



State of Idaho
Department of Environmental Quality
Air Quality Division

**AIR QUALITY PERMIT
STATEMENT OF BASIS**

Tier II Operating Permit and Permit to Construct No. P-2008.0159

FINAL

Cyprus Thompson Creek

Clayton, Idaho

Facility ID No. 037-00001

January 20, 2009


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Permit Writer

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

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu	British thermal unit
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
gr	grain (1 lb = 7,000 grains)
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
HAP	hazardous air pollutant
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
MMBtu	million British thermal units
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
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	Synthetic Minor
SO_2	sulfur dioxide
SO_x	sulfur oxides
TAP	toxic air pollutant
T2	Tier II operating permit
T2/PTC	Tier II operating permit and permit to construct
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. FACILITY INFORMATION

1.1 Facility Description

The Cyprus Thompson Creek Mining Company (Thompson Creek) operates an open pit molybdenum mine and concentrator in central Idaho. The operation produces 15-20 million pounds of molybdenum disulfide per year. Two types of concentrate are produced at the Thompson Creek facility, concentrate grade and lubricant grade. Concentrate grade is shipped off-site for further refining. Lubricant grade concentrate goes through additional processing steps to produce a higher purity product. High purity product is approximately 98 percent molybdenum disulfide.

1.2 Permitting Action and Facility Permitting History

Permit to Construct

This PTC is for a minor modification at an existing minor facility which has a Tier II operating permit. The following information regarding the facility's permit history was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

June 26, 1985	Operating Permit #0540-0001, facility operating permit, Permit status – S
September 29, 1989	PTC #0540-0001, Lube Grade Circuit, Permit status – S
February 20, 1990	Operating Permit #0540-0001, facility operating permit, Permit status – S
December 8, 1992	PTC #037-0000, Super Fine Molybdenum Circuit, Permit status – S
March 3, 2008	Operating Permit #T2-050508, facility operating permit – S

2. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

2.1 Application Scope

Thompson Creek is proposing to replace its existing diesel fired engine that provides energy to the electrical generator for the tailings pump. The existing generator has a rated brake horsepower capacity of 1,272. The new engine has rated capacity of 2,561 brake horsepower. Both the existing and the new engines combust diesel fuel.

2.2 Application Chronology

October 14, 2008	DEQ received an application from Thompson Creek to replace the existing tailings pump generator engine with a new engine.
October 15, 2008	DEQ received the \$1,000 permit to construct application fee for the new tailings pump generator engine
November 13, 2008	DEQ determined the permit to construct application complete
December 26, 2008	DEQ received the \$1,000 permit to construct processing fee

3. TECHNICAL ANALYSIS

3.1 Emission Unit and Control Device

Table 3.1 EMISSION UNIT AND CONTROL DEVICE INFORMATION

Emission Unit /ID No.	Emissions Unit Description	Control Device Description	Emissions Discharge Point ID No. and/or Description
Kohler Power Systems Diesel Engine	Tailings Pump Generator Engine	NA	Diesel Engine Stack

3.2 Emissions Inventory

Thompson Creek estimated emissions from the diesel fuel fired tailings pump generator engine. Tables 3.2 through 3.5 provide a summary of the emissions estimates provided by Thompson Creek. Emissions estimates were obtained using emission factors from EPA AP-42 Section 3.4 for Large Stationary Diesel engines and the maximum rated fuel consumption rate of the engine. The criteria and toxic air pollutant emissions inventories provided by Thompson Creek are included in Appendix B.

Table 3.2 UNCONTROLLED EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS

Emissions Unit	PM ₁₀		SO ₂		NO _x		CO		VOC		LEAD
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/quarter
Point Sources Affected by this Permitting Action											
Tailings Pump Engine		3.7		0.96		118		64.6		12.9	NA

Table 3.3 CONTROLLED EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS

Emissions Unit	PM ₁₀		SO ₂		NO _x		CO		VOC		LEAD
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/quarter
Point Sources Affected by this Permitting Action											
Tailings Pump Engine	0.84	0.21	0.88	0.22	26.95	6.74	14.74	3.68	2.95	0.74	NA

