

RECLAMATION PLAN
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RECLAMATION PLAN

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RP-1	Reclamation Progressions and Topography



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RP 1 POSTMINING LAND USE

Postmining land uses will be the same as pre-mining land uses. The primary land use will be hay land with some grazing land for livestock and wildlife. The entire affected area will be established to this joint land use. The lands will be returned to a condition equal to or better than pre-mining conditions. Total disturbances during the life of mine under this permit are expected to be less than 388 acres. Previous disturbances under the limited mining permits total approximately 23 acres. Annual disturbances will normally total less than 16 acres.

RP 2 CONTOURING PLAN

All affected lands will be contoured to match pre-mining slope conditions except postmining slopes will not exceed 3H:1V. Pit depths will normally not exceed 20 to 30 feet therefore slope lengths will also be limited in length. High-walls will be knocked down to construct the postmining slopes and blend the reclaimed area with adjacent topography.

Erosion and sediment control will be provided by ASCM's such as hay bales, silt fences and berms to control flow volumes. The small pit sizes and short slope lengths will minimize erosion. Slopes will be topsoiled and seeded the next available planting season following contouring.

The area is generally an upland area with two unnamed ephemeral drainages. Therefore, drainage patterns will be reestablished in the postmining landscape. The active access/haul roads will be constructed in upland areas where possible. Road corridors will be maintained for use during the reclamation process and then reclaimed as the final reclamation step.

Postmining slopes will blend in with adjacent natural contours. The maximum slopes of 3:1 are less steep than many of the natural slopes within the permit area. Adequate through drainage will be established following mining to prevent pollution and ensure the groundwater impacts are minimized. Postmining contours are shown on Map RP-1.



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RP 3 SURFACE PREPARATION FOR TOPSOIL PLACEMENT

Once the backfill is re-contoured and scarified to relieve compaction, all topsoil material salvaged will be replaced directly on the backfill.

RP 4 TOPSOIL AND/OR SUBSOIL REPLACEMENT

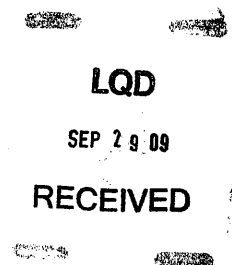
Initially, topsoil will be hauled from stockpiles. When possible, topsoil will be directly hauled from removal areas to the reclaimed areas. In the initial pit area opened up under the limited mining operation, there was no topsoil. Topsoil salvaged from the initial access/haul road and plant area averaged 6 to 18 inches. Deeper soils are located in the lower hay land areas and these areas will be the source for most of the topsoil used for reclamation. Future exploration drilling will identify the extent of the limestone deposit and the limits of mining in the areas with deeper topsoil deposits. The operator will attempt to replace a minimum of 6 to 12 inches over areas not designated as haylands with the deeper 12 inch replacement depending on available topsoil recovered as mining proceeds into the hayfield areas. The 18 inch replacement depth will be used in areas specifically designated as haylands. The deeper soils may be required to achieve enough production to obtain bond release for the haylands.

Topsoil will normally be replaced with scrapers and a blade. Topsoil will be replaced as soon as practical after backfilling and contouring are completed.

Erosion will be controlled through appropriate contouring and performing all tillage and seeding practices on the contour whenever operationally possible. If necessary, a fast growing cover crop, such as an annual grain may be planted along with the permanent mixture to assist in erosion control on potential problem areas.

No soil amendments are proposed at the time of seeding.

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RP 5 REVEGETATION PRACTICES

Cover crops will not be used unless additional erosion control is necessary. If cover crops are used, an annual grain such as oats will be seeded along with the permanent mix. In a spring seeding, oats would be added to the mix at a rate of 15 pounds per acre. In a fall seeding, winter wheat would be added to the permanent mix at a rate of 25 pounds per acre.

