

BUREAU OF AIR POLLUTION CONTROL

901 South Stewart Street, Suite 4001 • Carson City, Nv 89701-5249
 phone: 775-687-9350 • www.ndep.nv.gov/bapc • fax: 775-687-6396

Facility ID No. A0406

Permit No. AP1041-2245

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE II

Issued to: Rawhide Mining, LLC (HEREINAFTER REFERRED TO AS *THE PERMITTEE*)

Mailing Address: P.O. BOX 2070; FALLON, NEVADA 89407

Physical Address: 55.0 MILES SOUTHEAST OF FALLON, NEVADA ON HIGHWAY 839

General Facility Location: SECTIONS 4, 5, 8, 9, 16 AND 17 OF T13N, R32E, MDB&M
 (HA 122, GABBS VALLEY BASIN) (MINERAL COUNTY)
 NORTH 4,318,080 M, EAST 380,011 M, UTM ZONE 11 (NAD 83)

Emission Unit List: (4 Emission Units)

A. System 01 –Carbon Regeneration Kiln (System 1 in Air Quality Operating Permit AP1041-1116.02)

TU	4.001	Carbon Regeneration Kiln (S2.001)
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B. System 02 – Electrowinning Circuit (Insignificant Activity in Air Quality Operating Permit AP1041-1116.02)

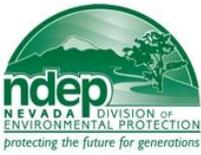
TU	4.002	Electrowinning Cell (IA3.007)
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C. System 03 – Refinery Induction Furnace (System 4 in Air Quality Operating Permit AP1041-1116.02)

TU	4.003	Refinery induction Furnace (S2.004)
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D. System 04 – Mercury Retort (System 2 in Air Quality Operating Permit AP1041-1116.02)

TU	4.004	Mercury Retort (S2.002)
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Issued to: Rawhide Mining, LLC

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.

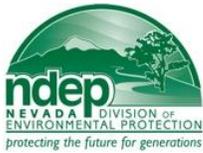
G. Information Request from Director. NAC 445B.3679.2(g)

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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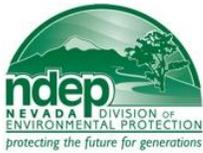
Permit No. AP1041-2245

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE II

Issued to: Rawhide Mining, LLC

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.



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Section I. General Conditions (continued)

M. Construction Requirements. NAC 445B.250

1. Early Reduction Credit (ERC), New, or Modified Thermal Units

The *Permittee* shall provide the Director written notification of:

- 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.
- 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.
- The actual date of initial startup of an affected facility, postmarked within 15 days after such date.

N. Annual Testing. NAC 445B.3679.3

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

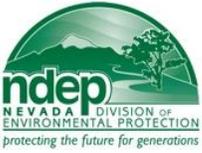
- Conduct and record a Method 29 (or alternative test method approved by the Director) compliance test for mercury on the exhaust stack of **Systems 1 through 4** consisting of three valid runs. Each of the three test runs must collect a sample volume of 1.7 dry standard cubic meters (60 dscf) or be conducted for up to two hours in an effort to collect this sample volume (NAC 445B.3679.3).
- Simultaneously, during the Method 29 (or alternative test method approved by the Director) compliance tests, conduct and record a material assay from **Systems 1 through 4**. One representative sample shall be taken during 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).
- 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).
- 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).
- 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. 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.

P. Expiration and Extension. NAC 445B.3687

- 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.
- 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.



