Nevada Department of Conservation and Natural Resources • Division of Environmental Protection

BUREAU OF AIR QUALITY PLANNING

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Facility ID No. A0393 *Permit No. AP1041-2246*

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: **Barrick, Bald Mountain Mine** (HEREINAFTER REFERRED TO AS ***THE PERMITTEE***)
Mailing Address: P.O. BOX 2706; ELKO, NEVADA 89803
Physical Address: 60 MILES SOUTH, SOUTHEAST OF ELKO, 9 MILES SOUTHWEST OF OVERLAND PASS, NEVADA
General Facility Location: SECTIONS 11, 13, 14, 23, T24N, R56E, MDB&M (HA 47) (HUNTINGTON VALLEY)
WHITE PINE COUNTY, NEVADA
NORTH 4423.10 KM, EAST 617.00 KM, UTM ZONE 11 (NAD 83)

Emission Unit List: (4 Emission Units)		
A. System 01 – Propane Fired Carbon Regeneration Kiln (AQOP AP1041-1362.01: System 1 – S2.001)		
TU	4.001	Propane Fired Carbon Regeneration Kiln
C. System 03 – Propane Fired Bullion Furnace (AQOP AP1041-1362.01: System 3 – S2.003)		
TU	4.003	Propane Fired Bullion Furnace
D. System 04 – Electro-winning Circuit & Barren Strip Solution Tank (Not Permitted in AQOP AP1041-1362.01)		
TU	4.004	Electro-winning Circuit
TU	4.005	Barren Strip Solution Tank

Facility ID No. A0393 Permit No. AP1041-2246

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Barrick, Bald Mountain Mine

Section I. General Conditions

The Permittee must comply with, but is not limited to, all conditions of Nevada Administrative Code (NAC) 445B.3611-3689 *"Nevada Mercury Air Emissions Control Program"*, inclusive.

A. Records Retention. NAC 445B.3679.2(a)
The Permittee of a Mercury Operating Permit to Construct shall retain records of all required monitoring data and support information for (5) years after the date of the sample collection, measurement, report or analysis. Supporting information includes, without limitation, all records regarding calibration and maintenance of the monitoring equipment and all original strip-chart recordings for continuous monitoring instrumentation.

B. Severability. NAC 445B.3679.2(b)
Each of the conditions and requirements of the Mercury Operating Permit to Construct is severable and, if any are held invalid, the remaining conditions and requirements continue in effect.

C. Compliance/Noncompliance. NAC 445B.3679.2(c)
The Permittee must comply with all conditions of the Mercury Operating Permit to Construct. Any noncompliance constitutes a violation and is grounds for:
1. An action for noncompliance;
2. The revoking and reissuing, or the terminating of the Mercury Operating Permit to Construct by the Director; or
3. The reopening or revising of the Mercury Operating Permit to Construct by the holder of the Mercury Operating Permit to Construct as directed by the Director.

D. Defense to Noncompliance. NAC 445B.3679.2(d)
The need to halt or reduce activity to maintain compliance with the conditions of the Mercury Operating Permit to Construct is not a defense to noncompliance with any conditions of the Mercury Operating Permit to Construct.

E. Cause. NAC 445B.3679.2(e)
The Director may revise, revoke and reissue, reopen and revise, or terminate the Mercury Operating Permit to Construct for cause.

F. Property Rights/Exclusive Privilege. NAC 445B.3679.2(f)
The Mercury Operating Permit to Construct does not convey any property rights or any exclusive privilege.

G. Information Request from Director. NAC 445B.3679.2(g)
The Permittee shall provide the Director, in writing and within a reasonable time, with any information that the Director requests to determine whether cause exists for revoking or terminating the Mercury Operating Permit to Construct or to determine compliance with the conditions of this Mercury Operating Permit to Construct.

