



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Ground Water Quality Bureau
1190 South St. Francis Drive (87505)
P.O. Box 5469, Santa Fe, New Mexico 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965
www.env.nm.gov



BUTCH TONGATE
Cabinet Secretary

BRUCE YURDIN
Acting Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

December 21, 2018

Jeff Smith, Chief Operating Officer
New Mexico Copper Corporation
4253 Montgomery Blvd. NE, Suite 130
Albuquerque, NM 87109

RE: Discharge Permit, DP-1840, Copper Flat Mine

Dear Mr. Smith:

The New Mexico Environment Department (NMED) issues the enclosed Discharge Permit, Discharge Permit 1840 (DP-1840) to the New Mexico Copper Corporation (permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 and 20.6.7 NMAC.

The Discharge Permit contains terms and conditions that shall be complied with by the permittee and are enforceable by NMED pursuant to WQCC 20.6.2.3104, WQA, NMSA 1978 §74-6-5 and §74-6-10. Issuance of this Discharge Permit does not relieve the permittee of its responsibility to comply with the WQA, WQCC Regulations, or any other applicable federal, state and/or local laws and regulations, such as zoning requirements and nuisance ordinances.

Pursuant to the WQA 74-6-5(I) and Subsection H of 20.6.2.3109 NMAC, the term of this Discharge Permit is seven years from the effective date (December 21, 2018) or five years from the date the discharge commences. To renew this Discharge Permit, the permittee shall submit an application and associated fees for renewal (or renewal and modification) at least 270 days prior to the expiration date of this Discharge Permit in accordance with Section 20.6.7.9, Section 20.6.7.10, and Section 20.6.7.11 NMAC.

In accordance with Subsection A of 20.6.7.9 NMAC, an invoice for the annual Discharge Permit fee is being sent under separate cover. The initial Discharge Permit fee is due on or before August 1, 2019; the annual permit fee shall continue to be remitted on August 1 of each year until termination of all discharge permits related to the Copper Flat Mine facility.

If you have any questions, please contact Brad Reid of the Mining Environmental Compliance Section (MECS) at (505) 827-2963. Thank you for your cooperation during this Discharge Permit review.

Sincerely,



Butch Tongate, Cabinet Secretary
New Mexico Environment Department

Enclosure: Discharge Permit, DP-1840
Ground Water Discharge Permit Monitoring Well Construction and Abandonment
Conditions, Revision 1.1, March 2011

Cc: Jeff Smith, Chief Operating Officer, NMCC (signed copy:
jsmith@themacresourcesgroup.com)
Katie Emmer, Permitting & Environmental Compliance Manager, NMCC (signed copy:
kemmer@themacresourcesgroup.com)
Andrew Knight, Assistant General Counsel, NMED (signed copy:
andrew.knight@state.nm.us)
Kurt Vollbrecht, Program Manager, MECS (signed copy:
kurt.vollbrecht@state.nm.us)
Juan Velasquez, NMCC permitting consultant (signed copy:
jvelasquez@vemsinc.com)
Holland Shepherd, Program Manager, MMD (signed copy:
holland.shepherd@state.nm.us)
David Ennis, MMD (signed copy: david.ennis@state.nm.us)
Charlie de Saillan, Environmental Law Center (signed copy: cdesaillan@nmelc.org)
Samantha Barncastle, Barncastle Law Firm, LLC (signed copy: samantha@h2o-
legal.com)



**NEW MEXICO
ENVIRONMENT DEPARTMENT**



SUSANA MARTINEZ
Governor

Ground Water Quality Bureau
1190 South St. Francis Drive (87505)
P.O. Box 5469, Santa Fe, New Mexico 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965

BUTCH TONGATE
Cabinet Secretary

JOHN A. SANCHEZ
Lieutenant Governor

www.env.nm.gov

BRUCE YURDIN
Acting Deputy Secretary

**GROUND WATER QUALITY BUREAU (GWQB)
DISCHARGE PERMIT
NEW COPPER MINE FACILITY
Issued under 20.6.2 and 20.6.7 NMAC**

Return Receipt Requested

Certified Mail Receipt Number: 7017 3040 0000 4183 6352

Mine Facility Name: Copper Flat Mine
GWQB Discharge Permit Number: DP-1840
GWQB TEMPO AI Number: 1535

Permittee Name/Responsible Party: New Mexico Copper Corporation
Mailing Address: 4253 Montgomery Blvd. NE, Suite 130
Albuquerque, NM 87109

Mine Facility Contact: Jeff Smith; (505) 382-5770
Mine Facility Location: 85 Copper Rock Road
Hillsboro, NM 88042

County: Sierra County

Permitting Action: New
Effective Date: December 21, 2018
Expiration Date: December 21, 2023 (see A102.A for additional details)

NMED Permit Contact: Brad Reid; (505) 827-2963
E-mail Address: brad.reid@state.nm.us

Butch Tongate

Butch Tongate
Cabinet Secretary
New Mexico Environment Department

12-20-18
Date

This page intentionally left blank.

TABLE OF CONTENTS

Part A GENERAL INFORMATION 1

 A100 Introduction..... 1

 A101 Applicable Regulations 1

 A102 Permit Duration..... 2

 A103 Terms of Permit Issuance..... 2

Part B FACILITY SPECIFIC INFORMATION 3

 B100 History and Facility Description 3

 B101 Permitting History..... 4

 B102 Facility Location, Ground Water and Process Water Characteristics 4

 B103 Authorized Mine Units 5

 B104 Authorized Discharges 13

Part C FACILITY SPECIFIC REQUIREMENTS 14

 C100 Practice of Engineering..... 14

 C101 Construction Schedule and Progress Reports..... 14

 C102 Copper Flat Open Pit 15

 C103 Waste Rock Stockpiles 15

 C104 Impoundments 16

 C105 Copper Crushing, Milling, Concentrator, and Tailings Storage Facility Units 16

 C106 Sumps, Tanks, Pipelines and Other Containment Systems 17

 C107 Stormwater Management 18

 C108 Sitewide Water Management Plan 18

 C109 Truck and Equipment Washing Units 18

 C110 Dust Suppression 19

 C111 Domestic Wastewater Treatment Facility 19

 C112 Flow Measurement..... 19

 C113 Monitoring and Reporting..... 19

 C114 Contingency Plan 24

 C115 Closure Plan 25

 C116 Abatement Plan..... 26

 C117 Financial Assurance 28

Part D GENERAL CONDITIONS 28

 D100 Enforcement..... 28

 D101 General Inspection and Entry Requirements..... 29

 D102 General Engineering, Operational and Setback Requirements 29

 D103 General Record Keeping and Reporting Requirements 29

 D104 General Sampling and Analytical Methods 30

 D105 Monitoring Well Abandonment 30

 D106 Reporting Requirements for Unauthorized Discharges..... 31

 D107 Modifications and Amendments 31

 D108 Compliance with Other Laws 32

LIST OF TABLES AND FIGURES

Table 1 – Copper Flat Development Sequence and Schedule 33

Table 2 – Monitoring and Reporting Summary for DP-1840 34

Figure 1 – Authorized Mine Unit Footprints 37

Figure 2 – Ground and Surface Water Sampling Locations 38

Figure 3 – Flow Meter and Process Water Sampling Locations 39

Part A GENERAL INFORMATION

A100 Introduction

- A. The New Mexico Environment Department (NMED) issues this Ground Water Discharge Permit, DP-1840 (Discharge Permit) to the New Mexico Copper Corporation (permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 and 20.6.7 NMAC. NMED is issuing this Discharge Permit to control the discharge of water contaminants from the Copper Flat Mine facility for the protection of ground water and those segments of surface water gaining from ground water inflow, for present and potential future use as domestic and agricultural water supply and other uses, and to protect public health.
- B. Pursuant to this Discharge Permit, the permittee is authorized to discharge a maximum of 25,264,000 gallons per day (gpd) of tailings slurry which includes mine tailings, process water, impacted stormwater, and domestic wastewater to a lined tailing impoundment. In addition, this Discharge Permit regulates discharges from other mine units including waste rock stockpiles, ore stockpiles, mineral processing units, process water impoundments, an open pit, sumps, tanks, pipelines, and other areas within the permit area. The discharge may move directly or indirectly into ground water of the State of New Mexico which has an existing concentration of 10,000 milligrams per liter (mg/L) or less of total dissolved solids (TDS) within the meaning of Section 20.6.2.3104 and Subsection A of 20.6.2.3101 NMAC. The discharge may contain water contaminants or toxic pollutants elevated above the standards of Section 20.6.2.3103 NMAC.
- C. The permittee is authorized to discharge water contaminants pursuant to this Discharge Permit which contains conditions authorized or specified by Part 20.6.7 NMAC (Copper Mine Rule) on condition that the permittee complies with the Copper Mine Rule and this Discharge Permit, which are enforceable by NMED.

A101 Applicable Regulations

- A. The permittee is discharging from a facility that meets the definition of a “new copper mine facility” as defined in Paragraph (39) of Section 20.6.7.7.B NMAC. Sections 20.6.2.3000 through 20.6.2.3114 NMAC and Part 20.6.7 NMAC apply to discharges specific to copper mine facilities and their operations.
- B. The discharges from the mine units regulated pursuant to this Discharge Permit are not subject to any of the exemptions of Section 20.6.2.3105 NMAC except as provided for in Subsection F of 20.6.2.3105 NMAC.

- C. Ground water quality as observed in monitoring wells required by C111.G and C114.C of this Discharge Permit is subject to the criteria of Sections 20.6.2.3101 and 20.6.2.3103 NMAC except as excluded pursuant to Subsection D of 20.6.7.24 NMAC.

A102 Permit Duration

- A. Pursuant to the WQA 74-6-5(I) and Subsection H of 20.6.2.3109 NMAC, the term of this Discharge Permit is seven years from the effective date (December 21, 2018) or five years from the date the discharge commences. In no event shall the term of DP-1840 exceed seven years from the effective date.
- B. If the permittee submits an application for renewal in accordance with Subsection F of 20.6.2.3106 NMAC, then the existing discharge permit shall not expire until the application for renewal has been approved or disapproved.

A103 Terms of Permit Issuance

- A. **Permit Fees** - The permittee shall remit an annual permit fee payment equal to the applicable permit fee, based on mine size as listed in Subsection A of 20.6.7.9 NMAC. The permit fee is due on August 1 of each year until termination of all discharge permits related to the Copper Flat Mine facility. [20.6.7.9.A NMAC]
- B. **Transfer of Discharge Permit** - Prior to the transfer of any ownership, control, or possession of this permitted facility or any portion thereof, the permittee shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a copy of this Discharge Permit with the notice. The permittee shall deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. [20.6.7.38 NMAC and 20.6.2.3111 NMAC]
- C. **Permit Renewal** - To renew this Discharge Permit, the permittee shall submit an application and associated fees for renewal at least 270 days prior to the expiration date of this Discharge Permit in accordance with Sections 20.6.7.9, 20.6.7.10, and 20.6.7.11 NMAC.
- D. **Additional Conditions** - In addition to the requirements of 20.6.7 NMAC, the permittee shall comply with the following additional conditions as authorized by Subsection I of 20.6.7.10 NMAC pursuant to WQA 74-6-5: Condition C100.A, Condition C100.B, Condition C101.B, Condition C101.C, Condition C103.F, Condition C110, Condition C113.B, Condition C113.E, Condition C114.E, Condition C115.H, Condition C115.I, Condition C116.B, Condition C116.C, Condition C116.D, Condition D105.A, Condition D105.B, Condition D106.A, Condition D106.B, Condition D107.D.

Part B FACILITY SPECIFIC INFORMATION

B100 History and Facility Description

- A. The Copper Flat Mine is an open pit copper mine facility owned by the New Mexico Copper Corporation situated within a mine permit area boundary of approximately 2,190 acres. The Copper Flat Mine will consist of an open pit, waste rock stockpiles, stormwater impoundments and collection systems, a Process Facility Area consisting of a concentrator and associated mineral processing units, a lined tailing impoundment, and associated infrastructure. The mine project will disturb approximately 1,290 acres of which approximately 910 acres were previously disturbed from historic mining operations at the site. The mine is regulated pursuant to this Discharge Permit and an abatement plan.
- B. The historic Copper Flat Mine operation included several waste rock stockpiles, an open pit, a tailings storage facility, mineral processing facilities, impoundments, and associated infrastructure. The mine was operated for commercial production in 1982 for approximately three and a half months. Approximately three million tons of overburden (i.e., open pit pre-stripping) and 1.2 million tons of ore were mined resulting in an open pit encompassing eighty acres of disturbance including a five-acre water body. The bottom level of the pit currently sits at 5,400 feet above mean sea level (amsl). No mining has occurred at the site since 1982.
- C. New Mexico Copper Corporation will construct and operate the Copper Flat Mine and concentrator using conventional copper and molybdenum sulfide flotation circuits and a gravity gold recovery circuit with a maximum throughput of 38,000 dry tons per day of ore, generating up to 25,264,000 gpd of tailings slurry. Over an estimated eleven-year operational period, the permittee intends to mine the copper-rich ore body and process approximately 125 million tons of ore at the Process Facility Area, and place 33 million tons of waste rock on three delineated waste rock stockpiles peripheral to the open pit.
- D. Ore mined from the Copper Flat Open Pit will be crushed, milled, and concentrated using conventional milling and concentration processes. The copper and molybdenum concentrates produced at the Process Facility Area will be packaged for off-site transport and additional processing. The tailings, a by-product from the flotation process, will be conveyed via a tailing pipeline to a cyclone classification plant (Cyclone Plant) and then discharged at the Tailings Storage Facility (TSF).
- E. A synthetically lined TSF will be constructed in the same location as the historic facility. Tailings slurry (i.e., process water and flotation tailings) containing, on average, approximately 29% solids by weight will be gravity conveyed from the Concentrator through a pipeline into the Cyclone Plant to separate the tailings into coarse and fine fractions. The coarse fraction tailings sand cyclone underflow will be deposited to construct the tailing dam and the fine fraction tailings slime cyclone overflow will be discharged to the interior of the TSF. The TSF will extend approximately 1,000 feet to the east of the former starter dam (the tailings expansion

- area). A centerline construction method using the cyclone-processed tailings sand for tailings dam construction will be utilized. A starter dam will be constructed using borrow material to provide initial storage capacity and to provide a location for initial discharge of tailings.
- F. Water collected inside the projected Open Pit Surface Drainage Area (OPSDA; as defined in Section 20.6.7.7 NMAC and displayed on Figure 2 attached to this Discharge Permit) at the open pit sump will be utilized for dust suppression during operations on haul roads, working areas, and waste rock stockpiles within the projected OPSDA. Water sources that do not exceed ground water quality standards set forth in Section 20.6.2.3103 NMAC will be used for dust suppression outside the projected OPSDA.
- G. The pit area will be dewatered to facilitate mining below the water table. The existing diversion structure will be maintained during operations to convey non-impacted stormwater flows generated in Grayback Arroyo and its tributaries around the perimeter of the open pit. Pit water will primarily be used for dust suppression or re-used in the process water circuit.
- H. After the cessation of mining, the pit will be rapidly re-filled with fresh water to the modeled static water table, forming a pit water body. Waste rock stockpiles, the TSF, and other impacted areas will be reclaimed and revegetated in accordance with the approved Closure/Closeout Plan, including placement of an engineered soil cover system where required.

