COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Masonville Stone	**MINE/PROSPECTING ID#:** M-1986-007	**MINERAL:** Sandstone (silica, sto quartzite)	**COUNTY:** Larimer
INSPECTION TYPE: Monitoring	**WEATHER:** Clear, warm	**INSP. DATE:** April 12, 2023	**INSP. TIME:** 09:00
OPERATOR: Glenn Southwick	**OPERATOR REPRESENTATIVE:** Glen Southwick	**TYPE OF OPERATION:** 110c - Construction Limited Impact	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** Complete Bond	**BOND AMOUNT:** $76,700.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
INSPECTOR(S): Nikie Gagnon	**INSPECTOR'S SIGNATURE:** Nikie Gagnon	**SIGNATURE DATE:** May 5, 2023

The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.

INSPECTION TOPIC: Gen. Compliance With Mine Plan
PROBLEM/POSSIBLE VIOLATION: Problem 1: The current mine plan needs to be updated and clarified pursuant to C.R.S. 34-32.5-112 and Rule 6.3.3. The operator must provide sufficient information to describe or identify how the operator intends to conduct the operation.
CORRECTIVE ACTIONS: By the corrective action due date, the operator shall submit a Technical Revision, with the required $216 revision fee, to update and clarify the current approved mining plan in accordance with Rule 6.3.3 to reflect existing and proposed activities. Additionally, the revision must include an updated mining plan map that meets the requirements of Rules 6.2.1(2) and 6.3.5(2). This map must unambiguously establish the location of the approved permit boundary. This will help to resolve any confusion caused by differences between the map submitted with the original application and the boundary delineated by surveyors in June 2015 but never added to the permit through the appropriate revision.
CORRECTIVE ACTION DUE DATE: 6/05/23

INSPECTION TOPIC: Gen. Compliance With Reclamation Plan
PROBLEM/POSSIBLE VIOLATION: Problem 2: The current reclamation plan needs to be updated and clarified pursuant to C.R.S. 34-32.5-116 and Rule 6.3.4. The operator must provide sufficient information to describe or identify how the operator intends to conduct reclamation.

CORRECTIVE ACTIONS: By the corrective action due date, the operator shall submit a Technical Revision, with the required $216 revision fee, to update and clarify the current approved reclamation plan in accordance with Rule 6.3.4 to reflect existing and proposed activities. Additionally, the revision must include an updated reclamation plan map that meets the requirements of Rules 6.2.1(2) and 6.3.5(3). This map must unambiguously establish the location of the approved permit boundary. This corrective action may be submitted with the same Technical Revision required for Problem #1 of this report.
CORRECTIVE ACTION DUE DATE: 6/05/23

INSPECTION TOPIC: Acid And Toxic Materials
PROBLEM/POSSIBLE VIOLATION: Problem 3: Improper storage and containment of fuels and/or other hazardous materials was present on site.
CORRECTIVE ACTIONS: All storage tanks, petroleum and any hazardous materials on site for any period of time shall have appropriate secondary containment. The site will also have to comply with all applicable SPCC requirements. Please supply photo documentation that any fuel or hazardous materials containers are stored properly - including applicable secondary containment structures by the corrective action date. Note that secondary containment structures shall consist of an impermeable containment which could contain all contents of the tanks and various containers (when full) plus 10% of the total capacity. The operator may also provide photo documentation that all containers have been removed from the site on or before the corrective action date. Please also note the location of the fuel storage area on the updated mining maps (see Problem #1 corrective actions).
CORRECTIVE ACTION DUE DATE: 6/05/23

INSPECTION TOPIC: Financial Warranty
PROBLEM/POSSIBLE VIOLATION: Problem 4: The financial warranty is not adequate to reclaim the site in accordance with the approved reclamation plan. This is a failure to maintain the proper financial warranty amount to complete reclamation of the affected lands pursuant to C.R.S. 34-32.5-117(4)(b) of the Act.
CORRECTIVE ACTIONS: The operator shall submit adequate financial warranty, as determined by the Division. The Division will be sending a separate surety increase notice to the operator regarding the increase of the financial warranty.
CORRECTIVE ACTION DUE DATE: The operator will have 60 days from the date on the surety increase notice to post the additional financial warranty.