H. Right to Entry. NAC 445B.3679.2(h)
The Permittee shall allow the Director or any authorized representative of the Director, upon the presentation of credentials, to:
1. Enter upon the premises of ***the Permittee*** where:
   a. The thermal unit that emits mercury is located;
   b. Activity related to mercury emissions is conducted; or
   c. Records are kept pursuant to the conditions of the Mercury Operating Permit to Construct.
2. Have access to and copy, during normal business hours, any records that are kept pursuant to the conditions of the Mercury Operating Permit to Construct;
3. Inspect, at reasonable times, any facilities, practices, operations, or equipment, including any equipment for monitoring or controlling air pollution, that are regulated or required pursuant to the Mercury Operating Permit to Construct; and
4. Sample or monitor, at reasonable times, substances or parameters to determine compliance with the conditions of the Mercury Operating Permit to Construct or applicable requirements.

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Section I. General Conditions (continued)

I. Certify True and Accurate. NAC 445B.3679.2(i)
A responsible official of the stationary source shall certify that, based on information and belief formed after reasonable inquiry, the statements made in any document required to be submitted by any condition of the Mercury Operating Permit to Construct are true, accurate and complete.

J. Yearly Reporting. NAC 445B.3679.3(b, c, d)
The Permittee will submit yearly reports including, but not limited to, throughput, production, fuel consumption, hours of operation, emissions and mercury co-product. These reports will be submitted on the form provided by the Bureau of Air Pollution Control for all emission units/systems specified on the form. The completed form must be submitted to the Bureau of Air Pollution Control no later than March 1 annually for the preceding calendar year, unless otherwise approved by the Bureau of Air Pollution Control.

K. Facilities Operation. NAC 445B.227
The Permittee may not:
1. Operate a stationary source of air pollution unless the control equipment for air pollution that is required by applicable requirements or conditions of the Mercury Operating Permit to Construct are installed and operating.
2. Disconnect, alter, modify or remove any of the control equipment for air pollution or modify any procedure required by an applicable requirement or condition of the Mercury Operating Permit to Construct.

L. Excess Emissions. NAC 445B.232
1. Scheduled maintenance or testing or scheduled repairs which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive, must be approved by the Director and performed during a time designated by the Director as being favorable for atmospheric ventilation.
2. The Director must be notified in writing of the time and expected duration at least 24 hours in advance of any scheduled maintenance which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive.
3. The Director must be notified in writing or by telephone of the time and expected duration at least 24 hours in advance of any scheduled repairs which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive.
4. The Director must be notified of any excess emissions within 24 hours after any malfunction or upset of the process equipment or equipment for controlling pollution or during startup or shutdown of such equipment. The telephone number for the notification is (775) 687-9350.
5. ***The Permittee***, as the owner or operator of an affected facility, shall provide the Director, within 15 days after any malfunction, upset, startup, shutdown, or human error which results in excess emissions, sufficient information to enable the Director to determine the seriousness of the excess emissions. The information must include at least the following:
   a. The identity of the stack or other point of emission, or both, where the excess emissions occurred.
   b. The estimated magnitude of the excess emissions expressed in units of the applicable limitation on emission and the operating data and methods used in estimating the magnitude of the excess emissions.
   c. The time and duration of the excess emissions.
   d. The identity of the equipment causing the excess emissions.
   e. If the excess emissions were the result of a malfunction, the steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of the malfunction.
   f. The steps taken to limit the excess emissions.
   g. Documentation that the equipment for controlling air pollution, process equipment, or processes were at all times maintained and operated, to a maximum extent practicable, in a manner consistent with good practice for minimizing emissions.

M. Construction Requirements NAC 445B250
Early Reduction Credit (ERC), New, or Modified Thermal Units: the ***Permittee*** shall provide the Director written notification of:
1. The date that construction or reconstruction of an affected facility is commenced, postmarked no later than 30 days after such date. This requirement shall not apply to mass-produced facilities which are purchased in completed form.

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Section I. General Conditions (continued)

2. The anticipated date of initial startup of an affected facility, postmarked not more than 60 days and not less than 30 days prior to such date.
3. The actual date of initial startup of an affected facility, postmarked within 15 days after such date.

