COLORADO
Division of Water Resources
Department of Natural Resources

March 31, 2025

Lauren Tiedemann Loob
David Heintz
Bishop-Brogden Associates
333 West Hampden Avenue, Suite 1050
Englewood, CO 80110

RE: Rich Pit Substitute Water Supply Plan
NE¼ Sec. 33, S½, Sec. 34, & SW¼ Sec. 35, T20S, R63W, 6th P.M.
N½, Sec. 2, T21S, R63W, 6th P.M.
Water Division 2, Water District 14, Pueblo County
DRMS Permit No. M-1985-218, Plan ID 550, WDID 1407808

Approval Period: April 1, 2025 through March 31, 2026
Contact Information for Ms. Loob: 303-806-8952; ltiedemann@bbawater.com

Dear Lauren Tiedemann Loob and David Heintz:

We have received your letter dated January 29, 2025, received by this office on February 4, 2025, requesting renewal of the above referenced substitute water supply plan ("SWSP") in accordance with section 37-90-137(11), C.R.S., to replace depletions caused by an existing gravel mining operation owned by Martin Marietta Materials ("Applicant"). The required fee of $257 for the renewal of this SWSP has been submitted (receipt no. 10040487). The original SWSP was approved on May 18, 2000 and it was most recently approved in a letter dated December 9, 2024 for the period of April 1, 2024 through March 31, 2025.

SWSP Operation

The Rich Pit comprises two areas: the Active Pit Site, located in portions of the S½ of

Section 34, and the SW¼ of Sec. 35, Township 20 South, and the N½ of Section 2, Township 21 South, Range 63 West of the 6th P.M.; and the Wash Pond Site, located in the NE¼ of Section 33, Township 20 South, Range 63 West of the 6th P.M. Martin Marietta Materials ("MM" or "Applicant") acquired the site from Lafarge West Inc. ("Lafarge") at the end of 2011. The Rich Pit was inactive from 2001 to 2021. Mining operations on the site resumed in 2021, and have continued through the last SWSP period.

Well Permit No. 45995-F (WDID 1406466) was issued for the Active Pit Site for exposure of groundwater, dust suppression, product retention, and concrete batching. The well with Permit No. 66042-F (WDID 1405128) is located at the Wash Pond Site and is used for sanitary and miscellaneous purposes connected with the Rich Pit ("Sanitary Well").

Water will be consumed at the site during this plan period by evaporation from exposed groundwater, mining and washing of material, dust suppression, concrete batching and pumping of the permitted Sanitary Well on the site.

Depletions

During the term of this SWSP, material will be mined from the Active Pit Site and delivered to the Wash Pond Site for washing. Water will be lost due to evaporation from exposed groundwater at the Active Pit Site (16.7 exposed acres in a silt pond plus 6,500 feet of 7 foot wide dewatering trenches totaling 17.7 acres). Additionally, MM has constructed two smaller silt ponds and a fresh water pond at the Wash Pond Site totaling 2.14 acres of exposed groundwater (see the attached Figure 1). Gross evaporation at the gravel pit location was estimated to be 4.17 feet per year based upon evaporation atlases in NOAA Technical Report NWS 33, distributed monthly as described in SEO guidelines for gravel pits at elevations below 6,500 feet. Effective precipitation was estimated as 70% of the average monthly evaporation. Data from the NOAA Pueblo Memorial Airport Station (Station no. USW00093058) for the period 1954-2024 shows the average precipitation is 12 inches per year. Therefore, net evaporative losses at the site are therefore estimated as 3.47 ft, totaling 69.00 acre-feet for the entire site, broken down as 61.57 acre-feet for the Active Pit Site and 7.43 acre-feet for the Wash Pond Site, as shown on the attached Table 1 and

Table 2.

Water losses from mining and washing the material at the Wash Pond Site have been estimated to be 4% of the total 368,000 tons of mined material weight, equivalent to 10.32 acre-feet of water volume. This volume is divided between the Active Pit Site and Wash Pond Site based on 2% of the material by weight, or 5.42 acre-feet, coming from the material moisture content and an additional 2%, or 5.42 acre-feet, resulting from washing of the material, and is shown in the attached Table 1 and Table 2.

