SECTION 3.0
Project Description

3.1 Introduction

The Idaho-Maryland Mine project site (project site) encompasses a total of 146 acres of land within the City of Grass Valley and unincorporated Nevada County. Three properties comprise the project site: (1) the Idaho-Maryland site (101 acres); (2) the New Brunswick site (37 acres); and (3) the Round Hole site (8 acres), which includes a one-acre easement (see **Figure 3-1**).

In April 2005, the Idaho-Maryland Mining Corporation (IMMC) filed an application for an Exploration and Mine Use Permit from the City of Grass Valley (City) to reopen the historic Idaho-Maryland Mine for gold mining and to operate a ceramics plant that would produce a variety of marketable ceramic tile products from mine waste product. The Exploration and Mining Use Permit application includes the following:

- Formal Development Review Application,
- Mineral Project Application (Use Permit/Mining Permit/Reclamation Plan),
- General Plan Application,
- Rezone/Prezone Application, and
- Annexation Application.

The purpose of the General Plan Amendment and Rezone/Prezone Applications is to allow the proposed use to occur on the Idaho-Maryland and Round Hole site. In addition, because the Idaho-Maryland site is located within the City's Sphere of Influence and within the 2000–2005 annexation time horizon, the Annexation Application proposes that the City annex the Idaho-Maryland site along with several other parcels that are currently within Nevada County jurisdiction, which would allow the project permitting as a whole to be under the single jurisdiction of the City, and would bring the properties into the City limits to provide City services to the site. The General Plan Amendment and Rezone/Prezone Applications seek to modify the City's proposed General Plan land use designations and zoning districts to ensure consistency with the Mineral Resource Element, the existing and historical uses of the property, and the proposed mining use. Specifically, the application requests that the General Plan be amended to designate all 101 acres of the Idaho-Maryland site as, Manufacturing/Industrial. The application further proposes that the Idaho-Maryland site be prezoned to M-2/MR, General Industrial, within the Mining and Reclamation Combining Zone. Approval of the proposed General Plan amendments would result in consistency between the proposed uses for the project site and the City of Grass Valley General Plan land use designations and policies. The

Figure 3-1: Project Location
Color -– (8.5 X 11)

Development Review Application is required to address the site planning and architectural elements of the three sites. The purpose of the Mineral Project Application is to address the mining and reclamation issues associated with the project. General Plan amendments would result in consistency between the proposed uses for the project site and the City of Grass Valley General Plan land use designations and policies.

Since the City has primary responsibility for approval decisions regarding the proposed project, the City will act as the designated Lead Agency for environmental review in compliance with the California Environmental Quality Act (CEQA) and the mining permit and reclamation plan pursuant to the Surface Mining and Reclamation Act.

3.2 Project Location

The project site, located on the same historical site as the original Idaho-Maryland Mine and related workings, is located in western Nevada County and the City of Grass Valley, approximately 1.5 miles east of Grass Valley's downtown (**Figure 3-1**). The project site is located east of State Route 20/49, with the Idaho-Maryland and Round Hole sites located south of Idaho-Maryland Road, west of Brunswick Road and north of East Bennett Road; and the New Brunswick site located southwest of the intersection of Brunswick Road and East Bennett Road.

The Idaho-Maryland Site is located within the east half of Section 26 and west half of Section 25, Township 16 North and Range 8 East. The Round Hole Site is located within the north half of Section 25, Township 16 North and Range 8 East. And the New Brunswick Site is located within the northeast quadrant of Sections 36, Township 16 North and Range 8 East and within the northwest quadrant of Section 31, Township 16 North, and Range 9 East.

3.3 Existing Land Uses

The Idaho-Maryland site is generally vacant with the exception of an area at the intersection of Idaho-Maryland Road and Whispering Pines Lane which is currently used as a lumber mill. The adjacent land northeast of Centennial Drive and on either side of Whispering Pines Lane have been developed for business office uses.

The Round Hole site is generally vacant with the exception of a now covered underground shaft that provided access to the mine. The adjacent properties are vacant lands, with the exception of buildings located to the southwest along Whispering Pines Lane.

The New Brunswick Site is generally vacant with the exception of remnants of ore bins from historical mining. The Bohemia Mill site and a reservoir/pond exist south of the property and some rural residential properties are located to the north and east of the property. A housing development is being constructed to the north of the site.

3.4 Project Objectives

CEQA Guidelines Section 15124(b) requires that the project description contain a clearly written statement of objectives, including the underlying purpose of the project. The statement of project objectives is important for the lead agency[1] when it develops a reasonable range of project alternatives to evaluate in the EIR.

The Idaho-Maryland Mining Corporation seeks to reopen the historical Idaho-Maryland Mine in accordance with all applicable federal, state and local laws and regulations for the purposes of:

- Dewatering of the existing Idaho-Maryland Mine workings,
- Conducting underground exploration and development,
- Developing the industrial mineral and gold ore deposits therein,
- Processing the industrial mineral deposits to produce gold and ceramic products,
- Operating and maintaining these facilities for the life of the project (approximately 20 years), and
- Conducting reclamation activities on the project sites at the conclusion of the project.

3.5 Geologic Setting

The project site is located within the northern half of the Sierra Nevada geologic province. The landforms in the vicinity of the subject properties comprise thin soils weathered out of mafic intrusive rocks, meta-volcanic rocks, and to a lesser degree ultra-mafic rocks. The rocks in the area show evidence of having been faulted multiple times, metamorphosed during plutonic emplacement of the Sierra Nevada batholith, and elevated during Tertiary uplift. The properties are located on shallow to moderate sloping, hillsides near the contact of Mesozoic ultra-mafic rocks with mafic intrusive and meta-volcanic rocks, all of which are associated with the Lake Combie complex of early Jurassic age.

The Idaho-Maryland site is located on a structurally-controlled, mesothermal gold deposit. The shape of the Idaho-Maryland ore deposit is controlled by the regional-scale Weimar Fault (also known as the 6-3 Fault in IMM company reports), and the Idaho Deformation Corridor within the Spring Hill Tectonic Mélange Zone. The ultra-mafic mélange zone consists of a matrix of well foliated, highly deformed, serpentine which contains large tectonic clasts or “slabs” of rocks whose lithologies vary from meta-volcanic flows and volcaniclastic units, fine grained metasedimentary units (e.g., cherts, slates), diabase and gabbro. The large Brunswick Slab, the largest and most important of the slabs, borders the Idaho-Maryland Mine to the south and extends eastward for 1.5 miles and defines the southern boundary of the high-strain zone for nearly its entire length.

