

**Stillwater Mining Company  
Blitz Ridge - 2012 Surface Exploration Drilling  
Beartooth Ranger District; Custer National Forest**

**PLAN OF OPERATIONS FOR MINERAL EXPLORATION  
2012 Blitz Ridge**



**Submitted to:  
Custer National Forest  
&  
Montana Department of Environmental Quality**

**Prepared by:  
Stillwater Mining Company**

**February 27, 2012**

Stillwater Mining Company  
2012 Blitz Project Surface Exploration Drillholes – PLAN OF OPERATIONS

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Stillwater Mining Company  
2012 Blitz Ridge Surface Exploration Drillholes – PLAN OF OPERATIONS

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PLAN OF OPERATIONS FOR MINERAL EXPLORATION ACTIVITIES  
2012 BLITZ RIDGE SURFACE DRILLHOLES

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Submitted By: Randy Weimer  
Environmental Manager - Stillwater Mine  
2562 Nye Road  
Nye, Montana 59061

Date: Randy Weimer

Signature: Feb. 28, 2012

Plan Received By: Travis Parie

Date: February 28, 2012

Signature: \_\_\_\_\_

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**I. GENERAL INFORMATION**

**A. Name of Mine/Project:**

2012 Blitz Ridge - Surface Exploration Drilling  
Beartooth Ranger District; Custer National Forest  
Stillwater County, Montana

**B. Type of Operation:**

Exploration Diamond Drilling and Geologic Mapping

**C. Is This a New/Continuing Operation:**

The proposed 2012 Blitz Ridge Exploration Drilling is a continuation of and directly tied to the existing Stillwater Mine. The Plan Operations entitled Blitz Ridge – 2012 Surface Exploration Drilling replaces the previously submitted Stillwater Mining Company Blitz Project Surface Exploration Drilling Plan of Operations. That Plan was submitted to the US Forest Service and Montana DEQ on August 17, 2011 and has not yet been approved by either agency.

**D. Proposed Start-up Date of Operation:**

April 1, 2012 or pending approval of this Plan of Operations.

**E. Expected Duration of Operation:**

Through October 31, 2012

**F. Expected Date of Annual Reclamation/Stabilization:**

October 31, 2012

- G. Expected Date for Completion of all Required Reclamation:**  
 October 31, 2013

**II. PRINCIPALS**

- A. Name, Address, and Phone Number of Operator:**

Stillwater Mining Company  
 2562 Nye Road  
 Nye, Montana 59061  
 406-328-6400

- B. Name, Address, and Phone Number of Authorized Field Representative:**

Randy Weimer  
 Stillwater Mine – Environmental Manager  
 2562 Nye Road  
 Nye, Montana 59061  
 Office: 406-328-8529  
 Cell: 406-321-0015

- C. Name, Address, and Phone Number of owner of the Claims:**

Stillwater Mining Company  
 1321 Discovery Drive  
 Billings, Montana 59102  
 406-373-8700

- D. Name, Address, and Phone Number of Any Other Lessees, Assigns, Agents, etc.:**

None

**III. PROPERTY AREA**

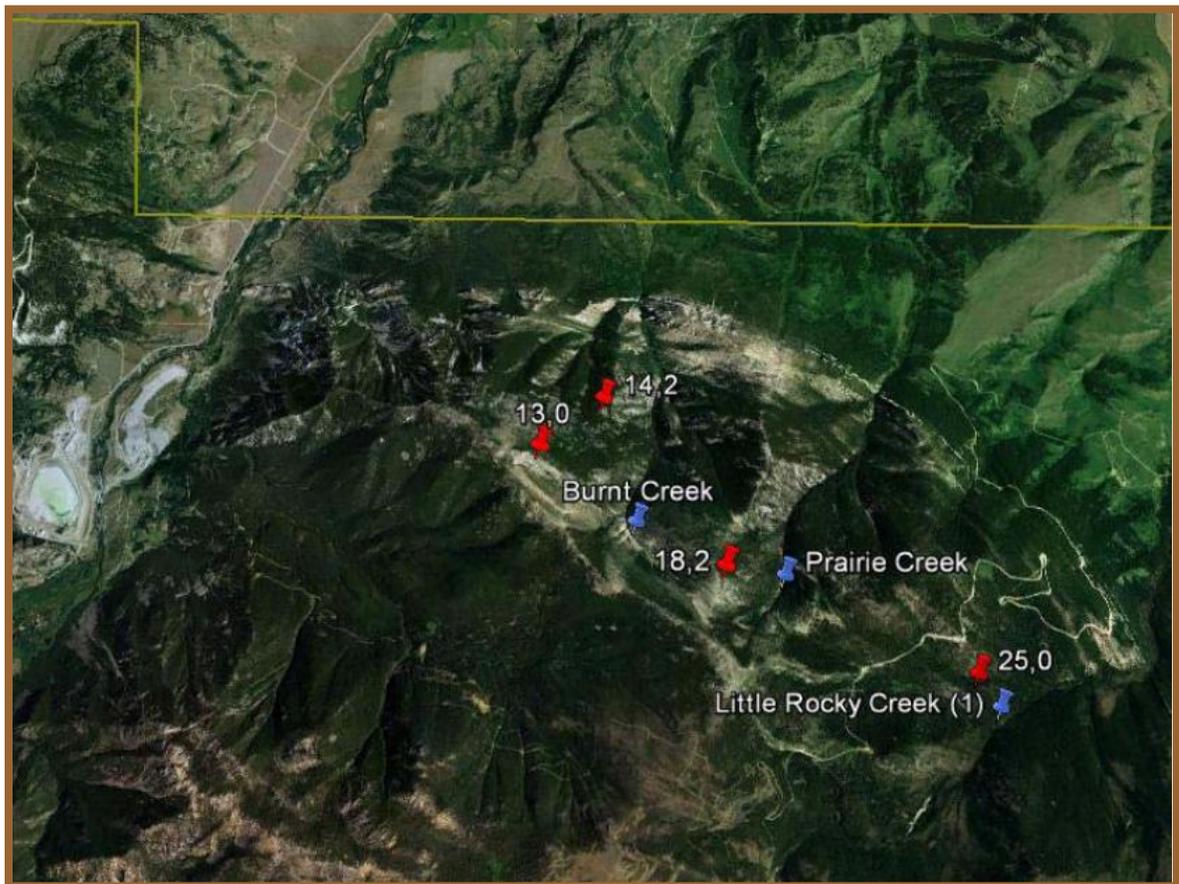
- A. Name of Claims and Legal Description:**