OBSERVATIONS

This inspection was conducted by Nikie Gagnon, representing the Division of Reclamation, Mining and Safety (Division). Glenn Southwick (Operator), accompanied the Division during the inspection. The Masonville Stone quarry is located in Larimer County, 3 miles north of the town of Masonville, Colorado. The site is an active 110c operation in Larimer County currently permitted to affect 9.40 acres. The post mining land use is wildlife habitat. The Operator is actively mining, primarily in the center of the permit area. Mining equipment was observed on site during this inspection.

The mining history of this site is complex. According to Division records, the historic flagstone quarry began operations in 1973. In 1985, Mr. Southwick (landowner and current operator) was notified of the State requirement to bring the operation into full compliance with the Colorado Mined Land Reclamation Act and obtain a permit for the flagstone mining operation. At that time, the historic operation had expanded to approximately 2 acres. In March 1986, the Division approved a mining and reclamation permit for the 2.5 acre quarry. In November 2000, the Division received a citizen complaint stating the Operator had gone outside the boundaries of the permitted 2.5 acres and waste rock was sliding down the slope toward Missouri Creek on the north side of the permit area. In response to the complaint, the Operator submitted an amendment application (AM-2) to add 7.4 acres to the permit area. On February 9, 2001, the Division approved the amendment to increase the permit boundary to 9.9 acres, encompassing the disturbance on the northern slope and expanding the overall footprint of the permit area. Over the next five years, the Operator terraced and stabilized the northern slope and completed reclamation of this area. On August 17, 2005, the Division approved a request to release 0.5 acres from the permit area and the permit area was reduced to 9.40 acres.

Permit Boundary and Mining and Reclamation Maps

For a 110c operation, the permit area boundary and affected area boundary are considered equivalent. In 2015, the Division conducted a routine inspection of the site and raised concerns about the permit boundaries and extent of the mining disturbance. In July 2015, Coffey Engineering & Surveying conducted a survey of the mining operation and determined the gross area of the permit boundary is 9.51 acres (see attached letter). At that time, the Division addressed the permit boundary with the Operator and determined there is a 0.22 acre undisturbed area, defined as a seed bed, in the upper portion of the permit area, which effectively reduces the net disturbance to 9.29 acres. The Division informed the Operator that although the 0.22 acre seed bed area is within the permit boundary, it could not be disturbed unless an amendment is approved to expand the permit boundary beyond 9.40 acres. Using the Coffey Engineering survey for guidance, the Division, along with the Operator, walked the site and set metal stakes covered with white PVC pipe around the perimeter of the quarry to mark the permit boundary and the undisturbed seed bed area.

During this inspection, the Division and the Operator located the boundary markers that were placed around the quarry in 2015. GPS points were taken and compared to the survey map provided by Coffee Engineering in 2015. No instances of changes in location of the stakes were noted and the seed bed appears to be undisturbed. However, the Division reviewed the 2001 approved mining and reclamation maps and attempted to correlate the maps with the 2015 survey. The Division determined the 2015 surveyed boundary is not consistent with the hand drawn maps and aerial photos submitted in 2000/2001. Therefore, the Division is requesting that the Operator submit a Technical Revision to update and clarify the approved mining and reclamation plans and maps (see Problems 1 & 2 for required corrective actions).

Hydrologic Balance

During this inspection, the Division noted pools of water within the active mining area. The Operator stated the water is runoff from recent storms and they haven't pumped the water out yet. The Division reminded the operator that after storm events, water must either drain or be pumped out of the mining area within 72 hours. After the inspection, on April 28, 2023, the Operator submitted photos showing the stormwater had been pumped out and the active mining area and the pit appears dry.

Improper Fuel Containment

The Division noted a container of diesel fuel improperly stored on a slope within the active mining area. Additionally, fuel stored in a staging area did not have secondary containment. All storage tanks, petroleum and any hazardous materials on site for any period of time shall have appropriate secondary containment. The Operator will need to construct a secondary containment structure for the fuels and add the location to the revised mine plan maps required to correct Problem 1.