N. Annual Testing.

Before the conclusion of each calendar year, ***the Permittee*** shall:

1. Conduct and record a Method 29 (or alternative test method approved by the Director) compliance test for mercury on the exhaust stack of Systems 01 - 04 consisting of three valid runs. Each of the three test runs must collect a sample volume of 1.7 dry standard cubic meters (60 dscf) or be conducted for up to two hours in an effort to collect this sample volume (NAC 445B.3679.3).
2. Simultaneously, during the Method 29 (or alternative test method approved by the Director) compliance test, conduct and record a material assay from Systems 01 - 04. One representative sample shall be taken for each test run. Total mercury content shall be determined using EPA Method 7471B (cold vapor atomic adsorption analysis) (or alternative test method approved by the Director) (NAC 445B.3679.3).
3. Conduct tests of performance under such conditions as the Director specifies to the operator of the plant based on representative performance of the affected facility. The owner or operator shall make available to the Director such records as may be necessary to determine the conditions of the test of performance. Operations during periods of startup, shutdown and malfunction must not constitute representative conditions of a test of performance unless otherwise specified in the applicable standard (NAC 445B.252.3).
4. Give notice to the Director 30 days before the test of performance to allow the Director to have an observer present. A written testing procedure for the test of performance must be submitted to the Director at least 30 days before the test of performance to allow the Director to review the proposed testing procedures (NAC 445B.252.4).
5. Furnish the Director within 60 days after completing the performance tests a written and electronic report of the results of the performance tests. All information and analytical results of testing and sampling must be certified as to the truth and accuracy and as to their compliance with NAC 445B.001 to 445B.3689 (NAC 445B.252.8).

O. Annual Reporting.

The Permittee shall:

1. Report mercury co-product on an annual basis (NAC 445B.3679.3(d)).
2. Report the level of mercury emissions on an annual basis which must be based on mercury emissions test data (NAC 445B.3679.3(c)).

P. Expiration and Extension. NAC 445B.3687

1. If construction will occur in one phase, a mercury operating permit to construct for a new or modified thermal unit that emits mercury expires if construction is not commenced within 18 months after the date of issuance thereof or construction of the thermal unit that emits mercury is delayed for 18 months after initiated. The Director may extend the date on which the construction may be commenced upon a showing that the extension is justified.
2. If construction will occur in more than one phase, the projected date of the commencement of construction of each phase of construction must be approved by the Director. A mercury operating permit to construct expires if the initial phase of construction is not commenced within 18 months after the projected date of the commencement of construction approved by the Director. The Director may extend only the date on which the initial phase of construction may be commenced upon a showing that the extension is justified.

Q. Nevada Mercury Control Program Implementation Requirements

1. The NvMACT for TU4.001 – TU4.005 each must be implemented not later than 24 months after the issuance date of this mercury operating permit to construct (NAC 445B3679.3(a)(2)(I). The issuance dates for TU4.001 – TU4.005 each are as follows:
   a. The issuance date for TU4.002 is July 19, 2010.
   b. The issuance date for TU4.001, TU4.003, TU4.004 and TU4.005 is XX.

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Section I. General Conditions (continued)

2. ***The Permittee*** shall provide the Director written notification of the date of implementation of NvMACT for TU4.001 – TU4.005 each pursuant to NAC 445B.3679.3(a)(2)(i), postmarked within 15 days after such date (NAC 445B.3679.2(g)).

R. SIP Article 2.5.4 Federally Enforceable SIP Requirement
Breakdown or upset, determined by the Director to be unavoidable and not the result of careless or marginal operations, shall not be considered a violation of these regulations.