B101 Permitting History

- A. The Discharge Plan for DP-1840 includes application materials submitted by the permittee to NMED dated December 11, 2015, Revision 1 of the Discharge Permit Application dated August 2017 (“Revised Application”), and materials contained in the DP-1840 administrative record prior to issuance of this Discharge Permit.

B102 Facility Location, Ground Water and Process Water Characteristics

- A. Copper Flat Mine is located at 85 Copper Rock Road approximately 5 miles NE of Hillsboro, in Sections 30 and 31, T15S, R6W, Sections 25, 26, 35, and 36, T15S, R7W, and Section 6, T16S, R6W, Sierra County.
- B. Ground water beneath the mine units regulated pursuant to DP-1840 is at a depth ranging from approximately 7 to 156 feet with a pre-discharge TDS concentration ranging from approximately 317 to 868 milligrams per liter.
- C. The Copper Flat Open Pit walls, the waste rock stockpiles, the TSF and other disturbed areas at the mine facility may contain sulfide minerals which, when oxidized, generate acidic solutions. These acidic solutions react with in situ minerals to produce acid rock drainage (ARD) that typically contains TDS, sulfate, and certain metals in concentrations that may exceed the water quality standards of Section 20.6.2.3103 NMAC.

- D. Process water and impacted stormwater discharges regulated pursuant to DP-1840, including ARD, are typically outside the acceptable range for pH and contain TDS, sulfate, and certain metals in concentrations that exceed the water quality standards of Section 20.6.2.3103 NMAC.

B103 Authorized Mine Units

The permittee is authorized to manage the discharge of water contaminants through operation of the following mine units pursuant to this Discharge Permit. This Discharge Permit contains requirements associated with the following mine units as identified in the Revised Application and the administrative record as of the effective date of this Discharge Permit. Mine units listed below meet the definition of “new” mine units pursuant to the Copper Mine Rule, unless otherwise noted, and will meet applicable Copper Mine Rule design and construction requirements.

A. Open Pit

1. The permitted open pit operational area will encompass approximately 161 acres at full build out and will reach an approximate base elevation of 4,650 amsl. The diameter of the open pit will be approximately 2,800 feet, and the open pit depth will reach approximately 850 to 900 feet below the original pre-mining surface. The existing diversion of Grayback Arroyo will route stormwater around the open pit during operations and at closure. Approximately thirty-nine acre-feet per year (24 gallons per minute, gpm) of ground water seepage and sixty-eight acre-feet per year (42 gpm) of stormwater entering the pit will be returned to the process water circuit or used for dust suppression using one or more pit dewatering sumps during operations.

B. Waste Rock Stockpiles

1. Waste Rock Stockpile 1 (WRSP-1) - WRSP-1 will be located inside the projected OPSDA northeast of the open pit and will have an estimated footprint of approximately 40 acres upon build out. Approximately 3.16 million tons of material will be stockpiled within the permitted footprint during the operational phase of the mine. Berms and drain ditches will be constructed around the waste rock stockpile to prevent run-on and to control run-off.
2. Waste Rock Stockpile 2 (WRSP-2) - WRSP-2 will be located outside the projected OPSDA east of the open pit and Animas Peak and will have an estimated footprint of approximately 49 acres upon build out. Approximately 8.64 million tons of material will be stockpiled within the permitted footprint during the operational phase of the mine. Berms and drain ditches will be constructed around the waste rock stockpile to prevent run-on and to control run-off.
3. Waste Rock Stockpile 3 (WRSP-3) - WRSP-3 will be located outside the projected OPSDA east of the open pit and Animas Peak and will have an estimated footprint of approximately 122 acres upon build out. Approximately 32.89 million tons of material will be stockpiled

- within the permitted footprint during the operational phase of the mine. Berms and drain ditches will be constructed around the waste rock stockpile to prevent run-on and to control run-off. An open channel stormwater conveyance structure will be cut into the underlying bedrock at the toe of the stockpile to collect seepage and impacted stormwater generated from WRSP-3.
4. Existing Waste Rock Stockpile 1 (EWRSP-1) - EWRSP-1, located inside the projected OPSDA, is an historic waste rock stockpile located at the western edge of the mine facility boundary and contains approximately 486,000 tons of waste rock. The current footprint of the stockpile is approximately 16 acres. This stockpile will be reclaimed during the mine start-up phase.
 5. Existing Waste Rock Stockpile 2A (EWRSP-2A) - EWRSP-2A is an historic waste rock stockpile located at the north side of the open pit. A portion of EWRSP-2A is located outside the projected OPSDA. This portion will be relocated onto the portion of EWRSP-2A that is inside the projected OPSDA during the mine start-up phase and prior to construction of WRSP-1. EWSRP-2A will be sequentially covered during the operational phase of the mine from construction of WRSP-1 (i.e., EWRSP-2A will become part of WRSP-1).
 6. Existing Waste Rock Stockpile 2B - EWRSP-2B, located inside the projected OPSDA, is an historic waste rock stockpile located at the north side of the open pit immediately west of the toe of EWRSP-2A. EWRSP-2B will be reclaimed during the mine start-up phase. The current combined footprint of EWRSP-2A and EWRSP-2B covers a footprint of 21 acres and contains approximately 760,050 tons of waste rock.
 7. Existing Waste Rock Stockpile 3 (EWRSP-3) - EWRSP-3, located outside the projected OPSDA, is an historic waste rock stockpile located north of the Concentrator in the ore processing area. It contains approximately 333,300 tons of waste rock and ore. The current footprint of the stockpile is approximately 20 acres. Ore from this stockpile will be processed during the start-up phase of the concentrator. In addition, EWRSP-3 will be used during mine operations to temporarily store ore during upset conditions (i.e., when the Primary Crusher is not working).
 8. Existing Waste Rock Stockpile 4 (EWRSP-4) - EWRSP-4, located inside the projected OPSDA, is an historic waste rock stockpile located southeast of the pit containing approximately 1,000,050 tons of waste rock. The current footprint of the stockpile is approximately 23 acres. The southern slopes of the stockpile facing Grayback Arroyo will be reclaimed during the mine start-up phase, and the top surface will be filled and graded to a 1% slope and used for an equipment laydown yard during operations. Stormwater generated from the top surface will discharge to the open pit.

C. Conditionally Exempt Facilities

1. **Growth Media Stockpiles** - Three growth media stockpiles will be constructed at the mine facility to store reclamation cover material. Growth Media Stockpile 1 will be constructed southwest of the TSF and will have an estimated footprint of approximately 30 acres upon build out. Growth Media Stockpile 2 will be constructed northeast of the TSF and will have an estimated footprint of approximately 32 acres upon build out. Growth Media Stockpile 3 will be constructed southeast of WRSP-3 and will have an estimated footprint of approximately 14 acres upon build out. These stockpiles are authorized for storage of reclamation cover material only, and the conditionally exempt status is premised on the permittee placing material that does not generate water contaminants on the Growth Media Stockpile.
2. **Mill Site Claims and Electrical Substation** - Nine total existing and/or proposed mill site claims and one electrical substation located off-site will contribute to the project. Each mill site claim is five acres in size and the electrical substation will be located on a thirty-acre parcel of land. The mill site claims will be utilized for other water-related infrastructure uses such as staging and storage areas for booster tanks, pumps and electrical equipment, maintenance, and monitoring. The mill site claims and electrical substation are authorized for use on condition that the permittee adheres to the approved material characterization and handling plan to ensure the conditionally exempt status as areas that do not generate water contaminants.

D. Copper Crushing, Milling, Concentrator, and Tailings Storage Facility

1. **Process Facility Area** - The Process Facility Area, located outside the projected OPSDA southeast of the open pit, is where crushing and grinding, milling, flotation, concentrating, drying and packaging of ore will occur. In addition, administration, parking and other ancillary support facilities (e.g., Assay Laboratory) will be located here. Impacted stormwater generated in the Process Facility Area will be directed to open channel conveyances that convey to Impacted Stormwater Impoundment A.
 - a. **Primary Crusher** - Ore from the open pit will be fed to the Primary Crusher for the first stage of crushing. Run-of-the-mine ore rock will be crushed to a size of eight-inch diameter and less. The gyratory crusher will be located below ground level on reinforced concrete with concrete sumps. The sumps will pump water for re-use in the ore processing circuit.
 - b. **Coarse Ore Stockpile** - The Coarse Ore Stockpile will be located between the Primary Crusher and the Concentrator in the Process Facility area. Crushed ore rock from the Primary Crusher will be temporarily stored at the Coarse Ore Stockpile until it is fed into the Reclaim Tunnel beneath the stockpile and onto a conveyor system which will transport ore to the Semi-Autogenous Grinding (SAG) Mill and grinding circuit. The

Coarse Ore Stockpile will have a capacity of 75,000 tons and will have a footprint of approximately 5 acres.

- c. Concentrator - The Concentrator is designed to process up to 38,000 tons per day. It will consist of several copper and molybdenum rougher/scavenger flotation cells, copper and molybdenum flotation and scavenger cells, concentrate tanks, thickeners, filters, a copper concentrate load-out area, a molybdenum packaging area, and associated infrastructure. The Concentrator is designed and will be constructed to prevent discharges from leaving the facility using concrete floors and numerous sumps, pumps, and concrete berms within the building.
 - d. Mill - The Mill is located inside the Concentrator building and will consist of one SAG Mill, one ball mill, a pebble crusher, and associated conveyance systems and separators.
2. Tailings Storage Facility (TSF) - The lined TSF will be located outside the projected OPSDA and built progressively out in a five-phase process. It is designed to accommodate the volume of tailings generated during the life of the mine. The liner will consist of an 80-mil high-density polyethylene (HDPE) liner (or equivalent material) placed on a twelve-inch thick liner bedding fill sub base. In Phase 1, the liner bedding fill will consist of a minimum of 12 inches of historic tailings recovered from the north cell of the old starter dam. After Phase 1, liner bedding fill will consist of a twelve-inch layer of crushed and screened native material or selected local soil. TSF drainage will be collected using an underdrain collection system that incorporates two underdrains that will convey solutions to the TSF Underdrain Collection Pond. Drainage from the TSF impoundment interior will be collected in a continuous underdrain system (impoundment underdrain) constructed over the geomembrane liner. A separate blanket drain system will underlie the tailings dam (dam underdrain). The impoundment underdrain system will be equipped with a shutoff valve at its inlet during the initial years of operation to ensure two feet of freeboard is maintained in the Underdrain Collection Pond. When the valve is closed, the TSF supernatant pool will be used for storage until the TSF underdrain collection pond is pumped down. The TSF pool, located in the interior of the TSF, will be equipped with four floating-barge pumps with a maximum design capacity of 12,978 gpm. The pumps will convey TSF supernatant process water to the Process Water Reservoir through the 36-inch diameter HDPE water reclaim process water pipeline for re-use as process water. Tailing slurry, which is gravity conveyed from the Concentrator, will pass through the Cyclone Plant prior to discharge to the TSF. The Cyclone Plant will separate the tailing slurry into a coarse and fine fraction; the coarse fraction will be used to construct the tailing dam and the fine fraction will be conveyed into the TSF pool.

E. Domestic Wastewater Treatment Facility

1. A package treatment plant sized to treat up to 10,000 gallons of day of domestic wastewater will be constructed on a pre-existing slab located near the main gate and outside the

projected OPSDA. The plant will be constructed and operated to treat wastewater to a secondary effluent quality. Treated effluent will be pumped via pipeline to the TSF facility for re-use as process water.

