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DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE A.Q. PROGRAM



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September 18, 2013

File No. MI-13-029

VIA E-MAIL and U.S. MAIL

Mr. Bill Rogers
Stationary Source Permit Program Coordinator
Idaho Department of Environmental Quality
Air Quality Division
1410 North Hilton
Boise, Idaho, 83706

RE: Permit to Construct Application for Agrium's North Rasmussen Ridge Mine

Dear Mr. Rogers:

Nu-West Industries, Inc., d/b/a Agrium Conda Phosphate Operations (Agrium) is pleased to submit this letter, attached forms, and supporting information, which constitute a Permit to Construct (PTC) application covering stationary combustion sources at the North Rasmussen Ridge Mine (PTC No. P – 020327) located in Soda Springs, Idaho.

This submittal includes the PTC application, an air dispersion modeling section that demonstrates compliance with all applicable air quality rules and detailed emission calculations. This submittal also contains electronic copies of the modeling files, detailed emission calculations, dispersion modeling protocol and DEQ modeling approval letter that support this application. Additionally, this application contains the \$ 1,000.00 PTC application fee.

Pursuant to IDAPA 58.01.01.123, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.

Please feel free to contact Frederick Parthey, Environmental Engineering Specialist at 208.574.2080 ext., 1207 if you have any questions or need additional information regarding this letter.

* A Registered Name of Nu-West Industries, Inc.

Sincerely,



Erika Stoner
Mine Manager

CC:

Agrium, Frederick Partey

North Rasmussen Ridge Mine

Air Permit Application

Prepared for:

Agrium

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September 23rd, 2013

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1.0 INTRODUCTION

Nu-West Industries, Inc. doing business as Agrium Conda Phosphate Operations (Agrium) is requesting an air quality Permit-to-Construct (PTC) for the North Rasmussen Ridge Mine (NRRM) located approximately 19 miles northeast of Soda Springs, in Caribou County, Idaho. The NRRM is currently operating under PTC No. P - 020327. The NRRM is generally located at Universal Transverse Mercator (UTM) coordinates 469,422 meters (m) east and 4,746,674 (m) north [North American Datum (NAD) 83)], Zone 12.

In 1995 former mine owner, Rhone-Poulenc Basic Chemicals Company, obtained a PTC (Number 029-0031) for a diesel fired Caterpillar generator rated at 483 horsepower (hp). In 2003, a PTC application was submitted requesting a name change from Rhone-Poulenc Basic Chemicals Company to Nu-West Industries. The 2003 PTC also added a 375 hp diesel generator and revised the hp for the diesel fired Caterpillar generator to 810 hp. Copies of the 1995 and 2003 PTC are in Appendix A and Appendix B.

At this time, Agrium proposes to modify the existing stationary source to add new diesel generators and light plants for the mine. In addition, Agrium intends to include all existing generators and light plant units that are not covered by prior permits. No other changes are proposed to the mine or to mining and loading operations at NRRM. These operations continue as permitted by the 2003 PTC.

A pre-permit application meeting was held with the Idaho Department of Environmental Quality (DEQ) on January 16, 2012. On May 28, 2013, Nu-West submitted a voluntary disclosure to DEQ summarizing historic permitting gaps that Agrium identified during an internal compliance audit. As noted in that letter, this application includes information to cure the past permitting deficiencies recently discovered by Nu-West (Appendix I). Additional potential permitting gaps were identified in the course of developing this Application and are described below. A revised PTC for the NRRM will result in permit coverage for all stationary combustion units needed to operate the mine.

This document contains the following sections that will serve to meet DEQ PTC Application requirements provided in Idaho Administrative Procedures Act (IDAPA) 58.01.01.200-228. Section 2.0 provides facility information, presents a project description, identifies emissions units, and provides a summary of potential to emit (PTE) emissions from the facility. Section 3.0 discusses the air quality impact analysis. Sections 4.0 and 5.0 present modeling information. Modeling was conducted using the

American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee Dispersion Model version 12345 (release date December 2012). Section 6.0 provides a regulatory analysis and references are provided in Section 7.0. DEQ PTC forms, emissions calculations, modeling files, and other supporting documentation are provided in Appendices A through J.

2.0 PROCESS DESCRIPTION

The NRRM is remotely located in Caribou County, Idaho. The North Rasmussen Ridge Mine (NRRM) was permitted for operation by Agrium in 2003. The site is located approximately 19 miles northeast of Soda Springs, Idaho in Caribou County. The mine is an open pit phosphate rock mine designed to supply phosphate ore material to the Agrium Conda Phosphate Operation, located 6 miles northeast of Soda Springs, Idaho.

Ore and waste are subjected to drilling and blasting activities as required to enable mining excavation and are separated by the grade of P_2O_5 and other constituents contained in the respective material. Excavation is conducted using a fleet of diesel/hydraulic excavators and diesel haul trucks of varying sizes. Other auxiliary equipment is utilized at the site to facilitate the work force and other required site activities such as drilling, water pumping, transportation, rail loading and remote lighting to facilitate 24 hour operations. Ore is transported from the pit facility to an associated stockpile and rail load out facility 9 miles away for transportation to the plant facility. Due to the locations of the pit versus rail facilities, power supply is different for each. The pit and administration buildings at the NRRM site are powered utilizing diesel generators and the rail infrastructure is supported by an installed power line.

The facility's operations require the use of generator sets to produce electrical power for the maintenance shop, employee offices, and mine operations. The NRRM historically operated three diesel-burning generators to produce primary electrical power for the maintenance shop and employee offices, nine small diesel-fired light plants that provide safety lighting during night-time shifts at the mine, and a small propane fired boiler. The specific emissions units covered by the existing 2003 PTC include:

- Generator No. 5004, an 810 hp diesel-fired generator;
- Generator No. 5001, a 375 hp diesel-fired generator;
- Generator No. 0002, a 207 hp diesel-fired generator well-pump generator; and
- Nine diesel-fired light plant generators ranging in size from 11 hp to 27 hp.

Other stationary combustion units operated at NRRM are not covered by the 2003 Permit. A Peerless

propane fired boiler (1.64 MMBtu) produces steam and hot water for mine operations. This unit, installed at NRRM prior to the 2003 PTC was likely eligible for an exemption from the PTC requirements under IDAPA 58.01.01.222.02(c). Eight of the originally permitted diesel fired light plants were replaced in 2007. Six additional light plants were installed in the mine in 2010. These units were also likely eligible for exemptions from the PTC requirements under IDAPA 58.01.01.222.01(c). Three additional generator units currently in use – (1) Tier III, 97.9 hp diesel-fired dust suppression well pump generator installed in 2012, (1) Tier III, 90 hp diesel-fired generator for the contractor building installed in 2011, and (1) 52 hp diesel-fired generator located inside the mine pit in 2012 – were likely eligible for exemptions under IDAPA 58.01.01.222.01(c). NRRM presently operates a rented 388 hp diesel-fired generator that Agrium intends to purchase as described below. Finally, in May 2013 Agrium commenced use of a temporary portable screen plant equipped with a non-road engine (40 CFR §1068.30) for sizing of rock used for road building at the mine.

2.1 PROJECT DESCRIPTION

At this time, Agrium proposes to modify the existing stationary source to add new stationary combustion engines -- diesel generators and light plants -- for the mine. In addition, Agrium intends to include all existing stationary combustion units -- generators and light plant units -- that are not covered by prior permits. No other changes are proposed to the mine or to mining and loading operations at NRRM. These operations continue as permitted by the 2003 PTC.

Permitted Generator No. 5004 failed in October 2012 and was removed from NRRM. Permitted Generator No. 5001 lacks sufficient power to satisfy the electrical needs of NRRM, is no longer in service, and will be removed from the site. Permitted Generator No. 0002 is also no longer in service and was removed from the site. Agrium is presently operating temporary power units in lieu of these permitted generators. Although no DEQ permit process was initiated for those temporary units, these temporary units comply with the 2003 PTC emissions limits -- as described to DEQ in the May 28, 2013 disclosure letter. Eight of the nine light plants covered by the 2003 PTC were replaced in 2007 leaving one original Whitman light plant from 2003 still in operation. Agrium also operates six additional light units installed in 2010 and the pre-2003 Peerless propane-fired boiler.

Agrium is proposing to replace the permitted generators, add generators, and substitute light plants to modify its existing source with this PTC Application. Specifically, Agrium purchased a Tier IV, 1,093 hp

diesel-fired generator to produce primary electrical power for the maintenance shop and employee offices, and a Tier IV, 67 hp diesel-fired generator for the mine shovel. These units will be operated only upon receipt of a new PTC. In addition, upon receipt of a PTC, Agrium will purchase the Tier II, 388 hp diesel-fired generator for future use as emergency back-up (this unit is presently rented and operating on site) and one Tier III 100 hp diesel-fired generator to serve as the primary well pump generator.

To provide additional lighting for worker safety assorted light plants are used in the mine. The original nine diesel-fired light plants were replaced by eight, Tier II Ingersoll Rand light plants leaving one 27 hp Whitman Light Plant, an original permitted in 2003. Agrium currently operates an additional existing six Tier IV Mobile Light Plants installed in 2010 -- for a total of 15 light plants. Existing Ingersoll Rand and Mobile light plant generators range in power rating from $8 \leq \text{kW}$ to $\leq 19 \text{ kW}$. The light plant models and manufacturers are interchangeable and can be moved within the pit. Light plants are routinely replaced after reasonable useful life. To allow operational and purchasing flexibility, Agrium proposes to permit use of up to 14 light plant units with power ratings up to 18 kW each. Agrium also proposes to permit the one 27 hp Whitman Light plant. To calculate worst case emissions, light plants were conservatively estimated to be 18 kW and 27 hp respectively.

To control storm-water runoff during spring and summer months, Agrium is proposing to rent up to three, Tier III, diesel-fired pumping generators. Each Tier III generator will be permitted for 4,500 hours per year. One Tier III generator will be placed at the Central Pit, one Tier III generator will be placed at Pond No. 2, and one Tier III generator will be placed at the South Pump. Rather than purchase Tier III generators, Agrium will rent Tier III generators ranging in size from 126-315 hp. Therefore, to allow for operational flexibility while calculating worst case emissions, Agrium proposes to permit three, Tier III, 315 hp diesel-fired generators.

In addition to permitting the new equipment, Agrium intends to obtain a PTC covering all existing stationary combustion equipment operating at the mine in order to cure any potential historic permitting gaps. Specific gaps were self-detected and voluntarily disclosed to DEQ on May 28, 2013. For example, a rented 388 hp diesel-fired generator is currently in use at the NRRM. Agrium intends to purchase and use this unit in the future as an emergency back-up unit. It was originally brought on site in March 2013 to replace another rental unit received in November 2012, following failure of the mine's primary generator in October 2012 -- and likely required PTC review before installation. Other existing emissions units were likely eligible for PTC exemptions at the time of installation, but are identified in this

Application to cure any historic permitting gaps. The existing Peerless propane fired boiler currently in use (1.64 MMBtu) was likely eligible for an exemption from the PTC requirements under IDAPA 58.01.01.222.02(c). The eight replacement light plants installed in the mine in 2007 and the six additional light plants installed in the mine in 2010 were also likely eligible for exemptions from the PTC requirements under IDAPA 58.01.01.222.01(c). The additional generator units currently in use – (1) Tier III, 97.9 hp diesel-fired dust suppression well pump generator installed in 2012, (1) Tier III, 90 hp diesel-fired generator for the contractor building installed in 2011, and (1) 52 hp diesel-fired generator located inside the mine pit in 2012 – were likely eligible for exemptions under IDAPA 58.01.01.222.01(c). Finally, the portable screen plant equipped with a non-road engine (40 CFR §1068.30) was brought on site temporarily this summer to size rock (no crushing or grinding) for mine roads is not subject to permitting under IDAPA 58.01.01.794 because it is not a non-metallic mineral processing plant, as defined at IDAPA 58.01.01.011.03.

2.2 SUMMARY OF PROPOSED MODIFICATION

In summary, Agrium seeks a PTC covering the following stationary combustion equipment for mine operations as noted:

Emissions Units to be permitted	Proposed Annual Hours	Use
(1) Tier IV 1,093 hp diesel generator	8,760	Main generator
(1) Tier IV, 67 hp diesel generator	8,760	Mine shovel
(1) Tier II, 388 hp emergency back-up diesel generator	8,760	Support generator
(1) Tier III, 100 hp diesel generator	8,760	Well pump for dust suppression
(3) Rental Tier III diesel generators	4,500 (each unit)	Rental units for seasonal run-off control
(15) Diesel-fired light plants	6,570 (all light plants)	Night shift lighting
(1) Peerless 1.64 MMBtu boiler	8,760	Steam generation, hot water
(1) Tier III, 97.9 hp diesel generator	8,760	Well pump for dust suppression
(1) Tier III, 90 hp diesel generator	8,760	Contractor building
(1) 52 hp diesel generator	8,760	Mine pit equipment

The proposed annual hours of operation for each unit are reflected in the emissions calculations provided in Appendix F and are proposed to limit the potential to emit of the NRRM. A PTC covering these units and proposed operating hours will provide NRRM sufficient operating flexibility, reflect the current and future stationary combustion sources, and limit emissions. A new PTC will also cure the permitting gaps voluntarily disclosed by Agrium in the letter dated May 28, 2013 and this Application.

Projected emissions were conservatively modeled for this Application based upon 8,760 hours of operation for all units and demonstrated no adverse impact to national ambient air quality standards. Agrium proposes to install hours meters on the units for which operating hour limitations are requested. Installation of hour meters will allow Agrium to determine compliance by recording the monthly usage and comparing against the annual operating hours limit.

2.3 FACILITY CLASSIFICATION

The NRRM is electing to take operational limits on the source's potential to emit so the facility may continue to operate as a non-major stationary source as defined in 40 CFR 52.21(b)(1). Therefore in accordance with 40 CFR 52.21(a)(2), Prevention of Significant Deterioration (PSD) requirements are not applicable to the NRRM. The NRRM is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 tons per year (tpy). NRRM is a synthetic minor stationary source. Emissions of Hazardous Air Pollutants (HAPs) do not exceed the major source thresholds of 10 tpy for a single HAP or 25 tpy for all HAPs combined, therefore the NRRM is also a minor source of HAP emissions.

2.4 CALCULATION OF EMISSIONS

The stationary combustions sources at NRRM have the potential to emit the following regulated air pollutants: PM₁₀, PM_{2.5}, SO₂, CO, NO and VOCs. Emissions HAPs and Toxic Air Pollutants (TAPs) are also expected from the combustion of diesel fuel. Uncontrolled PM₁₀, PM_{2.5}, CO, NO, SO₂, VOCs, HAP and TAP emissions resulting from the burning of diesel fuel are calculated using manufacturer Tier II, Tier III, and Tier IV emissions. Manufacturer exhaust emissions were used to calculate generator emissions, if available. When manufacturer emissions data was unavailable, EPA AP-42 emission factors were used (*Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition (AP-42, Tables 1.5-1, 3.3-1, 3.3-2, 3.4-2, 3.4-3 and Table 3.4-4)*). Generator and boiler manufacturer data sheets are provided in Appendix D. A plot plan is provided in Appendix E.

The combustion of diesel fuel and liquid propane gas also contributes to greenhouse gas emissions. Greenhouse gas emissions were calculated using emission factors from AP-42, Table 3.4-1 for large stationary diesel engines greater than 600 hp, from Table 3.3-1 and from AP-42 for diesel engines less than 600 hp, Table 1.5-1 for the combustion of liquid propane gas. A detailed emission inventory as well as emission calculations are provided on compact disk in Appendix F.

3.0 AIR QUALITY IMPACT ANALYSIS

This section describes the technical approach used for an air quality impact analysis for the stationary combustions sources operated at NRRM. The air dispersion modeling will follow the guidance and protocols outlined in the *State of Idaho Guidelines for Performing Air Quality Impact Analyses* (IDEQ, 2011) (“DEQ Modeling Guidance”) and the U.S. Environmental Protection Agency (EPA) *Guideline on Air Quality Models (Revised)* (EPA 2005). A modeling protocol describing the proposed modeling approach was submitted to DEQ on behalf of Agrimum on March 12th, 2013. This protocol was approved with resolution of comments on May 20th, 2013. The DEQ modeling approval letter along with the air dispersion modeling protocol is provided on compact disk in Appendix G.

The DEQ Modeling Guideline indicates that a modeling analysis is generally required with each permit application for new construction, or a modification that results in an increase in emissions of pollutants for sources permitted by DEQ. The types of permits that require a facility to demonstrate compliance with the NAAQS are permits to construct and Tier II operating permits. A modeling analysis may also be required to demonstrate compliance with the TAP standards.

For modifications, DEQ developed two levels (Level I and Level II) of modeling thresholds for criteria pollutants. If the proposed allowable facility-wide emissions for a given pollutant are less than Level I modeling thresholds, dispersion modeling for that pollutant is not required. If the proposed allowable facility-wide emissions for a given pollutant are greater than Level I thresholds but less than Level II modeling thresholds, dispersion modeling for that pollutant may not be required and is assessed on a case-by-case basis. Criteria pollutants that were assessed for NRRM include PM₁₀, PM_{2.5}, and NO as NO₂, CO, SO₂, and Pb. As stated in the DEQ modeling approval letter, facility-wide emissions were compared against DEQs Level II modeling thresholds. Modeling thresholds for criteria pollutants and VOCs are shown in Table 3-1, along with a summary of projected NRRM emissions.

Table 3-1
Criteria Pollutant Emissions and Modeling Thresholds

Criteria Air Pollutants	Combustion Emissions		Level I Modeling Threshold		Modeling Required	Level II Modeling Threshold		Modeling Required
	lb/hr	T/yr	2011 Guidance			Case-by-Case		
PM10 24-hour	2.08	---	0.22	lb/hr	YES	2.6	lb/hr	NO
PM2.5 24-hour	2.01	---	0.054	lb/hr	YES	0.63	lb/hr	YES
PM2.5 annual	---	7.32	0.35	T/yr	YES	4.1	T/yr	YES
CO 1-hr, 8-hr	9.50	---	15	lb/hr	NO	175	lb/hr	NO
NOx 1-hr x 80%	18.84	---	0.20	lb/hr	YES	2.4	lb/hr	YES
NOx annual x 75%	---	61.94	1.2	T/Yr	YES	14	T/yr	YES
SO2 1hr, 3hr, 24-hr	4.44	---	0.21	lb/hr	YES	2.5	lb/hr	YES
SO2 annual	---	13.72	1.2	T/yr	YES	14	T/yr	NO
VOC	16.21	50.43	40	T/yr	YES ¹	N/A	N/A	N/A
Lead rolling 3-month	0.00	0.00 (lb/mo)	14	lb/mo	No	N/A	N/A	N/A

¹ Ozone modeling is conducted on an air shed basis; photochemical modeling for VOC emissions is not required for individual minor sources

Additionally, for TAPs, combustion source emissions are compared against screening emission levels (ELs). Modeling may be required for those TAPs with emissions that are equal to or greater than the ELs. ELs for TAPs emitted at the NRRM are shown in Table 3-2, along with a summary of projected NRRM hourly TAP emissions. Emissions of Benzene, Formaldehyde, Acetaldehyde, Naphthalene, and 1,3-Butadiene, Acenaphthylene, Fluorene, Phenanthrene, Fluoranthene, and POM exceed their respective ELs. However, in accordance with IDAPA 58.01.01.210.20(a) no further procedures for demonstrating compliance will be required for TAPs because the proposed equipment is subject to 40 CFR Part 60 Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR part 63 Subpart ZZZZ.

Table 3-2
Screening Emission Levels and Total Projected TAP Emissions (lb/hr)

Hazardous Air Pollutants (HAPs) Toxic Air Pollutants (TAPs)			Exceeds EL / Modeling Required
TAPs / HAPs	lb/hr	EL (lb/hr)	
Benzene	1.60E-02	8.00E-04	YES
Toluene	8.13E-03	2.50E+01	No
Xylenes	5.64E-03	2.90E+01	No
Formaldehyde	1.33E-02	5.10E-04	YES
Acetaldehyde	8.45E-03	3.00E-03	YES
Acrolein	1.41E-03	1.70E-02	No
Naphthalene	2.23E-03	3.33E+00	No
Naphthalene	1.91E-03	9.10E-05	YES
Propylene	5.91E-02	----	
1,3-Butadiene	4.21E-04	2.40E-05	YES
Acenaphthylene	1.25E-04	9.10E-05	YES
Acenaphthene	5.11E-05	9.10E-05	No
Fluorene	4.12E-04	9.10E-05	YES
Phenanthrene	6.29-04	9.10E-05	YES
Anthracene	2.96-05	9.10E-05	No
Fluoranthene	1.13-04	9.10E-05	YES
Benzo(g,h,l)perylene	9.52-06	9.10E-05	No
Pyrene	7.99-05	9.10E-05	No
Benzo(a)anthracene	2.29-05		See POM
Chrysene	1.55-05		See POM
Benzo(b)fluoranthene	9.56-06		See POM
Benzo(k)fluoranthene	3.34E-06		See POM
Benzo(a)pyrene	3.99E-06		See POM
Indeno(1,2,3-cd)pyrene	7.21E-06		See POM
Dibenzo(a,h)anthracene	8.93-06		See POM
Polycyclic Organic Matter (POM) 7-PAH Group	7.14E-05	2.00E-06	YES

Note: Bold TAPs are considered Carcinogenic TAPs in accordance with IDAPA 58.01.586

DEQ recommended that a preliminary analysis which includes netting be conducted for this project. Pursuant to DEQ guidance new emissions were modeled as positive emission rates while emissions from the old 810 hp and 375 hp generators were modeled as negative emission rates and the modeled results were compared against the Significant Contribution Levels (SCLs). Table 3-3 provides the SCLs, which were used to assess whether or not NRRM has a significant impact. Table 3-4 provides the emission rates that were used for netting. When modeling results do not exceed the SCLs for a pollutant, no further analysis for that pollutant is required. Based on the significance and netting analysis, the 24-hour $PM_{2.5}$, annual $PM_{2.5}$, 1-hour and annual NO_x , and 1-hour SO_2 emissions exceeded the SCLs. Table 3-5 provides the SCL and netting analysis results.

A full impact analysis (FIA) was performed for the 24-hour $PM_{2.5}$, annual $PM_{2.5}$, 1-hour and annual NO_x , and 1-hour SO_2 . The FIA required adding facility-wide emissions to a background concentration to estimate a total concentration. Background concentrations were provided by DEQ for the cumulative impact analysis. Background concentrations are provided in Table 4-2. The total concentration for a pollutant must demonstrate compliance with the NAAQS. Table 3-3 provides the NAAQS increments with which the NRRM must comply.

Table 3-3
Applicable Regulatory Limits for Criteria Pollutant Dispersion Modeling

Pollutant	Averaging Period	Significant Contribution Levels ^c ($\mu\text{g}/\text{m}^3$) ^b	NAAQS ^d ($\mu\text{g}/\text{m}^3$)	Modeled Value ^e for Full/Cumulative NAAQS Analyses
PM ₁₀ ^a	24-hour	5.0	150	Maximum 6 th highest ^h
PM _{2.5} ^a	Annual	0.3	15 (12) ⁱ	PM _{2.5} – Maximum 1 st high ⁱ
	24-hour	1.2	35	PM _{2.5} – Maximum 1 st high ⁱ
Carbon monoxide (CO)	8-hour	500	10,000	Maximum 2 nd highest ^f
	1-hour	2,000	40,000	Maximum 2 nd highest ^f
Nitrogen Dioxide (NO ₂) <i>NO₂ is the indicator species for NOx</i>	Annual	1.0	100	Maximum 1 st highest ^e
	1-hour ^m	EPA Interim: 4 ppb ^k (7.5 $\mu\text{g}/\text{m}^3$)	100 ppb (188 $\mu\text{g}/\text{m}^3$)	Maximum 8 th highest ^k
Sulfur Dioxide (SO ₂) <i>SO₂ is the indicator species for SOx</i>	Annual	1.0	80	Maximum 1 st highest ^e
	24-hour	5	365	Maximum 2 nd highest ^f
	3-hour	25	1,300	Maximum 2 nd highest ^f
	1-hour	EPA Interim: 3 ppb ^{b, l} (7.9 $\mu\text{g}/\text{m}^3$)	75 ppb ^{b, l} (196 $\mu\text{g}/\text{m}^3$)	Maximum 4 th highest ^l
Lead (Pb)	Rolling 3-month average	---	0.15	Maximum 1 st highest ^{e, j}

^a Particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) or 2.5 micrometers.
^b $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter, ppb = parts per billion
^c SCLs are defined in Idaho Air Rules Section 006. PM_{2.5} SCLs (75 FR 64864, October 20, 2010) became effective on March 29, 2012. **The maximum 1st highest modeled value is always used for significant impact analyses.**
^d Federal National Ambient Air Quality Standards (NAAQS, see 40 CFR 50) in effect as of July 1 of each year are incorporated by reference during the legislative session the following spring. See Idaho Air Rules Section 107.
^e Never expected to be exceeded in any calendar year.
^f Never expected to be exceeded more than once in any calendar year. The 3-hr and 24-hr SO₂ standards were revoked (see 75 FR 35520, June 22, 2010) but will remain in effect until one year after the effective date of initial area designations for the new 1-hour SO₂ NAAQS. Modeling need not be conducted for 3-hr and 24-hr SO₂ if compliance has been shown for the 1-hr SO₂ NAAQS.
^g Concentration at any modeled receptor.
^h PM₁₀ concentration at any modeled receptor when using five years of meteorological data. Use the maximum 2nd highest value for analyses with less than five years of meteorological data or one year of site-specific met data.
ⁱ PM_{2.5} concentration at any modeled receptor when using a single year of site-specific meteorological data or a concatenated file with five years of meteorological data. EPA recommends using the high 8th high 3-year average monitored value for background, and using the highest 24-hr average and highest annual averages across five years of met data for the modeled result (Steven Page memo, Modeling Procedures for Demonstrating Compliance with PM_{2.5} NAAQS, March 23, 2010). **Annual PM_{2.5} NAAQS of 12 $\mu\text{g}/\text{m}^3$ (78 FR 3086, January 15, 2013) will become effective in Idaho when the legislature adjourns sine die in spring of 2014.**
^j Pb: The EPA's October 15, 2008 standard became effective in Idaho's NSR program on March 29, 2010.
^k NO₂ concentration at any modeled receptor when using complete year(s) of site-specific met data or five consecutive years of meteorological data. Compliance is based on the 3-year average of the 98th percentile of the annual distribution of 1-hour average daily maximum concentrations. February 10, 2010 1-hr NO₂ NAAQS (75 FR 6474) became effective in Idaho on April 7, 2011. EPA Interim significant impact level (SIL), Steven Page memo dated June 29, 2010.
^l SO₂ concentration at any modeled receptor when using five consecutive years of meteorological data. Compliance is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The EPA's 1-hour SO₂ standard (75 FR 35520, June 22, 2010) became effective on April 7, 2011. EPA Interim SIL, Steven Page memo dated August 23, 2010.

Table 3-4

Netting Emission Rates

Source	PM / PM ₁₀		PM _{2.5} ²		SO ₂		NO _x		CO		VOC	
	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr
Generator # 5004 (810 hp) ¹	1.00	---	---	---	1.13	---	13.70	---	1.00	---	1.00	---
Generator # 5001(375 hp) ¹	1.00	---	---	---	1.00	---	11.63	---	2.51	---	1.00	---
Total Annual Combined Emissions	2.00	3.62	---	---	2.13	4.95	25.33	60.1	3.51	8.8	2	3.3

¹ PTE emissions were obtained from the October 20003 Rasmussen Ridge Mine Final PTC No. P-020327.

² PM_{2.5} emissions were not calculated in the 2003 PTC.

Table 3-5

SCL Results & Netting Analysis

Pollutant	Averaging Period	Significant Contribution Level (µg/m ³)	SIL & Netting Results (µg/m ³) ¹	East (m)	North (m)	Elevation (m)
NO ₂	Annual 1-hour	1	4.57	467947.09	4745028.43	2009.06
		7.5	102.21	467947.09	4745028.43	2009.06
SO ₂	Annual	1	0.65	469080.00	4745035.00	2003.08
	1-hour	7.9	17.37	469080.00	4745035.00	2003.08
CO	8-hour	500	26.86	469199.50	4744881.12	2001.18
	1-hour	2,000	48.51	469378.75	4744650.31	1996.39
PM ₁₀	24-hour	5	2.43	467947.09	4745028.43	2009.06
PM _{2.5}	24-hour	1.2	2.41	467947.09	4745028.43	2009.06
	Annual	0.3	0.33	467947.09	4745028.43	2009.06

¹ Five year mean of highest concentration for each averaging period (2004-2008)

4.0 DISPERSION MODELING

The following sections discuss the technical approach for the air dispersion modeling analysis that was performed to estimate ambient air impacts for the 24-hour $PM_{2.5}$, annual $PM_{2.5}$, 1-hour and annual NO_x , and 1-hour SO_2 . Air dispersion modeling analysis addressed the impacts from combustion sources. Air dispersion modeling analysis followed the guidance and protocols outlined in the Revised State of Idaho Air Quality Modeling Guideline (IDEQ 2011) and the U.S. Environmental Protection Agency (EPA) Guideline on Air Quality Models (Revised) (EPA 2005).

4.1 DISPERSION MODEL SELECTION

Evaluation of the maximum ambient air quality impacts from the NRRM were conducted using the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee (AERMIC) modeling system, the AERMOD dispersion model, version 12345 (release date December 2012). All sources were modeled at maximum operating capacity (8,760 hours per year). AERMOD was run using all the regulatory default options including the use of stack-tip downwash, buoyancy-induced dispersion, and calms processing routines, upper-bound downwash concentrations for super-squat buildings, default wind speed profile exponents, vertical potential temperature gradients, and no use of gradual plume rise. Only pollutant dispersion was modeled for this analysis; particle deposition was not considered.

4.2 BUILDING WAKE EFFECTS

Emissions from NRRM were evaluated in terms of its proximity to nearby structures. Building downwash effects were included to determine if emission discharges become caught in the turbulent wakes of nearby structures. Wind blowing around a building creates zones of turbulence that are greater than if the buildings were absent. The potential for downwash effects on stack emissions from nearby structures was assessed using AERMOD. The AERMOD model inputs included building dimensions to assess the potential for downwash effects. Building dimensions for the NRRM shop/office, generator shed, and Kiewit contractor office building were used to build the Building Profile Input Program (BPIP) input file. Table 4-1 provides the lists of buildings that were included in the modeling analysis.

Table 4.1
Building Description and Dimensions

Building ID	Description	Length (ft)	Length (m)	Width (ft)	Width (m)	Height (ft)	Height (m)
Shop-Offices	Maintenance Shop	145	44.20	110	33.53	42	12.80
Gen Shed	Generator Shed	29.53	9.0	26.25	8.0	8.0	2.44
Con Bld	Contractor Building	67.32	20.52	59.35	10.10	12	3.66

4.3 TERRAIN DESCRIPTION

For modeling purposes, the rural/urban classification of an area is determined by either the dominance of a specific land use or by population data in the study area. Generally, if cumulative heavy industrial, light-moderate industrial, commercial, and compact residential (single and multiple family) land uses within a three kilometer radius from the facility is greater than 50%, the area is classified as urban. Conversely, if common residential, estate residential, metropolitan natural, agricultural rural, undeveloped (grasses), undeveloped (heavily wooded) and water surfaces land uses within a three kilometer radius from the facility are greater than 50%, the area is classified as rural.

The NRRM is remotely located in Soda Springs, Caribou County, Idaho, at an elevation of approximately 6,893 feet (2,101 meters) above mean sea level. The facility is situated within the Caribou-Targhee National Forest. For modeling purposes the rural classification was used in the modeling analysis.

4.4 METEOROLOGICAL DATA

Dispersion modeling was conducted using the best readily-available AERMOD-ready meteorological data set for projects located in the southeastern Idaho phosphate mine district which is the P4-Soda Springs 2004-2008 data set. These data were based on surface data collected at P4 in Soda Springs, supplemented with surface data collected at the Pocatello airport, and with upper air data collected at the Boise airport for the same period. These meteorological data sets were selected by DEQ because they are the most representative data available for site conditions at NRRM. Figure 4-1 provides a windrose diagram for the year 2004-2008.

4.5 COORDINATE SYSTEM

The location of emission sources, structures, and receptors was represented in the UTM coordinate system using North American Datum 1983 (NAD83). UTM coordinates for this analysis were based on UTM Zone 12.

4.6 RECEPTOR GRIDS

Receptors were placed in all areas directly surrounding the facility considered to be ambient air. Air dispersion modeling was performed using a model receptor grid that ensures that the maximum estimated impacts from the NRRM are identified. Following DEQ and EPA guidelines, receptor locations were identified with sufficient density and spatial coverage to isolate the area with the highest impacts. All combustion sources proposed in this analysis have short stack heights and their maximum emission impacts will be close to the property boundary. The following receptor grid locations (Figure 4-2) were used for the analysis to accomplish this coverage:

- 50-m receptor spacing on the property boundary;
- 50-m receptor spacing out to 100 m in all directions from the property boundary;
- 100-m receptor spacing out to 200 m in all directions from the property boundary
- 200-m receptor spacing out to 400 m in all directions from the property boundary
- 400-m receptor spacing out to 800 m in all directions from the property boundary
- 800-m receptor spacing out to 900 m in all directions from the property boundary

Per the State of Idaho Guidelines for Performing Air Quality Impact Analyses, the ambient air boundary was established in part by the facility's capability and responsibility for restricting public access for the sake of public safety under the Mine Safety and Health Administration (MSHA) Act. The general public is not invited to the NRRM as part of normal business conducted at the facility. Posting of the lease boundary at known access points along the boundary, gates on mine roads and monitoring of the site by Agrium mine employees will prevent public access to the site and serves to establish the ambient air boundary for this project.

Terrain elevations were assigned to all receptors using U.S. Geological Survey National Emission Data Set (NED – 30 m) in the AERMAP program.

Figure 4-1
Wind Rose Plot

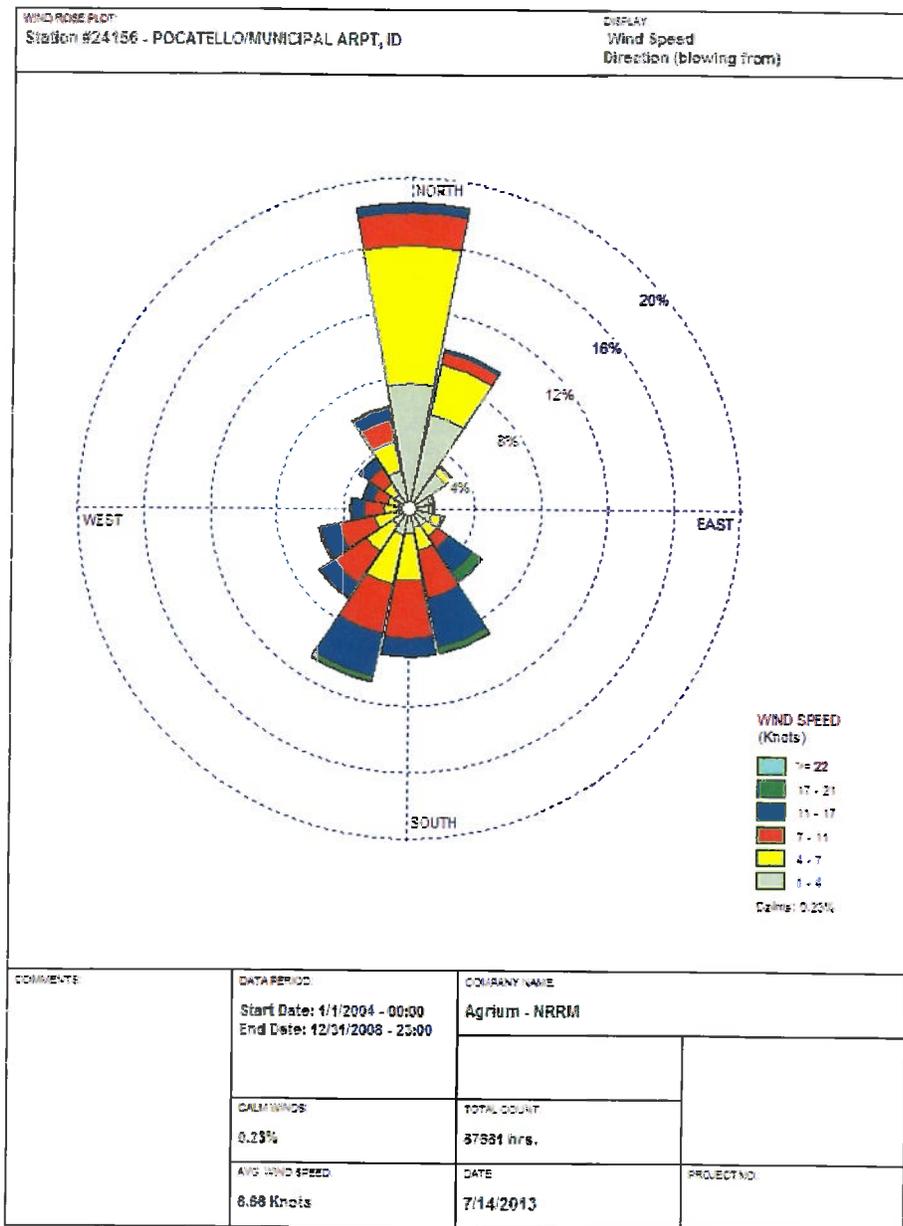
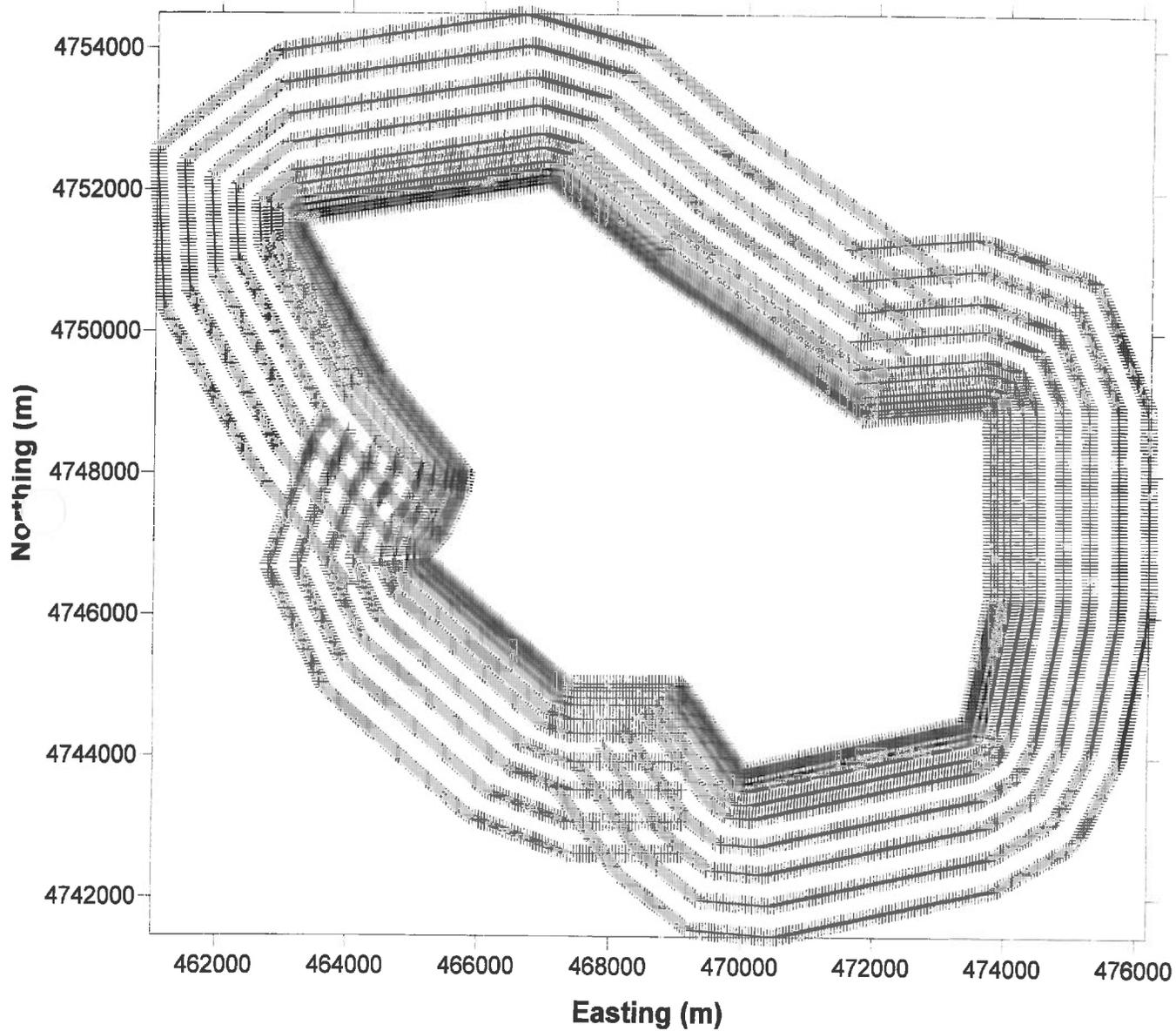


Figure 4-2
North Rasmussen Ridge Mine Receptors and Boundary



4.7 BACKGROUND CONCENTRATIONS

To evaluate the potential impacts of emissions from the NRRM on the public, the dispersion modeling evaluation considered the existing background concentrations of pollutants in the Soda Springs, Idaho area. The background concentration of a given pollutant is added to the modeled impact from the NRRM, and the results are compared to the NAAQS for that pollutant. The following background concentrations provided in Table 4-2 were provided by DEQ.

Table 4-2			
DEQ Recommended Background Concentrations			
Pollutant	Averaging Period	Background Concentration ($\mu\text{g}/\text{m}^3$)	Reference
PM10	24-hr	43	Idaho DEQ, 2003, Default, Rural remote, non-agricultural
PM2.5	24-hr	16	Average of 98 th percentile values, 2010-2012, 24-hr block avgs, Campbell County, Wyoming, open pit mining area: WY DEQ monitors near Belle Ayr Ba-4,5n,5s; Btm-36-2 (Black Thunder Mine), and Buckskin Mine North Site.
	Annual	5.2	Average of 98 th percentile values, 2010-2012, 24-hr block avgs, Campbell County, Wyoming, open pit mining area: WY DEQ monitors near Belle Ayr Ba-4,5n,5s; Btm-36-2 (Black Thunder Mine), and Buckskin Mine North Site.
CO	1-hr	3 ppm (3,600 $\mu\text{g}/\text{m}^3$)	Idaho DEQ, 2003, Default, Rural remote, non-agricultural
	8-hr	2.0 ppm (2,300 $\mu\text{g}/\text{m}^3$)	Idaho DEQ, 2003, Default, Rural remote, non-agricultural
NO2	1-hr	9.8 ppb (18 $\mu\text{g}/\text{m}^3$)	Average of 98 th percentile 1-hour values, 2010-2012, WY DEQ, Uinta County, UT, Murphy Ridge (UT/WY border), and Sublette County, WY, Wyoming Range/West
	Annual	2.3 ppb (4.3 $\mu\text{g}/\text{m}^3$)	Idaho DEQ, 2003, Default, Rural remote, non-agricultural
O3	Single Value for Level 3 NOx Analysis	0.079 ppm	Average of the 98 th percentile 1-hour values, 2010-2012, WY DEQ, Uinta County, UT, Murphy Ridge (UT/WY border), and Sublette County, WY, Wyoming Range/West
SO2	1-hr	18 ppb (47 $\mu\text{g}/\text{m}^3$)	Average of 99 th percentile values, 2010-2012, WY DEQ, Sweetwater County, WY, CBSA Rock Springs, Moxa
	Annual	0.003 ppm (8 $\mu\text{g}/\text{m}^3$)	Idaho DEQ, 2003, Default, Rural remote, non-agricultural

4.8 MODEL PARAMETERS

Modeled emissions sources at NRRM were all point sources. Emissions from these sources were modeled as individual point sources. Although Agrium proposes operating hours limitations to reduce the potential to emit from the sources, emissions from all sources were modeled at their maximum operating hours of 8,760 hours per year. A detailed listing of all emission sources and their corresponding modeling input release parameters and emission rates are provided in Table 4-3. Source locations are presented in UTM coordinates (NAD 83). Stack parameters for the point sources were based on manufacturer design parameters and/or conservative estimated values.

