

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

**In the matter of approving** ) **Proposed Decision regarding**  
**an air contaminant source** ) **Notice of Construction**  
**at the Buckhorn Mine Site** ) **Order No. 06AQ-C033 First Revision**

**TO: Brent C. Bailey**  
**Environmental Manager**  
**Kinross, Kettle River Operations**  
363 Fish Hatchery Road  
Republic, WA 99166

**1.0 Project Summary:**

The Buckhorn Mine project consists of underground mining and surface rock handling. Ammonium nitrate-fuel oil composite (ANFO) is the subsurface blasting material. Rock containing gold ore is loaded into trucks and transported for processing, at the Kettle River Mill. Non-ore bearing rock (a.k.a., development rock) is stockpiled for backfill as the mine is worked. Additional backfill rock is brought in from the backfill quarry, which is located eleven miles from the mine site, in Ferry County. Backfill rock may be mixed with cement and/or flyash.

Crown Resources Corporation (hereafter referred to as "Permittee") received approval to construct and operate an underground mining and surface rock handling gold mining project, by issuance of *Notice of Construction (air quality permit) Order No. 06-AQ-C033*, on 9/25/06. The Permittee received approval to operate three diesel-fired power generators until line power was available, by issuance of *Portable and Temporary Permission to Operate Order No. 08AQ-C072*, on 3/13/08. The Permittee received approval install an enclosure and dust collector, instead of water sprays, on the backfill and shotcrete plant, by issuance of *Emission Control Technology Order No. 08AQ-C074*, on 4/24/08.

On 11/7/08, the Permittee notified Ecology that they will be storing an 831 hp generator on-site for off-site use under a local community crisis management program. On 11/26/08, the Permittee requested permission to operate a 546 hp diesel-fired back-up generator on-site for up to 500 hours per year. Installation and operation of the 546 hp generator requires air quality permit approval. Ecology and the applicant have agreed to combine the above specified actions into this single air permit.

The project is located at the Buckhorn Mine site, located 20 miles east of Oroville, within Sections 24 and 25, Township 40 North, Range 30 East, Willamette Meridian, Okanogan County, Washington.

In relation to the above, the State of Washington Department of Ecology (Ecology), pursuant to Revised Code of Washington (RCW) 70.94.152, makes the following determinations regarding the project:

1. It qualified as a new source of air contaminants under Washington Administrative Code (WAC) 173-400-110, 1/10/05, and a new source of toxic air pollutants under WAC 173-460-040, 721/98.
2. It is located in an area which is in attainment or unclassifiable for all criteria pollutants.
3. Allowable emissions will not delay the attainment date for an area not in attainment nor cause or contribute to a violation of any ambient air quality standard.
4. It will comply with all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories and emission standards adopted under chapter 70.94 RCW.
5. It will employ Best Available Control Technology or Best Available Control Technology for Toxics, for all pollutants emitted.
6. It is not a major stationary source or major modification subject to the Prevention of Significant Deterioration permitting requirements of WACs 173-400-700 through 173-400-750.
7. This Order supersedes Order No. 06-AQ-C033, issued 9/25/06; Order No. 08AQ-C074, issued 4/24/08; and, Order No. 08AQ-C072, issued 3/13/08.

**THEREFORE**, it is ordered that the project as described in said Order and more specifically detailed in plans, specification and other information submitted to the Department of Ecology in reference thereto, is approved for construction, installation and operation, provided the following conditions are met:

## **2.0 Approval Conditions**

### **2.1 Laws and Regulations**

The proposed source shall comply with all state laws and regulations, including:

- Chapter 70.94 RCW, Washington Clean Air Act.
- Chapter 173-400 WAC, General Regulations for Air Pollution Sources.
- Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollutants.

The proposed source shall comply with all federal laws and regulations, including:

- Title 40 Part 60 Code of Federal Regulations (CFR) Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

2.2 Emissions

2.2.1 This source shall not exceed the following potential-to-emit of the specified air contaminants:

<b>Pollutant</b>	<b>Blasting &amp; Mine Development</b>	<b>Backfill / Shotcrete Plant</b>	<b>546 Generator (C9)</b>	<b>Surface Fugitives</b>	
Nitrogen Oxides (NO <sub>x</sub> )	6.2	0	0.49	0	tons per year
Carbon Monoxide (CO)	24.4	0	0.09	0	tons per year
Sulfur Dioxide (SO <sub>2</sub> )	0.7	0	0.001	0	tons per year
Volatile Organic Compounds (VOC)	0	0	0.008	0	tons per year
Total Suspended Particulate (TSP)	6.7	3.6	0.006	18.0	tons per year
Particulate Matter (PM <sub>10</sub> )	6.6	1.1	0.006	4.5	tons per year
<b>Toxic Air Pollutants*</b>					
Arsenic			0.01		pounds per year
Benzo(a)pyrene			0.000113		pounds per year
Cadmium			0.01		pounds per year
Chromium (hexavalent)			0.001		pounds per year
Lead			0.07		pounds per year
Nitric Oxide (NO)			605		pounds per year
Total PAH			0.00328		pounds per year

\* Toxic air pollutants with estimated emissions greater than the Small Quantity Emission Rate listed in WAC 173-460-080(2)(e).