********** End of General Conditions **********

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Section II. Specific Operating Conditions

A. Emission Units #TU4.001 location North 4,423.270 km, East 616.890 km, UTM (Zone 11)

System 01 – Propane Fired Carbon Regeneration Kiln	
TU 4.001	Propane Fired Carbon Regeneration Kiln, manufactured by Allis Chalmers, model (unspecified), serial #80-6238

1. Air Pollution Equipment

a. Exhaust gas from **TU4.001** shall be ducted to a control system with 100% capture consisting of:
   i. **Off Gas Cooler (OGC-001)**, manufacturer (unspecified), model (unspecified), serial # (unspecified)
   ii. **Sulfur Impregnated Carbon Adsorption Filter Bed (CA-002),** manufacturer (unspecified), model (unspecified), serial # (unspecified)

b. Stack parameters
   i. Height: 35.0 ft.
   ii. Diameter: 0.48 ft.
   iii. Stack temperature: Approximately 100.0°F
   iv. Flow: Maximum volume flow rate of approximately 130 dscfm.
   v. Unit **TU4.001** is ducted to a single vertical exhaust stack.

2. Operating Requirements

a. Limitations of operation. NAC 445B.3679.3.
   i. The maximum allowable throughput for **TU4.001** will not exceed 0.125 ton of strip circuit carbon per any one-hour period.
   ii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.A.3.e. for **TU4.001** shall be 5x10-3 gr/dscf mercury.
   iii. Hours
      (a) **TU4.001** may operate 24 hours per day.
      (b) **TU4.001** may operate a total of 8,544 hours per calendar year.

b. Work practices. NAC 445B.3679.3.
   i. Inspect the drum lining of **TU4.001** for cracks twice per calendar year.
   ii. The exhaust temperature exiting **OGC-001** shall be maintained at or below 100.0°F.
   iii. The differential pressure of **CA-002** shall be maintained at or below 1.0 inches water column.
   iv. **CA-002** shall contain no less than 300 pounds of sulfur-impregnated carbon.
   v. Sulfur-impregnated carbon from **CA-002** shall be replaced in accordance with the following schedule:
      (a) Representative carbon samples shall be taken from near the inlet and outlet of **CA-002**. The depth of the sample locations shall be recorded. The percentage of mercury by weight shall be calculated as the average loading from the samples. The loading capacity of the sulfur-impregnated carbon is 20% by weight. Sampling will continue quarterly, at the same sample depth location, until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with equivalent performing sulfur -impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity.
      (b) The required mercury analysis shall be performed utilizing one of the following methods:
         1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
         2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
         3. An alternative test method as approved by the Director.
   vi. Any sulfur-impregnated carbon replaced in **CA-002** shall be replaced with only the manufacturer's design specification sulfur-impregnated carbon or an equivalent or better performing carbon.
   vii. The NvMACT design specifications for the sulfur-impregnated carbon used in **CA-002** shall be kept on site.

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Section II. Specific Operating Conditions (continued)

A. Emission Units #TU4.001 location North 4,423.270 km, East 616.890 km, UTM (Zone 11)

3. Compliance Testing, Monitoring, Recordkeeping, Reporting and Performance Testing

a. Compliance Testing (NAC 445B.3379.3)
Within 180 days of the notification of the implementation of NvMACT for **TU4.001** as required in Section I.Q., ***the Permittee*** shall conduct and record a performance test for mercury on the exhaust stack of **TU4.001** consisting of three valid runs utilizing US EPA Method 29 of 40 CFR Part 60 Appendix A.

b. Monitoring (NAC 445B.3379.3)
The Permittee shall:
i. Prior to the implementation of NvMACT install, calibrate and maintain instrumentation to measure the following:
(a) The exhaust temperature exiting **OGC-001** in degrees Fahrenheit.
(b) The differential pressure of **CA-002** in inches water column.
ii. Monitor the exhaust temperature exiting **OGC-001** once per day during operations.
iii. Monitor the differential pressure of **CA-002** once per day during operations.
iv. Monitor **CA-002** for percentage of mercury by weight quarterly until reaching 50% of the carbon loading capacity of 20%, and then monthly until reaching 90% percent of the carbon loading capacity of 20%.