<b>2012 Blitz Ridge – Surface Exploration Drilling Sites Locations, Claims, and Water Sources</b>			
<b>Drill Hole ID</b>	<b>Location – NAD83</b>	<b>Claim Number</b>	<b>Water Source</b>
13.0	45.386,701° N, 109.825,140° W NAD83	Blitz 35	Burnt Creek Spring
14.2	45.390,516° N, 109.819,254° W NAD83	Blitz 32	Burnt Creek Spring
18.2	45.379,060° N, 109.807,907° W NAD83	Blitz 61	Burnt Crk / Prairie Crk
23.0	45.375,115° N, 109.789,280° W NAD83	Blitz 77	Limestone / LRC
25.0	45.372,400° N, 109.783,125° W NAD83	Blitz 88	Little Rocky Creek
Portal	45.382,260° N, 109.768,685° W NAD83	Fat Tire 75	Little Rocky Creek

#### IV. DESCRIPTION OF THE OPERATION

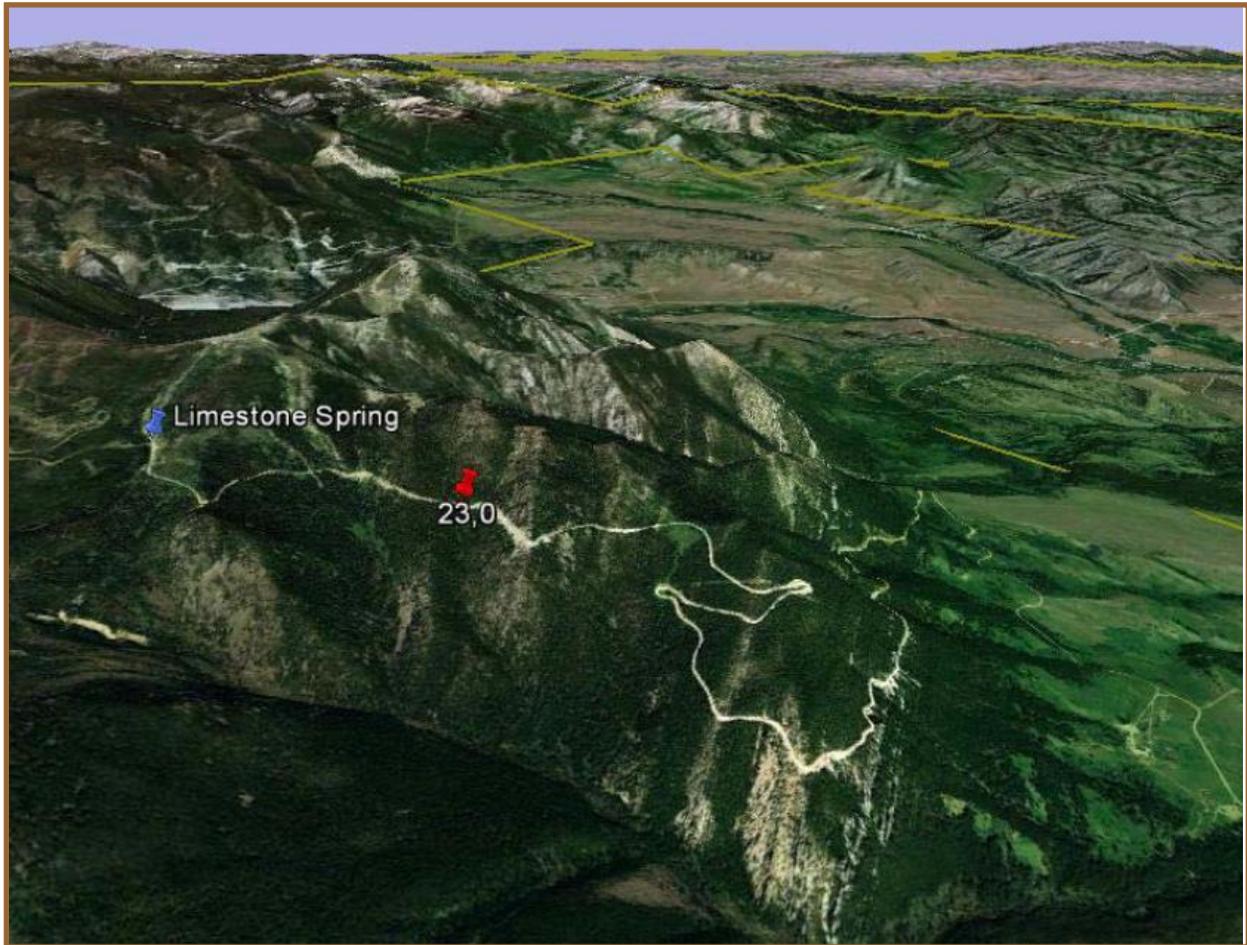
##### A. Access

Proposed drill locations 13.0, 14.2, 18.2, and 25.0 (see map below) shall be accessed and supported by helicopter. Large equipment would be staged and transported by helicopter from the historic Benbow Mill Site Area; while the daily transport of supplies and personnel shall be staged at either the existing helipad at the Stillwater Mine or from a separate helipad on private land. Personnel, supplies, and materials shall then be flown to centralized helipads near each drill location. In addition, ground transportation by truck, SUV, or ATV maybe used on occasion via Forest Service Road #2414 to gain proximity of the proposed drill locations. From the existing public roads and trails, access shall then be completed on foot. Only existing public roads and trails shall be used following USFS guidelines and regulations. There are no new roads or trails proposed with this Plan of Operations.



## Decision Memo Appendix A – Plan of Operations

The location of Drill Pad 23.0 (see map below) is immediately adjacent to Forest Service Road #2414 (Benbow Road). Accordingly, access to this drill site will be via the existing Benbow Road. Stillwater is not proposing to curtail usage of Benbow Road during drilling but rather proposes to complete some minor excavation into the road “cut-bank” to widen the road allowing for continued usage. These proposed excavation activities will be discussed in further detail in subsequent sections. The appropriate traffic signage shall be installed on either side of the proposed drill site to notify the public during occupation of this site. Depending on weather and snow conditions, some minor snow plowing may be required on FS 2414 to access the drill site and limestone spring early in the season.



## Decision Memo Appendix A – Plan of Operations

Access to the proposed Portal Drill Site will be via existing logging and ATV Trails from the historic Benbow Mill Site and some limited helicopter support. Use of the existing trails may require some minor tree removal, trimming of trees (branch removal), removal of dead-fall, and grading/leveling within the confines of the existing cat-track in order to provide safe access to the site. Because this route is not designated for public motorized use, signs indicating use of the route is authorized only as part of this mineral exploration will be placed at the beginning of the route near the Benbow Millsite and maintained while operations occur in this area. Any unauthorized public motorized use of this route will be immediately reported to the Forest Service.