2.3 Production. The combined production of ore and development rock shall not exceed 730,000 tons per year.

2.4 Generator-Engine Sets (generators)

2.4.1 The 546 hp generator shall operate no more than 500 hours per consecutive twelve month period. The generator shall only be operated for reliability or maintenance testing and to provide on-site backup electrical power.

2.4.2 The 831 hp generator may be stored on-site and operated only for maintenance of the generator itself.

2.4.3 Generators shall be certified to meet 40 CFR Part 89, 2008 emission levels for non-road engines. The 831 hp generator shall be certified to conform to EPA Tier II (40 CFR 89) non-road engines standards. The 546 hp generator shall be certified to conform to EPA Tier III (40 CFR 89) non-road engines standards.

- 2.4.4 Visual emissions for each exhaust stack shall be no more than 5 percent, with the exception of the ten minute period immediately following start-up. Visible emissions during the ten minute period immediately following start-up shall not exceed 20 percent. Visible emissions shall be measured by using the procedures contained in 40 CFR Part 60, Appendix A, Method 9.
  - 2.4.5 Replacement of failed generators with like generators (same manufacturer and model family) or equivalent generators requires notification prior to installation.
  - 2.4.6 Each generator exhaust stack shall be at least 2.4 meters (7.87 feet) above ground level.
  - 2.4.7 Each generator shall be equipped with a properly installed and maintained non-resettable hour meter.
- 2.5 Diesel Fuel Use
- 2.5.1 Diesel fuel use in all diesel-fired equipment (including that used in non road engines), dedicated to mine site use, shall not exceed 2,500,000 gallons in any consecutive twelve month period.
  - 2.5.2 Diesel fuel used in the generators shall have a sulfur content of 0.0015 weight percent or less. All other diesel fuel, used in equipment dedicated to mine site use, shall have a sulfur content of 0.05 weight percent or less.
- 2.6 Blasting
- 2.6.1 Blasting material used in the underground mine shall be a blasting emulsion rated by the vendor not less than “excellent” in water resistance, and based on ANFO. Except that ANFO without modification for water resistance may be used for long hole stoping, as judged necessary by the detonation specialist. Other blasting materials may be used, if written prior approval has been received from Ecology.
  - 2.6.2 All blasting material shall be kept dry and stored in a location protected from moisture.
  - 2.6.3 When using blasting material that is not water resistant, protective metal or plastic sleeves shall be used in the blasting holes to isolate blasting material from moisture.
  - 2.6.4 The fuel oil to ammonium nitrate ratio in the ANFO shall be not less than 0.05 and more than 0.07 by weight.
  - 2.6.5 Explosive materials used in the underground mine shall not exceed 730 tons in any consecutive twelve month period.

2.7 Backfill / Shotcrete Plant

2.7.1 The cement and fly ash storage silos, the backfill/shotcrete mixer and the transfer point of the two feed conveyors to the main conveyor shall all be controlled by baghouses.

2.7.2 All baghouses shall be installed, operated and maintained to preserve a minimum of 99.99% control efficiency AND particulate matter emissions not exceeding 0.005 grains per dry standard cubic foot.

2.7.3 Visible emissions from any baghouse shall not exceed 5% opacity. Visible emissions shall be measured by using the procedures contained in 40 CFR Part 60, Appendix A, Method 9.

2.8 Fugitive Dust Control Plan (FDCP). Fugitive dust shall be controlled, including those from materials handling, stockpiles, unpaved roads, paved roads and surface disturbed areas. A site specific FDCP shall be developed and followed. The FDCP shall be kept up-to-date. The FDCP shall at a minimum include:

2.8.1 A requirement to have a water truck available whenever the mine is in operation.

2.8.2 A plan for applying water (or other dust suppressant) to fugitive emission areas that specifies:

2.8.2.1 Application rate: amount of water applied per unit area

2.8.2.2 Frequency: time between applications

2.8.2.3 Vehicles per hour

2.8.2.4 Weather conditions

2.8.3 Speed limitations for site vehicles with procedures to maintain and enforce speed restrictions.

2.8.4 Wind erosion response plan that specifies how to locate, size, configure and re-vegetate stockpiles to minimize wind erosion.