Table 3.4 UNCONTROLLED TAP AND HAP EMISSIONS SUMMARY

TAPs	HAPs	24-hour Average ^a	Annual Average ^a
		lb/hr	lb/hr
Benzene	Benzene	1.3E-2	1.3E-2
Toluene	Toluene	4.77E-3	4.77E-3
Xylenes	Xylenes	3.28E-3	3.28E-3
Formaldehyde	Formaldehyde	1.34E-3	1.34E-3
Acetaldehyde	Acetaldehyde	4.3E-4	4.3E-4
Acrolein	Acrolein	1.3E-4	1.3E-4
Naphthalene	Naphthalene	2.21E-3	2.21E-3
Acenaphthylene	NA	1.6E-4	1.6E-4
Fluorene	NA	2.2E-4	2.2E-4
Phenathrene	NA	6.9E-4	6.9E-4
Anthracene	NA	2E-5	2E-5
Fluoranthene	NA	7E-5	7E-5
Pyrene	NA	6E-5	6E-5
Benz(a)anthracene	NA	1.1E-5	1.1E-5
Chrysene	NA	3E-5	3E-5
Benzo(b)fluoranthene	NA	2E-5	2E-5
Benzo(k)fluoranthene	NA	4E-6	4E-6
Benzo(a)pyrene	NA	4E-6	4E-6
Indeno(1,2,3-cd)pyrene	NA	7E-6	7E-6
Dibenz(a,h)anthracene	NA	6E-6	6E-6
Benzo(g,h,i)perylene	NA	9E-6	9E-6

a. 24-hour average only applies to non-carcinogenic TAPs. Annual average only applies to carcinogenic TAPs.
b. NA = not applicable.

Table 3.5 CONTROLLED TAP AND HAP EMISSIONS SUMMARY

TAPs	HAPs	24-hour Average ^a	Annual Average ^a
		lb/hr	lb/hr
Benzene	Benzene	1.3E-2	7.42E-04
Toluene	Toluene	4.77E-3	2.72E-04
Xylenes	Xylenes	3.28E-3	1.87E-04
Formaldehyde	Formaldehyde	1.34E-3	7.65E-05
Acetaldehyde	Acetaldehyde	4.3E-4	2.45E-05
Acrolein	Acrolein	1.3E-4	7.42E-06
Naphthalene	Naphthalene	2.21E-3	1.26E-04
Acenaphthylene	NA	1.6E-4	9.13E-06
Fluorene	NA	2.2E-4	1.26E-05
Phenathrene	NA	6.9E-4	3.94E-05
Anthracene	NA	2E-5	1.14E-06
Fluoranthene	NA	7E-5	4.00E-06
Pyrene	NA	6E-5	3.42E-06
Benz(a)anthracene	NA	1.1E-5	6.28E-07
Chrysene	NA	3E-5	1.71E-06
Benzo(b)fluoranthene	NA	2E-5	1.14E-06
Benzo(k)fluoranthene	NA	4E-6	2.28E-07
Benzo(a)pyrene	NA	4E-6	2.28E-07
Indeno(1,2,3-cd)pyrene	NA	7E-6	4.00E-07
Dibenz(a,h)anthracene	NA	6E-6	3.42E-07
Benzo(g,h,i)perylene	NA	9E-6	5.14E-07

a. 24-hour average only applies to non-carcinogenic TAPs. Annual average only applies to carcinogenic TAPs.

b. NA = not applicable.

3.3 Ambient Air Quality Impact Analysis

The submitted modeling analyses: (1) utilized appropriate methods and models; (2) were conducted using reasonably accurate or conservative model parameters and input data; (3) adhered to established DEQ guidelines for new source review dispersion modeling; and (4) predicted pollutant concentrations from emissions associated with the modification were below significant contribution levels. In conclusion, the ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the modification will not cause or significantly contribute to a violation of any air quality standard.

Controlled emissions of criteria air pollutants are below the level which modeling is required to be conducted as approved in the modeling protocol. Uncontrolled emissions of benzene, formaldehyde, acenaphthylene, fluorine, phenathrene and PAH mixtures were determined to above the toxic air pollutant screening rate; therefore, modeling was conducted to compare to the acceptable ambient increments for these pollutants. Table 3.5 summaries the modeling results for these toxic air pollutants. The ambient impact assessment is included in the facility's application is not repeated as part of this Statement of Basis.