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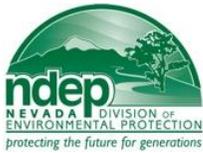
Section I. General Conditions (continued)

Q. Nevada Mercury Control Program Implementation Requirements

1. The NvMACT for **TU4.001 through TU4.004 each** must be implemented not later than 24 months after the issuance of this mercury operating permit to construct (NAC 445B.3679.3(a)(2)(I)).
 - a. The issuance date for **TU4.001 through TU4.004** is **month day year**.
2. The Permittee shall provide the Director written notification of:
 - a. The date of implementation of NvMACT for **TU4.001 through TU4.004**, each pursuant to NAC 445B.3679.3(a)(2)(i) postmarked within 15 days after such date. (NAC 445B.3679.2(g))

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

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Section II. Specific Operating Conditions

A. Emission Units #TU4.001 location North 4,317,933 m, East 379,808 m, UTM (Zone 11)

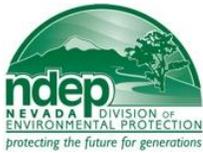
System 01 – Carbon Regeneration Kiln	
TU.001	Carbon Regeneration Kiln Manufactured by Summit Valley Equipment & Engineering, Model #1T1817E1B, Serial #1T1817E1B

1. Air Pollution Equipment

- a. Exhaust gases from **TU4.001** shall be ducted to a control system with 100% capture consisting of:
 - i. **Chilled Mercury Condenser (CO-001)** (*Summit Valley*)
 - ii. **Sulfur Impregnated Carbon Filter (CF-001)** (*Summit Valley*)
- b. Stack parameters
 - i. Height: 24.5 ft.
 - ii. Diameter: 0.33 ft.
 - iii. Stack temperature: approximately 60°F
 - iv. The maximum exhaust flow rate from **TU4.001** shall be approximately 120 dry standard cubic feet per minute (dscfm).
 - v. Exhaust gases from **TU4.001** are ducted to a single stack.

2. Operating Requirements

- a. Limitations of Operation NAC 445B.3679.3
 - i. The maximum allowable throughput for **TU4.001** will not exceed **0.042** ton of stripped carbon per any one-hour period, nor more than **368** tons per year.
 - ii. Mercury emissions from **TU4.001** shall not exceed **1.0 x 10⁻⁴** grains per dry standard cubic foot (gr/dscf).
 - iii. **TU4.001** may operate a total of **8,760** hours per calendar year.
- b. Work Practices Standards. NAC 445B.3679.3
 - i. Inspect the drum lining of **TU4.001** for cracks twice per calendar year.
 - ii. **CO-001** will be inspected weekly to insure free flow of water through cooling jacket and air flow through condenser baffles.
 - iii. The water flow rate to **CO-001** shall be maintained at or above 20 gallons per minute.
 - iv. The inlet water temperature for **CO-001** shall be maintained at or below 70°F.
 - v. **CO-001** will be drained weekly of mercury.
 - vi. **CF-001** shall contain no less than 780 pounds of sulfur impregnated carbon.
 - vii. The pressure drop across **CF-001** shall be maintained between 0.1 to 2.0 inches of water.
 - viii. Replace the sulfur-impregnated carbon in **CF-001**, according to the following schedule:
 Conduct an initial sampling of the sulfur-impregnated carbon every calendar quarter. A representative sample shall be taken and analyzed. The depth of the sample location shall be recorded. Using this sample the percentage of mercury by weight shall be calculated. Sampling will continue quarterly, at the same sample depth location, until reaching 50% of the carbon loading capacity of 20% by weight. Upon reaching 50% by weight of the carbon loading capacity of 20% by weight, sampling of the carbon will continue monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 - (a) EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - (b) EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - (c) An alternative test method as approved in advance by the Director.
 - ix. Any sulfur impregnated carbon replace in **CF-001** shall be replaced with only the original manufacturer’s design specification sulfur impregnated carbon, or an equivalent or better performing sulfur impregnated carbon.
 - x. The original manufacturer’s design specifications for the sulfur impregnated carbon used in **CF-001** shall be kept on site.



