



COLORADO
Division of Water Resources
Department of Natural Resources

September 3, 2024
Paul Bruss, P.E.
BBA Water Consultants, Inc.
333 West Hampden Avenue, Suite 1050
Englewood, CO 80110

**RE: Deep Cut LLC Substitute Water Supply Plan for the 22 West Pit
DRMS Permit No. M-2017-032
Section 21, Township 23S, Range 56W, Sixth P.M.
Water Division 2, Water District 17
SWSP ID 5992, WDID 1707867**

**Approval Period 1: August 1, 2023 through July 31, 2024
Approval Period 2: August 1, 2024 through July 31, 2025
Contact Information: 303-866-8952; pbruss@bbwater.com**

Dear Paul Bruss:

We have received your letters dated June 1, 2023, and May 31, 2024 requesting a substitute water supply plan ("SWSP") in accordance with section 37-90-137(11), C.R.S., for a sand and gravel pit known as the 22 West Pit, owned by Deep Cut, LLC ("Deep Cut" or "Applicant"), for the 2023 and 2024 plan years. The mine is permitted with the Division of Reclamation, Mining, and Safety ("DRMS") under Permit No. M-2017-032. The required \$257 fee has been paid for each plan year request, and given receipt nos. 10029527 and 10036398, respectively.

BACKGROUND

The 22 West Pit is located on the western portion of an existing mine known as the Rocky Ford East Pit (M-1977-560). The Rocky Ford East Pit was previously operated by Valco, Inc. ("Valco") under a combined SWSP with the Lamar East Pit and the Canon City East Pit. The Rocky Ford East Pit was later separated from the combined plan because of changes in the water supply.

Valco both sold the 22 West Parcel, consisting of the portion of the property lying west of County Road 22, (now known as the "22 West Pit", M-2017-032) and transferred two shares of the Rocky Ford Ditch to Deep Cut. Valco retained the portion of the Rocky Ford East Pit lying east of County Road 22, and will continue replacing evaporative depletions from that portion of the property under SWSP ID 0115.

Well Permit No. 84755-F (WDID 1706635) was issued for the 22 West Pit for exposure of groundwater, water removed with the mined material, and dust suppression.

SWSP OPERATION



Deep Cut plans to continue mining in the northern portion of the 22 West Parcel under DRMS Permit No. M-2017-032. The 22 West Pit includes Ponds 1 and 2, with a total exposed groundwater surface area of approximately 27.1 acres. Pursuant to the June 2, 2016 letter from DRMS, 17.4 acres of the currently exposed groundwater is considered to have been exposed prior to January 1, 1981 as a result of open mining of sand and gravel (“pre-1981” area). The remaining 9.7 acres (27.1 acres - 17.4 acres) in the northern portion of the 22 West Pit was exposed after December 31, 1980. The maximum groundwater surface area exposed to the atmosphere after December 31, 1980 will not exceed 15.0 acres for the duration of this SWSP period.

Lagged depletions will be replaced using Rocky Ford Ditch shares acquired with the property from the previous owner, Valco, and fully consumable water provided from Lake Meredith through an agreement with the City of Aurora (“Aurora”).

Depletions will occur from water removed with the mined material, dust control, and evaporation from the post-1980 water surface acreage of Ponds 1 and 2 (see Figure 1). The obligations previously incurred by Valco are incorporated into this SWSP, and are shown in Table 2 together with the projected new exposed surface area.

The final reclamation plan for the site includes a 27.32-acre lake. In accordance with the letter dated April 30, 2010 from the Colorado Division of Reclamation, Mining, and Safety (“DRMS”), 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 the operator provide information to DRMS to demonstrate the replacement of long term injurious stream depletions that result from mining related exposure of groundwater. In accordance with said letter, the Applicant has dedicated the following water rights to ensure the long-term replacement of evaporative depletions resulting from exposure of 15 acres of groundwater, detailed in Table 1.

