COLORADO
Division of Water Resources
Department of Natural Resources

October 2, 2019

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

RE: Rich Pit Substitute Water Supply Plan, M-85-218
SE ¼, Sec. 34, T20S, R63W, 6th P.M.
NW ¼, Sec. 2, T21S, R63W, 6th P.M.
Water Division 2, Water District 14
SWSP ID 550, WDID 1407808

Approval Period: April 1, 2019 through March 31, 2020
Contact Phone Number: 303-806-8952

Dear Mr. Heintz:

We have received your letter dated January 3, 2019, 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. 3689955). The original SWSP was approved on May 18, 2000 and it was most recently approved in a letter dated May 8, 2018 for the period April 1, 2018 through March 31, 2019.

SWSP OPERATION

The Rich Pit is located in portions of the SE ¼ of the SW ¼ and the SW ¼ of the SE ¼ of Section 34, Township 20 South, Range 63 West of the 6th P.M. Martin Marietta Materials ("MMM" or "Applicant") acquired the site from Lafarge West Inc. ("Lafarge") at the end of 2011. The Rich Pit has been inactive since 2001 and will remain inactive during this plan year. Ponds created from previous mining activities under this plan cause stream depletions during the inactive period due to evaporation. This renewal covers pond evaporation from the Active Pit (16.7 exposed acres) and pumping of a sanitary/miscellaneous well. Permit No. 45995-F (WDID 1406466) was issued for the pit for exposure of ground water, dust suppression, product retention, and concrete batching. A well, Permit No. 66042-F (WDID 1405128), is used for sanitary and miscellaneous purposes connected with the Rich Pit.

Description	WDID	Location
Active Pit (# 45995-F)	1406470	SE ¼, Sec. 34
Well Permit No. 66042-F	1405128	NE ¼, Sec. 33

DEPLETIONS

During this plan year, the maximum exposed surface area will total 16.7 acres within the Active Pit. The former Unused Wash Pond (0.5 acres) has been filled in and no longer exposes ground water. However, it is expected that lagged depletions from the Unused Wash Pond will continue to accrue during this plan year. During the April 1, 2019 through March 31, 2020 plan year, the site excavations will not expose any additional ground water. No mining or dewatering will take place during this plan year unless an amendment to this plan is approved.

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

- Transmissivity – 80,000 gallons/day/foot
- Storage Coefficient – 0.20
- Distance to the Stream –864 feet
- Distance to No-Flow Boundary – 4,121 feet

Based on these parameters, modeling was prepared for the exposed surface area from April 2019 through March 2020 as shown in Table 1. The lagged depletion analysis uses the previously used approach to account for all lagged depletions prior to March 2016. According to the analyses, 60.13 acre-feet of lagged depletions will occur during this plan year. This total is made up of 59.59 acre-feet of depletions due to the Active Pit, 0.20 acre-feet of depletions due to past use of the Unused Wash Pond and 0.33 acre-feet of depletions from the Sanitary Well (see Table 3).

REPLACEMENTS

The source of replacement water is the Pueblo Board of Water Works ("PBWW"). The Applicant has leased 61.9 acre-feet of fully consumable water from PBWW.

If the PBWW releases replacement water from an upstream source, the Applicant will need to account for transit losses as required by the Division Engineer or Water Commissioner.

The lease with PBWW will provide sufficient replacement water for depletions at the Rich Pit over the plan year, and will be delivered according to the schedule outlined in the table in the attached correspondence with PBWW.

In accordance with the letter dated April 30, 2010 from the Colorado Division of Reclamation, Mining, and Safety ("DRMS"), a source of renewable long-term replacement water sufficient to cover evaporative depletions has not been secured for this plan. At this time, Martin Marietta plans to proceed with the option to mitigate long-term injurious stream depletions that result from mining-related exposure of ground water according to the original plan submitted by LaFarge to install a slurry wall liner for use as water storage for lining and/or backfilling the pit. The Rich Pit has a bond totaling $344,500 to cover the cost of the remediation (Bond No. 44284559).

CONDITIONS OF APPROVAL

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

1. This current plan shall be valid April 1, 2019 through March 31, 2020 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 (please copy Kathy Trask at Kathy.Trask@state.co.us) with the statutory fee (currently $257) no later than February 1, 2020.

