

Table 3-2: Summary of Key Design Criteria for Facilities to be Closed

<p>Stockpiles – (Applicable to the West In-Pit Waste, East In-Pit Waste, NRW Waste, and CLW Waste stockpiles; applies to in-pit stockpile areas not covered by the ultimate pit lake)</p> <ul style="list-style-type: none"> ■ Outslopes to be graded to a maximum inter-bench slope of 3H:1V. ■ Maximum uninterrupted slope length of 200 feet for outslopes. ■ Terrace benches will have maximum bench width of 32 feet. ■ Bench longitudinal slopes at 2 percent. ■ Bench cross slopes and channels at a maximum of 2 percent. ■ Top surfaces of non-discharging waste rock stockpiles - minor grading to ensure that stormwater water does not accumulate near or discharge over a crest. ■ For the in-pit stockpiles regrading to be done in such a manner that orients surface water drainage toward the pit bottom. ■ Construction of downdrains and energy dissipators as needed on all stockpiles requiring reclamation at the EOY 2024. For the in-pit stockpiles energy dissipators are not required. ■ For the stockpiles outside of the open pit, regrading to be done in such a manner that orients surface water conveyances to the exterior perimeter of the stockpiles. ■ For the stockpiles outside of the open pit, slope channels will be located where possible in natural junctions or drainage chutes, and may contain riprap and energy dissipation structures if engineering designs warrant them. ■ Placement of 4 inches of additional fine-grained cover material over 10% of the surface area of the stockpiles to enhance the seed bed over potential rocky areas. ■ Top surfaces and outslopes to be ripped to a depth of 18 to 24 inches and vegetated in accordance with MMD Permit GR007RE and associated Permit revisions.
<p>Open Pit – (Little Rock Mine Open Pit)</p> <ul style="list-style-type: none"> ■ Accessible open pit flat areas, not covered by the ultimate pit lake, will be ripped to a depth of 18 to 24 inches and vegetated in accordance with MMD Permit GR007RE and associated Permit revisions. For the purposes of this CCP, accessible pit flat areas are defined as pit haul road driving surfaces and flat areas 50-feet or greater from a highwall. ■ A combination of 6-foot chain link fencing and earthen berms will be constructed approximately 40 feet from the open pit highwalls to limit public access. ■ Signs will be posted on fencing at 500-ft intervals and at all access points, warning of potential hazards present. ■ An approximate 25-foot-wide disturbance area used to construct the chain link fencing, and approximate 100-foot-wide disturbance area used to construct the berm will be vegetated in accordance with MMD Permit GR007RE and associated Permit revisions. ■ Removal of aboveground electrical systems and infrastructure, including pumps, lighting and transmission lines not necessary for post-closure site operations and maintenance.
<p>Pipelines (applies to pit dewatering and seepage collection pipelines that will not be used in closure/post closure water management, and pipelines located outside the regrade footprint of stockpiles)</p> <ul style="list-style-type: none"> ■ Removal of residual sediments and fluids from pipelines within the open pit and disposal of materials at an approved location. ■ Removal or burial of sections of pipeline within the open pit and dispose of pipe in an approved manner. ■ Covering impacted areas with 36 inches of suitable cover material. ■ Seeding of disturbed and covered areas to reestablish vegetation in accordance with MMD Permit GR007RE and associated Permit revisions.

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- Haul roads will be ripped to a depth of 18 to 24 inches and vegetated in accordance with MMD Permit GR007RE and associated Permit revisions. It is not anticipated that any haul roads will be located on acid-generating material, and all fill used for haul road construction will be non-acid generating.
- Removal of culverts not needed for post-closure storm water management and disposal of them in an approved manner.
- Acid-generating material (if present) will be graded to direct stormwater off road, covered with 36 inches of suitable cover material, and revegetated in accordance with MMD Permit GR007RE and associated Permit revisions.

Other Ancillary Facilities and Structures (surface impoundments including booster pump stations, electrical power transmission lines, [power poles](#), and a substation; operational and exploration roads; storm water structures for drainage, diversion, and sediment control; equipment storage areas; and fencing and security systems).

