This information provided in this Exhibit is intended to satisfy the requirements outlined in Section 6.4.7 of the Colorado Mined Land Reclamation Board Construction Material Rules and Regulations:

(a) Locate on the map (Exhibit C) tributary water courses, wells, springs, stock water ponds, reservoirs and ditches

The Arkansas River conveys water from west to east across the south part of the site. The headgate of the Excelsior Ditch is on the north side of the river approximately 500 feet west of the site. The Excelsior Ditch headgate receives flows from the Arkansas River west of the site and conveys water from west to east across the site. Other surface water features include Thunderbird Lake and two (2) unnamed ponds located on the southwest part of the site. Thunderbird Lake and the unnamed ponds appear to be unlined gravel lakes remaining after previous borrowing of gravel at the site. Thunderbird Lake will serve as the site fresh water source supplying water to the wash plant in the processing areas. After use in the wash plant, water will run through a series of siltation ponds developed during the Phase 1 and will be recirculated through Thunderbird Lake for reuse as the fresh water supply. The two (2) unnamed ponds will be removed by mining during Phase 3. Please refer to Exhibit C for locations of water courses in close proximity to the site, including wells, springs, stock water ponds, reservoirs and ditches.

(b) Identify all known aquifers

The site is underlain by a shallow alluvial aquifer of the Arkansas River. Water levels measured in three (3) site monitoring wells screened in the alluvial aquifer indicate groundwater ranges from approximately 5.0 to 5.9 feet below ground. Review of area water well logs indicate no bedrock aquifers underlie the site.

(c) Show how water from dewatering operations or runoff from disturbed areas, piled material and operating surfaces will be managed to protect against pollution of either surface or groundwater both during and after the operation.

Please refer to the Mining Plan Map in Exhibit C of this application. Mine areas will drain internally. Uncontrolled releases of surface water in disturbed areas will not occur. Stormwater collected in the active mine area will be managed through the dewatering system as needed.

Dewatering will be accomplished by digging a sump, generally along the base of the mine slope, which will hold a floating pump. The pump will have an HDPE discharge line that will be routed to one of the comingled discharge points located at the site. The Operator will obtain a Colorado Discharge Permit System (CDPS) Discharges from Sand and Gravel Mining and Processing General COG500000 permit prior to discharging water off site.

(d) Estimate project water requirements including flow rates and annual volumes for the development, mining and reclamation phases of the project.

Water needs estimated below provide for sustained production as detailed in the Mining Plan. The Operator will adjust water supplies to account for actual demand, avoid waste, and continuously comply with laws and regulations of the Division of Water Resources and any other water agency having jurisdiction over the operation.

Projected Use and Consumption: Annual evaporative depletions will be the evaporation from up to 5,000 feet of 5-foot-wide de-watering trench, located inside of the mine limit. The total area of exposed water is 0.6 acres. The gross annual evaporation at the mine is approximately 50 inches according to NOAA Technical Report NWS 33, Evaporation Atlas for the Contiguous 48 United States. The nearest weather station is the National Weather Service (NWS) located in the Pueblo Airpark approximately 1.7 miles northwest of the site. The average annual precipitation is 12.02 inches. Effective precipitation, that part of historical precipitation which was consumed by native vegetation on land to be covered by water surface, is conservatively estimated to be 70 percent of the total precipitation. The annual average effective precipitation at the property is estimated to be 8.41 inches. When subtracting the effective precipitation from the gross evaporation yields, the net annual evaporation is 41.59 inches, or 3.47 acre-feet per acre. The Thunderbird Lake (fresh water supply) is approximately 4.8 acres and the Siltation Ponds will be approximately 4 acres as only the primary (Phase 1a) or secondary (Phase 1b) siltation ponds will be exposed at any one time. The approximate acreage of open water surface is 9.4 acres. The annual amount of evaporation from open water surfaces is approximately 32.62 acre-feet.

