STATE OF COLORADO

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SWSP Approval for the Home Office Pit (WDID 0302517, Plan ID 2998)

Brucker - DNR, Sarah <sarah.brucker@state.co.us> Thu, Apr 1, 2021 at 8:46 AM
To: dheintz <dheintz@bbawater.com>
Cc: Michael Hein <michael.hein@state.co.us>, Mark Simpson <mark.simpson@state.co.us>, Louis Flink <louis.flink@state.co.us>, Amy Eschberger - DNR <amy.eschberger@state.co.us>

Please find attached the Substitute Water Supply Plan Approval for Martin Marietta's Home Office Pit (DRMS Permit No. M-1977-439, WDID 0302517, Plan ID 2998). Should you have any questions, please contact me at this office.

Sarah Brucker
Water Resources Engineer

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Approval 2998.pdf
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COLORADO
Division of Water Resources
Department of Natural Resources

April 1, 2021

Mr. David M. Heintz, P.E.
Bishop-Brogden Associates, Inc.
333 West Hampden Avenue, Suite 1050
Englewood, CO 80110

Re: Home Office Pit Substitute Water Supply Plan (WDID 0302517)
(formerly the Upper Poudre Combined Substitute Water Supply Plan)
Home Office Pit, DRMS No. M-1977-439 (WDID 0303005, Plan ID 2998)
Sections 33 & 34, T8N, and Section 3 & 4, T7N, R69W, 6th P.M.
Water Division 1, Water District 3, Larimer County

Approval Period: January 1, 2021 through December 31, 2021
Contact information for Mr. Heintz: 303-806-8952; dheintz@bbawater.com

Dear Mr. Heintz:

We have received your letter dated January 4, 2021 requesting renewal of a substitute water supply plan ("SWSP") in accordance with section 37-90-137(11), C.R.S., to cover depletions caused by gravel mining operations at a mine operated by Martin Marietta Materials ("MMM" or "Applicant") along the Cache la Poudre River known as the Home Office Pit. This SWSP was previously known as the Upper Poudre Combined Substitute Water Supply Plan and included the North Taft Hill Expansion Site (DRMS permit no. M-2001-051). MMM sold the North Taft Hill Expansion Site while retaining ownership of the Home Office Pit. Evaporative depletions associated with the unlined pond at the North Taft Hill Expansion Site are replaced pursuant to the William O. and Paulette M. Seaworth augmentation plan decreed in Division 1 Water Court case no. 16CW3093, and there are no remaining lagged depletions associated with past mining operations at the North Taft Hill Expansion Site, therefore this site is no longer required to be included in a SWSP. The required SWSP renewal fee of $257 for the Home Office Pit has been received (receipt no. 10008509).

SWSP Operation

The Home Office Pit (well permit no. 75423-F, WDID 0303005) is located just northwest of the City of Fort Collins in portions of Sections 33 and 34, Township 8 North, Range 69 West of the 6th P.M., and Sections 3 and 4 of Township 7 North, Range 69 West of the 6th P.M., as shown on the attached Figure 1. The two Treiber Lakes and three Lamb Lakes were also constructed under DRMS permit no. M-1977-439 (Home Office Pit). The Treiber Lakes have officially been separated from the Home Office Pit mining permit boundaries and are now covered under DRMS permit no. M-2011-049. The Lamb Lakes have also been officially separated from the Home Office Pit mining permit boundaries and are now covered under DRMS permit no. M-2018-039. The Tri-Districts and the City of Greeley assumed augmentation responsibility for the Treiber Lakes and the Lamb Lakes. The liners for the Treiber Lakes have been approved by the State Engineer's Office and all remaining lagged depletions associated with the Treiber Lakes were replaced as of the end of 2019. Ongoing

depletions associated with the Lamb Lakes are covered under the Lamb Lakes SWSP (WDID 0302556, Plan ID 6135).

