ft	0.5	0.75	1	1.5	3	4	4	4	5

[1] sg (specific gravity) = relative density to air (density air = 0.0763 lb/ft³ (st))
[2] n=1.3 meaning 30% excess air
[3] Most installations will require a stronger pilot (advised pilot capacity will be required)
[4] Natural gas pressure at pilot burner gas inlet (absolute minimum pilot capacity)
[5] For information only - strong pilots require adapted piping
[6] Differential air pressure needed to the burner
[7] Air pressure as measured at the air pressure connection port
[8] Differential natural gas pressure required at burner gas inlet (gas inlet test connection) relative to process, for the "n=1.3" maximum capacities.
[9] At minimum capacity 0.1" wc absolute minimum air pressure

Materials of construction



Item number	Burner part	Material
1	Burner housing	Carbon steel, painted [1]
2	Burner parts (in contact with furnace)	AISI 304 (1.4301)
3	Burner tip	AISI 310 (1.4541)
4	Burner block	Castable refractory [2]
5	Burner block sleeve (optional)	AISI 304 (1.4301)

[1] Optional available: 100% stainless steel burner

[2] Typical composition of castable refractory: refractory with 50% SiO_2, 45% Al_2O_3 and smaller fractions of iron oxide, titanium, lime, reinforced with needles (AISI 304-1.4301)

Selection criteria

KINEDIZER® LE burner versions

To suit the local demands of industry and specific regulations worldwide, the standard KINEDIZER® LE burner is available in different versions.

All burners can be ordered with NPT gas connection and SCH 10/40 air pipe connection (ANSI version - see drawings on page 3-11.9-10 through 3-11.9-16).

On request, special versions for hazardous locations, ISO connections, or high back pressure may be supplied. Contact MAXON for more details.

Application details

KINEDIZER® LE burners can be used in all direct fired high temperature air heating applications. It combines flexibility and stability with high turndown and the lowest available NOx emissions. The use of KINEDIZER® LE burners in indirect applications requires special consideration. Contact MAXON for application details.

Maximum capacities

All KINEDIZER® LE burners can be fired at higher maximum capacities if sufficient combustion air and fuel gas is allowed to the burner. Maximum capacities of all sizes can be 20% higher.

Preheated air/reduced O_2 air

KINEDIZER® LE burners accept preheated combustion air up to 660°F (800°F on request). Maximum capacities shall be reduced. Preheated combustion air can have reduced O_2 (as low as 17% if combustion air temperature is 800°F). Mixing of some low O_2 flue gas allows to combine increased system thermal efficiency with best emissions.

Process back pressure

Standard KINEDIZER® LE burners can accept static back pressures between -40"wc and 40"wc. The burner shall be connected to a fuel gas and combustion air control system that is capable of controlling a correct fuel gas ratio against all possible installation back pressures. Special versions are available to accept up to 14.5 psi back pressure (with PED-certification).

Process temperature

The construction of the burner allows operation in all applications with process temperatures from ambient up to 2000°F. Protect burner from high furnace temperatures during burner stop (purge to avoid back flow of hot furnace/process air).

In low temperature air heating applications (less than 1400°F), a user-supplied discharge sleeve is needed. Contact MAXON for recommended discharge sleeve size and installation instructions.

Piloting & ignition

Direct ignition of standard KINEDIZER® LE burners is possible. In case the use of a pilot is preferred, the KINEDIZER® LE burner will be equipped with a raw gas pilot to ignite the main flame (using main burner combustion air). Pilots shall be used only for ignition of the main flame (interrupted). Permanent pilot operation is not advised (no permanent or intermittent pilot). Use main burner at minimum capacity for continuous operation.

Use minimally 5000 V/200 VA ignition transformers for sparking of the spark ignitor. Optional ignition equipment for hazardous locations is available as well as high energy ignitors for direct ignition.

Typical ignition sequence

- Pre-purge of burner and installation, according to the applicable codes and the installation's requirements.
- Combustion air control valve shall be in the minimum position to allow minimum combustion air flow to the burner.
- Pre-ignition (typically 2 s sparking in air).
- Open pilot gas and continue to spark the ignitor (typically 5 s).
- Stop sparking, continue to power the pilot gas valves and start flame check. Trip burner if no flame from here on.
- Check pilot flame stability (typically 5 s to prove stable pilot).
- Open main gas valves and allow enough time to have main gas in the burner (typically 5 s + time required to have main gas in the burner).
- Close the pilot gas valves.
- Release to modulation (allow modulation of the burner).

Above sequence shall be completed to include all required safety checks during the start-up of the burner (process and burner safeties).

Locate one pilot gas valve as close as possible to the pilot burner gas inlet to have fast ignition of the pilot burner.

Ratio control

KINEDIZER® LE burners can be fired stable with air factors ("n") : $1.05 < n < 1.60$ (5% to 60% excess air) from 20% to 100% of listed maximum air flows (lower capacities require somewhat higher excess air). Flame dimensions and burner emissions are heavily affected by the excess air amount.

In order to achieve the best ratio control and emissions, MAXON SMARTFIRE® or SMARTLINK® control systems should be utilized. MAXON MICRO-RATIO® valves are also available to obtain good performance over the entire turndown of the burner.

Ratio control on reduced capacity

Most KINEDIZER® LE applications will require burner operation with 30% excess air to have low NOx.

On reduced capacities, the excess air will slowly increase.

KINEDIZER® LE burners will operate with low NOx between 20% and 100% of their listed maximum capacity. Below 20% firing rate, the air factor will slightly increase to have the listed air flow at minimum capacity. Changes of combustion air temperature, system back pressure and other parameters could influence gas/air ratio if the control system is not designed to compensate for these.

Flame supervision

KINEDIZER® LE flames shall be supervised by UV scanners. Two scanner positions are available. Both locations allow verfication of both pilot flame and main flame. (It is not possible to distinguish main and pilot flame.)

Scanners are mounted on the burner flange and look through the block (30° relative to the burner center line).

Pay attention to possible pick-up of strange flames (if any in the furnace). Allow some purge or cooling air to the scanner connections (typically 1.5 scfm of fresh clean air).

Flame development

KINEDIZER® LE burners shall be installed in combustion chambers or furnaces that allow full development of the burner flame. Cylindrical combustion chambers shall have diameters of 1.5 to 2 times burner flame diameter (see table on page 3-11.9-5).

Consult MAXON for proper combustion chamber lay-out.

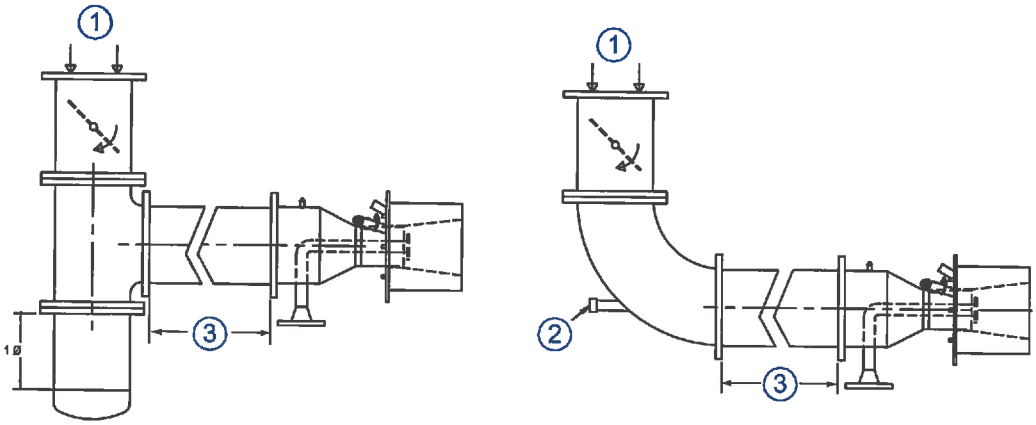
Cross velocities

Cross velocities up to 3000 ft/min can be allowed over the KINEDIZER® LE flame. Contact MAXON for proper lay-out and correct emission information in case of cross velocity over the flame.

Combustion air control and piping

KINEDIZER® LE burners require combustion air control valves with high turndown (to guarantee correct air flow at minimum capacity). Air control valves shall be properly sized. Typically, the air control valve diameter shall be smaller than the burner air inlet. Combustion air piping to the burner shall be done in such a way that the air flow to the burner will not disturb the flame. Location of air control valves directly on the burner inlet is not possible.

1) Air flow
2) Sight glass
3) Minimum 4 Ø



Typical lay-outs with correct piping between air control valve on the KINEDIZER® LE burner

Fuels

Standard KINEDIZER® LE burners are designed for low NOx firing of natural gas only. Special versions are available to fire propane/LPG. Multi-fuel burners will have higher NOx on the alternative fuel.

Expected emissions

Typical NOx for KINEDIZER® LE burners firing natural gas with 30% excess air:

- cold furnaces (< 1382°F): 50% of a conventional burner
- furnaces up to 1742°F : 40% of a conventional burner

CO highly depends on the installation's lay-out and can be reduced if sufficient dwell time after the flame is allowed. Consult MAXON for correct application information.

Low NOx furnace requirements

Low NOx operation requires properly designed combustion chamber or furnace.

KINEDIZER® LE flames have a medium velocity and will be influenced by the atmosphere around the flame. Contact MAXON for proper design.

CO and low NOx operation

Low NOx in combination with low CO is possible if sufficient dwell time is available after the flame. Mixing that occurs too fast with cold process air will increase CO.

Burner blocks

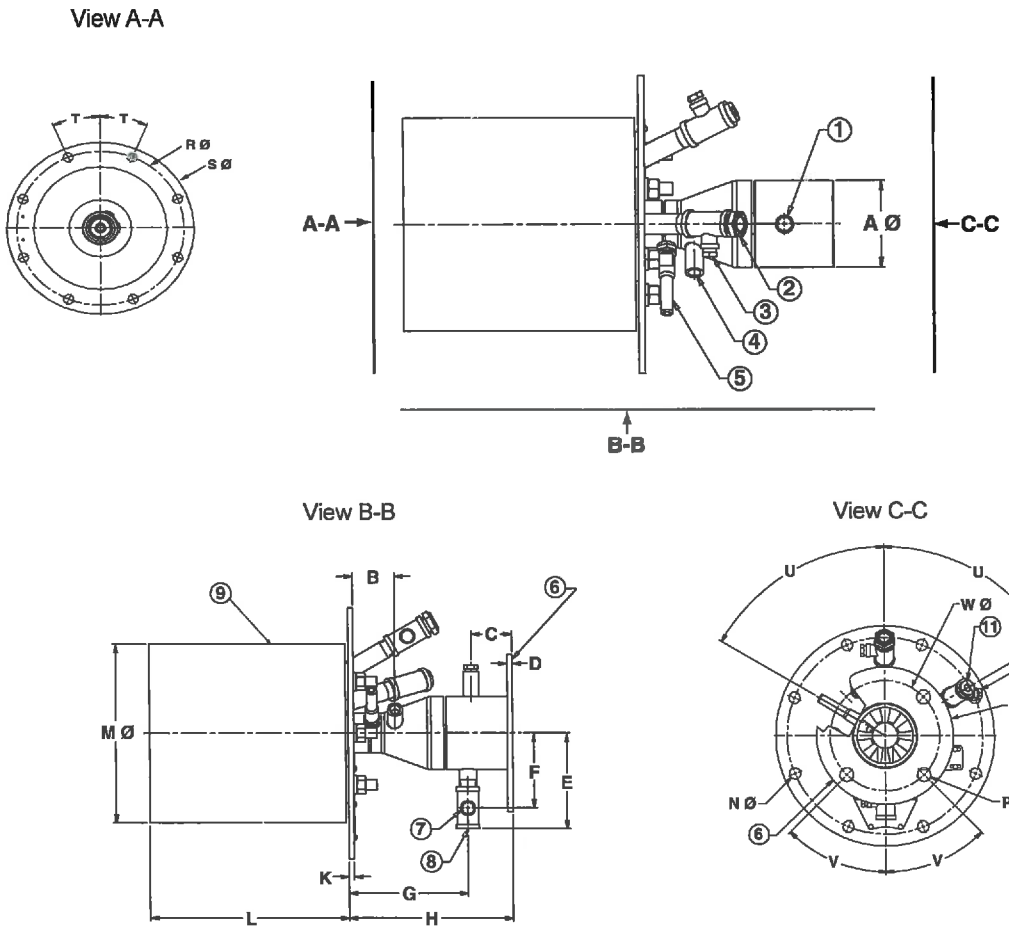
Standard KINEDIZER® LE burners will be shipped with block as shown on page 3-11.9-10. Two long block options are available: standard (without supporting sleeve) and with supporting sleeve.

Standard blocks without supporting sleeves shall be used only if the blocks are supported by the furnace walls. Supporting sleeves shall be used in all installations where the blocks are not supported (soft walls or steel ducting). Protect the supporting sleeve with insulation if used on high temperature furnaces. Consult installation instructions for detailed information.

Dimensions and weights

1-1/2" KINEDIZER® LE burners

1) 1/4" NPT air test connection
2) Observation port
3) 1/4" NPT purge air connection
4) 1/4" NPT pilot gas inlet
5) Spark ignitor
6) Optional air inlet flange
7) 1/4" NPT gas test connection
8) 1/2" NPT main gas inlet
9) Standard block or block with sleeve option
10) 1/4" NPT purge air connection
11) 1/2" NPT scanner port

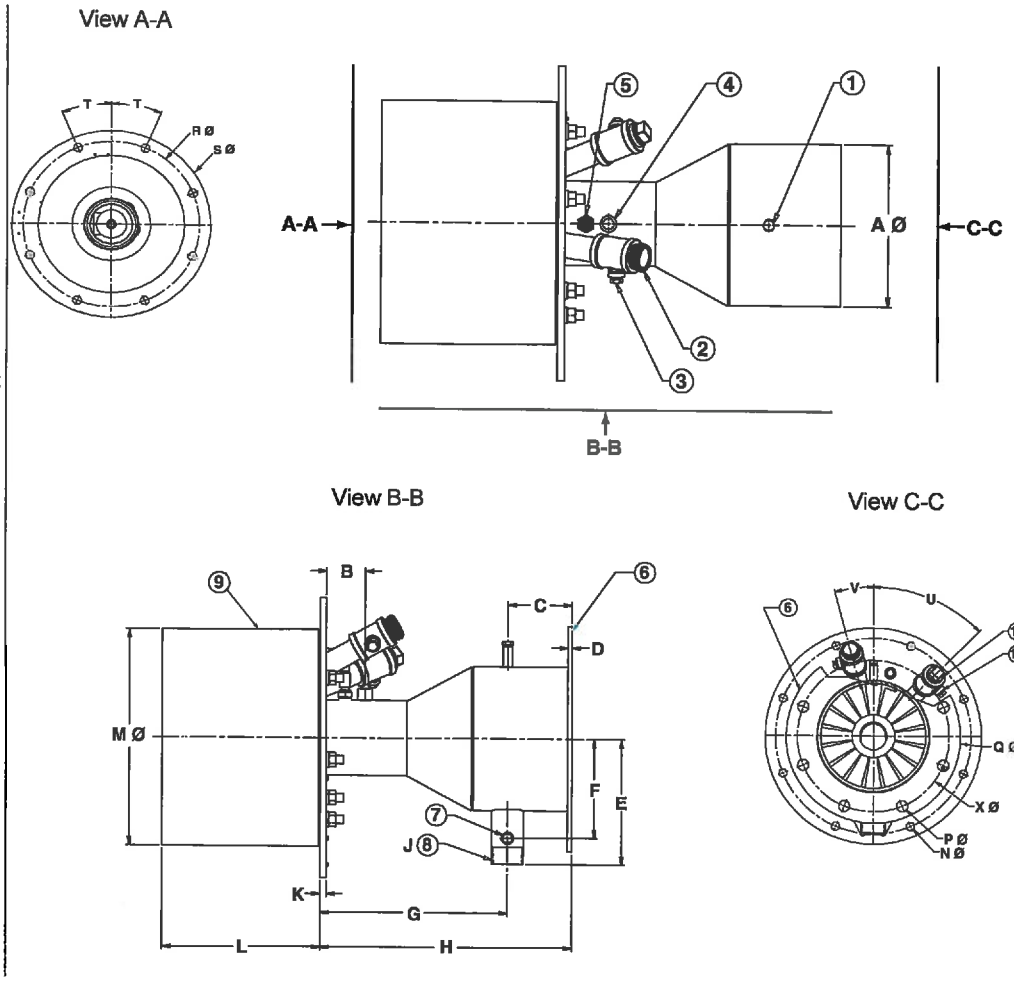


Dimensions in inches unless stated otherwise											
Size	A Ø	B	C	D	E	F	G	H	K	L	M Ø
1-1/2"	3.5	2.0	1.97	0.25	4.6	3.6	5.7	7.86	0.25	9.5	8.6