1 The City of Grass Valley will revisit project objectives at later stages of the CEQA process

Idaho Deformation Corridor is a fault zone of high strain that extends along the entire northern side of the Idaho-Maryland ore deposit. The corridor averages 500 feet in width and is traceable for 2.0 miles along a 275° to 290° strike. The zone dips 60° to 70° S and extends to the deepest levels of the mine at 0.62 miles. Within the corridor are less strained blocks of ground, with the high-strain zones occurring in a braided pattern or network throughout. The Brunswick Slab defines the southern boundary of the high-strain zone for nearly its entire length. The L Fault forms the northern boundary. In general, the zone contains both linear and non-linear fault members and exhibits a dominant reverse vertical displacement with a much weaker component of right-lateral horizontal displacement. Post-mineral reactivation of some faults shows small normal displacements. The linear and non-linear fault members have strong deformational fabric, well-developed gouges.

The Morehouse Fault branches from the Idaho Deformation Corridor in an arc shape and forms the southern contact of the Brunswick Slab. The fault extends in a southeasterly direction to the Weimar Fault.

3.6 Proposed Plan Amendments

The project applicant proposes to have the Idaho-Maryland site annexed into the City of Grass Valley and to subsequently amend the City's of Grass Valley's General Plan and Zoning Map to incorporate new proposed land use designations and zoning districts for the site. See Section 4.9, *Land Use and Planning*, for additional analysis of these plan amendments that are proposed as part of the project.

3.6.1 Annexation

IMMC has supplied an Annexation Application to the City of Grass Valley to initiate the annexation of the Idaho-Maryland site and other properties, which are within the City's Sphere of Influence and are forecast to be annexed. It is expected that the proposed annexation of the IMMC project properties, and certain other properties, will be conducted by way of a Resolution of Application of the City that will then be submitted to the Nevada County (County) Local Agency Formation Commission (LAFCo). The Idaho-Maryland and New Brunswick sites, while currently located on unincorporated County land, are within the City's sphere of influence and are forecast to be annexed in 2000-2005 and 2011-1015, respectively.

As part of the proposed project, the Idaho-Maryland site is proposed to be annexed into the City of Grass Valley, along with four separate adjacent properties, also within the County, owned by Milco Development (Milco), Ennis, Walsh, and DeMartini (see **Figure 4.9-3**, *Land Use and Planning*). The Idaho-Maryland, Milco, Ennis, Walsh and DeMartini properties have been identified by the City in its 2020 General Plan for annexation by 2005. The Milco, Ennis, Walsh and DeMartini properties are included in the proposed action because if they were not, unincorporated islands would be created by the annexation of the Idaho-Maryland site. Creation of islands is contrary to City and LAFCo policies and therefore, those other properties are also included in the annexation to ensure consistency with local policies. The other property owners have been notified by IMMC of the inclusion of their properties in its annexation proposal; the other property owners have indicated support for the proposed annexation. Of those, the DeMartini and Walsh properties will also be annexed into the City as part of separate applications that received approval from LAFCO on May 18, 2006 Additional jurisdictional changes would include detachment of the properties from the Nevada County Consolidated Fire Department as well as detachment from the Nevada County Sanitation District.

3.6.2 City of Grass Valley General Plan

The project proposes to amend the City's General Plan Land Use Map to reflect the proposed land use designation change of the Idaho-Maryland site from *Business Park* and *Urban Medium Density* to *Manufacturing Industrial*. **Figures 4.9-4** and **4.9-7**, *Land Use and Planning*, provide maps designating the existing and proposed General Plan land use designations for the Idaho-Maryland site. The *Manufacturing-Industrial* designation is intended to "accommodate a variety of industrial and service commercial uses." Typical uses in M-I designation are light manufacturing, automotive services, warehousing/distribution, and wholesale-retail outlets (City of Grass Valley, 1999).

3.6.3 City of Grass Valley Zoning Map

The Idaho-Maryland site is currently zoned *Light Industrial – Site Performance Combining District* (M1-SP) by the Nevada County Zoning Map. Because the Idaho Maryland site is proposed to be annexed and would therefore no longer be subject to the Nevada County zoning designation, the project applicant is also proposing to prezone the site as part of a separate Rezone/Prezone Application. Because the current County zoning designation would not allow for the type of land use proposed by the project, IMMC proposes to prezone/rezone the Idaho Maryland site to *General Industrial – Mineral Resource* (M-2/MR). The City of Grass Valley's Zoning Map would be amended to reflect these changes. **Figures 4.9-5** and **4.9-8**, *Land Use and Planning*, provide maps designating the existing and proposed zoning designations for the Idaho Maryland site. See Section 4.9, *Land Use and Planning* for an additional description of the existing and proposed zoning designations.

3.7 Proposed Project Components

IMMC proposes construction and operation of the mine in three phases to meet the development and mining rates as exploration and development expands, and resources and reserves are identified. Within these three phases, IMMC proposes to dewater the existing Idaho-Maryland Mine site, conduct underground exploration and development, develop industrial mineral and gold deposits, process the ore to produce gold doré, process development rock and tailings into high quality ceramic building products, and operate and maintain the facilities for the life of the project (approximately 20 years).

For purposes of this environmental analysis, it is assumed that the City would issue permits for the construction and operations of the Proposed Project in 2007/2008. Full production is anticipated to be achieved in 2013 with operations continuing through 2028, contingent on further underground exploration results. Absent indication of additional ore resources to be developed, the planned site closure date (i.e., end of mining operations) is in 2028. Site reclamation would be expected to be initiated at that time and last for approximately one year.

3.7.1 Idaho-Maryland Site

IMMC proposes to develop the Idaho-Maryland site for the mine and ceramics plant operations complex; therefore, the site would support mineral exploration, development, including dewatering during the construction and operation of the decline tunnel, extraction, production, and operational activities (including water treatment facilities). These activities would be situated west of the historic Idaho Shaft which provides access to the western portion of the mine's underground workings (**Figure 3-2**).

Table 3-1 shows the facilities that IMMC proposes for construction and use during operations at the Idaho-Maryland site with corresponding locations of the facilities shown on **Figure 3-2**.

Site Preparation and Construction

Site Access

Existing paved and dirt roads would provide access to the site. The main entrance to the Idaho-Maryland site is paved and is located at the intersection of Centennial Drive and Whispering Pines Lane. A second paved access to the site is the road to the employee parking lot located on East Bennett Road near the southeast corner of the property. Additionally, dirt roads, one at the northwest corner off of Idaho-Maryland Road and another at the southeast corner from Bennett Road, provide access.

Site Clearing and Grading

Surface structures from the site have previously been removed with the exception of concrete piers that were used for the distribution and storage of mine tailings. However, there may be other extant foundations or subsurface building remnants on site. The site has been vacant since the mill closure in 1956 and is now occupied by a dense cover of shrubs and trees, as viewed from both the Idaho Maryland and Bennett Roads; therefore, vegetation and trees would be removed from the site prior to grading. **Figure 3-3** depicts the proposed cut and fill required to develop these surface facilities. It is anticipated that a total of 317,750 cubic yards of soil would be cut for the site development and used onsite as fill.