- Power transmission lines, [power poles](#), booster pump stations, and substation will be removed once they are not needed for post-closure purposes. ~~Power poles will be left in place to serve as raptor perches after reclamation.~~
- Removal of any temporary, portable operations and maintenance facilities used to support mining and not needed for post-closure purposes.
- Disturbed areas associated with the construction of the open pit security fencing and earthen berm will be ripped to a depth of 18 to 24 inches and vegetated in accordance with MMD Permit GR007RE and associated Permit revisions.
- Covering impacted areas with 36 inches of suitable cover material.
- Ripping of non-impacted disturbed areas to a depth of 18 to 24 inches.
- Seeding of ripped and covered areas to reestablish vegetation in accordance with MMD Permit GR007RE and associated Permit revisions.

Notes:

MMD = Mining and Minerals Department

Table 6-1: Proposed Interim Seed Mix and Rates for the Little Rock Mine Reclamation Sites

Species ^a		Life-Form	Duration ^b	Seasonality	Rate ^{a,c}	PLS/ sq ft ^d
Scientific Name	Common Name					
Primary Seed Mix						
<i>Bouteloua curtipendula</i>	Sideoats grama	Grass	Per	Warm	1.50	6.58
<i>Bouteloua eriopoda</i>	Black grama	Grass	Per	Warm	0.10	3.06
<i>Bouteloua gracilis</i>	Blue grama	Grass	Per	Warm	0.50	9.47
<i>Leptochloa dubia</i>	Green sprangletop	Grass	Per	Warm	0.25	3.09
<i>Eragrostis intermedia</i>	Plains lovegrass	Grass	Per	Intermediate	0.05	4.02
<i>Dalea candida</i>	White prairie clover	Forb	Per	NA	0.25	2.03
<i>Linum lewisii</i>	Blue flax	Forb	Per	NA	0.25	0.98
<i>Sphaeralcea spp.</i>	Globemallow spp.	Forb	Per	NA	0.10	1.15
<i>Cercocarpus montanus</i>	Mountain mahogany	Shrub	Per	NA	1.50	1.63
<i>Fallugia paradoxa</i>	Apache plume	Shrub	Per	NA	0.10	0.96
<i>Krascheninnikovia lanata</i>	Winterfat	Shrub	Per	NA	1.00	2.82
Total					5.60	35.79
Alternate Seed Mix						
<i>Andropogon gerardii</i>	Big bluestem	Grass	Per	Warm	ND	ND
<i>Andropogon hallii</i>	Sand bluestem	Grass	Per	Warm	ND	ND
<i>Andropogon saccharoides</i>	Silver bluestem	Grass	Per	Warm	ND	ND
<i>Aristida purpurea</i>	Purple three-awn	Grass	Per	Warm	ND	ND
<i>Bothriochloa barbinodis</i>	Cane beardgrass	Grass	Per	Warm	ND	ND
<i>Bothriochloa ischaemum</i>	Yellow bluestem	Grass	Per	Warm	ND	ND
<i>Buchloe dactyloides</i>	Buffalograss	Grass	Per	Warm	ND	ND
<i>Digitaria californica</i>	Arizona cottontop	Grass	Per	Warm	ND	ND
<i>Heterotheca-Heteropogon contortus</i>	Tanglehead	Grass	Per	Warm	ND	ND
<i>Hilaria belangeri</i>	Curly mesquite	Grass	Per	Warm	ND	ND
<i>Muhlenbergia montana</i>	Mountain muhly	Grass	Per	Warm	ND	ND
<i>Muhlenbergia porteri</i>	Bush muhly	Grass	Per	Warm	ND	ND

