

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONTROL MINOR PERMIT

Permit No.: AQ0978MSS02
Revises Permit No. AQ0978MSS01

Date: Final – July 23, 2007

The Alaska Department of Environmental Conservation (Department), under the authority of AS 46.14 and 18 AAC 50, issues Air Quality Control Minor Permit No. AQ0978MSS02 to the permittee listed below.

Permittee: Alaska Gold Company
P.O. Box 640
Nome, AK 99762-640

Owner/Operator: Same as permittee

Stationary Source: Rock Creek Mine

Location: Northing 7,160,356; Easting 473,760; Zone 3

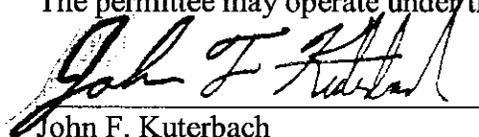
Physical Address: 6.2 miles north of Nome, Alaska on the Glacier Creek Road

Permit Contact: Keith Lee
keith.lee@novagold.net
907-443-2829

This minor permit is issued under 18 AAC 50.508(6) to revise or rescind terms and conditions of a Title I permit issued under 18 AAC 50. The permit satisfies the obligation of the permittee to obtain a minor permit under 18 AAC 50.

This permit authorizes the permittee to operate under the terms and conditions of this permit, and as described in the original permit application listed in Section 2 except as specified in this permit.

The permittee may operate under the terms and conditions of this permit upon issuance.



John F. Kuterbach
Manager, Air Permits Program

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Section 1 *Permit Terms and Conditions*

Minor Permit No. AQ0978MSS01 Revisions

1. Footnote [b] of Table 1 contained in Minor Permit No. AQ0978MSS01 dated December 22, 2006 is rescinded and replaced with the following footnote:

[b]Emission Units 2-15, 19-30 and 36-41 controlled by a 30,000 actual cubic feet per minute (acfm) baghouse. Emission Units 16-18, 31-35 and 42 are enclosed drop points.

2. Condition 1.1 of Minor Permit No. AQ0978MSS01 dated December 22, 2006 is rescinded and replaced with the following:

1.1 The permittee shall control emissions from Emission Units 2 through 15, 19 through 30, and 36 through 41 by use of a baghouse rated at 30,000 acfm.

3. Conditions 1.2 and 1.3 of Minor Permit No. AQ0978MSS01 dated December 22, 2006 are rescinded.

4. Condition 2.1 of Minor Permit No. AQ0978MSS01 dated December 22, 2006 is rescinded and replaced with the following:

2.1 the stationary source's assessable potential to emit of 57 tpy; or

5. Condition 4.3 of Minor Permit No. AQ0978MSS01 dated December 22, 2006 is rescinded and replaced with the following:

4.3 For the baghouse described in condition 1.1:

- a. Conduct a visible emission source test on the baghouse in accordance with Section 4 and condition 13.1 within 60 days after reaching maximum production or within 180 days after initial start-up, whichever occurs first. Record the pressure drop at the time of the source test. Attach a copy of the surveillance records to the operating report required under condition 26.
- b. Monitor the pressure drop across the baghouse daily to ensure that it is within the limits recommended by the manufacturer.
- c. Inspect the baghouse prior to initial start-up, whenever the pressure drop across the baghouse is not within the limits recommended by the manufacturer, and every 180 days of operation. Within 72 hours of discovering a worn or damaged bag, shutdown the baghouse if in operation. Do not restart a baghouse with a worn or damaged bag. Keep an adequate supply of spare bags on the premises to ensure compliance with this condition.

- d. Maintain maintenance logs detailing pressure drops across the baghouse, baghouse inspections and bag replacements. Keep records as set out by condition 24.
6. Condition 5.1 of Minor Permit No. AQ0978MSS01 dated December 22, 2006 is rescinded and replaced with the following:
- 5.1 For the baghouse described in condition 1.1 conduct a PM source test on the baghouse in accordance with Section 4 and condition 13.2 at the same time the visible emission source test is conducted in accordance with condition 4.3a. Attach a copy of the source test to the operating report required under condition 26.
7. Condition 6 of Minor Permit No. AQ0978MSS01 dated December 22, 2006 is rescinded and replaced with the following:
- 6 Sulfur Compound Emissions.** The Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from Emission Units 43 through 87 as listed in Table 1 to exceed 500 ppm averaged over three hours.
 - 6.1 For Emission Units 43 through 87, use only fuel with a sulfur content less than 0.5 percent by weight.
 - a For distillate fuel, obtain a statement or receipt from the fuel supplier certifying the maximum sulfur content of the fuel for each shipment of fuel that is delivered to the stationary source and combusted in Emission Units 43 through 87. If a certificate is not available from the supplier, analyze a representative sample of the fuel to determine the sulfur content using ASTM method D-129, D 4294, or an alternative method approved by the Department.
 - b Include in the operating report required under condition 26, a list of the fuel sulfur contents for each shipment of distillate fuel received at the stationary source and combusted in Emission Units 43 through 87 during the reporting period.