Construction of New Buildings and Other Above Ground Facilities

Concrete placement and steel working activities would occur simultaneously with general construction activities for each new facility. The building materials to be used include: structural steel, concrete, and masonry. Facilities would be equipped with electrical and mechanical systems.

Figure 3-2: IMM Site Plan

Color – (8.5 X 11)

TABLE 3-1
IDAHO-MARYLAND SITE FACILITIES PROPOSED FOR CONSTRUCTION

Project Component	Size (Square Feet)	Description	Site ID (see Figure 3-2)
Gold process plant	27,500	Used to concentrate and refine gold doré to gold bullion. Would be a pre-engineered structure that would follow historical mining building architecture not to exceed 50 ft in height. The building would house process equipment, a wet laboratory, offices, a lunchroom and washrooms. Occupancy would be less than 30 personnel during each shift.	A
Ceramics plant	159,000	Used to produce brick and tile products from development rock and gold tailings. Would be a pre-engineered structure with ten silos that will follow historical mining building architecture not to exceed 50 feet in height. The building would house process equipment, a laboratory, offices, a lunchroom and washrooms. Occupancy would be less than 75 personnel during each shift.	B
Visitors' center	5,200	Would house offices, an exhibit area, washrooms, and storage rooms. Would be a pre-engineered structure that would follow historical mining building architecture not to exceed 30 feet in height.	C
Administration office and dry space	9,000	Would be a three story, dual purpose building that houses offices, conference rooms, a lunchroom, washrooms, storage rooms and changing facilities. Would be a pre-engineered structure that will follow historical mining building architecture not to exceed 40 ft in height. The office area occupancy would be less than 70 personnel and visitors during the day. The change room, which would include one shower for every 15 employees, would be used for three shifts 24 hours a day, seven days a week. The number of personnel in the change room would be less than 100 at any given time.	D
Employee and Visitor's Center parking area	72,000	Would consist of 170 employee parking spaces and 9 Visitor's Center parking spaces.	E
Warehouse and truck shop	22,500	Would be a single, dual purpose building for mobile and fixed equipment maintenance facilities and primary storage area for all spare parts, consumables, chemicals, fuel and lubricants. Would be a pre-engineered structure that will follow historical mining building architecture not to exceed 30 ft in height. The building would house vehicle service equipment, offices and washrooms. The occupancy would be less than 10 personnel on each shift.	F
Two 8,500 ton ore stockpiles	17,500	One would be used to stockpile ore and the other used to stockpile ceramics feed stock	G
Outside tile storage area	885,000	Would be used to store tiles outside	H
Two outside equipment and materials storage area	80,000	Would be used to store equipment and materials outside	I
Three temporary powder magazines	1,800	Explosives would be stored on surface until an isolated, secured underground storage room would be constructed. This is anticipated to occur during Phase I of the project. The explosives would then be stored long term underground.	J
Mine water settling pond	25,300	Would be maintained full at all times and be used as a 150,000 gallon backup fire water supply.	K

TABLE 3-1 (Continued)
IDAHO-MARYLAND SITE FACILITIES PROPOSED FOR CONSTRUCTION

Project Component	Size (Square Feet)	Description	Site ID (see Figure 3-2)
Storm water detention pond	40,800	Would store water to be diverted to Wolf Creek	L
Decline tunnel		Would be the primary entrance and exit for underground mining. It would provide truck, belt conveyor and personnel access to the decline tunnel. For mine ventilation, a number of electric motor driven fans would be located at various points along the decline. The portal would be the air intake and the two ventilation shaft openings would be used as exhaust openings.	M
Surface belt conveyors		Would be used to transfer rock from underground to stockpiles and then over to the crushing and grinding plant. The conveyor structure would not exceed 50 ft in height and the access ways would not exceed 45 ft in height. The belt conveyors would have rubber belts, rubber covered pulleys, rubber cleaners and scrapers, and electric motors.	N
Substation		Would be the primary power source for the site. It would be an outdoor, fenced and secured compound. There would be power lines running into the substation from an existing 115 kV power line located east of the site. The emergency generator would also be located within the compound. The substation would not be manned on a continuous basis but would be inspected on regular intervals. The major equipment would include transformers, switchgear, a natural gas fired generator and instrumentation.	O
Water Treatment System		Would draw from the mine water sedimentation pond. The system would aerate and filter water pumped from underground and would incorporate tanks and different types of filters. Flammable materials will be plastics, electrical wiring and electrical components	P
Firewater Tank		Would be a 42,000 gallon tank. There would be an electric and a diesel firewater pump and jockey pump.	Q

Construction Equipment

Table 3-2 provides a list of the typical construction equipment expected on site during construction activities.

Truck Trips and Routes

Project construction trucks and worker vehicles would travel on State Route 20/49 (SR 20/49), Bennett Street, Colfax/Highway 174, East Bennett Road, Idaho-Maryland Road, Centennial Drive and Whispering Pines Lane. Traffic-generating construction activities would include trucks hauling equipment and materials to and from the work site, and the daily arrival and departure of construction workers to and from the work site. At peak construction, there would be approximately 250 construction workers and equipment operators at the construction site on a daily basis for a period of 12 to 14 months.

Figure 3-3: IMM Grading Plan
Color – (8.5 X 11)

TABLE 3-2
HEAVY-DUTY CONSTRUCTION EQUIPMENT

Clearing / Excavation / Foundation	Building Construction	Interior / Mechanical / Electrical	Road Work / Utilities	Landscaping
Haul Trucks Scrapers Loaders Dozers Shovels Excavators Compactors Water Trucks Mechanic's Service Trucks Dump Trucks Light-Duty Trucks Backhoes Material Handlers Pile Drivers	Cranes Boom Trucks Forklifts Concrete Pump Trucks Concrete Mix Trucks Bobcats Loaders Light-Duty Trucks Fuel Trucks Water Trucks Backhoes Dozers Compactors Pipe Layers	Cranes Forklifts Bobcats Boom Trucks Concrete Pump Trucks Concrete Mix Trucks Fuel Trucks Water Trucks Light-Duty Trucks	Motor Grader Shovels Excavators Compactors Haul Trucks Paving Machine Asphalt Delivery Truck	Backhoe Light-Duty Truck Bobcat

Source: IMMC (2006)

Truck trips on local roadways from construction at the project sites would include dump trucks, concrete trucks, and other delivery trucks. Dump trucks would be used for earthmoving and clearing, the removal of excavated material, the import of structural materials, and the import of paving materials. In addition to concrete trucks, other delivery trucks would be used to deliver heavy construction equipment, job trailer items, concrete forming materials, piping materials, new facility equipment, and other miscellaneous deliveries.