A track-mounted drill shall be used in this application in order to access the site. Once set-up, ATV(s) shall be used for daily access and the movement of supplies, materials, and personnel. On rare occasions, a helicopter maybe used to deliver supplies and materials. Mobilization, set-up, and operations at the Portal Drill Site will be scheduled in coordination with the Beartooth Ranger District to minimize any disturbance to a resident Goshawk. As a guideline, activities are restricted between April 15 and August 15.



### Helicopter Usage

As previously mentioned, Stillwater proposes to use a helicopter to support multiple activities as part of the 2012 Blitz Ridge Exploration Program. For larger loads, Stillwater proposes to use a K-Max Helicopter; while for smaller projects, an A-Star shall be used. The helicopter transport of equipment including the drill rigs, mini-excavator, and possible skid-steer is proposed to occur from the former Benbow Mill Area. Given the weight of this equipment, staging from this area will allow the shortest transport distance thus minimizing haulage time, noise, vertical climb distance, public over-flight, and related safety concerns. There shall be no helicopter refueling or routine maintenance activities performed at the Benbow Millsite. Rather, these activities will occur at the Helicopter Staging Area in addition to the staging and transport of supplies, materials, core, and personnel.

Stillwater proposes the use of two (2) helipads to stage and transport supplies, materials, core, and personnel, to and from the drill pads. The first being the Stillwater Mine Helipad and the second being on private land in proximity to Blitz Ridge. Use of the Stillwater Mine Helipad shall be limited. Rather, we propose to locate a temporary helipad on private land away from the Stillwater Mine for the reasons discussed below:

- **Proximity to the Stillwater River.** We would prefer not to stage fuel barrels and install temporary fueling tanks at the Stillwater Mine Helipad immediately adjacent to the River.
- **Safety Considerations.** At present, the area around the Mine's Helipad is extremely congested. There's existing haul truck traffic, mine traffic, plus trucks delivering supplies for the Blitz Project including arrival of the TBM. We are installing pipelines and the new powerline feeding the east-side sub-station. Beartooth Electric also has a powerline crossing in the same general area.
- **Storage Area.** At the Stillwater Mine Helipad, there is limited room/area for the storage and staging of supplies and materials.
- **Proximity to Highway.** As you know, during the summer, Highway 419 gets a lot of use with Woodbine Campground and the National Forest. For safety, noise, visual impacts, and public interaction, it is preferable to not be immediately adjacent to the highway.
- **Noise to our Neighbors.** To access Blitz Ridge from the Stillwater Mine Helipad requires a helicopter to slowly climb up the west side of the valley and then shoot across and over to Nye Basin. This will result in additional noise and inconvenience for our immediate neighbors to the north. We believe much of the noise can be mitigated by flying at elevation over the valley.
- **Access to the Hertzler Impoundment.** Should the need arise to haul cuttings from the drill sites, we would be in closer proximity to the Hertzler Impoundment for disposal.

Mobilization and de-mobilization of the drill rigs and supporting infrastructure to and from the Benbow Mill Area shall occur at the start and again at the end of the field season. During the drilling season itself, the K-Max and A-Star Helicopters will then be used periodically to move the rigs between the different drill sites on the ridge. It is anticipated that approximately twelve (12) helicopter trips will be necessary each time a drill rig and the associated infrastructure is mobilized to a drill site. Barring any type of extreme mechanical failures, for the smaller rig, we estimate this will occur approximately 4 times; while for the larger rig, we estimate twice. The

transport of the mini-excavator or skid-steer shall occur up to 10 times throughout the season, as the sites are initially developed and then during reclamation activities of each site.

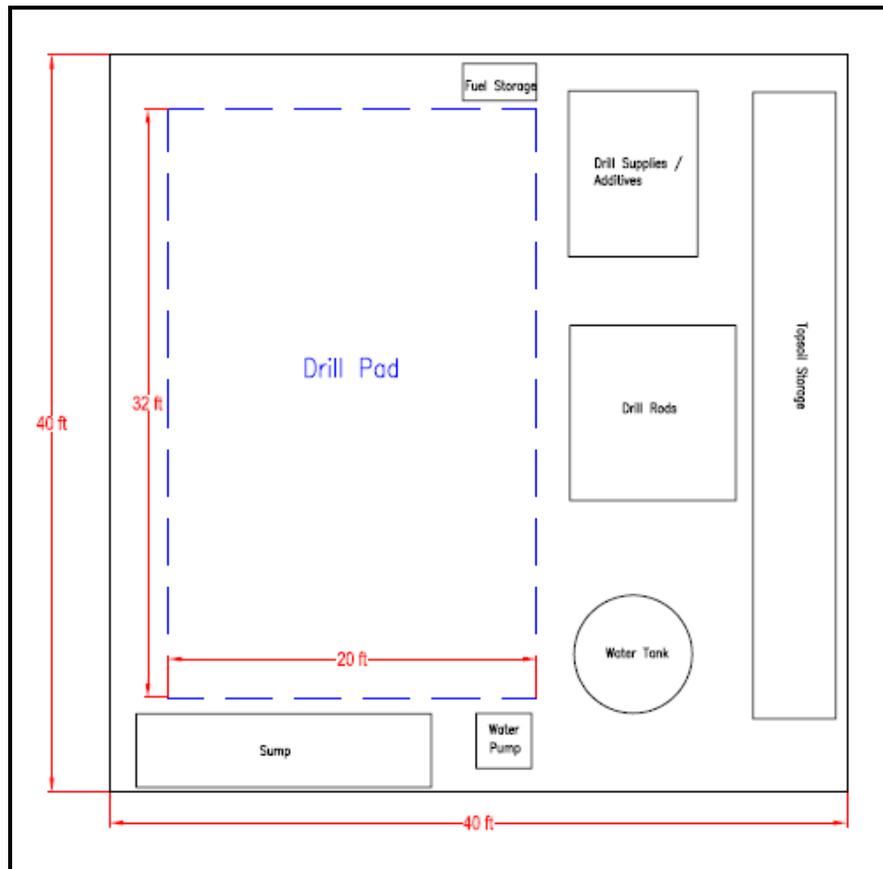
Once the rigs are in operation, a helicopter maybe used up to 5 times each day, 7 days a week to transport personnel, supplies, and materials from the Helipad(s) to each drill site and vice-versa. Additional helicopter use may be required due to unforeseen events, such as mechanical problems or medical emergencies.

**B. Map, Sketch, or Drawing**

The Drill Locations and access is shown on the above figures.