Size	N Ø	P Ø	Q Ø	R Ø	S Ø	T	U	V	W Ø	Weight lbs
1-1/2"	0.625	0.75	7.5	10.73	12.0	22.5°	60°	45°	6.0	66

3" & 4" KINEDIZER® LE burners

1) 1/4" NPT air test connection
2) Observation port
3) 1/4" NPT purge air connection
4) 3/8" NPT pilot gas inlet
5) Spark ignitor
6) Optional air inlet flange
7) 1/4" NPT gas test connection
8) Main gas inlet
9) Standard block or block with sleeve option
10) 1/4" NPT purge air connection
11) Scanner port

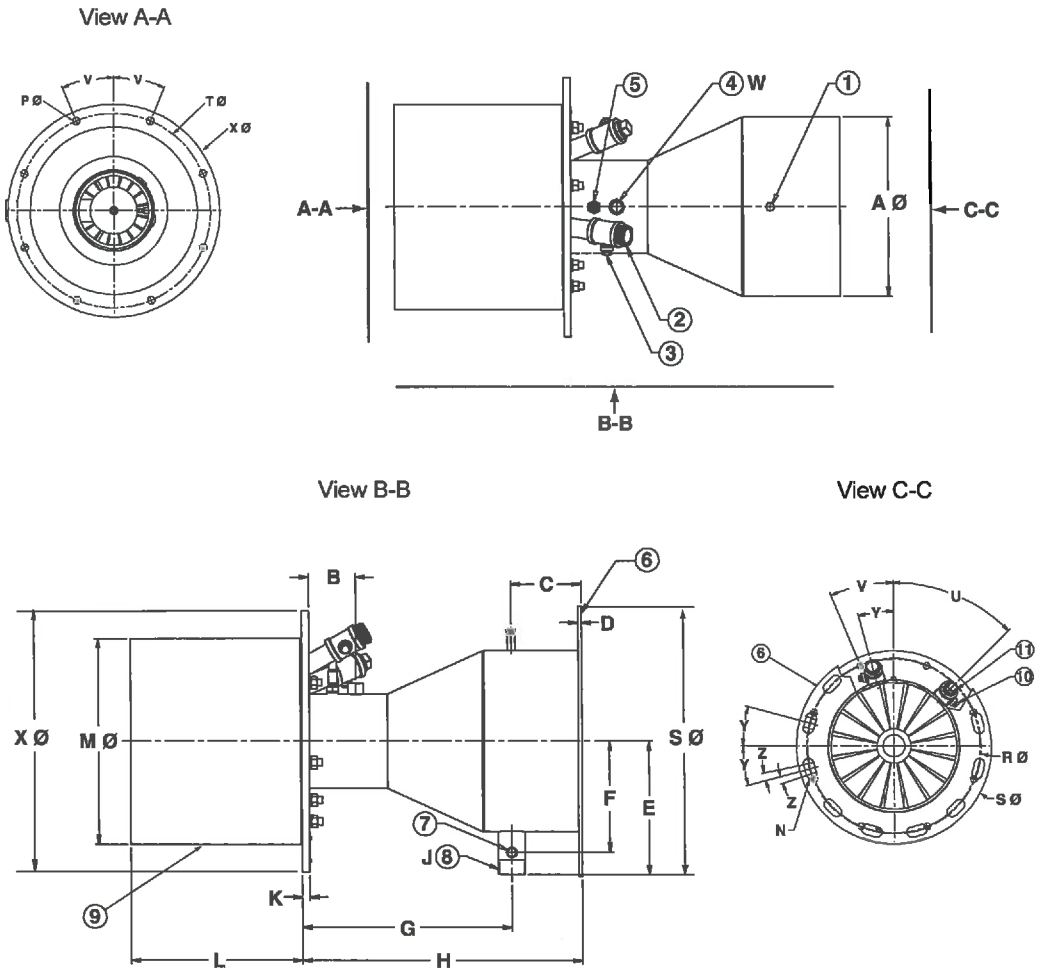


Dimensions in inches unless stated otherwise												
Size	A Ø	B	C	D	E	F	G	H	J NPT	K	L	M Ø
3"	6.62	2.99	3.12	0.25	6.25	4.69	6.94	10.06	1-1/4"	0.375	9.5	10.4
4"	8.62	2.31	3.84	0.25	7.5	5.94	11.24	15.09	1-1/2"	0.375	9.5	12.9

Size	N Ø	P Ø	Q Ø	R Ø	S Ø	T	U	V	W NPT	X Ø	Weight lbs
3"	0.625	0.875	11.0	12.52	14.15	22.5°	45°	15°	1/2"	9.5	100
4"	0.625	0.875	13.5	15.12	16.75	22.5°	45°	15°	1"	11.75	165

6" & 8" KINEDIZER® LE burners

1) 1/4" NPT air test connection
2) Observation port
3) 1/4" NPT purge air connection
4) Pilot gas inlet
5) Spark ignitor
6) Optional air inlet flange
7) 1/4" NPT gas test connection
8) Main gas inlet
9) Standard block or block with sleeve option
10) 1/4" NPT purge air connection
11) 1" NPT scanner port

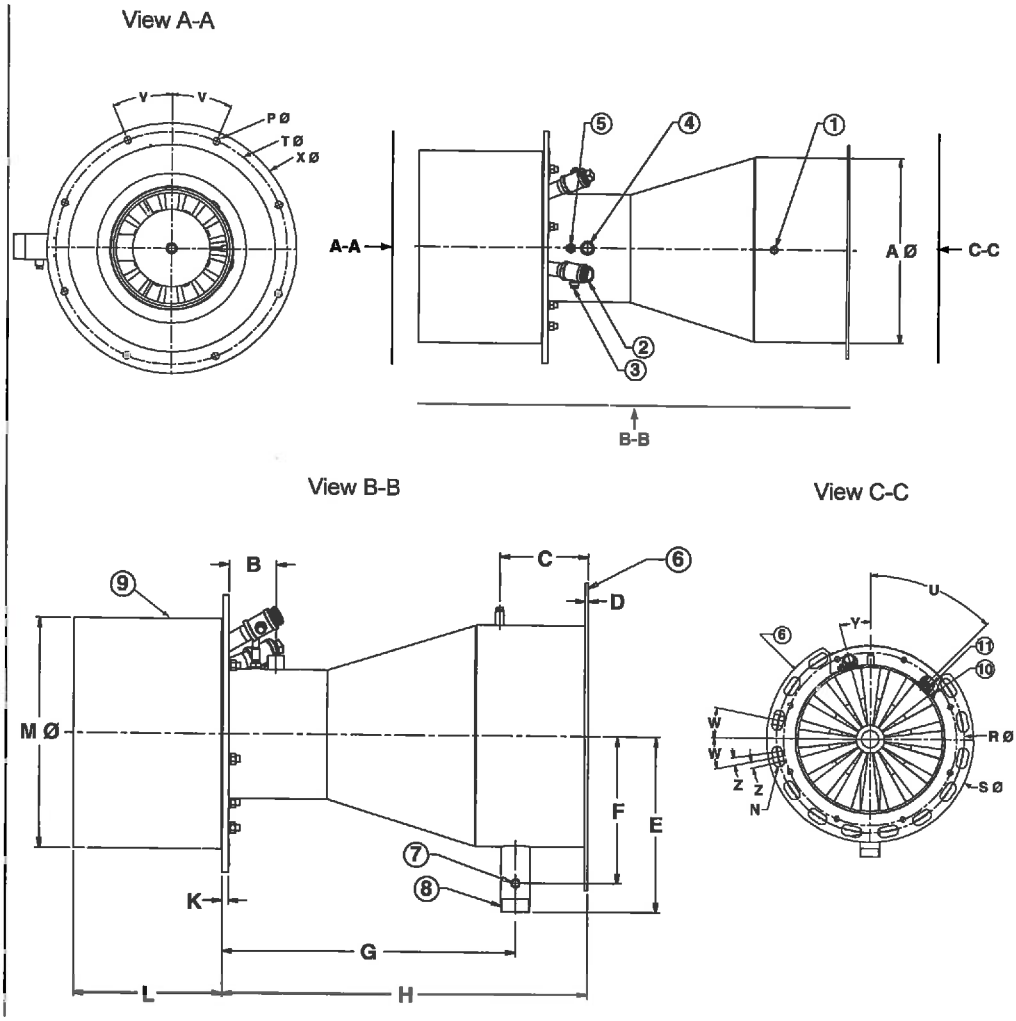


Dimensions in inches unless stated otherwise												
Size	A Ø	B	C	D	E	F	G	H	J NPT	K	L	M Ø
6"	12.75	3.3	5.0	0.25	9.38	7.81	14.76	19.75	1-1/2"	0.5	12.1	14.6
8"	12.75	3.81	7.2	0.25	11.69	9.35	16.42	22.79	2"	0.5	12.1	16.6

Size	N	P Ø	R Ø	S Ø	T Ø	U	V	W NPT	X Ø	Y	Z	Weight lbs
6"	0.5	0.625	17.0	19.0	16.823	45°	22.5°	1/2"	18.45	15°	3°	265
8"	0.5	0.625	17.0	19.0	18.82	45°	22.5°	3/4"	20.45	15°	3°	331

10" KINEDIZER® LE burners

1) 1/4" NPT air test connection
2) Observation port
3) 1/4" NPT purge air connection
4) 3/4" NPT pilot gas inlet
5) Spark ignitor
6) Air inlet flange
7) 1/4" NPT gas test connection
8) 2" NPT main gas inlet
9) Standard block or block with sleeve option
10) 1/4" NPT purge air connection
11) 1" NPT scanner port

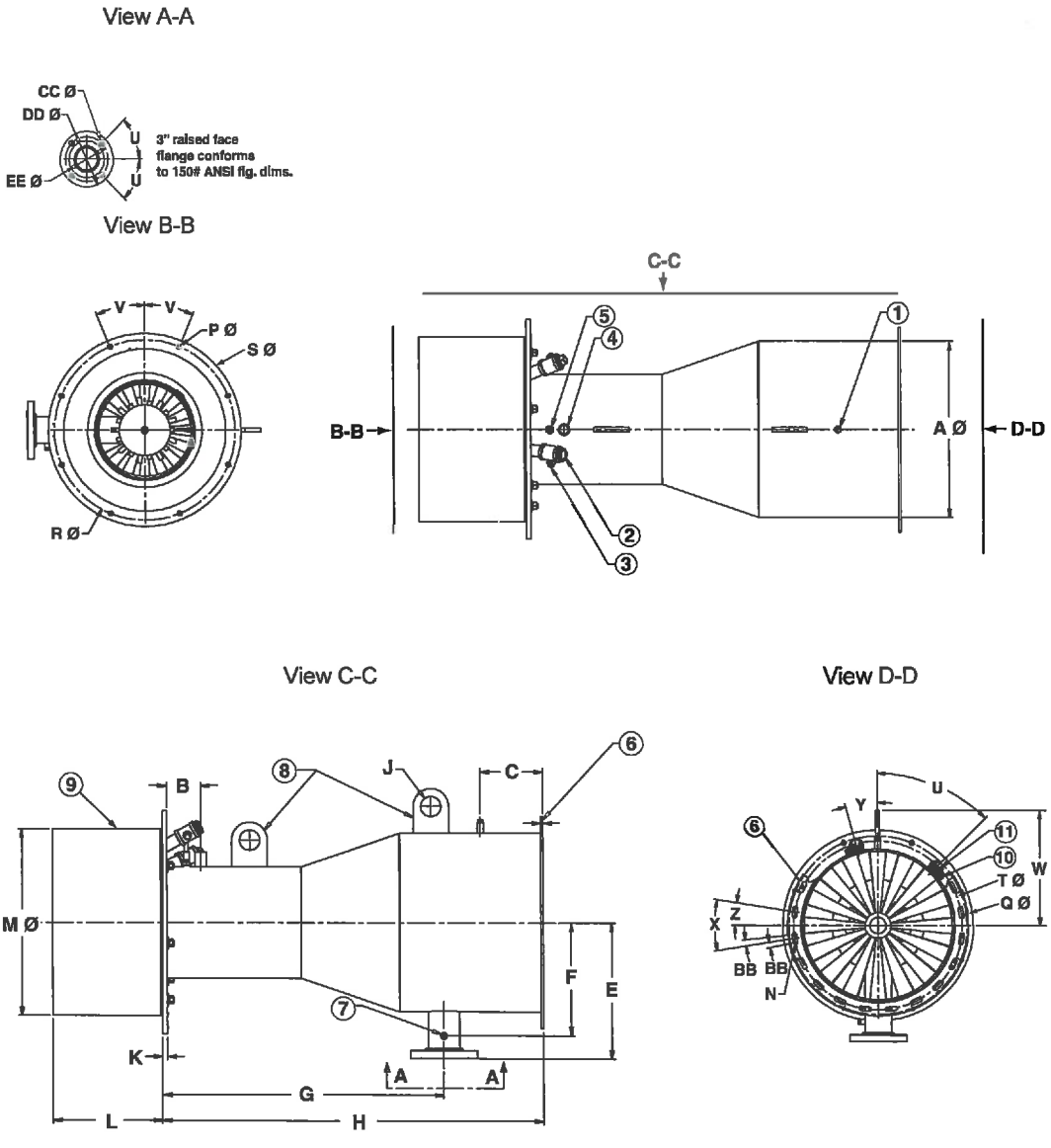


Dimensions in inches unless stated otherwise												
Size	A Ø	B	C	D	E	F	G	H	K	L	M Ø	N
10"	18.0	3.81	7.2	0.25	14.31	11.97	23.86	29.71	0.5	12.1	18.7	0.62

Size	P Ø	R Ø	S Ø	T Ø	U	V	W	X Ø	Y	Z	Weight lbs
10"	0.625	22.75	25.0	20.95	45°	22.5°	11.25°	22.57	15°	3°	662

12" KINEDIZER® LE burners

1) 1/4" NPT air test connection
2) Observation port
3) 1/4" NPT chamber test connection
4) 3/4" NPT pilot gas inlet
5) Spark ignitor
6) Air inlet flange
7) 1/4" NPT gas test connection
8) Lifting lugs
9) Standard block or block with sleeve option
10) 1/4" NPT purge air connection
11) 1" NPT scanner port

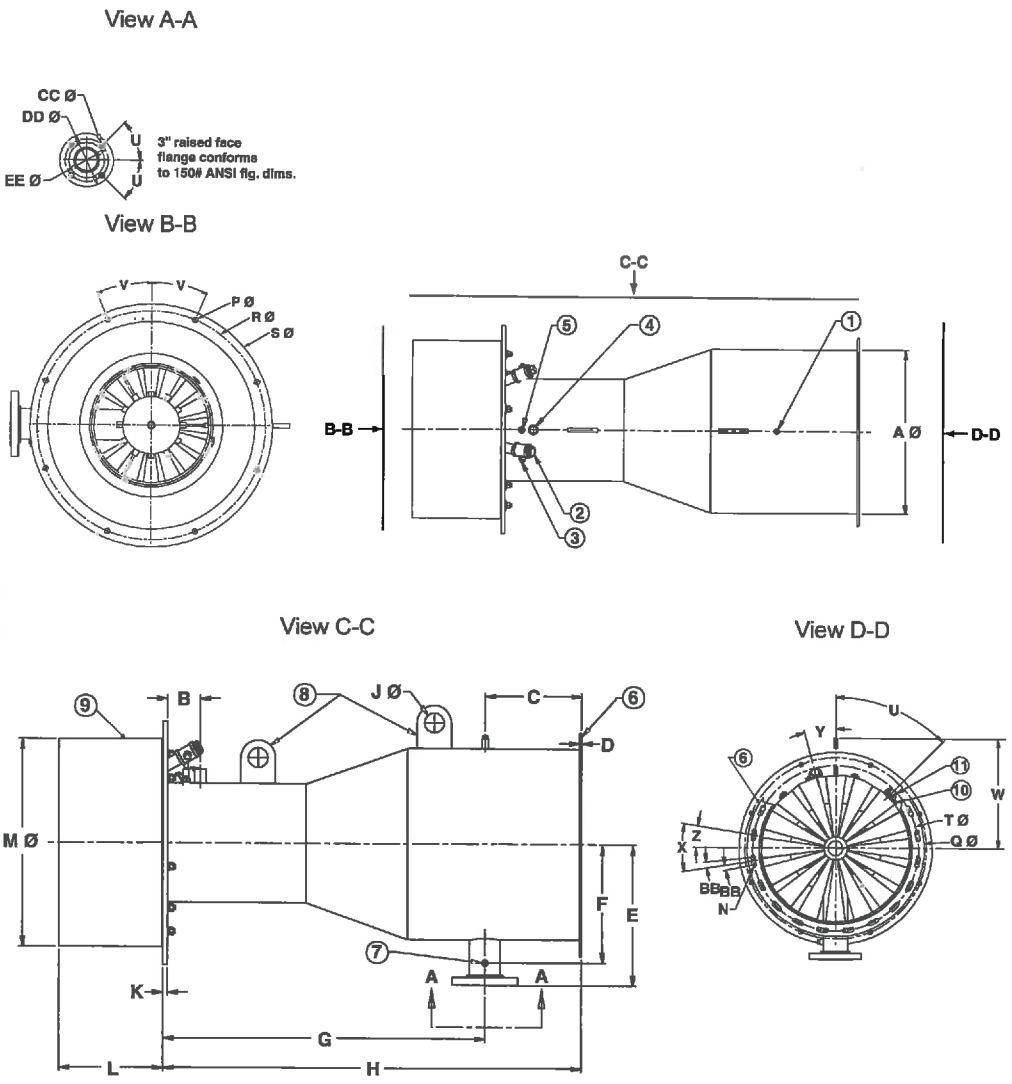


Dimensions in inches unless stated otherwise										
Size	A Ø	B	C	D	E	F	G	H	J Ø	K
12"	20.0	3.81	7.0	0.25	15.25	12.66	31.38	42.50	2.25	0.5
Size	L	M Ø	N	P Ø	Q Ø	R Ø	S Ø	T Ø	U	V
12"	12.1	21.0	0.281	0.625	23.75	23.375	25.0	22.12	45°	22.5°