2. A well permit was obtained for the current use and exposed pond surface area of the gravel pit in accordance with §37-90-137(2) and (11), C.R.S., permit no. 45995-F, and this permit remains valid.

3. The exposed ground water surface areas, consumption of water, and river depletions due to the operation of this plan may not exceed those listed in Tables 1, 2, and 3, unless a new application is submitted to this office. 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.

4. Well Permit No. 66042-F (WDID 1405128) shall not pump more than 0.333 acre-foot during the approval period, unless a new SWSP is approved allowing such.

5. 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.

6. 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 that result from the consumption of ground water during the approval period of this SWSP.

7. 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".

8. Monthly accounting of water in this plan, including amount of exposed water, evaporation, meter readings, stream depletions, and replacement water deliveries reduced for any applicable transit losses (on a monthly basis) must be provided to the Division Engineer (Augmentation.Coordinator@state.co.us) on forms and at times acceptable to the Division Engineer. Said accounting must be received by the 10th of the month following the month being reported. The name, mailing address, and phone number of the contact person who is responsible for operation and accounting of this plan must be provided on the accounting forms.

9. 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.

10. 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.

11. In accordance with amendments to §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.

12. 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 Kate Fuller of this office or Steve Stratman in the Division 2 office in Pueblo at (719) 250-1657.

Sincerely,

Jeff Deatherage, P.E.
Chief of Water Supply

Attachments: Tables 1-3
AGUA Water Lease Agreement

ec: Division 2 SWSP Staff
Steve Stratman, District 14/15 Water Commissioner
Doug Hollister, North Regional Team Leader, Districts 10,14,15
Division of Reclamation, Mining and Safety

JD/kff: M-85-218 Rich Pit 2019-20

Board of Water Works
of Pueblo, Colorado
319 W. 4th Street ▪ P.O. Box 400 ▪ Pueblo, Colorado 81002-0400 ▪ 719/584-0250

Mr. David M. Heintz
Martin Marietta c/o Bishop Brogden Associates, Inc.
333 W. Hampden Ave. Suite 1050
Englewood, CO 80110

Dear Mr. Heintz,

This letter is notice that the Board of Water Works accepts your proposals submitted for the February 14, 2019 water lease bid opening. A copy of the proposal summary is enclosed for your information.

Delivery arrangements can be made by contacting Alan Ward, Water Resources Division Manager at 719-584-0238. Thanks for your interest in this water lease opportunity.

Sincerely,

Tina Garcia

Tina Garcia
Procurement Specialist

enclosure

cc: Alan Ward
Accounting Department

Table 1
Martin Marietta Rich Pit
Active Pit Depletions

Month	Percent of Annual Evaporation (%) [1]	Gross Evaporation Rate (ft) [2]	Exposed Surface Area (ac) [3]	Gross Evaporation (ac-ft) [4]	Average Precipitation (ft) [5]	Effective Precipitation (ft) [6]	Net Evaporation Rate (ft) [7]	Net Evaporation Depletions (ac-ft) [8]	Lagged Depletions (ac-ft) [9]
Apr-19	9.0%	0.38	16.7	6.26	0.10	0.07	0.30	5.01	4.08
May-19	12.0%	0.50	16.7	8.35	0.12	0.09	0.41	6.85	5.43
Jun-19	14.5%	0.60	16.7	10.09	0.11	0.08	0.52	8.68	6.90
Jul-19	15.0%	0.63	16.7	10.44	0.16	0.11	0.51	8.52	7.56
Aug-19	13.5%	0.56	16.7	9.39	0.17	0.12	0.44	7.35	7.31
Sep-19	10.0%	0.42	16.7	6.96	0.07	0.05	0.37	6.18	6.70
Oct-19	7.0%	0.29	16.7	4.87	0.06	0.04	0.25	4.18	5.55
Nov-19	4.0%	0.17	16.7	2.78	0.04	0.03	0.14	2.34	4.16
Dec-19	3.0%	0.13	16.7	2.09	0.03	0.02	0.11	1.84	3.26
Jan-20	3.0%	0.13	16.7	2.09	0.03	0.02	0.11	1.84	2.85
Feb-20	3.5%	0.15	16.7	2.44	0.03	0.02	0.13	2.17	2.75
Mar-20	5.5%	0.23	16.7	3.83	0.07	0.05	0.18	3.01	3.03
Total	100%	4.17	-	69.58	1.00	0.70	3.47	57.95	59.59