**Table 4-3
Point Source Parameters & Coordinates**

Source ID	Description	Base Elev [m]	Stack Height [m]	Stack Diam [m]	Stack Exit_Vel [m/s]	Stack Exit_Temp [K]	Emission Rate	Easting [m]	Northing [m]
STCK1	Main Generator (1093 hp)	2097.05	3.658	0.30	28.96	706.48	0.047	469419.00	4746511.00
STCK2	Water Pump Generator (315 hp) - Pond #2 Generator	2089.45	1.829	0.10	50.00	800.93	0.014	469954.00	4745957.00
STCK3	Water Pump Generator (315 hp) - Central Pit Generator	2085.76	1.829	0.10	50.00	800.93	0.014	468612.00	4746860.00
STCK4	Water Pump Generator (315 hp) - South Pump Generator	2097.45	1.829	0.10	50.00	800.93	0.014	469303.00	4746397.00
STCK5	Emergency Back-up Generator (388 hp)	2097.52	3.048	0.30	11.99	734.26	0.107	469418.00	4746505.00
STCK6	Well Pump Generator (100 hp)	2009.99	1.829	0.10	50.00	834.26	0.028	468030.00	4745685.00
STCK7	Propane boiler (1.64 MMBTU)	2098.55	3.962	0.30	13.49	349.82	0.001	469417.00	4746446.00
STCK8	Diesel Light Plant - 1	2138.16	1.219	0.05	50.00	699.82	0.004	469503.19	4745872.17
STCK9	Diesel Light Plant - 2	2126.63	1.219	0.05	50.00	699.82	0.004	469370.94	4745997.08
STCK10	Diesel Light Plant - 3	2109.43	1.219	0.05	50.00	699.82	0.004	469019.67	4746379.01
STCK11	Diesel Light Plant - 4	2137.44	1.219	0.05	50.00	699.82	0.004	469617.49	4745799.82
STCK12	Diesel Light Plant - 5	2102.75	1.219	0.05	50.00	699.82	0.004	469014.96	4746148.02
STCK13	Diesel Light Plant - 6	2046.15	1.219	0.05	50.00	699.82	0.004	468841.16	4746376.68
STCK14	Diesel Light Plant - 7	2072.85	1.219	0.05	50.00	699.82	0.004	469014.65	4746592.36
STCK15	Diesel Light Plant - 8	2071.11	1.219	0.05	50.00	699.82	0.004	469130.30	4746719.54
STCK16	Diesel Light Plant - 9	2056.48	1.219	0.05	50.00	699.82	0.003	468845.57	4746785.10
STCK17	Diesel Light Plant - 10	2057.58	1.219	0.05	50.00	699.82	0.003	468705.80	4746893.84
STCK18	Diesel Light Plant - 11	2094.12	1.219	0.05	50.00	699.82	0.003	468524.97	4746897.01
STCK19	Diesel light plant - 12	2091.61	1.219	0.05	50.00	699.82	0.003	468184.45	4746991.88
STCK20	Diesel Light Plant - 13	2094.41	1.219	0.05	50.00	699.82	0.003	468110.96	4747166.84
STCK21	Diesel Light Plant - 14	2094.12	1.219	0.05	50.00	699.82	0.003	468188.31	4747336.26
STCK22	Diesel Light Plant - 15	2108.93	1.219	0.05	50.00	699.82	0.003	468229.27	4747552.71
STCK23	Kiewit Contractor Generator (90 hp)	2098.73	2.085	0.10	39.17	699.82	0.008	469469.20	4746407.88
STCK24	Pit Generator (52 hp)	2152.92	1.829	0.10	39.17	699.82	0.004	467479.82	4748239.12
STCK25	Dust Suppression Pump (97.9 hp) -WPG	2009.99	1.829	0.10	39.17	699.82	0.004	468030.00	4745685.00
STCK26	Shovel Generator (67 hp)	2146.39	1.83	0.09	1.65	753.15	0.004	466949.85	4749732.79

5.0 MODELING RESULTS

A preliminary analysis (PA) was conducted. Facility-wide emissions were modeled for the PA to evaluate whether a significant impact exists. Pursuant to DEQ guidance, new emissions were modeled as positive emission rates, emissions from the existing 810 hp and 375 hp generators were modeled as negative emission rates and the model results (netting) were compared against the Significant Contribution Levels (SCLs). Table 3-5 provides the SCL and netting analysis results. Based on these results, a full impact analysis (FIA) was required for NO₂, PM_{2.5}, and SO₂ (1-hr averaging period). CO, PM₁₀, and annual SO₂ were below the SCLs and therefore were included in the FIA. For the FIA, facility-wide emissions were added to appropriate background concentration to estimate a total concentration.

DEQ has determined there are no potentially co-contributing sources located near the NRRM project, background concentrations are all less than 50 percent of the applicable NAAQS, and there are no sensitive human receptors in the immediate vicinity of the NRRM. Therefore, only impacts from the facility's emission sources were included in the FIA. Maximum hours of operations (8,760 hours/year) were modeled in this analysis.

The NRRM must comply with NAAQS listed in Table 3-3. Modeling results for each required averaging period are presented in Tables 5-1 through Table 5-5. Table 5-6 provides the modeling results plus each corresponding background concentration. Figures 5-1 through 5-5 present modeled concentration isopleths for each pollutant. The total impact concentrations were then compared with NAAQS. Results indicate that the NRRM can operate in compliance with required NAAQS. Electronic modeling files used in this analysis are included on the compact disk in Appendix H.

Table 5-1				
Impacts for Cumulative NAAQS Analysis				
(NO₂ impacts, 1-hour averaging period)				
Years Modeled	Three Year Mean of 8th Highest Daily Maximum 1-Hour Concentration (μg/m³)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2005	82.92	467897.83	4745028.14	2010.58
2006	78.21	467947.09	4745028.43	2009.06
2007	79.69	467897.83	4745028.14	2010.58
Mean	80.27			

Table 5-2 Maximum Impacts for Cumulative NAAQS Analysis (NO ₂ impacts, Annual averaging period)				
Years Modeled	Highest Maximum Annual Concentration (µg/m³)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2005*	6.02	467947.09	4745028.43	2009.06

*2005 HAD THE HIGHEST IMPACT FOR ALL YEARS MODELED (2004-2008)

Table 5-3 Maximum Impacts for Cumulative NAAQS Analysis SO ₂ impacts, Three-year average of the 99 th percentile of the annual distribution of 1-hour average daily maximum concentrations not to exceed standard				
Years Modeled	Three Year Average of the 99 Percentile of the Annual Distribution of 1-hour Average Daily Maximum concentration - 4th Highest Concentration (µg/m³)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2005	17.97	469109.87	4744996.53	2006.07
2007	15.58	469229.37	4744842.66	1997.06
2008	15.89	469229.37	474482.66	1997.06
Mean	16.48			

Table 5-4 Maximum Impacts for Cumulative NAAQS Analysis PM _{2.5} impacts, 1 st highest 24-hour average concentrations not to exceed standard				
Years Modeled	1st Highest 24-hour Average Concentration (µg/m³)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2004-2008	3.52	469169.62	4744919.59	2005.50

Table 5-5 Maximum Impacts for Cumulative NAAQS Analysis PM2.5 impacts, Annual concentrations not to exceed standard				
Years Modeled	1stHighest Annual Concentrations ($\mu\text{g}/\text{m}^3$)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2004-2008	0.52	469139.75	4744958.06	2006.80

Table 5-6 Modeling Summary of Results						
Pollutant	Averaging Time	Modeled Results ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	Percentage of Standards (%)
NO ₂	1-hour	80.27	18	98.27	188	52.27
	Annual	6.02	4.3	10.32	100	10.32
SO ₂	1-hour	16.48	47	63.48	196	32.39
PM _{2.5}	24-hour	3.52	16	19.52	35	55.77
	Annual	0.52	5.2	5.72	15	38.14

Figure 5- 1

8th Highest Daily Maximum 1-Hour NO₂ Concentration ($\mu\text{g}/\text{m}^3$)

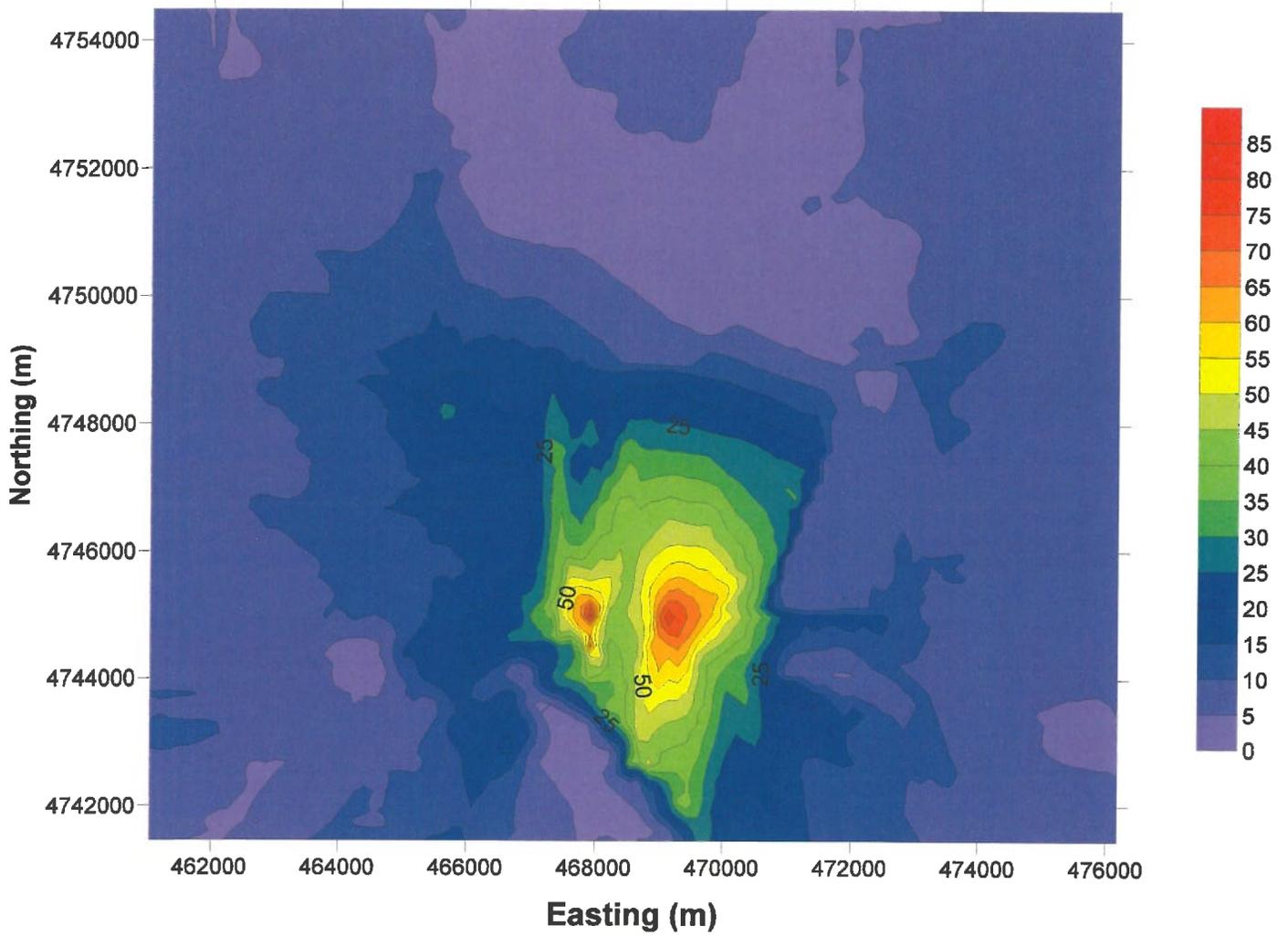


Figure 5-2
Highest Maximum Annual NO₂ Concentration (µg/m³)

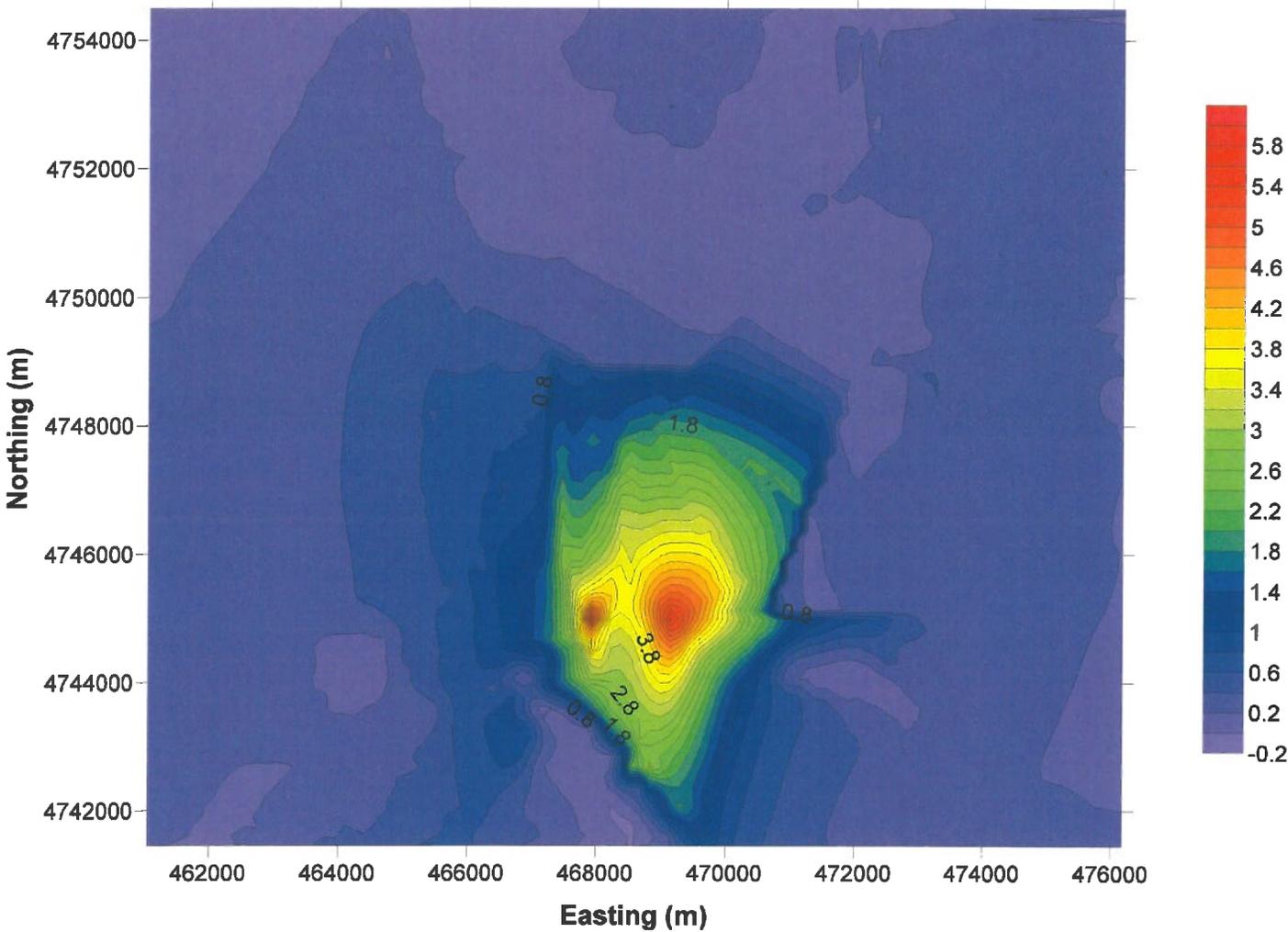


Figure 5-3

99 Percentile Annual Distribution of 1-hour Average Daily Maximum
SO₂ Concentration - 4th Highest Concentration (µg/m³)

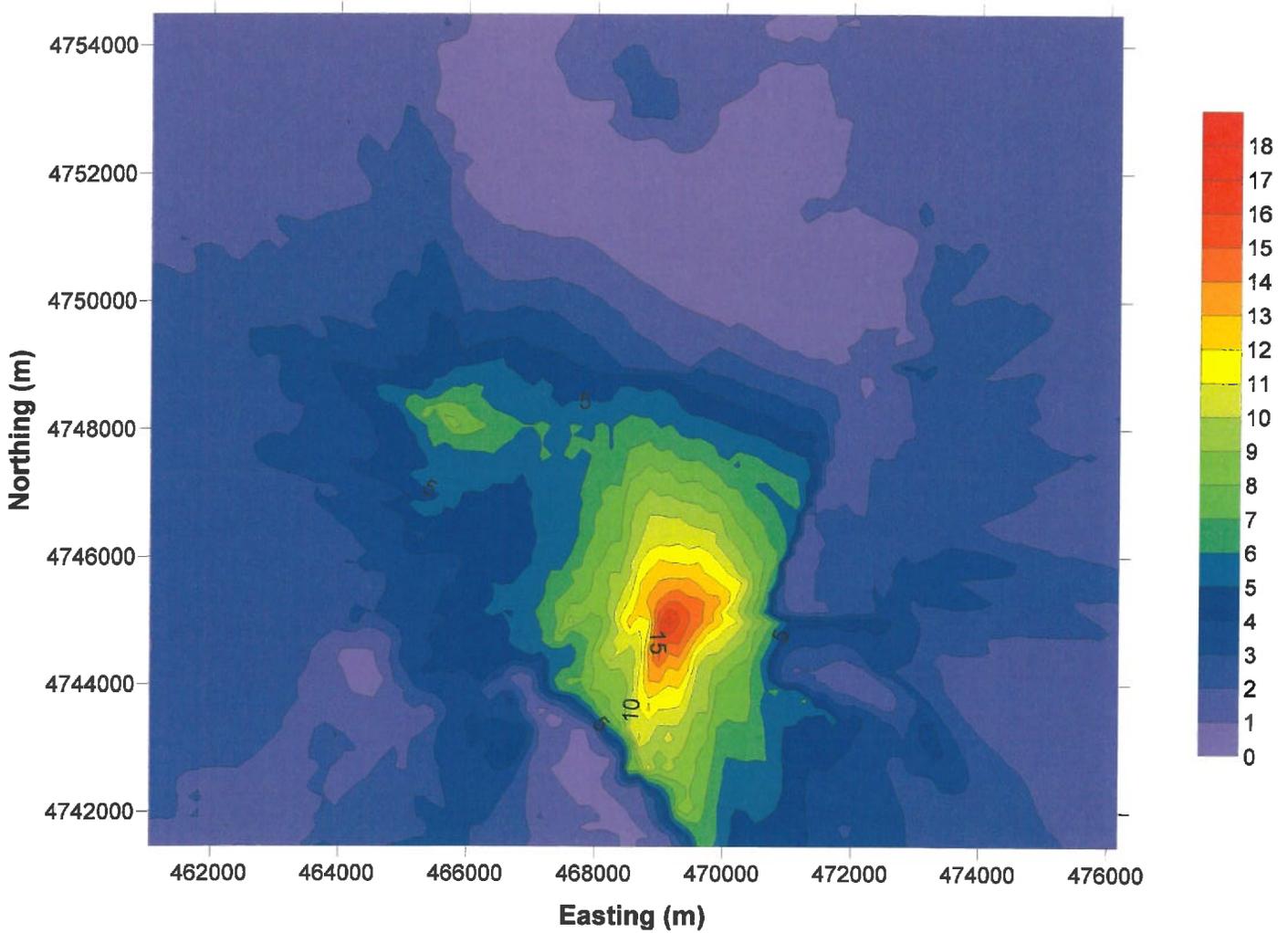


Figure 5-4
Highest 24-hour PM_{2.5} Concentration - 1st Highest Concentration (µg/m³)

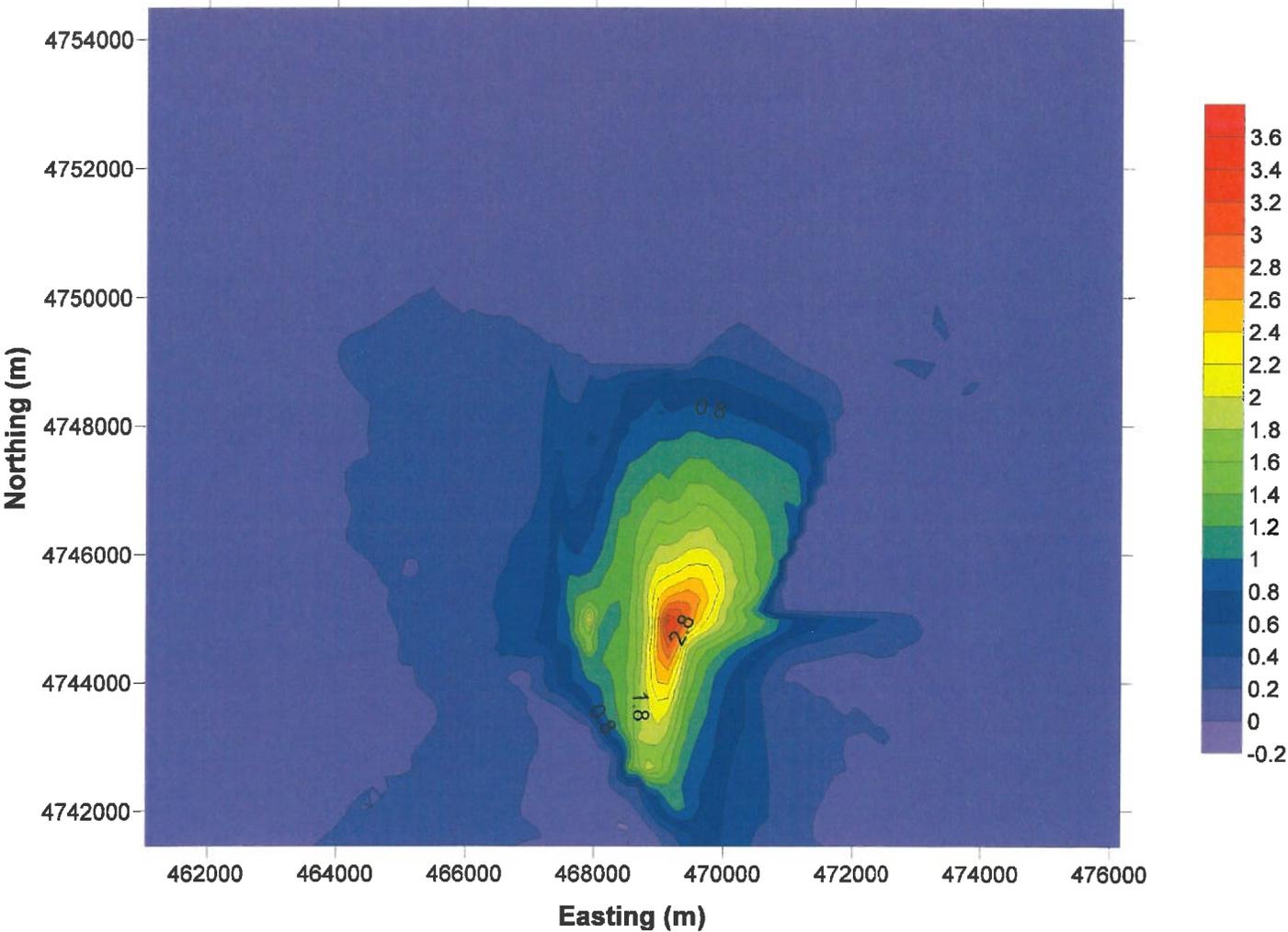
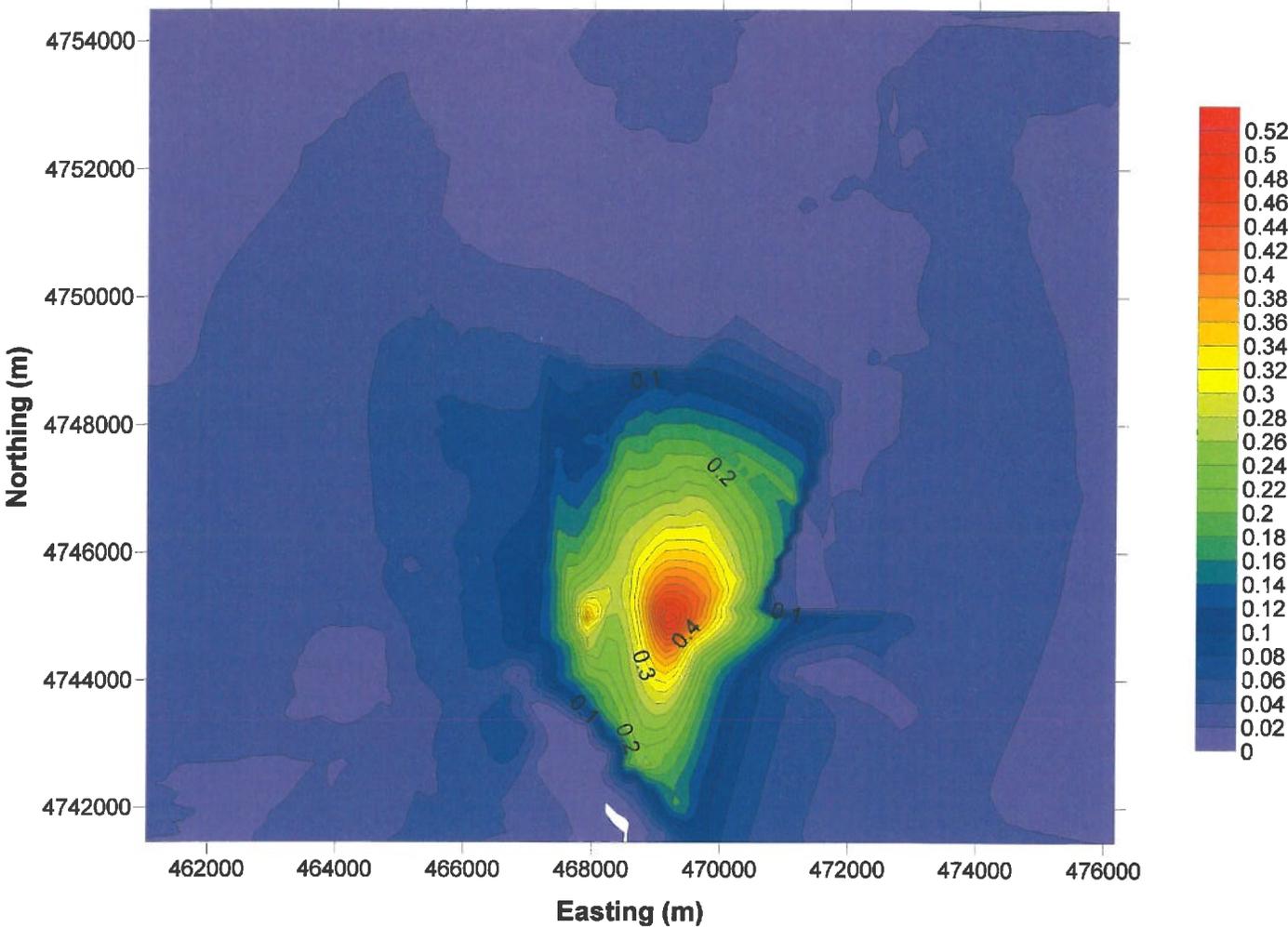


Figure 5-5
Highest Annual PM_{2.5} Concentration . 1st Highest Concentration (µg/m³)



6.0 REGULATORY ANALYSIS

A regulatory analysis was performed for NRRM to determine the applicability of the state and federal air quality regulations. The regulatory applicability determinations are included in this section.

Federal Regulations

New Source Review (NSR) and Prevention of Significant Deterioration (PSD) Applicability, 40 CFR Parts 51 and 52

In accordance with EPA and IDAPA 58.01.01.205 rules, the proposed facility is not a major source.

Greenhouse Gas Reporting Program (GHGRP), 40 CFR Part 98

On November 8, 2010, EPA signed a rule that finalized greenhouse gas (GHG) reporting requirements. Facilities must report GHG emissions if they meet the definition of one of the identified industry segments and emit 25,000 Metric Tons (MT) CO₂e (Carbon Dioxide equivalent) or more per year in combined GHG emissions. An emission inventory for GHG was performed for the NRRM. For uncontrolled emissions (8,760 hours/year) the site was estimated to emit approximately 17,128 metric tons per year of CO₂e. The NRRM is not subject to the GHG reporting program of 40 CFR Part 98 because facility emissions are less than 25,000 metric tons per year.

Greenhouse Gas Tailoring Rule

On May 13, 2010, EPA issued a final rule that establishes an approach to addressing greenhouse gas emissions from stationary sources under the Clean Air Act (CAA) permitting programs. This final rule sets thresholds for GHG emissions that define when permits under NSR, PSD and Title V Operating Permit programs are required for new and existing facilities. This rule "tailors" the requirements of these CAA permitting programs to limit which facilities will be required to obtain PSD and Title V permits. As the total CO₂e is 17,128 tons per year, the NRRM is not subject to PSD or Title V operating permit programs with respect to the GHG Tailoring Rule at this time.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61

The NRRM is not subject to any NESHAP requirements pursuant to 40 CFR Part 61.

Compliance Assurance Monitoring, 40 CFR Part 64

The Compliance Assurance Monitoring (CAM) rule, 40 CFR Part 64 applies to each Pollutant Specific Emissions Unit when it is located at a major source that is required to obtain Title V, Part 70 or 71 permit. The NRRM is not a major source nor will the facility obtain a Title V, Part 70 or 71 operating permit. Therefore, the CAM rule is not applicable to the NRRM.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63

Part 63 National Emission Standards for Hazardous Air Pollutants (NESHAP) apply both to major sources of HAPs, defined as PTE equal to or greater than 10 tons per year for any single HAP or PTE equal to or greater than 25 tons per year for total HAP, and area sources of HAPs, defined as any stationary source of HAPs that is not a major source. As HAP emissions are below major source thresholds, the NRRM is not a major source of HAPs. However, the NRRM is an area source of HAPs.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart JJJJJJ (NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources)

Source: 76 FR 15591, Mar. 21, 2011, unless otherwise noted.

What This Subpart Covers

§ 63.11193 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in §63.2, except as specified in §63.11195.

Per §63.11195(e) gas fired boilers as defined in Subpart JJJJJJ are not subject to any of the requirements of Subpart JJJJJJ. A gas fired boiler is defined as any boiler that burns gaseous fuels not combined with any solid fuels, burns liquid fuels only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. The Peerless propane boiler meets this definition of a gas fired boiler and is not subject to the requirements of Subpart JJJJJJ.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart DDDDDD (NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters)

Source: 69 FR 55253, Sept. 13, 2004, unless otherwise noted.

What This Subpart Covers

§ 63.7485 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP as defined in §63.2 or §63.761 (40 CFR part 63, subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities), except as specified in §63.7491. Because the NRRM is an area source of HAP, the Peerless steam boiler is not subject to the requirements of Subpart DDDDD.

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63 Subpart ZZZZ

e-CFR Data is current as of August 30, 2013

§ 63.6585 Am I subject to this subpart? *[Applicable Agrium references shown in italics]*

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068,

subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

§ 63.6590 What parts of my plant does this subpart cover? [*Applicable Agrium reference shown in italics*]

This subpart applies to each affected source.

(a) Affected source. An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) Existing stationary RICE.

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) New stationary RICE.

(i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) Reconstructed stationary RICE. (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(b) Stationary RICE subject to limited requirements. (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a

major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

Summary of Applicability Under 40 CFR Part 63, Subpart ZZZZ

Generator Units (date construction commenced, 40 CFR §63.2)	Subject to ZZZZ
(1) Tier IV 1,093 hp diesel generator (post 2006)	Yes
(1) Tier IV, 67 hp diesel generator (post 2006)	Yes
(1) Tier II, 388 hp emergency back-up diesel generator (post 2006)	Yes
(1) Tier III, 100 hp diesel generator (post 2006)	Yes
(3) Rental Tier III diesel generators (post 2006)	Yes
(15) Diesel-fired light plants (post 2006; except for one 2003, three 2005)	Yes, for 11 units
(1) Tier III, 97.9 hp diesel generator (post 2006)	Yes
(1) Tier III, 90 hp diesel generator (post 2006)	Yes
(1) 52 hp diesel generator (post 2006)	Yes

The engines at NRRM where construction is commenced on or after June 12, 2006 are considered new stationary RICE. 40 CFR § 63.6590(a)(2)(iii). New stationary RICE that are compression ignition engines located at an area source must meet the requirements of 40 CFR Part 63 Subpart ZZZZ by meeting the requirements of 40 CFR Part 60 Subpart IIII for compression ignition engines. 40 CFR § 63.6590(c)(1). There are no further requirements for these engines under Subpart ZZZZ. *Id.*

Other engines at NRRM where construction was commenced before June 12, 2006 are existing RICE engines at an area source. These engines must comply with Emission Limitations/Management Practices of § 63.6603 Table 2d and the fuel requirements of § 63.6604 and § 63.6625 as summarized below:

Relevant Excerpts § 63.6603 Table 2d		
For each	You must meet the following requirement, except during periods of startup	During periods of startup you must
1. Non-Emergency, non-black start CI stationary RICE ≤ 300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first; ¹ b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
2. Non-Emergency, non-black start CI stationary RICE $300 < \text{HP} \leq 500$	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O ₂ ; or	
Relevant Excerpts from Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements		
11. Existing non-emergency stationary RICE $100 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency stationary CI RICE $300 < \text{HP} \leq 500$ located at an area source of HAP	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.
12. Existing non-emergency stationary RICE $100 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency stationary CI RICE $300 < \text{HP} \leq 500$ located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR Part 60 Subpart III

e-CFR Data is current as of May 8, 2013

§ 60.4200 Am I subject to this subpart [*Applicable Agrium references shown in italics*]

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

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

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

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

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

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

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

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

(c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area

source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart applicable to area sources.

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(e) Owners and operators of facilities with CI ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate non-road engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

§ 60.4204 Emission Standards for Owners and Operators of non-emergency engines [*Applicable Agrium reference shown in italics*]

Sections 40 CFR §60.4204(a) and (b) describe the emissions standards.

§ 60.4205 Emission Standards for Owners and Operators of emergency engines [*Applicable Agrium reference shown in italics*]

Section 40 CFR §60.4205 described the emissions standards.

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine? [*Applicable Agrium reference shown in italics*]

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR §60.4204 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart

In accordance with § 60.4207 (b), beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must purchase diesel fuel that meets the requirements of 40 CFR 80.510(b) for non-road diesel fuel.

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?

Section 40 CFR §60.4208 prescribes engine requirements for units installed after December 31, 2008.

§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in § 60.4211.

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

Among other prescribed requirements, pre-2007 model engines with a displacement of less than 10 liters per cylinder must demonstrate compliance according to one of the methods below:

- (1) Purchase an engine certified according to 40 CFR Part 89 or Part 94, as applicable, for the same model year and maximum engine power.*
- (2) Keep records of performance test results for each pollutant for a test conducted on a similar engine. The rest must have been conducted using the same methods specified in this subpart.*
- (3) Keep records of engine manufacturer date indicating compliance with the standards.*
- (4) Keep records of control device vendor data indicating compliance with the standards.*
- (5) Conduct an initial performance test to demonstrate compliance with the emission standards according to the testing requirements in this subpart.*

Among other prescribed requirements, for model 2007 engines and later with a displacement of less than 30 liters per cylinder you must comply by:

- (1) Purchase an engine certified to the manufacturer's emission standards, as applicable, for the same model year and maximum engine power.*

§§ 60.4212, 4213 What are my testing requirements and procedures?

Section § 60.4212 and 4213 establish testing procedures for owners and operators that conduct testing.

§ 60.4214 Notification, Reporting and Recordkeeping for Owners and Operators

Section § 60.4214 establishes notification obligations owners and operators of emergency and non-emergency engines.

Summary of Applicability Under 40 CFR Part 60, Subpart IIII

These are the units at NRRM that are subject to the provisions of this Subpart IIII. Specifically,

the units ordered after July 11, 2005, the date that construction commences under 40 CFR §60.4200(a).

Generator Units (date construction commenced [ordered], 40 CFR §60.4200(a))	Subject to III
(1) Tier IV 1,093 hp diesel generator (2013)	Yes
(1) Tier IV, 67 hp diesel generator (2013)	Yes
(1) Tier II, 388 hp emergency back-up diesel generator (2013)	Yes
(1) Tier III, 100 hp diesel generator (2013)	Yes
(3) Rental Tier III diesel generators (2013)	Yes
(15) Diesel-fired light plants (6 in 2010; 8 in 2006; 1 in 2003)	Yes (14 units)
(1) Tier III, 97.9 hp diesel generator (2012)	Yes
(1) Tier III, 90 hp diesel generator (2011)	Yes
(1) 52 hp diesel generator (2012)	Yes

Standards of Performance for Phosphate Rock Plants, 40 CFR Part 60, Subpart NN

Although NRRM meets the definition of a Phosphate Rock Plant under 40 CFR §60.401, the facility does not utilize any of the affected facilities in 40 CFR §60.400.

Standards of Performance for Nonmetallic Mineral Processing Plants, 40 CFR Part 60 , Subpart OOO

These provisions do not apply to the portable screen plant at NRRM because there are no crushing or grinding equipment or activities. 40 CFR §60.670(a)(2).

IDAPA Regulations

IDAPA 58.01.01.123 – Certification 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. Agrium will comply with this requirement and the appropriate certifications by a responsible official are being submitted with this application.

IDAPA 58.01.01.625 -- Visible Emissions

This regulation prohibits emissions of any air pollutant for a period aggregating more than three minutes in any 60-minute period of greater than 20 percent opacity. The emission points at NRRM are subject to this regulation. NRRM will comply with this rule by implementing good operating practices and inspecting emissions units regularly.

IDAPA 58.01.01.650 -- Rules for Control of Fugitive Dust

All reasonable precautions shall be taken to prevent particulate matter from becoming airborne. Agrium will comply with this rule by implementing a fugitive dust control plan.

IDAPA 58.01.01.725 -- Rules for Sulfur Content of Fuels

No person shall use distillate fuel with sulfur content in excess of these rules. Agrium will comply with this rule by purchasing conforming diesel fuel.

IDAPA 58.01.01.790, 793, 794 -- Rules for the Control of Nonmetallic Mineral Processing Plants

These provisions do not apply to the portable screen plant at NRRM because there are no crushing or grinding equipment or activities. IDAPA 58.01.01.011.03.

7.0 REFERENCES

Environmental Protection Agency (EPA). 2005. *Guideline on Air Quality Models (Revised)*. 40 Code of Federal Regulations, Part 51, Appendix W. Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.

Idaho Administrative Code, Department of Environmental Quality (IDEQ), 2012. IDAPA 58.01.01, Rules for the Control of Air Pollution in Idaho, <http://adminrules.idaho.gov/rules/current/58/index.html>.

Idaho Department of Environmental Quality (IDEQ). 2011. *State of Idaho Air Quality Modeling Guideline*. Stationary Source Program, Air Quality Division. July, 2011.

U.S. Environmental Protection Agency (EPA). 2004. *User's Guide for the AMS/EPA Regulatory Model - AERMOD*. EPA-454/B-03-002. Office of Air Quality Planning and Standards, Emissions Monitoring and Analysis Division. Research Triangle Park, North Carolina. September 2004.

APPENDIX A
1995 PTC APPLICATION



IDAHO DEPARTMENT
OF HEALTH AND WELFARE

DIVISION OF
ENVIRONMENTAL QUALITY

1410 North Hillon, Boise, ID 83706-1255, (208) 334-0502

Philip E. Balt, Governor

February 6, 1995

CERTIFIED MAIL # P 875 712 748

Wendell Johnson
Rhone-Poulenc Basic Chemicals Company
Post Office Box 160
Montpelier, Idaho 83254

RE: P-950002 Rhone-Poulenc Basic Chemicals Co., Soda Springs
(Diesel Generator)

Dear Mr. Johnson:

On January 5, 1995, DEQ received your Permit to Construct (PTC) application to install a diesel generator at your facility located northeast of Soda Springs. That application was determined complete on January 23, 1995. Based on review of the application, DEQ finds this project meets the provisions of IDAPA 16.01.01.200 (Rules for the Control of Air Pollution in Idaho). Enclosed is your PTC No. 029-00031.

Please pay particular attention to the reporting requirements contained in Paragraph E of the General Provisions section of the permit. This information is needed to properly track the progress of the permit. Refer to the appropriate permit number when submitting reports required in the Reporting Requirements section of the permit.

You, as well as any other entity, may have the right to appeal this final agency action pursuant to the Idaho Department of Health and Welfare Rules, Title 5, Chapter 3, "Rules Governing Contested Case Proceedings and Declaratory Rulings," by filing a petition with the Hearings Coordinator, Department of Health and Welfare, Administrative Procedures Section, 450 West State Street, 10th Floor, Boise, Idaho 83720-5450, within thirty-five (35) days of the date of this decision.

Please be advised your facility is subject to registration and an annual registration fee prior to the operation of your facility in accordance with IDAPA 16.01.01.525 and IDAPA 16.01.01.526.02. The information regarding the required registration and fees will be sent to you shortly.

STATE OF IDAHO
 PERMIT TO CONSTRUCT AN
 AIR POLLUTION EMITTING SOURCE

PERMIT NUMBER

0 2 9 - 0 0 0 3 1

AQCR

0 6 1

CLASS

B

SIC

1 4 7 5

ZONE

1 2

UTM COORDINATE (km)

4 6 8 8 4 7 4 6 6

1. **PERMITTEE**
 Rhone-Poulenc Basic Chemicals Company
2. **PROJECT**
 Phosphate Mine
3. **MAILING ADDRESS**
 Post Office Box 160
- | | | |
|---------------------------|-----------------------|--------------------------|
| CITY
Montpelier | STATE
Idaho | ZIP CODE
83254 |
|---------------------------|-----------------------|--------------------------|
4. **SITE LOCATION COUNTY**
 Caribou
- | | |
|---|---|
| NO. OF FULL TIME EMPLOYEES
91 | PROPERTY AREA AT SITE (Acreage)
640 |
|---|---|
5. **PERSON TO CONTACT**
 Wendell Johnson
- | | |
|--------------------------------|---|
| TITLE
Chief Engineer | TELEPHONE NUMBER
(208) 574-2999 |
|--------------------------------|---|
6. **EXACT PLANT LOCATION**
 SE $\frac{1}{4}$, NE $\frac{1}{4}$, Section 26, T6S, R43E (~19 air miles NE of Soda Springs)
7. **GENERAL NATURE OF BUSINESS AND KINDS OF PRODUCTS**
 Phosphate Mine
8. **GENERAL CONDITIONS**

This permit is issued according to the Rules for the Control of Air Pollution in Idaho, Section 16.01.01.200, and pertains only to emissions of air contaminants which are regulated by the State of Idaho and to the sources specifically allowed to be constructed by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located, (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment, (c) does not release the permittee from compliance with other applicable federal, state, tribal or local laws, regulations, or ordinances, (d) in no manner implies or suggests that the Department of Health and Welfare, or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit is not transferable to another person, place, piece or set of equipment. This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for one year.

THIS PERMIT HAS BEEN GRANTED ON THE BASIS OF DESIGN INFORMATION PRESENTED WITH ITS APPLICATION. CHANGES OF DESIGN OR EQUIPMENT THAT RESULT IN ANY CHANGE IN THE NATURE OR AMOUNT OF EMISSIONS MUST BE APPROVED IN ADVANCE BY THE DEPARTMENT.

Wendell D. Green

ASSISTANT ADMINISTRATOR
 PERMITS AND ENFORCEMENT

DATE: February 5, 1995

PERMIT TO CONSTRUCT

PERMITTEE, PROJECT, AND LOCATION

Rhone-Poulenc Basic Chemicals Company
Phosphate Mine
Soda Springs, Idaho

P E R M I T N U M B E R

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SOURCE

Caterpillar Model 3412 Diesel Generator

1. SOURCE DESCRIPTION

1.1 Process Description

A Caterpillar Model 3412 diesel generator supplies electrical power to the hot-start line and shop/office building. The generator is rated at 545 kilowatts at one hundred percent (100%) load.

1.2 Controls

Emissions released to the atmosphere from the diesel generator are uncontrolled.