<u>Mining Production & Operations</u>: The Operator expects to extract approximately 500,000 tons annually of aggregate material from the site. All water retained in the recovered material will be replaced pursuant to the Substitute Water Supply Plan (SWSP). The total annual amount of water retained in the gravel product from mining activities totals approximately 6.8 acre-feet. The SWSP is renewed annually and will reflect analysis of production and depletion anticipated in each year of operation.

In addition, an estimated 3.3 acre-feet of water per year will be used for dust control based (approximately) on 5,000 gallons per day for 5 days a week for 10 months.

Annually the total evaporative and operational losses from mining activities (open water surface evaporation, water retained in the aggregate product, dust suppression) totals 42.62 acre-feet of depletion which must be augmented. All depletions will be lagged to the Arkansas River using the lagging factors approved by the State Engineer pursuant to future Substitute Water Supply (SWSP) approvals.

Reclamation Operations: Water will be necessary for compaction in the reclamation slopes and for compaction in backfilling to 400-feet from the river bank. A total of approximately 90 acre-feet of water will be necessary over the life of the project and will need to be accounted for in the annual SWSP approvals. In addition, approximately 26 acre-feet of water will be necessary to construct the two (2) slurry walls. This water use will be accounted for in the annual SWSP approvals for the individual years the work is performed.

(e) Indicate the projected amounts of the water sources to supply project water requirements

<u>Replacement Water</u>: The Miner will obtain an approved Substitute Water Supply Plan from the State Engineers office every year, providing annually or more frequently the opportunity to review the sufficiency of water supplies. The SWSP approvals require that the applicant provide a detailed explanation of the mining operations, a quantification of all mining activities and subsequent depletions and all legally available replacement sources. Sources of water are expected to be similar to those used at the applicant's Rich Pit and may include water leased from the following entities:

- Arkansas Groundwater and Reservoir Association
- Donala Water and Sanitation District
- Pueblo Board of Water Works
- Other water sources that may be obtained by the applicant

The full amount of replacement water required will be sourced from one or more of these potential sources.

(f) Affirmatively state that the Applicant has acquired or applied for a National Pollutant Discharge Elimination System permit from the Water Quality Control Division The Operator will apply for a COG500000 permit from the Water Quality Control Division of the Colorado Department of Public Health and Environment prior to discharging water from the site.

Groundwater Sampling and Analysis Plan

This information provided in this subsection of Exhibit G is intended to satisfy the requirements outlined in the Groundwater Monitoring and Protection Technical Bulletin dated September, 2023:

Existing Groundwater Conditions

The near surface groundwater is part of the alluvial aquifer along the Arkansas River in which permeable sand and gravel alluvium overlies relatively impermeable bedrock of the Lower Member of the Pierre Shale (Tweto, 1979).

The majority of the mine site is located on the north side of the Arkansas River where the prevailing groundwater flow direction is anticipated to be south-southeasterly roughly reflecting the site topography with some influence from the bedrock topography. A small portion of the permit area is on the south side of the river where the prevailing groundwater flow direction will be north-northeasterly also reflecting site topography with some influence of the bedrock topography. Groundwater in the area is tributary to the Arkansas River located on the south part of the site. Local groundwater levels and flow directions are likely influenced by:

• The Arkansas River is located on the south part of the site. For the majority of the year, the river acts like a drainage way maintaining groundwater elevations higher than water elevations in the river. During periods of high runoff, usually in the spring, river water levels will locally recharge the alluvial aquifer.

- The Saint Charles River is south of and tributary to the Arkansas River and encroaches on the mine at its confluence with the Arkansas. The Saint Charles River will behave in a manner similar to the Arkansas River acting like a drainage way for the majority of the year and locally recharging groundwater levels during periods of high run off.
- The Excelsior Ditch traverses the western and northern parts of the site before leaving the north part of the site. The ditch will act like a drain during the non-irrigation season maintaining surrounding groundwater levels at or near water levels in the ditch. During the irrigation season, the ditch may serve as a source of recharge to the alluvial aquifer.
- Irrigation is practiced in the area. Applied irrigation that is not lost to evaporation and transpiration will likely recharge the alluvial aquifer.
- Minor losses to the groundwater regime will occur due to evaporation of Thunderbird Lake and the unnamed ponds on the west part of the site. Evapotranspiration will also result in minor losses to the groundwater regime.
- Alluvial Wells: Local alluvial wells are present in the area. When pumping, groundwater will be drawn to the well(s).