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Section II. Specific Operating Conditions (continued)

A. Emission Units #TU4.001 location North 4,317,933 m, East 379,808 m, UTM (Zone 11)

3. Testing, Monitoring, Recordkeeping, and Reporting (NAC 445B.3379.3)

a. Compliance Testing

Within 180 days of the implementation of NvMACT for TU 4.001 as required in Section I.Q, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of TU 4.001 consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.

b. Monitoring

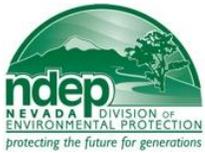
The *Permittee* shall:

- i. Prior to implementation of NvMACT for TU4.001, install, operate, calibrate, and maintain instrumentation to measure the following:
 - (a) The water flow rate to CO-001, in gallons per minute.
 - (b) The inlet water temperature of CO-001, in degrees Fahrenheit.
 - (c) The pressure drop across CF-001, in inches of water.
- ii. Monitor the throughput rate of stripped carbon for TU4.001 on a daily basis
- iii. Monitor the hours of operation for TU4.001 on a daily basis.
- iv. Monitor the water flow rate to CO-001, once per day during operation.
- v. Monitor the inlet water temperature of CO-001, once per day during operation
- vi. Monitor the amount of mercury drained from CO-001 weekly.
- vii. Monitor the pressure drop across CF-001, once per day during operation.
- viii. Monitor CF-001 for percentage of mercury by weight, quarterly until reaching 50 percent capacity and then monthly until reaching 90 percent capacity.

c. Recordkeeping

The required monitoring, established in Section A.3.b.i through viii, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total daily throughput rate of stripped carbon in tons, for the corresponding date.
- iii. The total daily hours of operation for the corresponding date.
- iv. The corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate will be determined from the total daily throughput rate and the total daily hours of operation recorded in Section A.3.b.ii and Section A.3.b.iii above.
- v. The results and corresponding dates of the twice a calendar year inspection of the drum of TU4.001.
- vi. The results and corresponding date of the weekly water and air flow inspection of CO-001.
- vii. The water flow rate in gallons per minute to CO-001, once per day, during operation, for the corresponding date
- viii. The inlet water temperature in degrees Fahrenheit for CO-001, once per day, during operation, for the corresponding date.
- ix. The amount of mercury drained in pounds from CO-001, weekly, for the corresponding date.
- x. The pressure drop in inches of water across CF-001, once per day, during operation, for the corresponding date.
- xi. The percentage of mercury by weight in CF-001, for the corresponding date.
- xii. The depth of the sample location, for the corresponding date.
- xiii. The date, time, and weight of each replacement of the sulfur-impregnated carbon in CF-001.



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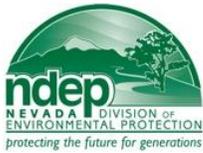
Section II. Specific Operating Conditions (continued)

A. Emission Units #TU4.001 location North 4,317,933 m, East 379,808 m, UTM (Zone 11)

d. Reporting (NAC 445B.3679.3(e))

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct 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.

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE II

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Section II. Specific Operating Conditions (continued)

B. Emission Units #TU4.002 location North 4,317,943 m, East 379,804 m, UTM (Zone 11)

System 02 – Electrowinning Circuit

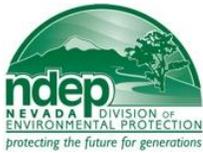
TU 4.002 Electrowinning Cell; Manufactured by Summit Valley

1. Air Pollution Equipment

- a. Exhaust gases from **TU4.002** shall be ducted to a control system with 100% capture consisting of:
 - i. **Chilled Mercury Condenser (CO-002)**, manufactured by Summit Valley.
 - ii. **Sulfur Impregnated Carbon Filter (CF-002)**, manufactured by Summit Valley.
- b. Stack parameters
 - i. Height: 21.0 ft.
 - ii. Diameter: 0.63 x 0.66 feet (rectangular stack).
 - iii. Stack temperature: approximately 66° F
 - iv. Exhaust gases from **TU4.002** shall have a maximum volume flow rate of approximately 640 dry standard cubic feet per minute (dscfm).
 - v. Exhaust gases from **TU4.002** are ducted to a single stack.