Table 1: Comparison of Long-term evaporative Depletions and Dedicated Water Rights

Water Right	Shares	Est. Yield (af/sh)	Yield (ac-ft)
Rocky Ford Ditch Company	2	12.86	25.72
Twin Lakes Reservoir and Canal Company	17.45	2.01	35.00
Total	-	-	60.72

Evaporative Depletion	Acres	Net Evap. Rate (ft)	Total Evap. Depletion (af)
Projected Maximum from SWSP	15	3.85	57.75

DEPLETIONS

Deep Cut commenced active mining at the 22 West Pit location in 2018. The previously incurred lagged depletions were calculated by re-establishing the centroid for Ponds 1 and 2 and lagging the depletions using the same methodology from previous Rocky Ford Pit SWSPs. Unlagged depletions as a result of evaporation and mining activities occurring during this plan year are calculated to total **59.34** acre-feet for both the 2023-2024 and 2024-2025 SWSP approval periods, as presented in Table 2.

**Table 2: SWSP Projected Annual Depletions and Replacements
(August 2023 - July 2024, and August 2024 - July 2025)**

Annual Replacement Credits Summary (acre-feet)

Fully Consumable Supply from Aurora	35.00
Rocky Ford Ditch Credits	25.72
Total Credits	60.72

Annual Depletions Summary

Site	Well Permit	Total Exposure (acres)	Pre-1981 Exposure (acres)	Post-1980 Exposure (acres)	Net Evaporation Loss Rate (ft/yr)	Evaporation Loss (af/yr)	Water Removed with Mined Material (af/yr)	Dust Control (af/yr)	Total Unlagged Depletions (af)
-	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
22 West Pit	84755-F	15.00	0.00	15.00	3.85	57.75	0.59	1.00	59.34

Notes:

- [1] State gravel pit well permit number.
- [2] Total maximum exposed groundwater surface area for the SWSP period.
- [3] Pre-1981 exposed groundwater surface area.
- [4] Maximum post-1980 exposed groundwater surface area, [2] - [3].
- [5] Net evaporation rate equals gross evaporation from NOAA Technical Report NWS 33 less a 0.72 ft effective precipitation reduction.
- [6] Evaporation loss, [4] * [5].
- [7] Water removed with material mined below the ground water table assumed 20,000 tons per year and 4% water depletion by weight.
- [8] Dust control uses are assumed 100% consumptive.
- [9] Total Depletions equal to [6] + [7] + [8].

Dust control is fully consumptive and estimated to require **1.0** acre-foot of water per plan year. The maximum amount of water removed with the mined product, assuming 20,000 tons of product removed, is **0.59** acre-feet annually. The current estimated surface area of groundwater exposed after 1980 is identified as 9.7 acres. During the period of this SWSP, additional groundwater may be exposed, therefore evaporative depletions were estimated using a maximum exposed groundwater surface area of 15 acres. Evaporative depletions were estimated using the same net evaporation rate as previous Rocky Ford East Pit SWSPs (3.85 feet/acre/year) and total **57.75** acre feet annually. Depletions from operations occurring during this plan period were lagged to the Arkansas River using the IDS-AWAS model, which uses the Glover method, with the parameters as given below in Table 3a:

Table 3a: Glover Analysis parameters

Distance from river:	3,520 ft
Distance from alluvial boundary:	7,670 ft
Transmissivity:	71,000 gpd/ft
Specific yield:	0.2

The AWAS model was utilized to develop a unit response function (URF) to estimate monthly lagged depletions to the river based on past and projected operations. Once the URFs showed that 95% of the depletions had impacted the river, the remaining depletions were redistributed over the previous months and adjusted to 100%. The URFs are shown in Table 3b below.

Table 3b: Unit Response Function (URF)

Month	Factor	Month	Factor	Month	Factor	Month	Factor
1	0.98%	13	2.61%	25	1.25%	37	0.61%
2	8.54%	14	2.45%	26	1.18%	38	0.57%
3	10.35%	15	2.30%	27	1.10%	39	0.54%
4	8.24%	16	2.16%	28	1.04%	40	0.50%
5	6.48%	17	2.04%	29	0.98%	41	0.47%
6	5.29%	18	1.91%	30	0.92%	42	0.45%
7	4.50%	19	1.80%	31	0.87%	43	0.42%
8	3.95%	20	1.69%	32	0.82%	44	0.40%
9	3.56%	21	1.60%	33	0.77%	45	0.37%
10	3.25%	22	1.50%	34	0.72%	46	0.35%
11	3.00%	23	1.41%	35	0.68%	47	0.33%
12	2.79%	24	1.32%	36	0.64%	48	0.30%

At the time the 2023-2024 SWSP request was submitted, actual consumptive use for the period of August 2023-July 2024 was not yet known, therefore the applicant used projected values to estimate lagged depletions for the purposes of the SWSP request. This office calculated the lagged depletions based on the unlagged depletions reported in the submitted accounting for this plan for the period of August 2023-July 2024.