Surface Drainage

The primary drainage onto the Idaho-Maryland site is located east of the site, and is carried through a culvert buried under a berm that runs along the east property boundary. IMMC proposes to capture this water in a north-running ditch immediately adjacent to the berm and divert the water to Wolf Creek through a diffuser into the streambed.

Another drainage originates immediately west of the site. IMMC proposes to create a north running ditch that would follow the westerly property line to capture that water and divert it to Wolf Creek through a similar second diffuser. Additionally, IMMC would create additional new drainages that would be directed by ditches around the new structures and buildings and collected in a storm water detention pond. Drainage from the detention pond would then be discharged into Wolf Creek using the second diffuser. Water from the storm water detention pond would not be treated and would not be allowed to mix with water to be redirected to Wolf Creek. **Figure 3-4** depicts these and other drainages characteristic of the project site.

Landscaping

A total landscape area of approximately 15,000 square feet is proposed within the area immediately south of the office and dry building, the visitor center, and the park south of the employee parking lot. Additionally, trees such as douglas firs, chinese pistache, pfitzer juniper

Figure 3-4: IMM Drainage

Color – (8.5 X 11)

western redbud, and incensed cedar would be planted at the Main Plant Entrance along Centennial Drive and Whispering Pines Lane for approximately 360 and 200 feet, respectively.

3.7.2 Round Hole Site

The Round Hole site would be developed as an underground ventilation shaft, an alternative worker emergency exit, and used to deliver workers and materials, as needed (see **Figure 3-5**). An unimproved access road, which intersects with Whispering Pines Lane, would provide access to the Round Hole site.

A friction hoist and hoist building would be constructed at the surface. The 200 square-foot, single-level, 15-foot tall hoist house would be located over the top of the shaft opening. It would be an un-insulated steel wall, steel pitched roof structure with steel doors. It would contain an emergency hoist and a diesel-fired emergency generator set. A small graveled area would be constructed surrounding the hoist building for equipment staging and vehicle parking.

This Round Hole site would not be manned and would not have any above-ground operating machinery except during testing and mine rescue operations; however, it would be inspected once per shift. Flammable materials at the site would include diesel fuel, plastic components, electrical wiring and electrical components. Ventilation fans would be placed underground in the shaft area to reduce the fans' mechanical noise levels. The current unpaved Round Hole site access road, which intersects with Whispering Pines Lane, would be improved to a gravel surface.

Construction of New Buildings and Other Above Ground Facilities

Concrete placement and steel working activities would occur simultaneously with general construction activities for each new facility. The building materials to be used would include: structural steel, concrete, and masonry. Facilities would be equipped with electrical and mechanical systems.

Construction Equipment

Construction equipment expected to be used at the Round Hole Site would be the same as seen above in **Table 3-2**.

3.7.3 New Brunswick Site

The New Brunswick site, specifically the existing New Brunswick shaft, would be developed for the purposes of providing mine ventilation, internal mine hoisting, emergency underground access, and a portal for dewatering and water treatment of the mine. Occasionally, the shaft would be used to deliver workers and materials. A dirt road located in the northwest corner of the site off of East Bennett Road would provide access to the New Brunswick site.

Surface development would include refurbishment of the existing New Brunswick mine shaft; and construction of a hoist head frame and hoist house; a dewatering and treatment system which

Figure 3-5: Round Hole Site Plan

Color – (8.5 X 11)

would be comprised of combined water aeration/filtration tanks, compressor and electrical area housed within the water treatment plant, as well as overland piping to a water diffuser discharging into the South Fork of Wolf Creek; a power substation and emergency generator; and a gravel parking lot and an access road. The historical ore silo located adjacent to the shaft would be preserved but not actively used.

Table 3-3 shows the structures and buildings that IMMC proposes for construction and then used for operations at the New Brunswick site (**Figure 3-6**).

TABLE 3-3
NEW BRUNSWICK SITE FACILITIES PROPOSED FOR CONSTRUCTION

Project Component	Size (Square Feet)	Description
Hoist house	3,000	Would contain two single drum service hoists and a winch. The building would be a pre-engineered structure that would follow historical mining building architecture not to exceed 20 feet in height. Automatic wet sprinklers would be used to provide fire protection inside the hoist house with the exception of the electrical room where an automated dry chemical fire suppression system would be used. Smoke detectors would be installed for early warning.
Hoist head-frame	200	A steel structure approximately 50 feet high supporting the wire rope and sheave wheel system for the underground mine hoist.
Water treatment system with compressor and electrical room	1,400	Would be used to treat water pumped from the underground mine; additionally, water from either of the two 20,000 gallon water treatment tanks could be used for fire protection. (*See* Section 3.8.2 for a detailed description)
Stand Pipe		Would be located at the water treatment tank for outdoor fire protection of all structures on site.
Substation and emergency generator set	100	The substation is the primary power source for the site. The major equipment would include transformers, switchgear; a diesel fired emergency generator set and instrumentation. Flammable material would be diesel, transformer oil and plastic components.

Surface Drainage

The surface drainage currently generally flows to the southwest and empties into the South Fork of Wolf Creek. The site development would be designed to maintain the existing surface drainage pattern. Natural drainages would be redirected by ditches around the new buildings and structures and allowed to continue back to the existing pattern and direction.

Construction of New Buildings and Other Above Ground Facilities

Concrete placement and steel working activities would occur simultaneously with general construction activities for each new facility. The building materials to be used would include: structural steel, concrete, and masonry. Facilities would be equipped with electrical and mechanical systems.

Figure 3-6: New Brunswick Site Plan
Color - (8.5 X 11)

Construction Equipment

Construction equipment expected to be used at the Round Hole Site would be the same as seen above in **Table 3-2**.

3.8 Construction Workers and Schedule

Project construction would be implemented in three phases. Specific detail regarding facilities that would be constructed during each phase, at each site with timing and estimated number of construction personnel are provided in **Table 3-4**. Within Phase I, 59 percent of the facilities construction is anticipated; 35 percent during Phase II and 6 percent during Phase III. Construction activities are anticipated to occur between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday.