2. Operating Requirements

- a. Limitations of Operation. NAC 445B.3679.3
 - i. The maximum allowable throughput for **TU4.002** will not exceed **45** gallons per minute of **precious metal bearing solutions**.
 - ii. Mercury emissions from **TU4.002** shall not exceed **5.0 x 10⁻⁵** grains per dry standard cubic foot (gr/dscf).
 - iii. **TU4.002** may operate a total of **8,760** hours per calendar year.
- b. Work Practices NAC 445B.3679.3
 - i. Covers on the electrowinning cells shall be kept closed during operation.
 - ii. **CO-002** will be inspected weekly to insure free flow of water through cooling jacket and air flow through condenser baffles.
 - iii. **CO-002** will be drained weekly of mercury.
 - iv. **CF-002** shall contain no less than 1,380 pounds of sulfur-impregnated carbon.
 - v. The pressure differential across **CF-002** shall be maintained at or above 0.1 inches of water
 - vi. Replace the sulfur-impregnated carbon in **CF-002** according to the following schedule:
 Conduct an initial sampling of the sulfur-impregnated carbon 90 days after replacement of the carbon. The sampling will include one composite sample collected horizontally approximately three quarters up from the base of the carbon bed. Based upon sample results, a carbon loading will be calculated. Sampling will commence quarterly thereafter. When carbon loading reaches 50% of the carbon loading capacity of 20% by weight, as specified by the manufacturer, monthly sampling will commence until 90% of the carbon loading capacity of 20% by weight is reached. The carbon will be replaced with an equivalent performing sulfur impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 - (a) EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - (b) EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - (c) An alternative test method as approved by the Director.
 - vii. Any sulfur impregnated carbon replaced in **CF-002** shall be replaced with only the original manufacturer’s design specification sulfur impregnated carbon, or an equivalent or better performing sulfur impregnated carbon.
 - viii. The original manufacturer’s design specifications for the sulfur impregnated carbon used in **CF-002** shall be kept on site.



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Section II. Specific Operating Conditions (continued)

B. Emission Units #TU4.002 (continued)

3. Monitoring, Recordkeeping, and Reporting (NAC 445B.3379.3)

a. Compliance Testing

Within 180 days of the implementation of NvMACT for TU 4.002 as required in Section I.Q, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of TU 4.002 consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.

b. Monitoring

The *Permittee* shall:

- i. Prior to implementation of NvMACT for TU4.002, install, operate, calibrate, and maintain instrumentation to measure the following:
 - (a) The throughput of TU4.002, in gallons per minute.
 - (b) The pressure drop across CF-002, in inches of water.
- ii. Monitor the daily throughput of **Precious Metal Bearing Solution**, in gallons per minute, once per day, for each day of operation.
- iii. Monitor the hours of operation during each day of operation.
- iv. Monitor the mercury drained from CO-002, weekly.
- v. Monitor the pressure drop across CF-002, once per day, during operation.
- vi. Monitor CF-002 for percentage of mercury by weight, quarterly until reaching 50 percent capacity and then monthly until reaching 90 percent capacity.

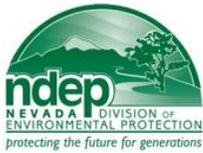
c. Recordkeeping

The required monitoring, established in Section B.3.b.i through vi, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The throughput of **Precious Metal Bearing Solution**, in gallons per minute, for the corresponding date.
- iii. The total daily operating hours, for the corresponding date.
- iv. The results and corresponding date of the weekly water and air flow inspection of CO-002.
- v. The amount of mercury collected from CO-002, in pounds, weekly, for the corresponding date.
- vi. The pressure drop in inches of water across CF-002 once per shift, during operation, for the corresponding date.
- vii. The percentage of mercury by weight in the sulfur-impregnated carbon, for the corresponding date.
- viii. The depth of the sample location, for the corresponding date.
- ix. The date, time, and weight of each replacement of the sulfur-impregnated carbon bed.

d. Reporting (NAC 445B.3679.3(e))

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct 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.