F. Impoundments

1. **Process Water Reservoir (PWR)** - The Process Water Reservoir will be located east of the Concentrator in the Process Facility Area and outside the projected OPSDA. It will have a footprint of approximately 2 acres and a storage capacity of 5,433,472 gallons while maintaining two feet of freeboard. It is sized to retain twelve hours of inflow at 7,200 gpm and a 100-year return interval storm event while maintaining two feet of freeboard. The pond will be double-synthetically lined minimum 60-mil HDPE (or equivalent material) liners equipped with a leak detection/collection system. It is designed to meet the requirements of Paragraphs (1), (2), (3), (6), and (7) of 20.6.7.17.D NMAC. The PWR will receive process water from the Underdrain Collection Pond at the TSF, impacted stormwater pumped from the three impacted stormwater impoundments, and freshwater from the off-site well field for use as process water in the Concentrator. The PWR will pump process water to the Process Water Tank for use in the Process Facility Area. Pumps will be sized to deliver 24,300,000 gpd (16,875 gpm) of process water to the Concentrator. In the event of upset conditions, the PWR overflow weir conveys solutions directly into the lined tailings trench/pipeline corridor which discharges to the TSF.
2. **TSF Underdrain Collection Pond (UCP)** - The UCP will be located outside the projected OPSDA at the southeastern toe of the TSF. It will have a footprint of approximately 8 acres and storage capacity of 12,240,000 gallons while maintaining two feet of freeboard. It is sized to retain twenty-four hours of underdrain flow at a maximum flow rate, and runoff from the downstream face of the TSF during a 100-year return interval storm event. The pond will be double-synthetically lined (60-mil each or equivalent) using HDPE or equivalent material and equipped with a leak detection/collection system. It is designed to meet the requirements of Paragraphs (1), (2), (3), (6), and (7) of 20.6.7.17.D NMAC. The pond will receive approximately 448 gpm of tailing underflow, tailings dam face seepage, and impacted stormwater under standard operating conditions. Collected solutions will be returned to the process water re-use circuit via the 4,000 gpm pond reclaim pump system (one operating pump and one spare submersible turbine pump mounted in a concrete sump) and the underdrain collection process water pipeline. The underdrain collection process water pipeline will be placed along the upstream side (i.e., inside the TSF toe berm) of the toe berm and above the geomembrane liner during all buildout phases of the TSF. Perimeter collection trenches situated on the bermed upstream side of the TSF liner will capture and contain impacted stormwater from the face of the TSF and convey solutions to the Underdrain Collection Pond.
3. **Surge Pond** - The Surge Pond will be located outside the projected OPSDA at the northwest margin (i.e., upstream side) of the TSF and is associated with the Cyclone Plant. It will

have a footprint of approximately 6.4 acres and storage capacity of 1,610,000 gallons while maintaining two feet of freeboard. The minimum 60-mil HDPE (or equivalent material) lined impoundment is designed to meet the requirements of Paragraphs (1), (2), (4), (6), and (7) of 20.6.7.17.D NMAC. The purpose of the Surge Pond is to contain discharges (tailings, process, and reclaim water) from various processing locations under upset conditions, due to a pipe failure, or shutdown of the Cyclone Plant. Upset flows from the Cyclone Plant will discharge by gravity to the Surge Pond within a secondary containment ditch lined with a minimum 60-mil HDPE geomembrane liner placed over 6 inches of liner bedding fill. Dedicated pumps will convey solutions from the Surge Pond to the TSF. The surge pond will be empty under normal operating conditions.

4. Impacted Stormwater Impoundments - Three stormwater impoundments will be utilized to capture precipitation and stormwater runoff from areas impacted by mining activities including mining, hauling, waste rock stockpiling, mineral processing, and shipping and receiving of goods and products. The minimum 60-mil HDPE (or equivalent material) lined impoundments are designed to meet the requirements of Paragraphs (1), (2), (4), (6), and (7) of 20.6.7.17.D NMAC. Each stormwater impoundment is designed to receive the volume of stormwater generated from a 100-year return interval storm event while maintaining two feet of freeboard. The stormwater impoundments will typically be empty and will be pumped as low as practicable within 30 days of storm events pursuant to Paragraph (4) of 20.6.7.17.D NMAC. Collected solutions from Impacted Stormwater Impoundment B (SW-B) and Impacted Stormwater Impoundment C (SW-C) will be pumped to Impacted Stormwater Impoundment A (SW-A) via the SW-C and SW-A pipelines, and solutions from SW-A will be pumped to the PWR via the SW-A pipeline using temporary pumps. Sheet flow generated during storm events will be conveyed to the stormwater impoundments via open channel conveyances capable of handling a 100-year return interval storm event while maintaining six inches of freeboard.
 - a. Impacted Stormwater Impoundment A (SW-A) - As shown in Figure 11J-3 of the Revised Application, SW-A will be located outside the projected OPSDA east of the Process Water Reservoir and at the southwest toe of WRSP-3. It will have a footprint of approximately 2 acres and storage capacity of 7,306,971 gallons while maintaining two feet of freeboard. SW-A will capture and manage impacted stormwater from the approximately 91.06-acre catchment area in Watershed A which includes the Process Facility Area.
 - b. Impacted Stormwater Impoundment B (SW-B) - As shown in Figure 11J-3 of the Revised Application, SW-B will be located inside the projected OPSDA at the southern toe of WRSP-1 and southwest corner of Watershed B. It will have a footprint of approximately 2 acres and storage capacity of 5,513,140 gallons while maintaining two feet of freeboard. SW-B will capture and manage impacted stormwater generated from the approximately 98.52-acre catchment area in Watershed B, which includes WRSP-

1. Overflow from the impoundment will discharge under a haul road via a culvert and then flow into the open pit.
- c. Impacted Stormwater Impoundment C (SW-C) - As shown in Figure 11J-3 of the Revised Application, SW-C will be located outside the projected OPSDA at the eastern toe of WRSP-3 and eastern edge of Watershed C. SW-C will have a footprint of approximately 7 acres and storage capacity of 10,513,140 gallons while maintaining two feet of freeboard. SW-C will capture and manage impacted stormwater from the approximately 198.66-acre catchment area in Watershed C which contains WRSP-2 and WRSP-3.

G. Sumps, Tanks, Pipelines and Other Containment Systems

1. Tanks - Forty-eight above ground tanks will be used at the mine site; most will be located outside the projected OPSDA at the Process Facility Area. Appendix C of the Revised Application describes all tanks, sumps, and designed containments for each. Tanks are designed and will be constructed in accordance with Subsections A and B of 20.6.7.23 NMAC, unless otherwise noted.
 - a. Concentrator Area - Thirty tanks will be located inside the Concentrator including (number of tanks in parenthesis): Grinding Area (1), Copper Floatation Area (1), Copper Re grind Area (1), Molybdenum Floatation Area (3), Copper-Molybdenum Thickening Area (4), Copper Thickening Area (6), Wheel Wash Area (1), Lime Reagent Area (2), Diesel Reagent Area (1), General Reagent Area (7), and Sodium Hydrosulfide Reagent Area (3).
 - b. Truck Shop Tank Farm - Seven tanks will be located in the Truck Shop Tank Farm area to store various oil and fluid to support the vehicle fleet.
 - c. Fuel Station Area - Five tanks will be located in the Fuel Station Area to be utilized for fueling needs.
 - d. Miscellaneous Locations - Three tanks will be incorporated into the domestic wastewater treatment facility, one tank will be used at the Assay Lab for chemical waste, and one 170,000-gallon tank will be used for Process Water Storage and delivery. The Process Water Storage Tank will be situated in a bermed area that will be underlain by a HDPE synthetic liner.
2. Sumps and Containment Areas - Twenty-two sumps and/or containment areas will be constructed to capture and contain process water, impacted stormwater, and other solutions in the event there is a release from the primary containment structures in the Process Facility Area.
3. Copper Flat Open Pit dewatering system - The Copper Flat Open Pit dewatering system will utilize one or more dewatering sumps and associated pipelines located in the pit to dewater the open pit. A portable booster tank(s) will be incorporated, as necessary, as the

pit is deepened.

4. Pipelines - Pipelines serving the DP-1840 mine units consist of HDPE and range in size from 6 inches or less in diameter up to 36 inches in diameter. The pipelines are described in Table 11J-3, and Figures 11J-20A and 11J-20B of the Revised Application. All pipelines are designed and will be constructed in accordance with Subsections A and B of 20.6.7.23 NMAC. The Concentrator Whole Tailings Transport pipeline and UCP return pipeline will be placed within lined and bermed channels when located outside building areas.

H. Truck and Equipment Washing Units

1. A Truck and Equipment Washing Unit (Truck Wash) will be located outside the projected OPSDA along a haul road between the mine and the Truck Shop south of the Concentrator. It will consist of a concrete pad for vehicle and equipment washing. The pad will be sloped to drain into a 50,000-gallon concrete settling basin for separation of water, solids, oil and grease. Oil and grease will be skimmed and properly disposed of offsite. Solids removed from the bottom of the settling basin will be disposed of at the TSF or stored on a concrete pad next to the wash unit for eventual disposal at the TSF. All wash water will be reused at the Truck Wash. The Truck Wash is designed in accordance with Section 20.6.7.26 NMAC.
2. A wheel wash tank and pump and associated concrete containment area will be located adjacent to the Concentrator. It will be used to remove and contain concentrate from truck wheels prior to the trucks travelling onto site roads. Solutions collected in the wheel wash sump will be returned to the Copper Thickener feed box via a dedicated pump equipped with automatic start/stop control.

I. Dust Suppression

1. Dust suppression trucks will utilize water from the open pit sump and/or stand pipes located inside the projected OPSDA for dust suppression within the projected OPSDA. Stand pipes used to deliver water to trucks for dust suppression outside the projected OPSDA will utilize water sources that meet ground water quality standards set forth in Section 20.6.2.3103 NMAC.

J. Flow Measurement

1. The permittee will utilize flow meters to measure regulated discharge volumes pursuant to this discharge permit and as required by the Copper Mine Rule. Flow meter locations utilized by DP-1840 are shown in Figures 11J-20A and 11J-20B of the Revised Application. In addition, Figure 3 located on Page 39 of this Discharge Permit, shows a schematic diagram of flow meter locations used for discharge volume reporting pursuant

to DP-1840.

K. Meteorological Station

1. The mine facility will utilize one Meteorological Station, located at the east central portion of the mine facility permit boundary, to measure meteorological data in accordance with the meteorological plan submitted with the Revised Application. The location is shown on Figure 11W-1 of the Revised Application.

B104 Authorized Discharges

The permittee is authorized to operate the following mine units in accordance with all applicable system design and operational constraints as described in this Discharge Permit, and the Discharge Plan. [20.6.2.3109 NMAC]

- A. The permittee is authorized to discharge a maximum of 25,264,000 gpd of tailing slurry from the Concentrator to the Cyclone Plant and then the TSF via gravity through the Concentrator Whole Tailings Transport pipeline.
- B. The permittee is authorized to pump a maximum of 21,236,000 gpd of process water from the TSF Water Reclaim System, which includes combined flows from the UCP and TSF supernatant pool, to the PWR.
- C. The permittee is authorized to discharge a maximum of 24,300,000 gpd of process water from the PWR to the Concentrator.
- D. The permittee is authorized to place waste rock from the Copper Flat Open Pit within the permitted footprints of WRSP-1, WRSP-2, and WRSP-3 and discharge water contaminants originating from placed materials.
- E. The permittee is authorized to dewater the Copper Flat Open Pit to accommodate mining of the Pit and to manage process water and impacted stormwater from the Copper Flat Open Pit.
- F. The permittee is authorized to store crushed ore at the Coarse Ore Stockpile.
- G. During upset conditions, the permittee is authorized to temporarily stage ore within the permitted footprint of EWRSP-3, and discharge water contaminants originating from placed materials.
- H. The permittee is authorized to operate SW-A, SW-B, and SW-C to collect impacted stormwater.
- I. The permittee is authorized to operate all sumps, tanks, pipelines and other containment systems described in B103.G.

- J. The permittee is authorized to operate the Truck and Equipment Wash units.
- K. The permittee is authorized to discharge a maximum of 10,000 gpd of treated effluent from the domestic wastewater treatment and disposal facility to the TSF.
- L. The permittee is authorized to discharge an annual average of approximately 96,000 gpd of process water from the Copper Flat Open Pit sump(s) and dewatering system for use as dust suppression water within the OPSDA or for reuse in the process water circuit.
- M. This Discharge Permit authorizes only those discharges specified herein. Any unauthorized discharges such as spills or leaks must be reported to NMED and remediated as required by Section 20.6.2.1203 NMAC, and any additional requirements listed in this Discharge Permit.
- N. The permittee shall provide written notice to NMED of the commencement of operations in accordance with Subsection C of 20.6.7.18 NMAC.
- O. If the Copper Flat Mine is on standby pursuant to the Mining Act, the permittee shall provide written notice to the department indicating the planned date of recommencement of operations. Written notification shall be submitted to the department a minimum of 30 days prior to the date mining is to recommence.

Part C FACILITY SPECIFIC REQUIREMENTS

The permittee shall conduct the requirements set forth below in accordance with the WQCC Regulations of Subsection C of 20.6.2.3106 NMAC and Section 20.6.2.3107 NMAC to ensure compliance with 20.6.2 NMAC, and in accordance with applicable requirements of Part 20.6.7 NMAC.

C100 Practice of Engineering

- A. Within 120 days of completion of construction of any mine unit authorized for construction and discharge as listed in B103, the permittee shall submit complete as-built drawings and/or a construction certification report pursuant to Paragraph (2) of 20.6.7.18.B NMAC.
- B. Design, construction and location of all mine units shall be in accordance with applicable Copper Mine Rule requirements and the Discharge Plan.

C101 Construction Schedule and Progress Reports

- A. Pursuant to Subparagraph (a) of 20.6.7.18.C(1), the permittee shall provide NMED with written notice a minimum of 30 days before commencing construction of mine units covered by this Discharge Permit. A summary of construction activities completed shall be submitted in accordance with Subsection B of 20.6.7.29 NMAC.