Actual unlagged depletions from the 2023-2024 plan year based on gravel pit operations and the accounting submitted to DWR can be seen below in Table 4. These data were included in

the AWAS model run for the 2024-2025 SWSP calculation of lagged depletions based on actual operations.

Table 4: Unlagged depletions for the SWSP 2023-2024 plan year (acre-feet)

Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Total
5.04	3.73	2.61	1.49	1.12	1.12	1.31	2.05	3.36	4.48	5.42	5.60	37.35

For the 2023-2024 plan year, the total projected lagged depletion was 46.22 acre-feet, and the total lagged depletion based on actual operations was **38.99 acre-feet**, as seen in Table 5:

Table 5: Lagged Depletions for 2023-2024 SWSP Period

Month	Projected Lagged Depletion (acre-feet)	Lagged Depletion based on actual operations (acre-feet)
August 2023	3.70	3.67
September 2023	4.07	3.80
October 2023	4.28	3.78
November 2023	4.23	3.63
December 2023	4.00	3.38
January 2024	3.72	3.13
February 2024	3.49	2.92
March 2024	3.36	2.78
April 2024	3.37	2.74
May 2024	3.59	2.83
June 2024	3.98	3.04
July 2024	4.45	3.31
Total	46.22	38.99

For the 2024-2025 plan year, the total lagged depletion is **45.21 acre-feet**, as seen in **Table 6**:

Table 6: Lagged depletions for 2024-2025 SWSP Period

Month	Projected Lagged Depletion (acre-feet)
August 2024	3.58
September 2024	3.96
October 2024	4.18
November 2024	4.13
December 2024	3.91
January 2025	3.63
February 2025	3.41
March 2025	3.28
April 2025	3.30
May 2025	3.52
June 2025	3.91
July 2025	4.39
Total	45.21

REPLACEMENTS

Deep Cut will utilize a combination of leased water and historical consumptive use credits to make replacements to the river. A Water Trade Agreement with the City of Aurora dated February 26, 2018 was obtained to provide 35 acre-feet of replacement supplies during this SWSP approval period (agreement attached). This lease was initially valid until December 31, 2023, and automatically renews for up to two additional five-year periods (through December 31, 2028, and December 31, 2033) unless terminated by either party. Chris Tomky of Deep Cut is the owner of 17.45 shares of Twin Lakes Reservoir and Canal Company, including Twin Lakes Reservoir storage associated with those shares, and approximately 19.25 acre-feet of associated storage. The agreement allows Chris Tomky to trade his Twin Lake shares for 35 acre-feet of Aurora's fully consumable water stored in the Colorado Canal System and released from Meredith Reservoir.

Valco owned 2 shares in the Rocky Ford Ditch, which were transferred to Deep Cut. During the

irrigation season, the historical consumptive use associated with the shares will be utilized for replacement of depletions associated with the 22 West Pit. The historical consumptive use of the shares was quantified by WRC Engineering, Inc. in a letter dated October 10, 1995 provided in support of a SWSP request for the Rocky Ford East Pit as having a net annual yield of 25.72 acre-feet/year based on the irrigation of 16.5 acres of crops. Return flow obligations associated with the use of the shares will be replaced using the water obtained from Aurora. During the irrigation season, these shares may result in consumptive use credits in excess of what Deep Cut requires for replacement purposes at the 22 West Pit. Valco may, with approval from Deep Cut and the Division Engineer, use a portion of those shares as part of its SWSP replacement requirement.

Transit loss will be assessed on deliveries of replacement water to the location where depletions from the 22 West Pit impact the river.