Size	W	X	Y	Z	BB	CC Ø	DD Ø	EE Ø	Weight lbskg
12"	15.0	18°	15°	9°	2.65°	0.75	7.5	6.0	550

14" KINEDIZER® LE burners

1) 1/4" NPT air test connection
2) Observation port
3) 1/4" NPT purge air connection
4) 3/4" NPT pilot gas inlet
5) Spark ignitor
6) Air inlet flange
7) 1/4" NPT gas test connection
8) Lifting lugs
9) Standard block or block with sleeve option
10) 1/4" NPT purge air connection
11) 1" NPT scanner port



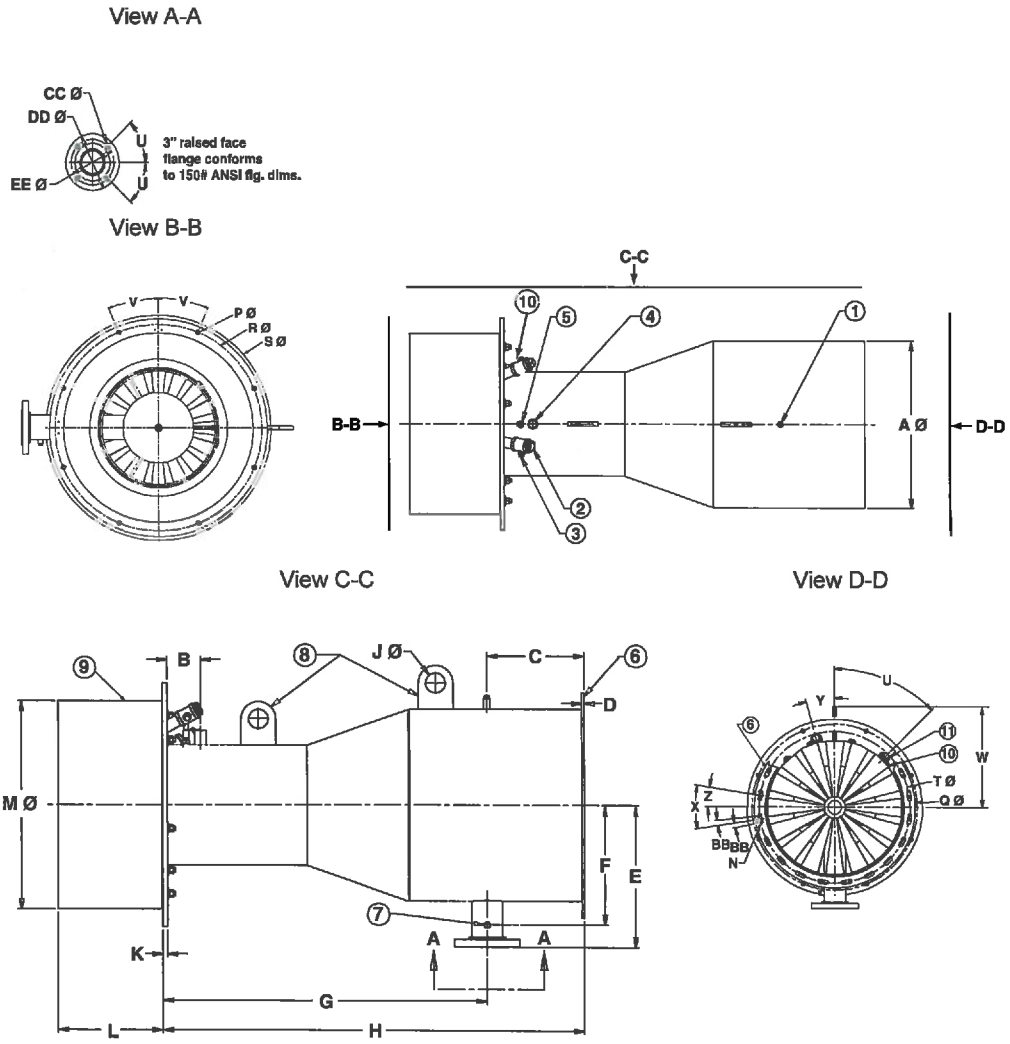
Dimensions in inches unless stated otherwise										
Size	A Ø	B	C	D	E	F	G	H	J Ø	K
14"	22.0	3.81	11.12	0.25	16.25	13.66	37.08	48.21	2.25	0.5

Size	L	M Ø	N	P Ø	Q Ø	R Ø	S Ø	T Ø	U	V
14"	12.0	23.9	0.281	0.625	25.75	26.375	28.0	24.12	45°	22.5°

Size	W	X	Y	Z	BB	CC	DD	EE	Weight lbs
14"	16.0	18°	15°	9°	2.65°	0.75	7.5	6.0	950

16" KINEDIZER® LE burners

1) 1/4" NPT air test connection
2) Observation port
3) 1/4" NPT purge air connection
4) 3/4" NPT pilot gas inlet
5) Spark ignitor
6) Air inlet flange
7) 1/4" NPT gas test connection
8) Lifting lugs
9) Standard block or block with sleeve option
10) 1/4" NPT purge air connection
11) 1" NPT scanner port



Dimensions in inches unless stated otherwise										
Size	A Ø	B	C	D	E	F	G	H	J Ø	K
16"	28	3.81	11.12	0.25	19.25	16.66	46.08	57.25	2.25	0.5

Size	L	M Ø	N	P Ø	Q Ø	R Ø	S Ø	T Ø	U	V
16"	15.2	26.75	0.281	0.625	31.75	29.13	30.75	30.12	45°	22.5°

Size	W	X	Y	Z	BB	CC	DD	EE	Weight lbs
16"	19	15°	15°	7.5°	2.5°	0.75	7.5	6.0	1030

Installation instructions for KINEDIZER® LE burners

Application requirements

View port

A view port to observe burner flame is essential to inspect flame aspect. Locate the view port downstream of the flame, looking back to the burner block. Make sure the complete flame can be evaluated.

Support burner air and gas piping

The KINEDIZER® LE burner shall not be used as support for the piping to the burner. Gas and air piping shall be supported in such a way that no additional loads will be created on the burner.

Burner mounting flange loads

Check burner weight and reinforce burner mounting flange or combustion chamber/furnace back wall if necessary to take complete burner weight.

Installation instructions

Storage of KINEDIZER® LE burners

KINEDIZER® LE burners shall be stored dry (inside). Burner blocks have been cured carefully before shipment and shall be kept dry. Wetting of blocks could result in premature failures.

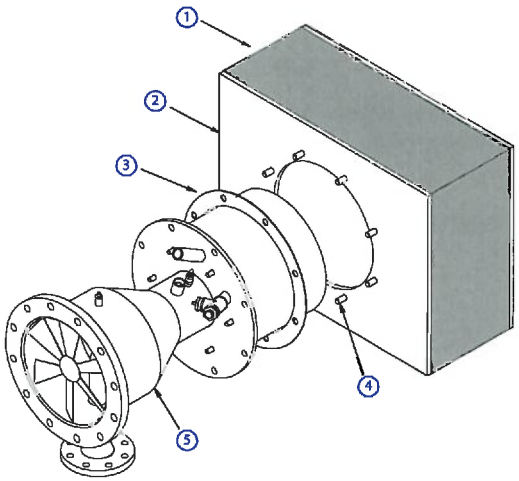
Handling of KINEDIZER® LE burners

KINEDIZER® LE burners are shipped as complete units. Handle burners with care during unpacking, transport, lifting and installation. Use proper equipment. Any impact on the burner could result in damage.

Flange the burner to the installation

Bolt the burner to the installation's burner mounting flange. Use proper gasketing. Tighten the flange bolting with correct torque. Retighten all bolts after first firing and regularly after commissioning.

1) Insulation
2) Furnace shell
3) Gasket (by others)
4) Mounting studs
5) Burner



MAXON
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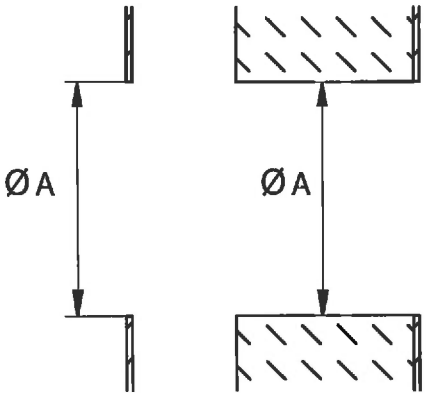
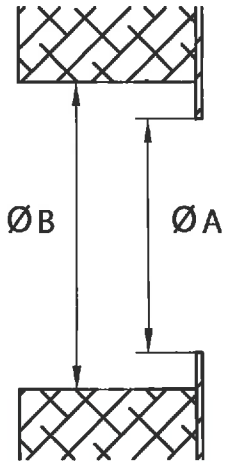
Burner mounting

Furnace/combustion chamber requirements

Sketch 1



Sketch 2



Dimensions in inches unless stated otherwise									
Burner size	1-1/2"	3"	4"	6"	8"	10"	12"	14"	16"
A Ø [1]	9.6	11.5	14	15.6	17.6	19.7	22	24.9	27.75
B Ø [2]	14.5	16.4	18.9	20.5	22.5	24.6	26.8	29.7	32.5

[1] Ø A = block diameter + 1 in
[2] Ø B = block diameter + 5.8 in

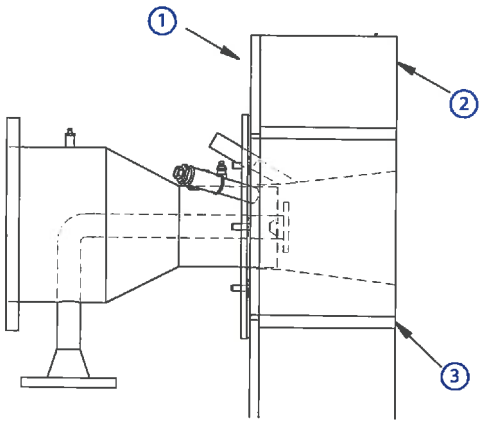
Sketch 1: sheet metal combustion chambers, furnaces without internal insulation or with soft wall internal insulation: flange / opening internal diameter shall be = Ø A

Sketch 2: furnaces or ovens with brick walls: opening in brick wall shall be = Ø B (to be rammed with castable refractory)

Standard blocks

Burners with standard blocks require supporting of the burner block by the furnace wall. Ram the gap between block and furnace wall with castable refractory.

1) Furnace shell
2) Furnace wall
3) Castable refractory material



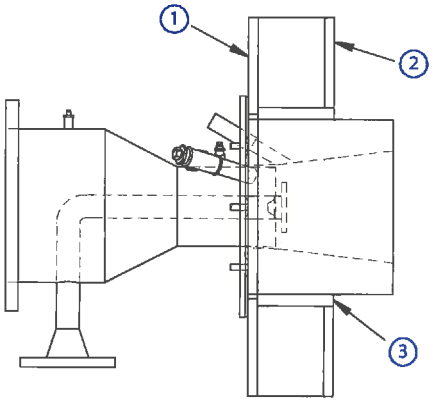
Blocks with supporting sleeve

Burners with blocks that have supporting sleeves can be used in all applications if the supporting sleeve is protected from temperatures that may be too high.

Sheet metal combustion chambers without internal insulation do not require any provision for supporting or protecting the burner blocks.

Furnaces with internal insulation or refractory walls will require protection of the block supporting sleeve from the high temperature. Close the gap between block and furnace wall with soft insulation fiber to provide thermal protection of the block sleeve.

1) Furnace shell
2) Panel wall
3) Soft insulating material



Start-up instructions for KINEDIZER® LE burners

Instructions provided by the company or individual responsible for the manufacture and/or overall installation of a complete system incorporating MAXON burners take precedence over the installation and operating instructions provided by MAXON. If any of the instructions provided by MAXON are in conflict with local codes or regulations, please contact MAXON before initial start-up of equipment.

Read the combustion system manual carefully before initiating the start-up and adjustment procedure. Verify that all of the equipment associated with and necessary to the safe operation of the burner system has been installed correctly, that all pre-commissioning checks have been carried out successfully and that all safety-related aspects of the installation are properly addressed.

Initial adjustment and light-off should be undertaken only by a trained commissioning engineer.

First firing or restart after shut-down

During first start-up of the burner, and after every longer installation shut-down, the temperature rise shall be limited. Allow the burner to fire on low fire for some time to allow the parts to heat up slowly.

Checks during and after start-up

During and after start-up, check the integrity of the system. Check all bolted connections after first firing (first time on temperature) and retighten if necessary.

Pilot ignition

Before ignition of the pilot, adjust the combustion air to the minimum burner air flow. Pilot will not ignite if too high an air flow. Set pilot gas flow to the correct value before pilot ignition attempt.

Main burner ignition

Set correct gas flow for burner minimum capacity before attempt of main burner ignition.

After ignition of main burner, allow some time on minimum capacity to allow the burner parts to heat up slowly.

Adjust air/gas ratio, set maximum capacity

Once the main flame is ignited, adjust air/gas ratio of the burner to have the required combustion quality and slowly increase capacity. (Do not increase capacity too fast to avoid damage to burner parts or furnace due to excessive temperature gradient.)

Maintenance & inspection instructions

Safety requirements

Regular inspection, testing and recalibration of combustion equipment according to the installation manual is an integral part of its safety. Inspection activities and frequencies shall be carried out as specified in the installation manual.

Visual inspection

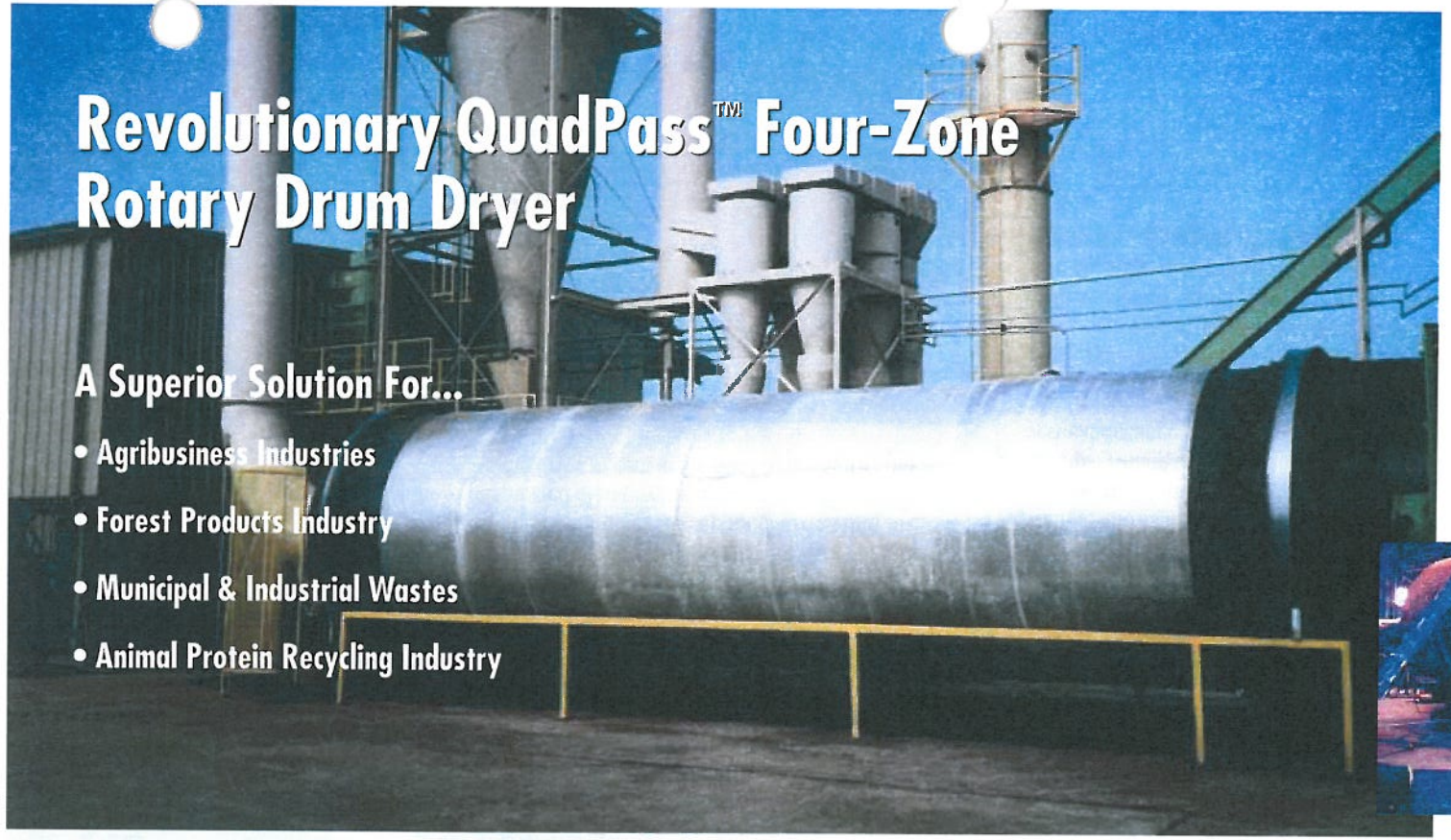
Regular visual inspection of all connections (air and gas piping to the burner, bolting of the burner to the furnace) and burner flame size and aspect are essential.