c. Recordkeeping (NAC 445B.3379.3)
The required monitoring established in Section A.3.b.i. through Section A.3.b.v. shall be maintained on site in a contemporaneous log containing, at a minimum, the following recordkeeping:
i. The calendar date of any required monitoring.
ii. The total daily throughput of strip carbon in tons for **TU4.001** for the corresponding date.
iii. The total hours of operation for **TU4.001** for the corresponding date.
iv. The corresponding average hourly throughput rate of strip carbon in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput rate and the total daily hours of operation recorded in Section A.3.c.ii. and Section A.3.c.iii. above.
v. The results of the drum lining inspections for **TU4.001**.
vi. The exhaust temperature exiting **OGC-001** in degrees Fahrenheit for the corresponding date.
vii. The differential pressure of **CA-002** in inches water column for the corresponding date.
viii. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-002** from the corresponding analyses.
ix. The date, time and weight of each sulfur-impregnated carbon replacement for **CA-002** for the corresponding date.

d. Reporting (NAC 445B.3679.3(e)
Permittee will promptly report to the Director any deviations from the requirements of this Operating Permit. The report to the director will include the probable cause of all deviations and any action taken to correct the deviations. For this Operating Permit, prompt is defined as submittal of a report within 15 days of the deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L of this permit.

e. Performance Testing (NAC 445B.3679.2(g))
i. Upon the notification date of the implementation of NvMACT pursuant to Section I.Q. above, ***the Permittee***, shall begin a performance demonstration period for the establishment of a mercury emissions limit for **TU4.001**, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NvMACT mercury emission limit for **TU4.001**.
ii. ***The Permittee*** shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NvMACT mercury emission limit for **TU4.001**.
iii. ***The Permittee*** shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.

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Section II. Specific Operating Conditions (continued)

A. Emission Units #TU4.001 location North 4,423.270 km, East 616.890 km, UTM (Zone 11)

iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to ***the Permittee*** with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.

v. The final NvMACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.

vi. The final NvMACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.

vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.

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Section II. Specific Operating Conditions

C. Emission Units #TU 4.003 location North 4,423.280 km, East 616.900 km, UTM NAD83 (Zone 11)

System 03 – Propane Fired Bullion Furnace
TU 4.003 Propane Fired Bullion Furnace manufactured by MIFCO, model #(unspecified), serial #162-1-0903

1. Air Pollution Equipment

a. Exhaust gas from **TU4.003** shall be ducted to a control system with 100% capture consisting of:
   i. **Baghouse (BH-001)**, manufactured by MAC, model #(unspecified), serial #(unspecified).
   ii. **Sulfur Impregnated Carbon Adsorption Filter Trays (CA-003)**, manufactured by Scotia International of Nevada, Inc., model #(unspecified), serial #(unspecified).

b. Stack parameters
   i. Height: 19.0 ft.
   ii. Diameter: 1.125 ft.
   iii. Stack temperature: Approximately 159.0°F
   iv. Flow: Maximum volume flow rate of approximately 3,000 dry standard cubic feet per minute (dscfm).
   v. Unit **TU4.003** is ducted to a single vertical exhaust stack.

2. Operating Requirements

a. Limitations of operation. NAC 445B.3679.3.
   i. The maximum allowable throughput for **TU4.003** will not exceed 0.05 ton of retorted precious metal bearing material per batch.
   ii. Precious metal bearing material or concentrate means the material that is loaded with gold along with various other metals (such as silver, copper and mercury) and substances that is produced by electro-winning, the Merrill-Crowe process, flotation and gravity separation processes, and other gold concentration and precipitation processes.
   iii. Precious metal bearing material or concentrate includes material collected from the wash-down of any equipment or surfaces contacted with precious metals that have accumulated through the concentration methods employed by ***the Permittee***.
   iv. All precious metal bearing material shall be retorted prior to furnace smelting.
   v. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.C.3.e. for **TU4.003** shall be 5x10-3 gr/dscf mercury.
   vi. Hours
      (a) **TU4.003** may operate 24 hours per day.
      (b) **TU4.003** may operate a total of 8,544 hours per calendar year.