The typical drill site plan is shown below. This typical drill plan will be used at all proposed sites with the exception of the Portal and the 23.0 Drill Pads. Given the relatively flat (horizontal) angle of the Portal Long-Hole and in order to mirror the proposed Benbow Decline, an 80'x80' pad will be necessary at this location. Facility arrangements shall be similar.

At the 23.0 Drill Site, a 40'x80' drill pad will be necessary. Facility arrangements shall be field-fit to minimize the amount of excavation required while still allowing public usage of the Benbow Road. Facility components would remain the same.



### C. Project Description

The Blitz Ridge Exploration Drilling Program has been designed to evaluate Platinum Group Metal (PGM) potential to the east of the Stillwater Mine, as well as to assist in the planning and design of the 5000E Footwall Lateral to be driven by the Tunnel Boring Machine (TBM) from existing agency-approved workings at the Stillwater Mine. The proposed core hole(s) at the Portal Site will be used to confirm and validate the location of the conceptual Benbow Portal in terms of lithology; structure; and reef location as well as assist with project design including an estimation of potential water volumes and rock characterization. Depending upon the results of this exploratory drilling program, possible future development and implementation of the Blitz Mine Expansion has the potential to add an additional 25 years or more of mine life to Stillwater Mining Company's operation.

During 2012, Stillwater Mining Company is seeking approval for the exploration drilling at six (6) drill sites with up to five (5) separate drill holes at each location. Initially, Stillwater will be targeting two (2) holes at each site but this may increase up to five (5) depending on materials encountered and/or drilling results. A typical Diamond Drill shall be used to drill the proposed exploration core holes that may vary from 2000-feet up to 6000-feet in depth depending on drilling conditions and materials encountered. No mining, milling, or permanent facilities are being proposed.

It is Stillwater's intent to operate as many as two (2) drill rigs at any one time. The drill(s) shall be operated 24 hours per day, 7 days a week requiring up to 10 persons working in the area from early April through October. Typically, a diamond drill can complete up to 200-feet per day of drilling. Contractors supporting the project will be expected to secure lodging in nearby towns. There shall be no camping on or near the project sites.

Drill Sites 13.0, 14.2, 18.2, and 25.0 shall be no larger than 40 ft. by 40 ft. for a disturbance area of approximately 0.04 acres. The Portal Long-Hole may be as large as 80 ft. x 80 ft. (0.08 acres) due to the shallow angle of this proposed hole and the need to anchor the drill stem onto bedrock. Depending on site characteristics, minor clearing and tree removal may be necessary at some or all drill sites to accommodate proper orientation of the drill rig and provide for safe operation of the helicopter. The Forest Service Representative will review sites prior to site preparation and pre-approve removal of all large trees and all live whitebark pine trees. Whenever possible, felling of healthy cone-bearing whitebark pine trees will be avoided.

To allow for ongoing usage of the Benbow Road and to maintain safe working distances, at the 23.0 Drill Site, Stillwater proposes to make a 40 ft. x 80 ft. excavation (cut) off the road into the cut slope. Drilling operations would then be set-up within this cut. Water to support the drillings operation will be hauled to the site from either Limestone Spring; Little Rocky Creek; or other source and stored in tanks. Drill cuttings will be placed in excavated sumps/tanks as necessary or shoveled down the drill hole; while, excess clarified water will be allowed to drain down the side of the road in existing stormwater control structures, none of which drain directly into surface waters. Excavated materials would be temporarily stored until drilling operations are completed. At that time, excavated materials would be returned to the cut and the pre-existing slopes/topography re-established. Plant material/organic litter and the various soil horizons will be salvaged and segregated during site preparation, and then returned in the same order they were removed (i.e. duff, topsoil, subsoil, and soil). The area will then be revegetated

with Stillwater's Benbow Seed Mix (see Table on Page 20) and stormwater control structures installed to limit and/or prevent erosion.

Where necessary, a temporary helipad will be placed in close proximity to the drill sites as described above. As before, the helipads shall be located in areas to minimize tree and brush removal. There is no ground disturbance proposed with the temporary helipads. If necessary, existing woody debris, cut timber, and/or untreated wooden planks/timbers will be used to assist in providing a level area upon which a landing pad could be established. During reclamation, any wooden planks or timber used in construction of the landing pad would be removed and remaining natural woody debris scattered about the site. Compacted areas would be scarified and reseeded if determined necessary by the Forest Service Representative.

At the drill sites, each drill will be equipped with self-leveling hydraulic legs that will be used in conjunction with cribbing to level the drill. Hand tools will be used to assist in pad construction. As necessary, a drilling platform will be constructed consisting of cut logs or supplied timbers covered by planking. No treated wood will be used at any time. As before, during reclamation, all planking and timbers shall be removed by helicopter from the site and remaining woody debris spread around the site to assist with reclamation activities.

Drilling fluids and water will be contained in portable plastic tanks. Water for drilling purposes shall either be supplied from adjacent surface water sources or transported in a tank to a location near the site where it can then be pumped or gravity fed via a garden hose or the like to the drill sites. State Water Rights shall be secured as necessary for usage of any surface water resource. At this time, water for the Portal and 25.0 drill sites will be sourced from Little Rocky Creek; the 23.0 water will be hauled from either Limestone Spring or Little Rocky Creek; the 18.2 water will be sourced from either Burnt Creek or Prairie Creek; and finally, for the 14.2 and 13.0 drill sites, water will be sourced from Burnt Creek.

The drill sites shall be maintained in a neat, orderly fashion. Drillings supplies, additives, fuels, etc. shall all be maintained in secondary containment facilities to prevent accidental releases. During reclamation, all materials, supplies, and associated items transported to the drill sites for use shall be removed and appropriately managed. Stillwater shall provide a complete list and materials safety data sheets for all drilling fluids, fuels, lubricants, bear spray, and other potentially hazardous materials to be used on the project sites.

A cascading system of multiple cuttings sumps, the largest being a nominal, 8' wide x 10' long x 5' deep, will be constructed down-gradient of the drill pad elevation for water clarification and for the containment and eventual disposal of drill cuttings and sludge. We believe the use of multiple sumps in series is the preferred method for water clarification. Excess clarified water not recycled back into the drilling process or infiltrated directly will overflow and percolate into the forest floor and/or into the subsurface under controlled circumstances that do not result in soil erosion. There shall be no direct discharge into streams, wetlands, or other surface waters. In the event cuttings sump(s) cannot be constructed as a result of shallow bedrock or large cuttings volumes, Stillwater would use portable tanks to contain the cuttings and for fluid recirculation. If portable tanks are used, Stillwater would transport drill cuttings back to the Stillwater Mine for disposal in the existing Tailings Impoundments.