Table 3.5 SUMMARY OF TAP AMBIENT IMPACT ANALYSIS

Toxic Air Pollutant	Uncontrolled Emissions (lb/hr)	Maximum Modeled Impact ($\mu\text{g}/\text{m}^3$)	Acceptable Ambient Concentration ($\mu\text{g}/\text{m}^3$)	Modeld Impact – Percent of Acceptable (%)
Benzene	1.32E-2	1.38E-2	1.21E-01	11.4
Formaldehyde	1.34E-3	1.4E-3	7.70E-02	1.8
Acenaphthylene	1.6E-4	1.64E-4	1.40E-02	1.2
Fluorene	2.2E-4	2.27E-4	1.40E-02	1.6
Phenanthrene	6.9E-4	7.24E-4	1.40E-02	5.2
PAH Mixture	2E-6	7.95E-5	3.00E-04	26.5

3.4 Origin of Existing Emissions Limits

The only specific emission rate limits included in the permit for the tailings pump generator engine are the NSPS Subpart IIII emissions standards. There is no need to add additional emissions limits. The toxic air pollutant ambient impact assessment was conducted using the maximum uncontrolled emissions from the generator engine. Uncontrolled ambient impacts were below 30% of all applicable toxic air pollutant increments. Emissions estimates are not expected to vary by a degree that would cause an emission increase that would cause an exceedance of a major facility thresholds, or ambient standard or increment. This supports the decision that additional emission rate limits are not needed to assure compliance.

Thompson Creek is an existing Tier I minor facility because the potential to emit of all regulated air pollutants is less than major facility thresholds. The tailings pump generator engine’s potential to emit is limited by restricting the hours of operation to less than 500 hours per year. Table 3.6 summarizes that facility-wide emission inventory from the statement of basis that supports the issuance of the March 3, 2008 Tier II operating permit and the new tailings pump generator engine.

Table 3.6 SUMMARY OF FACILITY-WIDE CONTROLLED EMISSIONS

	PM ₁₀ (T/yr)	VOC (T/yr)	CO (T/yr)	NO _x (T/yr)	SO ₂ (T/yr)
Existing Facility minus existing Tailings Pump	20.6	6.8	21.6	80.1	20.95
New Tailings Pump Engine	0.21	0.74	3.68	6.74	0.22
Total	20.81	7.54	25.28	86.84	21.17

Review of Table 3.6 shows that if estimated emissions from the tailings pump generator engine were to increase by a factor of two, emissions would still be below major facility thresholds. Restricting the hours of operation of the tailings pump engine to 500 hours per year effectively limits the potential to emit of the engine without the need to include numerical emission rate limits.

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located within AQCR 63 and UTM zone 11. The facility is located in Custer County, which is designated as attainment/unclassifiable for all regulated criteria pollutants (PM₁₀, CO, NO₂, SO₂, lead, and ozone). Reference 40 CFR 81.313.

4.2 Permit to Construct (IDAPA 58.01.01.201)

Thompson Creek submitted an application to obtain a permit to construct for the tailings pump generator engine. Thompson Creek did not pursue an exemption in accordance with IDAPA 58.01.01.220-223. The exemption criteria were discussed with Thompson Creek and they elected to obtain a permit to construct.

4.3 Tier II Operating Permit (IDAPA 58.01.01.401)

This permit to construct for the tailing pump engine will be added to the existing Tier II permit. The only portions of the Tier II that changes are those conditions for the tailings pump engine.

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

The potential to emit of all pollutants regulated by the Title V program is below major facility thresholds.

The facility has permitted emissions of 102 tons per year of particulate matter (PM). However, in accordance with EPA's October 16, 1995 guidance document, "[T]he Federal minimum for applicability of title V to sources of particulate matter should be based on the amount of emissions of PM-10, not particulate matter, that the source has the potential to emit." Thompson Creek's potential to emit PM₁₀ emissions is 20.81 tons per year (see Table 3.6); therefore, the facility is a Tier I (Title V) minor facility even though PM emissions are greater than 100 tons per year.