b. Work practices. NAC 445B.3679.3.
   i. The differential pressure of **BH-001** shall be maintained at or below 6.0 inches water column.
   ii. The differential pressure of **CA-003** shall be maintained at or below 4.0 inches water column.
   iii. **CA-003** shall contain no less than 3,000 pounds of sulfur-impregnated carbon.
   iv. Sulfur-impregnated carbon from **CA-003** shall be replaced in accordance with the following schedule:
      (a) Representative carbon samples shall be taken from the first and last trays of **CA-003**. The percentage of mercury by weight shall be calculated as the average loading from the samples. The loading capacity of the sulfur-impregnated carbon is 20% by weight. Sampling will continue quarterly, at the same sample locations, until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with equivalent performing sulfur -impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity.
      (b) The required mercury analysis shall be performed utilizing one of the following methods:
         1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
         2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
         3. An alternative test method as approved by the Director.

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Section II. Specific Operating Conditions (continued)

C. Emission Units #TU4.003 (continued) location North 4,423.280 km, East 616.900 km, UTM NAD83 (Zone 11)

v. Any sulfur-impregnated carbon replaced in **CA-003** shall be replaced with only the manufacturer's design specification sulfur-impregnated carbon or an equivalent or better performing carbon.
vi. The NvMACT design specifications for the sulfur-impregnated carbon used in **CA-003** shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping, Reporting and Performance Testing

a. Compliance Testing (NAC 445B.3379.3)
Within 180 days of the notification of the implementation of NvMACT for **TU4.003** as required in Section I.Q., ***the Permittee*** shall conduct and record a performance test for mercury on the exhaust stack of **TU4.003** consisting of three valid runs utilizing US EPA Method 29 of 40 CFR Part 60 Appendix A.

b. Monitoring (NAC 445B.3379.3)
The Permittee shall:
i. Prior to the implementation of NvMACT install, calibrate and maintain instrumentation to measure and record the following:
(a) The differential pressure of **BH-001** in inches water column.
(b) The differential pressure of **CA-003** in inches water column.
ii. Monitor the differential pressure of **BH-001** once per batch during operations.
iii. Monitor the differential pressure of **CA-003** once per batch during operations.
iv. Monitor **CA-003** for percentage of mercury by weight quarterly until reaching 50% of the carbon loading capacity of 20%, and then monthly until reaching 90% percent of the carbon loading capacity of 20%.

c. Recordkeeping (NAC 445B.3379.3)
The required monitoring established in Section C.3.b.i. through Section C.3.b.iv. shall be maintained on site in a contemporaneous log containing, at a minimum, the following recordkeeping:
i. The calendar date of any required monitoring.
ii. The total batch weight of precious metal bearing material in tons for **TU4.003** per batch for the corresponding date.
iii. The total hours of batch operation for **TU4.003** per batch for the corresponding date.
iv. The differential pressure of **BH-001** in inches water column per batch for the corresponding date.
v. The differential pressure of **CA-003** in inches water column per batch for the corresponding date.
vi. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-003** from the corresponding analyses.
vii. The date, time and weight of each sulfur-impregnated carbon replacement for **CA-003** for the corresponding date.

d. Reporting (NAC 445B.3679.3(e)
Permittee will promptly report to the Director any deviations from the requirements of this Operating Permit to Construct. The report to the director will include the probable cause of all deviations and any action taken to correct the deviations. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L of this permit.

e. Performance Testing (NAC 445B.3679.2(g))
i. Upon the notification date of the implementation of NvMACT pursuant to Section I.Q. above, ***the Permittee***, shall begin a performance demonstration period for the establishment of a mercury emissions limit for **TU4.003**, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NvMACT mercury emission limit for **TU4.003**.
ii. ***The Permittee*** shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NvMACT mercury emission limit for **TU4.003**.
iii. ***The Permittee*** shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.