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Section II. Specific Operating Conditions (continued)

C. Emission Units #TU 4.003 location North 4,317,956 m, East 379,850m, UTM (Zone 11)

System 03 – Refinery Induction Furnace

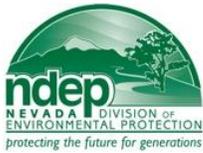
TU	4.003	Refinery Induction Furnace; Manufactured by Custom Equipment
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1. Air Pollution Equipment

- a. Exhaust gases from **TU4.003** shall be ducted to a control system with 100% capture consisting of:
 - i. **Chilled Condenser (CO-004)**
 - ii. **Sulfur Impregnated Carbon Filter (CF-004)**
 - iii. **Baghouse (BH-001)**
- b. Stack parameters
 - i. Height: 30.5 ft.
 - ii. Diameter: 2.0 ft.
 - iii. Stack temperature: approximately 60° F
 - iv. The maximum exhaust flow rate from **TU4.003** shall be approximately 13,000 dry standard cubic feet per minute (dscfm).
 - v. Exhaust gases from **TU4.003** are ducted to a single stack.

2. Operating Requirements

- a. Limitations of Operation. NAC 445B.3679.3
 - i. The maximum allowable throughput for **TU4.003** will not exceed **0.5 ton of precious metal concentrate**, per batch, nor more than **260 tons** per calendar year.
 - ii. Mercury emissions from **TU4.003** shall not exceed **1.0 x 10⁻⁵ grains** per dry standard cubic foot (gr/dscf).
 - iii. **TU4.003** will not operate in excess of **1,000 hours** per calendar year.
- b. Work Practices. NAC 445B.3679.3
 - i. Only **Precious Metal Concentrate** that has been retorted shall be fed into **TU 4.003**.
 - ii. Bags in **BH-001** will be inspected monthly for holes, particulate build-up, and tears.
 - iii. The pressure differential across **BH-001** shall be maintained between 0.5 and 2 inches of water.
 - iv. **CO-004** will be drained weekly of mercury.
 - v. The inlet water temperature of **CO-004** shall be maintained at or below 60°F.
 - vi. **CF-004** shall contain no less than 1,500 pounds of sulfur-impregnated carbon.
 - vii. The pressure differential across **CF-004** shall be maintained at or above 0.5 inches of water.
 - viii. Replace the sulfur-impregnated carbon according to the following schedule:
 Conduct an initial sampling of the sulfur-impregnated carbon 90 days after replacement of the carbon. The sampling will include one composite sample collected horizontally approximately three quarters up from the base of the carbon bed. Based upon sample results, a carbon loading will be calculated. Sampling will commence quarterly thereafter. When carbon loading reaches 50% of the 20% by weight of the carbon loading capacity, as specified by the manufacturer, monthly sampling will commence until 90% of the 20% by weight of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur impregnated carbon no later than 30 days after reaching 90% of the 20% by weight of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 - (a) EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - (b) EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - (c) An alternative test method as approved by the Director.
 - ix. Any sulfur impregnated carbon replace in **CF-004** shall be replaced with only the original manufacturer’s design specification sulfur impregnated carbon, or an equivalent or better performing sulfur impregnated carbon.



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE II

Issued to: Rawhide Mining, LLC

Section II. Specific Operating Conditions (continued)

C. Thermal Unit #TU 4.003 (continued)

3. Monitoring, Recordkeeping, and Reporting (NAC 445B.3379.3)

a. Compliance Testing

Within 180 days of the implementation of NvMACT for TU 4.003 as required in Section I.Q, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of TU 4.003 consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.

b. Monitoring

The *Permittee* shall:

- i. Prior to implementation of NvMACT for TU4.003, install, operate, calibrate, and maintain instrumentation to measure the following:
 - (a) The pressure drop across BH-001, in inches of water.
 - (b) The inlet water temperature of CO-004, in degrees Fahrenheit.
 - (c) The pressure drop across CF-004, in inches of water.
- ii. Monitor the batch weight of **Retorted Precious Metal Concentrate** for TU4.003, in tons, for each batch.
- iii. Monitor the hours of operation during each day of operation, for each batch.
- iv. Monitor the pressure drop across BH-001 once per batch during operation.
- v. Monitor the mercury drained from CO-004 weekly.
- vi. Monitor the inlet water temperature of CO-004 once per batch during operation.
- vii. Monitor the pressure drop across CF-004 once per batch during operation.
- viii. Monitor CF-004 for percentage of mercury by weight, quarterly until reaching 50 percent capacity and then monthly until reaching 90 percent capacity.