Water used for dust suppression at the Active Pit Site and Wash Pond Site will be pumped from the existing 16.7-acre unlined pond or the dewatering trench located on the Active Pit Site. MM expects to use approximately 8.14 acre-feet of water for dust suppression.

A Glover analysis was utilized to determine lagged depletions to the stream from the consumptive use of groundwater described above. The Glover analysis utilized the following parameters:

Aquifer Parameter	**Active Pit**	**Wash Pond**
Specific Yield	0.2	0.2
Distance to the Stream, X (ft)	864	1,400
Distance to No-Flow Boundary, W (ft)	4,121	2,650
Transmissivity (gpd/ft)	80,000	80,000

Based on these parameters, modeling was prepared to lag all depletions from April 2025 through March 2026 as shown in Tables 1 and 2 (attached). The lagged depletion analysis uses the previously used approach (based on Stream Depletion Factors; a method no longer accepted by DWR) to account for all lagged depletions prior to March 2016. According to the analyses, 88.23 acre-feet of lagged depletions will occur during this plan year. This total is made up of 75.05 acre-feet of depletions due to the Active Pit, 12.85 acre-feet of depletions due to the Wash Pond Site, and 0.33 acre-feet of depletions from the Sanitary Well (see Table 3, attached). Depletions from the Sanitary Well are assumed to be steady-state.

Any lagged depletions that will affect the Arkansas River after March 2026 will be carried

over and included in the next SWSP renewal and/or replaced under a future augmentation plan.

The pit will be continuously dewatered, and the water will be pumped to the onsite unlined pond. Due to the proximity of the mining area and dewatering trench, the Applicant considers dewatering to be returned to the alluvial system at an adequate rate to offset depletions attributable to the dewatering operation.

Replacements

The source of replacement water is a Membership Contract entered into in 2024 between the Arkansas Groundwater & Reservoir Association (AGRA) and MM. A copy of the Membership Contract is attached, showing MM's membership with AGRA, and stating that membership bestows the right to have water release for augmentation. The term of the membership is continuing and binding until terminated by MM or by AGRA. If replacement water is released from an upstream source, the Applicant will need to account for transit losses as required by the Division Engineer or Water Commissioner. Deliveries on Fountain Creek are subject to daily administration by the local Water Commissioner, and actual transit losses on Fountain Creek shall be determined by the Fountain Creek Transit Loss Model. There are additional transit losses from the Arkansas River and Fountain Creek Confluence that will need to be determined on any water delivered from Fountain Creek.

Long-Term Depletions

The Colorado Division of Reclamation, Mining, and Safety ("DRMS") states all sand and gravel mining operators must comply with the requirements of the Colorado Land Reclamation Act for the Extraction of Construction Materials and the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials for the protection of water resources. The April 30, 2010 letter from DRMS requires that you provide information to DRMS to demonstrate you can replace long term injurious stream depletions that result from mining-related exposure of groundwater. At this time, MM plans to proceed with the option to mitigate long-term injurious stream depletions that result from mining-related exposure of groundwater according to the

original reclamation plan submitted by LaFarge to install a slurry wall liner around the pit for water storage use and/or backfilling the pit. The Rich Pit has a bond totaling $15,621,713, accepted by DRMS November 16, 2023 (Bond No. 44284559).

Conditions of Approval

I hereby approve the proposed SWSP in accordance with section 37-90-137(11), C.R.S., subject to the following conditions:

1. This current plan shall be valid April 1, 2025 through March 31, 2026 unless otherwise revoked or superseded by decree. If this plan will not be decreed by a water court action by the plan's expiration date, a renewal request must be submitted to this office and the Division 2 office (Kassidy Davis at Kassidy.Davis@state.co.us) with the statutory fee (currently $257) no later than February 1, 2026.