The Home Office Pit will continue to be mined during this plan period. Depletions at the Home Office Pit during this plan period will include evaporation from exposed groundwater, water removed with the mined aggregate, water used for dust suppression, and lagged depletions from past mining activities at the site. The proposed sources of replacement water for these depletions are 14.175 Taylor & Gill Ditch shares owned by MMM, and if needed free river water stored in MMM's lined 35th Avenue West Cell Reservoir (WDID 0303844) and excess recharge accruals to the Cache la Poudre River from delivery of Whitney Ditch water to recharge under MMM's Parsons Mine SWSP (WDID 0302583, Plan ID 5822).

Most of the Home Office Pit is proposed to be continuously dewatered during this plan period. A portion of the site known as the Currie Pit will be dewatered from January through April, prepared for lining, and then allowed to refill. This will result in lagged depletions from dewatering and depletions associated with the "first fill" of the pit. MMM has entered into an agreement with the City of Greeley, Fort Collins-Loveland Water District, North Weld County Water District, and East Larimer County Water District ("Greeley/Tri-Districts") for purchase of the Currie Pit for eventual lining and use for water storage. The depletions associated with the dewatering and subsequent refilling of the Currie Pit are proposed to be replaced using excess water from MMM's Taylor & Gill Ditch shares.

Depletions

During the term of this plan, depletions at the Home Office Pit will consist of evaporative depletions from exposed groundwater, water lost with the mined product, water pumped for dust control, lagged depletions from past mining activities at the site, and the lagged dewatering depletions and expected fill of the Currie Pit.

Evaporation

Pursuant to section 37-90-137(11)(b), C.R.S., and case no. 2009CW49, a gravel pit operator or property owner does not need to replace depletions that occur due to evaporation from groundwater exposed prior to January 1, 1981 as a result of open mining of sand and gravel ("pre-81 areas"), regardless of whether mining continued after December 31, 1980. This office has recognized a total of 100.0 acres at the Home Office Pit as being pre-81 exposure. Per the State Engineer's *General Guidelines for Substitute Supply Plans for Sand and Gravel Pits* updated April 1, 2011, pre-81 areas are tied to the physical location at which the groundwater was exposed prior to January 1, 1981 with the exception for areas whose reallocation was approved by the State Engineer prior to January 1, 2011. Previous SWSPs (prior to January 1, 2011) approved the pre-81 area without specific mention of its location. Therefore, the State Engineer's Office allowed the pre-81 area to be reallocated and memorialized under the May 11, 2011 SWSP approval. The applicant provided a map (Figure 1) showing the specific location of the pre-81 area. Of the 100 total acres recognized as being pre-81 area, 22.1 acres are within Lamb Lake A as reflected in the Lamb Lakes SWSP for their portion of the Home Office Pit, and two ponds of 15.7 acres and 0.6 acres are located within a portion of the original Home Office Pit site that has been released. In addition, a 7.7-acre portion of the 30.9-acre pond has been backfilled. Therefore, a total of 53.9 acres remaining within the Home Office Pit mining permit boundary are recognized as being pre-81 areas. The credits for the pre-81 areas are tied to the locations identified on Figure 1 and may not be reallocated to other areas of groundwater

exposure within the gravel pit boundary. Any pre-81 area that is backfilled will lose its pre-81 exemption should it be excavated in the future. Additionally, the backfilling of a pre-81 area does not create a credit for use elsewhere.

A total of 26.44 acres of groundwater were exposed at the Home Office Pit after December 31, 1980, consisting of 25.4 acres in the Currie Pit and 1.04 acres in dewatering trenches (5 ft wide × 9,100 ft long). The Currie Pit will be dewatered during the period of January through April 2021, and will not have exposed groundwater during that period. For the purposes of this SWSP, you have assumed that the pond will have refilled to its current size of 25.4 acres as of May 2021 and remain at that size through December 2021. Evaporative depletions were calculated using a gross annual evaporation of 38 inches, with a credit of 10.56 inches for effective precipitation based on an average annual precipitation of 15.08 inches for the Fort Collins weather station (053005) obtained from the Western Regional Climate Center for the period of 1893-2017. The net depletion of groundwater due to evaporation from the surface area of the Home Office Pit exposed after December 31, 1980 was calculated to be 49.33 acre-feet for this plan period, as shown on the attached Table 1.