TABLE 3-4
CONSTRUCTION DETAILS

Projected Construction Phases	Time Frame	Estimated Personnel
Phase I 1,200 STPD Ceramics Production	March 2007 – July 2008	250
Idaho-Maryland Crushing & Grinding Plant Construction		
Idaho-Maryland Ceramics Plant Construction		
Idaho-Maryland Truckshop & Warehouse Construction		
Idaho-Maryland Office & Dry Construction		
Idaho-Maryland Ore Stockpiles		
New Brunswick Hoist House		
New Brunswick Compressor/Electrical Housing/ Water Treatment Plant		
Phase II 1,800 STPD Ceramics Production	September 2009 – August 2010	200
Idaho-Maryland Crushing & Grinding Plant Expansion		
Idaho-Maryland Ceramics Plant Expansion		
Phase III 2,400 STPD Ceramics Production	August 2010 – September 2011	150
Idaho-Maryland Gold Recovery Plant Construction		
Idaho-Maryland Visitors Center Construction		
Round Hole Hoist House Construction		

3.9 Mining Operations and Associated Processes

3.9.1 Mining Operations

The Idaho-Maryland site is proposed to be developed for the mine and ceramics plant operations complex. Current planned maximum depth of mining is 5,200 feet below surface. At maximum production, the Idaho-Maryland Mine Project would be expected to generate 3,200 short tons per day (STPD) of industrial mineral and gold ore from underground. The mill is anticipated to have a maximum production rate of 3,200 STPD for gold of which a maximum 2,400 STPD would be used in the manufacture of ceramic brick, tiles, and building materials. The ceramics plant would use gold mine development rock and tailings as feedstock. Approximately 800 STPD of gold tailings would be returned underground as backfill.

Decline Tunnel

A single decline tunnel would extend underground from the portal and may split into two declines. Both declines would extend to the New Brunswick shaft and only one may ultimately extend beyond the 1,300-foot level to a depth of 5,200 feet below surface.

IMMC would use non-electric blasting caps, small 25 grain boosters, detonating cord, and bulk emulsion explosives to drive the decline tunnel development. After blasting, haul trucks would move run of mine rock to the crushers; after which it would be hauled to surface stockpile areas. A temporary mobile crusher would be used at the surface during initial development of the decline. The temporary crusher would be an electrical motor-driven mobile crushing system capable of operating at 1,200 tons per day. It would crush material up to 12 inches down to 2 inches. The equipment would include a vibrating screen that feeds a jaw crusher. The crusher would discharge onto a belt conveyor that would load the haul trucks. Within one year of the start of the decline tunnel development, the mobile crusher would be moved underground and be fed by Load/Haul/Dump (LHD) vehicles and/or haul trucks. Then, haul trucks would be used to move the crushed rock to the surface stockpile for approximately two years, at which time, the ceramics plant would be built. Then, haul trucks would be used to move the material from the stockpiles to the belt conveyors which feed the ceramics plants until the stockpiles are drawn down completely.

This underground temporary crusher would process mine rock for the surface stockpiles until a permanent crusher can be located at greater depth. The electric motor driven underground crushing system installation would be operational roughly three years after the start of the decline. LHDs would bring run of mine material to the crusher, and a belt conveyer would move the crushed material to the surface stockpiles. The belt conveyor from the decline would feed two other conveyors via an end discharge splitter chute. The splitter chute would direct material onto either succeeding conveyor. Each of the two conveyors would feed one surface stockpile. All conveyors would be in the open.

Industrial Mineral and Ore Extraction

Underground exploration and mining would primarily occur in bedrock from the decline that would be developed on this site (*see discussion above*). Other than the decline, all mining for these feedstocks would occur underground from about 500 feet to approximately 5,200 feet vertically below the surface. Underground mining methods would consist of a combination of drilling and blasting with mechanized handling, crushing, and transportation to the surface facilities. The products would be industrial minerals to produce ceramic building materials and gold, although small amounts of tungsten and silver could be produced also.

Processing

Gold Plant

The ore processing would be accomplished using a series of enclosed unit operations leading to the production of high quality ceramic products and gold doré[2]. Industrial minerals and gold ore would be initially crushed underground by an electric motor driven underground crushing system before being transported by belt conveyor to the surface stockpiles or directly into the enclosed processing facilities. Non-gold-bearing rock would be crushed and finely ground to approximately 80 percent passing a 100 mesh (150 microns) size before being sent via belt or pneumatic conveyor to the ceramics plant for processing.

Gold ore would also be crushed and ground to approximately 80 percent passing 100 mesh before entering a gravity gold recovery circuit that would recover most of the gold without the use of reagents. Further processing would involve using a combination of flotation and cyanidation technologies. Less than 15 percent of the ore would be treated with an intensive cyanidation process where small quantities of sodium cyanide (NaCN) solution would be used as a reagent to extract gold from the ore and gold concentrate. The NaCN dissolves the gold into a chemical solution in a highly monitored and closed processing circuit, which allows for the economic recovery of the gold by employment of an electrowinning (i.e., electroplating) technology.

As illustrated in **Figure 3-7**, the closed processing system would consist of two hard-piped, closed loop tank/pump circuits. The first is a cyanide leaching system that includes a reagent tank, a pump and a leach tank. This is a batch system where sodium cyanide (in granular or powder form) is first mixed with water to achieve a 2 percent solution of cyanide. The cyanide solution is then pumped in a recirculation loop through the leach tank (filled with ore concentrate) and back into the reagent tank.

The solution is circulated through the loop for a maximum of eight hours to leach the gold from the rock. Then, it is pumped to the second closed-loop system, the electrowinning circuit. At this point most of the cyanide has reacted with the gold and the amount of cyanide in the solution is greatly decreased. There would be trace amounts of NaCN prior to final dewatering, followed either by transfer to the ceramics plant or used as underground backfill. Approximately 20 to 40 percent of the gravity tailings and leach residues representing up to 800 STPD – the difference between mining and production rates – would be used as structural backfill to provide additional integrity within the underground workings.

The electrowinning circuit includes a solution feed tank, a pump and an electrowinning cell. The gold-loaded solution from the leach circuit is circulated through the feed tank and the electrowinning cell for approximately 16 hours. Nearly pure gold is removed as a sludge from the electrowinning cell and most of the remaining solution is recycled into the reagent tank for reuse

[2] (pronounced gold doh-rey) is a bar of semi-purified gold (e.g. bullion). After being mined, the first stage in the purification process of the gold ore produces a cast bar (gold doré) that is approximately 90% gold. The other 10% is mostly metals like silver and copper.

Insert new Figure 3-7 Sodium Cyanide Closed Processing Circuit

in the leach circuit. A slip stream of solution from the electrowinning tank is pumped to the cyanide destruction tank to minimize the build-up of contaminants in the leach circuit. All of the equipment in the two circuits would be located in a fully bermed and sealed concrete area for spill containment. This area would be continuously monitored during operation.

Equipment and other items that would be used within the gold processing plant include:

- overhead cranes and hoists
- belt conveyors
- crushers
- grinding rolls
- tower mills
- dynamic (air) separators
- pneumatic conveying systems
- bucket elevators
- dust collection equipment
- wet grinding mills
- wet screens
- centrifugal and gravity separators
- flotation cells
- thickeners
- vacuum filters
- chemical mixing systems
- pumps
- screw conveyors
- air compressors and dryers
- tanks (agitate and non-agitated)
- chutes
- bins
- boxes
- piping
- heating and ventilation equipment
- ovens and furnaces
- mobile equipment
- electrical equipment
- instrumentation
- shelving
- pallets and chemicals (i.e. cloth, plastic and wood)

All the equipment, with the exception of mobile equipment, which would be powered by diesel fuel, would be powered by electric motors. The heating and ventilation equipment as well as ovens and furnaces would be fueled by natural gas.