Mining Plan

All mining will occur north of the Arkansas River. The Arkansas River forms a hydraulic boundary. The mining and reclamation will not affect groundwater flows on the south side of the Arkansas River.

Three (3) mine cells are currently planned at the site. As described in Exhibit D and shown on Exhibit C-2, one cell (Phase 1 – siltation ponds) will not be dewatered and will be wet mined with an excavator. Two (2) of the cells (Phases 2 and 3) will be slurry wall lined prior to mining below the water table. Thunderbird Lake will serve as the water supply for the site wash plant. Used water from the plant will be recirculated to Thunderbird Lake after passing through a series of settlement ponds. An approved SWSP will be obtained prior to mining below the water table.

Potential Lining & Mining Impacts to Local Groundwater Levels

Properly constructed slurry walls will tend to isolate the surrounding alluvial aquifer allowing for dewatering from within the lined cells without major impacts to water levels exterior to the lined cells. The lined cells will likely cause "mounding" of groundwater (increase in groundwater elevation) on the upgradient side (north and northwest) of the proposed lined cells and a "shadow effect" (reduction in groundwater elevation) on the downgradient side (south and southeast) of the lined cells.

Any mounding effect on the upgradient side is anticipated to be relatively minor (on the order of a few feet or less) and will dissipate with distance from the mine. The shadowing effect will likely be minor on the order of less than a foot to a few feet and will also dissipate with distance from the lined cells.

Due to the presence of the lined cells, limited to no affects are anticipated outside of the lined cell due to dewatering during mining. The mounding effect on the upgradient side of the lined cell may result in some increased flow in the Excelsior Ditch. Area wells, discussed below, should not be affected due to their distance from the unlined and lined cells, the lack of dewatering from the unlined cell(s), and dewatering from within slurry wall lined cells.

Area Wells Within Approximately 600 Feet of the Mine

A review of permitted wells on file at the State Engineer's Office (SEO), Division of Water Resources (DWR) indicates there are ten (10) permitted wells (not owned by Martin Marietta) within 600 feet of the permit boundary. All of these wells are screened in the alluvium. Six (6) of these wells are on the west, northwest, and north (upgradient) sides of the mine. Two (2) of the wells is north and cross-gradient of the mine. Two (2) of the wells are on the site itself and are owned by the Martin Marietta. A map showing the approximate well locations is included in Figure G-1.

A discussion of the wells not owned by Martin Marietta and located within 600 feet of the permit boundary are discussed below (note a domestic well is usually for household use but sometimes may also indicate use in yards and/or livestock watering):