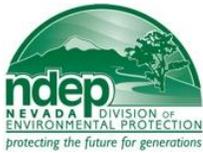
c. Recordkeeping

The required monitoring, established in Section C.3.b.i through viii, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total daily batch weight of **Retorted Precious Metal Concentrate** per batch, in tons, for the corresponding date.
- iii. The total daily operating hours, per batch, for the corresponding date.
- iv. The pressure drop in inches of water across BH-001, once per batch, during operation for the corresponding date.
- v. The corresponding date of the monthly inspection and the status of the bags in BH-001.
- vi. The amount of mercury collected from CO-004, in pounds, weekly, for the corresponding date.
- vii. The inlet water temperature in degrees Fahrenheit of CO-004, once per batch, during operation, for the corresponding date.
- viii. The pressure drop in inches of water across CF-004 once per batch, during operation, for the corresponding date.
- ix. The percentage of mercury by weight in the sulfur-impregnated carbon, for the corresponding date.
- x. The depth of the sample location, for the corresponding date.
- xi. The date, time, and weight of each replacement of the sulfur-impregnated carbon bed.
- xii. The original manufacturer's design specifications for the sulfur impregnated carbon used in CF-004 shall be kept on site.

d. Reporting (NAC 445B.3679.3(e))

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct 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.



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Section II. Specific Operating Conditions (continued)

D. Emission Units #TU4.004 location North 4,317,938 m, East 379,852 m, UTM (Zone 11)

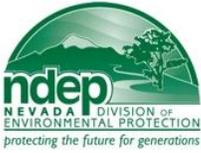
System 04 – Mercury Retort		
TU	4.004	Retort; Model #1000, Serial # 89-709

1. Air Pollution Equipment

- a. Emissions from TU4.004 shall be ducted to a control system with 100% capture consisting of:
 - i. Chilled Triple Mercury Condensers (CO-003)
 - ii. Primary Sulfur Impregnated Carbon Filter (CF-003)
 - iii. Secondary Sulfur Impregnated Carbon Filter (CF-005)
- b. Stack parameters
 - i. Height: 12.0 ft.
 - ii. Diameter: 0.33 ft.
 - iii. Stack temperature approximately 80° F
 - iv. Flow: maximum volume flow rate of 31 dry standard cubic feet per minute (dscfm).
 - v. Units TU4.004 is ducted to its own exhaust stack

2. Operating Requirements

- a. Limitations of Operation. NAC 445B.3679.3
 - i. The maximum allowable throughput for TU4.004 will not exceed 0.75 ton of precious metal material per batch and not to exceed 274 tons per year. Precious metal material shall be defined as:
 - (a) Precipitate recovered from the Merrill Crowe and electrowinning processes;
 - (b) Precipitate recovered from the wash down of equipment or surfaces that have been in contact with precious metal concentrate, and
 - (c) Carbon fines from the carbon kiln.
 - ii. Mercury emissions from TU4.004 shall not exceed 1.0 x 10⁻⁴ grains per dry standard cubic foot (gr/dscf).
 - iii. TU4.004 may operate a total of 8,760 hours per calendar year.
- b. Work Practices NAC 445B.3679.3
 - i. During heating TU4.004 shall be placed under negative gauge pressure between 0.5 and 10 inches of water.
 - ii. CO-003 will be drained weekly of mercury.
 - iii. The inlet water temperature of CO-003 shall be maintained at or below 60°F.
 - iv. The Primary Carbon Filter shall contain no less than 1,150 pounds of sulfur-impregnated carbon.
 - v. The minimum exhaust gas temperature at the inlet of the Primary Carbon Filter for TU 4.004 be maintained at or below 75°F
 - vi. The pressure differential across the Primary Carbon Filter shall be maintained between 1 and 7 inches of water.
 - vii. The Secondary Carbon Filter shall contain no less than 2,300 pounds of sulfur-impregnated carbon.
 - viii. The pressure differential across the Secondary Carbon Filter shall be maintained between 1 and 7 inches of water.
 - ix. Replace the sulfur-impregnated carbon in the Primary and Secondary Carbon Filters according to the following schedule:
 Conduct an initial sampling of the sulfur-impregnated carbon 90 days after replacement of the carbon. The sampling will include one composite sample collected horizontally approximately three quarters up from the base of the carbon bed. Based upon sample results, a carbon loading will be calculated. Sampling will commence quarterly thereafter. When carbon loading reaches 50% of the 20% by weight of the carbon loading capacity, as specified by the manufacturer, monthly sampling will commence until 90% of the 20% by weight of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur impregnated carbon no later than 30 days after reaching 90% of the 20% by weight of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:



BUREAU OF AIR POLLUTION CONTROL

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Issued to: Rawhide Mining, LLC

Section II. Specific Operating Conditions (continued)

D. Emission Units #TU4.004 (continued)

- (a) EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - (b) EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - (c) An alternative test method as approved by the Director.
- x. Any sulfur impregnated carbon replaced in the **Primary and Secondary Carbon Filters** shall be replaced with only the original manufacturer's design specification sulfur impregnated carbon or an equivalent or better performing sulfur impregnated carbon.

3. Monitoring, Recordkeeping, and Testing (NAC 445B.3379.3)

a. Compliance Testing

Within 180 days of the implementation of NvMACT for TU 4.004 as required in Section I.Q, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of TU 4.004 consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.

b. Monitoring

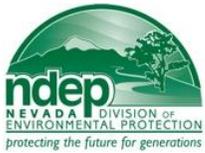
The *Permittee* shall:

- i. Prior to implementation of NvMACT for TU4.004, install, operate, calibrate, and maintain instrumentation to measure the following:
 - (a) The gauge pressure on TU4.004, in inches of water.
 - (b) The inlet water temperature of CO-003, in degrees Fahrenheit.
 - (c) The exhaust gas temperature at the inlet of the **Primary Carbon Filter**, in degrees Fahrenheit.
 - (d) The pressure drop across the **Primary Carbon Filter**, in inches of water.
 - (e) The pressure drop across the **Secondary Carbon Filter**, in inches of water.
- ii. Monitor the daily batch weight of **Precious Metal Material**, in tons, for each batch.
- iii. Monitor the hours of operation during each day of operation, for each batch.
- iv. Monitor the gauge pressure on TU 4.004, once per batch during operation.
- v. Monitor the mercury drained from CO-003 weekly.
- vi. Monitor the inlet water temperature of CO-003, once per batch during operation.
- vii. Monitor the exhaust gas temperature at the inlet of the **Primary Carbon Filter**, once per batch during operation.
- viii. Monitor the pressure drop across the **Primary Carbon Filter**, once per batch during operation.
- ix. Monitor the pressure drop across the **Secondary Carbon Filter**, once per batch during operation.
- x. Monitor the **Primary and Secondary Carbon Filters** for percentage of mercury by weight, quarterly until reaching 50 percent capacity and then monthly until reaching 90 percent capacity.

c. Recordkeeping

The required monitoring, established in Section D.3.b.i through x, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total daily batch weight of **Precious Metal Material** per batch, in tons, for the corresponding date.
- iii. The total daily operating hours, per batch, for the corresponding date.
- iv. The gauge pressure in inches of water on TU 4.004, once per batch during operation, for the corresponding date.
- v. The amount of mercury collected from CO-003, in pounds, weekly, for the corresponding date.
- vi. The inlet water temperature in degrees Fahrenheit of CO-003 per batch, during operation, for the corresponding date.
- vii. The exhaust gas temperature in degrees Fahrenheit at the inlet of the **Primary Carbon Filter**, per batch, during operation, for the corresponding date.
- viii. The pressure drop in inches of water across the **Primary Carbon Filter** per batch, during operation, for the corresponding date.