- B. The permittee shall adhere to the sequencing schedule outlined in Table 2-1 of Revision 1 of the Updated Mine Operation Reclamation Plan (MORP) dated July 2017 and titled, "Copper Flat Development Sequence and Schedule," and as shown on Table 1 located on Page 33 of this Discharge Permit. NMED shall be notified prior to any deviations from the sequencing schedule.
- C. All containment systems, seepage, and stormwater collection units shall be in place prior to operation of any discharging mine unit.

C102 Copper Flat Open Pit

- A. The Copper Flat Open Pit shall be operated in accordance with the applicable requirements of Section 20.6.7.24 NMAC.
- B. Pursuant to Subsection A of 20.6.7.24 NMAC, expansion of the Copper Flat Open Pit shall not exceed the area shown on Figure 1 located on Page 37 of this Discharge Permit. The permittee must obtain a permit modification or amendment prior to expanding the Copper Flat Open Pit beyond the area shown on Figure 1 of this Discharge Permit.
- C. Fluids generated within the open pit shall be managed according to the applicable requirements of 20.6.7.24.C NMAC, and the Sitewide Water Management Plan required pursuant to Condition C108.A.

C103 Waste Rock Stockpiles

- A. Waste rock shall be handled and characterized in accordance with applicable requirements of Subsection A of 20.6.7.21 NMAC, and the NMED-approved material characterization and handling plans summarized and referenced in the Revised Application.
- B. Design, construction and location of the waste rock stockpiles shall be in accordance with the Discharge Plan, and applicable requirements of Subsections B and C of 20.6.7.21 NMAC.
- C. The permittee shall comply with applicable operational requirements listed in Paragraphs (2) through (8) of 20.6.7.21.D NMAC including the requirement to place waste rock on waste rock stockpiles to plan for closure to the extent practicable and be in accordance with the operating plan required in C113.M (Sections 20.6.7.18, 20.6.7.21 and 20.6.7.33 NMAC).
- D. Pursuant to Paragraph (1) of 20.6.7.21.D NMAC and Paragraph (1) of 20.6.7.21.B NMAC, the waste rock stockpiles described in B103.B shall not exceed the footprint, configuration, and location shown in Figure 1 of this Discharge Permit. The permittee may only expand the permitted footprint for the purpose of facility closure, or through an NMED-approved permit amendment or modification to DP-1840.

- E. Pursuant to Paragraph (c) of 20.6.7.21.A(2) NMAC and as outlined in the material handling plan in the Revised Application, the permittee shall place a minimum of 10 feet of not potentially acid generating (NPAG) waste rock material above and below any areas where acid generating or potentially acid generating (PAG) waste rock will be placed.
- F. As outlined in the Revised Application, the portion of EWRSP-2A located outside the projected OPSDA shall be relocated onto the portion of EWRSP-2A that is located inside the projected OPSDA during the mine start-up phase and prior to construction of WRSP-1.

C104 Impoundments

- A. Design, construction and location of all impoundments shall be in accordance with the Discharge Plan, and applicable requirements of Subsection D of 20.6.7.17 NMAC.
- B. Operation of all impoundments shall be in accordance with the applicable requirements of Subsection F of 20.6.7.18 NMAC.
- C. Pursuant to Subsection C of 20.6.7.17 NMAC, the permittee shall submit to NMED for approval a liner system construction quality assurance/construction quality control (CQA/CQC) plan a minimum of 90 days prior to construction of any impoundment that requires a liner system.
- D. Pursuant to Subsection B of 20.6.7.18 NMAC, the permittee shall submit a construction certification report within 120 days of construction completion of all impoundments that require a liner system.
- E. In accordance with Subparagraph (c) of 20.6.7.17.D(2) NMAC, water levels in the PWR and UCP shall be maintained to provide capacity to convey maximum design process flow plus stormwater runoff from the reservoir catchment area while maintaining two-feet of freeboard.
- F. In accordance with Subparagraph (e) of 20.6.7.17.D(2) NMAC, water levels in the SW-A, SW-B, and SW-C shall be maintained to provide capacity for a 100-year return interval storm event while preserving two-feet of freeboard under standard operating conditions and after storm events.

C105 Copper Crushing, Milling, Concentrator, and Tailings Storage Facility Units

- A. Design, construction, and location of all crushing, milling, concentrating, and tailings storage facility units shall be in accordance with the Discharge Plan, and applicable requirements of Subsections A and B of 20.6.7.22 NMAC.
- B. Operation of all crushing, milling, concentrating, and tailings storage facility units shall be in accordance with the Discharge Plan and applicable requirements of Subsection C of 20.6.7.22 NMAC.

C. Tailings Storage Facility

1. Deposition of tailings shall be in accordance with the operating plan required in C113.N.
2. Prior to initiation of construction of any portion of the TSF and associated dam, the permittee shall submit to NMED documentation of compliance with the Dam Safety Bureau of the Office of the State Engineer permitting requirements pursuant to Section 72-5-32 NMSA 1978, and rules promulgated under that authority, unless exempt by law from such requirements.
3. Prior to discharging to the TSF, the permittee shall ensure that berms and/or the dam structure of the TSF will have the capacity for such discharges while maintaining appropriate safety measures in accordance with the regulations of the Dam Safety Bureau of the Office of the State Engineer and Paragraph (d) of 20.6.7.17.C(1) NMAC.
4. Pursuant to Subparagraph (4) of 20.6.22.A NMAC and Subsection B of 20.6.7.18 NMAC, the permittee shall submit a construction certification report within 120 days of TSF liner system installation.
5. Pursuant to Subparagraph (a) of 20.6.7.22.C(1) NMAC, the TSF shall not exceed the footprint (564 acres) or location and configuration as shown in Drawing 12 in Appendix J of the document titled *Feasibility Level Design, 30,000 TPD Tailings Storage Facility and Tailings Distribution and Water Reclaim Systems Copper Flat Project Sierra County, New Mexico Golder Associates Inc., Revised, November 2016* (i.e., Appendix A the Revised Application) and as shown on Figure 1 of this Discharge Permit. The permittee may only expand the permitted footprint for the purpose of facility closure, or through an NMED-approved permit amendment or modification to DP-1840.

C106 Sumps, Tanks, Pipelines and Other Containment Systems

- A. Design, construction and location of all pipelines, tanks, and sumps shall be in accordance with the Discharge Plan, and applicable requirements of Subsections A and B of 20.6.7.23 NMAC.
- B. Operation of all pipelines, tanks, and sumps shall be in accordance with the applicable requirements of Subsection C of 20.6.7.23 NMAC.
- C. Detailed and complete construction plans and specifications and supporting design calculations for any proposed or required tanks, pipelines, sumps, or other containment systems, including any replacements thereof, shall be submitted to NMED pursuant to Paragraph (2) of 20.6.7.17.C NMAC and Section 20.6.2.23 NMAC, and D107 of this Discharge Permit. This requirement does not apply to portable or temporary tanks, pipelines, sumps, or other containment systems that are subject to periodic relocation during mining operations.

- D. Pursuant to Subsection J of 20.6.7.33 NMAC, upon discontinuing the operation of, or before moving tanks, pipelines, sumps, or other containment systems, all liquids shall be released to a location specifically authorized in the discharge permit, an alternate location subject to NMED approval, or otherwise properly contained, transferred, or disposed of in a manner that does not result in discharge to non-authorized areas.

C107 Stormwater Management

- A. Stormwater shall be managed in accordance with the applicable requirements of Paragraph (4) of 20.6.7.17.C NMAC, and in accordance with the Stormwater Management Plan included in the Revised Application.
- B. To ensure compliance with Subparagraphs (e) and (f) of 20.6.7.17.D(2) NMAC, the permittee shall inspect all stormwater impoundments, conveyance channels and collection ponds on a monthly basis and after precipitation events that exceed one inch for evidence of stormwater accumulations that exceed design capacities. To properly manage stormwater, the permittee shall ensure that the pumping capacity is adequate to maintain storage capacity in all stormwater impoundments.
- C. Open channel conveyance structures, including those located at the base of WRSP-1, WRSP-2, and WRSP-3, shall be designed and operated to meet the requirements of Subparagraph (f) of 20.6.7.17.D(2).

C108 Sitewide Water Management Plan

- A. The Permittee shall submit to NMED for approval a Sitewide Water Management Plan no less than 60 days prior to discharge from the facility. The Sitewide Water Management Plan shall be a comprehensive plan that describes all water management systems at Copper Flat Mine and be designed, at a minimum, to meet the requirements of Paragraph (4) of 20.6.7.17.C NMAC (Stormwater Management Plan), Subsection C of 20.6.7.24 NMAC (Mine Operation Water Management Plan), and Subsection K of 20.6.7.30 NMAC (Interim Emergency Water Management Plan). Previously submitted documents in the Revised Application may be included as components of the Sitewide Water Management Plan including the Stormwater Management Plan and Mine Operation Management Plan. The Sitewide Water Management Plan shall be updated annually as specified in C113.F.

C109 Truck and Equipment Washing Units

- A. Design, construction and location of truck and equipment washing units shall be in accordance with the Discharge Plan, and applicable requirements of Subsections A and B of 20.6.7.26 NMAC.
- B. The permittee shall operate the truck and equipment washing units in accordance with the applicable requirements of Subsection C of 20.6.7.26 NMAC.

C110 Dust Suppression

- A. Dust suppression on areas outside the OPSDA shall be conducted using water sources that do not exceed ground water quality standards set forth in Section 20.6.2.3103 NMAC.
- B. If at some time in the future the permittee wishes to use an alternate source of dust suppression water or change the location in which discharges of water for dust suppression have been approved, the permittee shall notify NMED for approval in accordance with D107 prior to the proposed change.

C111 Domestic Wastewater Treatment Facility

- A. The permittee shall utilize operators, certified by the State of New Mexico at the appropriate level, to operate the wastewater collection, treatment, and disposal system. The operations and maintenance of all or any part of the wastewater system shall be performed by, or under the direct supervision of, a certified operator. [Subsection C of 20.6.2.3109 NMAC, 20.7.4 NMAC]

C112 Flow Measurement

- A. Pursuant to Paragraph (2) of 20.6.7.18.E NMAC, the permittee shall visually inspect all flow meters on a monthly basis for evidence of malfunction and repair or replace malfunctioning flow meters within 30 days of or as soon as practicable following discovery.

C113 Monitoring and Reporting

- A. Pursuant to applicable requirements in Sections 20.6.7.28 and 20.6.7.29 NMAC, the permittee shall collect, preserve, transport, and analyze all ground water, process water, tailings slurry, impacted stormwater, seep, spring, and surface water samples from the facility in accordance with Table 2 located on Page 34 of this Discharge Permit, and any additional requirements listed in this Discharge Permit. Table 2 of this Discharge Permit provides a summary the monitoring and reporting requirements. Figures 2 and 3, located on Pages 38-39 of this Discharge Permit, designate sampling locations.
- B. Samples of pit sump water, stormwater, PLS, seeps, and process water shall be analyzed for total concentrations for metal parameters (Suite C of Table 2) and dissolved concentrations for all parameters (including metal parameters) in accordance with Table 2 of this Discharge Permit. Samples of ground water and springs shall be analyzed for dissolved concentrations in accordance with Table 2 of this Discharge Permit.
- C. The permittee shall submit monitoring reports to NMED on a semi-annual basis that contain all quarterly monitoring data and information collected pursuant to the requirements of this Discharge Permit, and applicable requirements of Section 20.6.7.29 NMAC. Semi-annual reports are due by February 28 and August 31 of each year. Data required to be submitted annually shall be submitted in the monitoring report due by February 28 of each year.

- D. Pursuant to Subsection L of 20.6.7.28 NMAC, the permittee shall submit to NMED ground water elevation contour map(s) on a semi-annual basis and a map (or maps) showing the extent of the OPSDA and area of open pit hydrologic containment (AOPHC) on an annual basis. The ground water elevation contour map(s) shall be of an appropriate scale to show ground water elevation contours for the Copper Flat Mine; the contour maps shall include land surface topographic contours with appropriate contour intervals and shall include the monitoring wells that the ground water data is based on. The maps shall be submitted in the semi-annual monitoring reports in the format specified by Subsection C of 20.6.7.29 NMAC.
- E. Implementation of all monitoring and reporting requirements listed in this Discharge Permit shall commence 180 days before emplacement of ore, waste rock, or discharge of tailings at an individual waste rock stockpile or tailings impoundment to allow for sampling and reporting prior to discharge, except as required under abatement pursuant to C116.A and C116.B.
- F. The Permittee shall submit annually an updated Sitewide Water Management Plan that meets at a minimum the requirements of Paragraph (4) of 20.6.7.17.C NMAC (Stormwater Management Plan), Subsection C of 20.6.7.24 NMAC (Mine Operation Water Management Plan), and Subsection K of 20.6.7.30 NMAC (Interim Emergency Water Management Plan). The update shall be submitted to NMED as an attachment to the monitoring report due on February 28 of each year.
- G. Requests to change monitoring and reporting requirements may require an amendment or modification to this Discharge Permit as required by the secretary. [20.6.2.7 NMAC]

H. **Ground Water**

- 1. Pursuant to Subsection B of 20.6.7.28 NMAC the permittee “shall monitor ground water quality as close as practicable around the perimeter and downgradient of each open pit, waste rock stockpile, tailings impoundment, process water impoundment, and impacted stormwater impoundment.”
- 2. Pursuant to Paragraph (1) of 20.6.7.28.B NMAC, the existing monitoring wells listed in Table 2 of this Discharge Permit, except GWQ-1 and GWQ-8 as discussed in C113.H.4 below, have been deemed appropriate by NMED for continued use as ground water monitoring wells under this Discharge Permit. These ground water monitoring wells, installed prior to the effective date of the Copper Mine Rule, have been identified to be constructed in accordance with the Copper Mine Rule.
- 3. Pursuant to Subsection G of 20.6.7.28 NMAC, the permittee shall sample and analyze ground water quarterly from all monitoring wells in accordance with Table 2 of this Discharge Permit, and applicable requirements of Subsection F of 20.6.7.28 NMAC. Analytical results shall be submitted in the semi-annual monitoring reports in the format specified by Subsection C of 20.6.7.29 NMAC.
- 4. Monitoring Wells GWQ-1 and GWQ-8 are not constructed in accordance with Section