4.5 PSD Classification (40 CFR 52.21)

The Thompson Creek mine and mill complex is not a designated facility, and the facility's potential to emit is less than 250 tons per year. Therefore, the facility is not subject to PSD requirements.

4.6 NSPS Applicability (40 CFR 60)

The new tailings pump engine is subject to the requirements of 40 CFR Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Subpart IIII includes requirements for both the manufacturer and the owners/operators of affected engines. Following is a discussion of the applicable requirements of Subpart IIII that apply to Thompson Creek as the owner/operator of the tailings pump engine. Requirements applicable to the manufacturer are not discussed. All the following discussions are relevant to the given citation of 40 CFR Subpart IIII.

As a general matter, NSPS Subpart IIII sets forth emission standards for manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE). For the purposes of this permit, the tailings pump generator engine is a diesel-fired CI ICE that is classified as a "2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder," that will be required to comply with the emission standards for new CI ICE set forth in § 60.4202(a)(2) of NSPS Subpart IIII. The table below identifies the emission limits for manufacturers of 2007 model year and later emergency CI ICE with a displacement < 10 liters per cylinder must certify. The emission limits are those set forth in 40 CFR 89.112 and 40 CFR 89.113, which are incorporated by reference in § 60.4202(a)(2). In this case, Section 60.4205(b) of NSPS Subpart IIII requires Thompson Creek to purchase an engine that is certified by the manufacturer to meet the emission standards specified in § 60.4202(a)(2). Under § 60.4211, the CI ICE must be maintained according to the manufacturer's written instructions or procedures.

**Summary of Applicable NSPS III Emissions Standards for 2007 Model Year and Later
Emergency Stationary CI ICE < 30 Liters per Cylinder**

Max Engine Power	Model Years	NMHC + NO_x	CO	VOC
Generator Sets: > 560kW (> 750 hp)	2007 to 2010	6.4 g/kW-hr or 4.8 g/hp-hr	3.5 g/kW-hr or 2.6 g/hp-hr	0.20 g/kW-hr or 0.15 g/hp-hr

§ 60.4200(a)(1)(i) – Applicability

The tailings pump engine in a CIICE that meets the following and is therefore an affected emissions unit.

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

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

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

§ 60.4201 - 60.4203 – Requirements for Manufacturers

The provisions of §60.4201 - 60.4203 only apply to manufacturers of compression ignition internal combustion engines. However, the tailing pump engine must be certified by the manufacturer to meet the emission limits specified in §60.4202(a)(2).

§ 60.4204 – Standards for Non-Emergency Engines

The provisions of § 60.4204 apply only to non-emergency engines. Thompson creek intends to operate the tailings pump engine under emergency conditions only (including maintenance of the engine).

§ 60.4205 – Standards for Emergency Engines

Thompson Creek has stated that the engine is subject to the following requirements because the engine meets the definition of an emergency engine in accordance with §60.4219 (engine whose operation is limited to emergency situations and required testing and maintenance):

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

The standards in §60.4202 that are applicable to emergency engines are:

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) Does not apply to Thompson creek because the engine is greater than 37 KW (50 HP):

(2) For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007. (This section applies to Thompson Creek)

Listed below are the emissions standards of 40 CFR 89.112 with the applicable standards being those for engines with a rated power > 560 kW and that are Tier 2. The applicable standards are included in the last row of the emissions standard table.

§ 89.112 Oxides of nitrogen, carbon monoxide, hydrocarbon, and particulate matter exhaust emission standards.

(a) Exhaust emission from nonroad engines to which this subpart is applicable shall not exceed the applicable exhaust emission standards contained in Table 1, as follows:

Table 1.—Emission Standards (g/kW-hr)