- <u>RBK Construction, Inc. (57014F, 80290F)</u>: This is a gravel well permit that is shown on the State well permit map as approximately 485 feet from the permit boundary, however the permit documents indicate the gravel pit extends to an area just west of Baxter Road. This is a distance of approximately 100 feet west of fresh water and siltation cells. Because this is a gravel mine permit, it is unlikely that RBK will complain about limited dewatering effects at the Thunderbird Mine.
- <u>Bregar (213102)</u>: This well is located at 312 Baxter Road, approximately 185 feet north of and upgradient of the permit boundary and approximately 800 feet from and on the opposite side of the Ditch from the nearest lined cell. The use of this well is industrial. Water was first used in 1967 at a rate of 15 gpm. This well appears to no longer exist.
- <u>Mihelich (269682)</u>: This well located at 304 Baxter Road, approximately 450 feet north of and upgradient of the permit boundary and approximately 880 feet from and on the opposite side of the ditch from the nearest lined cell. The well is domestic. Water was first pumped in 1954 at a rate of 15 gpm. Due to the distance from the cell, it is unlikely that this well will be affected by mining and reclamation at the Thunderbird Mine.
- <u>Sonnenfeld (281646)</u>: This well is located at 279 Baxter Road, approximately 550 feet northwest of and upgradient of the permit boundary and approximately 1,200 feet from and on the opposite side of the ditch from the nearest lined cell. The well is listed as domestic at a rate of 12 gpm. Due to the distance, it is unlikely that this well will be affected by mining and reclamation at the Thunderbird Mine.
- <u>Vulgamore (9094356)</u>: This well is approximately 390 feet from the permit boundary on the opposite (south) bank of the Arkansas River. The river forms a barrier to groundwater flow thus the well will not be affected by activities at the mine.
- <u>Chavez (14754-R</u>): This well appears to be approximately 300 feet from the permit boundary and approximately 700 feet, north of and upgradient of the nearest lined cell. This well was used for irrigation with the first use in 1940. Notes in the permit file indicate this well is no longer in use. Due to the distance (~700 feet) from the nearest lined cell, it is unlikely that this well will be affected by mining and reclamation at the Thunderbird Mine.
- <u>Eaton (717 RN)</u>: This well appears to be approximately 600 feet north of and upgradient of the permit boundary and approximately 1,200 feet north of and upgradient of the nearest lined cell. This well has a capacity of 75 gpm for domestic use. Due to the great distance (~1,200 feet) from the nearest lined cell, it is unlikely that this well will be affected by mining and reclamation at the Thunderbird Mine.

- <u>Transit Mix (MH-51160)</u>: This well appears to be 480 feet north of and upgradient of the permit boundary and approximately 1,700 feet north of and upgradient of the nearest lined cell. The use of this well is for monitoring groundwater levels. This well is owned by Martin Marietta. Martin Marietta was not able to locate the well.
- <u>Smithour (36540)</u>: This well appears to be 480 feet north of and upgradient of the permit boundary and approximately 1,200 feet north of and upgradient of the nearest lined cell. The use of this well is domestic with a maximum discharge of 15 gpm. Due to the great distance (~1,200 feet) from the nearest lined cell, it is unlikely that this well will be affected by mining and reclamation at the Thunderbird Mine.
- <u>Chambers (87330</u>): This well appears to be approximately 120 feet south of the permit boundary on the south side of the Arkansas River. The river forms a hydraulic boundary, thus any mining on the north side of the river will not affect this well. This is a domestic well operating at a rate 7 gpm.

Area Wells Between Approximately 600 Feet and One-Half Mile of the Mine

A review of permitted wells on file at the DWR indicates there are approximately eighty (80) permitted wells between 600 feet and one-half mile of the permit boundary. Seventy-nine (79) of these wells are screened in the alluvium and one is screened in the bedrock. All of these wells are of great distance from the fresh water, siltation, and the lined cells and are unlikely to be affected by mining and reclamation at the Thunderbird Mine. A discussion of these wells and their relationship to permit boundary follows.

Upgradient and Cross-gradient Wells to the West and North

- <u>West</u>- A total of approximately twenty-one (21) wells are permitted upgradient of the site to the west. Eighteen (18) of these wells are domestic wells, two (2) of these wells are irrigation wells, and one (1) is a monitoring well.
- <u>North</u>- A total of approximately twenty-five (25) wells are permitted upgradient and cross-gradient of the site to the north. Fifteen (15) of these wells are domestic, nine (9) are monitoring, and one (1) is an irrigation well.

Downgradient Wells to the East and South

- <u>East</u> A total of four (4) wells are permitted downgradient of the site to the east. Three (3) of these wells are domestic and one (1) is an irrigation well.
- <u>South</u> A total of thirty (30) wells are located on the south side of the Arkansas River, beyond the hydraulic barrier the river forms. Twenty-six (26) of these wells are domestic, two (2) are irrigation, and two (2) are abandoned.