Terms to Make Permit Enforceable

8. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for
- 8.2 an enforcement action; or
 - 8.3 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.

- 9.** It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.
- 10.** Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.
- 11.** The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- 12.** The permit does not convey any property rights of any sort, nor any exclusive privilege.

Section 2 *Permit Documentation*

April 3, 2007 Minor Permit Application for the Rock Creek Mine.
June 25, 2007 Comments on preliminary permit.

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Air Permits Program

TECHNICAL ANALYSIS REPORT
for
Air Quality Control Minor Permit No. AQ0978MSS02

Alaska Gold Company
Rock Creek Mine

BAGHOUSE CHANGE

Preparer: Patrick Dunn
Supervisor: Sally Ryan
Date: Final– July 23, 2007

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Abbreviations/Acronyms

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AQC	Air Quality Control
AS	Alaska Statutes
ASTM	American Society of Testing and Materials
COMs	Continuous Emission Monitoring System
C.F.R.	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
MR&R	Monitoring, Recordkeeping, and Reporting
N/A	Not Applicable
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NSPS	New Source Performance Standards
ORL	Owner Requested Limit
PS	Performance Standard
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
TAR	Technical Analysis Report
TBD	To Be Determined

Permit Specific

AGC	Alaska Gold Company
RCM	Rock Creek Mine

Units and Measures

acfm	actual cubic foot per minute
bhp	brake horsepower
gr./ascf	grains per actual cubic feet (1 pound = 7,000 grains)
gph	gallons per hour
kW	kiloWatts (electric)
lbs	pounds
mmBtu	million British Thermal Units
ppm	parts per million
ppmv	parts per million by volume
ppmw	parts per million by weight
tph	tons per hour
tpy	tons per year
wt%	weight percent

Pollutants

CO	Carbon Monoxide
HAPS	Hazardous Air Pollutants
NO _x	Oxides of Nitrogen
NO ₂	Nitrogen Dioxide
NO	Nitric Oxide
PM	Particulate Matter
PM-10	Particulate Matter with an aerodynamic diameter less than 10 microns
S	Sulfur
SO ₂	Sulfur Dioxide
VOC	Volatile Organic Compound

1. Introduction

This Technical Analysis Report (TAR) provides the Alaska Department of Environmental Conservation's (the Department's) basis for issuing Air Quality Control (AQC) Minor Permit No. AQ0978MSS02 to the Alaska Gold Company (AGC) for the Baghouse project at the Rock Creek Mine (RCM). The AGC's minor permit application is dated April 3, 2007. The Department issued Minor Permit No. AQ0978MSS01 on December 22, 2006 authorizing the construction and operation of the RCM. Minor Permit No. AQ0978MSS02 revises Minor Permit No. AQ0978MSS01.

2. Background

2.1. Current Permits

Minor Permit No. AQ0978MSS01 is currently issued to the AGC for the RCM.

2.2. Stationary Source Description

The RCM will be an open pit mine that operates 24 hours per day, 365 days per year. The RCM mill will process approximate 7,700 tons of gold ore per day. The RCM mill includes a crushing and grinding circuit, a gravity circuit, a floatation circuit, and a cyanide carbon leach circuit. The primary air pollutant emissions from the mill will be particulate matter (PM) from the crushing and grinding circuit. PM emissions from the primary jaw crusher and secondary and tertiary cone crushers will be controlled by baghouses. The RCM is currently not fully constructed and is therefore not operational.

2.3. Application Description

Minor Permit No. AQ0978MSS01 authorized the installation of three baghouses to control PM with an aerodynamic diameter of less than 10 microns (PM-10) emissions from the crushing and grinding circuit. The total combined capacity of the three baghouses was 28,000 actual cubic feet per minute (acfm). The AGC never installed the three baghouses authorized in Minor Permit No. AQ0978MSS01. The AGC is now requesting to use a single baghouse rated at 30,000 acfm to control PM-10 emissions instead of the three baghouses. The emission units to be controlled by the single baghouse remain unchanged from those emission units that were to be controlled by the three baghouses.

The AGC also requested that the condition in Minor Permit No. AQ0978MSS01 that requires reporting of the sulfur content of distillate fuel delivered to the mine be revised to specifically state that this condition only applies to fuel combusted in the stationary emission units permitted by Minor Permit No. AQ0978MSS01. The AGC requested this modification because fuel shipments are being received daily at the mine during construction. This fuel is combusted in equipment used to construct the mine. This equipment is not part of the emission unit inventory of Minor Permit No. AQ0978MSS01.

The Departments' findings regarding the application are listed in Section 3

2.4. Project Emissions Summary

In their application, the AGC provided emission calculations for the new single baghouse at the RCM. The AGC used the following assumptions in their emission calculations.

- Units 2 through 15, 19 through 30 and 36 through 41 (as identified in Table 1 of Minor Permit No. AQ0978MSS01) PM-10 emissions controlled by the single baghouse. PM-10 emissions based on vendor-provided emission factors for the baghouse. The baghouse operates continuously (i.e. 8,760 hours per year).