- 20.6.7.28 NMAC; however, these wells are authorized for incorporation into the monitoring network to provide contextual ground water information for this Discharge Permit.
5. Pursuant to Paragraph (a) of 20.6.7.28(2) NMAC, the permittee shall install all proposed monitoring wells at least 180 days before emplacement of ore, waste rock, or discharge of tailings or other contaminants at an individual waste rock stockpile or tailings impoundment to allow sampling prior to discharge, except as required under abatement pursuant to C116.C and C116.D.
 - a. The permittee shall provide NMED with a definitive installation schedule as project approval dates become more certain.
 - b. All proposed monitoring wells shall be installed in accordance with Subsections B, C, D and E of 20.6.7.28 NMAC. Within 15 days of completion of each new monitoring well the permittee shall provide NMED with depth-to-water measurements and water quality field parameter data. Pending ground water conditions in the newly installed monitoring wells, additional requirements may be necessary. The permittee shall notify NMED in writing a minimum of one week prior to the start of installation of the monitoring wells. Upon completion of the installation of the monitoring wells, the permittee shall submit to NMED a monitoring well completion report for all newly-installed monitoring wells in accordance with the applicable requirements of Subsection K of 20.6.7.28 NMAC.
 6. The permittee is authorized to plug and abandon Monitoring Wells GWQ-11, GWQ94-13, GWQ94-16, GWQ94-17, GWQ94-18, GWQ94-19, GWQ94-20, IW-1, IW-2, IW-3, NP-2, NP-3, NP-5, GWQ11-25A and GWQ11-25B, which will be buried during construction of the TSF and enlargement of the open pit (GWQ11-25A, and GWQ11-25B).
 - a. Monitoring wells shall be plugged and abandoned in accordance with the attachment titled, *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011, and all applicable local, state, and federal regulations, including 19.27.4 NMAC.
 - b. The permittee shall submit documentation describing the well abandonment procedures in accordance with the attachment titled, *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011. The well abandonment documentation shall be submitted to NMED with the next semi-annual monitoring report for this Discharge Permit upon completion of abandonment procedures.
 - c. Pursuant to Subsection B of 20.6.7.30 NMAC, NMED may require replacement monitoring wells.
 7. The permittee shall include Monitoring Wells NP-1, NP-4, GWQ-10, GWQ94-21A, GWQ94-21B, GWQ94-14, GWQ94-15, GWQ11-25A, and GWQ11-25B in the monitoring plan until expansion of the TSF requires plugging and abandonment of these

wells.

8. The permittee shall submit a request in accordance with D105 prior to plugging and abandonment of any monitoring well.

I. Additional Monitoring Wells

1. The permittee shall install two additional monitoring well (PWQ-23, PGW-24). PGQ-23 shall be located along the southwest toe of the TSF between GWQ-6 and GWQ-12, and the PGQ-24 shall be located along the northeast toe of the WRSP-3 between PGWQ-3 and PGWQ-4.
2. Pursuant to Subsection A of 20.6.7.28 NMAC, the permittee shall submit a map identifying the proposed locations and provide construction details for the monitoring wells for NMED approval a minimum of 30 days prior to installation.
3. Installation of the monitoring wells shall be in accordance with Subsections B, C, D and E of 20.6.7.28 NMAC.
4. The permittee shall notify NMED in writing a minimum of one week prior to the start of installation of the monitoring wells required in C113.I.1. Upon completion of the installation of the monitoring wells, the permittee shall submit to NMED monitoring well completion reports for the newly-installed monitoring wells in accordance with the applicable requirements of Subsection K of 20.6.7.28 NMAC.

J. Surface Water

1. The permittee shall analyze surface water collected from five surface water auto-sampling ports (SWQ-1 through SWQ-5) located in Grayback Arroyo in accordance with the applicable requirements of the Revised Application and Subsection N of 20.6.7.28 NMAC. The surface water collection ports shall be checked after each precipitation event of 0.5 inch or greater at the Copper Flat Mine. If sufficient water is present, a sample shall be collected and analyzed. The permittee shall attempt to collect samples from the collection ports as soon as practicable after the precipitation event. No more than one surface water sample per port may be collected in a 24-hour period, and no more than two surface water samples per port are required to be collected per quarter. Samples shall be analyzed for total and dissolved concentrations of the analytes listed on Table 2 of this Discharge Permit. Analytical results shall be submitted in the semi-annual monitoring reports in the format specified by Subsection C of 20.6.7.29 NMAC.
2. The permittee shall sample and analyze surface water collected quarterly from any seeps or springs, if encountered, outside the OPSDA in accordance with the schedule listed in Table 2 of this Discharge Permit, and applicable requirements of Subsection N of 20.6.7.28 NMAC. Analytical results shall be submitted in the semi-annual monitoring reports in the format specified by Subsection C of 20.6.7.29 NMAC.

K. Copper Flat Open Pit

1. Pursuant to Subsection C of 20.6.7.24 NMAC, the permittee shall submit on an annual basis a mine operation water management report summarizing the pit dewatering activities for the Copper Flat Open Pit for the previous year, including reporting on volumes of water pumped to dewater the pit and location of pumping. The report shall also discuss changes and planned activities for dewatering the Copper Flat Open Pit for the coming year. The planned future dewatering activities shall be incorporated into the annual Sitewide Water Management Plan update required pursuant to C113.F.

L. Waste Rock Stockpiles

1. Pursuant to Paragraph (7) of 20.6.7.21.D NMAC, the permittee shall submit on an annual basis an operating plan that describes the sequencing of waste rock deposition on the waste rock stockpiles, including the volume and location of PAG waste rock material placed in the past year and a proposal for material placement for the next year, and describes the operation of any applicable systems utilized to contain or transport process water or impacted stormwater from the waste rock stockpiles. The operating plan shall be submitted with the monitoring report due by February 28 of each year.

M. Copper Crushing, Milling, Concentrator, and Tailings Storage Facility Units

1. Pursuant to Subparagraph (j) of 20.6.7.22.C(1) NMAC, the permittee shall submit on an annual basis an operating plan that describes the sequencing of tailings deposition on the TSF and describes the operation of any applicable systems utilized to contain or transport process water and measures taken to manage the surface impoundment area to maintain adequate freeboard.

N. Discharge Volumes

1. The permittee shall measure and report discharge volumes for process water, liner solution collection systems, tailings and impacted stormwater discharges in accordance with Subsections B, E, and F of 20.6.7.29 NMAC and the flow metering plan submitted with the Revised Application. Flow meter locations used for monitoring and reporting are schematically displayed on Figure 3 of this Discharge Permit. Discharge volume reporting shall be submitted in the semi-annual monitoring reports in the format specified by Subsection C of 20.6.7.29 NMAC. In addition to applicable discharge volume reporting required by Subsections B, E, and F of 20.6.7.29 NMAC, additional discharge volume reporting for the following shall be measured and reported:
 - a. The daily volume and source of water used for dust suppression.

O. Flow Measurement Report

1. Pursuant to Subparagraph (a) of 20.6.7.18.E.2 NMAC, the permittee shall submit a report

of repaired or replaced flow meters in the semi-annual monitoring reports that include a description of any flow meter malfunctions with a statement verifying the repair and description of calibration of the flow meter pursuant to Paragraph (3) of 20.6.7.18.E NMAC.

P. Impoundment Leak Detection/Collection System Report

1. Pursuant to Subparagraph (b) of 20.6.7.18.F.2 NMAC, the permittee shall submit a report of repaired or replaced leak detection/collection system components in the semi-annual monitoring reports.

Q. Meteorological Data

1. Meteorological data shall be measured and reported as stipulated in the Meteorological Plan submitted with the Revised Application. Pursuant to Subsection G of 20.6.7.29 NMAC, tabulated data shall be submitted to NMED in the monitoring report due by February 28 of each year.

C114 Contingency Plan

- A. The permittee shall comply with all applicable contingency requirements and submit to NMED all applicable information or documentation specified in Subsections A through J of 20.6.7.30 NMAC.
- B. Pursuant to Subsection G of 20.6.7.30 NMAC, discharges of process water, impacted stormwater, or seepage that exceed the standards of Section 20.6.2.3103 NMAC to unauthorized areas must be reported under Section 20.6.2.1203 NMAC.
- C. Pursuant to Subsection K of 20.6.7.30 NMAC, the permittee shall submit to NMED for approval an Interim Emergency Water Management Plan no less than 60 days prior to discharge at the mine facility. The Interim Emergency Water Management shall be a component of the Sitewide Water Management Plan required in C108.A.
- D. Pursuant to Subsection I of 20.6.7.30 NMAC, the permittee shall notify NMED of any significant erosion or condition that may compromise conveyance structures utilized in DP-1840.
- E. If NMED or the permittee identifies any other failures of the discharge plan or system not specifically noted in this permit, NMED may require the permittee to develop and submit contingency plans and schedules for NMED approval to address such failures. [20.6.2.3107.A.10 NMAC]

C115 Closure Plan

- A. Closure of all mine units associated with this Discharge Permit shall be performed in accordance with the requirements of Sections 20.6.7.33 and 20.6.7.34 NMAC, the Closure/Closeout Plan contained in the Revised Application, this Discharge Permit as applicable, and the final Closure/Closeout Plan approved by the New Mexico Mining and Minerals Division pursuant to the New Mexico Mining Act.
- B. Pursuant to Paragraph (4) of 20.6.7.33.F NMAC and Subsection F of 20.6.7.34 NMAC, the permittee shall submit for NMED approval at least sixty days prior to construction, a Construction Quality Assurance/Construction Quality Control (CQA/CQC) plan for any mine units regulated pursuant to DP-1840 where cover is applied under an approved Closure/Closeout Plan.
- C. For each mine unit closed, the closure period shall cease, and the post-closure period shall commence following NMED approval of a final CQA/CQC report that is in accordance with Subsection G of 20.6.7.34 NMAC.
- D. The permittee shall provide a workplan and an implementation schedule, as a component of the Test Plot Program, for NMED approval within 90 days of the effective date of this permit (by March 21, 2019) to perform soil water characteristic curve laboratory analysis on the proposed reclamation cover material (RCM). The workplan shall be designed to verify Copper Mine Rule water holding capacity requirements pursuant to Subsection F of 20.6.7.33 NMAC. Based on the results of developed soil water characteristic curves, the permittee will be required to implement an appropriate material handling plan at closure to ensure the emplaced cover material textural characteristics achieves the water holding capacity required pursuant to Section 20.6.7.33 NMAC. Final RCM approval is subject to a demonstration that Copper Mine Rule requirements will be met, and concurrence from the New Mexico Mining and Minerals Division that requirements of the Mining Act will be met.
- E. To demonstrate that the proposed RCM material will be capable of sustaining plant growth without continuous augmentation and have erosion resistant capabilities as required pursuant to Subsection F of 20.6.7.33 NMAC, the permittee shall conduct a RCM Test Plot Program. The RCM Test Plot Program shall be conducted in accordance with all approved work plans, and applicable New Mexico Mining and Minerals Division requirements.
- F. In accordance with Subsection H of 20.6.7.33 NMAC, the permittee shall manage all process water at closure pursuant to the water management plan described in the Revised Application.
- G. Surface water quality standards will not apply to the pit lake water body that will exist at closure so long as the pit lake remains a hydrologic evaporative sink and the pit lake water body remains wholly on private land (20.6.4.7(S)(5) NMAC).

- H. Closure of EWRSP-1 and EWRSP-2B shall be completed during the preproduction period of its mining operation in accordance with the requirements of Sections 20.6.7.33 and 20.6.7.34 NMAC, the Revised Application and this Discharge Permit, as applicable. Closure of EWRSP-1 and EWRSP-2B shall be completed no later than three years from the effective date of this Discharge Permit (by December 21, 2021).
- I. The southern slopes of EWRSP-4 facing Grayback Arroyo shall be reclaimed during the preproduction period of its mining operation, and the top surface shall be filled and graded to a 1% slope in accordance with the requirements of Sections 20.6.7.33 and 20.6.7.34 NMAC, the Revised Application and this Discharge Permit, as applicable.

J. Post-Closure Conditions

- 1. Post-closure requirements shall be performed in accordance with the applicable requirements of Section 20.6.7.35 NMAC, and in accordance with the Closure/Closeout Plan and associated materials submitted as part of this Discharge Permit. Pursuant to Subsection D of 20.6.7.35 NMAC, the permittee shall submit to NMED semi-annual reports pursuant to the schedule in Subsection A of 20.6.7.29 NMAC that include, but are not limited to, a description and the results of post-closure monitoring, any work completed during the preceding semi-annual period, any maintenance and repair work conducted for any closure unit, status of post-closure activities, and semi-annual potentiometric maps.
- 2. Pursuant to Subsection E of 20.6.7.35 NMAC, the contingency requirements of Section 20.6.7.30 NMAC apply to any deficiencies discovered during post-closure monitoring and inspections, including, but not limited to, the requirements for possible corrective action plans, abatement plans, monitoring well replacement, reporting and correction of unauthorized discharges, and significant erosion of, or ponding of water on, a cover system.