1.3 Equipment Listing

1.3.1 A Caterpillar Model 3412 diesel generator with the following specifications is covered by this Permit to Construct:

Horsepower Rating	--	483 hp
Maximum Power Rating	--	545 kW @ 100% load
Minimum Stack Height	--	12 feet (ft)
Maximum Stack Diameter	--	8 inches (in)
Exit Gas Volume	--	4,602 acfm @ 100% load
Fuel Type	--	#2 diesel

2. EMISSION LIMITS

2.1 Generator Emissions - Caterpillar Model #3412

- 2.1.1 Total Suspended Particulate (TSP) emissions shall not exceed the pound per hour (lb/hr) or ton per year (T/yr) values listed in Appendix A.
- 2.1.2 PM-10 (Particulate Matter with a mean aerodynamic diameter less than a nominal 10 microns) shall not exceed the pound per hour (lb/hr) or ton per year (T/yr) values listed in Appendix A.
- 2.1.3 Oxides of Nitrogen (NO_x) emissions shall not exceed the pound per hour (lb/hr) or ton per year (T/yr) values listed in Appendix A.
- 2.1.4 Carbon Monoxide (CO) emissions shall not exceed the pound per hour (lb/hr) or ton per year (T/yr) values listed in Appendix A.
- 2.1.5 Sulphur Dioxide (SO₂) emissions shall not exceed the pound per hour (lb/hr) or ton per year (T/yr) values listed in Appendix A.
- 2.1.6 Visible emissions from the diesel generator shall not exceed twenty percent (20%) opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period as required in IDAPA 16.01.01.625 (Rules for the Control of Air Pollution in Idaho) and the Department's "Evaluation of Visible Emissions Manual."

DATE: February 5, 1995

PERMIT TO CONSTRUCT

PERMITTEE, PROJECT, AND LOCATION

Rhone-Poulenc Basic Chemicals Company
Phosphate Mine
Soda Springs, Idaho

P E R M I T N U M B E R

0 2 9 - 0 0 0 3 1

SOURCE

Caterpillar Model 3412 Diesel Generator

3. REPORTING REQUIREMENTS

All documents, including but not limited to, records and supporting information submitted to the Department, shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the documents are all true, accurate and complete.

DATE: February 5, 1995

APPENDIX A

Hourly (lb/h) and Annual (T/yr) Emission Limits^a

Rhone-Poulenc Basic Chemicals Company

SOURCE DESCRIPTION	TSP		SO ₂		NO _x		CO		VOC		PM-10	
	lb/h	tons/yr	lb/h	tons/yr	lb/h	tons/yr	lb/h	tons/yr	lb/h	tons/yr	lb/h	tons/yr
Caterpillar 3412 Diesel Generator	1.0	3.62	1.13	4.95	13.71	60.05	1.0	2.10	1.0	0.57	1.0	3.62
TOTALS	-----	3.62	-----	4.95	-----	60.05	-----	2.10	-----	0.57	-----	3.62

a As determined by the specific EPA methods, Department approved alternative, or as determined by the Department's emission estimation methods used in the permit application analysis.

1.25

DATE: February 5, 1995

PERMIT TO CONSTRUCT GENERAL PROVISIONS

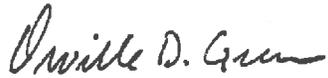
- A. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the Rules for the Control of Air Pollution in Idaho. The emission of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the Rules for the Control of Air Pollution in Idaho, and the Environmental Protection and Health Act, Idaho Code 39-101, et. seq.
- B. The permittee shall at all times (except as provided in the Rules for the Control of Air Pollution in Idaho) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.
- C. The permittee shall allow the Director, and/or his authorized representative(s), upon the presentation of credentials:
- 1) To enter at reasonable times upon the premises where an emission source is located, or in which any records are required to be kept under the terms and conditions of this permit; and
 - 2) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and require stack emission testing in conformance with the Department's Procedures Manual for Air Pollution Control when deemed appropriate by the Director.
- D. Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.
- E. The permittee shall notify the Idaho Division of Environmental Quality, in writing, of the required information for the following events within five working days after occurrence;
- 1) Initiation of Construction - Date
 - 2) Completion/Cessation of Construction - Date
 - 3) Actual Production Start up - Date
 - 4) Initial Date of Achieving Maximum Production Rate - Production Rate and Date
- F. If emission testing is specified, the permittee must schedule such testing within sixty (60) days after achieving the maximum production rate, but not later than one hundred and eighty (180) days after initial start up. Such testing must strictly adhere to the procedures outlined in the Department's Procedures Manual for Air Pollution Control, and will not be conducted on weekends or state holidays. Testing procedures and specific time limitations may be modified by the Idaho Division of Environmental Quality by prior negotiation if conditions warrant adjustment. The Idaho Division of Environmental Quality shall be notified at least fifteen (15) working days prior to the scheduled compliance test. Any records or data generated as a result of such compliance test shall be made available to the Department upon request.
- The performance tests will be performed at the maximum production rate. If this maximum rate is not achieved during testing, the allowable production rate will be limited to the production rate attained during testing.
- G. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

DATE: February 5, 1995

Wendell Johnson
February 6, 1995
Page 2

If you have any questions regarding the terms or conditions of the enclosed permit, contact Martin Bauer, Chief, Construction Permits Bureau, at (208) 334-5898.

Sincerely,



Orville D. Green
Assistant Administrator
Permits and Enforcement

ODG\BR:ls\rogca\rbonorp.pl

Enclosure

cc: R. Wilkosz/TSB
File Manual

P. Rayne/AFS
COF

SEIRO

APPENDIX B
2003 PTC APPLICATION



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706-1255 • (208) 373-0502

Dirk Kempthorne, Governor
C. Stephen Allred, Director

October 24, 2003

Certified Mail No.: 7099 3220 0009 1975 1273

Mr. Rob Squires
Nu-West Industries, Inc.
3010 Conda Road
Soda Springs, Idaho 83276

RE: AIRS No. 029-00031, Nu-West Industries, Inc., Rasmussen Ridge Mine
Final Permit to Construct

Dear Mr. Squires:

The Idaho Department of Environmental Quality (Department) is issuing Permit to Construct (PTC) Number P-020327 for the Rasmussen Ridge Mine facility located near Soda Springs, Idaho in accordance with IDAPA 58.01.01.200 through 228 (*Rules for the Control of Air Pollution in Idaho*). This permit is effective immediately and is based on your permit application received on December 23, 2002 and as amended on September 12, 2003.

This permit does not release Nu-West Industries, Inc., from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

Larry Sims or Richard Elkins of the Pocatello Regional Office will contact you regarding a meeting with the Department to discuss the permit terms and requirements. The Department recommends the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any operations staff responsible for day-to-day compliance with permit conditions.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to call Mike Simon at (208) 373-0212 to address any questions or concerns you may have with the enclosed permit.

Sincerely,

Martin Bauer
Administrator
Air Quality Division

MB/KH/sd

Permit No. P-020327

Enclosure

G:\Air Quality\Stationary Source\SS Ltd\PTC\Nu-West Rasmussen Mine\Final\NP-020327 Final Permit Ltr.doc

cc: Tiffany Floyd, Pocatello Regional Office
Lisa Kronberg, Attorney Generals Office
Ken Hanna, Permit Writer
Mike Simon, Permit Program Coordinator
Marilyn Seymore, Permit Binder
Pat Rayne, AFS
Sherry Davis, Source File
Mary Anderson, Modeling Coordinator (Ltr Only)
Phyllis Heitman, (Ltr Only)
Reading File (Ltr Only)

Eric Hansen
Senior Consultant
MFG, Inc.
19203 36th Avenue W., Suite 101
Lynwood, WA 98036-5707



Air Quality
PERMIT TO CONSTRUCT

State of Idaho
Department of Environmental Quality

PERMIT NO.: P-020327
AIRS FACILITY NO.: 029-00031
AQCR: 061 **CLASS:** B
SIC: 1475 **ZONE:** 12
UTM COORDINATE (km): 468.8 , 4746.6

1. PERMITTEE
Nu-West Industries, Inc.

2. PROJECT
Rasmussen Ridge Mine

3. MAILING ADDRESS 3010 Conda Road	CITY Soda Springs	STATE ID	ZIP 83276
--	-----------------------------	--------------------	---------------------

4. FACILITY CONTACT Rob Squires	TITLE Environmental/Safety Coordinator	TELEPHONE (208) 574-2420 ext. 40
---	--	--

5. RESPONSIBLE OFFICIAL Charles H. Ross	TITLE General Manager	TELEPHONE (208) 574-4381
---	---------------------------------	------------------------------------

6. EXACT PLANT LOCATION SE ¼, NE ¼ Section 26, T6S, R43E (~ 19 air miles NE of Soda Springs)	COUNTY Caribou
--	--------------------------

7. GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS
Phosphate Mine

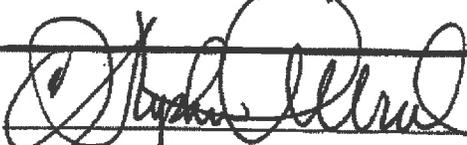
8. GENERAL CONDITIONS

This permit is issued according to IDAPA 58.01.01.200, *Rules for the Control of Air Pollution in Idaho*, and pertains only to emissions of air contaminants regulated by the state of Idaho and to the sources specifically allowed to be constructed or modified by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located; (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (c) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; (d) in no manner implies or suggests that the Department of Environmental Quality (DEQ) or its officers, agents, or employees, assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit is not transferable to another person, place, or piece or set of equipment. This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for one year.

This permit has been granted on the basis of design information presented with its application. Changes of design or equipment may require DEQ approval pursuant to the *Rules for the Control of Air Pollution in Idaho*, IDAPA 58.01.01.200, et seq.


C. STEPHEN ALLRED, DIRECTOR
DEPARTMENT OF ENVIRONMENTAL QUALITY

DATE ISSUED: October 24, 2003

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
Btu	British thermal unit
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
gpm	gallons per minute
HAPs	hazardous air pollutants
hp	horsepower
hr/yr	hours per year
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
m	meter(s)
MMBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	prevention of significant deterioration
PTC	permit to construct
PTE	potential to emit
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
SIC	Standard Industrial Classification
SO ₂	sulfur dioxide
SO _x	sulfur oxides
TSP	total suspended particulate
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-020327

Permittee: Nu-West Industries, Inc.	AIRS Facility No.: 029-00031	Date Issued: October 24, 2003
Location: Rasmussen Ridge, Soda Springs		

1. PERMIT TO CONSTRUCT SCOPE

Purpose

This PTC modifies previously issued PTC No. 029-00031, issued February 5, 1995. The effective date of this permit is the date of signature by DEQ on the cover page.

Regulated Sources

Table 1.1 lists all sources of emissions regulated by this PTC. The tables include all operations associated with the South, Central, and North Rasmussen Ridge mining areas.

Table 1.1 EMISSIONS SOURCES REGULATED BY THIS PERMIT

Permit Section	Source Description	Emissions Control(s)
2	#5004 Shop/Office Generator, Caterpillar model 3412, 810 hp, 545 kW @ 100% load, typical fuel contains up to 0.59% sulfur (not ASTM No. 1 or 2) & No. 1 diesel is used in cold weather. Stack characteristics: 12 ft high, 8 inches in diameter, 4602 acfm @ 100% load.	Good combustion control
2	#5001 Standby Generator, Caterpillar 300, 375 hp, typical fuel contains up to 0.59% sulfur (not ASTM # 1 or 2) & No. 1 diesel is used in cold weather. Stack characteristics: 10 ft high, 8 inches in diameter.	Good combustion control
3	Mobile equipment engaged in mining and hauling ore.	Reasonable control of fugitive dust
3	Ore handling operations; ore hopper, underground grizzly screen, conveyors, and rail car loading operations.	Reasonable control of fugitive dust
3	Mine roads and excavation areas.	Reasonable control of fugitive dust

Table 1.2 identifies all other air pollution-emitting sources at the facility that do not require specific permit conditions to demonstrate compliance with applicable air quality standards.

Table 1.2 OTHER EMISSIONS SOURCES

Permit Section	Source Description	PTC Exemption
	#0002 Well Generator/Engine, 207 estimated hp, 155 kW. This unit is exempt per IDAPA 58.01.01.222 when operated less than 225 hours per year.	
	Light plants, typically 11-22 hp. These units are exempt and allowed unlimited hours of operation if less than 100 hp per IDAPA 58.01.01.222.	

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-020327

Permittee: Nu-West Industries, Inc.	AIRS Facility No.: 029-00031	Date Issued: October 24, 2003
Location: Rasmussen Ridge, Soda Springs		

2. STATIONARY COMBUSTION UNITS

2.1 Process Description

The stationary combustion units include stationary diesel engines used to provide electric power for site operations. This includes the #5004 Shop/Office Generator and the #5001 Standby Generator that are located in the Rasmussen Ridge Central Mine area.

2.2 Emissions Control Description

Emissions from the stationary combustion units are controlled by maintaining good combustion control.

Emissions Limits

2.3 Emissions Limits

The PM/PM₁₀, SO₂, NO_x, VOC, and CO emissions from the #5004 Shop/Office Generator and from the #5001 Standby Generator stacks shall not exceed any corresponding emissions rate limits listed in Table 2.1.

Table 2.1 SHOP/OFFICE GENERATOR AND STANDBY GENERATOR EMISSIONS LIMITS

Source Description	PM/PM ₁₀ ¹		SO ₂		NO _x		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
#5004 Shop/Office Generator ¹	1.0	---	1.13	---	13.7	---	1.0	---	1.0	---
#5001 Standby Generator ²	1.0	---	1.0	---	11.63	---	2.51	---	1.0	---
Total Annual Combined Emissions from Generators #5004 and #5001 ³	---	3.62	---	4.95	---	60.1	---	8.8	---	3.3

- ¹ Based on the manufacturer's hourly emission data included in Appendix A of DEQ's February 5, 1995 Technical Memorandum.
- ² Based on AP-42 emission factors, Section 3.3, October, 1996.
- ³ As determined by multiplying the actual or allowable (if actual is not available) pound-per-hour emissions rate by the allowable hours per year that the process(es) may operate(s), or by actual annual production rates. The permittee shall not exceed the T/yr listed based on any consecutive 12-month period.
- ⁴ Includes condensibles.

2.4 Opacity Limit

Emissions from the Shop/Office Generator stack, the Standby Generator stack, or any other stack, vent, or functionally equivalent opening associated with the stationary combustion units, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-020327

Permittee: Nu-West Industries, Inc.	AIRS Facility No. 029-00031	Date Issued: October 24, 2003
Location: Rasmussen Ridge, Soda Springs		

Operating Requirements

2.5 Generator Operations

When the Office/Shop Generator or the Standby Generator are used, only one of these two units shall be operated at any time, except during periods of startup, shutdown, or maintenance.

2.6 Hours of Operation Limits – #5001 Standby Generator

The maximum annual hours of operation of the #5001 Standby Generator shall not exceed 7000 hr/yr, .

2.7 Fuel Oil Sulfur Content

No person shall sell, distribute, use, or make available for use any distillate fuel oil containing more than the following percentages of sulfur as required in IDAPA 58.01.01.728:

- ASTM Grade 1 fuel oil - 0.3% by weight.
- ASTM Grade 2 fuel oil - 0.5% by weight.

Monitoring, Recordkeeping and Reporting Requirements

2.8 Monitor Generator Hours of Operation

The permittee shall monitor and record the hours of operation of the #5001 Standby Generator on a monthly basis. A compilation of the most recent two years of records shall be kept onsite and made available to DEQ representatives upon request.

2.9 Document Certification

All documents, including but not limited to, records and supporting information submitted to DEQ, shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the documents are all true, accurate and complete.

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-020327

Permittee: Nu-West Industries, Inc.	AIRS Facility No. 029-00031	Date Issued: October 24, 2003
Location: Rasmussen Ridge, Soda Springs		

6. Establish procedures to minimize dust formation during conveying operations including the specific, quantifiable, maximum material drop height(s).
7. Training/orientation of employees about the Fugitive Dust Control Plan procedures.
8. The initial Fugitive Dust Control Plan shall be submitted to DEQ for review and approval no later than 60 days after the issuance date of this permit. After approval of the initial plan, the permittee may update the plan at any time by submitting the proposed changes to DEQ for review and approval. The updated plan shall not become effective until approved by DEQ. If DEQ deems that the change in the plan qualifies as permit to construct modification as defined in IDAPA 58.01.01.006, the procedures specified in IDAPA 58.01.01.200-228 shall be followed to make the change.
9. When in operation, the Permittee shall comply with the provisions in the approved Fugitive Dust Control Plan at all times. Whenever an operating parameter is outside the operating range specified by the plan, the permittee shall take corrective action as expeditiously as practicable to bring the operating parameter back within the operating range.
10. A copy of the Fugitive Dust Control Plan shall remain onsite at all times.

Monitoring and Recordkeeping Requirements

3.4 Fugitive Dust Monitoring – Periodic Inspections

The permittee shall conduct monthly facility-wide inspection of potential sources of fugitive dust emissions, during daylight hours and under normal operating conditions to ensure that the methods used to reasonably control fugitive dust emissions are effective. If fugitive dust emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each weekly fugitive dust emission inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time fugitive dust emissions were present (if observed), any corrective action taken in response to the fugitive dust emissions, and the date the corrective action was taken. A compilation of the most recent two years of records shall be kept onsite and shall be made available to DEQ representatives upon request.

3.5 Fugitive Dust Monitoring - Recordkeeping

The permittee shall monitor and maintain records of the frequency and the method(s) used (i.e., water, chemical dust suppressants, etc.) to reasonably control fugitive dust emissions. A compilation of the most recent two years of records shall be kept onsite and shall be made available to DEQ representatives upon request.

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-020327

Permittee: Nu-West Industries, Inc.	AIRS Facility No.: 029-00031	Date Issued: October 24, 2003
Location: Rasmussen Ridge, Soda Springs		

3. MINING AND LOADING OPERATIONS

3.1 Process Description

Open pit mining operations conducted at the South, Central and North Rasmussen Ridge Mine areas includes mobile equipment engaged in mining, hauling and placement of ore and overburden materials. Also included are loading operations at the off-site railcar load-out point, which includes an ore hopper, underground grizzly screen, conveyors, and a railcar loading hopper. All of the sources referred to above are fugitive dust sources.

3.2 Emissions Control Description

Emissions from mining operations are controlled by implementing good operating practices as presented in the Rasmussen Ridge Mining Project Fugitive Dust Control Plan.

Operating Requirements

3.3 Reasonable Control of Fugitive Dust Emissions -- Fugitive Dust Control Plan

All reasonable precautions shall be taken to prevent PM from becoming airborne as required in IDAPA 58.01.01.651. In determining what is reasonable, considerations will be given to factors such as the proximity of dust-emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of PM. To establish reasonable precautions, the Permittee shall develop, maintain and implement a Fugitive Dust Control Plan which identifies potential sources of fugitive dust and which establishes good operating practices for limiting the formation and dispersion of dust from those sources. The approved Fugitive Dust Control Plan is part of the terms and conditions of the permit.

The Fugitive Dust Control Plan (Plan) for the Rasmussen Ridge Mine shall, at a minimum, include information and establish requirements as follows:

1. A general description of the potential sources of fugitive dust from the facility.
2. Application of water from water trucks for control of dust in mining areas, haul roads and loadout areas. The Plan must establish specific, quantifiable, minimum frequencies for which the water must be applied. Water does not need to be applied when the surface is wet (i.e. during/following rainy conditions) or when reduced ambient temperatures may cause the water to freeze.
3. Application of suitable dust suppressant chemicals (e.g., magnesium chloride) to haul roads during the dry season. The Plan must specify a specific, quantifiable, minimum frequency for which the chemicals must be applied.
4. Drill rigs shall be equipped with water spray systems to reduce dust during drilling operations. The water sprays shall be used whenever drilling operations are being conducted. The water sprays do not need to be used when the ground is wet (i.e. during/following rainy conditions) or when reduced ambient temperatures may freeze the water in the system.
5. Establish procedures to minimize material drop heights and dust formation during truck loading operations and when dumping material from front-end loaders.

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-020327

Permittee: Nu-West Industries, Inc.	AIRS Facility No. 029-00031	Date Issued: October 24, 2003
Location: Rasmussen Ridge, Soda Springs		

4. PERMIT TO CONSTRUCT GENERAL PROVISIONS

1. The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the *Rules for the Control of Air Pollution in Idaho*. The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the *Rules for the Control of Air Pollution in Idaho*, and the Environmental Protection and Health Act, Idaho Code §39-101, et seq., and the permittee is subject to penalties for each day of noncompliance.
2. The permittee shall at all times (except as provided in the *Rules for the Control of Air Pollution in Idaho*) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.
3. The permittee shall allow the Director, and/or the authorized representative(s), upon the presentation of credentials:
 - To enter, at reasonable times, upon the premises where an emissions source is located, or in which any records are required to be kept under the terms and conditions of this permit.
 - At reasonable times, to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and require stack compliance testing in conformance with IDAPA 58.01.01.157 when deemed appropriate by the Director.
4. Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.
5. The permittee shall notify DEQ, in writing, of the required information for the following events within five working days after occurrence:
 - Initiation of Construction - Date
 - Completion/Cessation of Construction - Date
 - Actual Production Startup - Date
 - Initial Date of Achieving Maximum Production Rate - Production Rate and Date
6. If compliance testing is specified, the permittee must schedule and perform such testing within 60 days after achieving the maximum production rate, and not later than 180 days after initial startup. This requirement shall be construed as an ongoing requirement. The permittee shall not operate the source without testing within 180 days. If testing is not conducted within 180 days after initial startup, then each day of operation thereafter without the required compliance test constitutes a violation. Such testing must strictly adhere to the procedures outlined in IDAPA 58.01.01.157 and shall not be conducted on weekends or state holidays without prior written approval from DEQ. Testing procedures and specific time limitations may be modified by DEQ by prior negotiation if conditions warrant adjustment. DEQ shall be notified at least 15 days prior to the scheduled compliance test. Any records or data generated as a result of such compliance test shall be made available to DEQ upon request.

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-020327

Permittee: Nu-West Industries, Inc.	AIRS Facility No. 029-00031	Date Issued: October 24, 2003
Location: Rasmussen Ridge, Soda Springs		

7. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
8. In accordance with IDAPA 58.01.01.123, all documents submitted to DEQ, including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.



Air Quality Permitting Statement of Basis

**Permit to Construct No. P-020327
Nu-West Industries, Rasmussen Ridge Mine
AIRS Facility No. 029-00031**

Prepared by:

*Ken Hanna, Permit Writer
AIR QUALITY DIVISION*

October 20, 2003

FINAL

1. PURPOSE

The purpose for this memorandum is to document revisions made to Permit to Construct (PTC) No. 029-00031, dated February 5, 1995, issued to Rhone-Poulenc Basic Chemicals Company for the Rasmussen Ridge mine. This memorandum specifically documents changes to the PTC, but does not otherwise address the permit. For information regarding the technical basis for the original PTC, refer to the technical memorandum dated February 5, 1995.

2. FACILITY DESCRIPTION

A facility is defined by IDAPA 58.01.01.006.37 as all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one (1) or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same Major Group (i.e. which have the same two-digit code) as described in the Standard Industrial Classification (SIC) Manual.

For permitting purposes, the Rasmussen Ridge Mine is the "facility", and each separate mining area (i.e., the South, Central and North Rasmussen Ridge mine areas, and the load-out area) is considered to be a separate activity at that facility. In addition, the Nu-West Rasmussen Ridge Mine is a separate facility from the Nu-West manufacturing facility located near Soda Springs; these two do not constitute one facility. This is because the two are not part of the same industrial grouping (i.e., the mine SIC is 1475 and the manufacturing facility SIC is 2874). In addition, these two do not "... approximate the common sense notion of a plant..." as outlined in Section IX of the preamble to the NSR rules (45 FR 52693, August 7, 1980).

3. FACILITY / AREA CLASSIFICATION

The Rasmussen Ridge Mine, (i.e., the "facility" as defined above) is not a major facility in accordance with the definition given by IDAPA 58.01.01.006.55 since fugitive dust emissions may not be included in this major source determination. Note that 40 CFR Part 60 Subpart NN became a final rule on April 16, 1982. Since this facility does not belong to a stationary source category which, as of August 7, 1980, is being regulated under Sections 111 or 112 of the Clean Air Act, then fugitive emissions are not included in determining whether it is a major facility.

The Rasmussen Ridge Mine is located in Caribou County which is designated as attainment or unclassifiable for all criteria air pollutants.

4. APPLICATION SCOPE

On December 23, 2002, DEQ received an application from MFG, Inc. on behalf of Nu-West Industries, Inc. (Nu-West) to modify the PTC. The application requests a permittee name change and to add the Standby Generator to the PTC (in lieu of operating under exempt status). On April 10, 2003, the application was declared complete, and on May 22, 2003 and July 4, 2003, additional information was received from the Idaho Conservation League with regard to a Draft Environmental Impact Statement for the proposed North Rasmussen Ridge Mine. On June 2, 2003, Nu-West requested a draft permit prior to issuance, and on July 22, 2003, Nu-West provided a Fugitive Dust Control Plan for the Rasmussen Ridge Mining Project, as a supplement to the application, to address fugitive dust emissions. On August 6, 2003, DEQ provided Nu-West a draft permit for review, and on August 8, 2003 Nu-West responded with comments. A notice for a public comment period was published on August 14, 2003. On September 5,

comments were received from the Idaho Conservation League that the permit application was not complete. On September 11, 2003 and September 12, 2003 DEQ received additional permit application materials from Nu-West and on September 12, 2003 a notice was issued which extended the public comment period until October 14, 2003. Comments regarding the proposed permit were received from the Idaho Conservation League, the Greater Yellowstone Coalition, MFG, NU-West, and Davis Graham and Stubbs LLC. DEQ's responses to the Public Comments are included in Appendix C of the Statement Of Basis.

5. PERMITTING ANALYSIS

5.1 *Emission Inventory Review*

Refer to the attached Engineering Memorandum in Appendix A.

5.2 *Modeling Review*

A modeling analysis was not required for this project. Please read the regulatory review section of this memo for further information.

5.3 *Regulatory Review*

This permit to construct is subject to the following permitting requirements:

IDAPA 58.01.01.201 Permit to Construct Required

No owner or operator may commence construction or modification of any stationary source or facility without first obtaining a permit to construct from DEQ which satisfies the requirements of Sections 200 through 228 unless the source is exempted in any of Sections 220 through 223. In this case, a change in the operations for the Standby Generator (i.e., increased hours of operation) and construction of the proposed North Rasmussen Ridge mining area would be modifications of an existing facility (i.e., the permitted Rasmussen Ridge Mine). Therefore, the permit to construct requirements apply in this case.

IDAPA 58.01.01.203 Permit Requirements for New and Modified Stationary Sources - NAAQS

For the proposed change in operation of the facility's generators, the estimated amount of CO and VOC would increase. In this case, since the estimated changes were small it was not necessary to revise the existing SCREEN modeling to demonstrate NAAQS compliance (See Section 6 below on permit condition 2.3). For the proposed North Rasmussen Ridge Mine operations, overall facility operations which generate fugitive dust emissions would remain similar to past operations. Therefore, to control fugitive dust emissions the modified PTC will emphasize the use of good operational practices and reasonable precautions to prevent and minimize the formation of fugitive dust. This will be accomplished by including operating conditions in the PTC which require the development and implementation of a site specific Fugitive Dust Control Plan. In addition, monitoring and recordkeeping requirements will be added to demonstrate the plan has been followed.

IDAPA 58.01.01.203 & 210 Demonstration of Preconstruction Compliance with Toxic Standards

For the proposed facility modifications, an increase in the amount of toxic air pollutant emissions is not reasonably expected to occur. Generator emissions are expected to decrease since the larger Shop/Office Generator will operate less and, in its place, the smaller Standby Generator will operate more.

40 CFR 52..... Prevention of Significant Deterioration

The PSD rules are not applicable to this source. In 1995, it was determined by DEQ that the phosphate ore mining operation conducted at the Rasmussen Ridge Mine does not constitute a "Phosphate Rock Processing Plant," which is one of the 26 designated facilities within the PSD program.

40 CFR 60, Subpart NN..... New Source Performance Standards (NSPS) for Phosphate Rock Plants

40 CFR Part 60, Subpart NN does not apply to the Rasmussen Ridge Mine. Although the Rasmussen Ridge Mine meets the definition of a Phosphate Rock Plant, Subpart NN does not apply since the mine does not utilize any of the affected facilities listed in 60.400(a)(2). Details are provided as follows:

As given by 60.400(a)(2), the provisions of this subpart apply to the following affected facilities used in phosphate rock plants which have a maximum plant production capacity greater than 4 tons/hr: dryers, calciners, grinders, and ground rock handling and storage facilities, except those facilities producing or preparing phosphate rock solely for consumption in elemental phosphorus production. Note that the Rasmussen Ridge Mine does not utilize any of the affected facilities listed above.

As defined by 60.401(a), a Phosphate Rock Plant is any plant which produces or prepares phosphate rock product by any or all of the following processes: mining, beneficiation, crushing, screening, cleaning, drying, calcining, and grinding. The Rasmussen Ridge Mine meets the definition of a Phosphate Rock Plant since it produces/prepares phosphate rock by mining and screening.

40 CFR 60, Subpart OOO..... NSPS for Nonmetallic Mineral Processing Plants

The provisions of this subpart, as given by 60.670(a)(2), do not apply to facilities located in underground mines and stand-alone screening operations at plants without crushers or grinding mills. Therefore, this subpart does not apply to the Rasmussen Ridge Mine.

5.4 FEE Review

Nu-West paid the \$1,000 application fee as required in IDAPA 58.01.01.224 on March 10, 2003. A permit to construct processing fee of \$2500 will be required in accordance with IDAPA 58.01.01.225 because the increase in emissions from the modification was 9.4 T/yr as indicated in Table 8.1 (See Appendix B for details). The Rasmussen Ridge mining facility is not a major facility as defined in IDAPA 58.01.01.008.10, therefore, registration fees are not applicable in accordance with IDAPA 58.01.01.387.

Table 5.1 EMISSIONS INVENTORY

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	0.0	0	0.0
SO ₂	0.0	0	0.0
CO	6.7	0	6.7
PM ₁₀	0.0	0	0.0
VOC	2.7	0	2.7
TAPS/HAPS	0.0	0	0.0
Total:	9.4	0	9.4
Fee Due	\$ 2500.00		

6. PROPOSED PERMIT CHANGES

This section of the Statement of Basis describes the new permit conditions that have been added/changed to the previous permit based on the results of this permitting analysis.

Permit to Construct Scope (Section 1)

This new section was added to the permit for consistency with the current format for permits. This section provides a description of the sources and activities at the facility which are addressed by the permit. The description information provided reflects the information provided by the applicant and it is the basis upon which the permit was written. The information provided in Section 1 of the PTC is provided "for information purposes only" and does not represent enforceable permit terms or conditions. Note that the horsepower of the Shop/Office Generator was changed from 483 to 810 in Section 1 of the PTC to reflect the actual size of the unit. Note that the emission estimates and modeling in the February 5, 1995 Technical Memorandum are not affected by this change.

Stationary Combustion Units (Section 2)

2.3 Emissions Limits

In section 2 of the permit, short term emission limits (i.e., lb/hr) were added for the #5001 Standby Generator. In addition, the total annual generator emissions limit for CO was raised from 2.1 to 8.8 T/yr, and the total annual generator emissions limit for VOC was raised from 0.57 to 3.3 T/yr. The reason for the change is because the CO and VOC emission estimates provided for the Standby Generator, at 7000 hr/yr, are higher than for the Shop/Office Generator, and this difference is because different emission factors were used to estimate emissions for the 2 generators. The emissions estimates for the Standby Generator are higher (even though the hp is less) since they are based on emission factors from AP-42, Section 3.3 (October 1996), whereas the estimates for the Shop/Office Generator are based on specific emissions data provided for a 3412 CAT engine, as included in the permit application and Appendix A of the Department's February 5, 1995 Permit Technical Memorandum. The 7000 hr/yr limit was requested by Nu-West to limit the emissions increase to less than 10 tons per year which resulted in a reduced PTC processing fee. See Appendix B for details. Because the emission limit increases for CO and VOC are small, it was not necessary to revise the modeled estimates to show compliance with the NAAQS. For example, the February 5, 1995 modeled 8-hr impact for CO was $6.2 \mu\text{g}/\text{m}^3$ based on an emission rate of 0.48 lb/hr, which was well below the corresponding NAAQS of $10,000 \mu\text{g}/\text{m}^3$. Compliance with the NAAQS is still demonstrated based on the modeling previously conducted for this activity.

2.5 Generator Operations

For purposes of maintaining compliance with the NAAQS as a result of generator operations, a permit condition was added which allows only one generator to be operated at a time. This was done since modeling has not been conducted to demonstrate NAAQS compliance when both power generators operate simultaneously (i.e., the Shop/Office and the Standby Generators).

2.6 Hours of Operation Limits - #5001 Standby Generator

For purposes of limiting the Standby Generator emission increase to less than 10 T/yr, permit conditions to limit the hours of operation to not more than 7000 hr/yr and to monitor and record the monthly hours of operation were added. Compliance with the PTC emission limits may be determined by using the Department's emission estimation methods used in the permit analyses. For the Shop/Office Generator, the emission estimation methods and emission factors may be found in the Department's February 5, 1995 Permit Technical Memorandum, and for the Standby Generator they may be found in Appendix A of this document.

2.7 Fuel Oil Sulfur Content

The fuel oil sulfur content rules given by IDAPA 58.01.01.728 apply to this facility, therefore, it was added to the permit. Note that the permit application indicates fuel with up to 0.59% sulfur may be used. The PTC does not preclude the use of this particular fuel, however, it is important for the facility to note that it must not be sold (bought), distributed or used "as ASTM Grade 1 or 2 fuel oil" in accordance with IDAPA 58.01.01.728.

Mining and Loading Operations (Section 3)

3.3 Reasonable Control of Fugitive Emissions -- Dust Control Plan

For purposes of complying with the NAAQS and IDAPA 58.01.01.651, emphasis was placed on the development of good operational practices and reasonable precautions for limiting the formation and dispersion of fugitive dust from the facility. This was accomplished by adding a permit condition which requires the development and implementation of a site specific Fugitive Dust Control Plan for the entire facility. Specific minimum requirements for the plan were specified in the permit condition to ensure that all critical activities which generate fugitive dust will be adequately covered by the plan.

3.4 & 3.5 Fugitive Dust Monitoring

To demonstrate compliance with the Fugitive Dust Control Plan requirements, monitoring and recordkeeping conditions were added to the permit. This includes requirements for conducting weekly facility-wide inspections of potential sources of fugitive emissions, and monitoring/recording the frequency and methods used to reasonably control fugitive dust emissions. To emphasize the importance of compliance, these permit monitoring conditions were based on the more stringent requirements typically found in Tier I/Title V Operating Permits.

7. PUBLIC COMMENT

An opportunity for public comment on the Nu-West PTC application was noticed in the Caribou County Sun paper and on De's web-site on April 17, 2003. On May 29, 2003, DEQ received a request from a member of the public for a 30 day public comment period, and a public comment period was held from August 14, 2003 through October 14, 2003.

8. RECOMMENDATION

Based on the review of the application materials, and all applicable state and federal regulations, staff recommend that DEQ issue a Permit to Construct to Nu-West Industries. An opportunity for public comment on the air quality aspects of the proposed permit was provided from August 14, 2003 through October 14, 2003 in accordance with IDAPA 58.01.01.209, and the project does not involve PSD requirements.

KLH/sd Permit No. P-020327

Appendix A

Engineering Memorandum

Emission Estimate Calculations

Nu-West Industries, Rasmussen Ridge Mine



Engineering Memorandum

May 15, 2003

**Nu-West Industries
Rasmussen Ridge Mine
Soda Springs**

P-020237

Prepared by:

*Darrin Mehr, Associate Air Quality Engineer
Division of Technical Services*

Acronyms, Units, and Chemical Nomenclatures

CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
fps	feet per second
ft	feet
HAPs	Hazardous Air Pollutants
hp	horsepower
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act.
K	Kelvin
lb/hr	pound per hour
NO _x	nitrogen oxides
O ₃	ozone
Pb	lead
PM	Particulate Matter
PM ₁₀	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PTC	Permit to Construct
rpm	revolutions per minute
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
SO ₂	sulfur dioxide
SO _x	sulfur oxides
TAPs	toxic air pollutants
TOC	Total Organic Compounds
T/yr	Tons per year
VOCs	Volatile Organic Compounds

PURPOSE

The purpose for this memorandum is to verify the validity of the emissions estimates from the PTC modification application.

PROJECT DESCRIPTION

Nu-West Industries (Nu-West) is proposing to modify the existing PTC to add a backup (standby) generator for the Rasmussen Ridge Mine. During periods when less electrical power is needed, this smaller backup generator, No. 5001, would operate instead of the primary generator, No. 5004. The No. 5001 backup generator burns diesel fuel. It is listed as a model 300 manufactured by Caterpillar.

TECHNICAL ANALYSIS

Process Description

The Rasmussen Ridge Mine is remotely located. The facility's operations require the use of generator sets to produce electrical power. The facility has two diesel-burning generators to produce primary electrical power for the facility. Generator No. 5004 is the primary producer of electrical power for shop and office areas. Generator No. 5001 is a standby generator that typically operates during periods when operations are not at full scale, typically during weekends. Generator set No. 0002 powers a well pump. Nine small generator sets to provide power to operate area lighting plants. Each of the area lighting plant generators ranges in size from 11 hp to 27 hp.

Equipment Listing

Existing generator and lighting equipment at the facility is listed in Tables 1 and 2.

TABLE 1: LIGHT PLANT DIESEL ENGINES

SOURCE IDENTIFICATION NUMBER	HORSEPOWER RATING (HP)
8652	11
8682	20
8692	27
8802	27
8812	27
8822	27
8872	27
0031	27
5003	27

TABLE 2: ELECTRICAL GENERATORS

SOURCE IDENTIFICATION NUMBER	HORSEPOWER RATING (hp)
0002 (well pump)	207
5001 (standby)	375
5004 (office and shop)	810

Emission Estimates

Only criteria emissions from standby generator No. 5001 were reviewed for this project. The Stationary Source Program Office has stated that HAPs and TAPs reviews are not necessary for this project—only criteria air pollutants. Emissions were estimated on several bases: potential hourly, actual annual based on past operations, and unrestricted potential annual. Emissions are listed below in Table 3, and physical parameter information is listed below in Table 4. See Attachment 1 to review the emissions estimate spreadsheet. Emission factors were obtained from AP-42.¹

The AP-42 resource does not contain any emissions factors for lead emissions from burning No. 2 distillate fuel in internal combustion engines.

TABLE 3. POTENTIAL EMISSIONS FROM STANDBY GENERATOR NO. 5001

Pollutant	PM	PM ₁₀	NO _x	SO _x	CO	O ₃ /VOC	Pb	HAPs	TAPs
Potential Emission Rate (lb/hr)	1.65	0.83	11.63	0.77	2.51	0.94	NA	NA	NA
Actual Emission Rate (T/yr)	2.44	1.22	17.16	1.13	3.70	1.39	NA	NA	NA
Potential Emission Rate (T/yr)	7.23	3.61	50.92	3.37	10.97	4.13	NA	NA	NA

TABLE 4. STACK PARAMETERS FOR GENERATOR NO. 5001

Emission Unit	Stack Height (ft)	Stack Diameter (ft)	Gas Velocity (fps)	Stack Temp. (K)
5001 Standby Generator	10	0.67	Not provided	Not provided

Source Testing

No source testing is recommended for this emissions unit.

No source test reports were reviewed and incorporated in the analysis for this permitting action.

¹ Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1: *Stationary Point and Area Sources*, Section 3.3-Gasoline and Diesel Industrial Engines, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, USA, October 1996.

Operating Parameters

Standby Generator No. 5001

Operational Factors

The load factor (or the ratio of the load applied to the generator engine to the generator engine's maximum rated load) is an operational parameter that could affect emission rates. Emissions rates are directly related to the load factor of the engine. Engine rpm and fuel consumption are surrogate parameters for load factor. However, emissions estimates were conducted for full load operating conditions for this project. Actual hourly emissions are assumed to equal potential hourly emissions at full load operation.

This permitting analysis was performed for a worst-case operating scenario. There are no operating parameters that need to be monitored to comply with the potential emissions requested by Nu-West Industries. Operating hours may be tracked to quantify actual emissions on a daily, monthly, or other time basis, as desired.

The engines at the facility can operate on No. 1 and No. 2 distillate fuels that meet the sulfur content limits of 0.3 weight % and 0.5 weight %, respectively. The engines can also operate on distillate fuel that contains 0.59% by weight of sulfur. One might believe that the engine's estimated SOx emissions would be dependent upon the sulfur content in the fuel. However, this is not the case, because the SOx emission factor listed in AP-42, Section 3.3, is not dependent upon the sulfur content of the fuel combusted. Emissions estimates for SOx are not affected by this factor because of the method of emission calculation.

DAM/bm

P-020327

Attachment 1

**DEQ Emissions Spreadsheet
Of Criteria Air Pollutants**

NU-WEST INDUSTRIES
 Rasmussen Ridge Mine, Soda Springs
 F-020327

Generator Engine Emissions

Source: Generator Engine # 5001
 Purpose: Standby Generator
 Fuel: Diesel

Operating Information

Rated Horsepower (hp)	Load Factor (dimensionless)	Daily Hours of Operation (hr/day)	Actual Annual Hours (hr/yr)	Potential Annual Hours (hr/yr)
375	1.0	24	2952	8760

EMISSION FACTORS: CRITERIA AIR POLLUTANTS FOR DIESEL COMBUSTION

Source: AP-42, Section 3.3, released 10/96

NO _x (lb/hp - hr)	CO (lb/hp - hr)	SO _x (lb/hp - hr)	PM-10 (lb/hp - hr)	PM (lb/hp - hr)	TOCs (or VOCs) (lb/hp - hr)
0.031	6.68E-03	2.05E-03	0.0022	0.0044	2.51E-03

Criteria Air Pollutant Emissions Rates

Time Period/Case	NO _x (lb/hr)	CO (lb/hr)	SO _x (lb/hr)	PM-10 (lb/hr)	PM (lb/hr)	TOCs (or VOCs) (lb/hr)
Hourly ¹	11.625	2.51	0.77	0.83	1.65	0.94
Daily	279.00	60.12	18.45	19.80	39.60	22.63
Actual Annual ² (T/yr)	17.16	3.70	1.13	1.22	2.44	1.39
Potential Annual ² (T/yr)	50.92	10.97	3.37	3.61	7.23	4.13

1. Hourly emissions [lb/hr] = Emission Factor (lb/hp - hr) X Rated Engine Horsepower (hp)
2. Annual emissions [T/yr] = Hourly Emission Rate (lb/hr) X Operating Hours (hr/yr) / 2000 lb per ton

Appendix B

CO and VOC Emission Estimates

Nu-West Industries, Rasmussen Ridge Mine

An operational limit of 7000 hrs/yr was requested by Nu-west to reduce emissions allowed and, therefore, reduce the PTC Processing Fees required for this permit action. Since the CO and VOC estimated emission rates are higher for the #5001 Standby Generator, annual emissions at 7000 hr/yr are estimated as follows using the same methods used in the PTC application:

$$CO = \left(\frac{0.00668 \text{ lb}}{\text{hp-hr}} \right) \left(\frac{7000 \text{ hr}}{\text{yr}} \right) \left(\frac{375 \text{ hp}}{\text{ton}} \right) \left(\frac{\text{ton}}{2000 \text{ lb}} \right) = 8.77 \text{ tons / yr}$$

$$VOC = \left(\frac{0.00251 \text{ lb}}{\text{hp-hr}} \right) \left(\frac{7000 \text{ hr}}{\text{yr}} \right) \left(\frac{375 \text{ hp}}{\text{ton}} \right) \left(\frac{\text{ton}}{2000 \text{ lb}} \right) = 3.29 \text{ tons / yr}$$

Determine the increase in allowable emissions for this permit modification:

Total Tons Increase = CO Tons Increase + VOC Tons Increase

$$= (8.8 - 2.1) + (3.3 - 0.57)$$

$$= 6.7 + 2.7$$

$$= 9.4 \text{ Tons/yr}$$

APPENDIX C

Response To Public Comments

AIRS Facility No. 029-00031

Nu-West Rasmussen Ridge Mine

October 24, 2003

STATE OF IDAHO
DEPARTMENT OF ENVIRONMENTAL QUALITY
RESPONSE TO PUBLIC COMMENTS
ON THE PROPOSED PERMIT TO CONSTRUCT FOR THE
NU-WEST INDUSTRIES RASMUSSEN RIDGE MINE, SODA SPRINGS, IDAHO

Introduction

As required by IDAPA 58.01.01.209 of the *Rules for the Control of Air Pollution in Idaho (Rules)*, the Idaho Department of Environmental Quality (DEQ) provided for public notice and comment on the proposed permit to construct for the Nu-West Industries, Inc. Rasmussen Ridge Mine located near Soda Springs, Idaho. Public comment packages, which included the application materials, the permit, and associated technical memoranda, were made available for public review at the Soda Springs Public Library, and the DEQ's State Office in Boise and Regional Office in Pocatello. The public comment period was provided from August 12, 2003 through October 14, 2003. Written comments were received. Those comments regarding the air quality aspects of the permit are paraphrased below with DEQ's response immediately following.