If mulching is required, hay or straw mulch will be applied to newly seeded areas at the rate of 1500 to 2000 pounds per acre. Mulch will be anchored by crimping it into the soil.

Two permanent seed mixtures will be used. A hay land mix will be used on those areas where hay can be harvested and a mix containing native grasses commonly seeded in the area will be seed to establish grazing lands on the remaining areas. The seed mixtures presented in either Table RP 1 or 2 will be seeded on all reclaimed areas. If one or more species per life form are not available, LQD will be contacted for approval of a substitute species. All areas will be reclaimed as either hay lands or Upland Grasslands. A preferred seeding rate is provided in the table. In addition, a range is provided for times when one or more species may not be available so the rate can be increased on the remaining species. Actual seeding rates will be provided in the annual reports to maintain an accurate reclamation history. Most permanent seeding will occur in the fall after September 15. If spring seeding is required, it will be completed prior to May 15. Seeding will be performed on the contour with a drill seeder whenever possible. If broadcast seeding is required, the seeding rate will be double the drilling rate.

Temporary seed mixtures will be used to stabilize topsoil and overburden stockpiles that are expected to remain in-place more than 6 months. See Table RP 3 for the long term temporary and topsoil stockpile seed mixture. The temporary seed mixture will be drill seeded or broadcast seeded in the same time periods as described for the permanent mixture.

No woody species will be established during final reclamation because they were absent or limited pre-mining.

Postmining husbandry practices will consist of protecting the newly seeded areas from livestock grazing until the second growing season. Fences will be temporary 4-wire fences as described in LQD Guideline 10 as a Type III fence. If noxious weeds invade, a control plan will be



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implemented. If necessary, areas may be inter-seeded after the first growing season to improve establishment. After two growing seasons, areas may be subjected to limited livestock grazing. LQD will be consulted to determine if grazing is feasible.

RP 5.1 Methods for Evaluating Reclamation Success

Reclaimed areas will be evaluated for final bond release when deemed appropriate after negotiations with WDEQ-LQD. Croell Redi-Mix will develop a bond release monitoring plan and submit it to LQD for approval prior to conducting bond release monitoring. Extended reference areas will be used to evaluate revegetation success on the grazing lands while Crook County averages will be used for the hay lands. Revegetation success will be determined in accordance with LQD Noncoal Rules and Regulations, Chapter 3, Section 2(d)(vi). The ability to sustain grazing will be determined from WDEQ-LQD approved grazing demonstrations, actual grazing of livestock during the final bond release period and/or documentation that the primary plant species established will support grazing. The establishment of wildlife habitat will be determined by documenting that postmining plant species have value as wildlife forage and/or cover.

RP 6 FINAL HYDROLOGIC RESTORATION

Two ephemeral drainages are located within the area to be mined. Sections of both drainages will be removed by mining. No large stream channel construction will be necessary. However, flow patterns similar to premining conditions will be reestablished within the reclaimed areas. Drainage channels will be established in a stable, non-erosive manner. The channel designs will be reviewed with LQD and submitted for approval prior to implementation.

Upland reclaimed areas will be established to drain to the new flow patterns.

The two premining impoundments will not be removed by mining so no impoundments are proposed postmining.

Mining will not impact any known aquifers so reconstruction is not anticipated.

Mining will have minimal impact on surface water and no impact on groundwater so postmining water quality is expected to be essentially the same as pre-mining water quality.

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Piezometric surfaces will not be impacted by mining activities and should not change postmining.

Postmining contours will reestablish pre-mining drainage patterns.

Mining is not anticipated in any known recharge areas so there should be minimal impact. No restoration of recharge areas is anticipated.

Impacts, if any, to the hydrology of the permit area and adjacent lands will be minimal and short term.

RP 7 SPECIAL RECLAMATION STANDARDS

No permanent facilities other than a water well and electrical line are proposed at this time. Structural facilities consist of a scale and a small scale house that will be removed after mining is completed. If buildings are constructed at a later time, the permit holder will develop a reclamation plan for the facilities with the surface owner.