Issued to: Barrick, Bald Mountain Mine

Section II. Specific Operating Conditions (continued)

C. Emission Units #TU4.003 (continued) location North 4,423.280 km, East 616.900 km, UTM NAD83 (Zone 11)

iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to ***the Permittee*** with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.

v. The final NvMACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.

vi. The final NvMACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.

vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.

Issued to: Barrick, Bald Mountain Mine

Section II. Specific Operating Conditions

D. Emission Unit #TU 4.004 and TU4.005 location North 4,423.270 km, East 616.89 km, UTM NAD83 (Zone 11)

System 04 – Electro-winning Circuit and Barren Strip Solution Tank		
TU	4.004	Electro-winning Circuit, manufacturer (unspecified), model #125EC34, serial #7312EC001
TU	4.005	Barren Strip Solution Tank, manufacturer (unspecified), model #(unspecified), serial #(unspecified)

1. Air Pollution Equipment

a. Exhaust gas from **TU4.004 and TU4.005** shall be ducted to a common control system with 100% capture consisting of:
   i. **Exhaust Air De-Mister and Pre-Heater (PH-001)**, manufactured by Scotia International of Nevada, Inc., model #(unspecified), serial #(unspecified).
   ii. **Sulfur Impregnated Carbon Adsorption Bed (CA-004)**, manufactured by Scotia International of Nevada, Inc., model #(unspecified), serial #(unspecified).

b. Stack parameters
   i. Height: 24.0 ft.
   ii. Diameter: 0.5 ft.
   iii. Stack temperature: Approximately 161.0°F
   iv. Flow: Maximum volume flow rate of approximately 450 dry standard cubic feet per minute (dscfm).
   v. Units **TU4.004 and TU4.005** are ducted to a common single vertical exhaust stack.

2. Operating Requirements

a. Limitations of operation. NAC 445B.3679.3.
   i. The maximum allowable throughput for **TU4.004** will not exceed 100.0 gallons per minute of pregnant strip solution.
   ii. The maximum allowable throughput for **TU4.005** will not exceed 100.0 gallons per minute of barren strip solution.
   iii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.D.3.e. for **TU4.004 and TU4.005** shall be 5x10-3 gr/dscf mercury.
   iv. Hours
      (a) **TU4.004 and TU4.005** each may operate 24 hours per day.
      (b) **TU4.004 and TU4.005** each may operate a total of 8,760 hours per calendar year.

b. Work practices. NAC 445B.3679.3.
   i. **TU4.004** lids will be secured in place at all times during operation of **TU4.004**.
   ii. Visually inspect **TU4.005** for signs of solution leakage and corrosion monthly.
   iii. The differential pressure of **CA-004** shall be maintained at or below 8.0 inches water column.
   iv. **CA-004** shall contain no less than 2,200 pounds of sulfur-impregnated carbon.
   v. Sulfur-impregnated carbon from **CA-004** shall be replaced in accordance with the following schedule:
      (a) Representative carbon samples shall be taken from near the inlet and outlet of **CA-004**. The depth of the sample locations shall be recorded. The percentage of mercury by weight shall be calculated as the average loading from the samples. The loading capacity of the sulfur-impregnated carbon is 20% by weight. Sampling will continue quarterly, at the same sample depth location, until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with equivalent performing sulfur -impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity.
      (b) The required mercury analysis shall be performed utilizing one of the following methods:
         1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
         2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
         3. An alternative test method as approved by the Director.
   vi. Any sulfur-impregnated carbon replaced in **CA-004** shall be replaced with only the manufacturer's design specification sulfur-impregnated carbon or an equivalent or better performing carbon.
   vii. The NvMACT design specifications for the sulfur-impregnated carbon used in **CA-004** shall be kept on site.