C116 Abatement Plan

- A. The permittee has been required to submit to NMED for approval a proposed abatement plan for the Copper Flat Mine. All abatement plans and activities shall be performed in accordance with Sections 20.6.2.4000 through 4115 NMAC and Paragraphs (3) and (4) of 20.6.7.30.A NMAC.
- B. Within 180 days of the date of this Discharge Permit (by June 19, 2019), the permittee shall submit a workplan to evaluate any potential ongoing sources of surface or ground water impacts to Grayback Arroyo and connected aquifers. The workplan shall include a schedule and any corrective action measures, if necessary, to address any currently known source areas of impacts to Grayback Arroyo and connected aquifers pursuant to Sections 20.6.2.4000 NMAC through 4115 NMAC.

C. Additional Monitoring Wells

1. In addition to the monitoring wells already proposed in the Revised Application, the permittee shall install two additional monitoring wells to evaluate current ground water conditions proximal to the open pit and historic waste rock stockpiles. One monitoring well shall be located to the northeast side of the open pit at the intersection of ground water contour interval 5450 feet and the OPSDA (PGWQ-21) as shown on Figure 2 of this Discharge Permit, and a second monitoring well shall be located southwest of the open pit near the intersection of ground water contour interval 5480 feet and the OPSDA between GWQ-11-24B and GWQ11-26 (PGWQ-22).
2. Pursuant to Subsection A of 20.6.7.28 NMAC, the permittee shall submit a map identifying the proposed locations and provide construction details for the monitoring wells for NMED approval a minimum of 30 days prior to installation. The proposal shall consider the necessity of a nested pair monitoring well(s) to evaluate ground water conditions in different water bearing units or to account for ground water decline due to pit dewatering.
3. Within 180 days of the date of this Discharge Permit (by June 19, 2019), the permittee shall install monitoring wells PGWQ-1, PGWQ-5, PGWQ-13, PGWQ-20, PGWQ-21, and PGWQ-22 to provide additional information regarding the horizontal and vertical extent and magnitude of ground water contamination as required pursuant to Sections 20.6.2.4000 NMAC through 20.6.2.4115 NMAC.
4. Installation of the monitoring wells shall be in accordance with Subsections B, C, D and E of 20.6.7.28 NMAC.
5. The permittee shall notify NMED in writing a minimum of one week prior to the start of installation of the monitoring wells required in C116.C.3. Upon completion of the installation of the monitoring wells, the permittee shall submit to NMED monitoring well completion reports for the newly-installed monitoring wells in accordance with the applicable requirements of Subsection K of 20.6.7.28 NMAC.

D. Additional Stage 1 Abatement Plan Ground and Surface Water Quality Information

1. The permittee shall collect an additional four quarters of ground and surface water data from the monitoring wells required in C116.C.3, and the previously approved Stage 1 Abatement Plan sampling locations shown in Table 2 of the document entitled, "Results from First Year of Stage 1 Abatement Investigation at the Copper Flat Mine Site Near Hillsboro, New Mexico," dated May 2014.
2. The initial abatement sampling event shall commence following completion of installation of monitoring wells required in C116.C.3. Analytical results shall be submitted semi-annually in the format specified by Subsection C of 20.6.7.29 NMAC.

C117 Financial Assurance

- A. The permittee shall maintain joint financial assurance with NMED and the Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department to cover costs associated with closure and post-closure activities approved under this Discharge Permit. [20.6.2.3107 NMAC]

Part D GENERAL CONDITIONS

NMED has reviewed the Discharge Plan for the proposed discharge permit and has determined that the provisions of the Copper Mine Rule and applicable ground water quality standards will be met in accordance with this Discharge Permit. General conditions pursuant to 20.6.2 NMAC and 20.6.7 NMAC are listed below.

D100 Enforcement

- A. Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the permittee to a civil enforcement action pursuant to the NMSA 1978, Section 74-6-10(A) and (B). Such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the discharge permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to the NMSA 1978, Section 74-6-10(C) and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the NMSA 1978, Section 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the permittee waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. The permittee does not waive any argument as to the weight such evidence should be given. [74-6-10 WQA, 74-6-10.1 WQA]
- B. Pursuant to the NMSA 1978, Section 74-6-10.2(A-F), criminal penalties may be assessed for any person who knowingly violates or knowingly causes or allows another person to:
1. Make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA;
 2. Falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or
 3. Fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation.

D101 General Inspection and Entry Requirements

- A. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107 NMAC, 74-6-9(B) & (E) WQA]
- B. The permittee shall allow the Secretary or an authorized representative, upon the presentation of credentials, to [20.6.2.3107.D NMAC, 74-6-9(B) & (E) WQA]:
 - 1. Enter at regular business hours or at other reasonable times upon the permittee's premises or other location where records must be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
 - 2. Inspect and copy, during regular business hours or at other reasonable times, any records required to be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
 - 3. Inspect, at regular business hours or at other reasonable times, any facility, equipment (including monitoring and control equipment or treatment works), practices or operations regulated or required under this Discharge Permit, or under any federal or WQCC regulation.
 - 4. Sample or monitor, at reasonable times for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the WQA, any effluent, water contaminant, or receiving water at any location before or after discharge.

D102 General Engineering, Operational and Setback Requirements

- A. Mine units shall be designed in accordance with the applicable requirements of Section 20.6.7.17 NMAC.
- B. Mine units shall be operated in accordance with the applicable requirements of Section 20.6.7.18 NMAC.
- C. The permittee shall meet all applicable setback requirements pursuant to Section 20.6.7.19 NMAC.

D103 General Record Keeping and Reporting Requirements

- A. The permittee shall retain written records at the copper mine facility as required pursuant to Section 20.6.7.37 NMAC.
- B. The permittee shall furnish to NMED, within a reasonable time, any documents or other information which it may request to determine whether cause exists for modifying, terminating and/or renewing this Discharge Permit or to determine compliance with this Discharge Permit.

The permittee shall also furnish to NMED, upon request, copies of documents required to be kept by this Discharge Permit. [20.6.2.3107.D NMAC, 74-6-9 (B) & (E) WQA]

D104 General Sampling and Analytical Methods

A. Unless otherwise approved in writing by NMED, the permittee shall conduct sampling and analysis in accordance with the most recent edition of the following documents [Subsection B of 20.6.2.3107 NMAC]:

1. American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18th, 19th, or current)
2. U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste
3. U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey
4. American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water
5. U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition
6. Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations
7. Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy

D105 Monitoring Well Abandonment

A. The permittee shall submit a written request for NMED approval to amend or modify this Discharge Permit at least 30 days prior to the anticipated destruction or removal of any monitoring wells required under this Discharge Permit. Monitoring well plugging and abandonment shall be completed in accordance with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011, or according to regulations issued by the Office of the State Engineer in 19.27.7 NMAC, unless an alternate method is approved by NMED. [20.6.2.3107 NMAC]

B. The request required in D105.A shall include the following information:

1. A scaled map showing the location of the monitoring well(s) and the mine units it is intended to monitor;
2. The purpose for plugging and abandoning the monitoring well(s);

3. Details, if available, on the monitoring well(s) including depth-to-water elevation, top-of-casing elevation, construction and lithologic logs;
4. Ground water analytical results from a minimum of the most recent eight sampling events from the monitoring well(s);
5. Proposed replacement well(s), if applicable, and;
6. Same details, as applicable, as provided in D105.B.1, D105.B.3, and D105.B.4 are required for the proposed replacement monitoring well(s). New replacement wells require monitoring well completion reports pursuant to Subsection K of 20.6.7.28 NMAC.

D106 Reporting Requirements for Unauthorized Discharges

- A. In the event of a spill or release that is not authorized under this Discharge Permit, the permittee shall initiate the notifications and corrective actions as required in 20.6.2.1203 NMAC. The permittee shall take immediate corrective action to contain and remove or mitigate any damage caused by the discharge. Within 24 hours after discovery of the discharge, the permittee shall verbally notify NMED and provide the information required by Paragraph (1) of 20.6.2.1203.A NMAC, and to determine applicable monitoring and reporting requirements pursuant to Paragraphs (2) and (3) of 20.6.7.29.B NMAC. Within 7 days of discovering of a discharge reportable under 20.6.2.1203 NMAC, the permittee shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. The permittee shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]
- B. As part of the 24-hour spill notification requirements, the permittee shall submit a figure to NMED that clearly displays the location (or locations) of the spill and identifies nearby mine units and/or location information in latitude/longitude coordinates in decimal degrees (XX.XXXXXX and -XXX.XXXXXX, respectively), using a specified datum of WGS 84. Submittal of location information in Universal Transverse Mercator (UTM) format is also acceptable.

D107 Modifications and Amendments

- A. In the event the permittee proposes a change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or the amount or character of water contaminants received, treated, or discharged by the facility, the permittee shall notify and obtain approval from NMED prior to implementing such changes. Such changes may require modification or amendment of this Discharge Permit, including payment of applicable fees as specified in Section 20.6.7.9 NMAC. [20.6.2.3107.C NMAC, 20.6.2.3109.E NMAC, 20.6.7.7.B(19) NMAC, 20.6.7.14 NMAC]
- B. For any proposed change that would meet the definition of a discharge permit modification as specified in Paragraph P of 20.6.2.7 NMAC, the permittee shall submit for NMED approval an

application for modification of this Discharge Permit pursuant to Sections 20.6.7.10 and 20.6.7.11 NMAC. Plans and specifications shall be included in the application, as applicable, pursuant to Section 20.6.7.17 NMAC.

- C. For any proposed change that meets the definition of a discharge permit amendment as specified in Paragraph 19 of 20.6.7.7.B NMAC, the permittee shall submit to NMED a request for an amendment to this Discharge Permit pursuant to Section 20.6.7.14 NMAC. Plans and specifications shall be included in the request, as applicable, pursuant to Section 20.6.7.17 NMAC.
- D. Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a discharge permit modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated, or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of ground water quality, and that more stringent requirements are needed to protect ground water quality. The permittee may be required to abate water pollution.

D108 Compliance with Other Laws

- A. Nothing in this Discharge Permit shall be construed in any way as relieving the permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits or orders. [20.6.2 NMAC, 20.6.7.8(D) NMAC]

Table 1 – Copper Flat Development Sequence and Schedule

Project Build Out Sequence					Project Reclamation Sequence	
Year	Project Activity	Disturbed Acres		19.10.1602.D(15)(c) Reference	Year	Reclamation Activity
		Facility	Cumulative			
1	Mobilize Construction	0.00	0.00	Other Facility or Structures (c)xiii	1	
	Plant Site Grading	84.41	84.41	Other Facility or Structures (c)xiii		
	TSF Phase 1	451.50	535.91	Tailings Storage Facility (c)vii		
	Top Dressing Stockpile 1	29.33	565.24	Topsoil & Topdressing Stockpiles (c)xi		
	Construct Mill	8.51	573.75	Mills (c)viii		
	Construct Ancillary Facilities	8.89	582.64	Other Facility or Structures (c)xiii		
	Storage Areas	3.22	585.86	Storage Areas (c)x		
	EWRSP 1	15.34	601.20	Waste Rock Stockpiles (c)xii		
	EWRSP 2A	8.33	609.53	Waste Rock Stockpiles (c)xii		
	EWRSP 2B	12.73	622.26	Waste Rock Stockpiles (c)xii		
	EWRSP 3	19.54	641.80	Waste Rock Stockpiles (c)xii		
	EWRSP 4	18.10	659.90	Waste Rock Stockpiles (c)xii		
	Mine Haul Roads	5.97	665.87	Waste Rock Stockpiles (c)xii		
Impoundments : TSF; Proc; SW A	12.92	678.79	Impoundments (c)ii	2	Reclaim EWRSP 1 Reclaim EWRSP 2A Reclaim EWRSP 2B	
Collection Ditches : SW A	1.38	680.17	Impoundments (c)ii			
Top Dressing Stockpile 2	31.55	711.72	Topsoil & Topdressing Stockpiles (c)xi			
Top Dressing Stockpile 3	3.53	715.25	Topsoil & Topdressing Stockpiles (c)xi			
Construct Ancillary Facilities	21.10	736.35	Other Facility or Structures (c)xiii			
Open Pit	82.66	819.01	Open Pit (c)vi			
WRSP 1	3.97	822.98	Waste Rock Stockpiles (c)xii			
WRSP 2	2.44	825.42	Waste Rock Stockpiles (c)xii			
WRSP 3	6.07	831.49	Waste Rock Stockpiles (c)xii			
Mine Haul Roads	11.03	842.52	Waste Rock Stockpiles (c)xii			
EWRSP 4	4.52	847.04	Waste Rock Stockpiles (c)xii			
Ore Stockpile	2.07	849.11	Ore Stockpiles (c)i			
Impoundments : Surge; SW B; SW C	8.99	858.10	Impoundments (c)ii			
Collection Ditches : SW B; SW C	4.42	862.52	Impoundments (c)ii	3		
Top Dressing Stockpile 3	10.58	873.10	Topsoil & Topdressing Stockpiles (c)xi			
Open Pit	66.13	939.23	Open Pit (c)vi			
WRSP 1	27.80	967.03	Waste Rock Stockpiles (c)xii			
WRSP 2	4.88	971.91	Waste Rock Stockpiles (c)xii			
WRSP 3	18.20	990.11	Waste Rock Stockpiles (c)xii			
TSF Phase 2	28.22	1,018.33	Tailings Storage Facility (c)vii	4		
WRSP 1	7.94	1,026.27	Waste Rock Stockpiles (c)xii			
WRSP 2	19.51	1,045.78	Waste Rock Stockpiles (c)xii			
WRSP 3	18.20	1,063.98	Waste Rock Stockpiles (c)xii			
TSF Phase 3	28.22	1,092.20	Tailings Storage Facility (c)vii	5		
Open Pit	8.27	1,100.47	Open Pit (c)vi			
WRSP 2	14.63	1,115.10	Waste Rock Stockpiles (c)xii			
WRSP 3	18.20	1,133.30	Waste Rock Stockpiles (c)xii			
TSF Phase 4	28.22	1,161.52	Tailings Storage Facility (c)vii	6		
Open Pit (buildout complete)	8.27	1,169.79	Open Pit (c)vi			
WRSP 1	0.00	1,169.79	Waste Rock Stockpiles (c)xii			
WRSP 2	4.88	1,174.67	Waste Rock Stockpiles (c)xii			
WRSP 3	18.20	1,192.87	Waste Rock Stockpiles (c)xii	7		
WRSP 2, 3	2.44	1,195.31	Waste Rock Stockpiles (c)xii			
WRSP 3	18.20	1,213.51	Waste Rock Stockpiles (c)xii			
TSF Phase 5 (buildout complete)	28.22	1,241.73	Tailings Storage Facility (c)vii			
8	WRSP 3	18.20	1,259.93	Waste Rock Stockpiles (c)xii	8	
9 - 11	WRSP 3 (buildout complete)	6.07	1,266.00	Waste Rock Stockpiles (c)xii	10 - 11	WRSP 3 Contour
12					12	WRSP 3 Contour, TSF Draindown - Active Evaporation
13					13	Pit Rapid Fill, WRSP 2-Upper Lift Contour, WRSP 1-Contour, TSF Draindown - Active Evaporation
14	Mining and Processing Ends				14	Rapid Fill, WRSP-2 Upper Lift Contour, WRSP 1 - Contour, Fill & Contour, WRSP 3, 2, 1, EWRSP 4 Cover & Seed, TSF Draindown - Active Evaporation
15					15	Process Area Demo, Fill & Contour, WRSP 3, 2, 1, EWRSP 3 & 4 Contour, Cover & Seed, Pit Area Contour, TSF Contour, Draindown - Active Evaporation
16					16	Process Area Fill & Contour, WRSP 3, , 2, 1, EWRSP 3 & 4 Contour, Cover, Seed, TSF Contour, Draindown - Active Evaporation
17					17	TSF Contour, Draindown - Active Evaporation
18	Evaporation Pond Construction (Project Buildout Complete)	24.05	1,290.05	Impoundments (c)ii	18	TSF Contour & Cover, Draindown - Active Evaporation, Passive Evaporation
19					19	TSF Contour, Cover, Draindown - Passive Evaporation
20 - 21					20 - 21	TSF Contour, Cover, Seed, Draindown - Passive Evaporation
22 - 38					22 - 38	TSF Draindown - Passive Evaporation
39					39	TSF Evaporation Pond Fill, Cover & Seed