Spare parts

Keep local stock of spark ignitor. It is not recommended to keep local stock of other burner parts.

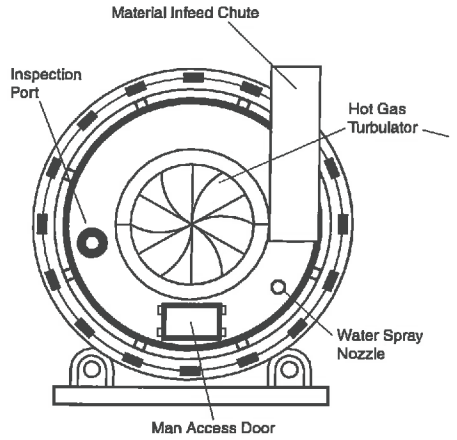
Consult installation manual for burner spare parts and system accessories.

Revolutionary QuadPass™ Four-Zone Rotary Drum Dryer



A Superior Solution For...

- Agribusiness Industries
- Forest Products Industry
- Municipal & Industrial Wastes
- Animal Protein Recycling Industry



Get lower VOC emissions, better product color, and more uniform drying than single- or triple-pass rotary drum dryers

Reduces VOC's

Wet feed is exposed to the hot furnace gases in a controlled "lift and fall" manner. The particles are exposed to the hot gas as they fall, but not while they are resting in the flighting. This exposure to high heat, followed by a brief rest, prevents the gases from heating the solids too long, greatly reducing the amount of VOCs generated.

Better product color

A QuadPass Dryer gives you better color in your finished product because the solids are less likely to be charred or over-dried. This is due to the unique way the QuadPass design presents the wet feed to the drum, as well as the controlled manner in which the feed is exposed to the hot gas.

Solids dried uniformly

The Hot Gas Turbulator swirls the gas as it enters the feed zone. This turbulent air helps the feed solids to spread out, allowing the hot gas to contact nearly all particle surfaces. Good heat distribution prevents clumping and generates a more uniformly dried product.

Reduces fire danger

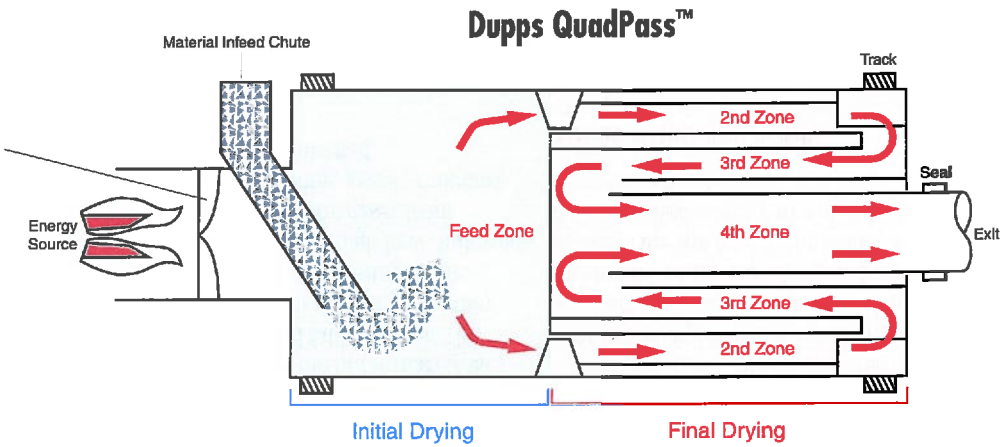
A unique feed arrangement all but eliminates operating dryer drum fires. Because the wet feed enters the drum off-center, away from the "blowtorch" of hot gases, it is much less likely to catch fire.

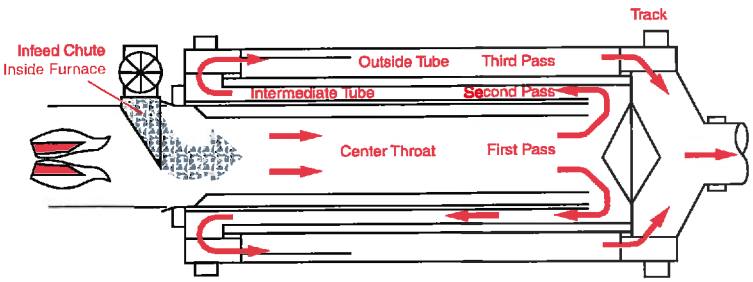
No insulation to break down

The QuadPass drum has NO insulation, only air sandwiched between the drum's outer shell and its stainless steel cladding. This annular air gap keeps the drum's outer surface at a modest temperature. And since there's no foam or fiber, there's no insulation breakdown—a common problem with other drum dryers.

Flexible fuel choices

To heat the air flowing through the dryer, Dupps offers burners that operate on natural gas and fuel oil as well as a solid fuel VDC (vertical dry cell) burner. The VDC can operate using wood, coal, or other forms of biomass fuel.





Ordinary three pass drums can over-dry.
Material starts drying at high air velocity then drops at each stage, so particles can accumulate, overheat and clog.

How it works

Wet solids enter at the largest diameter of the drum, away from hot gases. Hot air enters the feed zone at the centerline while the wet solids enter away from the center, landing directly on the flighting. As the drum rotates, the flights lift the wet feed upward. With further rotation, the particles are gradually released to fall downward through the hot gases in a thin curtain.

The repeating cycle of "lift and fall" through the hot gas occurs in an environment of low air velocity, which assures enough residence time in the Feed Zone. Most of the evaporation takes place in this zone, quickly reducing gas temperatures.

Zones 2 through 4 comprise the final drying section of the QuadPass drum. This section consists of two annular passageways and one final pass through the drum's center tube. Each successive zone has a smaller cross sectional area, so the gas velocities increase as the product travels through the drum.

In Zones 2 through 4, the fines tend to separate from the larger particles and exit the drum quickly. This prevents overdrying and charring and reduces VOC emissions. The smaller, faster-drying particles are picked up and carried away. Larger, wetter particles stay in the drum longer and continue to give up moisture as they are pushed along by the airstream. Each particle exits the dryer system at the desired moisture content.

Flighting to meet your application

For small, granular particles, the QuadPass offers saw-tooth flighting.

For elongated products (e.g. strands, hay, grass, bagasse) curved, smooth-edged flighting keeps products from hanging up in the flights.

Advantages of QuadPass

- An off-center feed chute allows wet feed to enter the drum away from the "blowtorch" of hot gases.
- Wet solids are exposed to the high heat in a controlled way, through a sequence of "lift and fall." The solids fall through the hot gas, then get a brief "break" from the heat as they lie in the drum's flighting.
- The feed zone is the entire drum diameter. Feeding into such a large volume allows the particles to spread out and travel individually rather than in clumps. Falling through a much larger vertical distance ensures that the hot gas reaches all particle surfaces.
- Drying gas velocity is slowest in the feed zone, then gets progressively faster in each successive zone. This increasing velocity helps material conveying and decreases any chance of drum plugging.

Problems with 3 Pass Dryers

- Wet feed is introduced in the dryer's center throat, directly into a "blowtorch" of hot gases.
- Wet solids are constantly exposed to unrelenting heat as they travel the entire drum length. This leads to charring, over-drying, and even fires.
- By feeding into the center throat, the wet solids are forced into a tight space. Even though flighting lifts and stirs, feed has less distance to fall and tends to form clumps.
- Drying gas in the center throat is at a high velocity, but the velocity drops as it travels through the annular passageways. This drop in velocity reduces conveying force and makes drum plugging more common.

KINEDIZER® LE

High capacity low NOx gas burners

- Field proven low emissions. State-of-the-art low NOx firing - adjustable for application flexibility
- Lower NOx and less excess air than standard KINEDIZER® burners
- Rugged design for oxidizers, process heaters, kilns, furnaces, dryers, waste incineration and other high temperature applications
- Available in a wide range of capacities, each with turndown as high as 20:1
- Burns natural gas, propane or other fuel gases
- Provides excellent stirring and mixing with its medium velocity exhaust
- Accepts preheated and vitiated combustion air

MAXON
A Honeywell Company

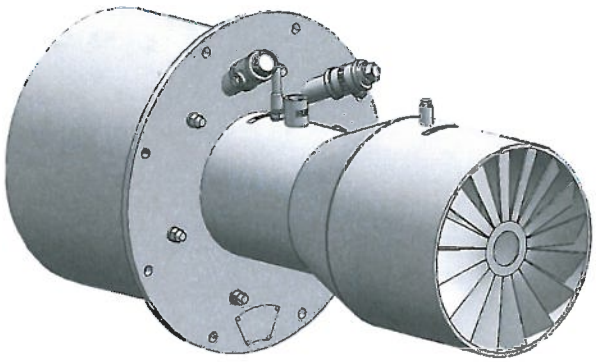
Product description

The KINEDIZER® LE burner is a nozzle-mix, medium-velocity design. Using advanced mixing technology, the burner produces low emissions with very little excess air. Ruggedly built with a reinforced refractory block and steel burner body and nozzle, it burns natural gas, propane or other gaseous fuels. Combustion air is supplied with an external blower. Accurate air and fuel modulation can be accomplished by the MAXON MICRO-RATIO® valve or SMARTLINK® technology.

Combustion air can range from 21% down to 17% O_2 if preheated and from ambient temperature up to 660°F (max. 800°F) on request. Maximum chamber temperature is 2000°F .

Turndown up to 20:1.

Contact MAXON for correct application details.



View of KINEDIZER® LE burner

Available KINEDIZER® LE sizes

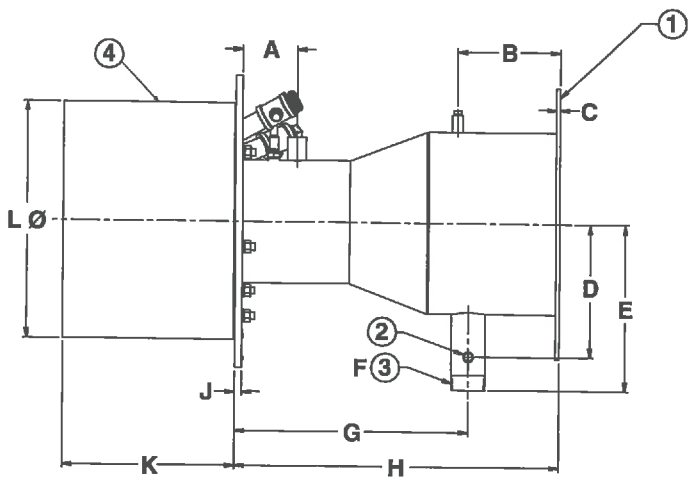
Typical burner data
Fuel: natural gas at 60°F with 1000 Btu/ft³ (st) HHV - sg = 0.6 [1]
Combustion air: 60°F - 21% O_2 - 50% humidity - sg = 1.0 [1]
Stated pressures are indicative. Actual pressures are a function of air humidity, altitude, type of fuel and gas quality.

KINEDIZER® LE size		1-1/2"	3"	4"	6"	8"	10"	12"	14"	16"
Maximum capacity @ n=1.3	MBtu/h	0.54	2.4	4.6	9.8	15.8	24.3	34	55	75
Air flow at maximum capacity	scfm	110	500	950	2030	3280	5050	7070	11400	15600
Advised pilot capacity	MBtu/h	0.1	0.2	0.2	0.3	0.5	1.0	1.0	1.0	1.0
Combustion air pressure @ inlet [2] [3]	"wc	28	32	32	32	32	32	32	32	30
Natural gas inlet pressure differential	"wc	55	52	42	64	40	75	76	120	220

[1] sg (specific gravity) = relative density to air (density air = 0.0763 lb/ft³ (st))
[2] Combustion air pressure required at full capacity, relative to process. Add 5% safety margin + piping & control valve pressure drops for blower sizing.
[3] At minimum capacity 0.1" wc absolute minimum air pressure

Dimensions and weights

1) Optional air inlet flange
2) 1/4" NPT gas test connection
3) Main gas inlet
4) Standard block or block with sleeve option



Dimensions in inches unless stated otherwise												
Burner size	A	B	C	D	E	F Ø NPT	G	H	J	K	L Ø	Weight lbs
1-1/2"	2.0	1.97	0.25	3.6	4.6	1/2"	5.7	7.86	0.25	9.5	8.6	66
3"	2.99	3.12	0.25	4.69	6.25	1-1/4"	6.94	10.06	0.375	9.5	10.4	100
4"	2.31	3.84	0.25	5.94	7.5	1-1/2"	11.24	15.09	0.375	9.5	12.9	165
6"	3.3	5.0	0.25	7.81	9.38	1-1/2"	14.76	19.75	0.5	12.1	14.6	265
8"	3.81	7.2	0.25	9.35	11.69	2"	16.42	22.79	0.5	12.1	16.6	331
10"	3.81	7.2	0.25	11.97	14.31	2"	23.86	29.71	0.5	12.1	18.7	662
12"	3.81	7.0	0.25	12.66	15.25	3" [1]	31.38	42.50	0.5	12.1	21.0	550
14"	3.81	11.12	0.25	13.66	16.25	3" [1]	37.08	48.21	0.5	12.0	23.9	950
16"	3.81	11.12	0.25	16.66	19.25	3" [1]	46.08	57.25	0.5	15.2	26.75	1030

[1] 3" ANSI raised face 150# slip on flange connection

Typical emissions

The KINEDIZER® LE burner is capable of low NOx when given excess air, typically 20-30% at high fire.

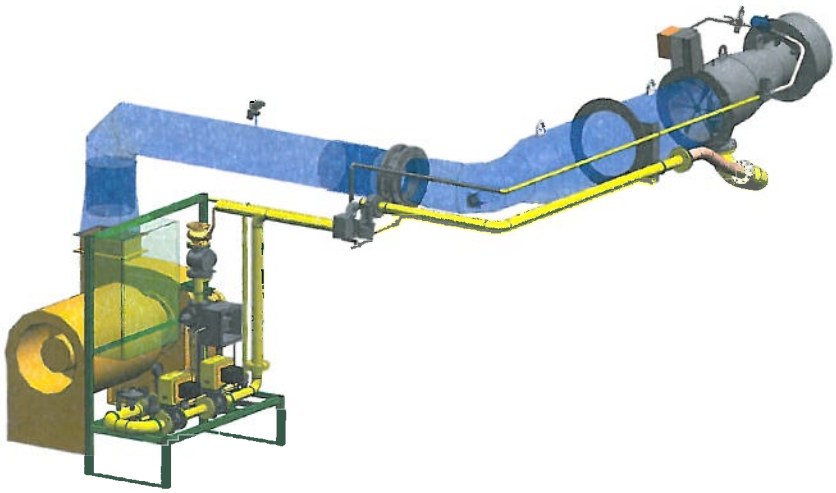
The same burner, when adjusted for on-ratio operation, will give low CO and high thermal efficiency. With flue gas recirculation, the emissions and efficiency can be further improved.

Read "Specifications of KINEDIZER® LE burners" for more detailed information on KINEDIZER® LE burners.

Applications

KINEDIZER® LE burners may be applied to a variety of applications for low to ultra-low emissions. The rugged design of the KINEDIZER® LE burner is ideal for oxidizers and incinerators, process heaters, kilns, furnaces, and other high temperature applications.