2. The Membership Contract between AGRA and MM was finalized on June 25, 2024. The Division Office and the State Engineer's Office will be notified if the membership status of the Applicant changes. In the event the Applicant is no longer a member of AGRA and is not using AGRA's replacement supplies, the Applicant is responsible for finding a new source of replacement water. A new SWSP request must be submitted and approved before a new source of replacement water can be utilized.

3. Well Permit No. 45995-F was obtained for the current use and exposed groundwater surface area of the gravel pit in accordance with sections 37-90-137(2) and (11), C.R.S., and this permit remains valid.

4. The total surface area of the groundwater exposed at the Rich Pit during this plan period must not exceed 17.7 acres at the Active Pit Site, which results in a maximum evaporative loss of 61.57 acre-feet, and 2.14 acres at the Wash Pond Site, which results in a maximum evaporative loss of 7.43 acre-feet. Documentation of pond size may be required by the Division Engineer in the form of an aerial photo evaluation or

survey by a Professional Land Surveyor during the plan year, or in years covered by subsequent renewals of this plan.

5. The amount of water used for operational purposes at the Active Pit Site and Wash Pit Site during this plan period must not exceed 18.98 acre-feet, estimated as 10.84 acre-feet lost with the production of 368,000 tons of mined and washed aggregate and 8.14 acre-feet for dust control purposes.

6. Well Permit No. 66042-F (WDID 1405128, "Sanitary Well") shall not pump more than a total of 0.33 acre-foot during the approval period.

7. This Applicant must first obtain written approval from this office before exceeding these aforementioned amounts.

8. Approval of this SWSP is for the purposes as stated herein. This office must first approve any additional uses for the water.

9. All diversions must be measured in a manner acceptable to the Division Engineer and in accordance with the "Amendments to Rules Governing the Measurement of Tributary Ground Water Diversions Located in the Arkansas River Basin."

10. All releases of replacement water must be sufficient to cover depletions as given on the attached tables and as calculated monthly based on pumping of Well Permit No. 66042-F (WDID 1405128) and made under the direction and/or approval of the Division Engineer and District 14 Water Commissioner.

11. Replacement water provided for this SWSP from AGRA must be entered into the Fountain Creek Transit Loss Model and shall be tracked from the point of entry into the model domain until the water is delivered. **Deliveries on Fountain Creek are subject to daily administration by the local Water Commissioner, and actual transit losses on Fountain Creek shall be determined by the Fountain Creek Transit Loss Model. The Applicant must account for additional transit losses from the Confluence of the Arkansas River and Fountain Creek to the point of depletion.**

12. The Applicant must continue to replace out-of-priority depletions to senior surface water rights in Colorado and depletions to usable Stateline flows occurring after the expiration date of this SWSP, resulting from the consumption of groundwater at this mining site.

13. The Applicant shall provide accounting for this SWSP on a monthly basis, including tons of excavated material, area of actual groundwater exposure, pumping, stream depletions, and replacement water deliveries. The accounting must be submitted to the Division Engineer via the online submittal tool. Accounting must be submitted within 10 days after the end of the month for which the accounting applies. Accounting and reporting procedures are subject to approval and modification by the Division Engineer.

14. Conveyance loss for delivery of replacement water to the Arkansas River is subject to assessment and modification as determined by the Division Engineer.

15. Dewatering at this site will produce delayed depletions to the stream system. As long as the pit is continuously dewatered at a relatively constant rate, the water returned to the stream system should be adequate to offset the depletions attributable to the dewatering operation. Dewatering operations must be measured by totalizing flow meters that can accurately show the monthly volume of dewatered water that is pumped and returns to the stream. If dewatering at the site ceases, or is significantly reduced, the monthly meter readings will be used to determine post pumping depletions that must be replaced. At least three years prior to completion of dewatering at the Rich Pit, a plan must be submitted that specifies how the post pumping dewatering depletions (including refilling of the pit) will be replaced, in time, place and amount. Should it be determined by the Water Commissioner or Division Engineer that dewatering water is being diverted for any purpose by the operator and accounting is not adequate to show that 100 percent of the dewatering water is returned back to the Arkansas River, the Applicant will need to account for any lagged dewatering depletions at the site. In addition, if it is determined by the Water Commissioner or Division Engineer that the pit is not

continuously dewatered at a relatively constant rate, the Applicant must track depletions and dewatering return flows in their accounting and replace any dewatering depletions that are not offset by dewatering return flows.