Potential emissions from these units are shown in Table 1 along with potential emissions as previously authorized by Minor Permit No. AQ0978MSS01.

Table 1 –Emission Estimates ^a

Unit No. (as identified in Table 1 in Minor Permit No. AQ0978MSS01)	Description	Potential Emissions in tpy				
		NO _x	CO	PM-10	VOC	SO ₂
2 thru 15, 19 thru 30, and 36 thru 41	Crushing and Grinding Circuit as authorized by Minor Permit No. AQ0978MSS01 (3 baghouses)	N/A	N/A	12.0	N/A	N/A
2 thru 15, 19 thru 30, and 36 thru 41	Crushing and Grinding Circuit as authorized by Minor Permit No. AQ0978MSS02 (single baghouse)	N/A	N/A	11.3	N/A	N/A
Decrease in Potential Emissions		N/A	N/A	0.7	N/A	N/A

Table Notes

^a N/A means not applicable.

3. Department Findings

Based on a review of the application, the Department finds that:

- (1) The AGC has requested to revise Minor Permit No. AQ0978MSS01.
- (2) The project is classified as needing a permit under 18 AAC 508(6), to revise or rescind terms of a Title I permit.
- (3) As described in 18 AAC 50.540(k)(1) - (3), an application for a minor permit classified under 18 AAC 50.508(6) must include the effect of revising or revoking the permit term or

condition on emissions, other permit terms, and compliance monitoring. The AGC's application meets this requirement.

- (4) The baghouse modification requested by the AGC will cause total assessable emissions for the RCM to decrease by 0.7 tpy (See **Table 1**). The RCM's new total assessable emissions are 57 tpy.
- (5) The fuel sulfur reporting revision as requested by the AGC will not have a significant impact on the AGC's ability to show compliance with the fuel sulfur reporting requirements established in Minor Permit No. AQ0978MSS01 for the distillate fuel burning emission units. The Department also noted an error in the list of emission units under this condition (condition 6) of Minor Permit No. AQ0978MSS01. Some of the emission units subject to condition 6 had been left off and the Department corrected this error in Minor Permit No. AQ0978MSS02.
- (6) The RCM is in the Northwest Coastal District. The Alaska Coastal Management Program currently does not require review for minor permits classified under 18 AAC 508(6).
- (7) The AGC's application for a minor permit contains all the elements listed in 18 AAC 50.540.

4. Permit Requirements

As described in 18 AAC 50.544(a), this minor permit identifies the stationary source, the project, the permittee, and contact information, and includes requirements to pay fees.

4.1. Fee Requirements

Because the AGC is modifying their baghouse configuration the total PTE has decreased to 57 tpy. The Department is rescinding the fee requirement established in Minor Permit No. AQ0978MSS01 and replacing them with the new fee requirement established by Minor Permit No. AQ0978MSS02.

4.2. State Emission Standard for Visible Emissions

AGC did not provide any compliance demonstrations for the baghouse. The source test requirements for the three baghouses established by Minor Permit No. AQ0978MSS01 will be required on the new single baghouse.

4.3. State Emission Standard for Particulate Matter

AGC provided vendor emission guarantees for the baghouse of 0.01 grains per acfm. Because these vendor guarantees are based on assumptions which may not occur during operation the permit contains an initial compliance demonstration for PM emissions for the baghouse. The source test requirements for the three baghouses established by Minor Permit No. AQ0978MSS01 will be required on the new single baghouse.

4.4. State Emission Standard for Sulfur Dioxide

The baghouse has no sulfur dioxide emissions.

4.5. Ambient Air Quality Protection Requirements

AGC had previously provided an ambient PM-10 air quality analysis with their application for Minor Permit No. AQ0978MSS01. The Departments did not require an ambient air quality analysis for Minor Permit No. AQ0978MSS02 because the baghouse modification did not warrant a modeling analysis.

4.6. Terms to Make Permit Enforceable

The minor permit contains these requirements to ensure that the permittee will construct and operate the stationary source or modification in accordance with 18 AAC 50, as described in 18 AAC 50.544(i).

5. Permit Administration

The AGC may operate the RCM in accordance with Minor Permit No. AQ0978MSS02 upon issuance.

COMMENT RESPONSE

Preliminary Air Quality Minor Permit No. AQ0978MSS02
for Alaska Gold Company (AGC)
Rock Creek Mine (RCM)
July 23 , 2007

The Department of Environmental Conservation (the Department) held a public comment period from June 8, 2007 through July 9, 2007 regarding AGC's RCM. AGC proposes to modify the baghouse configuration and to clarify the fuel sulfur reporting requirements for distillate fuel permitted in Minor Permit No. AQ0978MSS01.

The Department only received comment from the AGC.

Below is the Department's consideration of comments.

Comment 1. Please update the permit contact to:
Keith Lee
907-443-2829
keith.lee@novagold.net

Response: Permit revised as requested.