Public Comments and DEQ Responses

Responses to the comments received from the Idaho Conservation League on September 5, 2003 are provided below:

Comment 1:

I write to inform you that the PTC application that Nu-West Industries submitted to DEQ regarding their North Rasmussen Ridge mine was not complete. For the reasons outlined below, DEQ was in error when it concluded that the application was complete. In light of the omissions of information in this application, the Idaho Conservation League is not able to fully analyze the application and the proposed permit that is currently out for public comment. We respectfully request that DEQ withdraw the proposed PTC that is out for public comment, work with Nu-West to complete the application then re-notice a PTC for this mine. DEQ rules governing the "Application Procedures" for a Permit to Construct are articulated in Idaho Administrative Code at IDAPA 58.01.01.202. Readers are instructed that certain information must be provided as part of the application [IDAPA 58.01.01.202 and 202.01(a) were reprinted]. Nu-West's application, which we received as part of a Public Records Request, is deficient (i.e., not complete) for the following reasons:

1. The application lacks any drawings showing the design of the facility.
2. The application lacks any and all information regarding the anticipated amount of fugitive emissions of criteria pollutants that will result from the development of this facility.
3. The application lacks any and all information regarding the amount of secondary emissions associated with this facility.
4. The application lacks a schedule for construction of the facility.

The four areas of deficiency outlined above are all mandatory components of any PTC application of this nature, as noted above. As you are aware, the Idaho Conservation League has been involved with the issuance of this proposed PTC for some time. We are interested in conducting a thorough analysis of the impacts that this project will have on the air quality in the area surrounding the mine. As a result of missing information in the company's PTC application, we

are unable to conduct this analysis. We respectfully request that DEQ withdraw the proposed PTC that is out for public comment, work with Nu-West to complete the application then re-notice a PTC for this mine.

Response to 1: Permit to Construct (PTC) No. P-020327 for the Rasmussen Ridge Mine was based, in part, on information contained in the March 2003 Draft Environmental Impact Statement (DEIS) for the project. As the DEIS was not submitted as part of the original permit application, DEQ notified Nu-West of the need to provide additional application materials along with the required certification statement. On September 12, 2003, the DEQ received additional PTC application materials to DEQ to meet the requirements of IDAPA 58.01.01.202, and DEQ extended the PTC public comment period to October 14, 2003 to provide access to the amended permit application.

Responses to the comments received from the Idaho Conservation League on September 15, 2003 are provided below:

Comment 2: The proposed permit is deficient, or is premised on deficiencies in the application and/or technical memo/statement of basis, in a number of critical areas. Issuance of this permit will violate IDAPA 58.01.01 202.01(a), 58.01.01.203.02, and 58.01.01.650 et seq.

Response to 2: PTC No. P-020327 meets the PTC requirements of IDAPA 58.01.01.200-228, which includes IDAPA 58.01.01.650. Refer to the detailed responses provided below.

Comment 3: DEQ has failed to define the proposed North Rasmussen Ridge Mine as a support facility to Nu-West's Conda processing plant. As a result, issuance of this permit will violate IDAPA 58.01.01 202.01(c), 58.01.01.205 et seq, and 58.01.01.225. Additional state and federal air quality rules are likely violated here as well.

Response to 3: It has been determined by DEQ that the Rasmussen Ridge Mine is not a support facility to Nu-West's Conda processing plant, and PTC No. P-020327 for the Rasmussen Ridge Mine meets the PTC requirements of IDAPA 58.01.01.200-228. Refer to the detailed response to Comment No. 14.

Comment 4: As a result of the deficiencies outlined in our attached comments, we are unable to conduct a thorough analysis of this proposed permit. We believe that the only acceptable course of action is for DEQ to request that Nu-West provide the required information, that the proposed permit be re-crafted to incorporate this information and that the public be given another opportunity to review and comment on this permit prior to issuance to Nu-West.

Response to 4: As noted in the response to Comment No. 1, the DEQ notified Nu-West of the need to provide additional certified application materials. On September 12, 2003, the DEQ received additional PTC application materials, and DEQ extended the PTC public comment period to October 14, 2003 to provide access to the amended permit application.

Comment 5: **Failure to include critical information in application, statement of basis and permit** The PTC application submitted to DEQ regarding their North Rasmussen Ridge Mine was not complete. DEQ was in error when it concluded the application was complete. In light of the omitted information, it is not possible to fully analyze the application and proposed permit [see comment directly above]. ...The application shall include all of the information required by [IDAPA

58.01.202.01(a)]. Nu-West's PTC application which we received as part of a Public Records Request, is deficient – i.e., not complete – for at least the following reasons addressed by Comment Nos. 6 – 11.

Response to 5: Refer to the response for Comment No. 4.

Comment 6: The application lacks any drawings showing the design of the facility.

Response to 6: The additional/certified application materials received by DEQ from Nu-West on September 12, 2003 contain drawings of the proposed operations at the facility. These drawings are contained in the DEIS.

Comment 7: The application lacks any and all information regarding the anticipated amount of fugitive emissions of criteria pollutants that will result from the development of this facility.

Response to 7: The additional application materials received by DEQ from Nu-West on September 12, 2003 contain information regarding fugitive emissions associated with the proposed operations of the facility.

Comment 8: The application lacks any and all information regarding the amount of secondary emissions associated with this facility.

Response to 8: Secondary emissions are defined by IDAPA 58.01.01.007.09 as "emissions which would occur as a result of the construction, modification, or operation of a stationary source or facility, but do not come from the stationary source or facility itself. Secondary emissions must be specific, well defined, quantifiable, and affect the same general area as the stationary source, facility, or modification which causes the secondary emissions. Secondary emissions include emissions from any offsite support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the primary stationary source, facility or modification. Secondary emissions do not include any emissions which come directly from a mobile source regulated under 42 U.S.C. Sections 7521 through 7590." Based on this definition and the application information received on September 12, 2003, there are no apparent secondary emissions associated with the Rasmussen Ridge Mine. This is because "offsite" emissions, such as those from the tippie area operations and the tippie haul road area, have been included in the estimate of emissions from the facility. Therefore, estimates of emissions from those sources have already been accounted for as part of the "facility."

Comment 9: The application lacks any information about the manner in which the mining and hauling portion of the facility will be operated and emissions controlled.

Response to 9: The certified DEIS received by DEQ from Nu-West on September 12, 2003 describes the mining and hauling operations at the facility and how emissions from these operations will be controlled.

Comment 10: The application lacks a schedule for construction of the facility.

Response to 10: The additional application materials DEQ received from Nu-West on September 12, 2003 provide a schedule of construction for the facility.

Comment 11: The five areas of deficiency outlined above are all mandatory components of any PTC application of this nature, as noted above. Thus, on purely procedural grounds this application is not complete and the permit is deficient. Thus, this proposed permit cannot be finalized. The mandatory components of the PTC

application are required for good reason. Without this information it is impossible to determine the impact that this facility will have on air quality

Response to 11: Additional/certified application materials were received by DEQ from Nu-West on September 12, 2003, thereby providing a complete application for the proposed project. This information provides the basis for PTC No. P-020327. The additional application materials received did not necessitate a change to the proposed permit which was already offered for public comment. Therefore, the permit was not changed and the comment period was extended to provide additional time for comments which include the additional/certified application materials.

Comment 12: **National Ambient Air Quality Standards (NAAQS)** Absent any information in the application, statement of basis or the proposed permit regarding the anticipated emissions from the mining and hauling activities portion of this facility, a work schedule (to determine temporal distribution of the emissions) and a map or diagram of the facility it is impossible to determine if the facility will (or will not) violate the National Ambient Air Quality Standards at the fence line. We are interested in conducting a thorough analysis of the impacts that this project will have on the air quality in the area surrounding the mine; we are especially interested in determining whether or not this facility will violate NAAQS at the fence line. As a result of missing information in the company's PTC application we are unable to conduct this analysis.

Response to 12: The certified PTC application materials DEQ received from Nu-West on September 12, 2003 provide information regarding emissions from the facility. The facility has submitted emission rates for PM₁₀ fugitive emissions as well as maps of the area and mine. DEQ did not require the facility to submit work schedules because it is assumed that these operations occur 24 hours per day, 7 days per week. This is a correct assumption absent any federally enforceable requirement in the permit for work schedules. The facility has submitted sufficient information for DEQ to determine whether modeling is required.

Comment 13: Given the lack of information noted above, it is apparent that DEQ has likewise been unable to perform an analysis or modeling to determine if this facility will violate NAAQS. Issuance of a PTC by DEQ without ensuring that this mine will not cause or significantly contribute to a NAAQS violation is in violation of DEQ rules [58.01.01.203]. The proposed permit is in violation of 58.01.01.203.02 and, thus, cannot be finalized.

Response to 13: According to IDAPA 58.01.01.203, no permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department that it would not cause or significantly contribute to a violation of any ambient air quality standard. The requirement for modeling for the demonstration of compliance is determined on a case by case basis. Based on the information presented, DEQ has determined, for this situation, that modeling is not necessary to determine compliance with the NAAQS. DEQ made this decision based on the following information: (1) current PM₁₀ background concentration in the area is very low, (2) emission factors for fugitive dust from this source category are somewhat uncertain, (3) model predictions for this type of source are highly uncertain, and require the application of deposition in the model which adds additional uncertainty to the final results. Because of these great uncertainties for this case, DEQ determined it would be more appropriate to require fugitive dust control measures in the permit than to perform a modeling analysis. DEQ has determined that these control measures demonstrated, to the satisfaction of the Department, that this facility would not cause or significantly contribute to a violation of any ambient air quality standard.

Comment 14:

Support Facility DEQ has failed to properly identify the nexus between Nu-West's proposed mine and its nearby Conda phosphate processing plant. The North Rasmussen Ridge Mine is properly defined as a support facility of the Conda processing plant and DEQ needs to make this determination and ensure that proper permitting is established prior to the issuance of a PTC for the mine. In the statement of basis DEQ appears to dismiss a "support facility" relationship by citing that the mine and the processing plant do not have the same SIC codes. This logic is flawed and the conclusion is incorrect. ...It is improper to separate these two facilities based on SIC codes. Specific references are provided to the following documents: 45 FR 52695, 8/7/80; 62 FR 30289, 6/3/97; letter from EPA Region 5 to Wisconsin DNR, 8/25/99; and memo from EPA Region 8 to Utah DEQ, 5/21/98. As the facts of this matter and the above discussion clearly demonstrates, the Nu-West mine and processing plant are functionally interdependent, under common control, connected to each other though not adjacent, and 100% of the product from the support facility (the mine) is sent to the Conda plant. Thus, it is clear that these facilities need to be considered as a single facility for permitting purposes.

Response to 14:

Do the Mine and CPO constitute "one facility?" The term "facility" is defined by IDAPA 58.01.01.006.37 as: *"All of the pollutant-emitting activities which belong to the same industrial grouping, are located on one (1) or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same Major Group (i.e. which have the same two-digit code) as described in the Standard Industrial Classification Manual."*

Consistent with the PSD regulations and interpretation, note that this definition requires all three of the following factors to exist in order for the Mine and CPO to constitute a single "facility." All of the pollutant-emitting activities must:

1. belong to the same industrial grouping,
2. be located on one or more contiguous or adjacent properties, and
3. be under common control of the same person (or persons under common control)

In this instance, the support facility argument is irrelevant, as all three criteria do not apply for these facilities. As the commenter has already conceded, the two facilities are not adjacent. It follows that, as all three criteria are not satisfied, the two facilities cannot be considered as one.

However, there is value in providing additional detail for the public record. Accordingly, the remainder of this response clarifies why the two facilities are not contiguous or adjacent. In Section IX of the preamble to the final PSD Rule (45 FR 52695, August 7, 1980), EPA provides the following information regarding how far apart activities which encompass a long line operation, such as a railroad, must be in order to be treated separately:

Many commenters urged EPA to clarify the extent to which the final definition of those terms encompasses the activities along a "long-line" operation, such as a pipeline or electrical power line. For example, some urged EPA to add to the definition the provision that the properties for such operations are neither contiguous nor adjacent. To add such a provision is unnecessary. EPA has stated in the past and now confirms that it does not intend "source" to

encompass activities that would be many miles apart along a long-line operation. For instance, EPA would not treat all of the pumping stations along a multistate pipeline as one "source." EPA is unable to say precisely at this point how far apart activities must be in order to be treated separately. The agency can answer that question only through case-by-case determinations. One commenter asked, however, whether EPA would treat a surface coal mine and an electrical generator separated by 20 miles and linked by a railroad as one "source," if the mine the generator, and the railroad were all under common control. EPA confirms that it would not. First, the mine and the generator would be too far apart. Second, each would fall into a different two digit SIC category.

Since the DEQ has an EPA-approved PSD program, it will be necessary for DEQ to make a case-by-case determination regarding "how far apart activities must be in order to be treated separately" for purposes of meeting the requirements of PSD.

Facts for this case are presented as follows. The operational areas under consideration, including the transportation links between them, are: 1) the Conda Phosphate Operations facility (CPO); 2) the commercial railroad between CPO and the tippie area; 3) the tippie area (which is part of the Mine); 4) the Nu-West controlled haul road between the tippie and the mining area and; 5) the Rasmussen Ridge Mine. The transportation distance between CPO and the tippie is 12 miles, the distance between the tippie and the mining area is approximately 8 miles, and the total distance between CPO and the Mine is approximately 20 miles. Note that a "private haul road constructed solely for the purpose of transporting ore from the mine to the processing plant", as indicated in the comments, does not exist. Lastly, based on the maps included in the application (DEIS) the straight line distance between CPO and the Mine is approximately 13 miles, and complex terrain encompassing at least three ridge lines separates the two facilities.

Typically, the rationale for aggregating facilities with synergistic operations is because of their aggregate impact on the airshed. However, in this case, the complex terrain between the two facilities means that each facility is impacting a different airshed. It is DEQ's determination that emissions to ambient air from CPO and from the Mine are unlikely to impact the same airshed.

A similar approach with regard to the term "adjacent" appears to have been taken by the Texas Natural Resource Conservation Commission (TNRCC), Air Permits Division, in a document titled *Definition of a Site, Draft, March 2002* - "For NSR permitting purposes, contiguous or adjacent properties are considered to be separated by only an intervening road, railroad, right-of-way, waterway, or the like. Generally, properties located less than ¼ mile apart are considered contiguous or adjacent. The ¼ mile limit has been established based on consideration of air quality impacts in cases where emissions from multiple properties directly and measurably affected each other such that it is impossible to separate, differentiate, or detect ground level concentrations attributable to the properties separately."

The comments included a copy and references to the May 21, 1998 memo from EPA Region 8 to Utah DEQ. As noted in the memo, the Utah DEQ issued a determination for Great Salt Lake Minerals Corporation (GSLM) in which a pump station located 21.5 miles from the processing plant was a support facility to the plant (i.e., both units are part of the same "source"). However, on February 14, 2001, the Utah DEQ issued a letter which reversed this decision on the basis that the two activities are too far apart. The letter states "... it has been determined that the two locations do in fact represent two separate sources for the purposes of Title V and NSR/PSD permitting."

DEQ has determined that Nu-West's Rasmussen Ridge Mine facility and the Conda Phosphate Operations facility are not "contiguous or adjacent" to each other for purposes of applying the definition of the term "facility." These two facilities are too far apart and impact different airsheds. Since CPO and the Mine are not contiguous or adjacent, they cannot be considered to be "one facility" as defined by IDAPA 58.01.01.008.37. This case-by-case determination applies specifically to CPO and the Mine.

The issue of whether or not the Mine is a support facility to CPO was not addressed because the contiguous/adjacent part of the facility definition is not met. Since all three parts of the facility definition must be met, it is not necessary to address the other two parts of the definition (i.e., same industrial grouping/support facility and the issue of common control).

Comment 15: The proposed PTC fails to correctly address this issue. This has several important ramifications. Critically, this mine must be considered a modification of an existing "major" facility. This has several important ramifications. Thus, DEQ needs to be administering the development of the proposed PTC under different rules. This includes different permit application requirements (58.01.01.202.01(c)) and different permit requirements (58.01.01.205). In addition, DEQ must direct Nu-West to initiate a PSD review. As a result of these deficiencies, the proposed PTC cannot be finalized and issued.

Response to 15: As addressed in the previous response, the Nu-West Rasmussen Ridge Mine is not a support facility to the Agrium Conda Phosphate Operations facility, and it is also not a major facility by itself. Therefore, the major facility application and permitting requirements, which include PSD, do not apply.

Comment 16: Facility Description The Statement of Basis seems to state that the facility encompasses the South, Central and North mines and load out areas. Presumably, this description is based on information from Nu-West. This description is not consistent with the description of the facility that Nu-West has provided DEQ (and other agencies) in other forums. In the NEPA review for this mine, Nu-West defined the mine to DEQ per 58.01.11.400.06 as the Active Mineral Extraction Zone, which is basically the lease boundaries. Nu-West has specifically described the area not to include the south mine and portions of the central mine. In other parts of the NEPA, the haul roads are considered part of the facility. Since a significant amount of the fugitive emissions originate from the haul roads, it seems appropriate that these be included in the description of the facility. We can think of no instances where DEQ would allow a facility to claim a different location for air and water issues. DEQ needs to ensure that there is consistency in the description of the facility boundaries.

Response to 16: The NEPA process evaluates proposed projects from a big picture perspective, and for multiple media. Conversely, in the air-permitting forum, issues such as facility boundary are very specifically defined. For large projects such as this one, it is not at all unusual for facility boundaries in permitting actions to be different from information in NEPA documents and for water issues. There is no regulatory basis for facility boundaries to be the same for both water and air issues.

Comment 17: Facility / Area Classification The statement of basis fails to note that this facility has the potential to affect the air quality in a Class I area.

Response to 17: In accordance with IDAPA 58.01.01.202.c.vi, only new major facilities or major modifications are required to provide an analysis of the impairment to visibility to a Federal Class I area. Since this PTC is for a minor modification, a Class I analysis is not required.

Comment 18: **Reliance on former PTC to demonstrate compliance and in regard to net impacts**
In 1995 DEQ issued Rhone-Poulenc a PTC to install diesel generators at the shop buildings that support the South and Central Mines. This PTC only addressed the generators and made no mention of fugitive emissions from mine related activities. In hindsight, this 1995 PTC was clearly deficient for it failed to address the fugitive mine emissions.

Response to 18: In 1995, permitting practice was to not duplicate rule language in the permit. Rules such as IDAPA 58.01.01.650-651, *Rules for Control of Fugitive Dust*, still applied to the facility and compliance with the Rules was expected. In particular, please note that Permit to Construct General Provision D of the 1995 PTC states: "Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein."

Comment 19: DEQ is interpreting the construction of this new mine, the North Rasmussen Ridge Mine, as a "modification" of an existing facility – the South and Central mines and the shop building that houses the onsite generators. In the statement of basis, DEQ states: "For the proposed North Rasmussen Ridge Mine operation, overall facility operations which generate fugitive dust emissions would remain similar to past operations." This logic culminates in DEQ assuming that this mine will have no net impact on air quality. This is evidenced in the statement of basis' Emissions Inventory (table 5.1), here DEQ states that there will be no annual emissions increases in PM₁₀. However, the DEQ records contain absolutely no information from Nu-West that would allow DEQ to determine that the past, current and future operations would be similar. Neither the 1995 PTC application, technical memo or PTC itself contain any information about expected emissions of fugitive dust nor does the 2003 PTC application, technical memo or proposed PTC. DEQ has no information to support its claims of operational similarity and it has no information to support this conclusion regarding net impacts. Further, for the purposes of determining net impacts, DEQ must look at prior *permitted* emission in comparison to future permitted emissions. The fugitive PM₁₀ emission associated with the prior and current mining operations were never permitted (recall that the 1995 PTC does not address these emissions). As a result, DEQ must re-calculate the net impacts associated with this mine and integrate this information into all appropriate places. Failure to do so will violate DEQ guidance and reward those that either intentionally or unintentionally fail to secure proper permitting for facilities.

Response to 19: In the permit application materials received by DEQ on September 12, 2003, the emission estimates which support the permit analysis represent "total" fugitive dust emissions from all sources at the facility, not just the change in emissions, or net impacts, associated with the proposed change in operations. Basing the analysis for the permit modification on total emissions instead of just the increase/change in emissions is a conservative approach. An analysis of net impacts and a look at prior permitted emissions in comparison to future permitted emissions (or past actual to future potential emissions) was not conducted because this permit action is not for a major facility or a major modification – for minor sources, fugitive emissions are not relevant to determination of major source status. Refer to the response to Comment No. 13 for additional details.

Comment 20: **Fugitive Dust Control Plan** The proposed permit seems to infer two separate and distinct realities: 1) that there is an approved plan ("the approved Fugitive Dust Control Plan is part of the terms and conditions of the permit" p.7); and, simultaneously, 2) that a plan must be submitted after the PTC is issued ("the initial Fugitive Dust Control plan shall be submitted to the department for review and approval no later than 60 days after the issuance of this permit" p.8). Which is it?

Response to 20: The *Rules for Control of Fugitive Dust*, IDAPA 58.01.01.650-651, do not explicitly require the permittee to develop, implement, or maintain a Fugitive Dust Control Plan, nor do the Rules require DEQ to approve a plan prior to use. This Plan requirement was added to the PTC as a reasonable permit condition in accordance with IDAPA 58.01.01.211.01 for the purpose of demonstrating compliance with IDAPA 58.01.01.650-651 and to demonstrate that the operating practices presented in the PTC application (e.g., applying water to roads), which form the basis of the permit, are being adhered to. Nu-West provided DEQ an initial draft of the Plan on July 22, 2003 (which was certified as part of the PTC application on September 12, 2003). DEQ used this draft to establish minimum requirements for a more detailed, final Dust Control Plan. This approach is consistent with the Rules and allows for flexibility to amend the Plan to address different conditions at the mine.

Comment 21: In the event that the copy of the plan dated 7/22/03 that DEQ provided to ICL (which was by the way not part of the public packet) is the "approved" plan... This plan lacks nearly all of the items specifically outlined by DEQ in the PTC as required elements of the Fugitive Dust Control Plan on pages 7 and 8 of the PTC. Specifically, there is no mention of: "specific, quantifiable minimum frequencies" for watering certain areas; "specific, quantifiable minimum frequencies" regarding the use of dust abatement chemicals; no discussion of procedures for minimizing drop heights; no discussion of procedures for minimizing dust formation during conveying operations; no discussion of training/orientation of employers regarding the plan. That this 7/22/03 abatement plan violates 58.01.01.650 et seq is self evident and affirmed by the lengthy list of mandatory requirements provided by DEQ in the PTC at pages 7 and 8. Clearly this plan is deficient and needs to be revisited by Nu-West to address the requirements outlined by DEQ and brought into compliance with 58.01.01.650 et seq prior to issuance. When an appropriate plan is developed it needs to be made available to the public for review prior to issuance of this PTC.

Response to 21: Refer to the responses provided for Comment Nos. 20 and 23. A copy of the Plan may be reviewed/obtained from the DEQ State Office or the Pocatello Regional Office at any time using the public records request process that is accessible from the DEQ website: <http://www.deq.state.id.us>. Comments on the Plan may be submitted to the DEQ prior to DEQ approval of the Plan.

Comment 22: As an additional comment, per 58.01.01.651.04, DEQ needs to ensure that haul trucks are covered to minimize dust emissions. In the 7/22/03 Fugitive Dust Control Plan, Nu-West states that the moisture of the ore (10% - 11%) aids in dust control. DEQ needs to be aware that the vast majority of trucks exiting the pit will be carrying waste material - not ore. As such, it is proper that these loads be covered.

Response to 22: When drafting the Fugitive Dust Control Plan permit requirements, the requirement for the "covering, when practical," of open bodied trucks per 58.01.01.651.04 was considered in addition to IDAPA 58.01.01.651 which states that "all reasonable precautions shall be taken to prevent PM from becoming airborne. In determining what

is reasonable, consideration will be given to factors such as the proximity of dust-emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of PM." With regard to the covering of trucks, the following additional factors were considered when determining what would be reasonable/practical: the travel distance for loaded waste rock trips will generally be less than one mile; vehicle speeds will be slow at approximately 10 mph in/near the pits and up to 25 mph over the distance between pits; and the distance to the top of the 90-ton haul truck beds is 25 feet, resulting in a safety risk for individuals to install the cover, particularly in the midst of heavy equipment operations and at night. For this particular waste rock hauling operation, it has been determined that covering trucks is not practical.

Comment 23:

In the event that there is currently no approved plan (or perhaps the 7/22/03 plan has been approved?) and DEQ is requiring that a plan be submitted to DEQ within 60 days of the issuance of this PTC... It is completely inappropriate for DEQ to use the 7/22/03 plan (for the reasons outlined above) as a placeholder for a legal Plan to emerge. It is completely inappropriate for DEQ to issue a permit that enshrines a dust abatement plan as a "part of the terms and conditions of the permit" (p.7), yet does not provide that Plan in the proposed PTC for the public to review. In essence, that is like issuing a permit that says "this condition to be filled in later." Clearly, permit conditions must be developed and made available to the public in advance of issuing a permit. The operation of this facility is likely to result in the annual release of hundreds of tons of fugitive PM₁₀; the development of sufficient dust abatement plan is perhaps the most critical component of this permit to construct. It is inappropriate and illegal for DEQ to issue a PTC absent a sufficient dust abatement plan because the dust abatement plan is the permit condition that is required to comply with the requirements of the PTC as a whole.

Response to 23:

The comment does not substantiate why the approach for the Fugitive Dust Plan in this permit action is inappropriate. In most other permits, compliance with the fugitive dust rules is not specified even to this extent. In this permit, to ensure that fugitive emissions are reasonably minimized, DEQ has elected to establish minimum elements of a Fugitive Dust Plan. A Dust Plan which is external to the permit provides for flexibility in tailoring the Plan to facility conditions without the delay of permit review. In this manner, fugitive dust control can be maximized with minimal delay, while the public is assured of prudent dust control by the minimum Plan elements specified in the permit itself.

As noted earlier, the fugitive dust rules do not specify the minimum Plan elements. Rather, these elements have been arrived at during permit review. The comment has not advanced a substantiated argument that the minimum Plan elements specified in the permit are not adequately protective of air quality. Consequently, the use of a Fugitive Dust Plan is entirely appropriate.

Comment 24:

40 CFR 60 Subpart, NN DEQ incorrectly states that the North Rasmussen Ridge Mine does not utilize any of the facilities listed in 60.400(a)(2). The proposed mine is defined as a "Phosphate Rock Plant" and does include and utilize relevant features. As a result, the mine needs to comply with the New Source Performance Standards NSPS for Phosphate Rock Plants (40 CFR 60 Subpart, NN). DEQ notes that the proposed mine does meet the 60.401(a) definition of a Phosphate Rock Plant because it mines and screens phosphate ore. However, the proposed mine does make use of facilities that are used for ground rock handling and storage facilities (primarily at the screens and tippie). Thus, 60.400(a)(2) applies. As a result, 40 CFR 60 Subpart, NN applies to this facility and needs to be incorporated in the PTC.

Response to 24:

The applicability of Part 60 Subpart NN has not changed from the original applicability determination, contained in the February 5, 1995 PTC Technical Memorandum. However, in the interest of addressing this comment, clarification is provided here.

60.401(a): *Phosphate rock plant means any plant which produces or prepares phosphate rock product by any or all of the following processes: mining, beneficiation, crushing, screening, cleaning, drying, calcining, and grinding.* The Rasmussen Ridge Mine meets the definition of a "phosphate rock plant" since it produces/prepares phosphate rock by mining and screening.

60.401(f): *Ground phosphate rock handling and storage system means a system which is used for the conveyance and storage of ground phosphate rock from grinders at phosphate rock plants.* This term does not apply to the Rasmussen Ridge Mine since it does not utilize any "grinders."

60.400(a): *The provisions of [Subpart NN] are applicable to the following affected facilities used in phosphate rock plants which have a maximum plant production capacity greater than [4 tons/hr]: dryers, calciners, grinders, and ground rock handling and storage facilities, except those facilities producing or preparing phosphate rock solely for consumption in elemental phosphorus production.* Subpart NN does not apply to the Rasmussen Ridge Mine because it does not utilize any dryers, calciners, grinders, and ground rock handling and storage facilities.

In conclusion, although the mine is a phosphate rock plant, no NSPS Subpart NN requirements apply to the operations at this facility.

Responses to the comments received from the Idaho Conservation League and the Greater Yellowstone Coalition on October 14, 2003 are provided below:

Comment 25: The information that Nu-West has recently submitted violates IDAPA 58.01.01.124 (Truth, Accuracy and Completeness of Documents) because, as discussed below, it contradicts itself. Clearly, Nu-West has submitted contradictory, and potentially inaccurate, information to DEQ.

Response to 25: As the comment does not specifically address what information is allegedly in violation of IDAPA 58.01.01.124, it is not possible to respond with any specificity. However, the DEQ has no reason to believe that the information submitted to DEQ by Nu-West is not true, accurate and complete, as required by IDAPA 58.01.01.124. Note that the last General Condition on page 1 of the PTC states: "This permit has been granted on the basis of design information presented with its application. Changes of design or equipment may require DEQ approval pursuant to the Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01.200, et seq." If the DEQ determines that facility operation is not consistent with the application materials, then DEQ may take enforcement action.

Comment 26: The proposed permit is deficient, or is premised on deficiencies in the application and/or technical memo/statement of basis, in a number of critical areas. Issuance of this permit will violate the following Idaho air quality rules:

- 202.01(a); regarding required information in the application for a PTC for any new or modified stationary source or facility.
- 203.02; regarding demonstration that the stationary source or modification would not cause or significantly contribute to a violation of any NAAQS.

- 650 et seq; regarding the control of fugitive dust.

Response to 26: See the response to Comment No. 2.

Comment 27: Further, DEQ has failed to define the proposed North Rasmussen Ridge Mine as a support facility for Nu-West's Conda processing plant. This has significant consequences for permitting of both the mine and the processing plant and needs to be addressed. As a result, issuance of this permit will violate the following Idaho air quality rules:

- 202.01(c); regarding required information in the application for a PTC for any new or modified major facility in an attainment area.
- 205 et seq; regarding permit requirements for any new or modified major facility in an attainment area.
- 225; regarding PTC processing fees. Modification of a major source is \$10,000.

Additional state and federal air quality rules are likely violated here as well.

Response to 27: See the responses to Comment Nos. 14 and 15.

Comment 28: As a result of the deficiencies outlined in our attached comments, we are unable to conduct a thorough analysis of this proposed permit. We believe that the only acceptable course of action is for DEQ to request that Nu-West provide the required information, that the proposed permit be re-crafted to incorporate this information and that the public be given another opportunity to review and comment on this permit prior to issuance to Nu-West.

Response to 28: See the response to Comment No. 4. Based on the information provided by the applicant, the DEQ was able to conduct a permit review as required by IDAPA 58.01.01.200 et seq. It is not clear what additional analyses the commenter is proposing to conduct.

Comment 29: Continued Failure to include critical information in application, statement of basis and permit. The additional information that Agrium provided to DEQ (copies of the Bureau of Land Management's DEIS, FEIS and ROD and the September 12th, 2003 letter from MFG Inc. to DEQ/Mr. Ken Hanna) fails to address the deficiencies that we have previously outlined.

Please review our previous comments on this matter for a discussion of the legal reasons why certain information is required and a discussion of the deficiencies of the application and draft permit.

Response to 29: The PTC application materials that DEQ received from Nu-West on September 12, 2003 meets the application requirements of IDAPA 58.01.01.202, and allowed the DEQ to conduct a permit review.

Comment 30: In regards to the additional information added to the record, Agrium has still not provided the required information in IDAPA 58.01.01.202(a) i and ii. Specifically:

- 1) The application still lacks any adequate drawings showing the design of the facility.

The Statement of Basis portrays this DEQ permitting action as a modification of an existing permit and describes the facility as a facility that has grown over time to include the previous, current and future mines. This description is not consistent with the description of the facility provided by Agrium to DEQ via the BLM's DEIS document. In the DEIS there are various maps that may be relevant, but it is not at all clear what the boundary for the facility will be. For instance, is the map at DEIS 2-11 labeled "Proposed Action Facility Layout" the official boundaries for this proposed action? If it is, then DEQ needs to amend the draft permit to reflect this altered boundary line.

Response to 30:

Air permits rarely specify the facility boundary as a permit condition – there are exceptions if, under DEQ's discretion, air quality objectives are advanced by the inclusion of specific permit conditions pertaining to the ambient air boundary. As necessary, facility boundary issues are addressed in the underlying analysis – primarily because of the need to specify receptor spacing for modeling. As has already been noted, the DEQ has already indicated that conducting ambient air dispersion analyses are not appropriate for this facility. The DEIS which was submitted to the DEQ under certification provides adequate drawings. The comment does not specify how a boundary line is specifically required under IDAPA 58.01.01.200 et seq.

Comment 31:

Additionally, the application and DEQ work products do not adequately address inclusion (or exclusion) of the haul road system in the facility boundary. The road system is a significant contributor of PM10 pollution (as identified in the MFG documents). However, the BLM DEIS that Agrium submitted, assumedly to clarify site boundaries, does not provide accurate information about the location of the roads.

This is critically important to us because we would very much like to analyze the proposed action to determine whether or not the NAAQS will be violated at the site/facility design/mapping information.

Response to 31:

As has been noted in the response to Comment No. 13, conducting a modeling analysis is not necessary for this facility. However, if the commenter insists on conducting a questionable modeling analysis, the drawings contained in the application materials (i.e. the DEIS), the DEQ's December 31, 2002 *State of Idaho Air Quality Modeling Guideline*, and guidance documents from the EPA provide enough material to conduct such an analysis.

Comment 32:

2) The application still lacks sufficient information regarding the anticipated amount of fugitive emissions of criteria pollutants that will result from the development of this facility.

MFG provided DEQ with a document purported to be an "Emission Inventory" for the proposed mine (see attachment #2). Agrium also provided DEQ with the BLM DEIS for the mine. The DEIS also contains a summary of total annual emissions (DEIS p.4-14) (see attachment #3).

We are greatly concerned by the lack of consistency between these two submittals. The MFG document states that the annual PM10 for the project will be 207 tons/yr. The DEIS contradicts this and states that total PM10 for the project will be 600.08 tons/yr. This is a very significant difference.

Pursuant to IDAPA 58.01.01.124 (Truth, Accuracy and Completeness of Documents) Agrium has a responsibility to provide DEQ with accurate information regarding the emission of pollutants. Given the current Agrium

submissions on this matter it is apparent that Agrlum is in violation of this rule.

Response to 32:

The annual estimate for mining fugitive PM₁₀ emissions, as given in the DEIS, is 515.18 tons/yr. The potential to emit estimate for fugitive dust PM₁₀ provided in the PTC application (as described in the letter DEQ received on September 12, 2003) is 257 tons/yr. The emission estimates provided for the PTC application were reviewed, found to be consistent with DEQ's methods and procedures, and found to meet the PTC application requirements.

Although not a necessary part of the permit review, DEQ did look into the reasons for the apparent discrepancy between estimates of fugitive emissions. Several reasons were identified: (1) There were changes in project details. (2) Emissions estimating tools used in the DEIS were based on general emission factors for a western surface coal mine, whereas the PTC estimates used emission factors that were based on site-specific parameters.

(3) The DEIS used an assumption of 80 percent PM₁₀ control efficiency for roads (e.g., watering, chemical dust suppressants, etc.), whereas the PTC estimate used 90 percent. Nu-West is not in violation of IDAPA 58.01.01.124.

Comment 33:

3) The application still lacks adequate information regarding the amount of secondary emissions associated with this facility.

MFG's letter September 12th to DEQ states that "We do not believe operation of the Rasmussen Ridge Mine generates any secondary emissions, as defined in IDAPA 58.01.01.007," [the definition was reprinted]. We disagree. Clearly, the operation of the mine will result in emissions that fall into this category. For instance, the self-contained generators for lighting and the non-road mining and hauling equipment are among the many sources of potential secondary emissions at the facility.

These emissions are occurring as a result of the operation of the facility. They are specific, well defined and quantifiable. They occur in the same general area.

The BLM DEIS provides "Total Annual Emission" totals for secondary emissions. However, there is no information about how these numbers were generated. Providing totals without the specific data that allows a review to reconstruct the analysis is insufficient in its own right. And, taken in consideration with the discrepancies noted regarding PM10 estimates between the DEIS and the MFG inventory, we are concerned that the data in the DEIS may not be factually correct.

Response to 33:

The self-contained generators used for lighting pre-date the new mine area. As such, they are existing sources rather than new sources of secondary emissions. The existing self-contained generators were previously exempted through the PTC exemption requirements of IDAPA 58.01.01.220-223, as outlined in Section 1 of the PTC. Emissions from the non-road mining and hauling equipment are also not addressed as secondary emissions for the new mine area, as these activities existed to support the prior mine area. Also, as nonroad engines, emissions from these vehicles are not subject to permitting. Fugitive emissions from the haul roads have already been addressed in the application materials and permit review.

Comment 34: Continued failure to demonstrate compliance with National Ambient Air Quality Standards (NAAQS)

The recent submissions by Agrium still do not provide sufficient information in the application, statement of basis, or the proposed permit regarding the anticipated emissions from the mining and hauling activities portion of this facility, a work schedule (to determine the temporal distribution of the emissions) and a sufficient map or diagram of the facility to determine if the facility will (or will not) violate the National Ambient Air Quality Standards at the fence line.

As stated in our previous comments, we are interested in conducting a thorough analysis of the impacts that this project will have on the air quality in the area surrounding the mine; we are especially interested in determining whether or not this facility will violate NAAQS at the fence line. As a result of missing information in the company's PTC application we are unable to conduct this analysis.

As we noted in our previous comments, we are troubled by the fact that DEQ has not ascertained for itself, or required Agrium to demonstrate, that the proposed project will not violate NAAQS. The new material added to the record does not satisfy this concern. There is no information in the record that demonstrates that any modeling has been done that would allow DEQ to determine whether or not the fugitive PM10 emissions or the secondary emissions associated with the project would cause or significantly contribute to a violation of any ambient air quality standard.

Issuance of a PTC by DEQ without ensuring that this mine [which is a PTC modification and a stationary source] will not cause or significantly contribute to a NAAQS violation is in violation of DEQ rules. [a copy of IDAPA 58.01.01.203.02 was reprinted].

The proposed permit is in violation of 58.01.01.203.02 and, thus, cannot be finalized.

Response to 34: See responses to Comment Nos. 12 and 13.

Responses to the comments received from MFG on September 22, 2003 are provided below:

Comment 35: Attached is a revised and enhanced fugitive dust control plan for the Rasmussen Ridge Mine. Specifically, the draft plan we submitted earlier this summer has been revised to include the additional elements identified in Condition 3.3 of the draft PTC. On behalf of Agrium, I propose that DEQ endorse this revised Plan as the required Fugitive Dust Control Plan required in Condition 3.3. The final PTC may then incorporate this revised fugitive dust plan as an attachment, and the PTC requirements for the development of a plan may be deleted.

Response to 35: The requirements in permit condition 3.3 for development and approval of the plan were not changed; refer to the response to Comment Number 20. Review and approval of the Plan will be completed as specified in permit condition 3.3. This action will be completed by the DEQ after issuance of a PTC.

Responses to the comments received from Nu West on October 10, 2003 (as presented in a letter from MFG received on October 7, 2003) are provided below:

Comment 36: In the October 10, 2003 letter, Nu-West states: "At the request of IDEQ, our consultant MFG, on behalf of Agrium, by letter dated October 7, 2003, has provided certain responses and related attachments to IDEQ in order to clarify and address the operations at the mine site."

Response to 36: The information provided regarding the project is noted. No specific questions were raised, therefore, no responses are provided.

Responses to the comment received from Nu-West on October 10, 2003 are provided below:

Comment 37: A revised copy of the Fugitive Dust Control Plan for the Rasmussen Ridge Mining Project was faxed to DEQ.

Response to 37: Refer to the response to comment no. 35.

Responses to the comments received from Davis, Graham & Stubbs LLP on October 17, 2003 are provided below:

Comment 38: Re: P-020327, Nu-West Industries, Inc. Rasmussen Ridge Mine proposed revised Permit to Construct response to supplemental comments of ICL.

Response to 38: As the letter was received after the close of the public comment period, DEQ is not providing specific responses to these comments. However, the letter is included along with the other comments received as part of the public record.

APPENDIX C
PERMIT TO CONSTRUCT FORMS



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

All information is required. If information is missing, the application will not be processed.

IDENTIFICATION

1. Company Name		2. Facility Name:	
Nu-West Industries dba Agrium		North Rasmussen Ridge Mine	
3. Brief Project Description:	Add and Replace Diesel Generators		

FACILITY INFORMATION

4. Primary Facility Permit Contact Person/Title	Erika Stoner	Mine Manager
5. Telephone Number and Email Address	(208) 574-2080 x 1205	erika.stoner@agrium.com
6. Alternate Facility Contact Person/Title	Frederick Partey	Environmental Engineering Specialist
7. Telephone Number and Email Address	(208) 574-2080 x 1207	frederick.partey@agrium.com
8. Address to Which the Permit Should be Sent	North Rasmussen Ridge Mine, 3826 Blackfoot River Road, Soad Springs, ID 83276	
9. City/County/State/Zip Code	Soda Springs	Caribou Idaho 83276
10. Equipment Location Address (if different than the mailing address above)	NA	
11. City/County/State/Zip Code	Soda Springs	Caribou Idaho
12. Is the Equipment Portable?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
13. SIC Code(s) and NAICS Code	Primary SIC: 1475	Secondary SIC: NAICS: 212392
14. Brief Business Description and Principal Product	Phosphate Mining	
15. Identify any adjacent or contiguous facility that this company owns and/or operates	None	

16. Specify the reason for the application	<input type="checkbox"/> Permit to Construct (PTC)	
	<div style="border: 1px solid black; padding: 5px;"> <p>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.</p> <input type="checkbox"/> Incorporate the PTC at the time of the Tier I renewal <input type="checkbox"/> Co-process the Tier I modification and PTC <input type="checkbox"/> Administratively amend the Tier I permit to incorporate the PTC upon your request (IDAPA 58.01.01.209.05.a, b, or c) </div>	
	<input type="checkbox"/> Tier I Permit <input type="checkbox"/> Tier II Permit <input checked="" type="checkbox"/> Tier II/Permit to Construct	

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.

17. Responsible Official's Name/Title	Erika Stoner	Mine Manager
18. Responsible Official Address	3826 Blackfoot River Road, Soad Springs, ID 83276	
19. Responsible Official Telephone Number	(208) 574-2080 X 1205	
20. Responsible Official Email Address	erika.stoner@agrium.com	
21. Responsible Official's Signature	<i>Erika Stoner</i>	Date: Sept. 18/13



DEQ AIR QUALITY PROGRAM
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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: Nu-West Industries dba Agrium	2. Facility Name: North Rasmussen Ridge Mine
---	---

3. Brief Project Description: PTC - Add and Replace Diesel Generators

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): 40 CFR Part 60 Subpart IIII <input type="checkbox"/> 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): 40 CFR Part 63 Subpart ZZZZ <input type="checkbox"/> 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.	<input checked="" type="checkbox"/> A detailed regulatory review is provided (Follow instructions and example). <input type="checkbox"/> 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.