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Scientific Name	Common Name					
<i>Muhlenbergia rigens</i>	Deergrass	Grass	Per	Warm	ND	ND
Alternate Seed Mix (cont.)						
<i>Muhlenbergia torreyi</i>	Ring muhly	Grass	Per	Warm	ND	ND
<i>Muhlenbergia wrightii</i>	Spike muhly	Grass	Per	Warm	ND	ND
<i>Panicum obtusum</i>	Vine mesquite	Grass	Per	Warm	ND	ND
<i>Panicum virgatum</i>	Switchgrass	Grass	Per	Warm	ND	ND
<i>Pleuraphis jamesii</i>	Galleta grass	Grass	Per	Warm	ND	ND
<i>Pleuraphis mutica</i>	Tobosa	Grass	Per	Warm	ND	ND
<i>Schizachyrium scoparium</i>	Little bluestem	Grass	Per	Warm	ND	ND
<i>Setaria vulpiseta</i>	Plains bristlegrass	Grass	Per	Warm	ND	ND
<i>Sorghastrum nutans</i>	Indiangrass	Grass	Per	Warm	ND	ND
<i>Sporobolus airoides</i>	Alkali sacaton	Grass	Per	Warm	ND	ND
<i>Sporobolus cryptandrus</i>	Sand dropseed	Grass	Per	Intermediate	ND	ND
<i>Sporobolus giganteus</i>	Giant dropseed	Grass	Per	Warm	ND	ND
<i>Sporobolus wrightii</i>	Sacaton	Grass	Per	Warm	ND	ND
<i>Achillea millefolium</i>	Western yarrow	Forb	Per	NA	ND	ND
<i>Baileya multiradiata</i>	Desert marigold	Forb	Ann	NA	ND	ND
<i>Berlandiera lyrata</i>	Chocolate flower	Forb	Per	NA	ND	ND
<i>Calochortus 20mbiguos</i>	Desert mariposa lily	Forb	Per	NA	ND	ND
<i>Calylophus hartwegii</i>	Lavenderleaf primrose	Forb	Per	NA	ND	ND
<i>Castilleja integra</i>	Indian paintbrush	Forb	Per	NA	ND	ND
<i>Castilleja sessiliflora</i>	Downy paintbrush	Forb	Per	NA	ND	ND
<i>Coreopsis lanceolata</i>	Lanceleaf tickseed	Forb	Per	NA	ND	ND
<i>Coreopsis tinctoria</i>	Plains tickseed	Forb	Per	NA	ND	ND
<i>Dalea candida</i>	White prairie clover	Forb	Per	NA	ND	ND
<i>Dalea jamesii</i>	James' dalea	Forb	Per	NA	ND	ND

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Erigeron speciosus	Aspen fleabane	Forb	Per	NA	ND	ND
Alternate Seed Mix (cont.)						
<i>Gaillardia aristata</i>	Blanket flower	Forb	Per	NA	ND	ND
Alternate Seed Mix (cont.)						
<i>Gaillardia pulchella</i>	Firewheel	Forb	Per	NA	ND	ND
<i>Gilia tricolor</i>	Bird's eyes	Forb	Per	NA	ND	ND
<i>Glandularia gooddingii</i>	Desert verbena	Forb	Per	NA	ND	ND
<i>Heliomeris multiflora</i>	Showy goldeneye	Forb	Per	NA	ND	ND
Isocoma tenuisecta	Burroweed	Forb	Per	NA	ND	ND
<i>Ipomopsis aggregata</i> <i>ambigua</i>	Scarlet gilia	Forb	Per	NA	ND	ND
<i>Lesquerella gordonii</i>	Gordon bladderpod	Forb	Per	NA	ND	ND
Lotus rigidus	Deervetch	Forb	Per	NA	ND	ND
<i>Lupinus arizonicus</i>	Arizona lupine	Forb	Per	NA	ND	ND
<i>Lupinus perennis</i>	Perennial lupine	Forb	Per	NA	ND	ND
<i>Machaeranthera bigelovii</i> var. <i>bigelovii</i>	Bigelow's tansyaster	Forb	Per	NA	ND	ND
<i>Machaeranthera tanacetifolia</i>	Tanseyleaf tansyaster	Forb	Per	NA	ND	ND
Melilotus officinalis	Sweetclover	Forb	Per	NA	ND	ND
<i>Mirabilis multiflora</i>	Wild Four 'O Clock	Forb	Per	NA	ND	ND
<i>Monarda citriodora</i>	Lemon beebalm	Forb	Per	NA	ND	ND
<i>Monarda fistulosa</i>	Wild bergamot	Forb	Per	NA	ND	ND
<i>Oenothera elata</i>	Hooker evening primrose	Forb	Per	NA	ND	ND
<i>Oenothera macrocarpa</i>	Missouri evening primrose	Forb	Per	NA	ND	ND
Oenothera pallida	Pale evening primrose	Forb	Per	NA	ND	ND
<i>Penstemon ambiguous</i>	Sand penstemon	Forb	Per	NA	ND	ND
<i>Penstemon barbatus</i>	Scarlet bulger	Forb	Per	NA	ND	ND