Rated Power (kW)	Tier	Model Year ¹	NOx	HC	NMHC + NOx	CO	PM
kW<8	Tier 1	2000	—	—	10.5	8.0	1.0
	Tier 2	2005	—	—	7.5	8.0	0.80
8≤kW<19	Tier 1	2000	—	—	9.5	6.6	0.80
	Tier 2	2005	—	—	7.5	6.6	0.80
19≤kW<37	Tier 1	1999	—	—	9.5	5.5	0.80
	Tier 2	2004	—	—	7.5	5.5	0.60
37≤kW<75	Tier 1	1998	9.2	—	—	—	—
	Tier 2	2004	—	—	7.5	5.0	0.40
	Tier 3	2008	—	—	4.7	5.0	—
75≤kW<130	Tier 1	1997	9.2	—	—	—	—
	Tier 2	2003	—	—	6.6	5.0	0.30
	Tier 3	2007	—	—	4.0	5.0	—
130≤kW<225	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2003	—	—	6.6	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	—
225≤kW<450	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2001	—	—	6.4	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	—
450≤kW≤560	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2002	—	—	6.4	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	—
kW>560	Tier 1	2000	9.2	1.3	—	11.4	0.54
	Tier 2	2006	—	—	6.4	3.5	0.20

¹ The model years listed indicate the model years for which the specified tier of standards take effect.

§ 60.4206 – How Long Must Owners/Operators comply with Standards?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 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.

This requirement applies to the tailings pump engine which is subject to §§60.4205.

§ 60.4207 – Fuel Requirements for Owners/Operators

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(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 use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

40 CFR 80.510(a)&(b)

(a) (Applies only to locomotive engines).

(b) Beginning June 1, 2010 . Except as otherwise specifically provided in this subpart, all NR [i.e., nonroad] and LM diesel fuel is subject to the following per-gallon standards:

(1) Sulfur content.

(i) 15 ppm maximum for NR diesel fuel.

(ii) 500 ppm maximum for LM diesel fuel.

(2) Cetane index or aromatic content, as follows:

(i) A minimum cetane index of 40; or

(ii) A maximum aromatic content of 35 volume percent.

(c) (This section allows for the owner to petition the Administrator for approval to use non-compliant fuels. Thompson Creek is not pursuing and petition to used non-compliant fuels.)

(d) (Applies only to engines located in Alaska)

(e) (Allows for a national security exemption)

§ 60.4208 – Deadlines for Importing or Installing Engines Produced in Prior Years

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

Sections (b) through (f) do not include requirements applicable to the tailings pump engine. These sections specify requirements for engines installed after specified years (i.e. 12/31/09, 12/31/14 etc.).

(g) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (f) of this section after the dates specified in paragraphs (a) through (f) of this section.

In summary the pump engine must meet the standards included in §60.4205(b)(which references §60.4202(a)(2)) for 2007 model year engines with less than 30 liters per cylinder.

(h) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

The tailings pump engine is a new engine and the requirements for owners and operators do apply.

§ 60.4209 – Monitoring Requirements for Owners

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.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine.

(b) The tailings pump engine does not have to comply with the emission standards in §60.4204, therefore, this section does not apply. The tailings pump engine must comply with §60.4205.

§ 60.4210 – Applies only to Manufacturers

§ 60.4211 – Compliance Requirements

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) The tailings pump generator engine is not a pre-2007 model year, therefore, this section does not apply to it.

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

The tailings pump engine is a 2007 or later year model and must comply with the standards in §60.4205(b). Compliance with the standards is achieved by purchasing an engine certified to the applicable emission standards and by maintaining the stationary CI internal combustion engine and control device according to the manufacturer's written instructions.

(d) The tailings pump engine does not have to comply with §60.4205(c) or §60.4205(d), therefore, this section of regulation does not apply.

(e) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. For owners and operators of emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited.

Thompson Creek must comply with the requirements of this section because they have identified the tailings pump engine to be an emergency engine.

§ 60.4212 – Testing Requirements

The testing requirements of this section do not apply to the tailings pump engine. Compliance with the standards is achieved by purchasing an engine certified to the applicable emission standards and by maintaining the stationary CI internal combustion engine and control device according to the manufacturer's written instructions.

§ 60.4213 – Test Methods for Engines with Greater than 30 liters per cylinder.

These requirements do not apply to the tailings pump generator engine because the engine is not required to be tested (its design is less than 30 liters per cylinder).

§ 60.4214 – Notification, reporting, and Recordkeeping for Owners/Operators

(a) This section does not apply to the tailings pump generator engine because the tailings pump engine is for emergency use as described by Thompson Creek.