DEQ AIR QUALITY PROGRAM
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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	Nu West Industries, Inc. dba Agrium		
2. Facility Name	North Rasmussen Ridge Mine	3. Facility ID No.	029-00031
4. Brief Project Description - One sentence or less	PTC – Add and Replace Diesel Generators		

PERMIT APPLICATION TYPE

5. <input type="checkbox"/> New Source	<input type="checkbox"/> New Source at Existing Facility	<input type="checkbox"/> PTC for a Tier I Source Processed Pursuant to IDAPA 58.01.01.209.05.c
<input type="checkbox"/> Unpermitted Existing Source	<input type="checkbox"/> Facility Emissions Cap	<input checked="" type="checkbox"/> Modify Existing Source: Permit No.: <u>PTC 020327</u> Date Issued: <u>2003</u>
<input type="checkbox"/> Required by Enforcement Action: Case No.:		
6. <input checked="" type="checkbox"/> Minor PTC	<input type="checkbox"/> Major PTC	

FORMS INCLUDED

Included	N/A	Forms	DEQ Verify
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form CSPTC – Cover Sheet	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form GI – Facility Information	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form EU0 – Emissions Units General	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form EU1– Industrial Engine Information Please specify number of EU1s attached: 25	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU2– Nonmetallic Mineral Processing Plants Please specify number of EU2s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU3– Spray Paint Booth Information Please specify number of EU3s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU4– Cooling Tower Information Please specify number of EU3s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU5 – Boiler Information Please specify number of EU4s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form CBP– Concrete Batch Plant Please specify number of CBPs attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form HMAP – Hot Mix Asphalt Plant Please specify number of HMAPs attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PERF – Portable Equipment Relocation Form	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form AO – Afterburner/Oxidizer	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form CA – Carbon Adsorber	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form CYS – Cyclone Separator	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form ESP – Electrostatic Precipitator	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form BCE– Baghouses Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form SCE– Scrubbers Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form VSCE – Venturi Scrubber Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form CAM – Compliance Assurance Monitoring	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forms EI– Emissions Inventory	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PP – Plot Plan	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forms MI1 – MI4 – Modeling (Excel workbook, all 4 worksheets)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form FRA – Federal Regulation Applicability	<input type="checkbox"/>



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Emissions Units - Industrial Engine Information **Form EU1**

Revision 8
 1/15/10

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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input checked="" type="checkbox"/> New Unit <input type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 27.03 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 1	9. Maximum Rated Engine Power: <u>1093</u> Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: Caterpillar	12. Model: C27	13. Model Year: 2012
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): N/A	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	53.2 gal/hr			
19. Actual Consumption Rate	53.2 gal/hr			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 8,760 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 8,760 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, Inc., dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input checked="" type="checkbox"/> New Unit <input type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 6.8 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 2	9. Maximum Rated Engine Power: <u>315</u> Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: John Deere	12. Model: 6068HF485	13. Model Year: 2011 or newer
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	13.5 gal/hr			
19. Actual Consumption Rate	13.5 gal/hr			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 4,500 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 4,500 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, Inc., dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine
---	---

3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: New Unit Unpermitted Existing Unit
 Modification to a Unit with Permit #: _____ Date Issued: _____

5. Engine Displacement: 6.8 (liters per cylinder) 6. Ignition Type: Compression Spark

7. Use Emergency Non-Emergency

8. Engine ID Number: Stck 3 9. Maximum Rated Engine Power: 315 Brake Horsepower (bhp)

10. Construction Date: 2013	11. Manufacturer: John Deere	12. Model: 6068HF485	13. Model Year: 2011 or newer
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14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None
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FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	13.5 gal/hr			
19. Actual Consumption Rate	13.5 gal/hr			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
4,500 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
4,500 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, Inc., dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input checked="" type="checkbox"/> New Unit <input type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 6.8 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 4	9. Maximum Rated Engine Power: <u>315</u> Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: John Deere	12. Model: 6068HF485	13. Model Year: 2011 or newer
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	13.5 gal/hr			
19. Actual Consumption Rate	13.5 gal/hr			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 4,500 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 4,500 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input checked="" type="checkbox"/> New Unit <input type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 8.1 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 5	9. Maximum Rated Engine Power: <u>388</u> Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: John Deere	12. Model: 6081HF070	13. Model Year: 2005
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	21.63 gal/hr			
19. Actual Consumption Rate	21.63 gal/hr			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 8,760 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 8,760 Hours/Year



DEQ AIR QUALITY PROGRAM
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Emissions Units - Industrial Engine Information **Form EU1**

Revision 8
 1/15/10

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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input checked="" type="checkbox"/> New Unit <input type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: TBD (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 6	9. Maximum Rated Engine Power: <u>100</u> Brake Horsepower (bhp)		
10. Construction Date: TBD	11. Manufacturer: TBD	12. Model: TBD	13. Model Year: TBD
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	TBD			
19. Actual Consumption Rate	TBD			
20. Sulfur Content wt%	TBD	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 8,760 Hours/Year Generator has not been purchased.. Once purchased, generator specifications will be provided to DEQ. Emissions based on AP-42
22. Operating Schedule (hours/day, months/year, etc.): 8,760 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries Inc. dba Agrium	2. Facility Name: North Rasmussen Ridge Mine	3 Facility ID No: 029-00031
4. Brief Project Description: PTC- Add and Repalce Diesel-Fired Generators		

EXEMPTION

Please see IDAPA 58.01.01.222 for a list of industrial boilers that are exempt from Permit to Construct requirements.

BOILER (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

5. Type of Request: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #:		
6. Use of Boiler: <input type="checkbox"/> % Used For Process <input checked="" type="checkbox"/> % Used For Space Heat <input type="checkbox"/> % Used For Generating Electricity <input type="checkbox"/> Other: 100 % Space Heat and Hot Water		
7. Boiler ID Number: Stck 7	8. Rated Capacity: <input checked="" type="checkbox"/> 1.64 Million British Thermal Units Per Hour (MMBtu/hr) <input type="checkbox"/> 1,000 Pounds Steam Per Hour (1,000 lb steam/hr)	
9. Construction Date: 2003	10. Manufacturer: Peerless	11. Model: 211A
12. Date of Modification (if applicable): N/A	13. Serial Number (if available): NA	14. Control Device (if any): N/A Note: Attach applicable control equipment form(s)

FUEL DESCRIPTION AND SPECIFICATIONS

15. Fuel Type	<input type="checkbox"/> Diesel Fuel (#) (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Coal (unit: /hr)	<input checked="" type="checkbox"/> Other Fuels (unit:Propane /hr)
16. Full Load Consumption Rate				
17. Actual Consumption Rate				
18. Fuel Heat Content (Btu/unit, LHV)				1.64 MMBtu
19. Sulfur Content wt%				
20. Ash Content wt%		N/A		

STEAM DESCRIPTION AND SPECIFICATIONS

21. Steam Heat Content	NA	NA		
22. Steam Temperature (°F)	N/A	N/A		
23. Steam Pressure (psi)	N/A	N/A		
24 Steam Type	N/A	N/A	<input type="checkbox"/> Saturated <input type="checkbox"/> Superheated	<input type="checkbox"/> Saturated <input type="checkbox"/> Superheated

OPERATING LIMITS & SCHEDULE

25. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):	8,760
26. Operating Schedule (hours/day, months/year, etc.):	8,760
27. NSPS Applicability: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If Yes, which subpart: N/A



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine
---	---

3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: New Unit Unpermitted Existing Unit
 Modification to a Unit with Permit #: _____ Date Issued: _____

5. Engine Displacement: Unknown (liters per cylinder) 6. Ignition Type: Compression Spark

7. Use Emergency Non-Emergency

8. Engine ID Number: Stck 8 9. Maximum Rated Engine Power: 18kw Brake Horsepower (bhp)

10. Construction Date: 2007	11. Manufacturer: Kubota	12. Model: LightSource	13. Model Year: 2005
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14. Date of Modification (if applicable): N/A	15. Serial Number (if available): 354017UCP789	16. Control Device (if any): None
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FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
6,570 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
6,570 Hours/Year



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

IDENTIFICATION				
1. Company Name: Nu-West Industries, dba/ Agrium		2. Facility Name: North Rasmussen Ridge Mine		
3 Brief Project Description: PTC - Add and Replace Diesel-Fired Generators				
ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS				
4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____				
5. Engine Displacement: Unknown (liters per cylinder)			6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark	
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency				
8. Engine ID Number: Stck 9		9. Maximum Rated Engine Power: <u>18Kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2007		11. Manufacturer: Kubota	12. Model: LightSource	13. Model Year: 2005
14. Date of Modification (if applicable): N/A		15. Serial Number (if available): 354017UCP789	16. Control Device (if any): None	
FUEL DESCRIPTION AND SPECIFICATIONS				
17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	
OPERATING LIMITS & SCHEDULE				
21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year				
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year				



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

Emissions Units - Industrial Engine Information Form EU1

Revision 8
 1/15/10

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

IDENTIFICATION				
1. Company Name: Nu-West Industries, dba/ Agrium		2. Facility Name: North Rasmussen Ridge Mine		
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators				
ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS				
4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____				
5. Engine Displacement: Unknown (liters per cylinder)			6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark	
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency				
8. Engine ID Number: Stck 10		9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2007		11. Manufacturer: Kubota	12. Model: LightSource	13. Model Year: 2005
14. Date of Modification (if applicable): N/A		15. Serial Number (if available): 354017UCP789	16. Control Device (if any): None	
FUEL DESCRIPTION AND SPECIFICATIONS				
17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	
OPERATING LIMITS & SCHEDULE				
21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year				
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year				



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: Date Issued:			
5. Engine Displacement: 0.898 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 11	9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2007	11. Manufacturer: Kubota	12. Model: D905-BG-ES01	13. Model Year: 2006
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

Emissions Units - Industrial Engine Information Form EU1

Revision 8
 1/15/10

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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 0.898 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 12	9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2007	11. Manufacturer: Kubota	12. Model: D905-BG-ES01	13. Model Year: 2006
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: Date Issued:			
5. Engine Displacement: 0.898 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 13	9. Maximum Rated Engine Power: <u>18Kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2007	11. Manufacturer: Kubota	12. Model: D905-BG-ES01	13. Model Year: 2006
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 0.898 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 14	9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2007	11. Manufacturer: Kubota	12. Model: D905-BG-ES01	13. Model Year: 2006
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: Date Issued:			
5. Engine Displacement: 0.898 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 15	9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2007	11. Manufacturer: Kubota	12. Model: D905-BG-ES01	13. Model Year: 2006
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 1.5 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 17	9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2010	11. Manufacturer: Kubota	12. Model: V1505-BG-ET02	13. Model Year: 2011
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrum	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 1.5 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 18	9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2010	11. Manufacturer: Kubota	12. Model: V1505-BG-ET02	13. Model Year: 2011
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 1.5 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 19	9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2010	11. Manufacturer: Kubota	12. Model: V1505-BG-ET02	13. Model Year: 2011
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 1.5 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 20	9. Maximum Rated Engine Power: <u>18kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2010	11. Manufacturer: Kubota	12. Model: V1505-BG-ET02	13. Model Year: 2011
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 1.5 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 21	9. Maximum Rated Engine Power: <u>18 Kw</u> Brake Horsepower (bhp)		
10. Construction Date: 2010	11. Manufacturer: Kubota	12. Model: V1505-BG0ET02	13. Model Year: 2011
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: Unknown (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 22	9. Maximum Rated Engine Power: <u>27</u> Brake Horsepower (bhp)		
10. Construction Date: 2003	11. Manufacturer: Whitman	12. Model: Unknown	13. Model Year: Unknown
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5 %	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 6,570 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 6,570 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: _____ (liters per cylinder)		6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark	
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 23		9. Maximum Rated Engine Power: <u>90</u> Brake Horsepower (bhp)	
10. Construction Date: 2011	11. Manufacturer: John Deere	12. Model: 4045TF285E	13. Model Year: 2012
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	4.3			
19. Actual Consumption Rate	4.3			
20. Sulfur Content wt%	0.5	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 8,760 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 8,760 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: Unknown (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 24	9. Maximum Rated Engine Power: <u>52</u> Brake Horsepower (bhp)		
10. Construction Date: 2012	11. Manufacturer: ISUZU	12. Model: 4BD1	13. Model Year: 2005
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): Unknown	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	Unknown			
19. Actual Consumption Rate	Unknown			
20. Sulfur Content wt%	0.5	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 8,760 Hours/Year - No manufacturer data sheet available
22. Operating Schedule (hours/day, months/year, etc.): 8,760 Hours/Year



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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine	
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators		

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input type="checkbox"/> New Unit <input checked="" type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 3.0 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 25	9. Maximum Rated Engine Power: <u>97.9</u> Brake Horsepower (bhp)		
10. Construction Date: 2012	11. Manufacturer: ISUZU	12. Model: BJ-4JJ1X	13. Model Year: 2012
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	35.6 lbs/hr			
19. Actual Consumption Rate	35.6 lbs/hr			
20. Sulfur Content wt%	0.5	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 8,760 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 8,760 Hours/Year



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

Emissions Units - Industrial Engine Information **Form EU1**
 Revision 8
 1/15/10

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

IDENTIFICATION

1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: North Rasmussen Ridge Mine
3. Brief Project Description: PTC - Add and Replace Diesel-Fired Generators	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: <input checked="" type="checkbox"/> New Unit <input type="checkbox"/> Unpermitted Existing Unit <input type="checkbox"/> Modification to a Unit with Permit #: _____ Date Issued: _____			
5. Engine Displacement: 3.0 (liters per cylinder)	6. Ignition Type: <input checked="" type="checkbox"/> Compression <input type="checkbox"/> Spark		
7. Use <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Non-Emergency			
8. Engine ID Number: Stck 26	9. Maximum Rated Engine Power: <u>67</u> Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: ISUZU	12. Model: BU-4JJ1T	13. Model Year: 2011
14. Date of Modification (if applicable): N/A	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	<input checked="" type="checkbox"/> Diesel Fuel (#2) (gal/hr)	<input type="checkbox"/> Gasoline Fuel (gal/hr)	<input type="checkbox"/> Natural Gas (cf/hr)	<input type="checkbox"/> Other Fuels (unit:)
18. Full Load Consumption Rate	2.8			
19. Actual Consumption Rate	2.8			
20. Sulfur Content wt%	0.5	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 8,760 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 8,760 Hours/Year

APPENDIX D
MANUFACTURER DATA SHEETS
(GENERATORS AND BOILER)

Model	Model Year	Engine Make:	Engine Model:	Engine Year:	EPA engine family	CARB Executive Order#	Engine Horse Power (BHP)	Fuel consumption-full load (lb/hr)	Engine Displacement (Liters)	Engine Tier	PM (g/kw-hr)	Nox (g/kw-hr)	HC (g/kw-hr)	CO (g/kw-hr)	NOx+HC (g/kw-hr)	Accl	Lug	Peak
G150	2011	John Deere	6068HF285	2010	AJDXL09.0901	U-R-004-0415	197	70.50	6.8	3Flex	0.16	--	--	0.9	3.7	--	--	--
G240	2011	John Deere	6068HF485	2010	AJDXL09.0901	U-R-004-0416	315	109.70	6.8	3Flex	0.1	--	--	0.6	3.4	15	2	27

Diesel Generator Set

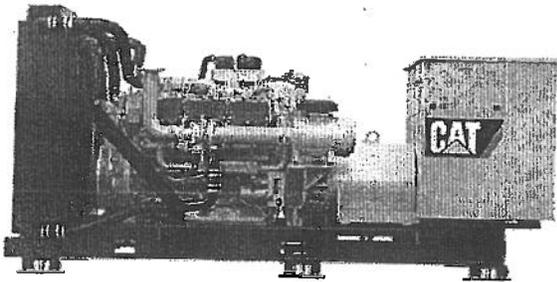


Image shown may not reflect actual package

Prime 725 kW 906 kVA 60 Hz 1800 rpm 480 Volts

Caterpillar is leading the power generation Market place with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

FUEL/EMISSIONS STRATEGY

- EPA Tier 4 Interim

DESIGN CRITERIA

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.

UL 2200

- UL 2200 packages available. Certain restrictions may apply. Consult with your Cat dealer.

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Cat® dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 1600 dealer branch stores operating in 200 countries.
- The Cat® SOSSM program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by products.

CAT C27 ATAAC DIESEL ENGINE

- Reliable, rugged, durable design
- Field proven in thousands of applications worldwide
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight

CAT GENERATOR

- Matched to the performance and output characteristics of Cat engines
- Single point access to accessory connections
- UL 1446 Recognized Class H insulation

CAT EMCP 4 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway

SEISMIC CERTIFICATION

- Seismic Certification available.
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength. IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer.
- Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007.
- Pre-approved by OSHP and carries an OPA#(OSP-0084-01) for use in healthcare projects in California.

PRIME 725 kW 906 kVA
60 Hz 1800 rpm 480 Volts



Factory Installed Standard & Optional Equipment

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none"> • Single element canister type air cleaner¹ • Indicator • Service indicator 	<ul style="list-style-type: none"> [] Dual element air cleaners [] Heavy duty air cleaners with dual elements and pre-cleaners
Cooling	<ul style="list-style-type: none"> • Radiator with guard • Jacket water heater • Fan and belt guards • Coolant drain line with valve • Coolant level sensors • Caterpillar Extended Life Coolant 	
Exhaust	<ul style="list-style-type: none"> • Exhaust manifold - dry - dual • Flanged dual outlets 	<ul style="list-style-type: none"> [] Mufflers [] Stainless steel exhaust flex fittings [] Elbows, flanges, expanders, & Y adapters
Fuel	<ul style="list-style-type: none"> • Secondary fuel filters • Fuel cooler² • Electric fuel priming pump 	
Generator	<ul style="list-style-type: none"> • 3-Phase brushless, Salient pole • Class-H insulation • Cat digital voltage regulator (CDVR) with VAR/PF control, 3-phase sensing • Winding temperature detectors 	<ul style="list-style-type: none"> [] Anti-condensation space heaters
Power Termination	<ul style="list-style-type: none"> • Bus bar (NEMA mechanical lug holes) • Top cable entry 	<ul style="list-style-type: none"> [] Circuit breakers, UL listed, 3 pole shunt trip, 100% rated, choice of trip units, manual or electrically operated [] Bottom cable entry [] Right, left, and/or rear power termination [] Load share module
Governor	<ul style="list-style-type: none"> • ADEM³ A4 	
Control Panel	<ul style="list-style-type: none"> • EMCP 4.2 Genset Controller • User interface panel (UIP) - rear mount • AC & DC customer wiring area (right side) • Emergency Stop Pushbutton 	<ul style="list-style-type: none"> [] Local & remote annunciator modules [] Digital I/O Module [] Generator temperature monitoring & protection
Lube	<ul style="list-style-type: none"> • Lubricating oil • Gear type lube oil pump • Oil filter, filler and dipstick • Oil drain line and valve • Open crankcase ventilation filters 	
Mounting	<ul style="list-style-type: none"> • Rails - engine / generator / radiator mounting • Spring type vibration isolator 	
Starting / Charging	<ul style="list-style-type: none"> • 24 volt starting motor(s) • 60A charging alternator • Batteries with rack and cables • Battery disconnect switch 	<ul style="list-style-type: none"> [] Battery chargers (10 Amp) [] Oversize batteries
General	<ul style="list-style-type: none"> • Right hand service • Paint - Cat yellow except rails and radiators gloss black • SAE standard rotation • Flywheel and flywheel housing - SAE No. 00 	<ul style="list-style-type: none"> [] UL 2200 listed [] CSA Certification [] Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007

*Not included with packages without radiators

PRIME 725 ekW 906 kVA
60 Hz 1800 rpm 480 Volts



SPECIFICATIONS

CAT GENERATOR

Frame	1424
Excitation	IE
Pitch.....	0.6667
Number of poles.....	4
Number of leads.....	6
Number of bearings	Two Bearing
Insulation	Class H
IP rating	Drip proof IP23
Over speed capability - % of rated.....	125%
Wave form deviation.....	2 %
Voltage regulator.....	3 phase sensing with load adjustable module
Voltage regulation.....	Less than $\pm 1/2\%$ (steady state) Less than $\pm 1/2\%$ (3% speed change)
Telephone Influence Factor	Less than 50
Harmonic Distortion	Less than 5%

CAT DIESEL ENGINE

C27 ATAAC, V-12, 4 stroke, water-cooled diesel

Bore	137.20 mm (5.4 in)
Stroke	152.4 mm (6.0 in)
Displacement	27.03 L (1649.47 in ³)
Compression ratio.....	16.5:1
Aspiration.....	TA
Fuel system.....	Electronic unit injection
Governor Type.....	ADEM™ A4

CAT EMCP 4 CONTROL PANELS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed & Voltage Adjust
- Engine Cycle Crank
- Emergency stop pushbutton

EMCP 4.2 controller features:

- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions

Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- Power Factor (per phase & average)
- kW (per phase, average & percent)
- kVA (per phase, average & percent)
- kVAr (per phase, average & percent)
- kW-hr & kVAr-hr (total)

Warning/shutdown with common LED indication of shutdowns for:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32)
- Reverse Reactive Power (kVAr) (32RV)
- Overcurrent (50/51)

Communications

- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- 6 programmable digital inputs
- 4 programmable relay outputs (Form A)
- 2 programmable relay outputs (Form C)
- 2 programmable digital outputs

Compatible with the following optional modules:

- Digital I/O module
- Local Annunciator
- Remote annunciator
- RTD module
- Thermocouple module

PRIME 725 ekW 906 kVA
60 Hz 1800 rpm 480 Volts



TECHNICAL DATA

Open Generator Set - 1800 rpm/60 Hz/480 Volts	PRIME DM8867	
Package Performance		
Power rating	725 ekW	
Power rating @ 0.8 pf	906 kVA	
Fuel Consumption		
100% load with fan	20.1 L/hr	53.2 Gal/hr
75% load with fan	15.6 L/hr	41.3 Gal/hr
50% load with fan	11.5 L/hr	30.5 Gal/hr
Cooling System²		
Ambient air temperature	43 °C	109 °F
Air flow restriction (system)	0.125 kPa	0.05 in water
Air flow (max @ rated speed)	1239 m ³ /min	43755 cfm
Engine coolant Capacity with radiator arrangement)	170.7 L	45.1 US Gal
Engine coolant capacity	70.0 L	18.5 US Gal
Radiator coolant capacity	81.8 L	21.6 US Gal
Inlet Air		
Combustion air inlet flow rate	54.6 m ³ /min	1927 cfm
Exhaust System³		
Exhaust stack gas temperature	433 °C	812 °F
Exhaust gas flow rate	127 m ³ /min	4478 cfm
Exhaust flange size (internal diameter)	203 mm	8 in
Exhaust system backpressure (minimum allowable)	2 kPa	8 in. water
Exhaust system backpressure (maximum allowable)	10 kPa	40 in. water
Heat Rejection		
Heat rejection to coolant (total)	466 kW	26478 Btu/min
Heat rejection to exhaust (total)	610 kW	34718 Btu/min
Heat rejection to aftercooler	145 kW	8266 Btu/min
Heat rejection to atmosphere from engine	102 kW	5794 Btu/min
Heat rejection to atmosphere from generator	35.8 kW	2037 Btu/min
Alternator⁴		
Motor starting capability @ 30% voltage dip	3430 skVA	
Frame	1424	
Temperature Rise	80°C	176 °F
Lube System⁵		
Lube oil refill with filter change for standard sump	86 L	26 US Gal
Emissions (Nominal)⁶		
NO _x g/hp-hr	1.93 g/hp-hr	
CO g/hp-hr	0.53 g/hp-hr	
HC g/hp-hr	0.06 g/hp-hr	
PM g/hp-hr	0.04 g/hp-hr	

¹ EPA Tier 4 Interim diesel engines required the use of Ultra Low Sulfur Diesel (ULSD) fuel in order to protect emissions control systems, help comply with emissions standards, and meet published maintenance intervals. ULSD fuel will have ≤ 15 ppm (0.0015%) sulfur using the ASTM D5453, ASTM 2622, or SIN 51400 test methods.

² For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

³ Backpressure allowance is total backpressure available for the customer.

⁴ Some packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40 degree C ambient per NEMA MG1-32.

⁵ Requires the use of C/J4 oil in order to meet published maintenance intervals.

⁶ Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO6178-1 for measuring HC, CO, PM, NO_x. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,380 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

PRIME 725 ekW 906 kVA
60 Hz 1800 rpm 480 Volts



RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications:
AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA
MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC,
98/37/EC, 2004/108/EC

Prime – Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of the prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year. Prime power in accordance with ISO 3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the alarm temperature.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions

Fuel Rates are based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

PRIME 725 ekW 906 kVA
60 Hz 1800 rpm 480 Volts



Dimensions

Package Dimensions		
Length	4332.8 mm	170.6 in
Width	2015.8 mm	79.3 in
Height	2478.0 mm	85.6 in
Weight	7430 kg	17699 lb

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions.

www.CAT-ElectricPower.com

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Sourced: U.S. Sourced

June 2011

Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

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*NEW
TIER 4
C27-*

PERFORMANCE DATA

FEBRUARY 27, 2013

For Help Desk Phone Numbers [Click here](#)

Perf No: DM8867

Change Level: (

General Heat Rejection Emissions Regulatory Altitude Derate Cross Reference Perf Param Ref

[View PDF](#)

SALES MODEL:	C27	COMBUSTION:	DI
ENGINE POWER (BHP):	1,093	ENGINE SPEED (RPM):	1,800
GEN POWER WITH FAN (EKW):	725.0	HERTZ:	60
COMPRESSION RATIO:	16.0	FAN POWER (HP):	41.6
APPLICATION:	PACKAGED GENSET	ADDITIONAL PARASITICS (HP):	31.2
RATING LEVEL:	PRIME	ASPIRATION:	TA
PUMP QUANTITY:	1	AFTERCOOLER TYPE:	ATAAC
FUEL TYPE:	DIESEL	AFTERCOOLER CIRCUIT TYPE:	JW+OC, ATAAC
MANIFOLD TYPE:	DRY	INLET MANIFOLD AIR TEMP (F):	129
GOVERNOR TYPE:	ADEM4	JACKET WATER TEMP (F):	210.2
ELECTRONICS TYPE:	ADEM4	TURBO CONFIGURATION:	PARALLEL
IGNITION TYPE:	CI	TURBO QUANTITY:	2
INJECTOR TYPE:	EUI	TURBOCHARGER MODEL:	GTB4502L-46T-1.1
REF EXH STACK DIAMETER (IN):	12	CERTIFICATION YEAR:	2011
		PISTON SPD @ RATED ENG SPD (FT/MIN):	1,800.0

General Performance Data [Top](#)

Note(s)

INLET MANIFOLD AIR TEMPERATURE ("INLET MFLD TEMP") FOR THIS CONFIGURATION IS MEASURED AT THE OUTLET OF THE AFTERCOOLER.

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BHP	PSI	LB/BHP-HR	GAL/HR	IN-HG	DEG F	DEG F	IN-HG	DEG F
725.0	100	1,093	292	0.341	53.2	64.9	129.3	1,142.7	66.8	811.6
652.5	90	990	264	0.341	48.2	60.2	125.2	1,089.7	61.3	771.0
580.0	80	889	237	0.343	43.5	55.1	121.5	1,042.2	55.8	738.8
543.8	75	839	224	0.345	41.3	52.5	118.5	1,020.7	52.9	725.9
507.5	70	789	210	0.347	39.1	49.7	115.3	999.8	50.0	714.3
435.0	60	689	184	0.354	34.8	43.9	108.6	957.5	44.1	692.7
362.5	50	589	157	0.362	30.5	37.5	101.7	911.9	37.9	670.4
290.0	40	488	130	0.371	25.8	29.4	95.7	858.1	31.5	642.1
217.5	30	386	103	0.383	21.1	21.8	90.2	794.3	24.8	607.6
181.2	25	335	89	0.393	18.8	18.6	87.7	758.6	21.3	587.9
145.0	20	283	76	0.408	16.5	15.9	85.8	717.1	18.7	561.1
72.5	10	179	48	0.468	12.0	12.9	84.9	606.9	19.0	467.8

GENSET POWER	PERCENT ENGINE	COMPRESSOR	COMPRESSOR	WET INLET AIR VOL	ENGINE OUTLET WET EXH	WET INLET AIR	WET EXH GAS	WET EXH VOL FLOW RATE (32	DRY EXH VOL FLOW RATE (32
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WITH FAN	LOAD	POWER	OUTLET PRES	OUTLET TEMP	FLOW RATE	GAS VOL FLOW RATE	MASS FLOW RATE	MASS FLOW RATE	DEG F AND 29.98 IN HG)	DEG F AN 29.98 IN HG)
EKW	%	BHP	IN-HG	DEG F	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
725.0	100	1,093	70	379.7	1,893.8	4,478.7	8,242.4	8,614.9	1,732.2	1,558.1
652.5	90	990	65	360.9	1,826.6	4,195.2	7,905.4	8,243.0	1,676.0	1,514.9
580.0	80	889	59	342.1	1,758.8	3,914.0	7,569.6	7,874.4	1,605.8	1,458.3
543.8	75	839	57	332.3	1,717.0	3,773.9	7,372.6	7,661.7	1,565.1	1,424.2
507.5	70	789	54	322.0	1,671.8	3,634.6	7,162.6	7,436.4	1,522.2	1,387.8
435.0	60	689	48	300.0	1,570.1	3,354.6	6,699.3	6,942.9	1,431.3	1,309.7
362.5	50	589	41	274.8	1,445.6	3,056.5	6,143.2	6,356.6	1,329.8	1,221.4
290.0	40	488	32	239.5	1,261.1	2,641.3	5,331.2	5,511.9	1,178.7	1,087.1
217.5	30	386	24	206.0	1,102.1	2,248.8	4,633.2	4,781.0	1,036.0	959.6
181.2	25	335	21	191.4	1,044.4	2,077.1	4,380.1	4,511.5	974.8	905.0
145.0	20	283	18	179.7	1,013.7	1,938.2	4,244.4	4,359.6	933.5	869.7
72.5	10	179	15	166.3	1,040.8	1,768.2	4,358.4	4,442.0	937.4	886.2

Heat Rejection Data Top

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHUAUST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIG HEA VAL ENE
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
725.0	100	1,093	26,478	5,794	34,718	16,903	6,080	8,266	46,352	114,158	121,
652.5	90	990	24,225	5,338	31,248	14,672	5,514	7,463	41,997	103,517	110,
580.0	80	889	22,134	4,919	28,105	12,885	4,977	6,689	37,702	93,451	99,5
543.8	75	839	21,155	4,686	26,733	12,099	4,723	6,311	35,570	88,669	94,4
507.5	70	789	20,204	4,457	25,434	11,359	4,474	5,927	33,454	83,995	89,4
435.0	60	689	18,347	4,010	22,932	9,943	3,982	5,135	29,220	74,765	79,6
362.5	50	589	16,493	3,610	20,367	8,482	3,485	4,257	24,972	65,431	69,7
290.0	40	488	14,528	3,307	17,446	6,678	2,952	3,070	20,691	55,426	59,0
217.5	30	386	12,575	2,981	14,232	5,085	2,415	2,147	16,372	45,348	48,3
181.2	25	335	11,612	2,792	12,542	4,421	2,148	1,818	14,195	40,328	42,9
145.0	20	283	10,489	2,568	11,017	3,774	1,884	1,597	12,004	35,367	37,6
72.5	10	179	7,604	2,030	8,690	2,113	1,366	1,420	7,577	25,647	27,3

Emissions Data Top

Units Filter: All Units

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITH FAN	EKW	725.0	543.8	362.5	181.2	72.5
ENGINE POWER	BHP	1,093	839	589	335	179
PERCENT LOAD	%	100	75	50	25	10
TOTAL NOX (AS NO2)	G/HR	2,528	1,863	1,204	790	690
TOTAL CO	G/HR	1,066	575	460	737	768
TOTAL HC	G/HR	124	123	131	185	215
PART MATTER	G/HR	95.0	68.6	43.1	32.8	71.4
TOTAL NOX (AS NO2)	(CORR 5% O2) MG/NM3	1,078.1	1,016.9	898.3	963.4	1,363.7
TOTAL CO	(CORR 5% O2) MG/NM3	454.4	313.3	342.7	893.4	1,489.2
TOTAL HC	(CORR 5% O2) MG/NM3	45.9	58.6	84.2	195.5	370.5
PART MATTER	(CORR 5% O2) MG/NM3	32.7	30.5	27.3	35.6	141.0
TOTAL NOX (AS NO2)	(CORR 5% O2) PPM	525	495	438	469	664
TOTAL CO	(CORR 5% O2) PPM	363	251	274	715	1,191
TOTAL HC	(CORR 5% O2) PPM	86	109	157	365	692
TOTAL NOX (AS NO2)	G/HP-HR	2.33	2.24	2.06	2.37	3.88
TOTAL CO	G/HP-HR	0.98	0.69	0.78	2.21	4.32

TOTAL HC	G/HP-HR	0.11	0.15	0.22	0.55	1.21
PART MATTER	G/HP-HR	0.09	0.08	0.07	0.10	0.40
TOTAL NOX (AS NO2)	LB/HR	5.57	4.11	2.66	1.74	1.52
TOTAL CO	LB/HR	2.35	1.27	1.01	1.63	1.69
TOTAL HC	LB/HR	0.27	0.27	0.29	0.41	0.47
PART MATTER	LB/HR	0.21	0.15	0.10	0.07	0.16

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN	EKW	725.0	549.8	362.8	181.2	72.5
ENGINE POWER	BHP	1,093	839	589	335	179
PERCENT LOAD	%	100	75	50	25	10
TOTAL NOX (AS NO2)	G/HR	2,089	1,540	995	653	571
TOTAL CO	G/HR	570	307	246	394	411
TOTAL HC	G/HR	66	65	69	98	114
TOTAL CO2	KG/HR	550	424	311	192	123
PART MATTER	G/HR	48.7	35.2	22.1	16.8	36.6
TOTAL NOX (AS NO2)	(CORR 5% O2) MG/NM3	891.0	840.4	742.4	796.2	1,127.0
TOTAL CO	(CORR 5% O2) MG/NM3	243.0	167.5	183.3	477.8	796.4
TOTAL HC	(CORR 5% O2) MG/NM3	24.3	31.0	44.5	103.4	196.0
PART MATTER	(CORR 5% O2) MG/NM3	16.8	15.6	14.0	18.3	72.3
TOTAL NOX (AS NO2)	(CORR 5% O2) PPM	434	409	362	388	549
TOTAL CO	(CORR 5% O2) PPM	194	134	147	382	637
TOTAL HC	(CORR 5% O2) PPM	45	58	83	193	366
FORMALDEHYDE	(CORR 15% O2) PPM	0.43	0.80	1.17	3.70	7.25
NON-METHANE HC	(CORR 15% O2) PPM	18.79	30.24	37.64	71.84	106.88
NON-ETHANE HC	(CORR 15% O2) PPM	16.69	27.24	34.53	65.00	95.63
TOTAL NOX (AS NO2)	G/HP-HR	1.93	1.85	1.70	1.96	3.21
TOTAL CO	G/HP-HR	0.53	0.37	0.42	1.18	2.31
TOTAL HC	G/HP-HR	0.06	0.08	0.12	0.29	0.64
PART MATTER	G/HP-HR	0.04	0.04	0.04	0.05	0.21
TOTAL NOX (AS NO2)	LB/HR	4.61	3.40	2.19	1.44	1.26
TOTAL CO	LB/HR	1.26	0.68	0.54	0.87	0.91
TOTAL HC	LB/HR	0.15	0.14	0.15	0.22	0.25
TOTAL CO2	LB/HR	1,213	935	686	423	270
PART MATTER	LB/HR	0.11	0.08	0.05	0.04	0.08
OXYGEN IN EXH	%	7.0	8.5	10.1	11.7	14.7
DRY SMOKE OPACITY	%	2.1	2.0	1.4	0.9	0.8
BOSCH SMOKE NUMBER		0.70	0.66	0.47	0.34	0.32

Regulatory Information [Top](#)

EPA TIER 4 INTERIM

2011 - 2014

GASEOUS EMISSIONS DATA MEASUREMENTS ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 1039 SUBPART F AN ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. GASEOUS EMISSIONS LIMIT VALUES ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.

Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR
U.S. (INCL CALIF)	EPA	NON-ROAD GENSET	TIER 4 INTERIM	CO: 3.5 NOx: 3.5 HC: 0.4 PM: 0.10

Altitude Derate Data [Top](#)

ALTITUDE CORRECTED POWER CAPABILITY (BHP)

AMBIENT OPERATING TEMP (F)	50	60	70	80	90	100	110	120	130	NORMAL
ALTITUDE (FT)										
0	1,093	1,093	1,093	1,093	1,090	1,086	1,082	1,077	1,073	1,093

1,000	1,093	1,093	1,092	1,089	1,085	1,080	1,076	1,071	1,067	1,091
2,000	1,092	1,089	1,086	1,083	1,078	1,074	1,070	1,065	1,060	1,086
3,000	1,086	1,083	1,080	1,076	1,072	1,067	1,063	1,058	1,047	1,080
4,000	1,079	1,076	1,073	1,069	1,064	1,060	1,053	1,032	1,011	1,075
5,000	1,072	1,069	1,065	1,061	1,057	1,035	1,016	995	974	1,068
6,000	1,070	1,067	1,063	1,050	1,028	1,007	985	964	942	1,068
7,000	1,070	1,056	1,037	1,018	994	971	948	925	903	1,068
8,000	1,051	1,032	1,013	993	970	947	924	903	883	1,051
9,000	1,011	993	974	954	930	910	892	874	855	1,018
10,000	966	947	929	911	892	876	858	839	818	979
11,000	921	906	889	875	859	841	822	798	774	941
12,000	886	872	858	843	824	802	778	756	734	904
13,000	852	838	823	805	782	760	738	719	703	874
14,000	816	799	781	763	742	723	707	693	682	846
15,000	776	758	743	727	710	696	685	676	665	816

Cross Reference [Top](#)

Engine Arrangement			
Arrangement Number	Effective Serial Number	Engineering Model	Engineering Model Version
3479352	ZRS00001	GS534	-
3541449	PEY00001	GS581	-
3606757	ZRS00001	GS534	-
3791707	RAM00001	EE053	-

Test Specification Data						
Test Spec	Setting	Effective Serial Number	Engine Arrangement	Governor Type	Default Low Idle Speed	Default High Idle Speed
0K7855	GG0352	ZRS00001	3479352	ADEM4		
0K4025	GG0381	PEY00001	3541449	ADEM4		
0K7855	GG0352	ZRS00001	3606757	ADEM4		
3704830	GG0513	RAM00001	3791707	ADEM4		

Performance Parameter Reference [Top](#)

Parameters Reference: DM9600 - 05

PERFORMANCE DEFINITIONS

PERFORMANCE DEFINITIONS DM9600

APPLICATION:
 Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request(SERR)test data shall be noted.

PERFORMANCE PARAMETER TOLERANCE FACTORS:
 Power +/- 3%
 Torque +/- 3%

Exhaust stack temperature +/- 8%
Inlet airflow +/- 5%
Intake manifold pressure-gage +/- 10%
Exhaust flow +/- 6%
Specific fuel consumption +/- 3%
Fuel rate +/- 5%
Heat rejection +/- 5%
Heat rejection exhaust only +/- 10%

Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications.

On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed.

These values do not apply to C280/3600. For these models, see the tolerances listed below.

C280/3600 HEAT REJECTION TOLERANCE FACTORS:

Heat rejection +/- 10%
Heat rejection to Atmosphere +/- 50%
Heat rejection to Lube Oil +/- 20%
Heat rejection to Aftercooler +/- 5%

TEST CELL TRANSDUCER TOLERANCE FACTORS:

Torque +/- 0.5%
Speed +/- 0.2%
Fuel flow +/- 1.0%
Temperature +/- 2.0 C degrees
Intake manifold pressure +/- 0.1 kPa

OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.

REFERENCE ATMOSPHERIC INLET AIR

FOR 3500 ENGINES AND SMALLER

SAE J1228 reference atmospheric pressure is 100 KPA (29.61 in hg) and standard temperature is 25 (77) at 60% relative humidity.

FOR 3600 ENGINES

Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JAW60 standard reference conditions of 25, 100 KPA 30% relative humidity and 150M altitude at the stated aftercooler water temperature.

MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE

Location for air temperature measurement air cleaner inlet at stabilized operating conditions.

REFERENCE EXHAUST STACK DIAMETER

The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.

REFERENCE FUEL

DIESEL

Reference fuel is #2 distillate diesel with a 35API gravity; A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 29 (84.2), where the density is 838.9 G/Liter (7.001 Lbs/Gal).

GAS

Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU Ft) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS EXTERNAL AUXILIARY LOAD

Engine corrected gross output includes the power required to drive standard equipment; lube oil, scavenge lube oil, fuel transfer, common rail fuel, separate circuit aftercooler and jacket water pumps. Engine net power available for the external (flywheel) load is calculated by subtracting the sum of auxiliary load from the corrected gross flywheel output power. Typical auxiliary loads are radiator cooling fans, hydraulic pumps, air compressors and battery charging alternators.

ALTITUDE CAPABILITY

Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could develop full rated output power on the current performance data set. Standard temperature values versus altitude could be seen on TM2001.

Engines with ADEM MEUI and HEUI fuel systems operating at conditions above the defined altitude capability derate for atmospheric pressure and temperature conditions outside the values defined, see TM2001. Mechanical governor controlled unit injector engines require a setting change for operation at conditions above the altitude defined on the engine performance sheet. See your Caterpillar technical representative for non standard ratings.

REGULATIONS AND PRODUCT COMPLIANCE

TMI Emissions Information is presented at 'nominal' and 'Potential Site Variation' values for standard ratings. No tolerances are applied to the emissions data. These values are subject to change at any time. The controlling federal and local emission requirements need to be verified by your Caterpillar technical representative. Log on to the Technology and Solutions Divisions (T&SD) web page (http://ted.cat.com/etsd/index.cfm?tech_id=2635iCAL) for information including federal regulation applicability and time lines for implementation. Information for labeling and tagging requirements is also provided.

NOTES:

Regulation watch covers regulations in effect and future regulation changes for world, federal, state and local. This page includes items on the watch list where a regulation change or product change might be pending and may need attention of the engine product group. For additional emissions information log on to the TMI web page.

Additional product information for specific market application is available.

Customer's may have special emission site requirements that need to be verified by the Caterpillar Product Group engineer.

HEAT REJECTION DEFINITIONS:

Diesel Circuit Type and HHV Balance : DM9500

EMISSIONS DEFINITIONS:

Emissions : DM1176

SOUND DEFINITIONS:

Sound Power : DM8702

Sound Pressure : TM7080

RATING DEFINITIONS:

Agriculture : TM6008

Fire Pump : TM6009
Generator Set : TM6035
Generator (Gas) : TM6041
Industrial Diesel : TM6010
Industrial (Gas) : TM6040
Irrigation : TM5749
Locomotive : TM6037
Marine Auxiliary : TM6036
Marine Prop (Except 3600) : TM5747
Marine Prop (3600 only) : TM5748
MSHA : TM5042
Oil Field (Petroleum) : TM6011
Off-Highway Truck : TM6039
On-Highway Truck : TM6038
Data Released : 11/23/11

EXHAUST EMISSION DATA SHEET

MQ POWER GENERATOR SET

Model: DCA45SSI



The engine used in this generator set is certified to comply with United States EPA Interim Tier 4 and CARB Mobile Off-Highway emission regulations.

ENGINE DATA

Manufacturer:	ISUZU	Bore:	3.75 in. (95.4 mm)
Model:	BU-4JJ1T	Stroke:	4.09 in. (105 mm)
Type:	4-Cycle Diesel, In-Line, 4-Cylinder	Displacement:	183 cid (3.0 liters)
Aspiration:	Turbocharged	Compression Ratio:	17.5:1

PERFORMANCE DATA

SAE Gross HP @ 1800 RPM (60 Hz)	67
Rated Load Fuel Consumption (gal/Hr)	2.8
Rated Load Exhaust Gas Flow (cfm)	233
Rated Load Exhaust Gas Temperature (°F)	896

United States EPA - Mobile Off-Highway Interim Tier 4 Limits - ≥49 BHP ~ <75 BHP

Criteria Pollutant	Emission Requirements	Certified Engine Emissions
NOx (Oxides of Nitrogen as NO ₂)	3.50 gr/bhp-hr	2.24 gr/bhp-hr
HC (Total Unburned Hydrocarbons)	(NOx + HC)* Combined	(NOx + HC)* Combined
CO (Carbon Monoxide)	3.73 gr/bhp-hr	1.04 gr/bhp-hr
PM (Particulate Matter)	0.22 gr/bhp-hr	0.17 gr/bhp-hr

EPA Engine Family:	BSZXL03.0UTB
EPA Certificate of Conformance:	SZX-NRCI-11-08
ARB Executive Order:	U-R-006-0349
Effective Date:	Model Year 2011

Note: Engine operation with excessive air intake or exhaust restriction beyond factory published maximum limits, or with improper service maintenance, may result in higher emission levels.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF TRANSPORTATION AND AIR QUALITY
WASHINGTON, DC 20460



CERTIFICATE OF CONFORMITY
2011 MODEL YEAR

Manufacturer: **ISUZU MOTORS LIMITED**
Engine Family: **BSZXL03.0UTB**
Certificate Number: **SZX-NRCI-11-08**
Intended Service Class: **NR 4 (37-75)**
Fuel Type: **DIESEL**
FELs: **NMHC + NOx: N/A NOx: N/A PM: N/A**
Effective Date: **9/23/2010**
Date Issued: **9/23/2010**

Karl J. Simon, Director
Compliance and Innovative Strategies Division
Office of Transportation and Air Quality

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 1039, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR 1039 and produced in the stated model year.

This certificate of conformity covers only those nonroad compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 1039 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 1039.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR Part 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to a revocation or suspension of this certificate for reasons specified in 40 CFR Part 1039. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void ab initio for other reasons specified in 40 CFR Part 1039.