16. The approval of this SWSP does not relieve the Applicant and/or the landowner of the requirement to obtain a Water Court decree approving a permanent plan for augmentation or mitigation to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions after gravel mining operations have ceased. If reclamation of the mine site will produce a permanent water surface exposing groundwater to evaporation, an application for a plan for augmentation must be filed with the Division 2 Water Court at least three (3) years prior to the completion of mining, to include, but not be limited to, long-term evaporation losses and lagged depletions. If a lined pond results after reclamation, replacement of lagged depletions from mining and dewatering shall continue until there is no longer an effect on stream flow.

17. The State Engineer may revoke this SWSP or add additional restrictions to its operation if at any time the State Engineer determines that injury to other vested water rights has occurred or will occur as a result of the operation of this SWSP. Should this SWSP expire without renewal or be revoked prior to adjudication of a permanent plan for augmentation, the Applicant shall obtain and present to this office an alternate source of replacement water.

18. In accordance with amendments to section 25-8-202(7), C.R.S., and "Senate Bill 89-181 Rules and Regulations" adopted on February 4, 1992, the State Engineer shall determine if the substitute supply is of a quality to meet requirements of use to which the senior appropriation receiving the substitute supply has normally been put. As such, water quality data or analyses may be requested at any time to determine if the requirement of use of the senior appropriator is met.

19. The decision of the State Engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in

any water court case or any other legal action that may be initiated concerning this SWSP. This decision shall not bind the State Engineer to act in a similar manner in any other applications involving other SWSPs or in any proposed renewal of this SWSP, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant.