Core removed from the site shall be appropriately analyzed and then stored on private lands for future use as needed. Upon completion, each drill hole will be backfilled with bentonite to within 5-10 feet of the surface and the last 5-10 feet will be cemented per Montana DEQ requirements. The casing will then be pulled or cut off below ground level. Finally, each drill location shall be marked by a rebar stake for future reference.

Additional specific project activities and detail are provided in the remainder of the Plan of Operations.

#### **D. Equipment and Vehicles**

At this time, it is difficult to predict the type and availability of equipment and vehicles to be used on the project. Based on the current project scope, it is anticipated that two diamond drill rigs will be used; a small, track-mounted excavator and/or skid-steer; multiple ATVs; two or three pickup trucks; a water truck; a helicopter; and water pumps. All vehicles and equipment will be state registered. Vehicles will be equipped with a fire compliant spark arrester, a 5-gallon bucket, a fire Pulaski or shovel, and a fire extinguisher. Pumps and saws will be equipped with spark arresters and fire suppression tools will be readily available when these pumps or saws are operated.

Drilling operations will take place 24-hrs per day, 7 days a week for up to 7 months. In support of these drilling activities, a track-mounted excavator and/or skid-steer will be used periodically for site preparation and again during reclamation activities. The helicopter(s) will be used daily to shuttle personnel and materials to and from the drill sites (please see prior discussion). Finally, it is estimated that no more than 10 vehicle trips per day will be required on the Benbow Road in support of these drilling activities.

#### **E. Structure**

No permanent structures are planned.

### **V. ENVIRONMENTAL PROTECTION MEASURES**

#### **A. Air Quality**

There is limited air quality impacts anticipated with this proposal. Timber slash generated as a result of the project will be minimal. As such, it would be lopped and scattered across the disturbed sites after they are seeded to prevent erosion, facilitate reclamation, and provide microsites for revegetation.

No refuse burning will occur. All trash materials shall be transported from the site(s) daily.

All engines utilized in the operation will be equipped with catalytic converters, mufflers, and spark arrestors with which they were manufactured. To the extent possible, Stillwater will attempt to secure Tier II and Tier III Engines for all equipment.

During drilling activities, road traffic will be minimal because the projects will be mainly helicopter supported. Accordingly, Stillwater is not proposing any dust suppression or road maintenance activities at this time with the exception of some minor snow-plowing as necessary.

## **B. Water Quality**

Drill sites are not in close proximity to surface waters. In all cases, applicable State and Federal Water Quality Standards will be met.

### **1. Water Source and Storage**

Prior to project startup, Stillwater shall secure the required water rights from the State of Montana or leases from existing water right holders for use of water on the project. Water from these sources will be pumped or gravity fed in a hose or pipe laid directly on surface to the drill sites and finally into a portable storage tank. If a pump is used, the pump itself will be placed in a plastic tub or like containment to prevent spillage into the adjoining surface water. There will be no permanent disturbance to the bed or banks of any creek. However, during periods of low flow, it may become necessary to install a temporary plastic dike in the creek to increase localized storage capacity. At the completion of drilling, any and all plastics shall be removed and any rocks used in the construction of the dike randomly scattered. All water source sites shall be approved by a USFS Representative prior to construction.

The drill will require up to 25 gallons of water per minute. This water is used to cool the bit face and flush drill cuttings from the hole into a collection sump. From the collection sump, the water is recycled back to the drilling process. Upon completion of drilling, water will remain in the drill hole or filter into the ground through the walls of the sump.

### **2. Erosion and Surface Water Runoff**

The proposed drill pad locations have minimal run-on potential and high infiltration rates. Surface disturbance will be minimal. Given these factors, erosion and surface water runoff is not anticipated.

The volume of water used in the drilling process is small given that water is recycled. Drill cuttings and fluids will be collected in a sump as required by Montana DEQ. At closure, drill cuttings will be disposed of down hole, buried within the sump(s), or transported to the Stillwater Mine for disposal in the existing tailings impoundments. Plant material/organic litter and the various soil horizons will be salvaged and segregated during site preparation for use in reclamation. Slash and litter will be placed on and downslope of disturbed ground to serve as a filter. Vegetation clearing will be minimized to that absolutely necessary for safe operations.

Drill sites and other areas with ground disturbance will be located a minimum of 300 feet from all perennial streams, ponds, lakes, reservoirs, or wetlands. Any exceptions to this distance will be applied only upon the site-specific approval by the Forest Service Representative in consultation with Forest Service fisheries or hydrology specialists.

It is understood that based upon site-specific determinations for erosion potential and in consultation with the Forest Service Representative that silt/drift fences; straw wattles; water bars; soil berming and sumps; and/or slash-filters may be required on or immediately downslope of cleared drill sites, sumps, or infiltration galleries during drilling operations and/or as part of reclamation activities.

### **3. Surface and Groundwater Monitoring**

Water will be visually monitored for sedimentation and/or the any presence of visible petroleum sheen.

### **4. Seasonal Closures or Temporary Cessation of Operations**

In the event of a seasonal closure or temporary cessation of operations for a period longer than 15 days, Stillwater shall implement interim stabilization activities. This includes removal of the drill, remaining sumps will be aggressively dewatered by decanting remaining clear water and scarifying berms to promote infiltration, all hazardous materials would be removed from the drill site to a secure storage location, all stormwater BMPs would be re-evaluated to ensure adequacy, and pumps adjacent to running water will be removed as part of seasonal closure or stored within a covered containment at the drill pad as part of temporary cessation.

All final reclamation activities will be completed within one (1) year of completion of activities or prior to October 31, 2013.

### **5. Land Application of Waste Water**

Land application is not proposed for this project.

## **C. Solid Wastes**

There will be limited solid wastes produced during Operations and the majority of these wastes will be domestic waste, paper, rags, and the like. In the event of mechanical breakdown or routine maintenance, there may be some limited maintenance wastes (i.e. hoses, parts, rags, etc.). In all cases, solid wastes produced by the operations will be hauled off-site and disposed of in accordance with State and Federal Law. No open burning of refuse or petroleum products will occur.

Portapotties or the equivalent shall be provided at each drill site. Portapotties shall be maintained in sanitary conditions and routinely emptied or “changed-out”. These wastes shall be managed by a licensed contractor and taken to the appropriate waste treatment facilities for disposal.