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] Total exposed surface area based on review of aerial photography.
[4] Gross evaporation = [2] x [3].
[5] Based upon the Western Regional Climate Center Station for Pueblo, CO (056740) for the time period 1954-2005.
[6] Effective precipitation = [5] x 0.7.
[7] Net evaporation rate = [2] - [6].
[8] Net evaporation depletions = [7] x [3].
[9] 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

Table 2
Martin Marietta Rich Pit
Unused Wash Pond Depletions

Month	Percent of Annual Evaporation (%) [1]	Gross Evaporation Rate (ft) [2]	Exposed Surface Area (ac) [3]	Gross Evaporation (ac-ft) [4]	Average Precipitation (ft) [5]	Effective Precipitation (ft) [6]	Net Evaporation Rate (ft) [7]	Net Evaporation Depletions (ac-ft) [8]	Lagged Depletions (ac-ft) [9]
Apr-19	9.0%	0.38	0	0.00	0.10	0.07	0.30	0.00	0.02
May-19	12.0%	0.50	0	0.00	0.12	0.09	0.41	0.00	0.02
Jun-19	14.5%	0.60	0	0.00	0.11	0.08	0.52	0.00	0.02
Jul-19	15.0%	0.63	0	0.00	0.16	0.11	0.51	0.00	0.02
Aug-19	13.5%	0.56	0	0.00	0.17	0.12	0.44	0.00	0.02
Sep-19	10.0%	0.42	0	0.00	0.07	0.05	0.37	0.00	0.02
Oct-19	7.0%	0.29	0	0.00	0.06	0.04	0.25	0.00	0.02
Nov-19	4.0%	0.17	0	0.00	0.04	0.03	0.14	0.00	0.02
Dec-19	3.0%	0.13	0	0.00	0.03	0.02	0.11	0.00	0.02
Jan-20	3.0%	0.13	0	0.00	0.03	0.02	0.11	0.00	0.01
Feb-20	3.5%	0.15	0	0.00	0.03	0.02	0.13	0.00	0.01
Mar-20	5.5%	0.23	0	0.00	0.07	0.05	0.18	0.00	0.01
Total	100%	4.17	-	0.00	1.00	0.70	3.47	0.00	0.20

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] There is no longer any exposed surface area at the Unused Wash Pond.
[4] Gross evaporation = [2] x [3].
[5] Based upon the Western Regional Climate Center Station for Pueblo, CO (056740) for the time period 1954-2005.
[6] Effective precipitation = [5] x 0.7.
[7] Net evaporation rate = [2] - [6].
[8] Net evaporation depletions = [7] x [3].
[9] Reflects real time lagged depletions due to evaporation based on Glover analysis using a stream depletion factor of 120 days.

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

Month	Active Pit Lagged Depletions [1]	Unused Wash Pond Lagged Depletions [2]	Sanitary Well Pumping [3]	Total Depletions [4]	AGUA or PBWW Lease Water [5]	Net Accretions (+) or Depletions (-) to Arkansas River [6]
Apr-19	4.08	0.02	0.03	4.13	4.2	0.07
May-19	5.43	0.02	0.03	5.47	5.5	0.03
Jun-19	6.90	0.02	0.03	6.95	7.0	0.05
Jul-19	7.56	0.02	0.03	7.60	7.7	0.10
Aug-19	7.31	0.02	0.03	7.36	7.4	0.04
Sep-19	6.70	0.02	0.03	6.75	6.8	0.05
Oct-19	5.55	0.02	0.03	5.60	5.7	0.10
Nov-19	4.16	0.02	0.03	4.20	4.3	0.10
Dec-19	3.26	0.02	0.03	3.30	3.4	0.10
Jan-20	2.85	0.01	0.03	2.90	3.0	0.10
Feb-20	2.75	0.01	0.03	2.80	2.9	0.10
Mar-20	3.03	0.01	0.03	3.07	3.1	0.03
Total	59.59	0.20	0.33	60.13	61.0	0.87

Notes:
[1] Lagged depletions for Active Pit calculated in Table 1.
[2] Lagged depletions for Unused 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 from AGUA or PBWW after required transit loss has been assessed. For an AGUA lease, the water is delivered to the point of depletion, therefore no transit loss is assessed.
[6] Net effect on the Arkansas River = [5] - [4].