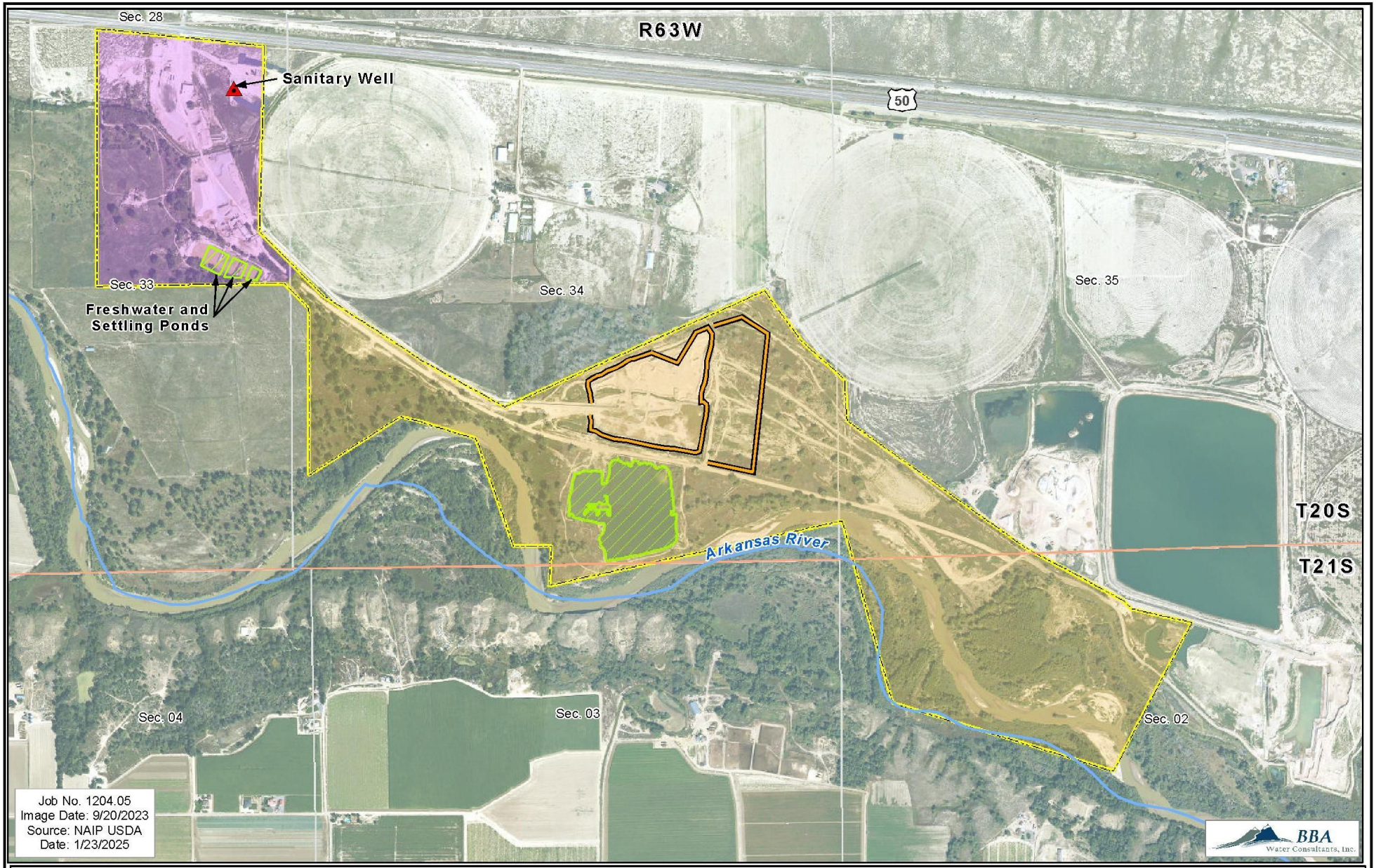
Should you have any questions, please contact Katharine Anderson of the Denver office (katharine.anderson@state.co.us) or Bethany Arnold in the Division 2 office in Pueblo at (719) 565-8686.

Sincerely,

Sarah Brucker, P.E.
Deputy State Engineer

Attachments: Figure 1
Tables 1-3

ec: Division 2 SWSP Staff
Steve Stratman, District 14/15 Water Commissioner
Division of Reclamation, Mining and Safety



Legend

- Dewatering Trench - Approx.
- Exposed Surface Area
- Active Pit Site
- Wash Pond Site
- Rich Pit Permit Boundary

Figure 1
Rich Pit
General Location Map

N
W E
S

1 inch = 0.25 miles

Overview Map

Table 1
Martin Marietta Rich Pit
2025-2026 Active Pit Depletions

Month	Percent of Annual Evaporation (%) [1]	Gross Evaporation Rate (ft) [2]	Average Precipitation (ft) [3]	Effective Precipitation (ft) [4]	Net Evaporation Rate (ft) [5]	Active Pit Exposed Surface Area (ac) [6]	Net Evaporation Depletions (ac-ft) [7]	Aggregate Production (tons) [8]	Aggregate Production Consumption (ac-ft) [9]	Dust Suppression (ac-ft) [10]	Total Production Depletions (ac-ft) [11]	Total Depletions (ac-ft) [12]	Lagged Depletions (ac-ft) [13]
Apr-25	9.0%	0.38	0.10	0.07	0.30	17.7	5.32	30,000	0.44	0.54	0.98	6.31	5.12
May-25	12.0%	0.50	0.12	0.09	0.41	17.7	7.28	35,000	0.52	0.68	1.19	8.47	6.66
Jun-25	14.5%	0.60	0.11	0.08	0.52	17.7	9.23	35,000	0.52	0.74	1.26	10.49	8.32
Jul-25	15.0%	0.63	0.16	0.11	0.51	17.7	9.05	35,000	0.52	0.84	1.36	10.41	9.11
Aug-25	13.5%	0.56	0.17	0.12	0.44	17.7	7.81	40,000	0.59	0.95	1.53	9.34	8.98
Sep-25	10.0%	0.42	0.07	0.05	0.37	17.7	6.57	33,000	0.49	0.81	1.30	7.86	8.29
Oct-25	7.0%	0.29	0.06	0.04	0.25	17.7	4.44	34,000	0.50	0.81	1.31	5.75	7.05
Nov-25	4.0%	0.17	0.04	0.03	0.14	17.7	2.48	25,000	0.37	0.81	1.18	3.66	5.52
Dec-25	3.0%	0.13	0.03	0.02	0.11	17.7	1.95	26,000	0.38	0.54	0.92	2.88	4.42
Jan-26	3.0%	0.13	0.03	0.02	0.11	17.7	1.95	20,000	0.29	0.41	0.70	2.65	3.82
Feb-26	3.5%	0.15	0.03	0.02	0.13	17.7	2.31	25,000	0.37	0.47	0.84	3.15	3.70
Mar-26	5.5%	0.23	0.07	0.05	0.18	17.7	3.19	30,000	0.44	0.54	0.98	4.18	4.05
Total 2025-2026	100%	4.17	1.00	0.70	3.47	-	61.57	368,000	5.42	8.14	13.56	75.13	75.05