This certificate does not cover nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

 AIR RESOURCES BOARD	ISUZU MOTORS LIMITED	EXECUTIVE ORDER U-R-006-0349 New Off-Road Compression-Ignition Engines
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Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2011	BSZXLO3.0UTB	3.0	Diesel	8,000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS		TYPICAL EQUIPMENT APPLICATION		
Electronic Direct Injection, Turbocharger, Electronic Control Module, Exhaust Gas Recirculation		Generator Set		

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37 ≤ kW < 56	Tier 4 - Interim	STD	N/A	N/A	4.7	5.0	0.30	N/A	N/A	N/A
		CERT	--	--	3.0	1.4	0.23	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 1 day of October 2010.



Annette Hebert, Chief
Mobile Source Operations Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF TRANSPORTATION AND AIR QUALITY
WASHINGTON, DC 20460



CERTIFICATE OF CONFORMITY
2011 MODEL YEAR

Manufacturer: **ISUZU MOTORS LIMITED**
Engine Family: **BSZXL03.0JXB**
Certificate Number: **SZX-NRCI-11-17**
Intended Service Class: **NR 4 (37-75)**
Fuel Type: **DIESEL**
FELs: **NMHC + NOx: N/A NOx: N/A PM: N/A**
Effective Date: **9/23/2010**
Date Issued: **9/23/2010**

Karl J. Simon, Director
Compliance and Innovative Strategies Division
Office of Transportation and Air Quality

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 89, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR 89 and produced in the stated model year.

This certificate of conformity covers only those nonroad compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 89 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 89.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 89.129-96 and 89.506-96 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to a revocation or suspension of this certificate for reasons specified in 40 CFR Part 89. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void ab initio for other reasons specified in 40 CFR Part 89.

This certificate does not cover nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

Public Version

Large Engine

Manufacturer: **Isuzu Motors Limited**
 Engine category: **Nonroad CI**
 Cert contact: **Isuzu Manufacturing Services**

Change of Address

1. Model Year: **2011**
 2. Carryover: **Yes**
 If yes, list the previous family: **ASZXL03.0JXB**

3. Process Code: **New Submission**
 4. EPA Engine Family: **BSZXL03.0JXB**

Date EPA Fee Paid: **6/2/2010**

5. Mfr's Family Name: **NA**

6. Engine Cycle: **Diesel**

7. Displace.(s) (cid Or Lit.): **3.0Liters**

8. Engine Configuration: **I-4**

9. Emission Control System:

<input checked="" type="checkbox"/> Electronic control	<input type="checkbox"/> NOx adsorber
<input checked="" type="checkbox"/> Engine Modification	<input type="checkbox"/> Lean NOx
<input type="checkbox"/> 3WCatalyst	<input type="checkbox"/> SCR
<input type="checkbox"/> Catalyst	<input type="checkbox"/> DOC
<input type="checkbox"/> Smoke Puff Limiter	<input type="checkbox"/> None
<input type="checkbox"/> Passive DPF	<input checked="" type="checkbox"/> Other
<input type="checkbox"/> Active DPF	<input type="checkbox"/> Other...
<input checked="" type="checkbox"/> EGR	

If Other Describe: **TC,CAC,DFI**

10. Fuel Type: **Diesel**

11. Fuel System Type: **Electronic Direct Injection**

12. Method of Aspiration: **Single Stage Turbo**

Turbocharger Type: **fixed turbo**

Aftercooling: **Air to Air**

13. Useful life Period: **10 years / 8,000 hours**

14. Deterioration Factor Type:

A. Gaseous Exhaust: **Additive**

B. Smoke: **NA**

15. INTENDED SERVICE CLASS (Please Check One Box Only.)
 NR 4 (37-75)

Applicable Regulations

- Part 89 } Nonroad CI
 Part 1039 }
 Part 60 only certified to requirements of Part 1039 } Stationary only
 Part 60 only certified to requirements of Part 89 }
 Part 60 and Part 1039 } Stationary-Nonroad CI
 Part 60 and Part 89 }

If CFF, Select which category:

18. Sales Area: Fed Cal 50 States

21. Program Information:

Note: The AVE or B&T fields must be checked to produce an ABT certificate.

22. Family Emission Limits:

NCPs	AVE	B&T
<input type="checkbox"/> In the split family	<input type="checkbox"/> PM	<input type="checkbox"/> In the split family program
<input type="checkbox"/> PM	<input type="checkbox"/> NOx	<input type="checkbox"/> PM
<input type="checkbox"/> NOx	<input type="checkbox"/> NMHC+NOx	<input type="checkbox"/> NOx
<input type="checkbox"/> NMHC+NOx	<input type="checkbox"/> None	<input type="checkbox"/> NMHC+NOx
<input type="checkbox"/> None	<input checked="" type="checkbox"/> NA	<input type="checkbox"/> None
<input checked="" type="checkbox"/> NA		<input checked="" type="checkbox"/> NA

PM
NOx
NMHC + NOx
Units:

23. Nonroad Engine Equipment Types:

<input type="checkbox"/> Crane	<input type="checkbox"/> Dozer	<input checked="" type="checkbox"/> Generator Set
<input type="checkbox"/> Loaders	<input type="checkbox"/> Pump	<input type="checkbox"/> NA
<input type="checkbox"/> Tractor	<input type="checkbox"/> Compressor	<input type="checkbox"/> Other...

Does AECD result in reducing effectiveness of emission control device(s):

24. Auxiliary Emission Control Devices:

AECD	Sensed	PARAMETER	Controlled	VMT	TONS/ENGINE	
Condensation	Intake Air Temp, Coolant	EGR valve				<input type="radio"/> Yes
Overheat	Intake Air Temp, Barometric	Fuel Inj Timing, Fuel Rail				<input type="radio"/> Yes
						<input type="radio"/> Yes
						<input type="radio"/> Yes
						<input type="radio"/> Yes
						<input type="radio"/> Yes
						<input type="radio"/> Yes
						<input type="radio"/> Yes
						<input type="radio"/> Yes
						<input type="radio"/> Yes

25. Adjustable Parameters:

Parameter	Adjustable Range (or N/a)	Tamper Resistance Method (or N/a)
Governed Speed	NA	Electronic control, write restriction
Fuel Injection	NA	Electronic control, write restriction

26. OBD

OBD Approval date:

OBD Approval Method:

27. Maintenance Interval

Alternate Maintenance Int.? Yes No

If yes, describe

28. Is this engine family using the Delegated Assembly flexibility described in 85.1713?

Yes No

If yes, attach plan in a container field on technical description page

Large Engine Test Info

Isuzu Motors Limited | 2011 | BSZXL03.0JXB | New Submission

3. TEST DATA SET:

4. Engine Code:

5. Engine Model:

6. Displacement(s)
(cid Or Liters):

7. Engine I.d. Number:

8. Rated HP @ Rated RPM: @

9. Torque (ft-lb) @ Engine RPM: @

10. WAIVERS: CO PM SMOKE IDLE CO

11. COLD START:

12. Certification Fuel:

13. Special Test Device Yes

14 Test Procedure:

15. Crankcase emissions (CCEs) CCEs routed into the air inlet system
 CCEs routed into the exhaust upstream of aftertreatment
 CCEs measured separately from exhaust emissions

If the CCEs are measured separately list them in the tech. description (item 13) and account for them in the test results listed below.

16. Official Results

Date:

OMHCE

NMHC/OMNMHCE

HC + NOx

CARBON MONOXIDE

OXIDE OF NITROGEN

PARTICULATE

FORMALDEHYDE

ACCEL (%opacity)

LUG (Gen) (%opacity)

PEAK (%opacity)

IDLE CO %

CO2

	Test 1	Test 2	Test 3
OMHCE	0.11		
NMHC/OMNMHCE			
HC + NOx	2.91		
CARBON MONOXIDE	1.17		
OXIDE OF NITROGEN	2.80		
PARTICULATE	0.152		
FORMALDEHYDE			
ACCEL (%opacity)			
LUG (Gen) (%opacity)			
PEAK (%opacity)			
IDLE CO %			
CO2	705		

17. Deterioration Factors

0.020
0.02
0.000
0.000
0.014

NOx Adsorber, etc

Strategy

18. Adjustment Factors

DPF

	EFL	EFH	UAF	DAF
HC/OMHCE				
CARBON MONOXIDE				
OXIDE OF NITROGEN				
PARTICULATE				

Frequency Factor

	EFL	EFH	UAF	DAF

Frequency Factor

19. Certification Levels
(Rounded Test Results)

Units-- g/kW-hr --Units

STDs

FELs

g/BHP-hr g/kW-hr

HC/OMHCE
 NMHC/OMNMHCE
 HC + NOx
 CARBON MONOXIDE
 OXIDE OF NITROGEN
 PARTICULATE
 FORMALDEHYDE
 ACCEL (%opacity)
 LUG (Gen) (%opacity)
 PEAK (%opacity)
 IDLE CO%

0.1			<Table	<Tabl
			<Table	<Tabl
2.9			<Table	<Tabl
1.2			<Table	<Tabl
2.8			<Table	<Tabl
0.17			<Table	<Tabl
			<Table	<Tabl
			<Table	

Engine Models Primary Template

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
BSZXL03.0JXB	4JJ1XDJBA-01	BJ-4JJ1X	97.9@1800	88.9@1800	35.6@1800	-	-	-	ECM,TC,CAC, DFI,EGR

Ingersoll Rand lightplants (5)

 California Environmental Protection Agency AIR RESOURCES BOARD	KUBOTA CORPORATION	EXECUTIVE ORDER U-R-025-0229 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2006	6KBXL01.3BCC	0.898, 1.001, 1.335	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Indirect Diesel Injection			Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

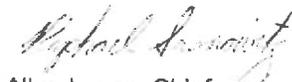
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+Nox	CO	PM	ACCEL	LUG	PEAK
8 ≤ kW < 19	Tier 2	STD	N/A	N/A	7.5	6.6	0.80	N/A	N/A	N/A
		CERT	--	--	5.3	2.0	0.48	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 30th day of December 2005.


 Allen Lyons, Chief
 Mobile Source Operations Division

INGERSOLL RAND lightplants (3)

 AIR RESOURCES BOARD	KUBOTA CORPORATION	EXECUTIVE ORDER U-R-025-0214-1 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2005	5KBXL01.5BCC	1.123, 1.498	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Indirect Diesel Injection			Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+Nox	CO	PM	ACCEL	LUG	PEAK
8 ≤ kW < 19	Tier 2	STD	N/A	N/A	7.5	6.6	0.80	N/A	N/A	N/A
		CERT	--	--	5.1	2.1	0.51	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

This Executive Order hereby supersedes Executive Order U-R-025-0214 dated October 28, 2004.

Executed at El Monte, California on this 19th day of November 2004.


 Allen Lyons, Chief
 Mobile Source Operations Division



Doosan Infracore
Portable Power

G70WJD-2A-T3

MOBILE GENERATORS

Key Features

- Manufactured in Statesville, North Carolina, USA.
- Heavy duty generator system designed for prime power operation in rental, construction and special events applications.
- Generator is CSA certified for electrical equipment per C22.2, No. 14.

Skidbase and Enclosure

- Package foundation is a heavy duty, oilfield-ready skidbase designed with minimum 110% environmental containment to prevent any leakage of fuel, oil, or coolant.
- Optimized package design combines low noise levels with small footprint and full load performance capability in high ambient temperatures.
- The enclosure is coated with a 13 stage paint process including E-coat primer for superior corrosion resistance and a high gloss powder paint for long life.
- Wide opening side access doors are hinged, providing easy access and are equipped with recessed, pad-lockable handles.
- Package is equipped with a center-point lifting eye for safe, well-balanced hoisting, designed with a 5 x safety factor for the weight of a fully fueled unit with running gear.

Engine and Cooling System

- Industrial, heavy-duty diesel engine is emissions certified to current EPA and CARB requirements and provides optimum mix of performance and fuel economy.
- Electronically controlled engine provides isochronous frequency control and advanced diagnostic monitoring and protection.
- Oversized cooling system rated for high ambient tempera-



ture (minimum 40°C/104°F) operation without derating.

- The engine generator assembly is mounted on fail-safe vibration isolators.
- Coolant and oil drains are piped to bulkhead fittings mounted on the enclosure and all filters and maintenance points are easily accessed for safe and easy servicing.
- Engines are globally supported by the engine OEM and Doosan Portable Power.

Generator

- Leroy Somer alternators feature AREP brushless excitation providing industry leading motor starting kVA and 300% overload capability.
- Class H insulation with upgraded environmental coating for ultimate resistance to high temperature and humidity.
- Three position Voltage Selector Switch (VSS) to

Voltage / Frequency	P.F.	Armature Connection	Rating	Amps	kW	kVA
480V-3Ø-60Hz	0.8	Series Wye	Prime	87	58	73
			Standby	96	64	80
240V-3Ø-60Hz	0.8	Parallel Wye	Prime	174	58	73
			Standby	191	64	80
208V-3Ø-60Hz	0.8	Parallel Wye	Prime	201	58	73
			Standby	221	64	80
240V-1Ø-60Hz	1.0	Series Wye (4-wire)	Prime	81	58	58
			Standby	89	64	64
240V-1Ø-60Hz	1.0	Zig-Zag	Prime	188	45	45
			Standby	207	50	50
120V-1Ø-60Hz	1.0	Parallel Wye (4-wire)	Prime	161	58	58
			Standby	177	64	64
120V-1Ø-60Hz	1.0	Zig-Zag	Prime	188 × 2	45	45
			Standby	207 × 2	50	50

G70WJD-2A-T3 MOBILE GENERATORS

easily configure the units for operation at most common voltages.

Control System

- Operator-preferred analog gauges provide at-a-glance monitoring of vital engine and generator parameters.
- Solid state engine control module provides convenient, microprocessor-controlled startup at the push of a button and protects the generator system from an array of faults while providing the operator with indication of any faults on the LED display.
- Engine fault codes are displayed on an LCD display, providing operators and technicians with a numeric and text explanation of the fault code, minimizing the need for expensive hand-held code scanners.
- Standard remote Auto Start / Stop capability via two wire, closed contact logic, allows for connection to automatic transfer switchgear and other remote starting devices.
- Industry exclusive Voltage Selector Switch (VSS) protection feature prevents switching the VSS while generator is operating.
- Battery disconnect switch is mounted inside the enclosure.

Power Connections

- All controls and connection points are grouped at the rear of the unit for safety and operator convenience.
- Power cables are connected at an oversized five lug (L1 L2 L3 N PE) terminal board capable of accepting bare end cable or terminated cables.
- Convenience receptacle panel includes individual branch circuit breakers.

Fuel System

- Single fuel tank sized for 24 hour runtime is mounted within the skid base, providing double wall protection.
- Fuel tank mounted low in frame and centered to ensure balanced lifting and low center of gravity.

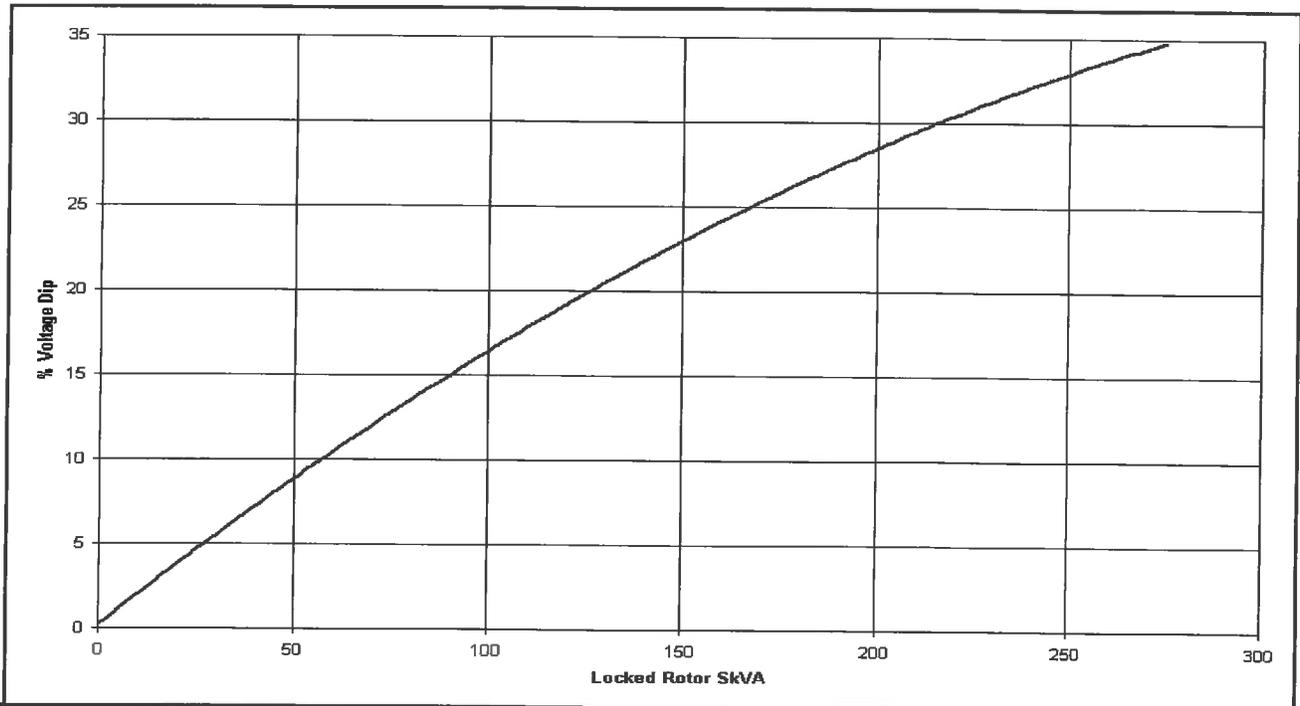
- The fuel filler is located within the containment basin, minimizing possible spillage.
- Standard Racor-style fuel / water separator and fine micron secondary fuel filter keep contaminants out of the system and increase reliability.
- The containment system features a three-inch drain plug for easy cleaning, and the fuel tank has a drain plug mounted behind the containment plug.
- Leak-proof fuel vents eliminate the potential for fuel purge during out-of-level conditions during transport and load / unload.
- Low fuel shutdown ensures the engines will not lose prime if they run out of fuel.

Running Gear

- Integrated running gear system mounts directly to generator skidbase providing an industry-best low center of gravity for safe, stable towing, on-road or off-road.
- Tandem axle torsion suspension with E-Z-Lube hub assemblies and choice of electric or hydraulic surge brakes.
- All models feature high quality, grommet-mount lighting and meet Federal Motor Vehicle Safety Standards for lighting and conspicuity.
- Trailer-to-vehicle connector is a 6-pole round plug with a high quality, jacketed wiring harness.
- All units are equipped with a 3-inch pintle eye, wheel chocks and a high quality, heavy-duty jack stand.

Warranty

- All models are covered by a comprehensive limited warranty:
- Package: 1 year / 2000 hours
- John Deere Engine: 1 year / unlimited hours or 2 years / 4000 hours
- Leroy Somer Alternator: 2 years / 4000 hours

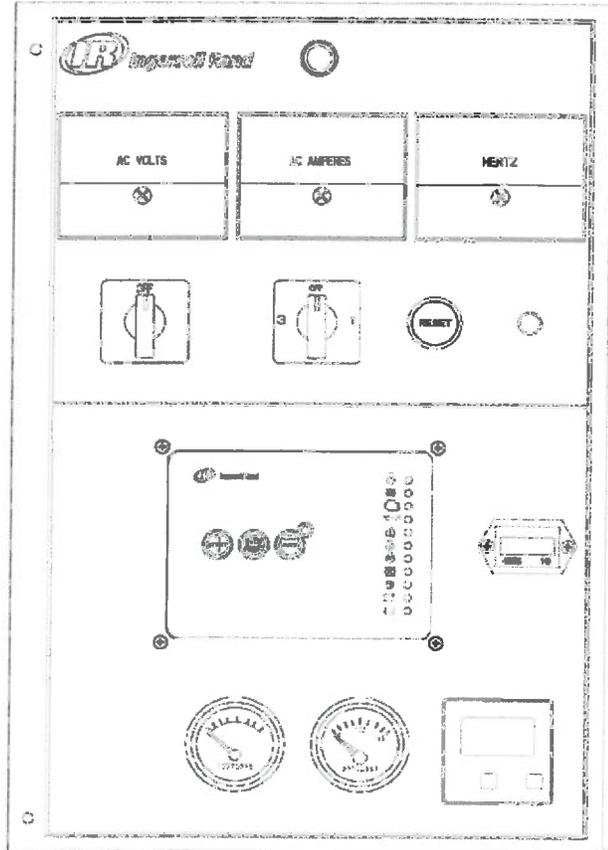


G70WJD-2A-T3 MOBILE GENERATORS

Engine Data		
Engine Manufacturer	John Deere	
Model Number	4045TF285E	
Prime Output @ Rated Speed	90 HP	67 kWm
Standby Output @ Rated Speed	99 HP	74 kWm
Engine Type	Inline 4-cycle	
Engine Control	ECU	
Emissions Certification	EPA Tier 3	
Number of Cylinders	4	
Aspiration	Turbocharged	
Bore x Stroke	4.2 x 5.0 in	106 x 127 mm
Displacement	275 in ³	4.5 L
Compression Ratio	19 : 1	
Governor Type	Electronic / Isochronous	
Speed Regulation Accuracy	+ / - 0.25% Steady State	
Single Step Load Acceptance	100%	
Cooling System	50% Glycol / 50% Water	
Charging Alternator Output	70 A	
DC System Voltage	12 V	
Battery Output	700 CCA	

Fluid Capacities		Gal	L
Oil Sump Capacity		3.57	13.5
Cooling System Capacity		7.5	28.4
Usable Fuel Cell Capacity		91.9	347.9
Fuel Consumption	Gal / h	L / h	Runtime
@ 25% Load	1.36	5.15	67.6
@ 50% Load	2.37	8.97	38.8
@ 75% Load	3.45	13.06	26.6
@ 100% Load	4.38	16.58	21.0

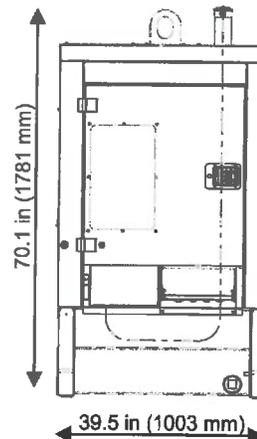
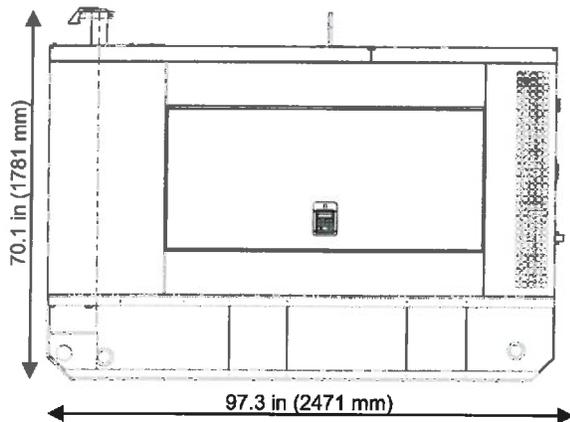
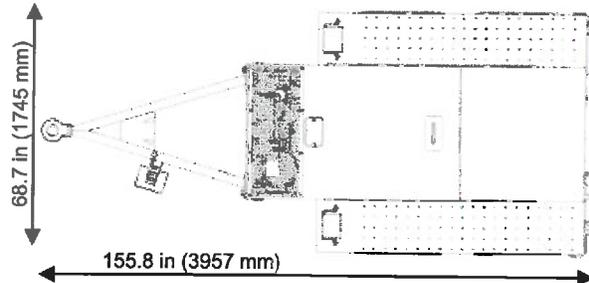
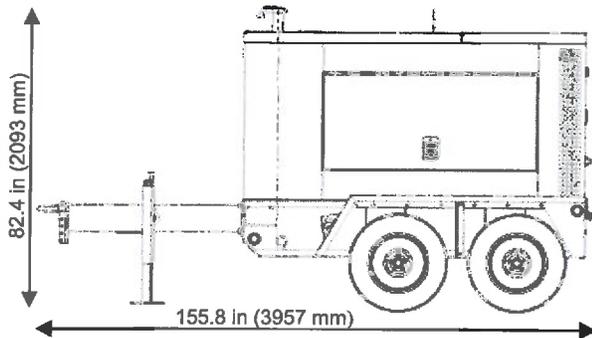
Alternator Data	
Alternator Manufacturer	Leroy Somer
Alternator Model	LSA 432 L65
Alternator Type	Four Pole Revolving Field
Number of Leads	12
Insulation Class	H
Frequency	60 Hz
Available Voltages—3Ø	208 / 240 / 416 / 480 V
Available Voltages—1Ø	120 / 139 / 240 / 277 V
Voltage Connection Method	3-Position Selector Switch
Excitation Method	Brushless with AREP
Voltage Regulator Model	R438
Voltage Regulation Accuracy	+ / - 0.5% Steady State
Total Harmonic Distortion (THD)	<5% @ No Load
Telephone Influence Factor (TIF)	<50



Power Connections		Qty
20A—125V GFCI Duplex (NEMA 5-20R)		2
50A—125/250V Temp Power (CS6369)		3
Terminal Board Maximum Cable Size (Bare Wire)	350 MCM	
Terminal Board Maximum Cable Size (Lugged)	350 MCM	
Reference Conditions		
Rated Ambient Temperature	10°-104°F	-12°-40°C
Minimum Starting Temperature (Standard)	10°F (-12°C)	
Minimum Starting Temperature (w/ Cold Start Opt)	0°F (-18°C)	
Rated Altitude		
Temperature De-rate Factor		
Altitude De-rate Factor		

G70WJD-2A-T3 MOBILE GENERATORS

Running Gear	To 49CFR571 requirements	
Configuration	Tandem axle	
Suspension	Torsion bar	
Standard Brake System Configuration	Electric (hydraulic surge brakes optional)	
Tires	ST205/75D15	
Wheels	15" × 5.5" (381 mm × 140 mm), 5 lug on 4.5" (114 mm) bolt circle	
Lighting and Reflectors	Meets FMVSS 571.108 requirements	
Electrical Connection to Towing Vehicle	Six pole round plug	
Standard Coupling Connection	3" (76 mm) Pintle eye (2-5/16" (59 mm) ball coupler optional)	
Hitch Height		
Safety Chains	2 × 5/16" (8 mm) Chains with slip hooks and safety latches	
Jack Stand Configuration	5,000lb (2,268 kg) Capacity, top wind with sand shoe, trunion mounted	
Weights & Dimensions (w/ Running Gear)		
Length	155.8 in	3,957 mm
Width	68.7 in	1,745 mm
Height	82.4 in	2,093 mm
Weight (Shipping)	4,435 lb	2,012 kg
Weight (Ready to Run)	5,260 lb	2,386 kg
Weights & Dimensions (Less Running Gear)		
Length	97.3 in	2,471 mm
Width	39.5 in	1,003 mm
Height	70.1 in	1,781 mm
Weight (Shipping)	3,708 lb	1,682 kg
Weight (Ready to Run)	4,378 lb	1,986 kg
Sound Level @ 23ft (7m), 100% Load	68 dB(A)	



Doosan Infracore
Portable Power



Doosan Infracore Portable Power
1293 Glenway Drive
Statesville, NC 28625

(800) 633-5206

DoosanPortablePower.com

Mobilight - lightplants (6)

 AIR RESOURCES BOARD	KUBOTA Corporation	EXECUTIVE ORDER U-R-025-0477
		New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2011	BKBXL01.5BCC	1.123, 1.498	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Indirect Diesel Injection			Generator Set, Light Tower	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

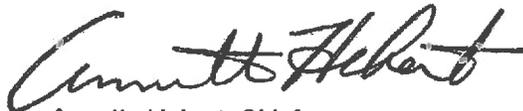
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
8 ≤ kW < 19	Tier 4	STD	N/A	N/A	7.5	6.6	0.40	N/A	N/A	N/A
		CERT	--	--	5.3	1.0	0.22	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 2 day of December 2010.



Annette Hebert, Chief
 Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: KUBOTA Corporation
Engine category: Nonroad CI
EPA Engine Family: BKBXL01.5BCC
Mfr Family Name: N/A
Process Code: New Submission

EO# U-R-025-0477
 Date: 12/2/2010
 Complete: 11/29/2010

Attachment

Page 1 of 1

1. Engine Code	2. Engine Model	3. BHP @ RPM (SAE Gross)	4. Fuel Rate: mm ³ /stroke @ peak HP (for diesel only)	5. Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6. Torque @ RPM (SEA Gross)	7. Fuel Rate: mm ³ /stroke @ peak torque	8. Fuel Rate: (lbs/hr) @ peak torque	9. Emission Control Device Per SAE J11830
D1105-BG-ET01	D1105-BG-ET	16.9@1800	23.6	7.1	N/A	N/A	N/A	EM
D1105-BG-ET02	D1105-BG-ET	13.7@1500	22.9	5.8	N/A	N/A	N/A	EM
V1505-BG-ET01	V1505-BG-ET	23.6@1800	24.0	9.7	N/A	N/A	N/A	EM
V1505-BG-ET02	V1505-BG-ET	22.0@1800	22.9	9.2	N/A	N/A	N/A	EM
V1505-BG-ET03	V1505-BG-ET	18.1@1500	22.6	7.6	N/A	N/A	N/A	EM

IDI




JOHN DEERE

ENGINE PERFORMANCE CURVE

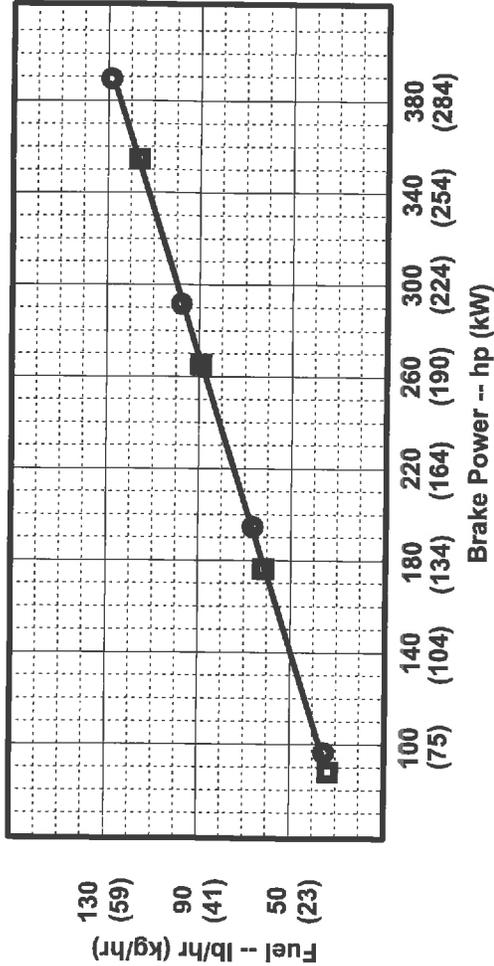
Rating: Gross Power
 Application: Generator
 1800 RPM (60 Hz)

PowerTech 8.1L Engine
Model: 6081HF070
JD Electronic Control
352 hp (263 kW) Prime
388 hp (289 kW) Standby
 [See Option Code Table]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	352	HP	388
kW	263	kW	289

Generator Efficiency %	Fan Power		Power Factor	Prime Rating		Standby Rating ¹		ISO 8528 G2 Block Load Capability
	hp	kW		kW	kVA	kW	kVA	
90-94	19.4	14.5	0.8	226-236	283-295	250-261	312-326	74%
Note 1: Based on nominal engine power. Derate 5% for 100% block load capability.								95%
								74%

■ - PRIME ● - STANDBY



Air Intake Restriction 12 in.H₂O (3 kPa)
 Exhaust Back Pressure 30 in.H₂O (7.5 kPa)

Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:
 77 °F (25 °C) air inlet temperature
 29.31 in.Hg (99 kPa) barometer
 104 °F (40 °C) fuel inlet temperature
 0.853 fuel specific gravity @ 60 °F (15.5 °C)

Conversion factors:
 Power: kW = hp x 0.746
 Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg
 Torque: N·m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.

Notes:
 All OEM Gen Set Engine Applications must be pre-screened for torsional vibration compatibility with the respective alternator end hardware.
 OEM Engine Application Engineering will perform this computer-based analysis work upon request. *

Tier-2 Emission Certifications: Certified by:

CARB; EPA
 Ref. Engine Emission Label

Brian L. Carlson
 30 Aug 04

* Revised Data
 Curve 6081HF0701800388 Sheet 1 of 2
 August 2004

Engine Specification Data

General Data

Model.....	6081HF070
Number of Cylinders.....	6
Bore and Stroke--in. (mm).....	4.56 x 5.06 (116 x 129)
Displacement--in. ³ (L).....	496 (8.1)
Compression Ratio.....	15.7 : 1
Valves per Cylinder--Intake/Exhaust.....	1 / 1
Firing Order.....	1-5-3-6-2-4
Combustion System.....	Direct Injection
Engine Type.....	In-line 4-Cycle
Aspiration.....	Turbocharged
Charge Air Cooling System.....	Air-to-Air
Engine Crankcase Vent System.....	Open
Maximum Crankcase Pressure--in. H ₂ O (kPa).....	2 (0.5)

Physical Data

Length--in. (mm).....	47.6 (1210)
Width--in. (mm).....	23.6 (599)
Height--in. (mm).....	45.4 (1152)
Weight, dry--lb (kg).....	1711 (776)
(Includes flywheel housing, flywheel & electrics)	
Center of Gravity Location.....	
From Rear Face of Block (X-axis)--in. (mm).....	19.0 (482)
Right of Crankshaft (Y-axis)--in. (mm).....	-0.3 (-8)
Above Crankshaft (Z-axis)--in. (mm).....	5.7 (145)
Max. Allow. Static Bending Moment at Rear.....	
Face of Flywhl Hsg w/ 5-G Load--lb-ft (N·m).....	600 (814)
Thrust Bearing Load Limit (Forward).....	2925 (13,010)
Intermittent--lb (N).....	1950 (8673)
Continuous--lb (N).....	

Air System

Max. Allowable Temp Rise--Ambient Air to Engine Inlet--°F (°C).....	15 (8)
Maximum Air Intake Restriction.....	
Dirty Air Cleaner--in. H ₂ O (kPa).....	25 (6.25)
Clean Air Cleaner--in. H ₂ O (kPa).....	12 (3)
Engine Air Flow--ft ³ /min (m ³ /min).....	738 (20.9)
Intake Manifold Press.--psi (kPa).....	34(235.9)
Compress Dischrg Temp.--°F (°C).....	411(210.4)
Maximum Pressure Drop Through.....	
Charge Air Cooler--in. H ₂ O (kPa).....	52 (13)
Max. Temp. Out of Charge Air Cooler @ 77 °F (25 °C) Ambient--°F (°C).....	140 (60)

Cooling System

Engine Heat Reject.--BTU/min (kW).....	5248(92.2)
Air/Air Exchanger Heat Rejection--BTU/min (kW).....	3415(60)
Coolant Flow--gal/min (L/min).....	71 (270)
Thermostat Start to Open--°F (°C).....	180 (82)
Thermostat Fully Open--°F (°C).....	201 (94)
Maximum Water Pump.....	
Inlet Restrict.--in. H ₂ O (kPa).....	28 (7)
Engine Coolant Capacity--qt (L).....	15 (14)
Min. Pressure Cap--psi (kPa).....	10 (69)
Max. Top Tank Temp--°F (°C).....	221 (105)
Min. Coolant Fill Rate--gal/min (L/min).....	3 (11)
Min. Air-to-Boil Temperature--°F (°C).....	117 (47)

Electrical System

Min. Battery Capacity (CCA)--amp.....	800
Max. Allow. Start. Circ't Resist.--Ohm.....	0.0012
Starter Rolling Current.....	
At 32 °F (0 °C)--amp.....	950
At -22 °F (-30 °C)--amp.....	1300
Maximum Voltage From Engine Crankshaft/Generator Shaft to Ground--VAC*.....	0.15*

Exhaust System

Exhaust Flow--ft ³ /min (m ³ /min).....	1713(48.5)
Exhaust Temperature--°F (°C).....	815 (435)
Maximum Allowable Back Pressure--in. H ₂ O (kPa).....	30 (7.5)

Fuel System

Fuel Injection Pump.....	Denso ECD-U2
Governor Droop.....	3.7%
Governor Type.....	Electronic
Total Fuel Flow--lb/hr (kg/hr).....	599.7(272)
Fuel Consump.--lb/hr (kg/hr).....	117(52.9)
Maximum Fuel Transfer Pump Suction--ft (m) fuel.....	10 (3.0)
Max. Fuel Inlet Temp.--°F (°C).....	149 (65)
Fuel Filter Micron Size @ 98% Efficiency.....	2

Lubrication System

Oil Press. at Rated Speed--psi (kPa).....	50 (345)
Oil Pressure at Low Idle--psi (kPa).....	30 (210)
In Pan Oil Temperature--°F (°C).....	239 (115)

Performance Data

Options.....	724A & 724B
Rated Power--hp (kW).....	353 (263)
Rated Speed--rpm.....	1800
Breakaway Speed--rpm.....	1865
Fast Idle Speed--rpm.....	1935
Low Idle Speed--rpm.....	1000
BMEP--psi (kPa).....	314 (2167)
Friction Power.....	
@ Rated Speed--hp (kW).....	28 (21)
Altitude Capability--ft (m).....	8800 (2682)
Ratio--Air : Fuel.....	27.5:1
Noise--dB(A) @ 1 m.....	NA

Fuel Consumption --lb/hr (kg/h)

25 % Power.....	34.6 (15.7)
50 % Power.....	61.5 (27.9)
75 % Power.....	89.7 (40.7)
100 % Power.....	116.6 (52.9)

All values at rated speed and power with standard options unless otherwise noted.

* Revised Data

Curve 6081HF0701800388..... Sheet 2 of 2
August 2004



Series 211A™

Large Commercial Steam Boilers



Standard Equipment

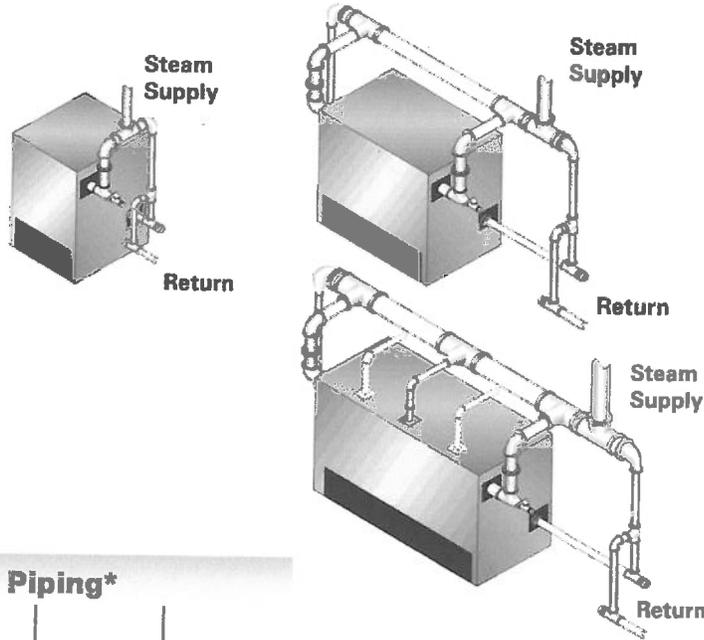
- Manual Reset High Limit Control
- Honeywell Operating Controls
- Injection Molded *Flex-Seal* Flow Port Gaskets
- Factory Assembled Gas Train to Meet ANSI Z21.13
- Individual Draw Rods for Ease of Assembly
- Float and Probe Type LWCO
- Gauge Glass and Fittings
- Pressure Gauge
- 15 PSI Safety Valve

Series 211A™ Boiler Features

- Atmospheric Gas Fired, Commercial Cast Iron Boiler
- Natural or LP Gas
- 43 sizes, 4–46 sections; Available as Knockdown, Factory Assembled Sections or Factory Packaged
- Boiler Efficiencies Compliant with Federal and ASHRAE 90.1 Requirements
- Factory Assembled Gas Train to Meet ANSI Z21.13
- Natural Draft (Chimney) Venting
- Large Water Content
- Built-in Horizontal to Vertical Draft Hood Provides Low Profile Design—Ideal for Installations with Low Ceilings
- Exclusive Access Design—Accessibility to Flueways from Both Ends for Inspection and Cleaning without Removing Entire Jacket

All commercial cast iron boilers include a full one-year warranty. A limited, ten-year warranty is provided for the cast iron sections of commercial steam boilers. Visit PeerlessBoilers.com for complete details.

Steam Piping



Pipe the return line to a Hartford Loop, with the return nipple located from 2 to 4 inches below the normal water line.