In low temperature air heating applications (less than 1400°F), a user-supplied discharge sleeve is needed. Contact MAXON for recommended discharge sleeve size and installation instructions.



KINEDIZER® LE burner with pipe train, control panel and combustion air blower

APPENDIX F

EMISSIONS INVENTORY

IDEQ PTC Forms

Facility Wide Potential to Emit Emission Inventory

Table 1. PRE PROJECT POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

* Assumed to be Zero because this is the initial PTC for the facility.

Table 2. POST PROJECT MAXIMUM POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

	Critieria Pollutant Emission Summary												
	NO_2 Emissions		CO Emissions		$PM_{2.5/10}$ Emissions		SO_2 Emissions		VOC Emissions		Lead Emissions		GHG Emissions
Description	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	T/yr
QuadPass Drum Dryer	2.696	11.809	4.529	19.839	0.410	1.795	0.032	0.142	0.297	1.299	2.70E-05	1.18E-04	29,629.95
Air Makeup Unit	0.784	3.435	0.659	2.886	0.060	0.261	0.005	0.021	0.043	0.189	3.92E-06	1.72E-05	
Process Emissions	N/A	N/A	N/A	N/A	3.83	16.80	N/A	N/A	N/A	N/A	N/A	N/A	
Total	3.480	15.244	5.188	22.724	4.304	18.852	0.037	0.162	0.340	1.488	3.09E-05	1.35E-04	29,629.95

NSR Regulated air Pollutants are defined[1] as: Particulate Matter (PM-10, PM-2.5), Carbon Monoxide, Lead, Nitrogen Dioxide, Ozone (VOC), Sulfur Dioxide, all pollutants regulated by NSPS (40 CFR 60)(i.e. TRS, fluoride, sulfuric acid mist) & Class I & Class II Ozone Depleting Substances (40 CFR 82)(i.e. CFC, HCFC, Halon, etc.) The IdaPro facility is not a source of any pollutants regualled by NSPS other than NSR regulated air pollutants, nor is the facility a source of Class I or Class II Ozone Depleting Substances

** See spreadsheets prepared by JBR (included in Appendix F of the permit application for further information regarding emission factors and calculation assumptions.

IDEQ PTC Forms

Facility Wide Potential to Emit Emission Inventory

Table 3. UNCONTROLLED POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

	Critieria Pollutant Emission Summary												
	NOx Emissions		CO Emissions		PM-10 Emissions		SOx Emissions		VOC Emissions		Lead Emissions		GHG Emissions
Description	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	T/yr
QuadPass Drum Dryer	2.696	11.809	4.529	19.839	0.410	1.795	0.032	0.142	0.297	1.299	2.70E-05	1.18E-04	29,629.95
Air Makeup Unit	0.784	3.435	0.659	2.886	0.060	0.261	0.005	0.021	0.043	0.189	3.92E-06	1.72E-05	
Process Emissions	N/A	N/A	N/A	N/A	3.835	16.796	N/A	N/A	N/A	N/A	N/A	N/A	
Total	3.480	15.244	5.188	22.724	4.304	18.852	0.037	0.162	0.340	1.488	3.09E-05	1.35E-04	29,629.95

** See spreadsheets prepared by JBR (included in Appendix E of the permit application for further information regarding emission factors and calculation assumptions.

Uncontrolled and PTE are assumed identical because all units are operating 8,760 hr/yr.

IDEQ PTC Forms

Toxic Air Pollutant Emissions Inventory

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

NON-CARCINOGENS							
Pollutant	CAS #	TAP Emissions (lb/hr)	Pre-Project TAP Emissions (lb/hr)	Difference (lb/hr)	Screening Level (lb/hr)	Modeling? (Y/N)	TAP Emissions (tpy)
Hexane	110-54-3	1.11E-01	0.00E+00	1.11E-01	12.00	No	4.87E-01
Naphthalene	91-20-3	3.77E-05	0.00E+00	3.77E-05	3.33	No	1.65E-04
Pentane	109-66-0	1.61E-01	0.00E+00	1.61E-01	118.00	No	7.03E-01
Toluene	108-88-3	2.10E-04	0.00E+00	2.10E-04	25.00	No	9.20E-04
Barium	7440-39-3	2.72E-04	0.00E+00	2.72E-04	0.03	No	1.19E-03
Chromium	7440-47-3	8.65E-05	0.00E+00	8.65E-05	0.03	No	3.79E-04
Cobalt	7440-48-4	5.19E-06	0.00E+00	5.19E-06	3.30E-03	No	2.27E-05
Copper	7440-50-8	5.25E-05	0.00E+00	5.25E-05	0.07	No	2.30E-04
Manganese	7439-96-5	2.35E-05	0.00E+00	2.35E-05	0.33	No	1.03E-04
Molybdenum	7439-98-7	6.79E-05	0.00E+00	6.79E-05	0.33	No	2.98E-04
Selenium	7782-49-2	1.48E-06	0.00E+00	1.48E-06	1.30E-02	No	6.49E-06
Vanadium	7440-62-2	1.42E-04	0.00E+00	1.42E-04	3.00E-03	No	6.22E-04
Zinc	7440-66-6	1.79E-03	0.00E+00	1.79E-03	0.67	No	7.85E-03

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

CARCINOGENS							
Pollutant	CAS #	TAP Emissions (lb/hr)	Pre-Project TAP Emissions (lb/hr)	Difference (lb/hr)	Screening Level (lb/hr)	Modeling? (Y/N)	TAP Emissions (tpy)
3-Methylcholanthrene	56-49-5	1.11E-07	0.00E+00	1.11E-07	2.50E-06	No	4.87E-07
Benzene	71-43-2	1.30E-04	0.00E+00	1.30E-04	8.00E-04	No	5.68E-04
Formaldehyde	50-00-0	4.63E-03	0.00E+00	4.63E-03	5.10E-04	Yes	2.03E-02
Naphthalene	91-20-3	3.77E-05	0.00E+00	3.77E-05	9.10E-05	No	1.65E-04
Arsenic	7440-38-2	1.24E-05	0.00E+00	1.24E-05	1.50E-06	Yes	5.41E-05
Beryllium	7440-41-7	7.41E-07	0.00E+00	7.41E-07	2.80E-05	No	3.25E-06
Cadmium	7440-43-9	6.79E-05	0.00E+00	6.79E-05	3.70E-06	Yes	2.98E-04
Nickel	7440-02-0	1.30E-04	0.00E+00	1.30E-04	2.70E-05	Yes	5.68E-04
POM (7-PAH)		1.14E-05	0.00E+00	1.14E-05	2.00E-06	Yes	4.99E-05

** See spreadsheets prepared by JBR (included in Appendix F of the permit application for further information regarding emission factors and calculation assumptions.

IDEQ PTC Forms
Facility Wide Hazardous Air Pollutant Potential to Emit

HAP MAXIMUM POTENTIAL TO EMIT EMISSIONS SUMMARY

HAP Pollutants	PTE (T/yr)
Benzene	5.68E-04
Formaldehyde	2.03E-02
Hexane*	4.87E-01
Naphthalene	1.65E-04
Toluene	9.20E-04
Cobalt	2.27E-05
Manganese	1.03E-04
Mercury	7.03E-05
Nickel	5.68E-04
Selenium	6.49E-06
Arsenic	5.41E-05
Beryllium	3.25E-06
Cadmium	2.98E-04
Chromium	3.79E-04
Total PAH	3.21E-05
Total	0.51

* Maximum Individual HAP

** See spreadsheets prepared by JBR (included in Appendix E of the permit application for

IdaPro
Initial Permit to Construct - August 2012
Emissions Inventory

Combustion Criteria Pollutant Emissions

Source	MMBtu/hr	Operational Hours/day[1]	Operational Hours/yr[1]	Emission Factors (lb/MMscf)					
				$PM_{2.5}/PM_{10}$[2]	NOx[3]	SO_2[2]	CO[3]	VOC[2]	Pb[2]
Drum Dryer	55	24	8760	7.6	50	0.6	84	5.5	0.0005
Air Makeup Unit	8	24	8760	7.6	100	0.6	84	5.5	0.0005

1. The hours are based on continual operations.
2. Emission factor Reference for $PM_{2.5}/PM_{10}$, SO_2, VOC & Pb: AP-42 Section 1.4, Natural Gas Combustion - Table 2: Total Particulate includes both filterable & condensible, SO_2 assume 100% conversion
3. Emission factor Reference for NO_x and CO: AP-42 Section 1.4, Natural Gas Combustion - Table 1: Small Boiler < 100 MMBtu (uncontrolled) for AMU, low-Nox burner for dryer

Combustion Source	Throughput (MMscf/hr)[1]	Emission Rates											
		$PM_{10}/PM_{2.5}$		NOx		SO_2		CO		VOC		Pb	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Drum Dryer	5.39E-02	0.410	1.79	2.696	11.81	0.032	1.42E-01	4.529	19.84	0.297	1.30	2.70E-05	1.18E-04
Air Makeup Unit	7.84E-03	0.060	0.26	0.784	3.44	0.005	2.06E-02	0.659	2.89	0.043	0.19	3.92E-06	1.72E-05
	Total	***0.47***	***2.06***	***3.48***	***15.24***	***0.04***	***0.16***	***5.19***	***22.72***	***0.34***	***1.49***	***3.09E-05***	***1.35E-04***

1. The throughput of each unit was determined by converting the heat rating from MMBtu/hr to MMscf/hr by dividing by a heating value of 1,020 btu/scf.

Greenhouse Emissions

Source	MMscf/yr[1]	Emission Factors (lb/MMscf)[2]			GW Potentials[3]			CO2e Totals (metric tpy)[4]		
		CO_2	N_2O	CH_4	CO_2	N_2O	CH_4	CO_2	N_2O	CH_4
Drum Dryer	472	120,000	2.2	2.3	1	310	21	25,710.95	146.12	10.35
Air Makeup Unit	69	120,000	2.2	2.3	1	310	21	3,739.77	21.25	1.51
								29,450.72	167.38	11.85
									Total	29,629.95

1. Fuel usage rate is based on the hourly rate and the operating hours of each unit.
2. Emission factor reference all pollutants is AP-42 Section 1.4, Natural gas Combustion - Table 2.
3. The Global Warming Potentials are derived from 40 CFR Part 98, Subpart A, Table A-1
4. The carbon dioxide equivalent is provided in metric tons whereby 2,204.6 pounds equal a ton.

IdaPro
Initial Permit to Construct - August 2012
Emissions Inventory

Combustion HAPs

Combustion Source	Emission Factors (lb/MMscf)[1]							
	Benzene	Formaldehyde	Hexane	Naphthalene	Toluene	Arsenic	Beryllium	PAH[2]
Drum Dryer	2.10E-03	7.50E-02	1.8	6.10E-04	3.40E-03	2.00E-04	1.20E-05	N/A
Air Makeup Unit	2.10E-03	7.50E-02	1.8	6.10E-04	3.40E-03	2.00E-04	1.20E-05	N/A
	Cadmium	Chromium	Cobalt	Manganese	Mercury	Nickel	Selenium	
	1.10E-03	1.40E-03	8.40E-05	3.80E-04	2.60E-04	2.10E-03	2.40E-05	
	1.10E-03	1.40E-03	8.40E-05	3.80E-04	2.60E-04	2.10E-03	2.40E-05	

1. Emission Factor Reference AP-42, Section 1.4, Table 3. All HAPs are based on EPA Section 112(b) of CAA
2. PAH (polycyclic aromatic hyrdocarbons) is a subset of Polycyclic organic matter (POM) which is a HAP.
There is no specific emission factor for the total. See table below for associated emissions.

Combustion Source	Throughput (MMscf/hr)[1]	Emission Rates									
		Benzene		Formaldehyde		Hexane		Naphthalene		Toluene	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Drum Dryer	5.39E-02	1.13E-04	4.96E-04	4.04E-03	1.77E-02	9.71E-02	4.25E-01	3.29E-05	1.44E-04	1.83E-04	8.03E-04
Air Makeup Unit	7.84E-03	1.65E-05	7.21E-05	5.88E-04	2.58E-03	1.41E-02	6.18E-02	4.78E-06	2.10E-05	2.67E-05	1.17E-04
Total		***1.30E-04***	***5.68E-04***	***4.63E-03***	***2.03E-02***	***1.11E-01***	***4.87E-01***	***3.77E-05***	***1.65E-04***	***2.10E-04***	***9.20E-04***
		Cobalt		Manganese		Mercury		Nickel		Selenium	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
		4.53E-06	1.98E-05	2.05E-05	8.97E-05	1.40E-05	6.14E-05	1.13E-04	4.96E-04	1.29E-06	5.67E-06
		6.59E-07	2.89E-06	2.98E-06	1.31E-05	2.04E-06	8.93E-06	1.65E-05	7.21E-05	1.88E-07	8.24E-07
		5.19E-06	**2.27E-05**	**2.35E-05**	**1.03E-04**	**1.61E-05**	**7.03E-05**	**1.30E-04**	**5.68E-04**	**1.48E-06**	**6.49E-06**
		Arsenic		Beryllium		Cadmium		Chromium		PAH[1]	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
		1.08E-05	4.72E-05	6.47E-07	2.83E-06	5.93E-05	2.60E-04	7.55E-05	3.31E-04	3.67E-06	1.61E-05
		1.57E-06	6.87E-06	9.41E-08	4.12E-07	8.63E-06	3.78E-05	1.10E-05	4.81E-05	3.67E-06	1.61E-05
		1.24E-05	***5.41E-05***	***7.41E-07***	***3.25E-06***	***6.79E-05***	***2.98E-04***	***8.65E-05***	***3.79E-04***	**7.34E-06**	**3.21E-05**
										Total HAP (tpy)	**0.51**

1. PAH is includes all of the following pollutants: 2-Methylnaphthalene, 3-Methylchloranthrene, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluorathene, Chrysene, Dibenzo(a,h)anthracene, Benzo(g,h,i) perylene, fluoranthene, fluorene, Indeno(1,2,3-cd)pyrene, Phenanthrene and Pyrene. Note that naphthalene was not included as it accounted for on its own.

IdaPro
Initial Permit to Construct - August 2012
Emissions Inventory

Combustion TAPS

CAS No.	Pollutant[2]	585/586	EF (lb/MMscf)	24-hr or Annual Avg (lb/hr)[3]	EL (lb/hr)	Exceeds (Y/N)
56-49-5	3-Methylcholanthrene	586	1.80E-06	1.11E-07	2.50E-06	No
71-43-2	Benzene	586	2.10E-03	1.30E-04	8.00E-04	No
50-00-0	Formaldehyde	586	7.50E-02	4.63E-03	5.10E-04	Yes
110-54-3	Hexane	585	1.80E+00	1.11E-01	1.20E+01	No
91-20-3	Naphthalene	585	6.10E-04	3.77E-05	3.33E+00	No
91-20-3	Naphthalene	586	6.10E-04	3.77E-05	9.10E-05	No
109-66-0	Pentane	585	2.60E+00	1.61E-01	1.18E+02	No
108-88-3	Toluene	585	3.40E-03	2.10E-04	2.50E+01	No
	POM (7-PAH)[1]	586	N/A	1.14E-05	2.00E-06	Yes
7440-38-2	Arsenic	586	2.00E-04	1.24E-05	1.50E-06	Yes
7440-39-3	Barium	585	4.40E-03	2.72E-04	3.30E-02	No
7440-41-7	Beryllium	586	1.20E-05	7.41E-07	2.80E-05	No
7440-43-9	Cadmium	586	1.10E-03	6.79E-05	3.70E-06	Yes
7440-47-3	Chromium	585	1.40E-03	8.65E-05	3.30E-02	No
7440-48-4	Cobalt	585	8.40E-05	5.19E-06	3.30E-03	No
7440-50-8	Copper	585	8.50E-04	5.25E-05	6.70E-02	No
7439-96-5	Manganese	585	3.80E-04	2.35E-05	3.33E-01	No
7439-98-7	Molybdenum	585	1.10E-03	6.79E-05	3.33E-01	No
7440-02-0	Nickel	586	2.10E-03	1.30E-04	2.70E-05	Yes
7782-49-2	Selenium	585	2.40E-05	1.48E-06	1.30E-02	No
7440-62-2	Vanadium	585	2.30E-03	1.42E-04	3.00E-03	No
7440-66-6	Zinc	585	2.90E-02	1.79E-03	6.67E-01	No

POM(7-PAH)	EF (lb/MMscf)	Annual Avg (lb/hr)
Benzo(a)	1.80E-06	1.11E-07
Benzo(b)	1.80E-06	1.11E-07
Benzo(k)	1.80E-06	1.11E-07
Dibenzo(a,h)	1.20E-06	7.41E-08
Chrysene	1.80E-06	1.11E-07
Indeno	1.80E-06	1.11E-07
Benzo(a)pyrene	1.20E-06	7.41E-08
	Total	**1.14E-05**

1. Polycyclic Organic matter (POM) is considered an aggregated total of the following pollutants: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3-cd)pyrene and benzo(a)pyrene
2. Note that mercury is no longer a TAP and is now regulated under specfic rules
3. These rates are equivalent to the appropriate averaging periods (24-hr for 585 and annual for 586) as we are assuming continuous operation.