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Section II. Specific Operating Conditions (continued)

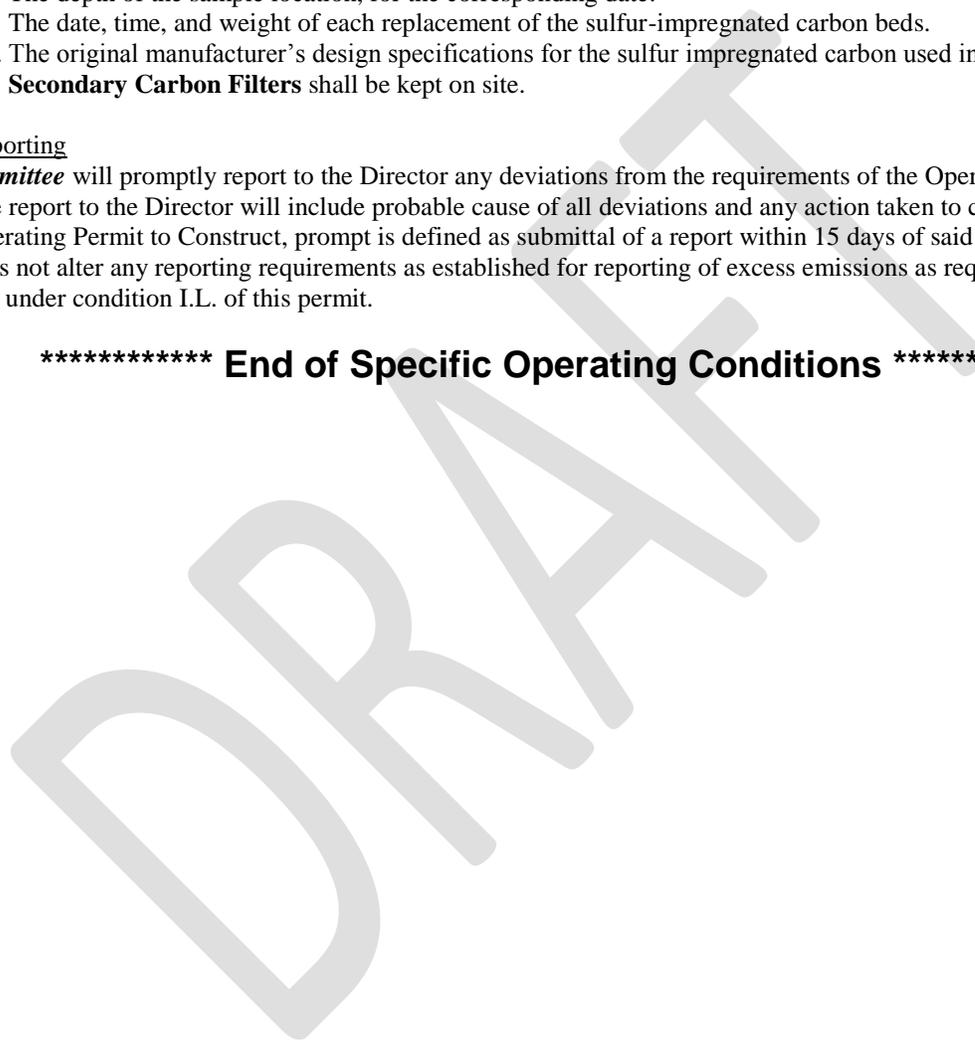
D. Emission Units #TU4.004 (continued)

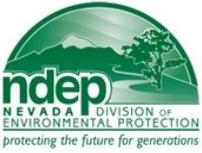
- ix. The pressure drop in inches of water across the **Secondary Carbon Filter** per batch, during operation, for the corresponding date.
- x. The percentage of mercury by weight in the sulfur-impregnated carbon from the **Primary and Secondary Carbon Filters**, for the corresponding date.
- xi. The depth of the sample location, for the corresponding date.
- xii. The date, time, and weight of each replacement of the sulfur-impregnated carbon beds.
- xiii. The original manufacturer’s design specifications for the sulfur impregnated carbon used in **the Primary and Secondary Carbon Filters** shall be kept on site.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct 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.

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





BUREAU OF AIR POLLUTION CONTROL

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE II

Issued to: Rawhide Mining, LLC

Section III. Amendments

DRAFT

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 Pollution Control

Phone: (775) 687-9330 Date: _____