Offsite Impacts

The permit area is surrounded by steep slopes on three sides. The Division noted slabs of stone and rubble outside the marked permit boundary on the east and south sides of the quarry. The Operator indicated the rubble on these slopes was from the historic mining operation. Additionally, the stacks of flagstone lining the access road are a safety berm marking the edge of the cliff and permit area boundary. In some cases the stacks are placed outside the boundary markers but the Operator indicated the boundary markers were placed inside the stacks of flagstone to be visible. The Operator should be aware that "affected lands" includes all surface area disturbed as a result of the mining operation, including areas in which structures, facilities, equipment, machines, tools or other materials or property which result from or are used in such operations are situated. This means that any stone derived from the quarry must also be located within the approved affected land boundary. The Operator will need to consider this when preparing the updated maps required by Problems 1 and 2.

Financial Warranty:

The Division currently holds a financial warranty in the amount of $76,700. The required financial warranty was last assessed by the Division in 2015. The Division recalculated the reclamation bond and determined the current bond amount is not sufficient to reclaim the site in accordance with the approved plan. A surety increase of $19,104 is required (see attached bond estimate). The Division will be sending a separate surety increase notice to the operator regarding the increase of the financial warranty. The operator will have 60 days from the date on the surety increase notice to post the additional financial warranty.

This completes the monitoring inspection report. Photographs taken during the inspection are attached.

Please contact Nikie Gagnon via phone at (303) 866-3567 ext. 8126 or email at nikie.gagnon@state.co.us if you have any questions regarding this report.

PHOTOGRAPHS

Photo 1. Looking southeast down into the active mining area.

Photo 2. Active mining area. Water pooling in two places noted by arrow.

Photo 3. Looking southwest at the seed bed. Arrow points to boundary marker delineating the eastern edge of the seed bed.

Photo 4. Released area on the northern slope above Missouri Creek.

Photo 5. Equipment staging area. Fuel tank on the left sitting on top of a small hill.

Photo 6. Diesel fuel container sitting in the active mining area.

Photo 7. Looking west at boundary marker near the top of the slope.

Photo 8. Stacks of flagstone along the edge of the cliff. Boundary marker placed inside the stacks.

Photo 9. Access road on the southeastern side of the permit area. Stacks of stone line the edge of the cliff in the affected area.

Photo 10. Looking east down the northern boundary of permit area. Arrows points to boundary marker locations.

Photo 11. Stacks of flagstone along the northern edge of the permit area. Boundary marker placed inside the stacks.

Photo 12. Looking northeast from the staging area near the entrance. Arrow points to northern boundary marker on hill. Affected area is very close to the boundary here.

Photo 12. Photo submitted by the Operator on April 28 showing the water has been pumped out of the pit.

GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

(AR) RECORDS---------- Y	**(FN) FINANCIAL WARRANTY-------- PB**	**(RD) ROADS---------- N**
(HB) HYDROLOGIC BALANCE---------- Y	**(BG) BACKFILL & GRADING---------- Y**	**(EX) EXPLOSIVES--------- N**
(PW) PROCESSING WASTE/TAILING---- N	**(SF) PROCESSING FACILITIES------- N**	**(TS) TOPSOIL---------- N**
(MP) GENL MINE PLAN COMPLIANCE- PB	**(FW) FISH & WILDLIFE---------- N**	**(RV) REVEGETATION---- N**
(SM) SIGNS AND MARKERS---------- Y	**(SP) STORM WATER MGT PLAN---- N**	**(RS) RECL PLAN/COMP-- PB**
(ES) OVERBURDEN/DEV. WASTE--------- N	**(SC) EROSION/SEDIMENTATION--- N**	**(ST) STIPULATIONS------- N**
(AT) ACID OR TOXIC MATERIALS------- PB	**(OD) OFF-SITE DAMAGE----------Y**	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

Inspection Contact Address
Glenn Southwick
13800 Silver Springs Rd
Jay Em, WY 82219

Enclosures
- February 2001 approved Mining and Reclamation Plan Maps
- 2015 Coffey Engineering Survey Letter
- Rule 6.35 Exhibit E Maps from the Construction Minerals Rules and Regulations

CC: Amy Eschberger, Senior EPS, DRMS

Neil Sprague

Jim Freeman

Glenn Southwick

pre existing road

product stockpile

future extraction

Quarry

rubble pile

pre existing road

pre existing road

TOP SOIL

Quarry

pre existing road

future extraction

rubble pile

Glenn Southwick

Glenn Southwick

Sunrise Ranch

Glenn Southwick

David Bacon

Permit Boundry

CTY RD 27

Richard Kleinke

CTY RD 29

N

applicant:- Glenn Southwick
prepared by: Laimi Southwick
1-15-2001

Contour Interval = 40 feet.