IdaPro
Initial Permit to Construct - August 2012
Emissions Inventory

Potato Processing Pollutant Emissions

Source	Throughput lb/hr	Throughput T/hr	Emission Factor (lb/T)[1]	Particulate[2] lb/hr
Drum Dryer	12,174	6.087	0.63	3.83

1. The emission factor of 0.63 lb/T is based on a Performance test conducted on 6/21/11 by Gem State Processing
2. $PM_{2.5}$ and PM_{10} are assumed to be the same emission rate

APPENDIX G

MODELING ANALYSIS

Idaho Dehydration and Processing, LLC

dba IdaPro, LLC

Air Quality Modeling Report

IdaPro - Rupert Facility

Prepared for:
IdaPro, LLC
1305 Albion Ave
Burley, ID 83318
Contact: Harry Budke
208.650.7414

Prepared by:
JBR Environmental Consultants, Inc.
7669 W. Riverside Drive, Ste 101
Boise, ID 83714
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October 2012

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1.0 PURPOSE

This air quality modeling report documents the methodology used to prepare an air quality analysis in support of an Idaho Department of Environmental Quality (IDEQ) 15-Day Pre-Permit Construction (15-Day) application and Permit to Construct (PTC) application for potato processing operations at the Idaho Dehydration and Processing, LLC (IdaPro) facility located in Rupert, ID (Appendix A of application). This report seeks to fully document and report the methods and techniques used to perform the modeling in support of IdaPro's 15-Day and PTC applications in order to gain concurrence from IDEQ staff. All DEQ modeling information application forms are included in Appendix A. In addition, electronic files of the Excel spreadsheets used to calculate facility emissions are included within the permit application.

1.1 PROCESS DESCRIPTION

IdaPro is a potato processing company that processes peels and other potato waste products via dehydration. The Rupert facility will produce dehydrated potato flakes and other dehydrated potato products. Products are dried to 8% moisture and are broken up and ground to customer specifications, packaged or stored, and then sold. IdaPro uses a QuadPass drum dryer with four zones. Wet solids enter at the largest diameter of the drum dryer, away from hot gases. Hot air enters the feed zone at the centerline while the wet solids enter away from the center, landing directly on the flighting. As the drum rotates, the flights lift the wet feed upward. With further rotation, the particles are gradually released to fall downward through the hot gases in a thin curtain.

The repeating cycle of "lift and fall" through the hot gas occurs in an environment of low air velocity, which assures enough residence time in the feed zone. Most of the evaporation takes place in this zone, quickly reducing gas temperatures.

Zones 2 through 4 comprise the final drying section of the QuadPass drum. This section consists of two annular passageways and one final pass through the drum's center tube. Each successive zone has a smaller cross sectional area, so the gas velocities increase as the product travels through the drum. In Zones 2 through 4, the fines tend to separate from the larger particles and exit the drum quickly. This prevents overdrying and charring and reduces VOC emissions. The smaller, faster-drying particles are picked up and are removed. Larger, wetter particles stay in the drum longer and continue to give up moisture as they are pushed along by the airstream. Each particle exits the dryer system at the desired moisture content.

The process also includes an air makeup natural gas unit. This is used for heating and cooling the air for employee comfort. A process flow diagram is contained in Appendix D of the associated application.

2.0 MODEL DESCRIPTION / JUSTIFICATION

AERMOD is one of the most frequently used regulatory dispersion models in the United States since it replaced ISCST3. Based on EPA guidance AERMOD is the most appropriate of the EPA-approved models given the site's physical characteristics and the facility emission sources. AERMOD will be applied as recommended in EPA's Guideline on Air Quality Models and consistent with guidance in IDEQ's Dispersion Modeling Guidelines. The BPIP Prime building downwash algorithm was applied for the facility, and all adjacent buildings and co-contributing source buildings.

Recommended regulatory non-default options were employed in order to model 1-hr NO2 using Level III, Plume Molar Ratio Method (PVMRM). Terrain data were processed consistent with the approved model protocol and EPA guidance for AERMAP. The United States Geological Survey (USGS) National Viewer was used to obtain appropriate National Elevation Dataset (NED) data to establish proper elevations. Meteorological data recommended for this analysis has been provided by IDEQ from the Burley airport from 2006-2010. IDEQ requires modeling of criteria pollutants if emissions from the proposed source exceed the modeling thresholds set forth the IDEQ Dispersion Modeling Guidelines. The criteria pollutants which exceed the modeling threshold at the IdaPro facility are $PM_{2.5}$, PM_{10} and NO_x. Two co-contributing facilities, Idaho Fresh-Pak and a Rupert/Glenn's Ferry cogeneration facility were also included in the final ambient air analysis.

In addition to the criteria pollutants, the following TAPs exceed the screening emission levels (ELs) in IDAPA 58.01.01.586: Arsenic, Cadmium, Formaldehyde, Nickel and polycyclic organic matter (POM) or 7-PAH.

In general, the AERMOD model application uses model source data consistent with the permit emission inventory. The model receptor network and model domain meet all EPA and IDEQ recommendations, and ensure a complete dispersion analysis that captures maximum potential impacts. Only direct chemical emissions and transport were considered in this analysis; chemical transformation of emissions was not considered in this analysis.

3.0 EMISSION AND SOURCE DATA

Modeled emissions include all sources of $PM_{2.5}$, PM_{10}, NO_x and the TAPs listed above. Emission rates represent the maximum anticipated operating rates for the averaging period modeled, taking into account the maximum daily hours of operation and throughputs requested in the application for all averaging periods. Idaho Fresh-Pak and the cogeneration facility are both assumed to operate continually.

Table 1 below compares the facility's Potential to Emit (PTE) for all criteria pollutants against IDEQ Modeling Thresholds. Table 2 compares the facility's PTE for those Toxic Air Pollutants (TAPs) that exceed the emissions screening levels in IDAPA 58.01.01.585 and

586 against IDEQ Modeling Thresholds. Emission summaries are documented in more detail in the facility's emission inventory (Appendix E of application).

Table 1 IdaPro Potential Criteria Pollutant Emission vs. IDEQ Modeling Thresholds

Criteria Modeling Check	$PM_{2.5}$	PM_{10}	NO_2	SO_2[2]	CO	Pb[1]
Emission Rates (pound per hour)[1]	4.30	4.30	3.48	0.04	5.19	3.09E-05
Level 1 Modeling Threshold (pound per hour)[1]	0.054	0.22	0.20	0.21	15	14
Level 2 Modeling Threshold (pound per hour)[1]	0.63	2.6	2.4	2.5	175	--
Modeling Required:	YES	YES	YES	NO	NO	NO

1. Lead modeling threshold is in lb/month
2. Note that the SO_2 T/yr Level 1 threshold (1.2) is also not exceeded. See Appendix F of the application for details.

Table 2 IdaPro Potential TAPs Emission vs. IDEQ Modeling Thresholds

Criteria Modeling Check	Arsenic	Cadmium	Formaldehyde	Nickel	POM (7-PAH)
Emission Rates (lb/hr)	1.24E-05	6.79E-05	4.63E-03	1.30E-04	1.14E-05
Screening Emission Level (lb/hr)	1.5E-06	3.7E-06	5.1E-04	2.7E-05	2.00E-06
Modeling Required:	YES	YES	YES	YES	YES

3.1 EMISSION SOURCES

Emissions sources included in the model are listed below:

- Air Makeup Unit Emissions
- QuadPass Drum Dryer Emissions
- Co-contributing Sources
  - Idaho Fresh-Pak
    - Flakers
    - Boilers
  - Cogeneration Facility

IDAPRO FACILITY

Air Makeup Units

One 8.0 MMBtu/hr Air Makeup Unit will be used to provide fresh air into the facility, provide heating for employee comfort, and maintain positive pressure inside the processing areas. The air makeup unit burner will be natural gas fired and will exhaust through the same stack as the QuadPass Drum Dryer. For conservatism, the model will assume that the burner will operate continually throughout the year. However, should it be necessary, operating restrictions will be implemented prior to final submittal.

QuadPass Drum Dryers

IdaPro will operate one (1) 55 MMBtu/hr natural-gas fired drum dryer. Emissions from the drum dryer will be process particulate and natural gas combustion emissions; all of which is exhausted through the fan drum exhausts. Emissions from the drum dryer will exit the same exhaust point as the AMU. Thus, there is only one emission location for the process. A detailed emissions inventory for each emissions source is included in Appendix F of the application.

CO-CONTRIBUTING SOURCES

Idaho Fresh-Pak

Idaho Fresh-Pak operates two boilers, 10 flakers and two baghouses with a common stack. Appendix C of this report includes further details regarding emissions and stack parameters for Idaho Fresh-Pak.

Cogeneration Facility

The Rupert Cogeneration Partners and Glenn's Ferry Cogeneration Partners facility contains a Solar Mars 100 Turbine and contributes the majority of NO_x emissions. Appendix C of this report includes further details regarding emissions and stack parameters for the cogeneration facility.

3.2 SOURCE PARAMETERS

The air makeup unit and drum dryer exhaust stacks and were represented in the model as point sources. The model facility layout including all sources, facility buildings and property boundary is shown in Appendix A of the application. All parameters for the co-contributing sources are established in a DEQ letter found in Appendix C of this report.

4.0 RECEPTOR NETWORK

The facility is located in a light industrial area in Rupert, ID. The property covers approximately 3.94 acres. Consistent with IDEQ guidance, the ambient air boundary used in this analysis will be the property boundary, which also serves as the public access boundary. Idapro will control access to the property through posting of signage and by training facility personnel to patrol and prevent public access. This also includes the city of Rupert easement

that runs along the west portion of the property. IdaPro and the city have an agreement whereby when city workers appear onsite, they are to be accompanied by IdaPro employees. IdaPro has indicated that they will also construct a fence and locked gates to the eastern edge of the property adjacent to the highway.

Receptor density is set to a spacing of 25 meters along the ambient air boundary, 50 meters for the first 100 meters past the boundary, then receptors are set at a density of one per 100 meters out to 500 meters away from the property boundary, 250 meters out to 2,000 meters from the ambient air boundary, and 500 meters out to 5 kilometers past the ambient air boundary. The receptor network ensures that the analysis meets or exceeds EPA receptor network requirements and captures the maximum impact from the facility. Therefore, no supplemental receptor network or expansion of the model domain is included.

5.0 ELEVATION DATA

All source base and receptor elevations were calculated from USGS NED data obtained via the National Map Viewer website using the Bee-Line BEEST preprocessing system.

6.0 METEOROLOGICAL DATA

Preprocessed AERMOD ready meteorological files were provided by Darrin Mehr of IDEQ. The data files cover the years 2006 through 2010 from the Burley Municipal Airport. The data is hourly from the National Weather Service Automated Surface Observing System (ASOS). The data presented by IDEQ is model-ready, and will be used without alteration or processing.

7.0 LAND USE CLASSIFICATION

AERMOD includes rural and urban algorithm options. These options affect the wind speed profile, dispersion rates, and mixing-height formula used in calculating ground-level pollutant concentrations. A protocol was developed by USEPA to classify an area as either rural or urban for dispersion modeling purposes. The classification is based on average heat flux, land use, or population density within a three-km radius from the plant site. Of these techniques, the USEPA has specified that land use is the most definitive criterion (USEPA, 1987). The urban/rural classification scheme based on land use is as follows:

> *The land use within the total area, A_0, circumscribed by a 3-km circle about the source, is classified using the meteorological land use typing scheme proposed by Auer (1978). The classification scheme requires that more than 50% of the area, A0, be from the following land use types in order to be considered urban for dispersion modeling purposes: heavy industrial (I1); light-moderate industrial (I2); commercial*

(C1); single-family compact residential (R2); and multi-family compact residential (R3). Otherwise, the use of rural dispersion coefficients is appropriate.

The IdaPro facility is located in a light industrial area, in Rupert, ID. Although the immediate vicinity of the site is industrial and commercial, site and map reconnaissance showed that the area A_0 within a 3-km circle of the source is below the 50% urban land use criteria necessary for use of urban dispersion coefficients. Rural dispersion coefficients were therefore used in the air quality dispersion modeling.

8.0 BACKGROUND CONCENTRATIONS

$PM_{2.5}$

Idaho DEQ Modeling Coordinator, Kevin Schilling, supplied both annual and 24-hr background concentrations from the city of Twin Falls. The concentrations that will be used are 21.3μg/m^3 and 7.19μg/m^3 for 24-hr and annual averaging periods, respectively.

PM_{10}

A PM_{10} background concentration based on monitoring data collected at a site in Rupert of 76 μg/m^3 was provided by IDEQ for the 24-hour averaging period.

NO_x

A background concentration of 32 μg/m^3 (annual average) for NO_2 was provided by IDEQ and is the default value for small town/suburban areas. Also, hourly background data was supplied by Kevin Schilling on July 31, 2012. These data were obtained via monitors at the Coeur d'Alene airport from October 2006 through September 2011. The modeling protocol approval letter provided hourly ozone from Parma, Idaho. These values were calculated based on mean and one standard deviation. See Appendix B of this report for further details.

TAPS

Background concentrations of TAPS are zero.

The impact limit standards applicable to this modeling analysis are the NAAQS for NO_2, $PM_{2.5}$, PM_{10}, and IDAPA 58.01.01.586 limits for arsenic, cadmium, formaldehyde, polycyclic organic matter (POM) (7-PAH) and nickel. Per IDEQ guidance, background concentrations are not included in TAP modeling. Both 1-hr and annual NO_2 background data was supplied by IDEQ. The annual background concentration of 32 μg/m^3 was obtained via a March 14, 2003 IDEQ memorandum entitled "Background Concentrations for Use in New Source Review Dispersion Modeling". This value is representative of IdaPro as it can be considered Small Town/Suburban as stated in Table 7 in the IDEQ memo. Via a July 31, 2012 email correspondence, Kevin Schilling of IDEQ provided hourly 1-hr NO_2 monitored data from October 2006 through September 2011 at the Coeur d'Alene airport. These data were used as background; the maximum result of which was 50.76 μg/m^3.

9.0 RESULTS

The following sections outline the methods used when analyzing the co-contributing sources, which includes implementation of MAXDCONT and a geographic receptor by receptor analysis for annual $PM_{2.5}$.

9.1 APPLICABLE LIMITS

The air quality impact limits applicable to this analysis are both the National Ambient Air Quality Standards and the Idaho ambient impact limits for Toxic Air Pollutants. Model predicted maximum impacts was the highest first high over the 5 years modeled for annual and 24-hr $PM_{2.5}$, annual NO_2 and all toxic air pollutants. For the 24-hr PM_{10} impacts, the highest sixth high over the 5 years modeled were used; 1-hr NO_2 used the 8^{th} highest high over the 5 years modeled. Model results for TAPs are shown in Table 3 below. These results include only IdaPro sources.

Table 3 Predicted Model Impacts

Pollutant	Averaging Period	Background Concentration (ug/m^3)	Modeled Impact (ug/m^3)	Total Concentration (ug/m^3)	AACC (ug/m^3)
Arsenic	Annual	0	Undetectable Assumed 1.0E-05	1.0E-05	2.3E-04
Cadmium	Annual	0	3.0E-05	3.0E-05	5.6E-04
Formaldehyde	Annual	0	2.0E-05	2.0E-05	7.7E-02
Nickel	Annual	0	5.0E-05	5.0E-05	4.2E-03
POM (7-PAH)	Annual	0	Undetectable Assumed 1.0E-05	1.0E-05	1.4E-02

Table 3 shows that predicted TAPs are below all applicable impact limits.

9.2 CO-CONTRIBUTING SOURCES IMPACT

Particulate emissions and NO_x emissions were included from Idaho Fresh-Pak and Cogeneration Partners. Both facilities are south of IdaPro along Onieda. Stack parameters and emission rates were provided by Cheryl Robinson of IDEQ. These data were established via previous permitting actions, source test data and calculations derived from AP-42. It should be noted that the IDEQ data suggests that condensables ($PM_{2.5}$) makes up 40% of

total PM_{10} for potato flakers. All units are permitted to operate continually. Therefore, the data found in Table 1 of Appendix C of this report assumes 8,760 annual hours.

There is a third facility to the north of IdaPro, Brewster West. The facility was previously determined to be exempt and there was no readily available emissions data. DEQ indicated that the assumed background values should remain unchanged and should account for any contributions from Brewster West.