Ceramics Plant

The ceramics plant would use the Ceramext™ Process to produce high quality ceramic building materials such as brick and floor, roofing, and decorative tiles. The Ceramext™ Process includes the use of a proprietary vacuum high temperature extrusion technology for which one equipment patent has been issued and patents for technology process and composition are pending.

Ground material would be withdrawn at controlled rates from the storage silos and fed to the ceramics manufacturing lines. The storage silos would be used to segregate different types and grades of ceramic feed material due to rock variation in the mine. The material from the silos would be transferred by pneumatic conveyors to each production line. The material may be blended and then fed to a pre-heater. From the pre-heater, the material would enter the vacuum extrusion chamber, pass through a cutting and forming chamber, then be slowly cooled under controlled temperature in a cool-down chamber, and finally placed in product cooling racks. Final product would be packaged and moved to either indoor or outdoor storage, and then shipped off site by truck continuously except between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday through Friday. Hazardous materials are not expected to be used in the ceramics manufacture. The ceramics plant outdoor storage plan would be determined by the type and dimensions of the products. Generally, stored material would be located in long rows with sufficient space between the rows to allow forklift access. The material would not be stacked higher than eight feet.

Equipment and other items that would be used within the ceramics processing plant include:

- overhead cranes and hoists
- pneumatic conveying systems
- blenders
- screeners
- dryers and preheaters
- screw feeders
- furnaces
- forming presses
- extruders
- polishing equipment
- tile cutting, edging, beveling and finishing equipment
- overhead cranes and hoists
- dust collection equipment
- air treatment equipment (e.g., scrubber, electrostatic precipitator, filter)
- glazing equipment
- packaging equipment
- transfer conveyors
- air compressors and dryers
- chutes
- bins
- piping
- heating and ventilation equipment
- mobile equipment
- electrical equipment
- instrumentation
- shelving, pallets

Generally, the equipment would be powered by electric motors. The dryers and preheaters, furnaces, and heating and ventilation equipment primarily would be fueled by natural gas; mobile equipment would be powered by diesel fuel or gasoline.

Process Water

Both the gold recovery and ceramics production process water would be drawn from the mine water settling pond. The mine water settling pond is a decantation step to remove the majority of solids prior to pumping it through the water treatment system. Water from the storm water detention pond would be used as a backup source. Process water is required for all processes downstream of comminution (i.e., after the breakdown of materials by the jaw crushers). The only loss of process water would be through water that could be dewatered from the tailings. All recovered process water would be recycled back into the process continuously. Make-up water would be required and would also be drawn from treated mine dewatering water. It is estimated that less than 150 gpm would be required for makeup water for the gold processing plant. Upon final plant closure, all process water would be filtered and sent through the Idaho-Maryland dewatering water treatment system prior to discharge into the storm water detention pond.

Process water for the ceramics plant would be drawn from the discharge of the water treatment plant. It would be used for feed preparation, manufacture of wet glazes and wash down. The anticipated requirement would be less than 50 gpm. Water loss from the process would occur almost entirely from evaporation during ceramic heating. All other ceramics process water would be recovered and recycled back into the process continuously. Make-up water would be required and would also be drawn from the water treatment plant. Upon final plant closure, all process water would be filtered and sent through the Idaho-Maryland site dewatering water treatment system prior to discharge into the storm water detention pond.

3.9.2 Mine Water Treatment

At the Idaho-Maryland site, mine water removed from the decline and local underground workings would be contained in a mine water-settling pond and then treated at an on-site water treatment plant before being redirected to the storm water detention pond. This dewatering activity would continue throughout the life of the project. At the New Brunswick site, mine water would be pumped directly to the on-site water treatment plant at a rate of up to 6 cubic feet per second (cfs), or 2,700 gallons per minute (gpm), to dewater the underground workings to at least the 3,300-foot level to enable industrial mineral and ore extraction. Once the initial dewatering is completed, which is estimated to take six to nine months, the dewatering rate would range between 1.1 cfs (500 gpm) and 2.7 cfs (1,200 gpm), varying by season, throughout the life of the project.

The proposed mine water treatment systems at the Idaho Maryland and New Brunswick sites would be packaged systems with three stages of water treatment. The Idaho-Maryland site system would be designed to treat a maximum of 1,200 gpm while the New Brunswick site system would be designed to treat a maximum of 2,700 gpm initially for six to nine months and then drop to 1,400 gpm thereafter. The flow rates through these systems would vary according to the mining rate and season. Each system would be designed to aerate the water as well as to remove turbidity and contaminants including iron (Fe), manganese (Mn), arsenic (As), lead (Pb), mercury (Hg) and aluminum (Al).

Aeration, the first stage water treatment would be carried out in two tanks. Pressurized air would be introduced into the water in the first tank and then the water would be detained in the second tank until the Fe and Mg oxidation reactions go to completion, thus reducing the amount of chemicals required in the second stage.

The second stage treatment would include adsorption, clarification, and filtration. The adsorption and clarification processes would be performed simultaneously. The processes would use chemical flocculants and buoyant plastic media to effect gravity separation of the contaminants from the water. These processes would provide the bulk of the cleaning effect. Further removal of contaminants would be achieved by filtration downstream of the adsorption and clarification processes. The mixed media used for filtration would be composed of carbon and sand of varying particle size. The contaminants would be flushed out of the second stage treatment into holding tanks in sludge form. The anticipated sludge generation rate would be approximately 2 tons per year at the Idaho-Maryland site and 5 tons per year at the New Brunswick site. The quantity of sludge would be dependent on the amount of contaminants in the water and is only an estimate at this time. The sludge would be dewatered at the Idaho-Maryland site and used as a colorant for ceramics manufacturing. Alternatively, the sludge may be transported by truck offsite to a waste disposal facility.

The third stage treatment would be an ion exchange system to remove the As, Pb, Hg, and Al. Water from the second stage treatment would be pumped through the third stage vessels which contain resins that chemically bond to the contaminants. Different ion exchange resins would be required to remove different contaminants. Spent resins would be replaced with fresh resins on an as required basis depending on the concentration of the contaminants. The spent resins would be taken off site and recycled by the resin manufacturer.

The treated water from the Idaho-Maryland site and New Brunswick site would then be discharged to Wolf Creek and the South Fork of Wolf Creek, respectively, via small pipelines that would terminate in in-stream diffusers. The water treatment systems are planned to operate during the lifespan of the project.