2.8.5 A vegetation reclamation plan that specifies:

2.8.5.1 Type of vegetation

2.8.5.2 When and how planted

2.8.5.3 Pounds of seed or shrub/tree per acre

2.8.5.4 Watering system

2.9 Operation and Maintenance (O&M) Manual. The emission units shall be properly operated and maintained. An emission unit specific O&M manual shall be developed and followed. Manufacturers' operating instructions and design specifications for the engines, generators and associated equipment shall be included in the manual. The O&M manual shall be updated to reflect any modifications of the equipment or its operating procedures. Emissions that result from failure to follow the operating procedures

contained in the O&M manual or manufacturer's operating instructions may be considered proof that the equipment was not properly installed, operated, and/or maintained. The O&M manual shall at a minimum include:

- 2.9.1 Normal operating parameters for each emissions unit.
  - 2.9.2 A maintenance schedule for each emissions unit.
  - 2.9.3 Monitoring and record keeping requirements.
  - 2.9.4 A description of the monitoring procedures.
  - 2.9.5 Actions for abnormal emission unit operation.
- 2.10 Recordkeeping. Records shall be kept in sufficient detail to demonstrate compliance with the conditions of this Order. All records shall be organized in a readily accessible manner and cover a minimum of the most recent 60-month period. At a minimum records shall include:
- 2.10.1 Monthly production of ore and development rock.
  - 2.10.2 Monthly hours of operation for each diesel electric generator.
  - 2.10.3 Fuel receipts with amount of diesel and sulfur content for each delivery.
  - 2.10.4 Vendor receipts identifying the amount of ANFO (or other blasting material) and the fuel oil to ammonium nitrate content for each delivery.
  - 2.10.5 The demolition specialist log noting the type and amount of blasting material used each day blasting takes place and whether protective sleeves were used in the blast holes.
  - 2.10.6 Vendor's information on the type, quantity, and installation date, of bags used in each baghouse
  - 2.10.7 Application of water or other dust suppressants. Records shall include dates and times, locations, type of dust suppressant and application rate.
  - 2.10.8 Revegetation efforts. Records shall include type, location and seeding/planting application rate.
  - 2.10.9 O&M records.
- 2.11 General Conditions
- 2.11.1 Records of all data shall be maintained in a readily retrievable manner for a period of five years and be made available at the project site to authorized representatives of Ecology upon request.

- 2.11.2 It shall be grounds for rescission of this approval if physical operation is discontinued for a period of eighteen (18) months or more. Ecology may extend the 18-month period upon a satisfactory showing that an extension is justified.
- 2.11.3 Legible copies of this Order and the O&M Manual shall be on-site in a location known by and available to employees in direct operation of the described equipment and available to Ecology upon request.
- 2.11.4 Access to the source by the United States Environmental Protection Agency or the Department of Ecology shall be permitted upon request for the purposes of compliance assurance inspections. Failure to allow access is grounds for revocation of this Order.
- 2.11.5 Operation of equipment must be conducted in compliance with all data and specifications submitted as part of the application unless otherwise approved by Ecology. Any activity undertaken by the Permittee, or others, in a manner which is inconsistent with the application or this Order, shall be subject to Ecology enforcement under applicable regulations.
- 2.11.6 Nothing in this Order shall be construed so as to relieve the Permittee of its obligations under any state, local, or federal laws or regulations.
- 2.11.7 It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.
- 2.11.8 This Order is valid only after payment of appropriate fee(s) required pursuant to WAC 173-455-120.

Authorization may be modified, suspended or revoked in whole or part for cause, including, but not limited to, the following:

- I. Violation of any terms or conditions of this authorization;
- II. Obtaining this authorization by misrepresentation or failure to disclose fully all relevant facts.

The provisions of this authorization are severable and, if any provision of this authorization or application of any provision to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this authorization, shall not be affected thereby.

You have a right to appeal this permit. To appeal this you must:

- File your appeal with the Pollution Control Hearings Board within 30 days of the “date of receipt” of this document. Filing means actual receipt by the Board during regular office hours
- Serve your appeal on the Department of Ecology within 30 days of the “date of receipt” of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). “Date of receipt” is defined at RCW 43.21B.001(2).

Be sure to do the following:

- Include a copy of (1) the permit you are appealing and (2) the application for the permit.
- Serve and file your appeal in paper form; electronic copies are not accepted.

**1. To file your appeal with the Pollution Control Hearings Board**

Mail appeal to:

The Pollution Control Hearings Board  
PO Box 40903  
Olympia, WA 98504-0903

OR

Deliver your appeal in person to:

The Pollution Control Hearings Board  
4224 – 6th Ave SE Rowe Six, Bldg 2  
Lacey, WA 98503

**2. To serve your appeal on the Department of Ecology**

Mail appeal to:

The Department of Ecology  
Appeals Coordinator  
P.O. Box 47608  
Olympia, WA 98504-7608

OR

Deliver your appeal in person to:

The Department of Ecology  
Appeals Coordinator  
300 Desmond Dr SE  
Lacey, WA 98503

3. And send a copy of your appeal to:

Sue Billings  
Department of Ecology  
Central Regional Office  
15 West Yakima Avenue, Suite 200  
Yakima, WA 98902

*For additional information visit the Environmental Hearings Office Website: <http://www.eho.wa.gov>*

*To find laws and agency rules visit the Washington State Legislature Website: <http://www1.leg.wa.gov/CodeReviser>*

DATED at Yakima, Washington, this [day] Day of [month], 2009.

Reviewed by:

PROPOSED DECISION

Lynnette A. Haller, PE  
Air Quality Program  
State of Washington  
Department of Ecology

Approved by:

PROPOSED DECISION

Susan M. Billings  
Section Manager  
Air Quality Program  
State of Washington  
Department of Ecology