Mitigation Plan

The site mining and reclamation activities are unlikely to adversely affect area wells due to dewatering from slurry wall lined cells, coupled with the recirculatory nature of the pumping from Thunderbird Lake described above. All dewatering will be under an approved SWSP. Upgradient and cross-gradient wells are far from the mine and downgradient wells are far from the mine or on the opposite side of the river. However, if the miner receives a complaint, the following mitigation plan will be implemented.

There are three (3) existing monitoring wells on the property, shown as MW-1, MW-2 and MW-3 on Exhibit G1 attached (Permits 51157-MH, 51158-MH, 51159-MH). Martin Marietta intends to install monitoring wells MW-4, MW-5 and MW-6 at the mine prior to exposing groundwater. The water levels in these monitoring wells will be measured monthly to identify potential changes in alluvial groundwater flow or elevation associated with mining and reclamation activities. Baseline data will be collected a minimum of five quarters prior to exposing groundwater levels associated with premining groundwater to provide a range of relative water levels associated with premining groundwater conditions. It is anticipated that groundwater levels will tend to fluctuate being highest in the summer irrigation season and lowest in the winter and early spring. The baseline data will be evaluated prior to installation of any slurry walls. If the analysis shows that any revisions to the mining and reclamation plans are necessary to minimize the mounding and shadowing effects (such as the design of under drains), a Technical Revision will be submitted to DRMS.

If, during mining or reclamation, the miner receives a complaint from any well owner within 600 feet of the permit boundary, the miner will immediately notify the DRMS.

After the DRMS has been notified, the miner will review any data and available information as well as submit a report to the DRMS within 30 days of notification. The evaluation will include a review of available baseline data and evaluate whether changes may be due to seasonal variations, climate, mining, mine cell lining or other factors. The report will identify the extent of potential impacts associated with any evaluation findings. If the extent of groundwater changes due to mining or reclamation activities is determined to be a significant contributing factor that has or may create adverse impacts, the mining associated impacts will be addressed.

The miner will begin implementing one or more mitigation measures if mining and reclamation activity is determined to be a significant factor of groundwater changes.

Mitigation measures may include, but are not limited to:

- Placing water in a recharge pond to raise groundwater levels around the well.
- Cleaning the well to improve efficiency.
- Providing an alternative source of water to support historic well use in terms of water quantity and quality.
- Modifying a well to operate under lower groundwater conditions. This could include deepening the well or lowering pumps. All work would be done at the miner's expense with the exception of replacing equipment that was non-functional prior to mining.
- Providing a well with a sump. The sump would allow for sufficient storage of water to allow historic well capacities to be met.
- If existing wells cannot be retrofitted or repaired, replacing the impacted well.

Groundwater Quality Monitoring Plan

We do not anticipate that onsite operations will have a negative effect on groundwater quality. Operations at the site will take place inside of lined cells, except for establishing the Siltation Pond during Phase I. To evaluate pre-mining groundwater quality at the site, the permittee will sample the existing, applicant owned upgradient well MW-1 (Permit 51157-MH) and a designated compliance well (MW-4) to be installed on the

downgradient side of the site for five quarters prior to exposing groundwater. The sample will be analyzed for the suite of analytes described in the following paragraphs. Some naturally occurring analytes may be detected in the analyses. The five quarterly samples will serve as the baseline to which all compliance samples will be compared.

To establish that mining has not had a negative effect on water quality in the area, the Miner will sample the designated compliance well annually once the groundwater is exposed until mining is completed. Martin Marietta will notify DRMS within 30 days of receiving the full, finalized report that indicates any of the results for any of the parameters listed in Table G-1 exceed the baseline results. Water quality lab results will be included in the DRMS annual report for the site.

Annual groundwater quality testing will be conducted for the life of the mine unless the requirement has been reduced or eliminated through the Technical Revision process with the DRMS.

If sufficient data is collected during the life of the mining operation, and a demonstration can be made that project impacts to the groundwater system have been minimized, Martin Marietta may request approval of a Technical Revision to revise the water level monitoring frequency or water quality sample collection frequency at a later date.