You have assumed the exposed groundwater surface area will be covered by ice during the months of January and February, based on the average temperatures of 27.82°F for January and 30.89°F for February for the Fort Collins weather station (053005) obtained from the Western Regional Climate Center for the period of 1893-2017. The ice-covered periods may be used to reduce the amount of evaporative losses that need to be replaced; however, for the purposes of this SWSP, the Applicant shall replace the net evaporation depletions from the exposed groundwater surface area that may occur during the assumed ice covered periods (January and February) for any time that the pit is not completely covered by ice. Computation of the net evaporation during any time that the pit is not completely covered by ice shall be determined as the pro-rata amount of the monthly gross evaporation rate distribution amount identified in the State Engineer's *General Guidelines for Substitute Supply Plans for Sand and Gravel Pits,* subtracting the pro-rata amount of the effective precipitation for that period.

Dust Control

Water for dust control purposes at the site is typically pumped from the Currie Pit. During the period of January through April, when the Currie Pit will be dewatered, water for dust control purposes will be pumped from either Treiber Lake B or Overland Pond C pursuant to an agreement with Greeley/Tri-Districts. Treiber Lake B and Overland Pond C are lined storage reservoirs and the use of water from these sources will not create any depletions requiring replacement under this SWSP. Once the Currie Pit refills in May, water for dust control purposes will be pumped from the Currie Pit and accounted for as a depletion in this plan. You have estimated that a total of 19.84 acre-feet of water will be pumped from the Currie Pit for dust control purposes during the period of May through December 2021. Water pumped for dust control purposes is assumed to be 100% consumed. All pumping for dust control purposes will be metered.

Mined Product

You have estimated that 373,840 tons of aggregate will be mined at the Home Office Site during this plan period. Of this amount, 220,747 tons of aggregate is anticipated to be crushed (not washed) and 153,093 tons is anticipated to be washed. All of the material will be mined below the groundwater table, but in a dewatered state. The water retained by the crushed aggregate is

considered to be 2% of the mined material by weight, and the water retained by the washed material is considered to be 4% of the mined material by weight. This results in a total groundwater loss of 7.75 acre-feet.

Lagging

The Alluvial Water Accounting System (AWAS), which uses the Glover method, was used to determine the lagged depletions to the Cache la Poudre River from past and projected evaporation and operational losses at the site. The following parameters were used in the model with the alluvial aquifer boundary condition: the distance (X) from the centroid of the exposed groundwater surface to the river; the width (W) of the aquifer on the side of the river where the pit is located; the transmissivity (T); and the specific yield (S). The Glover parameters used for each portion of the site are shown in the table below.

Glover Parameters

Site Name	X (ft)	W (ft)	T (gpd/ft)	S
Home Office Pit (mining area)	1,675	4,675	160,000	0.2
Home Office Pit (Currie Pit)	1,000	6,500	160,000	0.2

Dewatering

The majority of the Home Office PIt will be continuously dewatered throughout this plan period; however, the Currie Pit will only be dewatered through April 2021. All water pumped for dewatering purposes will be delivered to the unlined pre-81 ponds just south of the site, which overflow directly to the Cache la Poudre River. As long as the site is continuously dewatered, the water returned to the stream system is expected to be adequate to offset the depletions attributable to dewatering operations. However, once dewatering of the Currie Pit ceases in May, the lagged depletions due to dewatering of the Currie Pit must be replaced. The Currie Pit has been dewatered at a rate of 39 acre-feet per month or 285 gallons per minute in January, 25 acre-feet per month or 204 gallons per minute in February, and is anticipated to continue to be dewatered at a rate of 202 gallons per minute for the months of March and April (28 acre-feet and 27 acre-feet, respectively). Once dewatering of the Currie Pit ceases, it will be allowed to refill. You have estimated the volume of the Currie Pit to total 142 acre-feet, and estimated that it will refill over the three months following the cessation of dewatering, resulting in 46 acre-feet of depletions from refilling in the month of May and 48 acre-feet from refilling in the months of June and July. Using the aquifer parameters identified in the table above, lagged depletions associated with the cessation of dewatering and refilling of the Currie Pit will total 155.42 acre-feet for this plan period. All water pumped from the Currie Pit for dewatering purposes must be metered separately with meter readings reported on the submitted accounting for this plan.