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Section II. Specific Operating Conditions (continued)

D. Emission Unit #TU 4.004 and TU4.005 location North 4,423.270 km, East 616.89 km, UTM NAD83 (Zone 11)

3. Compliance Testing, Monitoring, Recordkeeping, Reporting and Performance Testing

a. Compliance Testing (NAC 445B.3379.3)
Within 180 days of the notification of the implementation of NvMACT for **TU4.004 and TU4.005** as required in Section I.Q., ***the Permittee*** shall conduct and record a performance test for mercury on the exhaust stack of **TU4.004 and TU4.005** consisting of three valid runs utilizing US EPA Method 29 of 40 CFR Part 60 Appendix A.

b. Monitoring (NAC 445B.3379.3)
The Permittee shall:
i. Prior to the implementation of NvMACT install, calibrate and maintain instrumentation to measure the following:
(a) The flow of pregnant strip solution through **TU4.004** in gallons per minute.
(b) The flow of barren strip solution through **TU4.005** in gallons per minute.
(c) The differential pressure of **CA-004** in inches water column.
ii. Monitor the flow of pregnant strip solution through **TU4.004** once per day during operations.
iii. Monitor the flow of barren strip solution through **TU4.005** once per day during operations.
iv. Monitor the differential pressure of **CA-004** once per day during operations.
v. Monitor **CA-004** for percentage of mercury by weight quarterly until reaching 50% of the carbon loading capacity of 20%, and then monthly until reaching 90% percent of the carbon loading capacity of 20%.

c. Recordkeeping (NAC 445B.3379.3)
The required monitoring established in Section D.3.b.i. through Section D.3.b.v. shall be maintained on site in a contemporaneous log containing, at a minimum, the following recordkeeping:
i. The calendar date of any required monitoring.
ii. The pregnant and barren strip solution throughput rates in gallons per minute for **TU4.004 and TU4.005** each for the corresponding date.
iii. The total hours of operation for **TU4.004 and TU4.005** each for the corresponding date.
iv. The results of the inspections for solution leakage and corrosion of **TU4.005** for the corresponding date.
v. The differential pressure of **CA-004** in inches water column for the corresponding date.
vi. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-004** from the corresponding analyses.
vii. The date, time and weight of each sulfur-impregnated carbon replacement for **CA-004** for the corresponding date.

d. Reporting (NAC 445B.3679.3(e)
Permittee will promptly report to the Director any deviations from the requirements of this Operating Permit. The report to the director will include the probable cause of all deviations and any action taken to correct the deviations. For this Operating Permit, prompt is defined as submittal of a report within 15 days of the deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L of this permit.

e. Performance Testing (NAC 445B.3679.2(g))
i. Upon the notification date of the implementation of NvMACT pursuant to Section I.Q. above, ***the Permittee***, shall begin a performance demonstration period for the establishment of a mercury emissions limit for **TU4.004 and TU4.005**, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NvMACT mercury emission limit for **TU4.004 and TU4.005**.
ii. ***The Permittee*** shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NvMACT mercury emission limit for **TU4.004 and TU4.005**.
iii. ***The Permittee*** shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.

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Section II. Specific Operating Conditions (continued)

D. Emission Unit #TU 4.004 and TU4.005 location North 4,423.270 km, East 616.89 km, UTM NAD83 (Zone 11)

iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to ***the Permittee*** with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.

v. The final NvMACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.

vi. The final NvMACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.

vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.

********** End of Specific Operating Conditions **********

Facility ID No. A0393 Permit No. AP1041-2246

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Barrick, Bald Mountain Mine

Section III. Amendments

This permit:

1. **Is non-transferable. (NAC 445B.287.3)**
2. **Will be posted conspicuously at or near the stationary source. (NAC 445B.318.5)**
3. **Any party aggrieved by the Department's decision to issue this permit may appeal to the State Environmental Commission (SEC) within ten days after the date of notice of the Department's action. (NRS 445B.340)**

Signature _____

Issued by: Rob Bamford
Supervisor, Permitting Branch
Bureau of Air Quality Planning

Phone: (775) 687-9330 Date: November 30, 2010

PAA