The main haul /access road to the scale house site access will remain postmining for use by the landowner to replace their premining access road. All temporary haul/access roads are the only roads that are proposed for reclamation. The road surface material will be removed or ripped and the areas will be re-contoured, topsoiled, scarified and seeded.

RP 8 DECOMMISSIONING MILL SITE AND TAILINGS SYSTEMS

None are proposed for this operation.

RP 9 RECLAMATION SCHEDULE

The schedule is dependant upon forecasted sales and final limestone recovery capabilities. The limestone is highly variable in depth and distribution. Map RP-1 shows the proposed postmining topography and estimated time frames. Reclamation will follow mining as soon as operationally possible. Mined out areas will be contoured and seeded in the appropriate



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planting season following final mineral removal and relocation of the crusher facilities. Updates of the mining and reclamation progressions will be provided in the Annual report.

RP 10 RECLAMATION COSTS

Estimated reclamation bond calculations are presented in Table AF-1 in the Reclamation Bond section as pages AF.1 and AF.2.

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TABLE RP 1
Basic Seed Mix for Permanent Reclamation: Grazing land

<u>Species</u>	<u>Common Name</u>	<u>#/Acre P.L.S.*</u>	<u>(Possible Range)</u>
<u>Cool Season Perennial</u>			
<u>Grasses</u>			
<i>Agropyron dasystachum</i>	Thickspike wheatgrass	2.0	(1-3)
<i>Agropyron smithii</i>	Western wheatgrass	2.0	(1-3)
<i>Agropyron trachycaulum</i>	Slender wheatgrass	2.0	(1-3)
<i>Stipa viridula</i>	Green needlegrass	1.0	(0-2)
<u>Warm Season Perennial</u>			
<u>Grasses</u>			
<i>Bouteloua gracilis</i>	Blue grama	2.0	(2-4)
<i>Schizachyrium scoparis</i>	Little bluestem	2.0	(1-3)
<u>Perennial Forbs</u>			
<i>Achillea millefolium</i>	Western yarrow	0.1	(0.1-0.3)
<i>Ratibida columnifera</i>	Prairie coneflower	0.1	(0.1-0.3)
	Total	11.2	

* Pure Live Seed



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TABLE RP 2
Hay Land Seed Mixture

<u>Species</u>	<u>Common Name</u>	<u>Preferred Variety</u>	<u>Range of #/Acre</u> <u>P.L.S.*</u>
<i>Agropyron smithii</i>	Western wheatgrass	Rosana	3.0-8.0
<i>Agropyron trachycaulum</i>	Slender wheatgrass	Revenue or Pryor	1.0-6.0
<i>Agropyron riparium</i>	Streambank wheatgrass	Sodar	1.0-5.0
<i>Agropyron dasystachum</i>	Thickspike wheatgrass	Critana	1.0-6.0
<i>Medicago sativa</i>	Alfalfa	Dryland	0.0-2.0

Total Pounds PLS Per Acre 12.0 To 15.0

TABLE RP 3
Long Term Temporary And Topsoil Stockpile Seed Mixture

<u>Species</u>	<u>Common Name</u>	<u>Preferred Variety</u>	<u>Range of #/Acre</u> <u>P.L.S.*</u>
<i>Agropyron smithii</i>	Western wheatgrass	Rosana	3.0-8.0
<i>Agropyron trachycaulum</i>	Slender wheatgrass	Revenue or Pryor	1.0-6.0
<i>Agropyron riparium</i>	Streambank wheatgrass	Sodar	1.0-5.0
<i>Agropyron dasystachum</i>	Thickspike wheatgrass	Critana	1.0-6.0
<i>Medicago sativa</i>	Alfalfa	Dryland	0.0-2.0

Total Pounds PLS Per Acre 12.0 To 15.0



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