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

The tailings pump generator engine is an emergency engine therefore the initial notification requirements of §§60.7(a)(1) do not apply. The model years included in Table 5 to this subpart start with calendar year 2011, therefore, the monitoring and record keeping described by this section do not apply. In summary, this entire section does not have any applicable requirements for the tailings pump generator engine.

(c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

In the application materials Thompson Creek did not indicate whether a filter was used or not. This requirement is included in the permit in case the engine is equipped with a Filter. If the engine is not equipped with a filter, then records do not need to be kept.

§ 60.4215 – Requirements for Guam, Samoa, Northern Mariana Islands.

These requirements do not apply to Thompson Creek.

§ 60.4216 – Requirements for Alaska

These requirements do not apply to Thompson Creek.

§ 60.4217 – Requirements for Special Fuels

Thompson Creek will only combust #1 and #2 fuel oil. The special fuel provisions do not apply.

§ 60.4218 – Which General Provisions Apply

The general provisions which apply are cited in Table 8 to Subpart IIII, that table is included in the permit to construct.

4.7 NESHAP Applicability (40 CFR 61)

The tailings pump generator engine is not subject to 40 CFR 61.

4.8 MACT Applicability (40 CFR 63)

The tailings pump generator engine is not subject to 40 CFR 63.

4.9 CAM Applicability (40 CFR 64)

Thompson Creek is not subject to the Tier I (or Title V) permitting program; therefore, CAM is not applicable to this facility.

4.10 Permit Conditions Review

Thompson Creek's existing Tier II permit was modified to include the new permit to construct provisions for the new tailings pump generator engine. The existing Tier II permit included permit requirements for the old tailings pump generator engine; those are the only permit conditions which have changed in the Tier II permit. Listed below are the permit to construct conditions which have been added to the Tier II and which replace the existing Tier II permit conditions for the old tailings pump generator engine.

Table 9.1 has been changed to include the specification for the new tailings pump generator engine.

Permit condition 9.4 continues to limit the hours of operation of the tailings pump generator engine to less than 500 hours per year.

Permit Conditions 9.3, 9.5, 9.6, 9.8-9 include the applicable requirements of Subpart IIII that apply to Thompson Creek. The applicability and requirements of Subpart IIII are discussed in detail in Section 4.6 of this Statement of Basis. Should there be a conflict between these permit conditions and Subpart IIII, Subpart IIII shall govern.

All other Tier II permit conditions remain unchanged.

5. PERMIT FEES

Table 5.1 lists the processing fee associated with this permitting action. The facility is subject to a processing fee of \$1,000 in accordance with IDAPA 58.01.01.225 because its permitted emissions change is less than one ton per year. Refer to the chronology for fee receipt dates.

Table 5.1 PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	9.86	6.74	-3.12
SO ₂	0.65	0.22	-0.43
CO	2.16	3.68	1.52
PM ₁₀	0.70	0.21	-0.49
VOC	0	0.74	0.74
HAPS	-	-	insignificant
Total:	0.0	0	-1.78
Fee Due	\$1,000.00		

6. PUBLIC COMMENT

An opportunity for public comment period on the PTC application was provided from October 30, 2008, to November 14, 2008, in accordance with IDAPA 58.01.01.209.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action.

Appendix A – AIRS Information

AIRS/AFS Facility-wide Classification Form

Facility Name: Cyprus Thompson Creek
Facility Location: Clayton
Facility ID: 037-00001 **Date:** 12/19/08
Project/Permit No.: P-2008.0159 **Completed By:** Dan Pitman

- Check if there are no changes to the facilitywide classification resulting from this action. (compare to form with last permit)
 Yes, this facility is an SM80 source.

Identify the facility's area classification as A (attainment), N (nonattainment), or U (unclassified) for the following pollutants:

Area Classification:

SO ₂	PM ₁₀	VOC
U	U	U

 DO NOT LEAVE ANY BLANK

Check one of the following:

- SIP [0]** - Yes, this facility is subject to SIP requirements. (do not use if facility is Title V)
 OR
 Title V [V] - Yes, this facility is subject to Title V requirements. (If yes, do not also use SIP listed above.)

For SIP or TV, identify the classification (A, SM, B, C, or ND) for the pollutants listed below. Leave box blank if pollutant is not applicable to facility.