3.9.3 Chemical Usage, Storage, and Handling

Explosives

Explosives would be stored on the surface until isolated and secured underground storage facilities could be constructed, which is anticipated to occur during Phase 1, between 2007 and 2009. Upon completion of underground storage facilities, all explosives would be stored underground.

On the surface, the explosives would be stored in first-class explosives magazines which are bullet-resistant, fire-resistant, weatherproof, theft-resistant, and well ventilated. First-class magazines used on surface locations would normally be constructed of steel with a wood lining. The magazines would be located in an isolated place as far away from other activities as feasible.

Detonators would be stored in a separate magazine by themselves. Emulsion blasting agents would be stored in a secured locked enclosure but not necessarily a first-class magazine. These storage magazines would be separated from each other and from inhabited buildings and public roadways as required by American Table of Distance rules enforced by the US Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF).

The project applicant proposes to store and handle all explosive materials in accordance with Cal/OSHA regulations (California Code of Regulations, Title 8, Subchapter 17, et seq.), Federal Mine Safety and Health Administration (MSHA) standards, and ATF rules. Explosives and initiators stored on the surface would include non-electric detonators, cast boosters, detonating cord, and cartridged explosives.

Other Chemicals

All Material Safety Data Sheets (MSDSs) would be maintained onsite and all chemical handling is proposed by the applicant to be performed in accordance with a site Emergency Response Plan/Health and Safety Plan (ERP/HSP) that would be developed upon occupancy. Personnel responsible for operating and maintaining hazardous materials would be trained and certified to do so.

Sodium cyanide would be transported to the Idaho-Maryland site approximately once every three weeks in granular or powder form in one- to two-ton “super sacks” that are lined, unbreakable nylon sacks designed to be handled by forklifts. Acids would be stored in a separate area to prevent formation of hydrogen cyanide (HCN) gas. In addition, personnel handling the material would be equipped with personal protective equipment (e.g., respirators, safety glasses and gloves) to avoid dust inhalation and skin contact. The handling and reagent mixing/makeup area would be well-ventilated and would be fully bermed and sealed. The frequency of unloading operations would be minimized as much as possible including the use of large covered storage hoppers. No hazardous materials would be used in ceramics manufacturing.

Other hazardous materials expected to be used onsite include: lime ($Ca(OH_2)$); sodium hydroxide ($NaOH$) and dilute hydrochloric acid (HCl) for pH control; lead nitrate ($PbNO_3$) to enhance gold leaching kinetics; Caro's acid (H_2SO_5; peroxymonosulfuric acid), hydrogen peroxide (H_2O_2) or sulfur dioxide (SO_2) for cyanide destruction; sodium isobutyl xanthate ($CH_5H_9KOS_2$) as a flotation collector; methyl isobutyl carbinol ($C_6H_{14}O$; MIBC) as a floatation frother; and soluble starch to depress the talc and mica.

The truck shop/warehouse would serve as a single, dual purpose building for mobile and fixed equipment maintenance facilities and as a primary storage area for all spare parts, consumables, chemicals, fuels, and lubricants.

3.9.4 Utilities Usage

Idaho-Maryland Site

Utilities that would be required for the operations of the Idaho-Maryland site include:

- Up to 150 gigawatts (GW) hr/yr of electrical power would be solicited from the local area provider, Pacific Gas and Electric Company (PG&E).
- Natural gas requirement for the Ceramic plant would be up to 2,100 million cubic feet per year.
- Potable water for onsite construction and operating personnel would require a new potable water supply line and would be requested from Nevada Irrigation District (NID). Based on an estimated usage of 35 gallons/day/person (GPD) for 400 employees, NID would be requested to supply up to 14,000 GPD.
- Wastewater disposal requirements for 400 employees is anticipated. Based on Nevada County flow estimates of 30 GPD, additional daily discharge of 12,000 gallons, would need to be accommodated in capacity at the City's treatment facility.
- Solid waste would be generated on site. Recyclables would be separated from other wastes to minimize the volume that would need to be collected by the local refuse disposal service provider.
- Process water would be taken from mine dewatering and would be recycled as much as practical. Mine water would also be used for onsite fire water systems (see 3.8.2. Water Treatment Discussion above).

Round Hole and New Brunswick Sites

Up to 2 GW hr/yr of electrical power would be solicited from PG&E for the Round Hole site and up to 20 GW hr/yr for the New Brunswick site. It is anticipated that potable water would not be needed at either site. Additionally, it is anticipated that wastewater would not be generated and that solid waste generation would be minimal as both sites would normally be unmanned. Any solid waste would be removed and transported to the Idaho-Maryland Site for disposal.

3.9.5 Access

All employee and visitor access to the project sites would be provided via a direct connection to East Bennett Road. The primary inbound traffic from the west would flow from the State Route 20/49 (S.R. 20/49) freeway to the East Bennett gate via Bennett Street which turns into East Bennett Road or via Colfax Avenue/Highway 174 which connects to Bennett Street via Ophir Street. Primary inbound traffic from the east would flow from Brunswick Road & Colfax Avenue/Highway 174.

All ceramics truck traffic and almost all mining-related truck traffic would access a gate at the Whispering Pines Lane/Centennial Drive intersection. All project truck drivers would be instructed to use Idaho-Maryland Road to access the S.R.20/49 freeway. Trucks would use this gate and access route 24 hours per day, seven days per week. Outbound trucks destined to the west (south) on the S.R.20/49 freeway would use the Idaho-Maryland Road westbound on-ramp. However, rather than accessing the freeway at this location, trucks would stay in the auxiliary (third) lane leading to the Bennett Street off-ramp. At Bennett Street, trucks would proceed along the one-way westbound frontage road that would lead to the South Auburn Street westbound freeway on-ramp. This would be the same pattern used by project truck traffic for access to the westbound freeway if proposed improvements are completed at the Idaho-Maryland Road, Bennett Street and South Auburn Street interchanges.

On site, the main vehicle and personnel primary entrance and exits to the underground workings would be provided through the mine portal to the decline tunnel. The decline tunnel would also be used for underground equipment access and a conveyor system to move underground development rock and ore to surface. There would be mobile equipment traffic on site, and employee/applicant vehicle and freight truck movement into and out of the site.

3.9.6 Workers and Schedule

Operations are expected to commence in 2007 and reach optimal production commencing 2013. The project is expected to have a permanent operational work force of 200 for the gold processing plant and 200 for the ceramics plant (total 400) which would be expected to be employed between 2007 and 2028. It is anticipated that less than 50 employees would be working underground during each shift. See **Table 3-5** for details.

