EXHIBIT E – RECLAMATION PLAN

This information provided in this Exhibit is intended to satisfy the requirements outlined in Section 6.4.5 of the Colorado Mined Land Reclamation Board Construction Material Rules and Regulations: The proposed mining and reclamation plan focuses on minimizing the ecological impacts of mining, minimizing the length of time of impact, and maximizing long-term benefits.

(a) A description of the type(s) of reclamation the Operator proposes to achieve in the reclamation of the affected land, why each was chosen, the amount of acreage accorded to each, and a general discussion of methods of reclamation as related to the mechanics of earthmoving;

Phase 1 mine areas will be filled with overburden if siltation has not come to grade, topped with topsoil and revegetated with an upland seed mixture. Other disturbed areas such as roads, parking areas, plant areas, shop area, stockpile areas, scale and scale house areas, disturbed areas near Thunderbird Lake will be similarly filled with overburden where not to grade, topped with topsoil and reseeded with upland or wetland seed mixes, as appropriate.

Phases 2 and 3 will be reclaimed to slurry wall lined water storage reservoirs (i.e., developed water resources). The applicant will not mine to within 400-feet of the river bank until a Technical Revision is submitted and approved that either provides detailed designs of inlet/outlet structures, or hydrologic analyses demonstrating stability of the pit banks during a 100-year flood event. The slurry walls will be constructed prior to mining below the water table to reduce dewatering during mining and to provide reclaimed water storage due to a need within the county and state for water storage facilities[1]. Compacted reclamation slopes no steeper than 3 horizontal to 1 vertical (3H:1V) will be constructed at the mine limit of the Phase 2 and 3 cells as shown on the Exhibit F map. Topsoil will be spread above the high-water line of the reclamation slopes. Upland seed mixes will be placed 1-foot and higher above the high-water line ("HWL"). Wetland seed mixes will be placed in the 1-foot area above the high-water line as well as 1-foot area below the high-water line. In addition, the conveyor area and any haul roads will be topped with topsoil and reseeded to upland vegetation. Refer to Exhibit F for the acreages of each cell and reclamation type.

The reclamation plan, including material volumes, is outlined on Exhibit F and summarized in the following table.

Martin Marietta, Thunderbird Sand and Gravel Pueblo County, Colorado
Phase 1 Reclamation Summary
Structure Removals: Concrete Pad at Wash Plant, Scale and concrete base, Scale Trailer, Shop and footings, Excelsior Ditch Culvert *Backfilling: Phase 1a and 1b Siltation ponds if not filled with silt.* *Topsoiling and Reseeding:* Phase 1a and 1b siltation ponds, northwest stockpile area, parking area, entrance road, disturbed area near Thunderbird Lake
Phase 2 Reclamation Summary
Structure Removal: Conveyor footings *Backfilling:* Backfill reservoir slopes to 3h:1v *Topsoiling and reseeding:* Conveyor area, Reservoir slopes above and at HWL
Phase 3 Reclamation Summary
Structure Removals: Plant and portable plant, plug and abandon monitoring wells *Backfilling:* Backfill reservoir slopes to 3h:1v *Topsoiling and reseeding:* Reservoir slopes above and at HWL

Earthmoving

Slurry wall construction will consist of excavating a trench, supported by a bentonite slurry, through the overburden, sand and gravel, and into the underlying bedrock. A low permeable backfill mixture will follow trench excavation by mixing stockpiled supplemental fines sourced from the overburden, select material excavated from the trench, dry bentonite, and bentonite slurry. The backfill mixture will be placed at the top of the trench and will slump down the backfill slope displacing the bentonite slurry. The final slurry wall barrier will be keyed into suitable bedrock a minimum of 4-feet.