#### **D. Scenic Values**

The proposed drill sites are located in remote, timbered areas. The sites are not readily visible from residential areas. Any slash generated during Operations shall be used for erosion mitigation or visual screening. At the completion of Operations, slash shall be lopped and scattered about the site. All disturbed areas will be concurrently reclaimed at the completion of Operations. Elevated lighting shall be shielded and directed towards the ground to reduce visibility impacts. Painting and visual screening of equipment shall be used to the extent practicable to minimize visibility impacts. There will be no line of site clearing at any location.

#### **E. Fish and Wildlife**

Stillwater shall make every effort and implement appropriate mitigations to maintain and protect fisheries and wildlife, and their habitat.

There shall be no camping within, or in the vicinity of, project area drill sites by Stillwater Employees or any contractors working on behalf of Stillwater. Stillwater and our contractors shall maintain a clean, organized, and tidy work location and staging areas. In addition, the following conditions shall apply:

- Food Storage – All refuse will be transported on a regular basis from the drill sites to the Stillwater Mine for management. Food, food wastes and like disposable refuse will be kept in steel, bear resistant containers or other means approved by the Forest Service Representative. The bear food storage order (Custer National Forest Order No. 10-08-02-13) will be complied with. The containers will be removed routinely (at least every three (3) days) and the contents taken to the Stillwater Mine for management.
- Bear Incident Report – Any incident involving a grizzly bear or black bear will be reported to the Forest Service representative within 24 hours. It is understood that the Forest Service may require immediate temporary modification of operations if such an action is deemed necessary in order to prevent confrontation or conflict between humans and bears.
- Wolves – Any discovery of occupied dens or rendezvous sites on National Forest Lands will be reported to the Forest Service within 24 hours. It is understood that specific mitigations to minimize disturbance to the wolves maybe required at that time.
- Aquatic Nuisance Species (ANS) – Introduction and spread of ANS via water pumping equipment is of concern. As such, Stillwater shall use one of the following wash procedures for equipment that will come in contact with waterbodies, such as streams, lakes, or wetlands.
  - Wash debris, mud, sediments, organisms, plant material and fragments from all equipment that will enter water feature. Allow equipment to thoroughly air dry (inside and out) for a minimum of 48 hours.
  - Wash equipment with heated water (>140F) for a minimum of 10 minutes and until all mud, sediments, organisms, plant material and fragments are removed from equipment. Allow equipment to thoroughly air dry for a minimum of two hours or until no visible moisture exists.
  - Wash equipment with a minimum of 5% Quaternary Ammonium Solution (Quat128 or Sparquat256) for a minimum of ten minutes and until all mud, sediments, organisms, plant material and fragments are removed from

equipment. Allow equipment to thoroughly air dry for a minimum of two hours or until no visible moisture exists. Disposal of Quat128 or Sparquat256 shall be away from waterbodies and on bare soil.

- Equipment Cleaning and Inspections – Stillwater will implement an aggressive reclamation and noxious weed management program to maintain habitat. Vehicles and equipment will be washed and inspected for noxious weeds and Aquatic Nuisance Species prior to entering the exploration area and National Forest System lands.
- Waste waters shall be properly managed to avoid contact with any surface waters.
- Oil and grease saturated materials will be segregated and disposed of separately.
- Open burning of materials and refuse will not be allowed. There shall be no campfires of any type.

To further minimize wildlife impacts, Stillwater shall make every effort to reduce and manage helicopter usage in the area including materials/load consolidation; personnel scheduling and transport; location of flight paths, corridors, and flight times; and materials staging.

#### **F. Vegetation**

It is anticipated that a few live and dead trees may need to be removed at each of the drill sites and helipads in order to implement this Plan. As previously discussed, efforts will be made to avoid cutting healthy whitebark pine whenever possible. To the extent possible, helipads shall be pre-fabricated, lifted, and set at each of the proposed drill locations. A few of the cut trees might be used to level and shore the landing area. At reclamation, these trees will be scattered across the site to assist in re-establishing vegetation and to add organic matter to the soil as they decay.

Noxious weeds are not currently prevalent or widespread through the project area. To reduce or eliminate the potential introduction of noxious weeds to the area, all vehicles and equipment will be pressure washed prior to mobilization and inspected prior to entering the Forest or being used on the project.

#### **G. Cultural Resources**

If determined necessary by Forest Service Archeologists, additional cultural resource inventories shall be completed by a contractor with necessary Forest Service Permits. Reports of such inventories will be reviewed and approved by the Forest Archeologist in advance of any ground disturbing activities associated with this exploration project. As necessary, Stillwater will implement the necessary mitigation measures to protect historical or archeological sites if they are identified. If additional cultural resources are discovered during implementation of the project, Stillwater shall immediately cease operations at that location and notify the Forest Service Representative.

## H. Hazardous Substances

### 1. Type and Volume of Hazardous Materials and Toxic Substances

Gasoline, diesel fuels, oils, and greases are necessary to successfully operate the drill, pumps, generator, and associated equipment. To prevent spills and releases, these substances and other potentially hazardous materials necessary for operations shall be stored within secondary containment with a minimum 150% of the capacity of the total volume of all liquids stored. Covers or tarps will be utilized to prevent accumulation of rain or snow within the secondary containments to limit management of additional waters. All fueling of equipment will be completed over absorbent materials or within secondary containment. Given drilling operations are proposed to occur 24 hours per day, 7 days a week, vandalism to storage tanks and drums is not a concern.

Approximate Quantities to be stored at each operating drill site:

- 110 gallons of Diesel Fuel (2 – 55 gallon drums)
- 55 gallons of Gasoline (1 – 55 gallon drum)
- Two (2) cases of 1-quart plastic bottles of oil
- Two (2) cases of grease tubes

Fuels, lubricants, and other materials shall be re-supplied to the drill sites as necessary to complete the project. It is anticipated that the drill will use approximately 25 gallons of diesel fuel per day.

Copies of MSDS for substances used on National Forest Lands will be maintained at each drill site. In addition, a copy of each MSDS will be provided to the Forest Service Representative prior to commencement of activities.

Potentially hazardous materials will be handled, managed, and disposed of as described in the Materials Safety Data Sheets and removed from National Forest Lands at the completion of activities. Spill kits will be available at each drill site when hazardous or potentially hazardous materials are present.

### 2. Methods, Volume, and Frequency of Transport

Helicopters will be used to transport equipment, supplies, materials, and personnel to the drill sites with the exception of the Portal and the 23.0 Drill Sites. These two sites will be accessed by existing Forest Service Roads, ATV Trails, or historic logging/mining roads. On limited occasions, small items and some re-supply materials and food will be transported by pickup trucks or ATV to central locations along the Forest Service Road and from there, taken on foot as necessary to the helicopter supported sites. While transporting petroleum products, by air or land, all hazardous materials will be in spill proof containers and tightly-secured to minimize the potential for spillage. Clean up materials will also be readily available.