Total Depletions

Consumptive use from the mining area of the Home Office Pit will total 9.97 acre-feet during this plan period, consisting of evaporation from the dewatering trench and water lost with the mined material. Lagged depletions from past and projected consumptive use at the mining area of the Home Office Pit will total 10.32 acre-feet during this plan period. Consumptive use from the Currie Pit portion of the Home Office Pit will total 66.75 acre-feet during this plan period, consisting of evaporation from the pit surface and water pumped for dust control. Lagged depletions from past and projected consumptive use at the Currie Pit, including depletions resulting from the cessation of

dewatering and associated refilling of the pit, will total 244.17 acre-feet during this plan period. Total depletions requiring replacement during this plan period are therefore 254.49 acre-feet.

Replacements

Replacements for this plan will come from credits associated with 14.175 shares in the Taylor & Gill Ditch owned by MMM, free river water stored in the MMM's lined 35th Avenue West Cell Reservoir (WDID 0303844), and/or excess consumptive use credits from 12 shares of the Whitney Ditch.

Taylor & Gill Ditch

Previously MMM owned a total of 15.175 shares in the Taylor & Gill Ditch, however one (1) share was sold to Mr. Seaworth to be used in the plan augmentation plan decreed in case no. 16CW3093. Previous SWSPs (2015-2018) used a total of 13.175 shares out of the 15.175 shares in the Taylor & Gill Ditch to replace depletions during those SWSPs periods. In this SWSP, MMM will use all of their remaining 14.175 shares to replace depletions during the SWSP period. The water associated with the 14.175 shares will be delivered directly to the river for immediate credit or will be delivered to recharge to generate lagged recharge accretion credits used to offset out-of-priority depletions in this SWSP.

This SWSP relies on the quantification of the historical consumptive use of 19.3 shares in the Taylor & Gill Ditch owned by MMM and Mr. Seaworth that was performed in support of the decree entered in case no. 16CW3093. Of the 19.3 shares, MMM owns 14.175 shares and Mr. Seaworth owns 5.125 shares. According to the decree in case no. 16CW3093, 1.125 of the 5.125 shares owned by Mr. Seaworth will continue to be used for irrigation. The remaining 18.175 shares (14.175 shares owned by MMM and 4.0 shares owned by Mr. Seaworth) will no longer be used for irrigation and the associated lands will be dried up. The total dry-up area associated with the 18.175 shares was quantified in case no. 16CW3093 to be 309.91 acres, as shown in the attached Figure 2. Since 4.0 shares of the 18.175 shares (22.01%) were changed in the decree in case no. 16CW3093, MMM will be entitled to a pro–rata portion of the dry-up credit associated with the total 309.91 acres of dry-up for their 14.175 shares out of the 18.175 total shares (77.99%). Thus the 14.175 shares were determined to have been used to irrigate a total of 241.70 acres.

The historical average farm headgate delivery for the 18.175 shares was determined to be 52.75 acre-feet per share (2.41 acre-feet per irrigated acre), with a historical consumptive use of 23.67 acre-feet per share (1.17 acre-feet per acre). Therefore the 14.175 shares to be used in this SWSP will yield 747.73 acre-feet of total farm headgate delivery (52.75 acre-feet/share × 14.175 shares) and 335.52 acre-feet of consumptive use (23.67 acre-feet/share × 14.175 shares) to be used for replacement of out-of-priority depletions under this SWSP.

It is anticipated that 211.05 acre-feet of farm headgate delivery associated with the Taylor & Gill Ditch shares will be delivered to the Upper Poudre Recharge Ponds (WDID 0302004) during the period of April through October. Daily deliveries of the shares will be measured and any excess deliveries will be sent directly back to the river without claiming augmentation credit. Excess water will be returned to the river via the Taylor & Gill Wasteway, as described in more detail below. Evaporative losses from the water delivered to a series of three recharge ponds is estimated to total 5.60 acre-feet for this plan period, based on a maximum recharge pond surface area of 3.0 acres while deliveries are being made (April-October). The net recharge accretions were lagged to the

river using the AWAS model with the following parameters: a distance (X) from the centroid of the exposed groundwater surface to the river of 2,300 ft; a width (W) of the aquifer of 6,500 ft; a transmissivity (T) of 160,000 gpd/ft; and a specific yield (S) of 0.2. Taylor & Gill Ditch shares have been diverted into the recharge ponds to produce accretions to the stream for replacement purposes for the Home Office Pit under previous SWSPs since 2004. Lagged recharge accretions from past and projected deliveries are anticipated to total 186.99 acre-feet during this plan period (as shown in Table 2, column D).