The DRMS recommends a set of groundwater quality parameters for analysis for aggregate mine permitting. These include a list of dissolved metals, radiological parameters, and miscellaneous parameters which include pH and Total Dissolved Solids (TDS). The nature of activities associated with sand and gravel mining involves the excavation of large volumes of aggregate materials using industrial machinery. These activities inherently do not result in the generation or release of coliform, bacteria, asbestos, chlorophenol, foaming agents, odor, or phenol compounds. They also do not result in a change in corrosivity of water or color change. As a result, these parameters which are otherwise a part of the DRMS requirements for water quality analyses are excluded from the list of water quality parameters. Likewise, sand and gravel mining does not lead to the generation or release of gross alpha or beta and photon emitters as part of the operation. The complete list of water quality parameters proposed for analysis is presented on Table G-1.

In the event of a well owner complaint, Martin Marietta will commit to reporting any complaints received from well owners to the DRMS within 48 hours, to investigating the complaint as soon as practical, and to submitting the results to the DRMS for evaluation within 30 days.

Parameter	Applicable Water Quality Standard Concentration	Comments
Aluminium - Dissolved	5 mg/L	Filter in field (0.45 micron)
Antimony - Dissolved	0.006 mg/L	Filter in field (0.45 micron)
Arsenic - Dissolved	0.01 mg/L	Filter in field (0.45 micron)
Barium - Dissolved	2.0 mg/L	Filter in field (0.45 micron)
Beryllium - Dissolved	0.004 mg/L	Filter in field (0.45 micron)
Boron - Dissolved	0.75 mg/L	Filter in field (0.45 micron)
Cadmium - Dissolved	0.005 mg/L	Filter in field (0.45 micron)
Chromium - Dissolved (CrVI)	0.1 mg/L	Filter in field (0.45 micron)
Cobalt - Dissolved	0.05 mg/L	Filter in field (0.45 micron)
Copper - Dissolved	0.2 mg/L	Filter in field (0.45 micron)
Cyanide - Free	0.2 mg/L	
Fluoride - Total F	2.0 mg/L	
Iron - Dissolved	0.3 mg/L	Filter in field (0.45 micron)

Table G-1 Water Quality Sampling, Analyte List

Lead - Dissolved	0.05 mg/L	Filter in field (0.45 micron)
Lithium - Dissolved	2.5 mg/L	Filter in field (0.45 micron)
Manganese - Dissolved	0.05 mg/L	Filter in field (0.45 micron)
Mercury - Dissolved	0.002 mg/L	Filter in field (0.45 micron)
Molybdenum - Dissolved	0.21 mg/L	Filter in field (0.45 micron)
Nickel - Dissolved	0.1 mg/L	Filter in field (0.45 micron)
Nitrate (NO3)	10.0 mg/L as N	Filter in field (0.45 micron)
Nitrite (NO2)	1.0 mg/L as N	Filter in field (0.45 micron)
Nitrate+Nitrite (NO2+NO3), dissolved	10.0 mg/L as N	Filter in field (0.45 micron)
pH	6.5 - 8.5	Measure in field
Selenium - Dissolved	0.02 mg/L	Filter in field (0.45 micron)
Silver - Dissolved	0.05 mg/L	Filter in field (0.45 micron)
Sulfate - Total	250 mg/L	
Thallium - Dissolved	0.002 mg/L	Filter in field (0.45 micron)
TDS	400 mg/L	Filter in field (0.45 micron)
Uranium - Dissolved	0.0168 to 0.03 mg/L	Filter in field (0.45 micron)
Vanadium - Dissolved	0.1 mg/L	Filter in field (0.45 micron)
Zinc - Dissolved	2 mg/L	Filter in field (0.45 micron)
Chloride, dissolved	250 mg/L	Filter in field (0.45 micron)

Notes: Detection Limit / Reporting Limit must be equivalent to the water quality standard or lower.