Topsoil and overburden stripped while establishing the plant site, siltation ponds, customer roads, and parking area will be placed in segregated berms in the area of the north-west corner of the site where not encumbered by the flood plain to visually screen the plant area from the adjacent offsite areas. The northwest area will be accessed by a bridge or culvert spanning the Excelsior Ditch. The segregated, bermed topsoil and overburden will be used in final reclamation of the Phase 1 siltation ponds, reclamation slopes in Phases 2 and 3,, the vegetated areas of the plant, roadways, parking areas, disturbed areas near Thunderbird Lake, the conveyor areas and any other locations requiring topsoil and overburden during final reclamation.

Topsoil and overburden stripped in Phases 2 and 3 will be placed in segregated stockpiles as approximately shown in Figure C-2. As much as possible, overburden will be placed directly into reclamation slope areas . Material balance estimates indicate an abundance

of overburden is present at the site. The applicant will maintain 1.3 times the amount of overburden required for final reclamation at the site. Amounts in excess of this amount may be sold for offsite use. Segregated topsoil and overburden from the stockpiles will be used to reclaim slopes, or for reclamation of vegetated areas over the rest of the site. Topsoil and overburden may be placed by a scraper, haul truck, excavator and/or bulldozer, and will generally be graded with a blade. Compactors will be used when placing the reclaimed slopes. Compaction of 95-percent maximum dry density will be required in the reclamation slopes. All grading will be done in a manner that controls erosion and siltation of the affected lands, to protect areas outside the affected land from soil deposition and other damage.

Reclamation in each phase may begin before completion of mining, but no later than within six months of when mining in that phase is completed. Overburden materials will be removed from mining phases and placed near reclamation phases or directly in the reclamation slopes. If no reclamation phase is open, overburden and clay materials will be stockpiled in one of the stockpile locations shown in Figure C-2. At the conclusion of mining activities, disturbed areas will be regraded and smoothed to a finished grade that is suitable for topsoiling and revegetation or the final land use.

[1] *The Arkansas Implementation Plan, part of the Colorado Water Plan*

(b) A comparison of the proposed post-mining land use to other land uses in the vicinity and to adopted state and local land use plans and programs.

The water storage reservoirs will be compatible with the other land uses in the vicinity, which includes farmland, industrial land, and rural residential. Municipal boundaries have approached the vicinity of the site and represent a growing need for both construction materials and water storage facilities. The Arkansas Basin Implementation Plan, developed as part of the Colorado Water Plan, recognizes *the need to develop water storage opportunities in the Arkansas River Basin.*

(c) A description of how the Reclamation Plan will be implemented to meet each applicable requirement of Section 3.1.

The Operator will carry reclamation to completion with reasonable diligence. Each phase of reclamation will be generally completed within one to two years from completion of mining, but not more than five years from the date the Operator informs the Board or Office that final reclamation of a particular phase has commenced.

Section 3.1.5 Reclamation Measures Material Handling:

Grading will be performed to help control erosion and siltation of the affected lands through phased mining, implementing good operation techniques to handle material as little as possible, and seeding/vegetation of stockpiles remaining in place for more than 180 days.

The seed mix used for stockpiles will consist of:

Bluestem (Champ, Chet) 1.00 lbs pls/acre
Sand Lovegrass (Bend, Native, Ne27) 2.50 lbs pls/acre
Indian Ricegrass (Nezpar, Rimrock) 3.00 lbs pls/acre
Prairie Sandreed (Goshen) Upland seed mix for final reclamation will consist of:
Green Needlegrass (Lodorm) 1.50 lbs pls/acre
Little bluestem (Blaze, Cimarron, Camper) 0.75 lbs pls/acre
Yellow Indiangrass (Cheyenne, Holt, Scout) 0.50 lbs pls/acre
Switchgrass (Blackwell, Nebraska 28) 1.50 lbs pls/acre
Sand Dropseed 0.50 lbs pls/acre
Total: 12.00 pounds pls/acre

Although the use of erosion protection devices is not anticipated, if deemed necessary by the operator at the time of excavation, silt fence, haybale dams or other erosion control devices will be installed. Backfilling and grading will be completed as soon as feasible after the mining process is complete for each phase.