At the Idaho-Maryland site, there would be two to three shifts of employees per day for mining operations, including administration personnel, miners, and mill, truck shop, warehouse, and

TABLE 3-5
OPERATIONAL DETAILS

Projected Operational Phases	Commodity Removed for Gold Production (STPD)	Gold Tailings Used for Ceramic Production (STPD)	Time Frame	Estimated Personnel
Phase I		1,200	March 2007 – August 2010	220
Phase II		1,800	August 2010 – September 2011	310
Phase III	3,200	2,400	September 2011 – July 2028	400

maintenance workers. There would also be two to three shifts of employees per day for ceramics plant operations, including administration, operators, and maintenance employees. All phases of operations are expected to operate twenty-four hours a day, seven days a week (24/7) year round, until 2028.

As part of the proposed project, shift change times would be set for all activities so that, to the maximum extent possible, project auto and truck traffic on the local roadway network would be minimized between 7:00 and 9:00 a.m., 12 noon to 1:00 p.m. and 4:00 to 6:00 p.m. All shift changes, other than for half of the mining and ceramics administrative staffs, would be moved to other (off-peak) time periods.

3.10 Reclamation

3.10.1 Idaho-Maryland Site

IMMC proposes the following reclamation measures for the Idaho-Maryland site (**Figure 3-8**):

1. The stockpiles would be drawn down and material processed into product. The stockpile pads would be ripped, re-graded, and re-vegetated.

2. Paved areas and roads may be retained if requested for the future property owner. Drains and ditches servicing the paved areas and roads would be retained if the paved areas and roads are retained. Alternatively, the paved areas and roads would be demolished by removal and disposal of roadbase materials. These areas and roads would then be ripped, resoiled, re-graded, and re-vegetated.

3. The storm water detention pond would be retained if the paved areas and roads are retained. Alternatively, the pond would be drained, backfilled, and re-vegetated. The storm water discharge diffuser located in Wolf Creek would be retained in operation if the storm settling pond was retained. Wolf Creek would be monitored downstream and upstream of the diffuser. Alternatively, the diffuser and associated piping would be dismantled and scrapped if the storm water detention pond was backfilled.

4. Unpaved vehicle areas, roads, and the drains and ditches servicing these unpaved areas and roads, would be demolished by removal and disposal of the roadbase materials. These areas and roads would then be ripped, resoiled, re-graded, and re-vegetated.

5. Landscaped areas and unimproved areas would not be disturbed where feasible.

Figure 3-8: IMM Reclamation Plan

Color – (8.5 X 11)

6. Areas void of vegetation would be re-vegetated.

7. Buildings would be emptied of process and ancillary equipment and related structures. Building shells would be retained unless dictated otherwise by the future property owners. Should the buildings be demolished, building foundations and foundation base materials would be dug up, and disposed of offsite. Building footprint areas would be ripped, resoiled, re-graded, and re-vegetated.

8. All buried pipe, conduit and other services structures would be dug up, demolished and scrapped. Trenches and holes would be resoiled, re-graded and re-vegetated.

9. If desired by the future property owner, site lighting would be dismantled, sold, or scrapped.

10. Security fencing would be retained for the future property owner.

3.10.2 Round Hole and New Brunswick Site

For the Round Hole and New Brunswick sites (**Figure 3-9** and **Figure 3-10**, respectively), reclamation activities, numbers 4 through 10 above, would apply. The New Brunswick dewatering, water treatment and diffuser system would be retained in operation until the mine overflow water is determined to be sufficiently clean to discharge into South Fork Wolf Creek without treatment. The South Fork of Wolf Creek would be monitored downstream and upstream of the diffuser during the operation of the water treatment plant for conformance to water quality standards.

The reclamation of surface facilities would essentially clear the site of all mining-related items with the exception of items to be retained at the request of the future property purchaser. The reclamation of underground accesses would comprise concrete capping of both the Idaho-Maryland decline tunnel and the Round Hole and New Brunswick site shafts. These caps could be removed by blasting. The reclamation of underground shafts and headings would be comprised primarily of waste backfill; however, rock backfill may also be used depending on the suitability and availability of material. Backfilling would likely not prevent future mining.

Access ports to the underground workings for small wildlife would be provided and would be covered by steel grates with suitably sized openings to allow wildlife entry while preventing human entry. Final reclamation fill slopes would not exceed 2:1 in any circumstance. Re-vegetation would be carried out for end use.

3.10.3 Workers and Schedule

Reclamation would be anticipated to take about one year starting in July 2028 and ending in July 2029. It is expected that approximately 20 workers would be needed to complete the reclamation within the one-year time period.

Figure 3-9: Round Hole Reclamation Plan

Color – (8.5 X 11)

Figure 3-10: New Brunswick Reclamation Plan

Color – (8.5 X 11)

3.11 Required Permits and Approvals

The City of Grass Valley is the lead agency for the Idaho-Maryland Mine Project under the California Environmental Quality Act (CEQA). IMMC would also obtain permits, approvals, and licenses as needed from, and would participate in reviews and consultations as needed with, federal, state, and local agencies as shown in **Table 3-6**.

TABLE 3-6
SUMMARY OF PERMIT REQUIREMENTS

Agency	Permits
Federal Agencies	
Bureau of Alcohol, Tobacco, Firearms and Explosives	Storage and Use of Explosives
Mine Safety and Health Administration (MSHA)	Legal Identity Report
U.S. Army Corps of Engineers	Section 404 Permit for discharge to jurisdictional waters of the U.S.
U.S. Fish and Wildlife Service - Sacramento Valley Branch	Possible Federal Endangered Species Act Section 7 consultation
State Agencies	
California Dept. of Transportation (CalTrans)	Encroachment Permit
California / Occupational Safety and Health Administration (DOSH)	Notification of commencement of underground operations
California Department of Conservation, Mining and Geology Board	Review and approval of Mineral Management and Reclamation Plan
California Department of Fish and Game	• Section 1601 - Streambed Alteration Agreement • Possible California Endangered Species Act Consultation and 2081 Permit
Central Valley Regional Water Quality Control Board (CVRWQCB)	NPDES, Section 401 Water Quality Certificate
State Water Resources Control Board (SWRCB)	Same as and in conjunction with CVRWQCB
Northern Sierra Air Quality Management District	Air permit to operate
Local Agencies	
City of Grass Valley	• Mine Use Permit • Formal Development Review • General Plan Amendment • Rezone/Prezone • Annexation • Reclamation Plan
Nevada County	Use Permits (may be approved by City pending MOU)
Nevada County Sheriff's Department	Storage and use of explosives (i.e., blasting)
Nevada County LAFCo	Annexation approval

Data Gaps

1. Details regarding what roads are existing and the type of road (i.e. gravel, dirt, paved) and what roads are proposed and the type. Additionally how the road will be used will be needed (i.e. operations only, employee access, emergency, etc.).

2. Details regarding how the Round Hole site would be used to deliver workers and materials; where would they be delivered to; and why?

3. Details on what would be included within the IMM Emergency Response Plan/Health and Safety Plan (ERP/HSP).