Scale 1" = 50ft

Jim Freeman

Neil Sprague

Glenn Southwick

Sunrise Ranch

Glenn Southwick

CTY RD 29

Glenn Southwick

overburden replaced from rubble pile 1'-10' depth as needed to bring quarry site to natural slope of hillside approx 3:1

pre existing road

overburden replaced from rubble pile 1':10' as needed to bring back to natural slope approx 3:1

rubble some used for fill

TOPSOIL REPLACED 1"-6" OVERALL
SEEDED OVERALL WITH GRASSES

pre existing road

pre existing road

pre existing road

some rubble retrieved for fill. remaining rubble slopes to approx 1:1 slope topsoil replaced 1"-6" overall

Richard Kleinke

Permit Boundry

Glenn Southwick

David Eaton

CTY RD 27

N

applicant: Glenn Southwick
prepared by Laura Southwick
1-15-2007

Contour Interval = 10 feet

Scale 1" = 50ft

EC5

COFFEY
ENGINEERING & SURVEYING
4045 St. Cloud Drive, Suite 180
Loveland, CO 80538
[P] 970-622-2095 [F] 970-461-4469

CO Division of Reclamation Mining & Safety
Attn: Eric Scott, Environmental Protection Specialist
1313 Sherman Street, Room 215
Denver, CO 80203

M-1986-007

Date: August 6th, 2015

To all concerned,

The owners of the Masonville Quarry engaged Coffey Engineering & Surveying to conduct a survey of the disturbed mining operation. Early in June 19, 2015, we went to the site. We established primary control for GPS receivers and performed a calibration to insure that the accuracy was relevant to the area and site. We walked the perimeter of the active quarry and used RTK method on our GPS Trimble GNSS R8-4. We also defined the perimeter of the 'island' or seed-bed area to be excluded from the calculation. After post processing the data, we provided the owner with a report and sketch map showing that the gross disturbed area was 9.4 acres, with the island being 0.4 acres…for a total disturbed calculation of 9.0 acres

After this effort was provided, Eric Scott voiced concerns about how the boundary was defined. Trying to represent the boundary on an unrectified image added to the confusion. In order to insure that the true area of disturbance was accurately represented…it was determined that meeting on site would be to only way to have complete confidence in the acreage calculation. On July 22nd the owner, Eric Scott, and myself, met on site and walked the entire perimeter of the active quarry. Eric and I discussed the boundary point by point and left lath markers at each angle point of the disturbed area boundary. On July 31, 2015 a survey crew from my office went to the site and located each of the angle point marks set by Eric and myself. This field data was post processed and the calculations performed again. To insure the integrity of the data and that no stakes had moved from the time I had walked it with Eric, on August 5, 2015 I had a separate crew accompany me back to the site and retraced the locations that I had set with Eric. We found no instances where the boundary was different than the field survey performed on July 31st. The gross area of the mine was determined to be 9.51 acres, with the 'island' or seed-bed covering 0.22 acres for a net area of disturbance of 9.29 acres.

Coffey Engineering & Surveying has permanent record of the control, boundary locations and calculations that can be provided in coordinate format or retraced at any time. I think that the redundant methods, as well as independent survey efforts have been above and beyond the normal protocol, but necessary to conclude the confusion created by not having the boundary consistently monumented.