Maximum final slopes and slope combinations will be compatible with the selected post-mining land use. Mining will occur at a slope that is stable. Reclaimed slopes in the water storage reservoirs will not be steeper than a 3H:1V ratio (horizontal:vertical). Representative samples of the fill material will be analyzed for Standard Proctor moisture/density relationships prior to backfilling the slope. The material will be worked to within 2% of the optimal moisture content and placed back into the slope at lifts not exceeding 1-foot and compacted to 95 percent maximum standard Proctor dry density. The lifts will be compacted with a sheepsfoot roller to tie lifts together. The upland areas will be reclaimed to grades consistent with pre-mining drainage patterns.

The operator will backfill using fill material generated on-site, or imported inert fill generated outside the permit area. If any inert off-site material is used as backfill, a notarized letter will be submitted to the Division as required by Section 3.1.5(9) of the MLRB Construction Material Rules and Regulations.

It is not anticipated that mining will uncover any refuse or acid-forming or toxic producing materials, however if any such materials are encountered the operator will take precaution to handle the materials in a manner that will control unsightliness and protect the drainage system.

Drill or auger holes that are part of the mining operation shall be plugged with non-combustible material, which shall prevent harmful or polluting drainage. Monitoring wells not located within the mine excavation limits will be plugged to DWR standards as soon as it can be confirmed that they are no longer needed for the operation.

Mined material to be disposed of within the affected area will be handled in such a manner to prevent any unauthorized release of pollutants to the surface drainage system. No unauthorized release of pollutants to groundwater shall occur from any materials mined, handled or disposed of within the permit area.

***Section 3.1.6 Water-General Requirements*:**

The Operator will comply with applicable Colorado water laws governing injury to existing water rights and with applicable state and federal water quality and dredge and fill laws and regulations.

The operator will develop and comply with a stormwater management plan and will use best management practices (BMPs) to ensure groundwater and surface water are protected to the greatest practical extent. BMPs include schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollution in runoff from the site.

***Section 3.1.7 Groundwater - Specific Requirements*:**

The Operator will comply with the applicable standards and conditions for groundwater.

***Section 3.1.8 Wildlife*:**

The mining and reclamation plans have been designed to account for the safety and protection of wildlife on the mine site. The Operator will mine the site in phases and use concurrent reclamation methods to minimize the impact on wildlife. The proposed reclamation plan may improve wildlife habitat. The proposed seed mix and plantings will create improved cover, foraging, and roosting areas for wildlife. The water area within the reservoirs will serve as habitat for waterfowl and other bird species and the fringes of the reservoirs will be used by mammal, bird, reptile and amphibian species. Control and/or removal of noxious and weedy species during the project and the introduction of desirable graminoid, forb and potential woody species during reclamation will result in enhancement of wildlife habitat on the project site.

***Section 3.1.9 Topsoiling*:**

Topsoil shall be removed and segregated from other material. Topsoil stockpiles shall be stored in places and configurations to minimize erosion and located in areas where disturbance by ongoing mining operations will be minimized, as shown on Exhibit C2. Once stockpiled, topsoil shall be re-handled as little as possible. Stockpiles that will remain in place for more than one growing season will receive vegetative cover.

Section 3.1.10 Revegetation:

In those areas where revegetation is part of the reclamation plan, the land shall be revegetated in a manner that establishes a diverse, effective, and long-lasting vegetative cover that is capable of self-regeneration without continued dependence on irrigation or fertilizer and is at least equal in extent of cover to the natural vegetation of the surrounding area. These areas are relatively minimal given the water development reclamation plan for the site. The proposed seed-mix and plantings for reclamation are outlined on the Reclamation Plan included in Exhibit F of this application and repeated again below. Seeding will occur between November 1 and May15.