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 SWSP shall be valid for the period of August 1, 2023 through July 31, 2025, unless otherwise revoked or superseded by decree. If this SWSP will not be made absolute by a water court action by the SWSP expiration date, a renewal request must be submitted to this office and the Division 2 office (please copy Bethany Arnold at Bethany.Arnold@state.co.us) with the statutory fee (currently \$257 per gravel pit) by **June 1, 2025**.
2. No more than 15 acres of groundwater may be exposed at the 22 West Pit (in addition to the 17.4 acres of pre-1981 area) without first obtaining a new SWSP. Documentation of pond sizes may be required by the Division Engineer in the form of an aerial photo evaluation or survey by a Professional Land Surveyor during the term of this SWSP.
3. The annual amount of water consumed for dust control purposes and lost with the mined product during this plan period is limited to 1.59 acre-feet. This Applicant must first obtain written approval from this office and a new well permit before exceeding this amount.
4. Approval of this SWSP is for the purposes stated herein. Additional uses will be allowed only if a new SWSP is approved for those additional uses.
5. Replacement water shall be made available to cover all out-of-priority depletions in time, place, and amount and shall be made available under the direction and/or approval of the water commissioner. The release of replacement water may be aggregated at the discretion of the division engineer and/or water commissioner. The water commissioner and/or the division engineer shall determine the rate and timing of any aggregated release. The Applicant will deliver its Rocky Ford Ditch shares directly to the Arkansas River using the City of Aurora's augmentation station. The City of Aurora will include the delivery of the Applicant's Rocky Ford Ditch shares in its water accounting for this augmentation station.

6. The Applicant must replace all out-of-priority depletions resulting from operation under this SWSP, including those lagged depletions and return flow obligations that occur to the stream after the expiration date of this SWSP.
7. The replacement water, which is the subject of this SWSP, cannot be sold or leased to any other entity during the term of this SWSP without prior approval of the Division Engineer.
8. Subject to approval by the Division Engineer, the Applicant may lease or purchase additional replacement water from the sources approved in this SWSP. In addition, the Applicant must also provide a copy of a lease/purchase agreement to the State Engineer's Office and the Division Engineer for use of such additional replacement water.
9. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the Division Engineer.
10. The Applicant must provide adequate accounting (including, but not limited to diversions, depletions, and river calls) on a monthly basis. The accounting must be submitted to the Division Engineer via the online submittal tool. Submission access was established under the previous SWSP approval, please contact Kassidy Davis at kassidy.davis@state.co.us with any questions related to accounting submission under this SWSP approval. 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. **NOTE:** Monthly accounting, even during the winter non-irrigation season, is required.
11. The Applicant shall perform an inspection and provide verification that the 16.5 acres of land associated with the 2 shares in the Rocky Ford Ditch changed for replacement purposes in this SWSP has been removed from irrigation during the term of this SWSP. All parcels of dried up land are subject to administration pursuant to the Administration of Parcels Claimed for Augmentation Credit Agreement signed by the Colorado State Engineer and Kansas Chief Engineer in September of 2005. Final verification of dry up must be in the form of an affidavit signed by an individual having personal knowledge of the dry up for the entire 2023, 2024, and 2025 irrigation seasons for each parcel of historically irrigated land. An affidavit was provided on November 30, 2023 verifying dry up for the 2023 irrigation season. **Affidavits must be provided to the Division Engineer by December 15, 2024 for 2024 irrigation season dry up and by December 15, 2025 for 2025 irrigation season dry up, such that the final determination of augmentation credits for the irrigation season can be made along with mapping showing any revisions to the dry up acreage.**
12. The approval of this SWSP does not relieve the applicant and/or landowner of the requirement to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions after the gravel mining operations have ceased. If reclamation of the mine site will produce a permanent water surface exposing groundwater to evaporation, an application for 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 the ponds will be backfilled, or a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow. Granting of this SWSP does not imply approval by this office of any such court application(s).

13. 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, all use of water under this SWSP must cease immediately and the Applicant may need to obtain and present to this office an alternate source of replacement water.
14. 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 this substitute supply of replacement water 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.
15. 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 pending 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.

If you have any questions, please contact Katie Anderson (katharine.anderson@state.co.us) of the Denver office, or Brandy Cole (brandy.cole@state.co.us) in the Division 2 office in La Junta at (719) 384-1000.

Sincerely,



Sarah Brucker, PE
Deputy State Engineer

Attachments: Figure 1
 February 26, 2018 Water Trade Agreement
 August 30, 2018 Dedication Letter

cc: Division 2 SWSP Staff
 Brandy Cole, East Regional Team Leader
 Division of Reclamation, Mining and Safety
 Marshall F. Brown, Utility Enterprise of the City of Aurora

kea: Deep Cut 2023-25