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Scientific Name	Common Name					
<i>Penstemon eatonii</i>	Firecracker penstemon	Forb	Per	NA	ND	ND
<i>Penstemon fendleri</i>	Fendler's penstemon	Forb	Per	NA	ND	ND
<u>Alternate Seed Mix (cont.)</u>						
<i>Penstemon palmeri</i>	Palmer penstemon	Forb	Per	NA	ND	ND
<i>Penstemon pseudospectabilis</i>	Desert penstemon	Forb	Per	NA	ND	ND
<i>Penstemon superbus</i>	Superb penstemon	Forb	Per	NA	ND	ND
<i>Penstemon virgatus</i>	Wandbloom penstemon	Forb	Per	NA	ND	ND
<i>Phacelia campanularia</i>	Bluebells	Forb	Per	NA	ND	ND
<u>Alternate Seed Mix (cont.)</u>						
<i>Phacelia crenulata</i>	Desert bluebells	Forb	Per	NA	ND	ND
<i>Ratibida columnifera</i>	Mexican hat	Forb	Per	NA	ND	ND
<i>Rudbeckia hirta</i>	Blackeyed Susan	Forb	Per	NA	ND	ND
<i>Senecio flacciduslongilobus</i>	Silver groundsel	Forb	Per	NA	ND	ND
<i>Senna covesii</i>	Desert senna	Forb	Per	NA	ND	ND
<i>Solidago canadensis</i>	Canada goldenrod	Forb	Per	NA	ND	ND
<i>Sphaeralcea ambigua</i>	Desert globemallow	Forb	Per	NA	ND	ND
<i>Sphaeralcea coccinea</i>	Scarlet globemallow	Forb	Per	NA	ND	ND
<i>Sphaeralcea grossulariifolia</i>	Gooseberry globemallow	Forb	Per	NA	ND	ND
<i>Thelesperma filifolium</i>	Greenthread	Forb	Per	NA	ND	ND
<i>Agave parryi</i>	Parry's agave	Shrub	Per	NA	ND	ND
<i>Amorpha fruticosa</i>	False indigo-bush	Shrub	Per	NA	ND	ND
<i>Artemisia ludoviciana</i>	White sagebrush	Shrub	Per	NA	ND	ND
<i>Atriplex canescens</i>	Fourwing saltbush	Shrub	Per	NA	ND	ND
<i>Brickellia californica</i>	Canyon bricklebrush	Shrub	Per	NA	ND	ND
<i>Calliandra eriphylla</i>	Fairy duster	Shrub	Per	NA	ND	ND
<i>Chilopsis linearis</i>	Desert willow	Shrub	Per	NA	ND	ND

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<i>Dalea formosa</i>	Feather dalea	Shrub	Per	NA	ND	ND
<i>Dasyliion wheeleri</i>	Sotol	Shrub	Per	NA	ND	ND
<i>Encelia virginensis</i>	Virgin River brittlebush	Shrub	Per	NA	ND	ND
Alternate Seed Mix (cont.)						
<i>Erimaceria nauseosa</i>	Rubber rabbitbrush	Shrub	Per	NA	ND	ND
<i>Lycium pallidum</i>	Wolfberry	Shrub	Per	NA	ND	ND
<i>Mahonia repens</i>	Creeping Oregon grape	Shrub	Per	NA	ND	ND
<i>Nolina microcarpa</i>	Beargrass	Shrub	Per	NA	ND	ND
<i>Rhus trilobata</i>	Skunkbush sumac	Shrub	Per	NA	ND	ND
<i>Ribes leptanthum</i>	Canyon gooseberry	Shrub	Per	NA	ND	ND
Alternate Seed Mix (cont.)						
<i>Robinia neomexicana</i>	NM locust	Shrub	Per	NA	ND	ND
<i>Senegalia greggii</i>	Catclaw acacia	Shrub	Per	NA	ND	ND
<i>Vachellia constricta</i>	Whitethorn acacia	Shrub	Per	NA	ND	ND
<i>Yucca baccata</i>	Broadleaf yucca	Shrub	Per	NA	ND	ND
<i>Yucca elata</i>	Soap tree yucca	Shrub	Per	NA	ND	ND
<i>Yucca glauca</i>	Spanish bayonet	Shrub	Per	NA	ND	ND

Notes:

^a Seed mix and rates are subject to change based on future investigations

^b Per – Perennial; Ann = Annual

^c Rate is in pounds of pure live seed (PLS) per acre; substitutions may change seeding rates

^d PLS/sq ft = Pure live seed per square foot, estimated based on published values for seeds per pound

lb/ac = pounds per acre

NA = Not applicable

ND = Not determined

Table 6-3: Proposed Plant Diversity Guidelines for the Little Rock Mine

Class	Seasonality	Numbers	Minimum Occurrence (% cover)
Grasses	Warm	3	1
Shrubs	NA	2	<u>0-51</u>
Forbs	NA	2	0.1

Notes:

NA = Not applicable