Analyses were conducted for annual $PM_{2.5}$ and NO_2. Short term analysis of 24-hr $PM_{2.5}$ and 1-hr NO_2 were also performed. Plume Molar Ratio Method (PVMRM), Level III analysis was used for 1-hr NO_2. An in-stack NO_2/NO_x ratio implemented was 0.2. This value is consistent with natural gas combustion. The default equilibrium ratio of 0.9 was used.

Analysis broke units into specific emission groups. This was done to determine the impact each facility has on the overall ambient air concentration. The modeling files contain four groups. The IDAPRO group includes the drum dryer and AMU. FRESHPAK includes all emission rates associated with the Idaho Fresh-Pak #3 facility. The final two groups contain one unit each. RUPCOGEN is the Rupert Partners and GFCOGEN is the Glenns Ferry Partners.

Table 4 shows the total impact after all co-contributing sources were included. As shown below 1-hr NO_2, 24-$PM_{2.5}$ and annual $PM_{2.5}$ exceed the NAAQS, but annual NO_2 and PM_{10} remained below the standard. For those standards that were exceeded, more refined analysis was necessary. This is discussed in detail in the next section of this report.

Table 4 Predicted Model Impacts with Co-contributing Sources

Pollutant	Averaging Period	Background Concentration (ug/m^3)	Modeled Impact (ug/m^3)	Total Concentration (ug/m^3)	NAAQS (ug/m^3)	% of Standard
PM_{10}	24-hour	76	66.02	142.02	150	94.7%
$PM_{2.5}$	24-hour	21.3	42.39	63.69	35	182%
	Annual	7.19	9.30	16.49	15	110%
NO_2	1-hour	50.76	389.11	439.87	188	234%
	Annual	32	52.91	84.91	100	84.9%

While Table 4 illustrates some concern, the majority of the impact that contributed to the exceedances was from Idaho Fresh-Pak rather than IdaPro. For example, Fresh-Pak produced

a maximum concentration of 358.26 $\mu g/m^3$ and IdaPro was only 15.54 $\mu g/m^3$ for 1-hr NO_2. The two cogeneration units combined for 34.67 $\mu g/m^3$ although the emission rate is considerably higher than the NAAQS. This can be attributed to a substantial difference in stack parameters, specifically the exit velocity. The two boilers from Idaho FreshPak had an exit velocity of 2.6 m/s, while the Rupert and Glenns Ferry cogen were 21.1 m/s and 19.6 m/s, respectively. Also, the stack heights of the cogens are 60 ft each and the boilers are only 25.9 ft tall. As a result, the plume height for the cogen units is much higher which allows for better dispersion and fewer impacts due to building downwash.

9.3 REFINED AMBIENT AIR QUALITY ANALYSIS

In order to explicitly establish the contribution of IdaPro for the short term standard exceedances (1-hr NO_2 and 24-hr $PM_{2.5}$) the MAXDCONT or maximum daily concentration was utilized to demonstrate that IdaPro's contribution is below the significance threshold.

MAXDCONT is applicable to 24-hr $PM_{2.5}$ and 1-hr SO_2 standards. Each emission group's contribution can be segregated out at the lowest total concentration that still exceeds the NAAQS at given receptor. An upper bound high (8^{th} in the case of 1-hr NO_2) is established and either a lower bound or a concentration threshold is indicated. The threshold was defined as 187.9, slightly below the NAAQS. Beginning with the 8^{th} high value, each emission group is calculated at each of the 900 receptors through the 190^{th} high.

The 190^{th} high (189.57$\mu g/m^3$) was the lowest total concentration that exceeded the threshold. However, Idaho Fresh-Pak contributed 155.94$\mu g/m^3$. The background was 33.61$\mu g/m^3$. The significance threshold according to IDEQ modeling guidance is 7.5$\mu g/m^3$. For all rankings between 8^{th}-190^{th}, the IdaPro contribution was below the significance threshold. In fact the maximum contribution was only 1.2664$\mu g/m^3$. Therefore, because IdaPro is below the significance threshold, compliance with the 1-hr NO_2 standard is demonstrated.

Similarly, MAXDCONT was used to demonstrate compliance with the 24-hr $PM_{2.5}$ standard. The upper bound was the 1^{st} and the threshold was set at 13.6 $\mu g/m^3$. This value was determined by subtracting the background of 21.3 $\mu g/m^3$ from the NAAQS, 35$\mu g/m^3$. It was then adjusted down by 0.1 for some conservatism. The 97^{th} high (13.603$\mu g/m^3$) was the lowest total concentration that exceeded the threshold. However, Idaho Fresh-Pak contributed 13.58$\mu g/m^3$. The maximum IdaPro contribution from the 1^{st} high to the 97^{th} was only 1.1467$\mu g/m^3$. The significance threshold according to IDEQ modeling guidance is 1.2$\mu g/m^3$. Table 5 illustrates these results.

Table 5 Predicted Model Impacts with Co-contributing Sources

Pollutant	Averaging Period	Total Concentration ($\mu g/m^3$)	IdaPro Contribution ($\mu g/m^3$)	Significance Threshold ($\mu g/m^3$)	% of Threshold
$PM_{2.5}$	24-hour	13.603	1.1467	1.2	95.6%
NO_2	1-hour	189.57	1.2664	7.5	16.9%

A geographic analysis was conducted to demonstrate that the annual $PM_{2.5}$ contribution of IdaPro is also below the significance threshold. Annual results showed that there were only three receptors surrounding Idaho Fresh-Pak that exceeded the NAAQS. However, none of those receptors also exceeded the significance threshold due to IdaPro's contribution alone. All receptors that exceeded the threshold solely due to IdaPro are to the northwest of the facility. Because there are no receptors that meet both criteria, IdaPro is below the significance threshold and demonstrates compliance with the annual $PM_{2.5}$ standard.

10.0 ELECTRONIC COPIES OF MODELING FILES

Electronic copies of all input, output, and support modeling files necessary to duplicate the model results accompany this submittal to IDEQ. Note that there are five separate BEEST files which include a separate file for MAXDCONT 1-hr NO_2, MAXDCONT 24-hr $PM_{2.5}$ (annual is also included in this file), annual NO_2, 24-hr PM_{10} and all TAPs.

APPENDIX A – DEQ Modeling Information Forms

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

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

Company Name:	Idaho Dehydration and Processing, LLC
Facility Name:	Rupert Facility
Facility ID No.:	
Brief Project Description:	Potato Processing facility

SUMMARY OF AIR IMPACT ANALYSIS RESULTS - CRITERIA POLLUTANTS

		1.		2.	3.	4.		5.
Criteria Pollutants	**Averaging Period**	**Significant Impact Analysis Results (µg/m3)[1]**	**Significant Contribution Level (µg/m3)**	**Full Impact Analysis Results (µg/m3)[1]**	**Background Concentration (µg/m3)**	**Total Ambient Impact (µg/m3)**	**NAAQS (µg/m3)**	**Percent of NAAQS**
$PM_{2.5}$	24-hour	0.01	1.2	42.39	21.30	63.69	35	182%
	Annual	N/A	0.3	9.30	7.19	16.49	15	110%
PM_{10}	24-hour	N/A	5	66.02	76.00	142.02	150	95%
SO_2	1-hr	N/A	7.9	N/A	N/A	N/A	196	N/A
	24-hr	N/A	5	N/A	N/A	N/A	365	N/A
	Annual	N/A	1	N/A	N/A	N/A	80	N/A
NO_2	1-hour	0.01	7.5	389.11	50.76	439.87	188	234%
	Annual	N/A	1	52.91	32.00	84.91	100	85%
CO	1-hr	N/A	2000	N/A	N/A	N/A	40000	N/A
	8-hr	N/A	500	N/A	N/A	N/A	10000	N/A

1. The significance value represented for 24-hr PM2.5, 1-hr NO2 are from MAXDCONT and geographic analysis. The full impact analysis includes co-contributing sources.

Instructions for Form MI1

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

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

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

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

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

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

PERMIT TO CONSTRUCT APPLICATION

Revision 3
4/5/2007

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

Company Name:	Idaho Dehydration and Processing, LLC
Facility Name:	Rupert Facility
Facility ID No.:	
Brief Project Description:	Potato Processing facility

BUILDING AND STRUCTURE INFORMATION

1. Building ID Number	2. Length (ft)	3. Width (ft)	4. Base Elevation (m)	5. Building Height (m)	6. Number of Tiers	7. Description/Comments
IdaPro	300.00	100.00	1267.37	8.53	1	Facility site
SiloBins	120.00	28.00	1267.36	33.22	2	Storage bins along the southen border of property boundary
Lesschwab	300.00	100.00	1267.13	8.53	1	nearby commercial location to south of facility
Cellar2			1267.34	7.62	1	
Main2			1267.37	7.01	1	
Mains2			1267.37	9.14	1	
Silos2			1267.36	12.19	1	
Steam2			1267.37	6.10	1	
Coal2			1267.36	3.66	1	
Park2			1267.37	3.66	1	
Arena2			1267.17	3.66	1	
Cogen2			1267.26	9.14	1	
Celm2			1267.17	3.66	1	

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

PERMIT TO CONSTRUCT APPLICATION
Revision 3
3/27/2007

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

Company Name:	Idaho Dehydration and Processing, LLC
Facility Name:	Rupert Facility
Facility ID No.:	
Brief Project Description:	Potato Processing Plant

POINT SOURCE STACK PARAMETERS

1.	2.	3a.	3b.	4.	5.	6.	7.	8.	9.	10.
Emissions units	**Stack ID**	**UTM Easting (m)**	**UTM Northing (m)**	**Base Elevation (m)**	**Stack Height (ft)**	**Modeled Diameter (ft)**	**Stack Exit Temperature (F)**	**Stack Exit Flowrate (acfm)**	**Stack Exit Velocity (m/s)**	**Stack orientation (e.g., horizontal, rain cap)**
Point Source(s)										
Dryer/AMU	Dryer/AMU	280,037.90	4,720,849.20	1,267.37	66.00	3.00	185.00	80,800.00	58.07	Vertical
Boiler East	BOILE	279,782.30	4,720,638.00	1,267.37	25.92	2.66	409.73	2,838.87	2.60	Vertical
Boiler West	BOILW	279,775.60	4,720,644.00	1,267.39	25.92	2.66	409.73	2,838.87	2.60	Vertical
Flaker1 West	FLAKE1W	279,737.90	4,720,567.00	1,267.37	35.11	3.77	130.73	37,415.25	17.00	Vertical
Flaker1 East	FLAKE1E	279,735.30	4,720,570.00	1,267.37	35.11	3.77	130.73	37,415.25	17.00	Vertical
Flaker2 West	FLAKE2W	279,742.80	4,720,572.00	1,267.37	35.11	3.77	130.73	41,398.88	18.81	Vertical
Flaker2 East	FLAKE2E	279,739.60	4,720,574.00	1,267.37	35.11	3.77	130.73	41,398.88	18.81	Vertical
Flaker3 Central	FLAKE3C	279,748.20	4,720,575.00	1,267.37	35.11	4.07	130.73	10,746.82	4.20	Vertical
Flaker3 East	FLAKE3E	279,753.50	4,720,570.00	1,267.37	35.11	4.07	130.73	10,746.82	4.20	Vertical
Flaker3 West	FLAKE3W	279,751.00	4,720,573.00	1,267.37	35.11	4.07	130.73	10,746.82	4.20	Vertical
Flaker4 Central	FLAKE4C	279,753.40	4,720,583.00	1,267.37	35.11	4.07	130.73	10,746.82	4.20	Vertical
Flaker4 East	FLAKE4E	279,756.00	4,720,580.00	1,267.37	35.11	4.07	130.73	10,746.82	4.20	Vertical
Flaker4 West	FLAKE4W	279,759.50	4,720,577.00	1,267.37	35.11	4.07	130.73	10,746.82	4.20	Vertical
Baghouse	BHMAC1	279,755.30	4,720,588.00	1,267.37	12.14	1.90	70.07	10,021.00	17.90	Vertical
Rupert Cogen	RUPCOGN	279,800.40	4,720,614.00	1,267.36	60.00	6.00	307.13	117,605.65	21.13	Vertical
Glenns Ferry Cogen	GFCOGN	279,804.70	4,720,611.00	1,267.32	60.00	60.00	316.99	109,089.95	19.60	Vertical
(insert more rows as needed)										

Instructions for Form MI2

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

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

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

APPENDIX B – DEQ Modeling Protocol Approval

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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

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

August 24, 2012

VIA EMAIL

Mr. Harry Budke
IdaPro, LLC
1305 Albion Ave
Burley, Idaho 83318

RE: Facility ID No. TBD, IdaPro, LLC, Rupert, Potato Waste Dehydration Facility
Modeling Protocol Approval for Initial PTC, 15-day Pre-Permit Construction Project

Dear Mr. McCulloch:

On August 3, 2012, the Department of Environmental Quality (DEQ) received a dispersion modeling protocol developed on your behalf by JBR Environmental's Boise office. Modeling is proposed to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) for emissions of criteria pollutants and state-regulated Toxic Air Pollutants (TAPs) from a new dehydration facility processing potato peels and other waste potato products.

The modeling protocol has been reviewed and DEQ has the following comments:

Comment 1. Met Data. At the time this protocol was received, the best readily-available AERMOD-ready meteorological data set for this project is the 2006-2010 data set described in the protocol. These data were based on National Weather Service surface data collected at the Burley Municipal Airport supplemented with 1-minute ASOS wind data collected at the Burley airport, with upper air data collected at the Boise airport. DEQ (Darrin Mehr) provided an electronic copy of this data set to JBR on July 19, 2012.

Comment 2. Background Concentrations and Co-Contributing Sources. DEQ (Kevin Schilling) provided the following background values for this project to JBR on July 31, 2012:

NO_2: Hourly values based on the 99th percentile of 1-hour monitored values from the Coeur d'Alene airport for the period from October 2006 through September 2011.

$PM_{2.5}$: 21.3 $\mu g/m^3$ (24-hr) and 7.19 $\mu g/m^3$ (annual), based on monitoring data collected near Twin Falls.

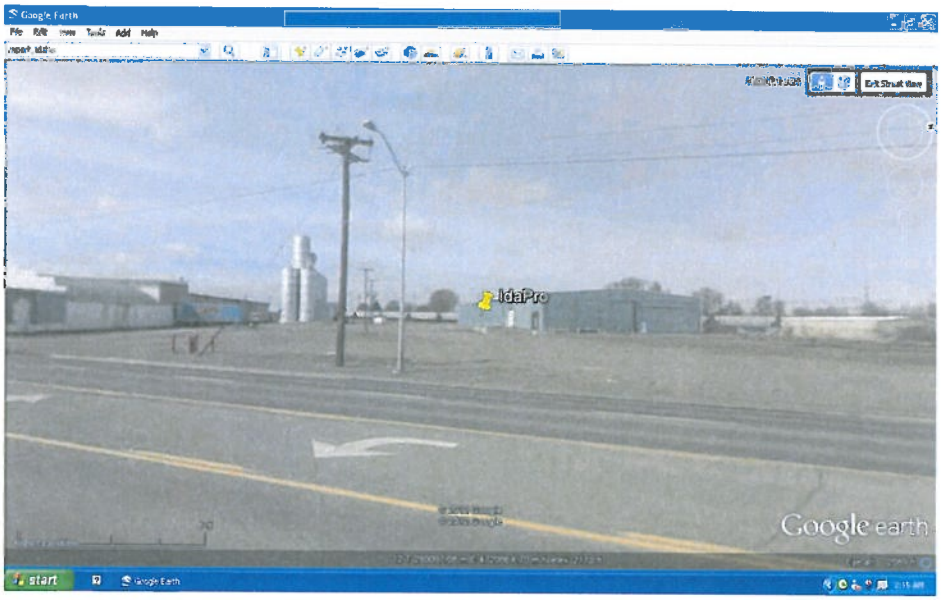
Since then, DEQ has identified at least two facilities that should be included as co-contributing sources for full impact analyses: Idaho Fresh Pak Plant #3, located at 823 S. Oneida and Rupert Cogeneration Partners, located at 811 S. Oneida. The main emission points for each of these facilities are roughly 300 meters from IdaPro's main building. DEQ will provide modeling parameters and emission rates for these two facilities in a separate transmittal. Based on a cursory review of DEQ's files, it is unclear whether DEQ has any information regarding emissions from the Brewster West cheese manufacturing facility (formerly Kraft's) located just to the north of IdaPro's proposed facility.

Comment 3. Level III NO_2 Modeling. Based on discussions with JBR's Eric Clark about preliminary modeling results for NO_2 emissions, it appears that a Level III analysis will be needed to demonstrate compliance for the 1-hour NO_2 NAAQS. The use of PVMRM or OLM is approved for this project. Ozone data collected near Parma, Idaho from June 27 through October 12, 2007 were sorted by hour and the mean and standard deviation calculated for

each hour across all days. A background ozone concentration equal to the mean plus one standard deviation was generated for each hour in a 24-hour day is shown in the table below.