Notes:

[1] Monthly percentages determined in SB89-120 for elevations below 6,500 feet.

[2]Based upon NOAA Technical Report NWS 33, Evaporation Atlas for the Contiguous 48 United States.

[3] Based upon the NOAA Station for Pueblo Memorial Airport (USW00093058) for the time period 1954-2024.

[4] Effective precipitation = [3] x 0.7.

[5] Net evaporation rate = [2] - [4].

[6] Total exposed surface area based on review of aerial photography and planned mining areas indicated by MM.

[7] Net evaporation depletions = [5] x [6].

[8] Projected mining tonnage provided by Martin Marietta.

[9] Aggregate will be mined from a dewatered state. Water removed with mined aggregate is equal to 4.8 gallons/ ton (2% of total mined volume) as defined by the SEO's Gravel Pit SWSP Guidelines. Therefore, [8] is equal to the projected crushed and washed aggregate production (in tons), multiplied by 4.8 gallons/ton, divided by 325,851 to convert gallons to acre-feet.

[10] Projected dust suppression water use provided by Martin Marietta.

[11] Equals [9] + [10].

[12] Equals [7] + [11]

[13] Reflects real time lagged depletions due to evaporation based on two Glover analyses:

All depletions incurred through March 2016 are lagged using a stream depletion factor of 7.3 days

All depletions incurred after March 2016 are lagged based upon the following parameters: x= 864 ft, W= 4,121 ft, s= 0.2, T= 80,000 gpd/ft

BBA
Water Consultants, Inc.

Table 2
Martin Marietta Rich Pit
2025-2026 Wash Pond Depletions

Month	Percent of Annual Evaporation (%) [1]	Gross Evaporation Rate (ft) [2]	Average Precipitation (ft) [3]	Effective Precipitation (ft) [4]	Net Evaporation Rate (ft) [5]	Exposed Surface Area (ac) [6]	Net Evaporation Depletions (ac-ft) [7]	Aggregate Washing Consumption (ac-ft) [8]	Total Depletions (ac-ft) [9]	Lagged Depletions (ac-ft) [10]
Apr-25	9.0%	0.38	0.10	0.07	0.30	2.14	0.64	0.44	1.08	0.81
May-25	12.0%	0.50	0.12	0.09	0.41	2.14	0.88	0.52	1.39	1.02
Jun-25	14.5%	0.60	0.11	0.08	0.52	2.14	1.11	0.52	1.63	1.27
Jul-25	15.0%	0.63	0.16	0.11	0.51	2.14	1.09	0.52	1.61	1.44
Aug-25	13.5%	0.56	0.17	0.12	0.44	2.14	0.94	0.59	1.53	1.51
Sep-25	10.0%	0.42	0.07	0.05	0.37	2.14	0.79	0.49	1.28	1.47
Oct-25	7.0%	0.29	0.06	0.04	0.25	2.14	0.54	0.50	1.04	1.32
Nov-25	4.0%	0.17	0.04	0.03	0.14	2.14	0.30	0.37	0.67	1.09
Dec-25	3.0%	0.13	0.03	0.02	0.11	2.14	0.24	0.38	0.62	0.87
Jan-26	3.0%	0.13	0.03	0.02	0.11	2.14	0.24	0.29	0.53	0.72
Feb-26	3.5%	0.15	0.03	0.02	0.13	2.14	0.28	0.37	0.65	0.65
Mar-26	5.5%	0.23	0.07	0.05	0.18	2.14	0.39	0.44	0.83	0.68
Total 2025-2026	100%	4.17	1.00	0.70	3.47	-	7.43	5.42	12.85	12.85