Table 2 – Monitoring and Reporting Summary for DP-1840

Monitoring Report Schedule of Submittal (Subsection A of 20.6.7.29 NMAC)								
1	January 1 - June 30 (Q1 and Q2 sampling quarters) – Semi-annual report due by August 31 of each year							
2	July 1 - December 31 (Q3 and Q4 sampling quarters) – Semi-annual report due by February 28 of each year							
3	Annual reports due by February 28 of each year							
Reporting Summary								
Annual Reporting Frequency	Number of Sites	Description						
2	Not Applicable	Monitoring reports – All applicable requirements of Subsections A through H of 20.6.7.29 NMAC, and C113.						
2	Not Applicable	Additional discharge volume reporting listed in C113.N						
2	1	Mine facility ground water elevation contour map						
1	1	OPSDA and AOPHC Map(s)						
Monitoring Schedule								
Area	Identification Number	Sampling					Notes	
		type	Q1	Q2	Q3	Q4		
Open Pit	GWQ96-22A	mw	A-F,W	A-D,W	A-D,W	A-D,W		
	GWQ96-22B	mw	A-F,W	A-D,W	A-D,W	A-D,W		
	GWQ11-26	mw	A-F,W	A-D,W	A-D,W	A-D,W		
	GWQ96-23A	mw	A-F,W	A-D,W	A-D,W	A-D,W		
	GWQ96-23B	mw	A-F,W	A-D,W	A-D,W	A-D,W		
	GWQ11-24A	mw	A-F,W	A-D,W	A-D,W	A-D,W		
	GWQ11-24A	mw	A-F,W	A-D,W	A-D,W	A-D,W		
	PGWQ-1	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
	PGWQ-2	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
	PGWQ-21	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
	PGWQ-22	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
	TSF	GWQ-1	mw & p	A-F,W	A-D,W	A-D,W	A-D,W	
		GWQ-8	mw & p	A-F,W	A-D,W	A-D,W	A-D,W	
GWQ-10		mw	A-F,W	A-D,W	A-D,W	A-D,W		
GWQ-12		mw	A-F,W	A-D,W	A-D,W	A-D,W		
NP-1		mw	A-F,W	A-D,W	A-D,W	A-D,W		
NP-4		mw	A-F,W	A-D,W	A-D,W	A-D,W		
GWQ94-14		mw	A-F,W	A-D,W	A-D,W	A-D,W		
GWQ94-15		mw	A-F,W	A-D,W	A-D,W	A-D,W		
GWQ94-21A		mw	A-F,W	A-D,W	A-D,W	A-D,W		
GWQ94-21B		mw	A-F,W	A-D,W	A-D,W	A-D,W		
GWQ13-28		mw	A-F,W	A-D,W	A-D,W	A-D,W		
PGWQ-14		Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
PGWQ-15		Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
PGWQ-16		Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
PGWQ-18		Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
PGWQ-19	Pmw	A-F,W	A-D,W	A-D,W	A-D,W			
PGWQ-23	Pmw	A-F,W	A-D,W	A-D,W	A-D,W			
TSF/UCP	PGWQ-17	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
TSF/WRSP-2 &-3	PGWQ-13	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
Surge Pond	GWQ-5R	mw	A-F,W	A-D,W	A-D,W	A-D,W		
	PGWQ-9	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
WRSP-2 &-3	PGWQ-3	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
	PGWQ-4	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		
	PGWQ-5	Pmw	A-F,W	A-D,W	A-D,W	A-D,W		

	PGWQ-8	Pmw	A-F,W	A-D,W	A-D,W	A-D,W	
	PGWQ-20	Pmw	A-F,W	A-D,W	A-D,W	A-D,W	
	PGWQ-24	Pmw	A-F,W	A-D,W	A-D,W	A-D,W	
SW-C/ WRSP-2 & WRSP-3	PGWQ-6	Pmw	A-F,W	A-D,W	A-D,W	A-D,W	
	PGWQ-7	Pmw	A-F,W	A-D,W	A-D,W	A-D,W	
SW-A	PGWQ-10	Pmw	A-F,W	A-D,W	A-D,W	A-D,W	
PWR	PGWQ-11	Pmw	A-F,W	A-D,W	A-D,W	A-D,W	
SW-A/PWR	PGWQ-12	Pmw	A-F,W	A-D,W	A-D,W	A-D,W	
Grayback Arroyo^	SWQ-1	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	SWQ-2	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	SWQ-3	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	SWQ-4	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	SWQ-5	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
Impoundments	SW-A(M/S-9)	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	SW-B (M/S-10)	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	SW-C (M/S-11)	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	PWR (M/S-8)	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	Surge Pond (M/S-14)	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	UCP (M/S-6)	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
	TSF (M/S-4)	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
Mine Pit Water	Dewatering Sump	sw	A-F,W	A-D,W	A-D,W	A-D,W	Suite C Tot.
Seeps/Springs	Outside OPSDA only	spg/ sp	A-F,W	A-D,W	A-D,W	A-D,W	If encountered
Flow Meters/Discharge Volume Reporting	M/S-1 through M/S-17		C113.N and O	C113.N and O	C113.N and O	C113.N and O	See Figure 3

Sampling Analytical Suites (dissolved concentrations in mg/L, unless otherwise noted):

A = Field Parameters: Temperature (°C), pH, specific conductance (µS/cm)

B = General Chemistry and Inorganic Parameters: alkalinity-bicarbonate (alk-HCO₃), alkalinity-carbonate (alk-CO₃), alkalinity-total (alk-Tot), calcium (Ca), chloride (Cl), cyanide (CN), fluoride (F), magnesium (Mg), potassium (K), sodium (Na), sulfate (SO₄), and total dissolved solids (TDS)

C = Metal Parameters: aluminum (Al), arsenic (As), barium (Ba), beryllium (Be), boron (B), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), iron (Fe), lead (Pb), manganese (Mn), molybdenum (Mo), nickel (Ni), selenium (Se), silver (Ag), total mercury (Hg), uranium (U), and zinc (Zn).

D = Nutrients: Total Kjeldahl nitrogen (TKN), and Nitrate-Nitrogen (NO₃-N)

E = Radioactivity: Combined Radium-226 and Radium-228 (pCi/L)

F = Organic Parameters: Total Petroleum Hydrocarbons (TPH), benzene, polychlorinated biphenyls (PCBs), toluene, carbon tetrachloride, 1,2-dichloroethane (EDC), 1,1-dichloroethylene (1,1-DCE), 1,1,2,2-tetrachloroethylene (PCE), 1,1,2-trichloroethylene (TCE), ethylbenzene, total xylenes, methylene chloride, chloroform, 1,1-dichloroethane, ethylene dibromide (EDB), 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, vinyl chloride, PAHs: total naphthalene plus monomethylnaphthalenes, benzo-a-pyrene

W = Measurements: Depth-to-water measurement to the nearest 0.01 foot

^ = See C113.J

Explanation to Abbreviations and Symbols		
mw = monitoring well Pmw = proposed monitoring well sw = surface water p = production well spg = spring sp = seep Tnk = tank	WRP = Waste Rock Stockpile PWR = Process Water Reservoir UCP = Underdrain Collection Pond SW = Impacted Stormwater Impoundment Suite C Tot. = Total Concentrations for Suite C M/S-# = Measuring/Sampling Point OPSDA = Open Pit Surface Drainage Area AOPHC = Area of Open Pit Hydrologic Containment	<u>Sampling Quarter:</u> Q1 = Jan-Mar Q2 = Apr-Jun Q3 = Jul-Sep Q4 = Oct-Dec