Hour	1	2	3	4	5	6	7	8	9	10	11	12
O_3 (ppb)	27.9	28.5	26.8	24.1	22.1	21.4	19.7	22.8	30.5	37.8	43.8	48.8
Hour	13	14	15	16	17	18	19	20	21	22	23	24
O_3 (ppb)	53.0	55.0	57.1	57.6	57.1	55.1	49.0	39.0	30.9	28.5	29.4	29.6

Comment 4. Based on a review of photos from Google Earth, there appear to be no markings or means to prevent access to the paved areas around the facility. Unless better controls are proposed to prevent public access, all areas outside of buildings must be considered as ambient air. Provide a detailed plot plan with the application, clearly describing the ambient air boundary. If the ambient air boundary is not defined by a fence, describe how members of the public will be excluded from the area.



Comment 5. The application should provide documentation and justification for all stack parameters used in the modeling analyses, clearly showing how stack gas temperatures and flow rates were estimated. In most instances, applicants should use typical parameters, not maximum temperatures and flow rates. Please include the documentation provided by equipment vendors if this is used as the basis for exhaust parameters. Provide all assumptions used to develop modeling parameters for fugitive emission sources, if any.

Comment 6. The protocol indicates that regulatory default settings will be used in AERMOD. If capped or horizontal exhaust points are included in the model, use of the non-regulatory options in AERMOD are approved for this project.

Comment 7. Emission rates for criteria pollutants were compared to pound per hour modeling thresholds in Table 1 of the protocol. Please include calculations showing whether annual emissions of $PM_{2.5}$, NO_2, and SO_2 exceed ton-per-year modeling thresholds.

Comment 8. Pound-per-hour emission values used in the TAPs dispersion modeling should be double-checked to ensure that they reflect the appropriate averaging period, e.g., noncarcinogenic toxic air pollutant (TAP) emissions should reflect a 24-hour average, and carcinogenic TAP emissions should reflect an annual average.

Although listed as a noncarcinogen in the Rules, DEQ has determined that naphthalene is a possible/probable carcinogen. Compliance for naphthalene emissions should be based on the EL or AACC listed in Section 586 for PAH. Please note that the PAH EL and AACC should be applied to each PAH, not total PAHs. To simplify the demonstration, however, if total PAH emissions are below the EL, that is sufficient to show compliance.

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

DEQ's modeling staff considers the submitted dispersion modeling protocol, with resolution of the additional items noted above, to be approved. It should be noted, however, that the approval of this modeling protocol is not meant to imply approval of a completed dispersion modeling analysis. Please refer to the State of Idaho Air Quality Modeling Guideline, which is available on the Internet at http://www.deq.idaho.gov/media/355037-modeling-guideline.pdf, for further guidance.

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

Sincerely,

Cheryl Robinson

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

ec: Harry Budke, IdaPro, LLC, hbudke@idapro.biz
Scott McClure, P.E., McClure Engineering, smcclure@mcclure-engineering.com
Eric Clark, EIT, JBR Environmental, eclark@jbrenv.com
Kevin Schilling, NSR Modeling Coordinator, kevin.schilling@deq.idaho.gov
Bill Rogers, NSR Permit Coordinator, william.rogers@deq.idaho.gov

APPENDIX C – DEQ Co-contributing Source Information

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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

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

October 1, 2012

VIA EMAIL

Mr. Harry Budke
IdaPro, LLC
1305 Albion Ave
Burley, Idaho 83318

RE: Facility ID No. TBD, IdaPro, LLC, Rupert, Potato Waste Dehydration Facility
Modeling Protocol Approval for Initial PTC, Addendum #1, Pre-Permit Construction Project

Dear Mr. Budke:

On August 24, 2012, the Department of Environmental Quality (DEQ) issued a modeling protocol approval for this project. In Comment 2 of that approval, DEQ noted that modeling parameters and emission rates for adjacent co-contributing facilities would be sent to you at a later date. DEQ has reviewed the source file documentation for Idaho Fresh Pak Plant #3, located at 823 S. Oneida, Rupert Cogeneration Partners and Glenns Ferry Cogeneration Partners, both located on the Idaho FreshPak property at 811 S. Oneida, and Brewster West, located in the former Kraft cheese plant at 311 S. Oneida. The modeling parameters and emission rates shown in Table 1 are being provided for inclusion in the IdaPro dispersion modeling analyses. To help expedite including these values in the model, this information as well as building parameters have been input into a file compatible with the BEEST graphical user interface used by JBR's Eric Clark to run AERMOD.

Table 1. MODELING PARAMETERS FOR CO-CONTRIBUTING SOURCES

Source ID	Source Description	Easting (X), [a] (m)	Northing [a] (Y), (m)	Base Elev (m)	Stack Height (ft)	Exit Temp (K)	Exit Vel. M/s)	Stack Dia. (ft)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	NO_x (lb/hr)
BOILE	Freshpak #3 [b]	279782.3	4720638		25.92	483.0	2.6	2.66	0.182	0.182	1.96
BOILW	Freshpak #3 [b]	279775.6	4720644		25.92	483.0	2.6	2.66	0.182	0.182	1.96
FLAKE1W	Freshpak #3 [b]	279737.9	4720567		35.10	328.0	17	3.77	0.297	0.119	---
FLAKE1E	Freshpak #3 [b]	279735.3	4720570		35.10	328.0	17	3.77	0.297	0.119	---
FLAKE2W	Freshpak #3 [b]	279742.8	4720572		35.10	328.0	18.8	3.77	0.297	0.119	---
FLAKE2E	Freshpak #3 [b]	279739.6	4720574		35.10	328.0	18.8	3.77	0.297	0.119	---
FLAKE3C	Freshpak #3 [b]	279748.2	4720575		35.10	328.0	4.2	4.07	0.306	0.122	---
FLAKE3E	Freshpak #3 [b]	279753.5	4720570		35.10	328.0	4.2	4.07	0.306	0.122	---
FLAKE3W	Freshpak #3 [b]	279751.0	4720573		35.10	328.0	4.2	4.07	0.306	0.122	---
FLAKE4C	Freshpak #3 [b]	279753.4	4720583		35.10	328.0	4.2	4.07	0.306	0.122	---
FLAKE4E	Freshpak #3 [b]	279756.0	4720580		35.10	328.0	4.2	4.07	0.306	0.122	---
FLAKE4W	Freshpak #3 [b]	279759.5	4720577		35.10	328.0	4.2	4.07	0.306	0.122	---
BHMAC1	Freshpak #3 [b]	279755.3	4720588		12.14	294.3	17.9	1.90	0.857	0.857	---
RUPCOGN	Rupert Cogen [c]	279800.4	4720614		60.00	426.0	21.1	6.00	0.973	0.973	12.8
GFCOGN	Glenns Ferry Cogen [d]	279804.7	4720611		60.00	431.5	19.6	6.00	0.911	0.911	12.7

[a] UTM coordinates for all sources developed by DEQ based on Google Earth image dated 10/16/2009.

[b] Freshpak #3stack parameters are from P-060477, October 2006, Geomatrix modeling files. PM_{10} emissions include emissions from air makeup units that exhaust inside the buildings. DEQ estimated that condensable emissions ($PM_{2.5}$) comprised 40% of the PM_{10} values, based on information for other potato flakers (DEQ TRIM Document

No. 2008AAF123, Source Test Report Log). As noted in the 2007 statement of basis, were based on a Method 5/202 source test at the Idaho Freshpak Lewisville facility. In the absence of any additional information, DEQ presumed $PM_{2.5}$ emissions from the two baghouses exhausting through a common stack (BHMAC1) were equal to PM_{10}.

Maximum hourly NOx emissions from each of the two 20 MMBtu/hr boilers were calculated by DEQ based on AP-42, natural gas heat content 1,020 MMBtu/MMscf, uncontrolled = 0.0196 MMscf/hr x 100 lb/MMscf = 1.96 lb/hr.

[c] Rupert Cogen (54 in x 76 in rectangular stack) , stack parameters from P-030400, DEQ SCREEN3 verification analysis, July 2003.

$PM_{10} = PM_{2.5}$, and NOx emissions were calculated by DEQ based on AP-42, burning 1122.87 MMscf/yr over 8,760 hr/yr =0.128 MMscf/hr x 100 lb NOx/MMscf = 12.8 lb/hr NOx,

" x 7.6 lb PM_{10}/MMscf = 0.973 lb/hr $PM_{10} = PM_{2.5}$

[d] Glenns Ferry Cogen (6 ft dia round stack) , stack parameters from P-980049, PTC No. 067-00012, Technical Memorandum, July 1998. 109,298 acfm x min/60 sec / π (3 ft)^2 = 64.4 ft/sec x m/3.28084 ft = 19.6 m/sec. NOx emissions were based on April 5, 2007 manufacturer turbine source test info for 2007 turbine replacement, see correspondence file, attachment to emails between Bill Rogers (DEQ) and Tim Rogers (Black Hills Corp), May 7-8, 2007.
$PM_{10} = PM_{2.5}$ emissions were calculated by DEQ based on AP-42, turbine rated at 110.93 MMBtu/hr, LHV of natural gas at 925 MMBtu/MMscf = 0.120 MMscf/hr x 7.6 lb/MMscf = 0.911 lb PM_{10} /$PM_{2.5}$.

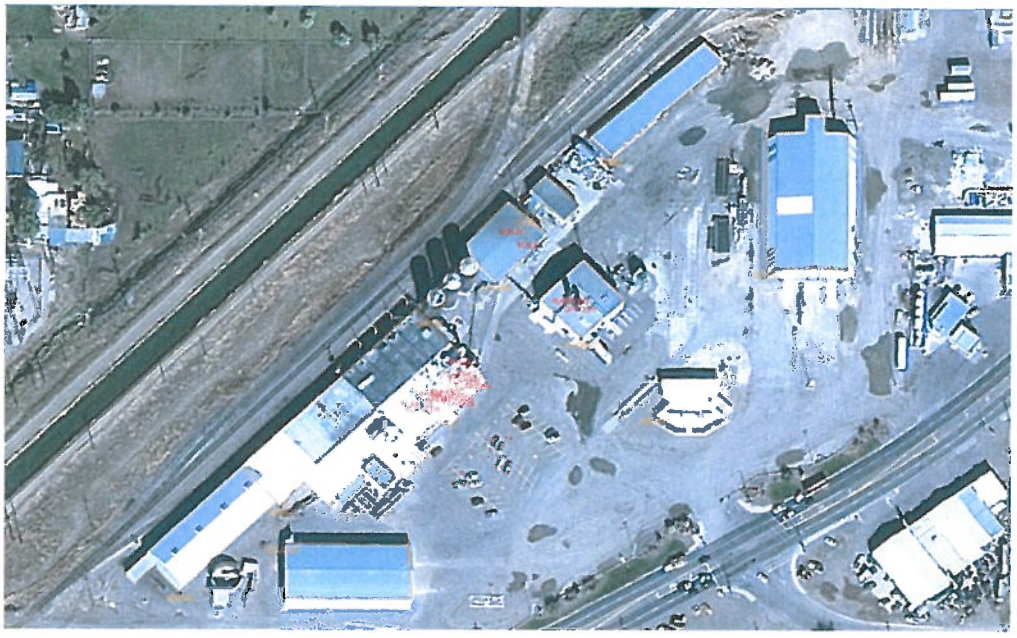
Stack locations and exhaust parameters are not readily available for the Brewster West facility, as that facility was determined to be exempt from permitting during a May 19, 2009 inspection by DEQ's Twin Falls Regional Office. Emission sources include a 636 hp backup diesel generator, a Superior 400 hp boiler manufactured in 1988, and a Nebraska 600 hp boiler (heat input rating at 25.2 MMBtu/hr) manufactured in 1980. Because this source can't easily be included in the IdaPro dispersion modeling analysis, DEQ is recommending no change to the background values previously provided for this project:

Background Concentrations and Co-Contributing Sources. DEQ (Kevin Schilling) provided the following background values for this project to JBR on July 31, 2012:

NO_2: Hourly values based on the 99th percentile of 1-hour monitored values from the Coeur d'Alene airport for the period from October 2006 through September 2011.

$PM_{2.5}$: 21.3 $\mu g/m^3$ (24-hr) and 7.19 $\mu g/m^3$ (annual), based on monitoring data collected near Twin Falls.

The BEEST layout for these co-contributing sources is shown in the figure below.



If you have any further questions or comments, please contact me at (208) 373-0220 or cheryl.robinson@deq.idaho.gov.

Sincerely,

Cheryl Robinson

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

ec: Harry Budke, IdaPro, LLC, hbudke@idapro.biz
Scott McClure, P.E., McClure Engineering, smcclure@mcclure-engineering.com
Eric Clark, EIT, JBR Environmental, eclark@jbrenv.com
Kevin Schilling, NSR Modeling Coordinator, kevin.schilling@deq.idaho.gov
Bill Rogers, NSR Permit Coordinator, william.rogers@deq.idaho.gov

APPENDIX D – Significance Analysis


S 3rd St
S 4th St
S 5th St
S 6th St
S 9th St
S G St
S H St
PROPERTY
IDAPRO
SILOBINS
LESSCH
PARK2
COAL2
CELRN2
SILOS2
ISTEAM2
COGEN2
ARENA2
CELLAR2
MAINS2
24

APPENDIX H

15-DAY ELIGIBILITY

IDAPRO, LLC
PRE-PERMIT CONSTRUCTION ELIGIBILITY AND PROOF OF ELIGIBILITY

In accordance with IDAPA 58.01.01.213.01, a facility must meet certain eligibility requirements to receive pre-permit construction approval. Each section of the rule is given below, along with certified explanation of how the IdaPro Rupert facility complies with each section.

IDAPA 58.01.01.213.PRE-PERMIT CONSTRUCTION.
This section describes how owners or operators may commence construction or modification of certain stationary sources before obtaining the required permit to construct. (3-23-98)

01. Pre-Permit Construction Eligibility. *Pre-permit construction approval is available for non-major sources and non-major modifications and for new sources or modifications proposed in accordance with Subsection 213.01.d. Pre-permit construction is not available for any new source or modification that: uses emissions netting to stay below major source levels; uses optional offsets pursuant to Section 206; or would have an adverse impact on the air quality related values of any Class I area. Owners or operators may ask the Department for the ability to commence construction or modification of qualifying sources under Section 213 before receiving the required permit to construct. To obtain the Department's pre-permit construction approval, the owner or operator shall satisfy the following requirements: (4-5-00)*

The IdaPro, LLC Rupert facility will be a minor source. Both uncontrolled and controlled facility potential to emit is documented in the 15-Day Pre-Permit Construction Approval and Permit to Construct Application. The facility will not: use emissions netting to stay below major source levels; use optional offsets; and will not have adverse impact on the air quality related values of any Class I area

a. *The owner or operator shall apply for a permit to construct in accordance with Subsections 202.01.a., 202.02, and 202.03 of this chapter. (3-23-98)*

The owner/operator will submit a Permit to Construct application in accordance with the above mentioned subsections of IDAPA 58.01.01.

b. *The owner or operator shall consult with Department representatives prior to submitting a pre-permit construction approval application. (3-23-98)*

A pre-application meeting was conducted and included representatives from IDEQ, JBR Environmental Consultants, Inc., IdaPro, LLC and McClure Engineering on July 19, 2012.

c. *The owner or operator shall submit a pre-permit construction approval application which must contain, but not be limited to: a letter requesting the ability to construct before obtaining the required permit to construct, a copy of the notice referenced in Subsection 213.02; proof of eligibility; process description(s); equipment list(s); proposed emission limits and modeled ambient concentrations for all regulated air pollutants and toxic air pollutants, such that they*

demonstrate compliance with all applicable air quality rules and regulations. The models shall be conducted in accordance with Subsection 202.02 and with written Department approved protocol and submitted with sufficient detail so that modeling can be duplicated by the Department. (4-11-06)

This documentation of eligibility is included as an appendix to IdaPro Pre-Permit Construction Approval application. The cover letter to DEQ included in with the application serves as the letter to DEQ requesting the ability to construct before obtaining the required permit to construct. Appendix C of the application contains a copy of the informational public meeting referenced in Subsection 213.02. The remaining required information listed in Subsection 213.01(c) is contained within the application itself as well as supporting appendices.

d. *Owners or operators seeking limitations on a source's potential to emit such that permitted emissions will be either below major source levels or below a significant increase must describe in detail in the pre-permit construction application the proposed restrictions and certify in accordance with Section 123 that they will comply with the restrictions, including any applicable monitoring and reporting requirements. (3-23-98)*

Material throughput, fuel and equipment restrictions are described in detail in the pre-permit application. IdaPro will comply with the restrictions including any applicable monitoring and reporting requirements.

OWNER/OPERATOR CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Harry Budke

Harry Budke
Engineering Manager, IdaPro, LLC

8-20-2017
Date