Technical Information

Steam Boiler Piping*

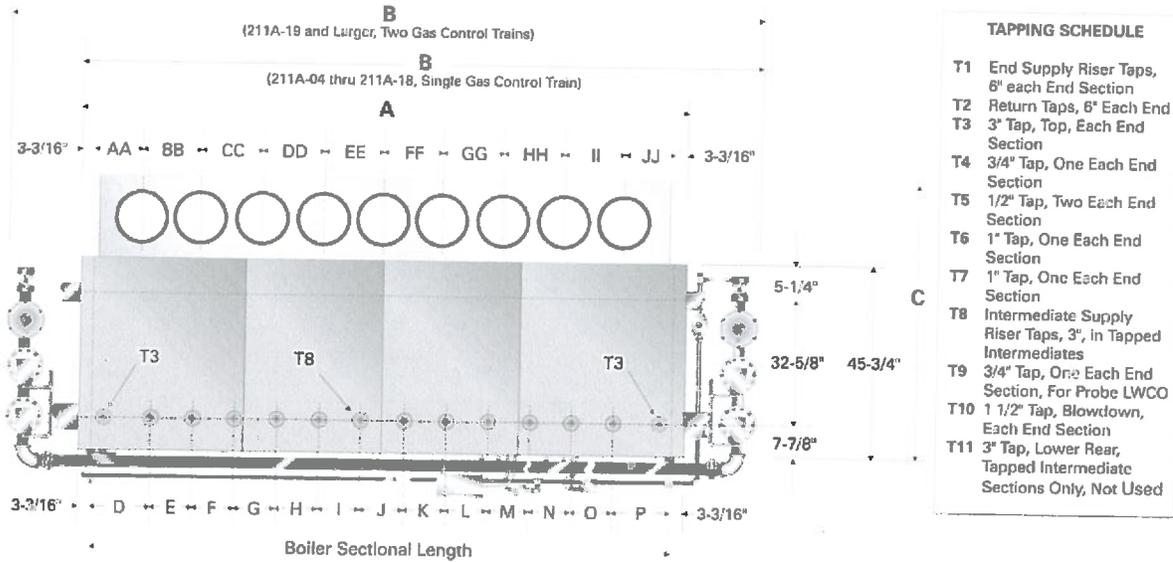
Boiler Model Number	Header	Risers	Equalizer
211A-04	4"	1-4"	2-1/2"
211A-05	5"	1-5"	2-1/2"
211A-06	5"	1-5"	2-1/2"
211A-07	5"	1-5"	2-1/2"
211A-08	6"	2-4"	2-1/2"
211A-09	6"	2-5"	2-1/2"
211A-10	6"	2-5"	3"
211A-11	6"	2-5"	3"
211A-12	8"	2-5"	3"
211A-13	8"	2-5"	3"
211A-14	8"	2-5"	3"
211A-15	8"	2-6"	3"
211A-16	8"	2-6"	4"
211A-17	8"	2-6"	4"
211A-18	8"	2-6" 1-3"	4"
211A-19	8"	2-6" 1-3"	4"
211A-20	8"	2-6" 1-3"	4"
211A-21	8"	2-6" 1-3"	4"
211A-22	8"	2-6" 2-3"	4"
211A-23	8"	2-6" 2-3"	4"
211A-24	10"	2-6" 2-3"	4"
211A-25	10"	2-6" 3-3"	4"
211A-26	10"	2-6" 3-3"	4"
211A-27	10"	2-6" 4-3"	4"
211A-28	10"	2-6" 4-3"	5"
211A-29	10"	2-6" 5-3"	5"
211A-30	10"	2-6" 5-3"	5"
211A-31	10"	2-6" 6-3"	5"
211A-32	10"	2-6" 6-3"	5"
211A-33	10"	2-6" 7-3"	5"
211A-34	10"	2-6" 7-3"	5"
211A-35	10"	2-6" 7-3"	5"
211A-36	10"	2-6" 8-3"	5"
211A-37	10"	2-6" 8-3"	5"
211A-38	10"	2-6" 8-3"	5"
211A-39	10"	2-6" 9-3"	5"
211A-40	10"	2-6" 9-3"	5"
211A-41	10"	2-6" 10-3"	5"
211A-42	10"	2-6" 10-3"	5"
211A-43	10"	2-6" 11-3"	5"
211A-44	12"	2-6" 11-3"	5"
211A-45	12"	2-6" 12-3"	5"
211A-46	12"	2-6" 12-3"	5"

Boiler Specs

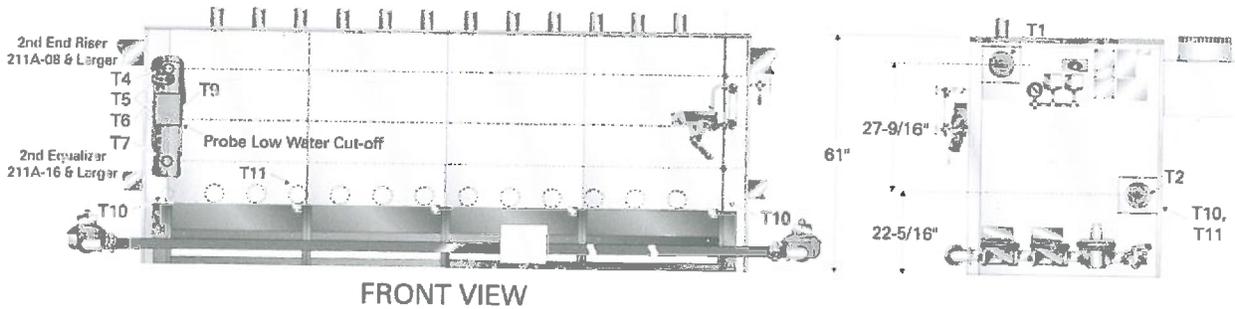
Boiler Model Number	Gas Connection Size (Nat. Gas)	Draft Hoods No. & Size	Flue Size to Stack	Chimney Size	Approx. Shipping Weight (lbs.)
211A-04	1"	(1) 12"	12"	12" x 20'	2380
211A-05	1"	(1) 12"	12"	12" x 20'	2900
211A-06	1-1/4"	(1) 14"	14"	14" x 20'	3450
211A-07	1-1/4"	(2) 12"	14"	14" x 20'	3900
211A-08	1-1/4"	(2) 12"	15"	15" x 20'	4390
211A-09	1-1/2"	(2) 12"	16"	16" x 20'	4875
211A-10	1-1/2"	(2) 14"	17"	17" x 20'	5320
211A-11	2"	(2) 14"	18"	18" x 20'	5900
211A-12	2"	(3) 12"	18"	18" x 20'	6370
211A-13	2"	(3) 12"	19"	19" x 20'	6800
211A-14	2"	(3) 14"	20"	20" x 20'	7400
211A-15	2"	(3) 14"	21"	21" x 20'	7950
211A-16	2"	(3) 14"	21"	21" x 20'	8420
211A-17	2"	(4) 14"	22"	22" x 20'	8900
211A-18	2-1/2"	(4) 14"	23"	23" x 20'	9450
211A-19	(2) 2"	(4) 14"	23"	23" x 20'	10000
211A-20	(2) 2"	(4) 14"	24"	24" x 20'	
211A-21	(2) 2"	(4) 14"	25"	25" x 20'	
211A-22	(2) 2"	(5) 14"	25"	25" x 20'	
211A-23	(2) 2"	(5) 14"	26"	26" x 20'	
211A-24	(2) 2"	(5) 14"	26"	26" x 20'	
211A-25	(2) 2"	(5) 14"	27"	27" x 20'	
211A-26	(2) 2"	(5) 14"	27"	27" x 20'	
211A-27	(2) 2"	(6) 14"	28"	28" x 20'	
211A-28	(2) 2"	(6) 14"	29"	29" x 20'	
211A-29	(2) 2"	(6) 14"	29"	29" x 20'	
211A-30	(2) 2"	(6) 14"	30"	30" x 20'	
211A-31	(2) 2"	(6) 14"	30"	30" x 20'	
211A-32	(2) 2"	(7) 14"	31"	31" x 20'	
211A-33	(2) 2"	(7) 14"	31"	31" x 20'	
211A-34	(2) 2-1/2"	(7) 14"	32"	32" x 20'	
211A-35	(2) 2-1/2"	(7) 14"	32"	32" x 20'	
211A-36	(2) 2"	(7) 14"	33"	33" x 20'	

*Refer to 211A IOM for piping details

Front View



- TAPPING SCHEDULE**
- T1 End Supply Riser Taps, 6" each End Section
 - T2 Return Taps, 6" Each End
 - T3 3" Tap, Top, Each End Section
 - T4 3/4" Tap, One Each End Section
 - T5 1/2" Tap, Two Each End Section
 - T6 1" Tap, One Each End Section
 - T7 1" Tap, One Each End Section
 - T8 Intermediate Supply Riser Taps, 3", in Tapped Intermediates
 - T9 3/4" Tap, One Each End Section, For Probe LWCO
 - T10 1 1/2" Tap, Blowdown, Each End Section
 - T11 3" Tap, Lower Rear, Tapped Intermediate Sections Only, Not Used



FRONT VIEW

Boiler Dimensions

Boiler Model Number	Dimensions Length & Width			Boiler Section Length	Intermediate Riser Center Lines 3" Tappings - Used in Addition to Two End Risers (Dimension are Approximate)																Flue Connection Center Line										
	"A"	"B"	"C"		"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"	"N"	"O"	"P"	"AA"	"BB"	"CC"	"DD"	"EE"	"FF"	"GG"	"HH"	"II"	"FF"				
211A-04	28 1/4"	38 3/4"	63"	21 3/4"													10 7/8"										10 7/8"				
211A-05	33 3/4"	44"	63"	27 3/4"													13 3/4"										13 3/4"				
211A-06	38 3/4"	50 1/4"	65"	33"													16 1/2"										16 1/2"				
211A-07	45"	55 7/8"	63"	38 3/4"													10 7/8"	16 7/8"									10 7/8"				
211A-08	50 5/8"	61 3/4"	63"	44 1/4"													13 3/4"	19 5/8"									10 7/8"				
211A-09	56 1/4"	67 5/8"	63"	49 7/8"													13 3/4"	22 1/2"									13 3/4"				
211A-10	61 1/4"	73 1/4"	65"	55 1/2"													16 1/2"	25 3/4"									13 3/4"				
211A-11	67 1/2"	80 3/4"	65"	61 1/4"													16 1/2"	28 1/8"									16 1/2"				
211A-12	73 1/4"	86 3/8"	63"	66 3/4"													13 3/4"	22 1/2"	19 5/8"								10 7/8"				
211A-13	78 3/4"	91 1/2"	63"	72 3/4"													13 3/4"	22 1/2"	22 1/2"								13 3/4"				
211A-14	84 3/4"	97 3/8"	65"	78"													16 1/2"	25 3/4"	25 1/4"								16 1/2"				
211A-15	90"	102 3/4"	65"	83 3/4"													16 1/2"	28 1/8"	28 1/8"								16 1/2"				
211A-16	95 5/8"	108 3/4"	65"	89 1/4"													13 3/4"	22 1/2"	22 1/2"	22 1/2"							13 3/4"				
211A-17	101 1/4"	114 1/4"	65"	94 7/8"													16 1/2"	25 3/4"	22 1/2"								16 1/2"				
211A-18	106 7/8"	120 3/4"	65"	100 1/2"	53 1/8"											16 1/2"	25 3/4"	22 1/2"	22 1/2"								13 3/4"				
211A-19	112 1/2"	139 1/8"	65"	106 1/8"	53 1/8"											47 7/8"	16 1/2"	25 3/4"	22 1/2"	22 1/2"								13 3/4"			
211A-20	118 1/8"	144 3/4"	65"	111 3/4"	58 1/8"											53 1/8"	13 3/4"	25 3/4"	28 1/8"	25 1/4"								13 3/4"			
211A-21	123 3/4"	150 3/8"	65"	117 3/4"	58 1/8"											58 1/8"	16 1/2"	28 1/8"	28 1/8"	25 3/4"								13 3/4"			
211A-22	129 3/4"	156"	65"	123"	41 1/8"	45"										36 3/8"	16 1/2"	25 3/4"	22 1/2"	22 1/2"	22 1/2"						16 1/2"				
211A-23	135"	161 5/8"	65"	128 3/4"	41 1/8"	45"										41 1/8"	16 1/2"	28 1/8"	25 3/4"	22 1/2"	22 1/2"						13 3/4"				
211A-24	140 3/4"	168 3/8"	65"	134 1/4"	47 7/8"	45"										41 1/8"	16 1/2"	28 1/8"	28 1/8"	25 3/4"	22 1/2"						13 3/4"				
211A-25	146 1/4"	172"	65"	139 3/8"	36 3/8"	33 3/4"	33 3/4"									36 3/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"						13 3/4"				
211A-26	151 1/8"	177 3/4"	65"	145 1/2"	36 3/8"	33 3/4"	30 3/8"									36 3/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"						16 1/2"				
211A-27	157 1/2"	183 1/4"	65"	151 1/8"	36 3/8"	28 1/8"	28 1/8"									30 3/8"	16 1/2"	28 1/8"	25 3/4"	22 1/2"	22 1/2"						13 3/4"				
211A-28	163 1/8"	188 7/8"	65"	156 3/4"	24 1/8"	33 3/4"	33 3/4"	33 3/4"								30 3/8"	16 1/2"	28 1/8"	28 1/8"	25 3/4"	22 1/2"	22 1/2"					13 3/4"				
211A-29	168 3/4"	194 1/2"	65"	162 3/8"	24 1/8"	28 1/8"	28 1/8"	28 1/8"								24 1/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"	22 1/2"					13 3/4"				
211A-30	174 3/4"	200 1/4"	65"	168"	30 3/8"	28 1/8"	28 1/8"	28 1/8"								24 1/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"	22 1/2"					13 3/4"				
211A-31	180"	205 3/4"	65"	173 3/8"	30 3/8"	22 1/2"	22 1/2"	22 1/2"	22 1/2"	22 1/2"						24 1/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"	22 1/2"					16 1/2"				
211A-32	185 3/4"	211 7/8"	65"	179 1/4"	30 3/8"	28 1/8"	22 1/2"	22 1/2"	22 1/2"	22 1/2"						30 3/8"	16 1/2"	28 1/8"	23 1/8"	25 1/4"	22 1/2"	22 1/2"					13 3/4"				
211A-33	191 1/4"	217 1/2"	65"	184 7/8"	24 1/8"	22 1/2"	22 1/2"	22 1/2"	22 1/2"	22 1/2"	22 1/2"				24 1/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"	22 1/2"	22 1/2"	22 1/2"				13 3/4"				
211A-34	196 7/8"	223 7/8"	65"	190 1/2"	24 1/8"	22 1/2"	22 1/2"	22 1/2"	28 1/8"	22 1/2"	22 1/2"				24 1/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"	22 1/2"	22 1/2"					13 3/4"				
211A-35	202 1/2"	229 1/2"	65"	196 1/4"	24 1/8"	22 1/2"	22 1/2"	28 1/8"	28 1/8"	22 1/2"	22 1/2"				24 1/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"	22 1/2"	22 1/2"					13 3/4"				
211A-36	208 1/4"	262"	65"	201 3/4"	24 1/8"	22 1/2"	22 1/2"	22 1/2"	22 1/2"	22 1/2"	22 1/2"				19 5/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	28 1/8"	28 1/8"	28 1/8"					18 1/2"				
211A-37	213 3/4"	268"	65"	207 3/4"	24 1/8"	22 1/2"	22 1/2"	22 1/2"	22 1/2"	22 1/2"	22 1/2"				24 1/8"	16 1/2"	28 1/8"	28 1/8"	28 1/8"	25 3/4"	22 1/2"	22 1/2"	22 1/2"				13 3/4"				

Technical Information



Boiler Ratings - Assembled Block or Individual Section

Boiler Model Number	Natural Gas Ratings										LP Gas (2500 Btu/cu. ft.; 93,000 kJ/m ³)										Efficiency	
	Input		Output ¹		Net Ratings ²				Steam Piping Factor	Boiler H.P.	Input		Output		Net Ratings ²				Steam Piping Factor	Boiler H.P.	Thml	Cmb
	MBH	kW	MBH	kW	Sq. Ft.	m ²	MBH	kW			MBH	kW	Sq. Ft.	m ²	MBH	kW	%	%				
211A-04	630	185	486	142	1,521	141	365	107	1.333	14.5	615	180	474	139	1,483	138	356	104	1.333	14.2	77.1	79.8
211A-05	860	252	666	195	2,083	194	500	147	1.333	19.9	820	240	635	186	1,983	184	476	140	1.333	19.0	77.4	80.0
211A-06	1,050	308	816	239	2,550	237	612	179	1.333	24.4	1,025	300	796	233	2,488	231	597	175	1.333	23.8	77.7	80.0
211A-07	1,260	369	980	287	3,063	285	735	215	1.333	29.3	1,230	360	957	280	2,992	278	718	210	1.333	28.6	77.8	80.0
211A-08	1,470	431	1,145	336	3,579	332	859	252	1.333	34.2	1,435	421	1,116	328	3,496	325	839	246	1.333	33.4	77.9	80.0
211A-09	1,680	492	1,310	384	4,113	382	987	289	1.327	39.1	1,640	481	1,279	375	4,008	372	962	282	1.330	38.2	78.0	80.0
211A-10	1,890	554	1,476	433	4,688	436	1,125	330	1.312	44.1	1,845	541	1,441	422	4,567	424	1,096	321	1.315	43.0	78.1	80.0
211A-11	2,100	615	1,642	481	5,263	489	1,263	370	1.300	49.1	2,050	601	1,603	470	5,125	476	1,230	360	1.303	47.9	78.2	80.0
211A-12	2,310	677	1,806	529	5,829	542	1,399	410	1.291	54.0	2,255	661	1,763	517	5,679	528	1,363	399	1.293	52.7	78.2	80.0
211A-13	2,520	739	1,958	574	6,333	588	1,520	445	1.288	58.5	2,460	721	1,911	560	6,179	574	1,483	435	1.289	57.1	77.7	80.0
211A-14	2,730	800	2,124	622	6,871	638	1,649	483	1.288	63.5	2,665	781	2,073	608	6,704	623	1,609	472	1.288	61.9	77.8	80.0
211A-15	2,940	862	2,290	671	7,408	688	1,778	521	1.288	68.4	2,870	841	2,236	655	7,233	672	1,736	509	1.288	66.8	77.9	80.0
211A-16	3,150	923	2,454	719	7,938	737	1,905	558	1.288	73.3	3,075	901	2,395	702	7,746	720	1,859	545	1.288	71.5	77.9	80.0
211A-17	3,360	985	2,621	768	8,479	788	2,035	596	1.288	78.3	3,280	961	2,558	750	8,275	789	1,986	582	1.288	78.4	78.0	80.0
211A-18	3,570	1,046	2,785	816	9,008	837	2,162	634	1.288	83.2	3,485	1,021	2,718	797	8,792	817	2,110	618	1.288	81.2	78.0	80.0
211A-19	3,780	1,108	2,952	865	9,550	887	2,292	672	1.288	88.2	3,690	1,081	2,882	845	9,325	866	2,238	656	1.288	86.1	78.1	80.0
211A-20	3,990	1,169	3,116	913	10,079	936	2,419	709	1.288	93.1	3,895	1,142	3,042	892	9,842	914	2,362	692	1.288	90.9	78.1	80.0
211A-21	4,200	1,231	3,280	961	10,613	986	2,547	746	1.288	98.0	4,100	1,202	3,202	938	10,358	962	2,486	729	1.288	95.7	78.1	80.0
211A-22	4,410	1,292	3,449	1,011	11,158	1,037	2,678	785	1.288	103.0	4,305	1,262	3,367	987	10,892	1,012	2,614	766	1.288	100.6	78.2	80.0
211A-23	4,620	1,354	3,599	1,055	11,642	1,082	2,794	819	1.288	107.5	4,510	1,322	3,513	1,030	11,363	1,056	2,727	799	1.288	104.9	77.9	80.0
211A-24	4,830	1,416	3,763	1,103	12,175	1,131	2,922	856	1.288	112.4	4,715	1,382	3,673	1,076	11,883	1,104	2,852	836	1.288	109.7	77.9	80.0
211A-25	5,040	1,477	3,931	1,152	12,717	1,181	3,052	894	1.288	117.4	4,920	1,442	3,838	1,125	12,417	1,154	2,980	873	1.288	114.7	78.0	80.0
211A-26	5,250	1,539	4,095	1,200	13,246	1,231	3,179	932	1.288	122.3	5,125	1,502	3,998	1,172	12,933	1,202	3,104	910	1.288	119.4	78.0	80.0
211A-27	5,460	1,600	4,259	1,248	13,779	1,280	3,307	969	1.288	127.2	5,330	1,562	4,157	1,218	13,446	1,249	3,227	946	1.288	124.2	78.0	80.0
211A-28	5,670	1,662	4,428	1,298	14,325	1,331	3,438	1,008	1.288	132.3	5,535	1,622	4,323	1,267	13,983	1,299	3,356	984	1.288	129.1	78.1	80.0
211A-29	5,880	1,723	4,592	1,346	14,854	1,380	3,565	1,045	1.288	137.2	5,740	1,682	4,483	1,314	14,504	1,347	3,481	1,020	1.288	133.9	78.1	80.0
211A-30	6,090	1,785	4,756	1,394	15,388	1,430	3,693	1,082	1.288	142.1	5,945	1,742	4,643	1,361	15,021	1,395	3,605	1,057	1.288	138.7	78.1	80.0
211A-31	6,300	1,846	4,920	1,442	15,917	1,479	3,820	1,120	1.288	147.0	6,150	1,802	4,803	1,408	15,538	1,444	3,729	1,093	1.288	143.5	78.1	80.0
211A-32	6,510	1,908	5,084	1,490	16,446	1,528	3,947	1,157	1.288	151.9	6,355	1,862	4,963	1,456	16,054	1,491	3,853	1,129	1.288	148.3	78.1	80.0
211A-33	6,720	1,969	5,255	1,540	17,000	1,579	4,080	1,196	1.288	157.0	6,560	1,923	5,130	1,503	16,596	1,542	3,983	1,167	1.288	153.2	78.2	80.0
211A-34	6,930	2,031	5,419	1,588	17,529	1,628	4,207	1,233	1.288	161.9	6,765	1,983	5,290	1,550	17,113	1,590	4,107	1,204	1.288	158.0	78.2	80.0
211A-35	7,140	2,093	5,583	1,636	18,063	1,678	4,335	1,270	1.288	166.8	6,970	2,043	5,451	1,598	17,633	1,638	4,232	1,240	1.288	162.8	78.2	80.0
211A-36	7,350	2,154	5,748	1,685	18,596	1,728	4,463	1,308	1.288	171.7	7,175	2,103	5,611	1,644	18,150	1,686	4,356	1,277	1.288	167.6	78.2	80.0
211A-37	7,560	2,216	5,904	1,730	19,100	1,774	4,584	1,343	1.288	176.4	7,380	2,163	5,764	1,689	18,646	1,732	4,475	1,311	1.288	172.2	78.1	80.0
211A-38	7,770	2,277	6,068	1,778	19,629	1,824	4,711	1,381	1.288	181.3											78.1	80.0
211A-39	7,980	2,339	6,232	1,828	20,163	1,873	4,839	1,418	1.288	186.2											78.1	80.0
211A-40	8,190	2,400	6,396	1,874	20,692	1,922	4,966	1,455	1.288	191.1											78.1	80.0
211A-41	8,400	2,462	6,560	1,923	21,221	1,971	5,093	1,493	1.288	196.0											78.1	80.0
211A-42	8,610	2,523	6,724	1,971	21,750	2,021	5,220	1,530	1.288	200.9											78.1	80.0
211A-43	8,820	2,585	6,888	2,019	22,283	2,070	5,348	1,567	1.288	205.8											78.1	80.0
211A-44	9,030	2,646	7,051	2,069	22,842	2,122	5,482	1,607	1.288	210.9											78.2	80.0
211A-45	9,240	2,708	7,228	2,118	23,375	2,172	5,610	1,644	1.288	215.9											78.2	80.0
211A-46	9,450	2,770	7,390	2,166	23,908	2,221	5,738	1,682	1.288	220.8											78.2	80.0

BOILER MODEL NUMBERS 211A-38 TO 211A-46 ARE CERTIFIED FOR NATURAL GAS ONLY. CONTACT THE FACTORY.

Boiler Ratings - Packaged

Boiler Model Number	Natural Gas Ratings						Natural Gas Ratings Boiler H.P.	Steam Water Content, gnl
	Input, MBH	Output ¹ , MBH	Net Ratings ²		Thermal Efficiency, %	Combustion Efficiency, %		
			Steam EDR, sqft	Steam, MBH				
211A-04	630	486	1,521	365	77.1	79.8	14.5	31.64
211A-05	860	666	2,083	500	77.4	80.0	19.9	39.55
211A-06	1,050	816	2,550	612	77.7	80.0	24.4	47.46
211A-07	1,260	980	3,063	735	77.8	80.0	29.3	55.37
211A-08	1,470	1,145	3,579	859	77.9	80.0	34.2	63.28
211A-09	1,680	1,310	4,113	987	78.0	80.0	39.1	71.19
211A-10	1,890	1,476	4,688	1,125	78.1	80.0	44.1	79.10
211A-11	2,100	1,642	5,263	1,263	78.2	80.0	49.1	87.01
211A-12	2,310	1,806	5,829	1,399	78.2	80.0	54.0	94.92
211A-13	2,520	1,958	6,333	1,520	77.7	80.0	58.5	102.83
211A-14	2,730	2,124	6,871	1,649	77.8	80.0	63.5	110.74
211A-15	2,940	2,290	7,408	1,778	77.9	80.0	68.4	118.65
211A-16	3,150	2,454	7,938	1,905	77.9	80.0	73.3	126.56
211A-17	3,360	2,621	8,479	2,035	78.0	80.0	78.3	134.47
211A-18	3,570	2,785	9,008	2,162	78.0	80.0	83.2	142.38
211A-19	3,780	2,952	9,550	2,292	78.1	80.0	88.2	150.29

1 Gross Output Rating, Thermal Efficiency; and Combustion Efficiency; determined in accordance with AHRI requirements.

2 Net AHRI steam ratings based on allowance shown in table.

3 Consult factory before selecting a boiler for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping systems, etc.



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14. BOILER RATINGS & DIMENSIONS

Table 14.1: Boiler Rating Information

Boiler Model Number	Natural Gas Ratings						LP Gas (2500 Btu/cu ft.; 93,000 kJ/m ³)					
	Input		Output		IBR Net Ratings		Input		Output		IBR Net Ratings	
	MBH	kW	MBH	kW	Water		MBH	kW	MBH	kW	Water	
					MBH	kW					MBH	kW
211A-04	630	185	504	148	438	128	615	180	492	144	428	125
211A-05	840	246	672	197	584	171	820	240	656	192	570	167
211A-06	1,050	308	840	246	730	214	1,025	300	820	240	713	209
211A-07	1,260	369	1,008	295	877	257	1,230	361	984	288	856	251
211A-08	1,470	431	1,176	345	1,023	300	1,435	421	1,148	336	998	293
211A-09	1,680	492	1,344	394	1,169	343	1,640	481	1,312	385	1,141	334
211A-10	1,890	554	1,512	443	1,315	385	1,845	541	1,476	433	1,283	376
211A-11	2,100	616	1,680	492	1,461	428	2,050	601	1,640	481	1,426	418
211A-12	2,310	677	1,848	542	1,607	471	2,255	661	1,804	529	1,569	460
211A-13	2,520	739	2,016	591	1,753	514	2,460	721	1,968	577	1,711	502
211A-14	2,730	800	2,184	640	1,899	557	2,665	781	2,132	625	1,854	543
211A-15	2,940	862	2,352	689	2,045	599	2,870	841	2,296	673	1,997	585
211A-16	3,150	923	2,520	739	2,191	642	3,075	901	2,460	721	2,139	627
211A-17	3,360	985	2,688	788	2,337	685	3,280	961	2,624	769	2,282	669
211A-18	3,570	1,046	2,856	837	2,483	728	3,485	1,021	2,788	817	2,424	711
211A-19	3,780	1,108	3,024	886	2,630	771	3,690	1,082	2,952	865	2,567	752
211A-20	3,990	1,169	3,192	936	2,776	814	3,895	1,142	3,116	913	2,710	794
211A-21	4,200	1,231	3,360	985	2,922	856	4,100	1,202	3,280	961	2,852	836
211A-22	4,410	1,293	3,528	1,034	3,068	899	4,305	1,262	3,444	1,009	2,995	878
211A-23	4,620	1,354	3,696	1,083	3,214	942	4,510	1,322	3,608	1,058	3,137	920
211A-24	4,830	1,416	3,864	1,133	3,360	985	4,715	1,382	3,772	1,106	3,280	961
211A-25	5,040	1,477	4,032	1,182	3,506	1,028	4,920	1,442	3,936	1,154	3,423	1,003
211A-26	5,250	1,539	4,200	1,231	3,652	1,070	5,125	1,502	4,100	1,202	3,565	1,045
211A-27	5,460	1,600	4,368	1,280	3,798	1,113	5,330	1,562	4,264	1,250	3,708	1,087
211A-28	5,670	1,662	4,536	1,330	3,944	1,156	5,535	1,622	4,428	1,298	3,850	1,129
211A-29	5,880	1,723	4,704	1,379	4,090	1,199	5,740	1,682	4,592	1,346	3,993	1,170
211A-30	6,090	1,785	4,872	1,428	4,237	1,242	5,945	1,742	4,756	1,394	4,136	1,212
211A-31	6,300	1,847	5,040	1,477	4,383	1,285	6,150	1,803	4,920	1,442	4,278	1,254
211A-32	6,510	1,908	5,208	1,526	4,529	1,327	6,355	1,863	5,084	1,490	4,421	1,296
211A-33	6,720	1,970	5,376	1,576	4,675	1,370	6,560	1,923	5,248	1,538	4,563	1,338
211A-34	6,930	2,031	5,544	1,625	4,821	1,413	6,765	1,983	5,412	1,586	4,706	1,379
211A-35	7,140	2,093	5,712	1,674	4,967	1,456	6,970	2,043	5,576	1,634	4,849	1,421
211A-36	7,350	2,154	5,880	1,723	5,113	1,499	7,175	2,103	5,740	1,682	4,991	1,463
211A-37	7,560	2,216	6,048	1,773	5,259	1,541	7,380	2,163	5,904	1,730	5,134	1,505
211A-38	7,770	2,277	6,216	1,822	5,405	1,584						
211A-39	7,980	2,339	6,384	1,871	5,551	1,627						
211A-40	8,190	2,400	6,552	1,920	5,697	1,670						
211A-41	8,400	2,462	6,720	1,970	5,843	1,713						
211A-42	8,610	2,524	6,888	2,019	5,990	1,756						
211A-43	8,820	2,585	7,056	2,068	6,136	1,798						
211A-44	9,030	2,647	7,224	2,117	6,282	1,841						
211A-45	9,240	2,708	7,392	2,167	6,428	1,884						
211A-46	9,450	2,770	7,560	2,216	6,574	1,927						

Models 211A-38 through 211A-46
Are Certified for Natural Gas Only

APPENDIX E

PLOT PLAN



* NOT TO SCALE



TITLE: NORTH RASMUSSEN RIDGE MINE SITE PLAN		OWNER/DEVELOPER: C. HILDEBRAND		PROJECT LOCATION: ID440		REVISIONS	
REVISION A	DESIGNED BY: KK	DRAWN BY: KK	CHECKED BY: RAE	No.	BY	DATE	DESCRIPTION
SHEET # 1	DRAWING # FIG. 1		PROJECT CONTACT: RYAN A. ELDRIDGE 304.252.3444 R.A.ELDRIDGE@CENTRAINC.COM				
			CENTRA CONSULTING INC. 415 WEST BRAND, SUITE 208 BOULDER, COLORADO 80501 304.252.3444 FAX WWW.CENTRACONSULTING.COM				

APPENDIX F

**SUMMARY EMISSION CALCULATIONS
(Detailed Emissions Provided on CD)**

Summary of Uncontrolled Criteria Pollutant Emissions

North Rasmussen Ridge Mine

Emission Sources ¹	PM ₁₀		PM _{2.5}		SO ₂		NOx		CO		VOC	
	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr
1093 Tier IV HP Shop/Office Generator	0.44	1.92	0.37	1.61	0.44	1.94	4.65	20.37	1.28	5.59	0.14	0.63
315 HP Water Pump Generator	0.05	0.23	0.05	0.23	0.65	2.83	1.76	7.70	0.31	1.36	1.76	7.70
315 HP Water Pump Generator	0.05	0.23	0.05	0.23	0.65	2.83	1.76	7.70	0.31	1.36	1.76	7.70
315 HP Water Pump Generator	0.05	0.23	0.05	0.23	0.65	2.83	1.76	7.70	0.31	1.36	1.76	7.70
388 HP Emergency Back-up Generator	0.85	3.74	0.85	3.74	0.80	3.48	4.11	17.98	2.22	9.74	4.11	17.98
100 HP Well Pump Generator	0.22	0.96	0.22	0.96	0.21	0.90	3.10	13.58	0.67	2.93	0.25	1.10
90 HP Klewit Office Tier III Generator	0.06	0.26	0.06	0.26	0.18	0.81	0.69	3.04	0.73	3.21	0.69	3.04
97.9 HP Tier III Dust Suppressant Generator	0.03	0.12	0.03	0.12	0.20	0.88	0.45	1.97	0.19	0.84	0.47	2.04
Propane Boiler	0.23	1.02	0.01	0.05	3.59E-04	1.57E-03	0.23	1.02	0.13	0.59	0.02	0.08
52 HP Pit Generator	0.11	0.50	0.11	0.50	0.11	0.47	1.61	7.06	0.35	1.52	0.13	0.57
67 Tier IV HP Shovel Generator	0.03	0.14	0.03	0.14	0.14	0.60	0.52	2.26	0.55	2.41	0.52	2.26
5 Ingersoll Rand Tier II Light Plants ²	0.16	0.69	0.16	0.69	0.25	1.08	1.49	6.50	1.31	5.72	1.49	6.50
3 Ingersoll Rand Tier II Light Plants ³	0.10	0.42	0.10	0.42	0.15	0.65	0.89	3.90	0.78	3.43	0.89	3.90
6 Mobile Tier IV Light Plants ⁴	0.10	0.42	0.10	0.42	0.30	1.30	1.78	7.81	1.57	6.87	1.78	7.81
1 Whitman Light Plant	0.06	0.26	0.06	0.26	0.06	0.24	0.84	3.67	0.18	0.79	0.07	0.30
Post Project Totals	2.54	11.13	2.25	9.65	4.76	20.34	25.63	112.26	10.90	47.72	15.83	69.31

¹ Emissions are based on 8,760 hours/year

² Light plant emissions are based on a total of 5 light plants

³ Light plant emissions are based on a total of 3 light plants

⁴ Light plant emissions are based on a total of 6 light plants

Summary of Controlled Criteria Pollutant Emissions

North Rassmussen Ridge Mine

Emission Sources ¹	PM ₁₀		PM _{2.5}		SO ₂		NOx		CO		VOC	
	lb/hr	TYr	lb/hr	TYr	lb/hr	TYr	lb/hr	TYr	lb/hr	TYr	lb/hr	TYr
1093 Tier IV HP Shop/Office Generator	0.44	1.92	0.37	1.61	0.44	1.94	4.65	20.37	1.28	5.59	0.14	0.63
315 HP Water Pump Generator	0.05	0.12	0.05	0.12	0.65	1.45	1.76	3.96	0.31	0.70	1.76	3.96
315 HP Water Pump Generator	0.05	0.12	0.05	0.12	0.65	1.45	1.76	3.96	0.31	0.70	1.76	3.96
315 HP Water Pump Generator	0.05	0.12	0.05	0.12	0.65	1.45	1.76	3.96	0.31	0.70	1.76	3.96
388 HP Emergency Back-up Generator	0.85	3.74	0.85	3.74	0.80	3.48	4.11	17.98	2.22	9.74	4.11	17.98
100 HP Well Pump Generator	0.22	0.96	0.22	0.96	0.21	0.90	3.10	13.58	0.67	2.93	0.25	1.10
90 HP Klewit Office Tier III Generator	0.06	0.26	0.06	0.26	0.18	0.81	0.69	3.04	0.73	3.21	0.69	3.04
97.9 HP Tier III Dust Suppressant Generator	0.03	0.12	0.03	0.12	0.20	0.88	0.45	1.97	0.19	0.84	0.47	2.04
Propane Boiler	0.23	1.02	0.01	0.05	3.59E-04	1.57E-03	0.23	1.02	0.13	0.59	0.02	0.08
52 HP Pit Generator	0.11	0.50	0.11	0.50	0.11	0.47	1.61	7.06	0.35	1.52	0.13	0.57
67 Tier IV HP Shovel Generator	0.03	0.14	0.03	0.14	0.14	0.60	0.52	2.26	0.55	2.41	0.52	2.26
5 Ingersoll Rand Tier II Light Plants ²	0.16	0.52	0.16	0.52	0.25	0.81	1.49	4.88	1.31	4.29	1.49	4.88
3 Ingersoll Rand Tier II Light Plants ³	0.10	0.31	0.10	0.31	0.15	0.49	0.89	2.93	0.78	2.58	0.89	2.93
6 Mobile Tier IV Light Plants ⁴	0.10	0.31	0.10	0.31	0.30	0.97	1.78	5.85	1.57	5.15	1.78	5.85
1 Whitman Light Plant	0.06	0.20	0.06	0.06	0.06	0.18	0.84	2.75	0.18	0.59	0.07	0.22
Post Project Totals	2.54	10.36	2.25	8.94	4.76	15.99	25.63	95.55	10.90	41.54	15.83	53.45

¹ Emissions are based on 8,760 hours/year

² Light plant emissions are based on a total of 5 light plants

³ Light plant emissions are based on a total of 3 light plants

⁴ Light plant emissions are based on a total of 6 light plants

APPENDIX G

MODELING PROTOCOL
&
DEQ APPROVAL LETTER
(COPY PROVIDED ON CD)



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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

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

May 20, 2013

VIA EMAIL

Frederick Partey, Ph.D., PMP
Environment, Health & Safety Coordinator
Nu-West Industries, Inc. (Agrium)
3010 Conda Road
Soda Springs, Idaho 83276

RE: Facility ID No. 029-00031, Nu-West Industries, Inc. (Agrium), Rasmussen Ridge Mine
Modeling Protocol Approval for PTC Modification: Engine Generator Project

Dear Mr. Partey:

On March 13, 2013 the Department of Environmental Quality (DEQ) received a dispersion modeling protocol developed on your behalf by Hildebrand & Associates, LLC of Boise (Hildebrand). Modeling is proposed to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) for increased emissions of criteria pollutants and state-regulated Toxic Air Pollutants (TAPs) resulting from:

- 1) Replacing the existing 810 hp diesel engine generator (Generator No. 5004, which provides primary power for the shop and office areas) on or about December 2012 with a new 1,093 hp engine generator certified to meet EPA (*interim?*) Tier 4 standards. Modeled emissions will presume the engine generator operates 8,760 hours per year.
- 2) Installing three (3) additional diesel engine generators for stormwater management at the Central Pit, Pond No. 2, and at the South Pump. The generators will be rented or leased rather than owned; with nominal ratings of 126, 173, 197, or 315 hp; will be certified to meet EPA Tier 3 standards; and each will be permitted to operate 3,000 hours per year. The generators are expected to operate no more than about four (4) months per year. Modeled emissions will presume all three generators are rated at 315 hp.
- 3) Installing one (1) additional 100 hp engine generator for the Well Pump. The existing 207 hp well pump engine generator (Generator No. 0002) will now be used as a standby generator for the Well Pump, and will continue to be operated fewer than 225 hours per month.
- 4) No changes to the existing 1.64 MMBtu/hr propane-fueled boiler, Generator No. 0002 (207 hp), Generator No. 5001 (limited to a maximum of 7,000 hours per year), or the 19 diesel-fired portable light towers (typical ratings between 13.5 and 16 hp).

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

- Comment 1. Please ensure that emissions are calculated based on the maximum *engine* rating, not the maximum electrical output of the generator.
- Comment 2. The current PTC (P-020327) describes nine (9) diesel-fired portable light towers. The modeling protocol states that there are 19 light towers. Please resolve this apparent discrepancy.
- Comment 3. Ensure that Standby Generator No. 5001 is the same "Caterpillar 300" engine described in the permit and statement of basis for the current PTC (P-020327, issued October 24, 2003). If the engine is the same one, and this PTC action is just correcting the engine rating from 375 hp to 459 hp,

- Comment 4. Please confirm the EPA certification level for the 1,093 hp replacement engine for Generator No. 5004. The protocol states that this engine meets Tier 4 requirements, but new non-emergency engines of this size are required to meet Interim Tier 4 standards through at least Model Year 2017.
- Comment 5. DEQ Level II modeling thresholds are approved for this project.
- Comment 6. For comparison with DEQ modeling thresholds, the increase in criteria pollutant emissions associated with this project should be based on the hourly and annual emissions from the new 1,093 hp generator (at confirmed EPA Tier certification), three “new” generators rated at 345 hp (Tier 3), the “new” 100 hp Well Pump generator (Tier 4?), and for Generator No. 5001: emissions associated with the “increase/correction” in the rating (459 – 375 = 84 hp) or emissions associated with the replacement 459 hp engine generator.
- Comment 7. DEQ strongly recommends that a significance analysis which includes netting be conducted for this project, i.e., new emissions are modeled as positive emission rates, emissions from the “old” 810 hp Generator No. 5004 are modeled as negative emission rates, and the reduction in allowable fuel sulfur content for engines subject to 40 CFR 60, Subpart IIII (NSPS for new diesel engines) and/or 40 CFR 63, Subpart ZZZZ (area source MACT for pre-2006 engines) can be factored into the SO₂ emission rates. Please note that the high 1st high modeled value is *always* used for significance analyses.
- Comment 8. A full-impact analysis, if required for any pollutant and averaging time based on the significance analysis, may limit the receptors to just those with an impact greater than or equal to the applicable significant contribution level (SCL).
- Comment 9. Please contact DEQ for representative background values for pollutants and averaging periods for which full-impact analyses are required.
- Comment 10. At the time this protocol was received, the best readily-available AERMOD-ready meteorological data set for projects located in the southeastern Idaho phosphate mine district is the P4-Soda Springs 2004-2008 data set. These data were based on surface data collected at P4 in Soda Springs supplemented with surface data collected at the Pocatello airport, with upper air data collected at the Boise airport for the same period. A zipped electronic copy of this met data set was emailed to Hildebrand today.
- These data were processed using AERMET v. 11059, which should be compatible with AERMOD v. 12345.
- Comment 11. 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.
- Please note that DEQ requires additional justification for exhaust velocities greater than about 50 m/sec.
- Comment 12. DEQ has determined that all state-regulated toxic air pollutants (TAPs) emitted from diesel engine generators are regulated by a federal New Source Performance Standard (NSPS) and/or National Emission Standard for Hazardous Air Pollutants (NESHAP), because these engines are subject to 40 CFR 60, Subpart IIII (NSPS for new diesel engines) and/or 40 CFR 63, Subpart ZZZZ (area source MACT for pre-2006 engines). In accordance with Section 210.20 of the Idaho Air Rules, no further demonstration of preconstruction compliance is required for these TAPs emissions.

Comment 13. The density of the proposed receptor grid appears to be reasonable. Limiting the extent of the grid to 300 meters beyond the ambient air boundary, however, is unusual. 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.

Comment 14. 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.

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

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Rasmussen Ridge Mine Air Dispersion Modeling Protocol

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March 12th, 2013

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1.0 INTRODUCTION

Nu-West Industries, Inc. doing business as Agrium Conda Phosphate Operations (Agrium) is proposing to modify Permit to Construct (PTC) No. P-020327 for the Rasmussen Ridge Mine located in Soda Springs, Caribou County, Idaho. Hildebrand & Associates, LLC (Hildebrand) is submitting this air dispersion modeling protocol to the Idaho Department of Environmental Quality (IDEQ), on behalf of Agrium. This protocol describes the methodologies that will be used in the air dispersion modeling analysis to demonstrate compliance with the Acceptable Ambient Concentrations (ACC) for benzene, formaldehyde, acetaldehyde, naphthalene, 1,3-butadiene, acenaphthylene, fluorene, phenanthrene, and for Polycyclic Organic Matter (POM). POM is considered one Toxic Air Pollutant (TAP) and is comprised of benzo(a) anthracene, chrysene, benzo(b) fluoranthene, benzo(k) fluoranthene, benzo(a) pyrene, indeno(1,2,3-cd) pyrene and dibenzo(a,h) anthracene.

This air dispersion modeling analysis will also demonstrate compliance with National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$), particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}), nitrogen dioxide (NO_2) and sulfur dioxide (SO_2). The results of this analysis will be provided in a PTC application to be submitted in the near future.

2.0 FACILITY INFORMATION

Agrium owns and operates the Rasmussen Ridge Mine and mine facilities area. The facilities area includes an employee office building and maintenance shop (facilities area). The Rasmussen Ridge Mine is currently operating under PTC No. P-020327. This PTC was issued October 24th, 2003 which modified PTC No. 029-00031 issued February 5th, 1995. The Rasmussen Ridge Mine is located approximately 19 miles northeast of Soda Springs, in Caribou County, Idaho. Mine facilities are generally located at Universal Transverse Mercator (UTM) coordinates 469,422 meters (m) east and 4,746,674 (m) north [North American Datum (NAD) 83], zone 12. Figures 2-1 through 2-3 provide an aerial view of the Rasmussen Ridge Mine facilities area as well as proposed generator locations. The Rasmussen Ridge Mine operates two, 12 hour shifts per day, 7 days a week, for 52 weeks per year.

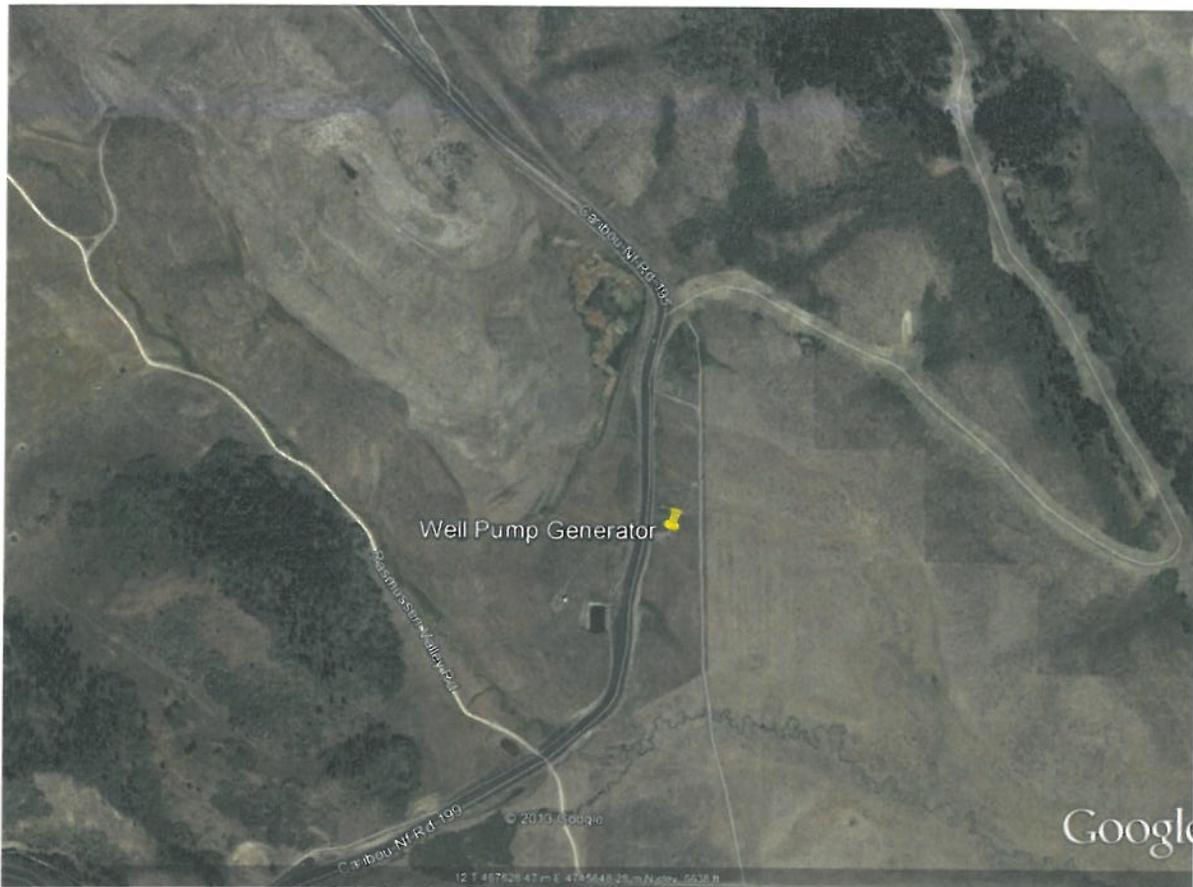
Figure 2-1
Rasmussen Ridge Mine Facility and Pond No. 2 Generator



Figure 2-2
Rasmussen Ridge Mine Central Pit Generator



Figure 2-3
Rasmussen Ridge Mine Well Pump Generator



The Rasmussen Ridge Mine is remotely located in Caribou County, Idaho. The facility's operations require the use of generator sets to produce electrical power for the facilities area. Generator sets will also be required to provide pumping power for stormwater management. The Rasmussen Ridge Mine has two diesel-burning generators that produce electrical power for the facilities area. Generator No. 5004 is an 810 horsepower (HP) generator and is the primary producer of electrical power. Generator No. 5001 is a 459 HP standby generator that typically operates during periods when operations are not at full scale, typically weekends. The Rasmussen Ridge Mine also has one, 207 HP well pump generator, generator No. 0002 and nineteen diesel light towers ranging in size between 13.5 HP to 16 HP.