Sincerely,

Michael D. Lang, P.L.S.
Vice President

COLORADO REGISTERED
MICHAEL DAVID LANG
37053
PROFESSIONAL LAND SURVEYOR
8-6-15

Google earth

feet 1000
meters 300

TOTAL = 9.29 AC

COST SUMMARY WORK

Task description: **Reclamation**

Site: **Masonville Stone** Permit Action: 2023 Inspection Permit/Job#: M1986007

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 4/26/2023 County: Larimer Filename: M007-000
User: NCG

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Regrade to final slope (9 ac. @ 2' fill)	DOZER	1	121.03	$43,153
002	Replace 3" topsoil on 9 ac.	DOZER	1	20.29	$5,835
003	Revegetate AM02 seed mix and mulch	REVEGE	1	16.00	$15,809
004	Mob Dozer	MOBILIZE	1	5.00	$1,843
005	Haul 270 tons composted manure to site - operator estimate	NA	1	40.00	$5,100
		SUBTOTALS:		**202.32**	**$71,740**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$1,449
Performance bond:	1.05	Total =	$753
Job superintendent:	101.16	Total =	$7,600
Profit:	10.00	Total =	$7,174
		TOTAL O & P =	$16,977
		CONTRACT AMOUNT (direct + O & P) =	$88,717

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	0.00	Total =	$0
Reclamation management and/or administration:	5.00		$4,436
CONTINGENCY:	3.00	Total =	$2,152
		TOTAL INDIRECT COST =	$24,065
		TOTAL BOND AMOUNT (direct + indirect) =	**$95,805**

(d) A wildlife statement prepared by the Colorado Parks and Wildlife (CPW) is not required for 111 Special Operations, or 110, or 110(6) Limited Impact Operations. The Operator/Applicant may contact the local CPW representative to verify that no critical or important wildlife habitats or wildlife species will be impacted by the proposed operation.

6.3.3 EXHIBIT C - Mining Plan

The purpose of the mining plan is to describe how mining will affect the permit area for the duration of the operation. This plan must be correlated to Exhibit E - Map. The description of the mining plan must be adequate to satisfy the requirements of Rule 3.1 and demonstrate compliance with Rule 3. At a minimum, the Operator/Applicant must include the following information:

(a) specify the estimated dates that mining will commence and end. If the operation is intended to be an intermittent operation as defined in C.R.S 34-32.5-103(11)(b), the Applicant should include in this exhibit a statement that conforms to the provisions of Section 34-32.5-103(11)(b), C.R.S.;

(b) the estimated depth to which soil, suitable as a plant growth medium, will be salvaged for use in the reclamation process. This description must be consistent with information provided in Exhibit B. Sufficient soil must be salvaged to meet the vegetation establishment criteria of Rule 3.1.10. If plant growth medium is not reapplied on a graded area immediately after salvage, then the Operator/Applicant must specify how the topsoil will be stockpiled and stabilized with a vegetative cover or other means until used in reclamation. Plant growth medium stockpiles must be located separate from other stockpiles, out of the way of mine traffic and out of stream channels or drainage ways. The location of plant growth medium stockpiles must be shown on Exhibit E - Map;

(c) specify the thickness of overburden or quantity of waste rock, if any, to be removed to reach the deposit. The location of any overburden stockpiles or waste rock fills must be shown on Exhibit E - Map;

(d) specify the thickness of the deposit to be mined;

(e) describe the major components of the mining operation such as: roads and access routes, pit, office, shop/maintenance buildings, plant, processing facilities, and any underground openings such as adits or ventilation facilities. These components must be located on Exhibit E - Map;

(f) specify the dimensions of any significant disturbances to the land surface such as pit excavations, mine benches, impoundments, stockpiles, waste rock disposal areas, etc.;

(g) specify the dimensions of any existing or proposed roads that will be used for the mining operation. Describe any improvements necessary on existing roads and the specifications to be used in the construction of new roads. New or improved roads must be included as part of the affected lands and permitted acreage. Affected land shall not include off-site roads which existed prior to the date on which notice was given or permit application was made to the office and which were constructed for purposes unrelated to the proposed mining operation and which will not be substantially upgraded to support the mining

operation. Describe any associated drainage and runoff conveyance structures to include sufficient information to evaluate structure sizing;

(h) specify how much water will be used in conjunction with the operation, and the source of this water;

(i) if groundwater will be encountered and/or surface water intercepted or disturbed, describe how mining will affect the quantity and quality of the surface or groundwater and the methods to be used to minimize disturbance to the surface and groundwater systems including proposed dewatering, sediment-containment or chemical treatment systems, storm water run-off controls, and groundwater points of compliance;

(j) specify how you will comply with applicable Colorado water laws and regulations governing injury to existing water rights;