Figure 1 – Authorized Mine Unit Footprints

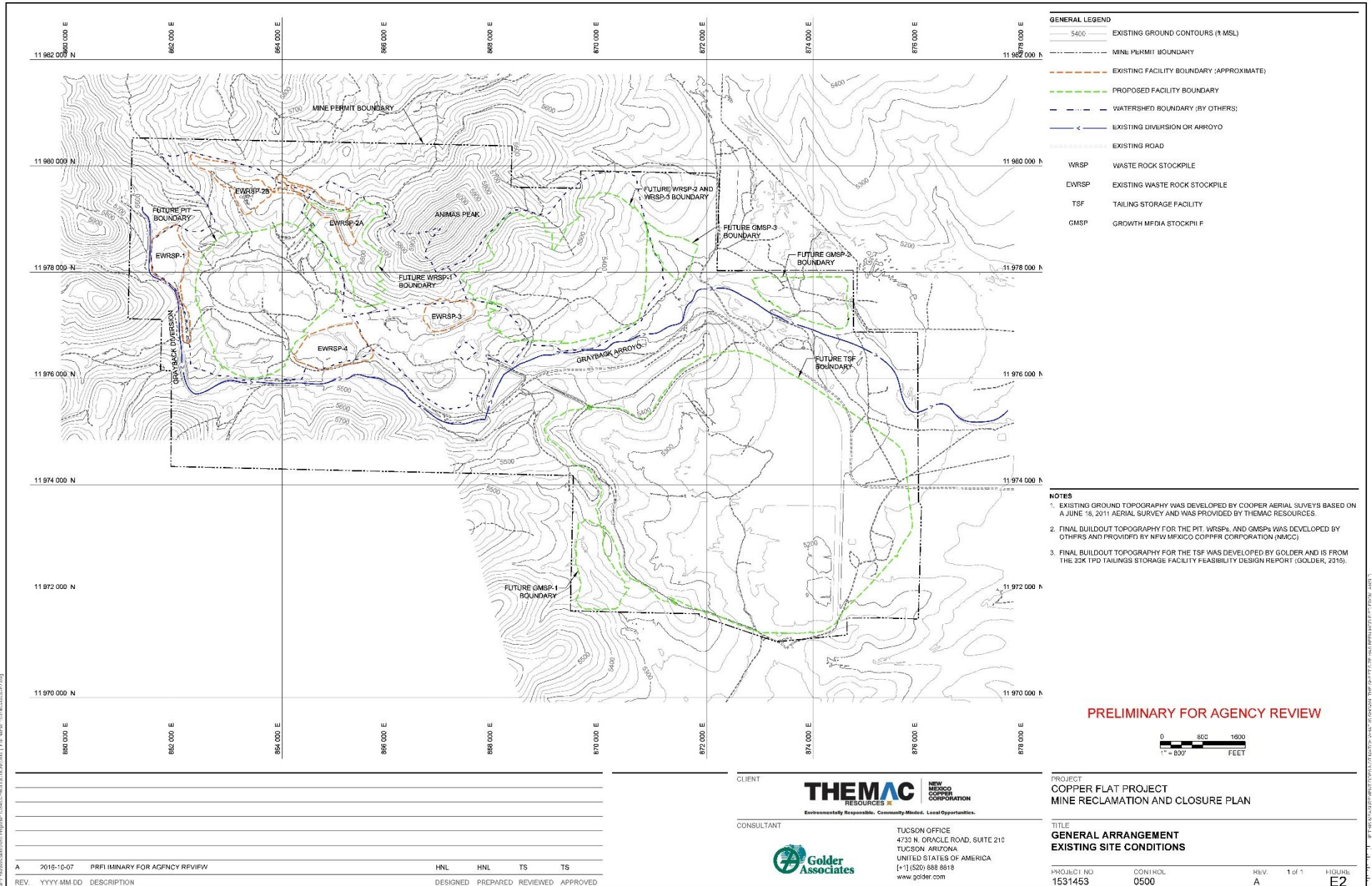


Figure 2 – Ground and Surface Water Sampling Locations

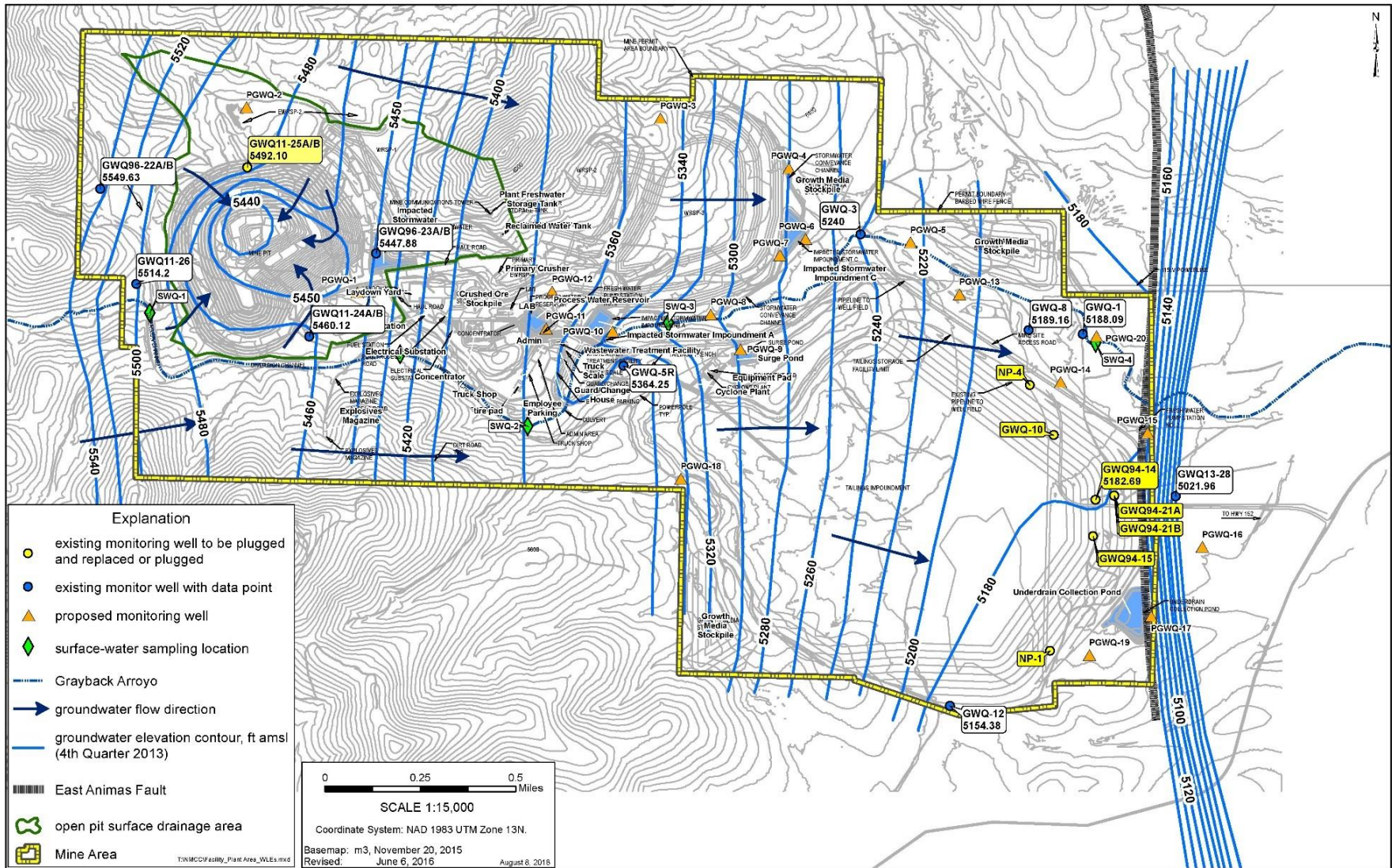
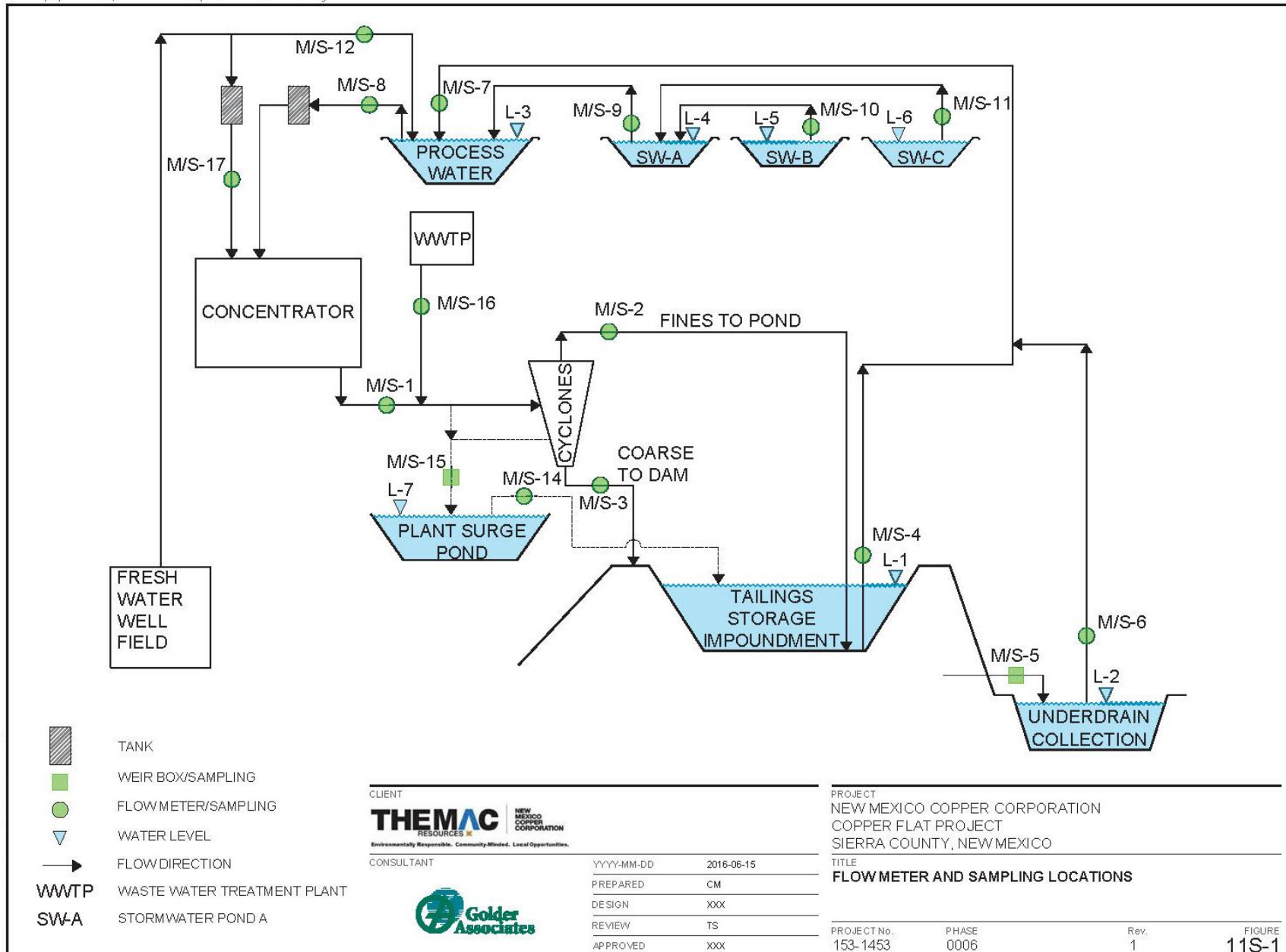


Figure 3 – Flow Meter and Process Water Sampling Locations



Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions

These conditions identify construction and abandonment requirements for installation of water table monitoring wells under ground water Discharge Permits issued by the NMED's Ground Water Quality Bureau (GWQB). Proposed locations of monitoring wells required under Discharge Permits and requests to use alternate installation and/or construction methods for water table monitoring wells shall be submitted to the GWQB for approval prior to drilling and construction.

General Drilling Specifications:

1. All well drilling activities shall be performed by an individual with a current and valid well driller license issued by the State of New Mexico in accordance with 19.27.4 NMAC.
2. Drilling methods that allow for accurate determinations of water table locations shall be employed. All drill bits, drill rods, and down-hole tools shall be thoroughly cleaned immediately prior to the start of drilling. The borehole diameter shall be drilled a minimum of 4 inches larger than the casing diameter to allow for the emplacement of sand and sealant.
3. After completion, the well shall be allowed to stabilize for a minimum of 12 hours before development is initiated.
4. The well shall be developed so that formation water flows freely through the screen and is not turbid, and all sediment and drilling disturbances are removed from the well.

Well Specifications (see attached monitoring well schematic):

5. Schedule 40 (or heavier) polyvinyl chloride (PVC) pipe, stainless steel pipe, carbon steel pipe, or pipe of an alternate appropriate material that has been approved for use by NMED shall be used as casing. The casing shall have an inside diameter not less than 2 inches. The casing material selected for use shall be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. The casing material and thickness selected for use shall have sufficient collapse strength to withstand the pressure exerted by grouts used as annular seals and thermal properties sufficient to withstand the heat generated by the hydration of cement-based grouts. Casing sections shall be joined using welded, threaded, or mechanically locking joints; the method selected shall provide sufficient joint strength for the specific well installation. The casing shall extend from the top of the screen to at least one foot above ground surface. The top of the casing shall be fitted with a removable cap, and the exposed casing shall be protected by a locking steel well shroud. The shroud shall be large enough in diameter to allow easy access for removal of the cap. Alternatively, monitoring wells may be completed below grade. In this case, the casing shall extend from the top of the screen to 6 to 12 inches below the ground surface; the monitoring wells shall be sealed with locking, expandable well plugs; a flush-mount, watertight well vault that is rated to withstand traffic loads shall be emplaced around the wellhead; and the cover shall be secured with at least one bolt. The vault cover shall indicate that the wellhead of a monitoring well is contained within the vault.
6. A 20-foot section (maximum) of continuous-slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED shall be installed across the water table. Screens created by cutting slots into solid casing with saws or other tools shall not be used. The screen material selected for use shall be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. Screen sections shall be joined using welded, threaded, or mechanically locking joints; the method selected shall provide sufficient joint strength for the specific well installation and shall not introduce constituents that may reasonably be considered contaminants of interest at the facility. A cap shall be attached to the bottom of the well screen; sumps (i.e., casing attached to the bottom of a well screen) shall not be installed. The bottom of the screen shall be installed no more than 15 feet below the water table; the top of the well screen shall be positioned not

less than 5 feet above the water table. The well screen slots shall be appropriately sized for the formation materials and shall be selected to retain 90 percent of the filter pack.

7. Casing and well screen shall be centered in the borehole by placing centralizers near the top and bottom of the well screen.
8. A filter pack shall be installed around the screen by filling the annular space from the bottom of the screen to 2 feet above the top of the screen with clean silica sand. The filter pack shall be properly sized to prevent fine particles in the formation from entering the well. For wells deeper than 30 feet, the sand shall be emplaced by a tremmie pipe. The well shall be surged or bailed to settle the filter pack and additional sand added, if necessary, before the bentonite seal is emplaced.
9. A bentonite seal shall be constructed immediately above the filter pack by emplacing bentonite chips or pellets (3/8-inch in size or smaller) in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal shall be 3 feet in thickness and hydrated with clean water. Adequate time shall be allowed for expansion of the bentonite seal before installation of the annular space seal.
10. The annular space above the bentonite seal shall be sealed with cement grout or a bentonite-based sealing material acceptable to the State Engineer pursuant to 19.27.4 NMAC. A tremmie pipe shall be used when placing sealing materials at depths greater than 20 feet below the ground surface. Annular space seals shall extend from the top of the bentonite seal to the ground surface (for wells completed above grade) or to a level 3 to 6 inches below the top of casing (for wells completed below grade).
11. A concrete pad (2-foot minimum radius, 4-inch minimum thickness) shall be poured around the shroud or well vault and wellhead. The concrete and surrounding soil shall be sloped to direct rainfall and runoff away from the wellhead.

Abandonment:

12. Approval for abandonment of monitoring wells used for ground water monitoring in accordance with Discharge Permit requirements shall be obtained from NMED prior to abandonment.
13. Well abandonment shall be accomplished by removing the well casing and placing neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer for wells that encounter water pursuant to 19.27.4 NMAC from the bottom of the borehole to the ground surface using a tremmie pipe. If the casing cannot be removed, neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer shall be placed in the well using a tremmie pipe from the bottom of the well to the ground surface.
14. After abandonment, written notification describing the well abandonment shall be submitted to the NMED. Written notification of well abandonment shall consist of a copy of the well plugging record submitted to the State Engineer in accordance with 19.27.4 NMAC, or alternate documentation containing the information to be provided in a well plugging record required by the State Engineer as specified in 19.27.4 NMAC.

Deviation from Monitoring Well Construction and Abandonment Requirements: Requests to construct water table monitoring wells or other types of monitoring wells for ground water monitoring under ground water Discharge Permits in a manner that deviates from these requirements shall be submitted in writing to the GWQB. Each request shall state the rationale for the proposed deviation from these requirements and provide detailed evidence supporting the request. The GWQB will approve or deny requests to deviate from these requirements in writing.

MONITORING WELL SCHEMATIC

(Not to Scale)