Well pump generator No. 0002 operates less than 225 hours per year and therefore has been exempt pursuant to IDAPA 58.01.01.222. Each light tower is less than 100 HP therefore they have been exempt pursuant to IDAPA 58.01.01.222 and are allowed to operate for unlimited number of hours. There is also one 1.64 MMBtu propane-fired steam boiler that provides steam and hot water to the facilities area. The propane boiler has also been exempt pursuant to IDAPA 58.01.01.222(02)(c).

The primary source of emissions comes from the combustion of diesel fuel. The criteria pollutants expected as a result of this project include PM_{2.5}, PM₁₀, SO₂, NO₂, volatile organic compounds (VOCs) and, carbon monoxide (CO). Emissions of Hazardous Air Pollutants (HAPs) and Toxic Air Pollutants (TAPs) are also expected from the combustion of diesel fuel. A summary of the Rasmussen Ridge Mine's regulated emission units are presented below in Table 2-1.

**Table 2-1
Rasmussen Ridge Mine Regulated Emission Units**

Source	Maximum MMBTU/or (HP)	Description
STCK1	1093 hp	Main Generator
STCK2	315 hp	Water Pump Generator - Pond #2
STCK3	315 hp	Water Pump Generator - Central Pit
STCK4	315 hp	Water Pump Generator - South Dump
STCK5	459 hp	Standby Generator
STCK6	207 hp	Well Pump Generator (Standby)
STCK7	1.64 MMBTU/hr	Propane Boiler
STCK8-26	Each less than 100 hp	19 Light Plants
STCK 27	100 hp	Well Pump Generator (Prime)

3.0 AIR QUALITY REGULATORY FRAMEWORK

3.1 RASMUSSEN RIDGE MINE AIR QUALITY CLASSIFICATION

EPA classifies air quality regions as “nonattainment” for a given pollutant if ambient air concentrations exceed the NAAQS. NAAQS are established separately for each of the “criteria” pollutants and these NAAQS have been promulgated under Title 40 of the Code of Federal Regulations (40 CFR) Part 50. Areas that are not nonattainment are either “attainment” if the NAAQS have not been exceeded, or the area is deemed unclassifiable/attainment if insufficient data exists to make a determination. The Rasmussen Ridge Mine area is classified as attainment or unclassifiable/attainment for PM₁₀ and PM_{2.5} as well as CO, SO₂, NO₂ and Ozone.

3.2 SOURCE DESIGNATION

The Rasmussen Ridge Mine is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), Prevention of Significant Deterioration (PSD) requirements are not applicable to Rasmussen Ridge Mine. The Rasmussen Ridge Mine is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 tons per year (tpy).

Facility wide emissions from the Rasmussen Ridge Mine do not have the potential to emit (PTE) greater than 100 tpy for PM₁₀, PM_{2.5}, SO₂, CO, NO₂, or VOC, therefore Rasmussen Ridge Mine will be categorized as a minor stationary source. Emissions of Hazardous Air Pollutants (HAPs) will not exceed the major source thresholds of 10 tpy for a single HAP or 25 tpy for all HAPs combined, therefore the Rasmussen Ridge Mine will also be a minor source of HAP emissions. Since the PTE for all criteria pollutants will be below 100 tpy and the facility will not be a major source of HAPs, the Rasmussen Ridge Mine will not be subject to Tier I or Title V permitting in accordance with IDAPA 58.01.01.006.113. Consequently, the Rasmussen Ridge Mine will operate under a PTC issued by the IDEQ.

3.3 PROJECT DESCRIPTION

Agrium is proposing to modify Rasmussen Ridge Mine's existing PTC No. P-020327 by replacing the 810 HP diesel generator (generator No. 5004) with a Tier IV, 1,093 HP diesel generator. Agrium will continue to operate the standby generator, generator No. 5001. Additionally, Agrium is proposing to add three Tier III diesel generators for stormwater management. To manage stormwater runoff, one Tier III generator will be placed at the Central Pit, one generator will be placed at Pond No. 2 and one generator will be placed at the South Pump. Agrium will continue to use the existing propane-fired boiler, well pump generator, generator No. 0002 and the nineteen portable light towers. The well pump generator will continue operate less than 225 hours per month. Lastly, Agrium will add one 100 HP diesel well pump generator. This generator will serve as the primary well pump generator while the 207 HP well pump generator will serve as a standby generator. The portable light towers are less than 100 HP; therefore these units will still qualify as exempt pursuant to IDAP 58.01.01.222. The propane fired boiler will also qualify as exempt pursuant to IDAPA 58.01.01.222(02)(c).

The new Tier IV generator will be permitted for 8,760 hours per year while the operations of the standby generator, generator No. 5001 will be unchanged and will be permitted for 7,000 hours per year. The three Tier III generators will be used approximately 4 months per year and each generator will be permitted for 3,000 hours per year. Rather than purchase Tier III generators, Agrium will rent the Tier III generators. Agrium's rental fleet of generators consists of four generators with a nominal rating of 126, 173, 197 and 315 HP respectively. To allow for operational flexibility, Agrium will permit the highest rated HP generator (315 HP) among the four rental generators. To calculate worst case emissions the highest manufacture exhaust emissions among the four generators will be used. When manufacture emissions data is unavailable, EPA AP-42 emission factors will be utilized.

3.4 MODELED EMISSION RATES

This project is for a modification to an existing facility. Pre-project potential to emit (PTE) for criteria pollutants will be compared against post-project PTE and the net difference will be compared against the modeling thresholds for criteria pollutants. Pre-project and post-project PTE for criteria pollutants are provided below in Table 3-1 and Table 3-2. PTE net differences for criteria pollutants are provided below in Table 3-3. TAP emissions were not calculated in the 2003 PTC, therefore pre-project TAP emissions are considered zero. In addition to the four new generators being permitted, Rasmussen Ridge Mine is proposing to operate exempt emission units pursuant to IDAPA 58.01.01. 222 and consist of the following:

- One 207 HP diesel well pump generator (operated less than 225 hours per month);
- One 100 HP diesel well pump generator;
- One 1.64 MMBtu propane-fired boiler; and
- 19 diesel light towers (each light plant is less than 100 HP).

Because total emissions increase from the proposed project triggers PTC permitting, combustion emissions from the well pump generators, propane-fired boiler and diesel light towers are included in the overall facility-wide PTE and are compared against criteria pollutant modeling thresholds. Similarly, combustion emissions of TAPs from the well pump generators, propane-fired boiler and diesel light towers are included in the TAP analysis. Except for the light plants, all generators and the propane-fired boiler will be modeled at maximum operating capacity (8,760 hours/year). Since the light plants only operate during evening hours, light plants will be modeled at 12 hours per day for 365 days per year (4,380 hours/yr). It should be noted that in the 2003 PTC the rated HP for the standby generator was listed at 375 HP. However, according to the manufacture's engine specifications, this generator is nominally rated at 459 HP. Therefore post-project emissions were calculated using the rated 459 HP. Emissions of criteria pollutants, VOCs, HAPs and TAPs are expected to occur from the following sources:

- Diesel generator stacks;
- Propane boiler stack and diesel light plants.

Diesel generator stacks, the propane boiler stack and diesel light plants will be modeled as point sources in this modeling analysis. Modeling thresholds for criteria pollutants are shown in Table 3-4. Based on comparisons between the modeling thresholds in Table 3-4 and facility-wide emissions in Table 3-5,

PM₁₀, PM_{2.5}, NO₂ and SO₂ are the only criteria pollutants that need to be modeled. Rasmussen Ridge Mine's emissions of all other criteria pollutants are predicted to be less than modeling thresholds.

Table 3-1
Pre-Project Potential to Emit For Regulated Air Pollutants ¹

Source	PM/PM ₁₀		PM _{2.5}		SO ₂		NO _x		CO		VOC		CO ₂ ^o	
	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr
Generator # 5004	1.00	---	0.00	0.00	1.13	---	13.70	---	1.00	---	1.00	---	0.00	0.00
Generator # 5001	1.00	---	0.00	0.00	1.00	---	11.63	---	2.51	---	1.00	---	0.00	0.00
Total Emissions	2.00	3.62	0.00	0.00	2.13	4.95	25.33	60.1	3.51	8.8	2	3.3	0.00	0.00

¹ Pre project emissions for the maintenance shop and standby generator were obtained from the October 20003 Rasmussen Ridge Mine Final PTC No. P-020327.

¹ The 2003 PTC No. P-020327 only addressed criteria pollutants, HAPs, TAPs and Greenhouse Gas emissions were not included.

Table 3-2
Post-Project Potential to Emit For Regulated Air Pollutants

Source	PM/PM ₁₀		PM _{2.5}		SO ₂		NO _x		CO		VOC		CO ₂ ^o	
	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr
1,093HP Generator ^{1,2}	0.44	1.92	0.37	1.61	0.44	1.94	4.65	20.37	1.28	5.59	0.14	0.63	1268	5553
315 HP ³ Generator	0.11	0.17	0.11	0.17	0.65	0.97	2.57	3.85	0.83	1.24	2.57	3.85	362	543
315 HP ³ Generator	0.11	0.17	0.11	0.17	0.65	0.97	2.57	3.85	0.83	1.24	2.57	3.85	362	543
315 HP ³ Generator	0.11	0.17	0.11	0.17	0.65	0.97	2.57	3.85	0.83	1.24	2.57	3.85	362	543
Generator # 5001 ⁴	1.01	3.53	1.01	3.53	0.94	3.29	14.23	49.8	3.07	10.73	1.15	4.04	528	1847
207 HP Well Pump ⁵	0.46	1.99	0.46	1.99	0.42	1.86	6.42	28.11	1.38	6.06	0.52	2.28	431	1889
1.64 MMBtu Boiler ⁶	0.01	0.05	0.01	0.05	0.004	0.002	0.23	1.02	0.13	0.59	0.02	0.08	224	981
Diesel Light Plants ⁶	0.62	2.7	0.62	2.7	0.57	2.51	8.68	38.02	1.87	8.19	0.70	3.08	322	1410
100 HP Well Pump ⁷	0.22	0.96	0.22	0.96	0.21	0.9	3.1	13.58	0.67	2.93	0.25	1.1	115	504
Total Emissions	3.09	8.92	3.02	8.61	4.53	10.86	45.02	123.8	10.89	29.49	10.49	19.63	3781	11533

¹ The 810 HP diesel generator for the shop is being replaced with a Tier IV 1093 HP diesel generator.

² Based on manufacturer's emissions and AP-42 Section 3.3 emission factors for large stationary diesel engines. Emissions are based on 8,760 hrs/yr.

³ Based on manufacturer's emissions and AP-42 Section 3.3-1 emission factors for stationary diesel engines less than 600 HP.

³ Emissions are based on an operational limit of 3,000 hrs/yr

⁴ Standby generator # 5001 is not being replaced, it is going to remain permitted 7,000 hrs/yr.

⁵ Emissions based on AP-42 emission factors and 2,640 hrs/yr

⁶ Emissions are based on AP-42 emission factors and 4,380 hrs/yr

⁷ Emissions based on AP-42 and 8,760 hrs/yr

Table 3-3
Potential to Emit Differences for Regulated Air Pollutants

Source	PM/PM ₁₀		PM _{2.5}		SO ₂		NO _x		CO		VOC		CO ₂ ^o	
	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr	Lb/hr	T/yr
Pre Project	2.00	3.62	0.00	0.00	2.13	4.95	25.33	60.1	3.51	8.8	2.00	3.3	0.00	0.00
Post Project	3.09	8.92	3.02	8.61	4.53	10.86	45.02	123.8	10.89	29.49	10.49	19.63	3781	11533
Total Emissions	1.09	5.3	3.02	8.61	2.40	5.91	19.69	63.7	7.38	20.69	8.49	16.33	3781	11533

Table 3-4
Modeling Thresholds for Criteria Pollutants

Pollutant	Potential Emission Rate from a New Source	
	Level I Thresholds	Level II Thresholds ^a
CO	15 lbs/hr ^b	175 lbs/hr
NO _x	1.2 ton per year ^b and 0.2 lbs/hr ^b	(14 ton per year) ^c and (2.4 lbs/hr) ^c
SO ₂	1.2 ton per year ^b and 0.21 lbs/hr ^b	(14 ton per year) ^c and (2.5 lbs/hr) ^c
PM ₁₀	0.22 lbs/hr ^b	(2.6 lbs/hr) ^c
PM _{2.5}	0.35 ton per year ^b and 0.054 lbs/hr ^b	(0.41 ton per year) ^c (0.63 lbs/hr) ^c
Pb	14 lbs/month	
a.	<p>Modeling may be required for emissions below Level II threshold for the following:</p> <ol style="list-style-type: none"> 1. Sources where a substantial portion of the new or modified emissions have poor dispersion characteristics (e.g., rain caps, horizontal stacks, fugitive releases, or building downwash) in close proximity to ambient air. 2. Sources located in complex terrain (e.g. there is terrain above stack height that is in close proximity to the source). 3. Sources located in areas with poor existing air quality. 4. Modifications at existing major stationary sources, including grandfathered sources that have never been modeled before. 	
b.	<p>Level I thresholds are emission rates below which modeling will not be required in most instances. Thorough justification for using Level I thresholds is not generally required. These thresholds are based on the following methods and assumptions:</p> <p>AERSCREEN with MAKEMET program run separately for land use of grassland, conifer forest, and desert shrub land, using the maximum impact of the tree. The highest value was taken and compared to the significant contribution levels. Stack height = 10 m, exit temperature = 150°F, diameter = 0.3 m, exit velocity = 10 meter per second, ambient air is 100 meters from stack in all direction, building of 4 m(W) by 4 m (L) by 5 m (H).</p>	
c.	<p>The Level II thresholds, in parentheses, are applicable on a case-by-case conditional basis. They are based on the following analyses/assumptions: AERSCREEN with MAKEMET program run for land use grassland, conifer forest, and desert shrub land, using the maximum impact of the tree. The highest value was taken and compared to the significant contribution levels. Stack height = 15 m, exit temperature = 260°F, diameter = 1 m, exit velocity = 20 meter per second, ambient air is 100 meters from stack in all direction, there is a 10 m(W) by 10 m (L) by 5 m (H) building present at the stack location.</p>	

Table 3-5								
Facility Wide Net Emissions and Emission Levels (Modeling Thresholds)								
Criteria Air Pollutants	Combustion Emissions		Level I Modeling Threshold		Modeling Required	Level II Modeling Threshold		Modeling Required
	lb/hr	T/yr	2011 Guidance			Case-by-Case		
PM10 24-hour	1.09		0.22	lb/hr	YES	2.6	lb/hr	No
PM2.5 24-hour	3.02		0.054	lb/hr	YES	0.63	lb/hr	YES
PM2.5 annual		8.61	0.35	T/yr	YES	4.1	T/yr	YES
CO 1-hr, 8-hr	7.38	20.69	15	lb/hr	No	175	lb/hr	No
NOx 1-hr x 80%	15.75		0.20	lb/hr	YES	2.4	lb/hr	YES
NOx annual x 75%		47.78	1.2	T/Yr	YES	14	T/yr	YES
SO2 1hr, 3-hr, 24-hr	2.40		0.21	lb/hr	YES	2.5	lb/hr	No
SO2 annual		5.91	1.2	T/yr	YES	14	T/yr	No
VOC	8.49	16.33	40	T/yr	No	NA	NA	NA
Lead rolling 3-month	0.00	0.00	14	lb/mo	No	NA	NA	NA

IDEQ recommends that a preliminary analysis (PA) first be conducted when dispersion modeling is warranted. Facility-wide emissions are modeled for the PA to evaluate whether a significant impact exists. Model results are compared to the Class II Significant Contribution Levels (SCLs). Table 3-6 displays the SCLs, which are used to assess whether or not a facility has a significant impact at downwind receptors. When modeling results do not exceed SCLs for a pollutant, no further analysis for that pollutant is required. Based on the comparisons shown in Table 3-6, PM₁₀, PM_{2.5}, NO₂ and SO₂ emissions from the Rasmussen Ridge Mine will be modeled to evaluate whether a significant impact exists.

A full impact analysis (FIA) must be performed if any of the model results exceed the SCLs, which typically requires adding facility-wide emissions to a background concentration to estimate a total concentration. Background concentrations and, if necessary neighboring source contributions will be provided by IDEQ for the cumulative impact analysis. The total concentration for a pollutant must demonstrate compliance with the NAAQS. Table 3-6 shows the Significant Impact Levels and NAAQS concentrations with which the Rasmussen Ridge Mine must comply. A Prevention of Signification Deterioration (PSD) increment compliance demonstration is not required because the Rasmussen Ridge Mine will be a minor source of air pollution.

Table 3-6
Class II Significant Contribution Levels and Ambient Air Quality Standards

Pollutant	Averaging Period	Significant Contribution Level ($\mu\text{g}/\text{m}^3$) ^a	National AAQS ($\mu\text{g}/\text{m}^3$) ^a
NO ₂	Annual	1	100 ^d
	1-hour	4 ppb ^{b,c} 7.5 $\mu\text{g}/\text{m}^3$ ^d	100 ppb ^c 188 $\mu\text{g}/\text{m}^3$ ^d
SO ₂	Annual	1	80
	24-hour	5	365 ^b
	3-hour	25	1,300 ^b
SO ₂	1-hour	3 ppb ^c 7.9 $\mu\text{g}/\text{m}^3$ ^d	75 ppb ^e 196.5 $\mu\text{g}/\text{m}^3$
CO	8-hour	500	10,000 ^b
	1-hour	2,000	40,000 ^b
PM ₁₀	Annual	1	50 ^g
	24-hour	5	150 ^b
Pb	Quarterly	N/A	1.5 ^j
Pb	3-month	N/A	0.15 ^k
PM _{2.5}	24-hour	1.2	35 ^h
	Annual	0.3	15 ⁱ

For Footnotes See Table 3 and 4, page 14 and 15 of the State of Idaho Guidelines for Performing Air Quality Impact Analysis

In the state of Idaho, all new and modified sources of TAP emissions are compared against screening emission levels (ELs). Modeling is required for those TAPs with emissions that are equal to or greater than the ELs. Applicable ELs are provided in IDAPA 58.01.01.585 and 586.

Facility wide TAPs emitted from the combustion of diesel and propane are presented in Table 3-7. Emissions of benzene, formaldehyde, acetaldehyde, naphthalene, 1,3-butadiene, acenaphthylene, fluorene, phenanthrene, and POM exceeded their screening thresholds. For this modeling analysis, the method described in subsection 210.6 of comparing the uncontrolled ambient concentration to the applicable AAC will be used to demonstrate preconstruction compliance.

NOTE: TAPs lb/hr emissions are 24-hour averages unless shown in bold. Bold emissions are annual averages for carcinogens.

Table 3-7			
Screening Emission Levels and Total Projected TAP Emissions (lbs/hr)			
Hazardous Air Pollutants (HAPs) and Toxic Air Pollutants (TAPs)			Exceeds EL/ Modeling Required
HAPs /TAPs	lb/hr	EL (lb/hr)	
Benzene	1.24E-02	8.00E-04	YES
Toluene	7.85E-03	2.50E+01	No
Xylenes	5.45E-03	2.90E+01	No
Formaldehyde	8.80E-03	5.10E-04	YES
Acetaldehyde	5.52E-03	3.00E-03	YES
Acrolein	6.03E-05	1.70E-02	No
Propylene	5.47E-02	----	---
1,3-Butadiene	2.72E-04	2.40E-05	YES
Acenaphthylene	1.06E-04	9.10E-05	YES
Acenaphthene	4.57E-05	9.10E-05	No
Fluorene	3.01E-04	9.10E-05	YES
Phenanthrene	5.16E-04	9.10E-05	YES
Anthracene	2.24E-05	9.10E-05	No
Fluoranthene	8.37E-05	9.10E-05	No
Benzo(g,h,i)perylene	7.65E-06	9.10E-05	No
Pyrene	6.16E-06	9.10E-05	No
Naphthalene	1.58E-03	9.10E-05	YES
Benzo(a)anthracene	1.64E-05		See POM
Chrysene	1.42E-05		See POM
Benzo(b)fluoranthene	9.18E-06		See POM
Benzo(k)fluoranthene	2.75E-06		See POM
Benzo(a)pyrene	3.27E-06		See POM
Indeno(1,2,3-cd)pyrene	5.77E-06		See POM
Dibenzo(a,h)anthracene	6.70E-06		See POM
Polycyclic Organic Matter (POM) 7-PAH Group	5.83E-05	2.00E-06	YES

4.0 MODELING METHODOLOGY

This section describes the technical approach for the air dispersion modeling analysis that will be performed to estimate ambient air impacts due to benzene, formaldehyde, acetaldehyde, naphthalene, 1,3-butadiene, acenaphthylene, fluorene, phenanthrene, POM, PM_{2.5}, PM₁₀, SO₂ and NO₂. Air dispersion modeling will address the impacts from all combustion sources. Air dispersion modeling will follow the guidance and protocols outlined in the *Revised State of Idaho Air Quality Modeling Guideline* (IDEQ Modeling Guideline; IDEQ, July, 2, 2011) and the U.S. Environmental Protection Agency (EPA) *Guideline on Air Quality Models (Revised)* (EPA 2005).

4.1 DISPERSION MODEL

The American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee (AERMIC) modeling system, the AERMOD dispersion model, version 12345 (release date December 2012) will be used to predict maximum criteria pollutant concentrations in ambient air from North Rasmussen Ridge Mine. AERMOD will also be used to predict impacts of benzene, formaldehyde, acetaldehyde, naphthalene, 1,3-butadiene, acenaphthylene, fluorene, phenanthrene, and POM.

AERMOD is recommended by EPA for evaluating Class II impacts within 50 kilometers (km) of the facility being assessed (EPA 2004). AERMOD will be run using all the regulatory default options including use of stack-tip downwash, buoyancy-induced dispersion, and calms processing routines, upper-bound downwash concentrations for super-squat buildings, default wind speed profile exponents, vertical potential temperature gradients, and no use of gradual plume rise. Only pollutant dispersion will be modeled for this analysis; particle deposition will not be considered.

4.2 BUILDING WAKE EFFECTS

Emissions from North Rasmussen Ridge Mine will be evaluated in terms of its proximity to nearby structures. Building downwash effects are included to determine if emission discharges become caught in the turbulent wakes of nearby structures. Wind blowing around a building creates zones of turbulence that are greater than if the buildings were absent. The potential for downwash effects on stack emissions from nearby structures will be assessed in using AERMOD. The AERMOD model inputs will include building dimensions to assess the potential for downwash effects. Building dimensions for North Rasmussen Ridge Mine shop and generator building will be used to build the Building Profile Input Program (BPIP) with Prime Enhancement (BPIP-Prime) input file. Table 4-1 presents the lists of buildings that will be included in this modeling analysis.

Table 4.1
Building Description and Dimensions

Building ID	Description	Length		Width		Height	
		(ft)	(m)	(ft)	(m)	(ft)	(m)
	Maintenance						
Shop – Office Areas	Shop & Office Building	145	44.20	110	33.53	42	12.80
Gen Shed	Generator Shed	28	8.53	25	7.62	8	2.43

4.3 TERRAIN DESCRIPTION

For modeling purposes, the rural/urban classification of an area is determined by either the dominance of a specific land use or by population data in the study area. Generally, if the sum of heavy industrial, light-moderate industrial, commercial, and compact residential (single and multiple family) land uses within a three kilometer radius from the facility are greater than 50%, the area is classified as urban. Conversely, if the sum of common residential, estate residential, metropolitan natural, agricultural rural, undeveloped (grasses), undeveloped (heavily wooded) and water surfaces land uses within a three kilometer radius from the facility are greater than 50%, the area is classified as rural.

The Rasmussen Ridge Mine is remotely located in Soda Springs, Caribou County, Idaho, at an elevation of approximately 6,893 feet (2,101 meters) above mean sea level. The facility is situated within the Caribou-Targhee National Forest. There are no residential areas near the facility. Rural dispersion will be assumed for this modeling analysis.

4.4 METEOROLOGICAL DATA AND NSPS SOURCES

This air dispersion modeling analysis will be performed using five years of representative data for the AERMOD dispersion model. **Hildebrand is requesting representative surface and upper-air meteorological data for the Soda Springs, Idaho area to be used in the Rasmussen Ridge Mine Project.**

If the owner or operator demonstrates that the toxic air pollutant from the source or modification is regulated by the Department or by EPA at the time of permit issuance under 40 CFR Part 60, 40 CFR Part 61 or 40 CFR Part 63, no further procedures for demonstrating preconstruction compliance will be

required under Section 210 for that toxic air pollutant as part of the application process. The Rasmussen Ridge Mine will operate five diesel burning generators which may be regulated by 40 CFR Part 60 Subpart III and 40 CFR Part 60 Subpart ZZZZ. **Hildebrand is requesting a list of TAPs that are excluded from modeling under 40 CFR Part 60 Subpart III and 40 CFR Part 60 Subpart ZZZZ.**

4.5 COORDINATE SYSTEM

The location of emission sources, structures, and receptors will be represented in the UTM coordinate system using North American Datum 1983 (NAD83). UTM coordinates for this analysis will be based on UTM Zone 12.

4.6 RECEPTOR GRIDS

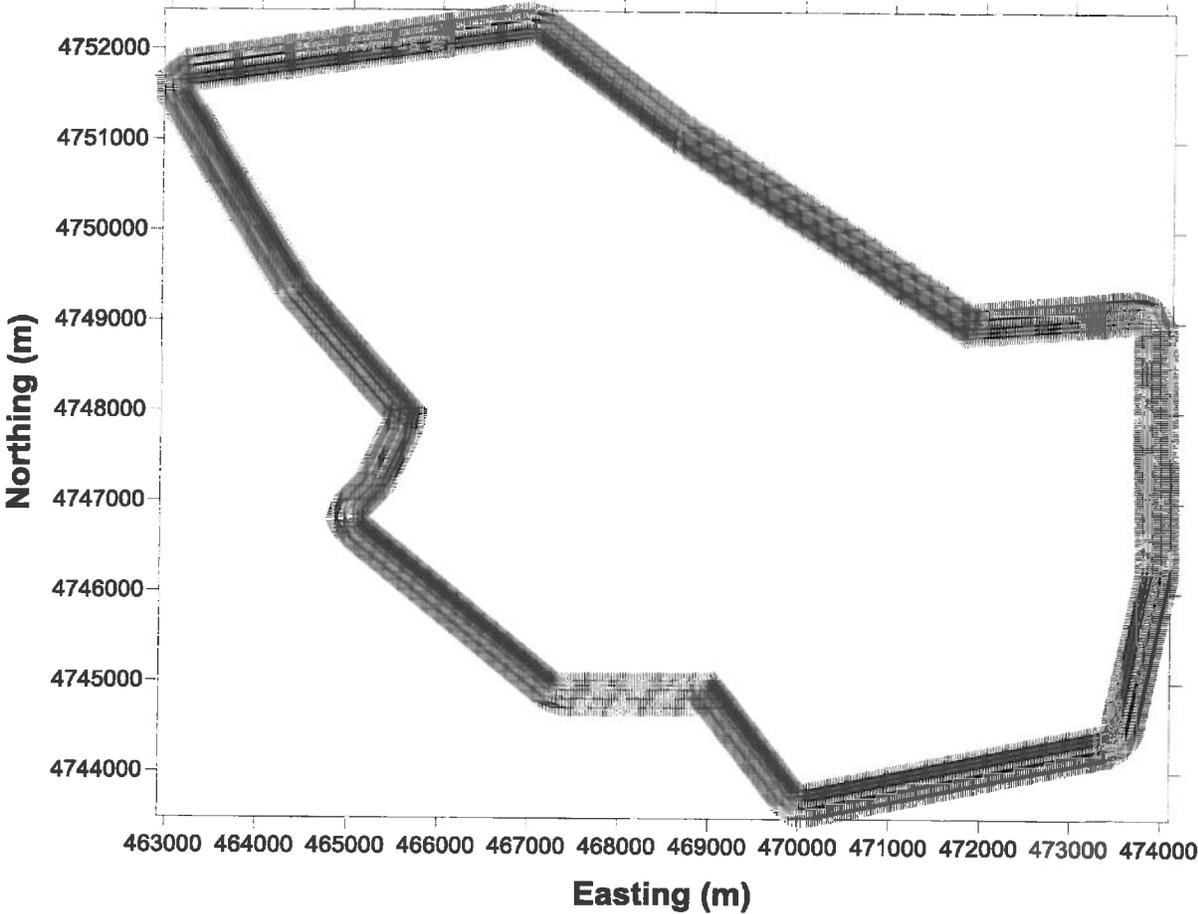
Receptors will be placed in all areas directly surrounding the facility considered to be ambient air. Air dispersion modeling will be performed using a model receptor grid that ensures that maximum estimated impacts from the facility are identified. Following IDEQ and EPA guidelines, receptor locations will be identified with sufficient density and spatial coverage to isolate the area with the highest impacts. All combustion sources proposed in this analysis have short stack heights and their maximum emissions impact will be close to the property boundary. The following receptor grid locations (see Figure 4-1) will be used for the analysis to accomplish this coverage:

- 25-m receptor spacing on the property boundary;
- 50-m receptor spacing out to 100 m in all directions from the property boundary;
- 100-m receptor spacing out to 300 m in all directions from the property boundary

The ambient air boundary is established in part by the facility's capability and responsibility for restricting public access for the sake of public safety under the Mine Safety and Health Administration (MSHA) Act. Posting of the lease boundary at known access points along the boundary, gates on mine roads and monitoring of the site by Agrium mine employees will prevent public access to the site and serves to establish the ambient air boundary for this project.

Receptor locations will be presented in UTM coordinates (NAD 83). Terrain elevations will be assigned to all receptors using U.S. Geological Survey 30 meter National Elevation Database (NED) in the AERMAP program.

Figure 4-1
FACILITY RECEPTORS and BOUNDARY



4.7 BACKGROUND CONCENTRATIONS

The IDEQ has established significant impact levels (SILs) to determine whether or not a proposed project would have a significant impact on the air quality in the area. If the resulting ambient concentrations exceed these levels the project is considered a significant impact. To evaluate the potential impacts of emissions from the facility on the public, the dispersion modeling evaluation will consider the existing background concentrations of pollutants in the Soda Springs, Idaho area. The background concentration of a given pollutant is added to the modeled impact and the result is compared to the NAAQS for that pollutant. **Hildebrand is requesting representative ambient air background concentrations for Soda Springs, Idaho.** Pollutants directly emitted by the Rasmussen Ridge Mine under evaluation for dispersion modeling purposes are PM₁₀, PM_{2.5}, NO₂, and SO₂. It will be assumed that background concentrations for TAPs are insignificant.

4.8 MODEL PARAMETERS

Modeled emissions sources at Rasmussen Ridge Mine are all point sources. Model parameters are shown in Table 4-2. Source locations are presented in UTM coordinates (NAD 83).

Source		X Coord.	Y Coord.	Base	Release	Exit	Exit	Inside
				Elevation	Height	Temperature	Velocity	Diameter
ID	Description	(m)	(m)	(m)	(m)	(K)	(m/s)	(m)
STCK1	Main Generator (1093 hp)	469419.00	4746511.00	2097.05	3.658	706.48	41.05	0.26
STCK2	Water Pump Generator (315 hp) - Pond #2 Generator	469954.00	4745957.00	2089.45	1.829	800.93	50.00	0.10
STCK3	Water Pump Generator (315 hp) - Central Pit Generator	468612.00	4746860.00	2085.40	1.829	800.93	50.00	0.10
STCK4	Water Pump Generator (315 hp) - South Dump Generator	469303.00	4746397.00	2097.45	1.829	800.93	50.00	0.10
STCK5	Standby Generator (459 hp)	469418.00	4746505.00	2097.52	3.048	755.37	50.00	0.20
STCK6	Well Pump Generator (207 hp)	468030.00	4745685.00	2009.99	1.829	1012.04	50.00	0.10
STCK7	Propane boiler (1.64 MMBTU)	469417.00	4746446.00	2098.55	16.76	349.82	34.77	0.30
STCK8	Diesel light plant - 1	469503.19	4745872.17	2138.16	1.219	699.82	34.83	0.03
STCK9	Diesel light plant - 2	469370.94	4745997.08	2126.63	1.219	699.82	34.83	0.03
STCK10	Diesel light plant - 3	469019.67	4746379.01	2109.43	1.219	699.82	34.83	0.03
STCK11	Diesel light plant - 4	469617.49	4745799.82	2137.44	1.219	699.82	34.83	0.03
STCK12	Diesel light plant - 5	469014.96	4746148.02	2102.75	1.219	699.82	34.83	0.03
STCK13	Diesel light plant - 6	468841.16	4746376.68	2046.15	1.219	699.82	34.83	0.03
STCK14	Diesel light plant - 7	469014.65	4746592.36	2072.85	1.219	699.82	34.83	0.03
STCK15	Diesel light plant - 8	469130.30	4746719.54	2071.11	1.219	699.82	34.83	0.03
STCK16	Diesel light plant - 9	468845.57	4746785.10	2056.48	1.219	699.82	34.83	0.03
STCK17	Diesel light plant - 10	468705.80	4746893.84	2057.58	1.219	699.82	34.83	0.03
STCK18	Diesel light plant - 11	468524.97	4746897.01	2094.12	1.219	699.82	34.83	0.03
STCK19	Diesel light plant - 12	468184.45	4746991.88	2091.61	1.219	699.82	34.83	0.03
STCK20	Diesel light plant - 13	468110.96	4747166.84	2094.41	1.219	699.82	34.83	0.03
STCK21	Diesel light plant - 14	468188.31	4747336.26	2094.12	1.219	699.82	34.83	0.03
STCK22	Diesel light plant - 15	468229.27	4747552.71	2108.93	1.219	699.82	34.83	0.03
STCK23	Diesel light plant - 16	467219.50	4748770.33	2165.67	1.219	699.82	34.83	0.03
STCK24	Diesel light plant - 17	466749.62	4749305.11	2147.78	1.219	699.82	34.83	0.03
STCK25	Diesel light plant - 18	466697.50	4749923.69	2160.42	1.219	699.82	34.83	0.03
STCK26	Diesel light plant - 19	465756.07	4750784.87	2129.52	1.219	699.82	34.83	0.03
STCK27	Well Pump Generator (100 hp)	468030.00	4745685.00	2009.99	1.829	1012.04	50.00	0.10

5.0 REFERENCES

- Idaho Department of Environmental Quality (IDEQ). 2011. *State of Idaho Air Quality Modeling Guideline*. Stationary Source Program, Air Quality Division. July, 2011.
- U.S. Environmental Protection Agency (EPA). 2005. *Guideline on Air Quality Models (Revised)*. 40 Code of Federal Regulations, Part 51, Appendix W. Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.

APPENDIX H

**AIR DISPERSION MODELING FORMS AND FILES
(FILES PROVIDED ON CD)**



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

Modeling Information - Impact Analysis Form MI 1

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

Company Name: Nu-West Industries, Inc. dba Agrium
Facility Name: North Rasmussen Ridge Mine
Facility ID No.: 029-00031
Brief Project Description: Permit To Construct Phosphate Mine

SUMMARY OF AIR IMPACT ANALYSIS RESULTS - CRITERIA POLLUTANTS

Criteria Pollutants	Averaging Period	1.		2.		3.		4.		5.	
		Significant Impact Analysis Results (µg/m ³)	Significant Contribution Level (µg/m ³)	Full Impact Analysis Results (µg/m ³)	Background Concentration (µg/m ³)	Total Ambient Impact (µg/m ³)	NAAQS (µg/m ³)	Percent of NAAQS			
PM ₁₀	24-hour	2.64	5	Below SIL		150					
	Annual	Revoked	1	Revoked	Revoked	Revoked	Revoked	Revoked	Revoked		
	3-hr		25			1300					
	24-hr		5			365					
SO ₂	1-hour	19.51	7.9	16.72	47.00	63.72				33%	
	Annual	0.80	1	Below SIL		196					
	1-hour		1			80					
NO ₂	Annual	113.04	7.5	89.79	18.00	107.79				57%	
	1-hour	5.18	1	4.30	11.00	100.00				11%	
	24-Hour	2.64	1.2	4.23	16.00	20.23				58%	
PM _{2.5}	Annual	0.37	0.3	0.54	5.20	5.74				38%	
	1-hr	51.03	2000	Below SIL		15					
CO	1-hr	30.64	500	Below SIL		10000					
	8-hr					40000					



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: Nu-West Industries, Inc., dba Agrium
Facility Name: North Rasmussen Ridge Mine
Facility ID No.: 029-00031
Brief Project Description: Permit To Construct Phosphate Mine

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 (m)	Modeled Diameter (m)	Stack Exit Temperature (K)	Stack Exit Flowrate (acfm)	Stack Exit Velocity (m/s)	Stack orientation (e.g., horizontal, rain cap)
Point Source(s)										
Main Generator (1063 hp)	STCK1	469419	4746511	2097.05	3.658	0.3	706.48	4478	28.96	Vertical
Water Pump Generator (315 hp) - Pond #2 Generator	STCK2	469954	4745957	2089.45	1.829	0.1	800.93	893.6232	50	Vertical
Water Pump Generator (315 hp) - Central Pit Generator	STCK3	468612	4746860	2085.76	1.829	0.1	800.93	893.6232	50	Vertical
Water Pump Generator (315 hp) - South Pump Generator	STCK4	469303	4746397	2097.45	1.828	0.1	800.93	893.6232	50	Vertical
Emergency Back-up Generator (368 hp)	STCK5	469418	4746505	2097.52	3.048	0.3	734.26	1854	11.99	Vertical
Well Pump Generator (100 hp)	STCK6	468030	4745685	2009.99	1.829	0.1	834.26	893.6232	50	Vertical
Propane boiler (1.64 MMBTU)	STCK7	469417	4746446	2098.55	3.962	0.3	349.82	2086.3577	13.49	Vertical
diesel light plant - 1	STCK8	469503.19	4745872.17	2198.16	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 2	STCK9	469370.94	4745997.08	2126.63	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 3	STCK10	469019.67	4746379.01	2109.43	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 4	STCK11	469617.49	4745799.82	2137.44	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 5	STCK12	469014.96	4746148.02	2102.75	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 6	STCK13	468841.16	4746376.68	2046.15	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 7	STCK14	469014.65	4746592.36	2072.85	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 8	STCK15	469130.3	4746719.54	2071.11	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 9	STCK16	468845.57	4746785.1	2056.48	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 10	STCK17	468705.8	4746893.84	2057.58	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 11	STCK18	468524.97	4746897.01	2094.12	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 12	STCK19	468184.45	4746991.88	2091.61	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 13	STCK20	468110.96	4747166.84	2094.41	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 14	STCK21	468188.31	4747336.26	2094.12	1.219	0.05	699.82	223.4058	50	Vertical
diesel light plant - 15	STCK22	468229.27	4747552.71	2108.93	1.219	0.05	699.82	223.4058	50	Vertical
Kiewit Contractor Generator (90 hp)	STCK23	469469.2	4746407.88	2098.73	2.085	0.1	699.82	700	39.17	Vertical
Pit Generator (52 hp)	STCK24	467479.82	4748239.12	2152.92	1.829	0.1	699.82	700	39.17	Vertical
Dust Suppressant Generator (97.9 hp)	STCK25	468030	4745685	2009.99	1.829	0.1	699.82	700	39.17	Vertical
Shovel Generator (67 hp)	STCK26	466949.85	4749732.79	2146.39	1.83	0.09	753.15	233	1.65	Vertical

APPENDIX I

**VOLUNTARY PTC OMISSION DISCLOSURE LETTER
MAY 28, 2013**



May 28, 2013

Richard Elkins
DEQ Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201

Steve Bacom
Air Quality Compliance Manager
1410 North Hilton
Boise, ID 83706

Michael Simon
Stationary Source Program Manager
1410 North Hilton
Boise, ID 83706

Re: Voluntary Disclosure of Permit to Construct Omission

Gentlemen:

On May 20, 2013, Nu-West Industries (Nu-West) orally disclosed a self-detected permit omission to Michael Simon, Stationary Source Program Manager. This letter provides written disclosure to the Pocatello Regional office and the State Compliance Manager, as suggested by Mr. Simon. Nu-West's objectives with this communication are (1) to disclose a permitting deficiency; and (2) to reconfirm the path forward. The circumstances prompting Nu-West's voluntary disclosure are as follows:

The North Rasmussen Ridge Mine is subject to a Permit to Construct issued in 2003 that authorizes the operation of two generators (#5004 and #5001), among other sources (Permit Number P-020327, the "PTC"). Generator #5004 provided power continuously to the shop and office operations at the mine, and generator #5001 was installed as back-up. Emissions limits are imposed on both units and the hours of operation for generator #5001 are expressly limited by the PTC. During an internal environmental, health and safety (EH&S) compliance audit conducted at the mine during the week of May 13, 2013, Nu-West detected a deficiency in the permitting of the primary generator, #5004.

Auditors learned that generator #5004 failed on October 28, 2012. The mine utilized the back-up generator #5001 until November 28, 2012 when a rental generator arrived on site and commenced operation to replace generator #5004. This rental unit subsequently failed on March 2, 2013, and was replaced by another rental unit on March 11, 2013, that is currently operating at the mine. Back-up generator #5001 provided power during the outage of the first rental, until the replacement rental unit arrived. Both rental units were smaller (less hp) and more efficient (Tier II and Tier III) than the permitted generator #5004. Operation of each rental unit complied with the PTC emissions limits for #5004. The audit revealed, however, that no PTC modification was requested by Nu-West from IDEQ for either of the replacement rental units. Neither replacement unit met the criteria for a categorical exemption from IDEQ's PTC requirements.

Currently, Nu-West is in the process of purchasing a new Tier IV generator for the mine to replace the #5004 and a new upgraded back-up unit to replace generator #5001. Nu-West is presently working on a permit application for the new units that will ensure compliance with existing emissions limits and the RICE NSPS requirements. Nu-West expects to have the newly purchased generators on site to install on July 1, 2013. Future operation will include the new Tier IV generator for continuous power to replace generator #5004 and the upgraded back-up generator to replace generator #5001. Nu-West is anxious to proceed with the permitting of the new generators to cure the current defect in the existing PTC (the reference to generator #5004 that no longer operates at the mine).

Submission of Nu-West's permit application is imminent and will cure the permitting oversight. This application will cover the newly purchased generators and update information on other small emissions sources at the mine. Preparation of this application was delayed by review of the modeling protocol submitted on March 12, 2013, and a request for meteorological data. Nu-West's air quality consultant, Hildebrand & Associates, recently received the modeling information from IDEQ needed to finalize the application for the new Tier IV generator and back-up generator.

Nu-West regrets the oversight and omission from applicable permitting requirements resulting from the failure of generator #5004. The company's internal audit system detected the omission, and Nu-West promptly and voluntarily reported the deficiency. Nu-West will work cooperatively with IDEQ to obtain a revised permit and otherwise resolve these circumstances.

If you have any questions, please contact me at (208) 547-1089.

Sincerely,



Erika Stoner
North Rasmussen Ridge
Agrium Conda Phosphate Operations Mine Manager

cc: Jeff Grussing, Director Wholesale EHS&S, Agrium U.S. Inc.