Upland seed mix for final reclamation will consist of:

Western Wheatgrass (Arriba, Barton, Rosana) 2.50 lbs pls/acre
Blue Grama (Hachital, Lovington) 1.50 lbs pls/acre
Sideoats Grama (Vaughn, Butte, Niner, El Reno, Haskell) 2.25 lbs pls/acre
Smooth Brome (Lincoln, Manchar) 2.00 lbs pls/acre
Sand dropseed 0.25 lbs pls/acre
Perennial Ryegrass (Calibra or Garibaldi tetraploid) 0.75 lbs pls/acre
Slender Wheatgrass (Pryor, Revenue or San Luis) 2.50 lbs pls/acre
Alkaligrass (Sult ll, Salt or Sea) 1.25 lbs pls/acre
Switchgrass (Blackwell, Nebraska 28) 1.00 lbs pls/acre
Total: 14.00 pounds pls/acre

Wetland seed mix for final reclamation will consist of:

American Sloughgrass (Beckmannia Sylzgachne) 0.96 lbs pls/acre
Wooly Sedge (Carex Lanuginosa) 0.04 lbs pls/acre
Nebraska Sedge (Carex Nebrascensis) 0.32 lbs pls/acre
Creeping Spikerush (Eleocharls Palustris) 0.08 lbs pls/acre
Canada Wildrye (Elymus Canadensis) 1.20 lbs pls/acre
Arctic Rush (Juncus Balticus/arcticus) 0.08 lbs pls/acre
Torrey's Rush (Juncus Torreyl) 0.08 lbs pls/acre
Mannagrass (Glyceria Striata) 0.08 lbs pls/acre
Switchgrass (Panlcum Virgtum) 0.96 lbs pls/acre
Hard-stem Bulrush (Scirpus Acutis) 0.08 lbs pls/acre
Three-square Bulrush (Scirpus Americanus) 0.32 lbs pls/acre
Cloaked Bulrush (Scirpus Pallidus) 0.08 lbs pls/acre
Alkali Bulrush (Scirpus Palludosus) 0.08 lbs pls/acre
Softstem Bulrush (Scirpus Validus) 0.08 lbs pls/acre
Prairie Cordgrass (Spartina Pectinata) 0.68 lbs pls/acre
Total: 8.00 pounds pls/acre

Section 3.1.11 Buildings and Structures:

An aggregate processing plant and a shop/office will be placed in the plant area on the north side of the phase 3 mine area. A scale and scale trailer will be placed along the site access road. With the exception of the scale trailer, these structures will be modular structures founded on footings and will remain at the site during the majority of mining operations. These structures will be removed as part of final reclamation and to allow final mining under the plant itself. A portable plant will be utilized when mining the north part of phase 3. The proposed locations of the plant structures are approximately shown on Figure C-2.

Conveyors may be constructed at the site to move material from the cells to the processing plant. The conveyors may locally require footings.

Section 3.1.12 Signs and Markers:

The Operator will post appropriate signage at the entrance to the mine site. The permit area will be marked by signage and fencing on the north side of the river. Because no mining will occur south of the river, the permit area will be marked by visible monuments and existing fences will remain.

(d) Plans for topsoil segregation, preservation and replacement; for stabilization, compaction and grading of spoil; and for revegetation.

Topsoil will be removed and segregated from other material. Topsoil not needed for reclamation may be sold or removed from the site. For reclamation, topsoil will be replaced by a scraper, haul truck, or other suitable means, and generally graded with a blade. Grading shall be done in a manner that controls erosion and siltation of the affected land and protects areas outside the affected land from siltation and other damage. In addition, backfilling and grading shall be completed as soon as feasible after the mining process.

Final grading will create a final topography that is appropriate for the final land use. For example, final grading of the reservoir below and above the high-water line will create slopes no steeper than 3H:1V (horizontal to vertical) below the top of the banks. Topsoil will be placed and spread on areas disturbed by the mining, above the anticipated high-water line. The minimum top soil thickness shall be 6 inches. The topsoil shall be keyed to the underlying and surrounding material by the use of harrows, rollers or other equipment suitable for the purpose.