(k) if refuse and acid or toxic producing materials are exposed during mining, describe how they shall be handled and disposed of in a manner that will control unsightliness and protect the drainage system from pollution;

(l) describe what measures will be taken to minimize disturbance to the hydrologic balance, prevent off-site damage, and provide for a stable configuration of the reclaimed area consistent with the proposed future land use;

(m) specify whether the deposit will be processed on-site. If the deposit will be processed, then describe the nature of the process, facilities and chemicals utilized. The process area and any structures must be described on Exhibit E - Map;

(n) identify the primary and secondary commodities to be mined/extracted and describe the intended use; and

(o) name and describe the intended use of all expected incidental products to be mined/extracted by the proposed operation.

(p) Specify if explosives will be used in conjunction with the mining or reclamation operation. In consultation with the Office, the Applicant must demonstrate, pursuant to Rule 6.5(4), Geotechnical Stability Exhibit, that off-site areas will not be adversely affected by blasting during mining or reclamation operations.

6.3.4 EXHIBIT D - Reclamation Plan

(1) The purpose of the Reclamation Plan is to describe the timing, procedures, criteria and materials that will be used to reclaim the affected land to the proposed future land use. This plan must be correlated to Exhibit E - Map. The description of the Reclamation Plan must be adequate to satisfy the requirements of Rule 3.1 and demonstrate compliance with Rule 3. At a minimum, the Application shall include the following information:

(a) specify at what point in the mining plan and to what depth(s) overburden will be replaced in relation to ongoing extraction.

(b) specify the maximum gradient of reclaimed slopes (horizontal:vertical). If the Application proposes slopes steeper than 3:1, the Operator/Applicant must include a justification that supports steeper slopes for the proposed post-mining land use, and demonstrates compliance with the applicable performance standards of Rule 3.1.

(c) specify the measures that will be taken to revegetate the site, if applicable, including

(i) state the thickness of plant growth medium to be replaced. Sample and analyze available soils sufficiently to establish quantity and quality;

(ii) state at what point in the mining plan the site will be seeded. Explain how the seedbed will be prepared to eliminate compacted conditions (e.g., plowed, chiseled, disced). State the type, application rate, and soil incorporation methods of fertilizer application, if any. NOTE: Soil amendments shall only be applied where soil tests indicate nutrient deficiencies for the plant species to be established;

(iii) state the grass, forb, shrub and tree species to be planted and the applicable quantities. Specify the quantity of each grass and forb species as pounds of pure live seed per acre;

(iv) specify the application method for grass and forb seeding. If the seed is to be broadcast, the application rate shall be twice the rate required for seed drilling. If the seedbed has not been adequately roughened prior to seeding, the seed shall be raked or harrowed after broadcast application;

(v) if a mulch is needed, specify the kind to be used, the crimping method, and rate of application; and

(vi) explain the establishment methods for each species of shrub and/or tree, and state the number of each to be established per acre.

(d) Specify which ponds, streams, roads and buildings, if any, will remain after reclamation. These features must be shown on the Exhibit E - Map. If ponds are part of the Reclamation Plan, slopes from five (5) vertical feet above to ten (10) vertical feet below the expected average water level cannot be steeper than 3H:1V; remaining slope lengths may not be steeper than 2H:1V. Where wildlife habitat is the proposed future land use, shorelines should be irregularly shaped to promote a diverse wildlife habitat. Colorado Parks and Wildlife (CPW) must be consulted where wildlife use is the proposed future land use.

(e) Specify the reclamation treatment of any waste rock dumps, underground mine openings, ditches, sediment control facilities, buildings and other features specified in your mine plan but not previously addressed in the Reclamation Plan narrative. These features must be shown on Exhibit E - Map. This should describe the measures taken to minimize disturbance to the hydrologic balance, prevent off-

site damage, and provide for a stable configuration consistent with the proposed future land use.