Classification:

SO ₂	NO _x	CO	PM ₁₀	PT (PM)	VOC	THAP
B	SM	B	SM	SM	B	SM

- PSD [6]** - Yes, this facility has a PSD permit.

If yes, identify the pollutant(s) listed below that apply to PSD. Leave box blank if pollutant does not apply to PSD.

Classification:

SO ₂	NO _x	CO	PM ₁₀	PT (PM)	VOC	THAP
<input type="checkbox"/>						

- NSR - NAA [7]** - Yes, this facility is subject to NSR nonattainment area (IDAPA 58.01.01.204) requirements.

Note: As of 9/12/08, Idaho has no facility in this category.

If yes, identify the pollutant(s) listed below that apply to NSR-NAA. Leave box blank if pollutant does not apply to NSR - NAA.

Classification:

SO ₂	NO _x	CO	PM ₁₀	PT (PM)	VOC	THAP
<input type="checkbox"/>						

- NESHAP [8]** - Yes, this facility is subject to NESHAP (Part 61) requirements. (THAP only)

If yes, what CFR Subpart(s) is applicable?

- NSPS [9]** - Yes, this facility is subject to NSPS (Part 60) requirements.

If yes, what CFR Subpart(s) is applicable?

If yes, identify the pollutant(s) regulated by the subpart(s) listed above. Leave box blank if pollutant does not apply to the NSPS.

Classification:

SO ₂	NO _x	CO	PM ₁₀	PT (PM)	VOC	THAP
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- MACT [M]** - Yes, this facility is subject to MACT (Part 63) requirements. (THAP only)

If yes, what CFR Subpart(s) is applicable?

Appendix B – Emissions Inventory

**Table 1 Thompson Creek Mining Company
Tailings Pump Generator
Proposed Criteria Pollutant Emissions**

Compression Ignition Internal Combustion Engine (CI-ICE) Data			
Make	Detroit Diesel/MTU	Fuel Sulfur Content	500 ppmw
Model	12V4000 G83 T-23-8P35	Hours of Operation	500 yr/yr
Mechanical Output ¹	2,561 hp	Fuel Density ²	7.16 lb/gal
Electrical Output ¹	1,916 kW	HHV of Fuel ²	19,300 Btu/lb
Duty (input)	16.88 MMBtu/hr	Fuel Consumption ¹	123.90 gal/hr

Pollutant	Emission Factors	GHGE Emission Rates			
		Short-term		Annual	
		lb/hr	g/sec	tpy	g/sec
NO _x ¹	6.40 g/kWhr	28.85	3.3968	6.74	0.1938
CO ²	3.50 g/kWhr	14.74	1.8668	3.68	0.1060
VOC ³	0.70 g/kWhr	2.95	0.3714	0.74	0.0212
PM ₁₀ ³	0.20 g/kWhr	0.84	0.1081	0.21	0.0061
SO ₂ ⁴	0.0371 lb/gal	0.88	0.1108	0.22	0.0063

¹ From vendor specification sheet.

² From EPA42

³ From EPA6 S. App. 111 (Standards of Performance for Stationary Compression-Ignition Internal Combustion Engines) § 60.4205(b) which references § 60.4202(a)(2) which requires the owner to purchase an engine that is certified by the manufacturer to the emissions standards in 40 C.F.R. 60.112 and 40 C.F.R. 60.115

⁴ SO₂ emissions factor is based on a maximum sulfur content of 500 ppmw. This limit is effective until 2010, at which time 15 ppmw will be the limit per "Clear Air Nonroad Diesel Rule".

sample calculations:

$$(gal/hr) (7.16 \text{ lb/gal}) (16,880 \text{ Btu/hr}) (19,300 \text{ Btu/lb}) = 19,160 \text{ kWhr}$$

$$(g/kWhr) (kWhr) (2.5452 \text{ lb/g}) = \text{lb/hr} \quad (6.40) (19,160 \text{ kWhr}) (2.5452 \text{ lb/g}) = 31,160 \text{ lb/hr} \quad (43,000 \text{ g/sec}) = \text{g/sec}$$

$$(lb/hr) (24hr) (365 \text{ days}) = \text{tpy} \quad (31,160 \text{ lb/hr}) (24 \text{ hr}) (365 \text{ days}) = 276,000 \text{ lb/yr} \quad (43,000 \text{ g/sec}) (3,600 \text{ sec}) = \text{g/ann}$$

$$[(2000 \text{ lb}) / (10^6)] \cdot (2 \text{ lb SO}_2 / \text{lb S}) \cdot (7.16 \text{ lb/gal}) = \text{lb SO}_2 / \text{gal}$$