Notes:
[1] Monthly percentages determined in SB89-120 for elevations below 6,500 feet.
[2]Based upon NOAA Technical Report NWS 33, Evaporation Atlas for the Contiguous 48 United States.
[3] Based upon the NOAA Station for Pueblo Memorial Airport (USW00093058) for the time period 1954-2024.
[4] Effective precipitation = [3] x 0.7.
[5] Net evaporation rate = [2] - [4].
[6] Total exposed surface area based on silt pond and fresh water pond areas expected by Martin Marietta.
[7] Net evaporation depletions = [5] x [6].
[8] Aggregate will be mined from a the Active Pit and then washed on the Wash Pond site. Water used from washing mined aggregate is equal to 4.8 gallons/ ton (2% of total mined volume) as defined by the SEO's Gravel Pit SWSP Guidelines. Therefore, [8] is equal to the projected mined production (in tons), multiplied by 4.8 gallons/ton, divided by 325,851 to convert gallons to acre-feet.
[9] Equals [7] + [8].
[10] Reflects real time lagged depletions due to evaporation based on two Glover analyses:
All depletions incurred through March 2016 are lagged using a stream depletion factor of 120 days
All depletions incurred after March 2016 are lagged based upon the following parameters: x= 1,400 ft, W= 2,650 ft, s= 0.2, T= 80,000 gpd/ft

Table 3
Martin Marietta Rich Pit
2025-2026 Water Balance
(all values in ac-ft)

Month	Active Pit Lagged Depletions [1]	Wash Pond Lagged Depletions [2]	Sanitary Well Pumping [3]	Total Depletions [4]	AGRA Lease Water [5]	Net Accretions (+) or Depletions (-) to Arkansas River [6]
Apr-25	5.12	0.81	0.028	5.96	5.96	0.00
May-25	6.66	1.02	0.028	7.71	7.71	0.00
Jun-25	8.32	1.27	0.028	9.61	9.61	0.00
Jul-25	9.11	1.44	0.028	10.58	10.58	0.00
Aug-25	8.98	1.51	0.028	10.52	10.52	0.00
Sep-25	8.29	1.47	0.028	9.79	9.79	0.00
Oct-25	7.05	1.32	0.028	8.40	8.40	0.00
Nov-25	5.52	1.09	0.028	6.64	6.64	0.00
Dec-25	4.42	0.87	0.028	5.32	5.32	0.00
Jan-26	3.82	0.72	0.028	4.56	4.56	0.00
Feb-26	3.70	0.65	0.028	4.37	4.37	0.00
Mar-26	4.05	0.68	0.028	4.76	4.76	0.00
Total 2025-2026	75.05	12.85	0.33	88.23	88.23	0.00

Notes:
[1] Lagged depletions for Active Pit calculated in Table 1.
[2] Lagged depletions for Wash Pond calculated in Table 2.
[3] Amount of estimated use from sanitary well based upon Martin Marietta projections.
[4] Total depletions at Rich Pit = [1] + [2] + [3].
[5] Lease water deliverd to the point of depletion by AGRA.
[6] Net effect to the Arkansas River = [5] - [4].