In those areas where revegetation is part of the reclamation plan, the Operator will revegetate the land in such a manner as to establish a diverse, effective, and long-lasting vegetative cover that is capable of self-regeneration without continued dependence on irrigation or fertilizer and is at least equal in extent of cover to the natural vegetation of the surrounding area. Seed will be drilled and mulched.

The revegetation seeding on the Reclamation Plan Map contains the preferred species of grasses and shrubs to be planted.

Seeding will take place once final grading and replacement of topsoil have been completed for each phase. Timing of seeding will be consistent with standard horticultural practice for dryland applications - generally between late September and the middle of April to ensure there is adequate moisture for germination.

(e) A plan or schedule indicating how and when reclamation will be implemented. Include:

i. An estimate of the periods of time which will be required for the various stages or phases of reclamation.

Reclamation for any given stage of mining may take up to five years to allow for successful revegetation. Please refer to the Timetable for Mining and Reclamation in Section (e) of Exhibit D.

ii. A description of the size and location of each area to be reclaimed during each phase.

Please refer to the Reclamation Plan Map (Exhibit F).

iii. Outlining the sequence in which each stage or phase of reclamation will be carried out.

Please refer to the Timetable for Mining and Reclamation in Section (e) of Exhibit D.

(f) A description of:

i. Final grading – maximum anticipated slope gradient or expected ranges thereof;

The finished slopes of the reservoirs will be no steeper than 3H:1V horizontal to vertical.

ii. Seeding – types, mixtures, quantities and time of application;

Please refer to the Reclamation Plan Map for the list of plant materials and seeds to be utilized. The operator will seed during the appropriate season to ensure adequate moisture for germination and implement weed controls to allow the grasses to successfully establish. Additional plantings may be installed once the reservoirs are full of water and the grasses are established.

iii. Fertilization – types, mixtures, quantities, and time of application;

Fertilizer is not anticipated to be necessary. The type and application rate of fertilizer may be determined based on a soil test at the time of final reclamation.

iv. Revegetation – types of trees, shrubs, etc.;

The site will be revegetated with an upland grass seed mix in areas that are above the highwater line or are graded back to native grade. Wetland seed mixes will be used in appropriate areas such as near the high waterline of the Phase 2 and 3 reservoirs, in disturbed areas near Thunderbird Lake, and other areas if appropriate.

v. *Topsoiling – specify anticipated minimum depth or range of depths for those areas where topsoil will be replaced.*

Topsoil will be placed and spread on all areas disturbed by the mining above the anticipated high-water line and areas graded back to native grade. The minimum thickness shall be 6 inches above the surrounding finished grade.

WEED MANAGEMENT PLAN

Noxious weeds will be eradicated or managed within the Mine operations areas. Noxious weed species to be managed are defined as those plant species currently identified by the Colorado

State Department of Agriculture (CDA) as noxious under the Colorado Noxious Weed Act. Management efforts will be directed to those species identified under List A or List B by the CDA. List A species are required to be eradicated, while List B species will be controlled.

The noxious species are not listed here as the list of noxious species changes regularly. The Colorado State Department of Agriculture maintains a list of noxious weed species on their web site (https://www.colorado.gov/pacific/agconservation/noxious-weed-species).

Noxious weeds will be controlled by any combination of cultural, mechanical, biological or chemical measures. Weed control measures will be developed specifically for the noxious weed species encountered and in conjunction with the local county weed control district and/or the Colorado State Department of Agriculture. Weed control measures will be undertaken by trained and/or licensed (if required by law) personnel. Weed management control will be initiated within two weeks of noxious weed identification at any operation, or as specified by the county weed control specialist.

Where noxious weed control measures cause elimination of vegetation at a revegetated site, seeding or planting of desirable replacement vegetation will occur during the first normal planting or seeding season after weed control measures have been implemented.