**Table 2 Thompson Creek Mining Company
Tallings Pump Generator
Estimated Potential Hazardous Air Pollutant Emissions**

Compression Ignition Internal Combustion (CI/ICE) Engine Data			
Make	Detroit Diesel/MTL	Model	12V4000 G83 T-123-1A3B
Mechanical Output	2,561 hp	Hours of Operation	500 hr/yr
Electrical Output	1,910 kW	Duty (Input)	16.98 MMBtu/hr

Pollutant	Emission Factors ¹	CI/ICE Emission Rates			
		Short-term		Annual	
		lb/hr	g/sec	tpy	g/sec
Benzene	7.76E-04 lb/MMBtu	0.01317	0.001660	0.003	0.00009
Toluene	2.61E-04 lb/MMBtu	0.00477	0.000601	0.001	0.00003
Xylenes	1.83E-04 lb/MMBtu	0.00328	0.000413	0.001	0.00002
Formaldehyde	7.69E-05 lb/MMBtu	0.00134	0.000169	0.000	0.000010
Acetaldehyde	2.62E-05 lb/MMBtu	0.00043	0.000054	0.000	0.000003
Acrolein	7.68E-06 lb/MMBtu	0.00013	0.000017	0.0000	0.000001
Naphthalene	1.30E-04 lb/MMBtu	0.00221	0.000275	0.0006	0.000016
Acenaphthylene	9.23E-06 lb/MMBtu	0.00016	0.000020	0.0000	0.000001
Acenaphthene	4.66E-06 lb/MMBtu	0.00008	0.000010	0.0000	0.000001
Fluorene	1.28E-05 lb/MMBtu	0.00022	0.000027	0.0001	0.000002
Phenanthrene	4.00E-06 lb/MMBtu	0.00069	0.000087	0.0002	0.000005
Anthracene	1.23E-06 lb/MMBtu	0.00002	0.000003	0.0000	0.000000
Fluoranthene	4.03E-06 lb/MMBtu	0.00007	0.000009	0.0000	0.000000
Pyrene	3.71E-06 lb/MMBtu	0.00006	0.000008	0.0000	0.000000
Benz(a)anthracene	6.22E-07 lb/MMBtu	0.00001	0.000001	0.0000	0.000000
Chrysene	1.53E-06 lb/MMBtu	0.00003	0.000003	0.0000	0.000000
Benz(b)fluoranthene	1.11E-06 lb/MMBtu	0.00002	0.000002	0.0000	0.000000
Benz(k)fluoranthene	2.16E-07 lb/MMBtu	0.000004	0.0000005	0.0000	0.000000
Benzo(a)pyrene	2.57E-07 lb/MMBtu	0.000004	0.0000005	0.0000	0.000000
Indeno(1,2,3-cd)pyrene	4.14E-07 lb/MMBtu	0.000007	0.0000009	0.0000	0.000000
Dibenz(a,h)anthracene	3.46E-07 lb/MMBtu	0.000006	0.0000007	0.0000	0.000000
Benzo(g,h,i)perylene	5.56E-07 lb/MMBtu	0.000009	0.0000012	0.0000	0.000000
Total HAPs			0.007 tpy/yr		

¹ From AP42 Section 3.6 Large Station Diesel And Air Pollution Control Engines, Tables 3.6-3 and 3.6-4.

sample calculations:

$$(lb/MMBtu) (MMBtu/hr) = lb/hr; (lb/hr) (453.59 g/lb) (hr/60 min) (min/60 sec) = g/sec$$

$$(lb/hr) (24 hr/d) (365 d/yr) = tpy/yr; (g/sec) (2,000 lb/ton) (86,400 g/lb) (24 hr/d) (365 d/yr) (hr/60 min) (min/60 sec) = g/sec$$