All containers shall be appropriately labeled identifying contents and hazards (HMIS Labeling System).

**3. Measures Taken to Prevent or Report the Release of Reportable Quantities of Hazardous Materials or the Release of Toxic Substances**

Upon arriving onsite and during operations, equipment shall be thoroughly inspected and monitored for equipment leaks. If a leak develops, that piece of equipment shall be immediately shut-down and any spillage contained to minimize impacts. Equipment shall not be operated until repairs are completed. All spilled and impacted materials, regardless of quantity, shall be appropriately cleaned up and managed per the MSDS.

While within the project area, appropriate containment procedures shall be employed and absorbent materials readily available. Fuel barrels or tanks will be stored in secondary containment, such as metal stock tanks, with a containment volume of at least 150% of the total volume of all materials stored. Petroleum absorbent materials will also be available at each storage location. Tarps or like items will be available to cover fuel barrels and secondary containment vessels to prevent the accumulation of precipitation. Operating water pumps will also be in containment or will have petroleum-absorbent materials under them.

All spills or releases of hazardous substances, regardless of size, will be properly and expeditiously managed, contained, and removed to protect public health and the environment. Per Montana DEQ notification requirements, releases and spills will be reported to the state's Disaster and Emergency Services (DES) 24-hr phone number (406) 431-0411. If no one can be reached at that number, the release or spill will be reported to the MDEQ Duty Officer at (406) 431-0014. Notification to the National Response Center (NRC) may also be required. NRC can be reached at 800-424-8802.

A. The following types of spills must be reported:

- Releases or spills of hazardous substances in amounts that meet or exceed reportable (420 or 25 gallons as outlined in "C" below) quantities as set out in 40 CFR Part 302. Notification to the DES and NRC is required.
- Spills, overfills, and suspected releases from underground storage tanks and petroleum storage tanks. *ARM 17.56.501, et seq.*
- Releases or spills of any materials that would lower the quality of groundwater below water quality standards. *ARM 17.30.1045.*

B. The following types of spills should be reported:

- Spills that enter or may enter state water or a drainage that leads directly to surface water;
- Spills that cause sludge or emulsion beneath the surface of the water, stream banks or shorelines,
- Spills that cause a film, "sheen", or change the color of the water, stream banks or shorelines; or
- All other spills except as noted in C.

- C. The following types of spills are not required to be reported provided they do not enter surface water or a drainage that leads directly to surface water:
- Spills of twenty-five (25) gallons or less of refined crude oil products, including but not limited to gasoline, diesel fuel, aviation fuel, asphalt, road oil, kerosene, fuel oil, and derivatives of mineral, animal, or vegetable oils.

In addition, all spills of hazardous substances and petroleum products will be reported to Pat Pierson or Dan Seifert (Custer National Forest) and Bob Cronholm or Lisa Boettcher (MDEQ).

## I. Reclamation

Best management practices will be used to keep disturbances to the minimum required for the safe and successful completion of the project. Reclamation of the sites will be initiated on a site-specific basis following completion of drilling activities. Final and interim reclamation of drill-sites, water pumping sites, lay-down areas, helipads, travel routes, and other areas disturbed by activities proposed in this Plan, will be conducted in consultation with the Custer National Forest and MDEQ on a site by site basis. Reclamation measures will be adjusted as necessary to best achieve reclamation objectives. There are no permanent structures proposed with this Plan.

### Objectives

The objectives of reclamation measures under this Plan of Operations are to:

- 1) Reclaim the surface disturbed by operations by taking such measures as will prevent or control on-site and off-site damage to the environment and forest surface resources.
- 2) Return areas disturbed by operations to a stable configuration that approximates the original condition to the extent possible.

### Facilitating Reclamation

Disturbed areas will be kept to the minimum size necessary to accommodate exploration operations. If ground leveling activities are needed or if infiltration galleries or sumps are dug, vegetation and soil layers will be separated, stockpiled, and finally returned in the same order they were excavated. When possible, vegetation, such as sod or small shrubs, will be stockpiled on tarps so as to remain separated from other soil materials and to facilitate placing this material atop the reclaimed surface. Surface litter shall be salvaged and placed over the top of disturbed areas once reclamation is complete. Felled or cut trees, logs, or brush will be stockpiled and used for final reclamation.

Where deemed necessary by the Forest Service Representative, disturbed areas shall be reseeded utilizing Stillwater's Benbow Seed Mix (as described below). Seed shall be hand-broadcasted and raked into the soil horizon. This will be followed by the spreading of surface litter (organic matter) and installing necessary erosion control structures as directed by the Forest Service Representative. Areas that have become compacted due to foot or vehicle traffic will be ripped, roughened, and/or scarified to allow for infiltration of precipitation and to prevent erosion.

Stillwater Mine - Benbow Seed Mix			
Species		Common Name	Seeding Rate (lbs/acre)
<b>Grasses</b>			
Agropyron dasystachyum		Thickspike wheatgrass	5.0
Agropyron spicatum		Bluebunch wheatgrass	5.0
Agropyron trachycaulum		Slender wheatgrass	2.5
Bromus marginatus		Mountain brome	4.5
Festuca idahoensis		Idaho fescue	1.5
Poa ampla		Big bluegrass	1.0
Stipa columbiana		Columbia needlegrass	3.5
<b>Forbs</b>			
Achillea millefolium		Yarrow	0.2
Artemisia frigida		Fringed sage	0.3
Linum lewisii		Blue flax	1.0
Lupinus sericeus		Silky lupine	1.0
<b>Shrubs</b>			
Amelanchier alnifolia		Serviceberry	2.0
Prunus virginiana		Chokecherry	2.0
Rosa woodsii		Wood's rose	3.0

Stillwater Mining Company will assume responsibility for any necessary reclamation resulting from activities of contracted and or sub-contracted employees. Final reclamation shall be completed within one (1) year of completion of exploration drilling activities described under the Plan.

Interim Reclamation Measures

While the timely completion of final reclamation is preferable, this may not always be possible due to snowfall or other weather. In the event final reclamation activities cannot be achieved, interim reclamation will be completed in consultation with the Forest Service Representative for the purposes of erosion control. This could include draining sumps and infiltration galleries; erosion control measures such as constructing or installing water bars, scarifying compacted surfaces, placement of woody debris, interim re-vegetation, etc.