117(4)(a) (2) All 110 Limited Impact and 111 Special Operation applications must provide an estimate of the actual costs to reclaim the site based on what it would cost the State of Colorado using an independent contractor to complete reclamation. (Such estimates are not required for activities contemplated by the operator and approved by the Office to be outside the scope of the proposed reclamation plan.) The unit costs should include estimates for the following activities as appropriate to the operation: backfilling, grading, topsoil application, seeding, mulching, fertilization, and labor to complete reclamation. Determine and specify the point during the operation when the site has reached a point of maximum disturbance. The cost to reclaim the site to the specifications of the Reclamation Plan at this point must be estimated. Unit costs (cost per cubic yard), volumes, haul or push distances, and grades must be included when backfilling and grading are part of the Reclamation Plan. Volume and unit costs for finish grading, subsoil and topsoil application must be provided in terms of cost per cubic yard. The estimated cost for fertilizer, seed and mulch acquisition and application must be provided as cost per acre.

(a) Equipment costs must include such factors as equipment operator wages and benefits, fuel and lubricant consumption and depreciation. The cost to mobilize and demobilize the equipment from the nearest population center known to have the required equipment availability should be estimated.

(b) All items referenced in the Reclamation Plan must be included in the cost calculation. These items in addition to earthwork, such as building demolition, fencing, monitoring well sealing or stream channel reconstruction must also be included in the reclamation cost estimate.

(c) After the direct costs noted above have been estimated, the Office may add up to an additional maximum eighteen and one-half percent (18.5%) of that total, which includes private contract, typical overhead costs. This additional cost is required to cover indirect costs that an independent contractor would incur when performing reclamation of the site. Five percent (5%) additional cost shall be added to cover Office administration cost in the event of bond forfeiture and permit revocation.

6.3.5 EXHIBIT E - Map

(1) In addition to the requirements of Rule 6.2.1(2), the Operator/Applicant must provide a map that clearly describes the features associated with the mining plan and the components of the Reclamation Plan. Include one (1) map for the mine plan and one (1) map for the Reclamation Plan. The map(s) must be drawn to a scale no smaller than appropriate to clearly show all elements that are required to be delineated by the Act and these Rules; show a north arrow, note any section corners adjacent to the proposed operation, and indicate the date illustrated. At a minimum, maps must include the following information:

(2) <u>Mining Plan Map</u>

(a) outline and label the permit boundaries, described in Exhibit A - Legal Description; for all 110 Limited Impact and 111 Special Operations, the Office considers the area bounded by the permit boundary to be analogous to the affected area;

(b) label the names of owner(s) of record of the surface of the affected area and of the land within two hundred (200) feet of the affected area, identify the owner of the substance to be mined, and the type of structure and owners of record of any permanent or man-made structures within two hundred (200) feet of the affected area;

(c) outline and label all major surface features to be used in connection with the proposed operation such as: existing and proposed roads, pit boundary, topsoil stockpiles, overburden stockpiles, product stockpiles, waste rock fills, stream channels, buildings, processing plant, underground openings such as adits or ventilation facilities, ponds, impoundments, dewatering pumps, diversions or waste disposal areas;

(d) indicate the direction that construction material extraction will proceed;

(e) note the location of any significant, valuable, and permanent man-made structures within two hundred (200) feet of the affected area. A narrative description must be provided in Exhibit B - Site Description; and

(f) outline and label existing disturbance within and/or adjacent to the permit boundary (e.g., previously mined areas, roads or excavations resulting from utility construction). Re-disturbance of previously disturbed areas, by the proposed mining operation, must be included in the permit area and addressed in Exhibit D - Reclamation Plan.

(3) Reclamation Plan Map

(a) show the gradient of all reclaimed slopes (horizontal:vertical) sufficient to describe the post mine topography;

(b) indicate where vegetation will not be established and the general area(s) for shrub or tree planting;

(c) if ponds are a part of the Reclamation Plan, outline the final shore configuration of the ponds and shallow areas if the future land use is for wildlife;

(d) state the average thickness of replaced overburden by reclamation area or phase; and

(e) state the average thickness of replaced topsoil by reclamation area or phase.

6.3.6 EXHIBIT F - List of Other Permits and Licenses Required

Provide a statement identifying which of the following permits, licenses and approvals which are held or will be sought in order to conduct the proposed mining and reclamation operations: effluent discharge permits, air quality emissions permits, radioactive source materials licenses, disposal of dredge and fill material (404) permits, permit to construct a dam, well permits, explosives permits, State Historic Preservation Office clearance, highway access permits, U.S. Forest Service permits,