Final Reclamation Measures

Following drill rig and equipment demobilization, all refuse and debris will be removed from the drill sites. No refuse will be buried or burned. Any petroleum impacted soils shall be excavated and taken to the Stillwater Mine for management.

Drill holes will be reclaimed pursuant to the Administrative Rules of Montana. Exploration drill holes will be filled with bentonite to within 5 to 10 feet of the surface. The top 5 to 10 feet of each hole will then be cemented. Collar pipe or casing will be removed or cut off below ground level. Standing water in sumps/infiltration galleries will be drained back into the drill hole prior to closure.

After general site cleanup, excavations will be backfilled with salvaged soil and organic material; subsoil material first, followed by organically enriched topsoil and then vegetation and other

organic materials. Fill materials will be mounded slightly (2 to 3 inches) above ground surface to allow for future settling. The sites shall be recontoured to prevent erosion and mimic, as closely as possible, the original surface configuration.

Serious soil compaction will be ripped to an approximate depth of 6 inches in areas where the soil is exposed and/or little vegetative cover remains. Ripping may be waived as directed by the Forest Service Representative when abundant rock fragments are present in surface soil layers. Additional woody debris and forest litter, when available for salvage from adjacent areas, may be placed on the surface of highly compacted areas around the sump pits and elsewhere. Ripping will not be required in other less seriously compacted areas where substantial bare ground is not exposed and where an acceptable amount of live vegetative cover has been retained on the site as determined by the Forest Service Representative.

Upon completion of reclamation, any excess salvaged material (rock, soils, slash, woody debris, etc.) will be scattered in the vicinity. Excess rock or soils will not be placed or scattered in streams or wetlands.

Only certified weed-free seed will be used in the seed-mix outlined above. Prescribed re-vegetation will be accomplished as soon as possible; however, the re-vegetation will be performed in the proper season in accordance with accepted agricultural and reforestation practices identified in consultation with Forest Service Representatives.

Based on site-specific determination for potential erosion, a Forest Service Representative may require installation of bio-degradable erosion control fabric mats on or immediately down-slope of the drill sites and other areas disturbed by operations. If erosion mats are used, they shall be placed as per the manufacturer's recommended installation directions over disturbed areas immediately after placement of topsoil and organic matter. Mats will be stitched and sewn with biodegradable [non-synthetic] thread. The type of erosion mat must be approved by a Forest Service Representative prior to installation.

Any damage to USFS roads, ditches, trails, or associated drainage features (water bars, ditches, culverts, etc.) resulting from these activities and/or associated travel by Stillwater Mine personnel and/or contractors will be repaired by Stillwater to a functional condition as specified by USFS personnel. The entrance to the Portal Drill Site access route will be blocked with boulders and signed as closed to public motorized use. In consultation with the Forest Service Representative, erosion control measures (possibly including, but not limited to, construction of water bars or placement of down logs, weed-free waddles or weed-free straw bales) will be applied to portions of this road utilized by Stillwater's operations.

#### Reclamation Monitoring

Stillwater Mining will conduct annual field inspections of drill sites and other areas disturbed under this Plan of Operations to monitor for reclamation effectiveness and noxious weed infestations for a period of not less than 3 years. Each of the field inspections will be documented with photographs or written descriptions and provided to the Forest Service and MDEQ.

Any noxious weeds that may have been introduced will be pulled by hand and removed from the site in garbage bags for landfill disposal. Herbicide will be applied only if the infestation is

unexpectedly severe or if the particular noxious weed species cannot be eradicated by hand pulling.

In the event that any of the above reclamation efforts do not meet with the established criteria as stated below, Stillwater Mining will collaborate with the Forest Service Representative and MDEQ and make modifications to the site, incorporating such changes and additional procedures necessary to achieve the stated standard.

Reclamation Bond Release

Release of the reclamation bonds for these activities will be requested when:

- Monitoring indicates that reclamation measures have effectively prevented or controlled onsite and off-site damage to the environment and forest surface resources for a period of three years and such prevention is expected to continue into the future.
- Re-vegetation at reclaimed areas is adequate. Re-vegetation will be deemed adequate when: 1) Species composition is similar to or on a growth trajectory toward that of adjacent areas; and 2) Vegetative crown cover is similar to the existing percent vegetative crown cover of adjacent areas not disturbed by operations authorized by this Plan.

**VI. FOREST SERVICE EVALUATION OF THE PLAN OF OPERATIONS**

- A. Required changes/modifications/special mitigation for plan of operations:

B. Bond.

Reclamation of all disturbances connected with this plan of operations is covered by **State of Montana Exploration License No. 00046** and associated **Reclamation Performance Bond No. 124014489**, dated **September 9, 1994**, signed by **Stillwater Mining Company** (Principal) and **American Casualty Company of Reading Pennsylvania** (Surety), for the penal sum of **\$250,000**. This Reclamation Performance Bond is a guarantee of faithful performance with the terms and conditions listed below, and with the reclamation requirements agreed upon in the Plan of Operations. This Reclamation Performance Bond also extends to and includes any unauthorized activities conducted in connection with this operation.

The bond amount for this Plan of Operations was based on a bond calculation worksheet and was calculated at **XXXX**. The bond amount may be adjusted during the term of this proposed plan of operations in response to changes in the operation or to changes in the economy. Both the Reclamation Performance Bond and the bond calculation worksheet are attached to and made part of this plan of operations.

**VII. TERMS AND CONDITIONS**

- A. If a bond is required, it must be furnished before approval of the plan of operations.
- B. Information provided with this plan marked confidential will be treated in accordance with the agency's laws, rules, and regulations.
- C. Approval of this plan does not constitute certification of ownership to any person named herein and/or recognition of the validity of any mining claim named herein.
- D. Approval of this plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules, or regulations.
- E. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operation, those operations will not proceed until notification is received from the Authorized Officer that provisions for mitigating unforeseen impacts as required by 36 CFR 228.4(e) and 36 CFR 800 have been complied with.
- F. This plan of operations has been approved for a period of \_\_\_\_\_ or until (mm/dd/yy) \_\_\_\_\_. A new or revised plan must be submitted in accordance with 36 CFR part 228, subpart A, if operations are to be continued after that time period.

**VIII. OPERATING PLAN ACCEPTANCE**

I/We have reviewed and agreed to comply with all conditions in this plan of operations including the required changes, modifications, special mitigation, and reclamation requirements.

I/We understand that the bond will not be released until the Authorized Officer in charge gives written approval.

\_\_\_\_\_  
Operator

\_\_\_\_\_  
Date (mm/dd/yy)

**IX. OPERATING PLAN APPROVAL**

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Authorized Officer

\_\_\_\_\_  
Date (mm/dd/yy)