The return flow obligations associated with the use of the Taylor & Gill Ditch shares will be calculated using the return flow factors described in paragraphs 15.3 and 15.4 of the decree entered in case no. 16CW3093. Surface return flow obligations during the summer period of April to October will be calculated by multiplying the monthly delivery to recharge by its respective monthly factor (shown in Table 2, column E). Groundwater return flow obligations will be calculated by multiplying the previous two years of irrigation season total deliveries (April through October) by its respective monthly factor (shown in Table 2, column F). According to the information provided, 116.60 acre-feet were delivered during the irrigation season in 2018, 180.17 acre-feet were delivered during the irrigation season in 2019, and 143.59 acre-feet were delivered during the irrigation season in 2020. For the period of this SWSP, return flow obligations are estimated to total 109.22 acre-feet. After accounting for return flow obligations, the Taylor & Gill Ditch shares delivered to recharge are projected to generate a total of 77.77 acre-feet of available replacement water during this plan period, as shown in Table 2, column H.

MMM also plans to deliver 333.64 acre-feet of farm headgate delivery associated with the Taylor & Gill Ditch shares directly to the Cache la Poudre River for replacement purposes during the period of April through September. Deliveries will be made at the Taylor & Gill Wasteway located as shown in Figure 1. The Wasteway is a headgate on the ditch that flows to an approximately 8.5-acre pond. The delivery point is on the north side of this pond and from the pond the water will flow to the Cache la Poudre River. Typically, any time water is being delivered to the pond, water from the pond will spill into the Cache la Poudre River; however, in the event that deliveries are made while water is not spilling from the pond, the Applicant is required to notify and coordinate with the water commissioner to ensure that depletions are replaced in time, location, and amount. All deliveries will be recorded daily and any excess deliveries will be sent directly back to the river without claiming augmentation credit. Return flow obligations will be calculated based on the actual timing of direct deliveries. After accounting for return flow obligations of 146.07 acre-feet, the Taylor & Gill Ditch shares delivered directly to the Cache la Poudre River are projected to generate a total of 187.57 acre-feet of available replacement water during this plan period.

A monthly breakdown of the stream depletions from the mining site as well as the replacement water available from recharge and direct delivery of the Taylor & Gill Ditch shares is shown in the attached Table 3.

35th Avenue Reservoir

Water stored in MMM's 35th Avenue West Cell Reservoir under free river conditions may also be used as a replacement source under this SWSP. The 35th Avenue West Cell Reservoir is a lined reservoir located approximately 33 miles downstream of the Home Office Pit, in the western half of MMM's 35th Avenue Pit (DRMS M-1977-036, WDID 0303022). In January 2018 MMM began filling the 35th Avenue West Cell Reservoir under free river conditions with the approval of the water commissioner.

In order to use the stored water to replace depletions, the water would be pumped from the reservoir directly to the Cache la Poudre River at the westernmost border of the 35th Avenue Pit.

Excess Recharge from Parsons Mine

MMM requests the ability to use excess recharge accruals to the Cache la Poudre River, above what is needed to replace depletions at the Parsons Mine, to be exchanged up the Cache la Poudre River to replace depletions at the Home Office Pit. The Parsons Mine is located approximately 26 miles downstream of the Home Office Pit. MMM owns 12 shares of the Whitney Ditch (WDID 0300930) that can be delivered directly to the river for immediate credit or delivered to a recharge pond (Parsons Mine Recharge Area, WDID 0302067) for lagged recharge accretion credits. The 12 Whitney Ditch shares are primarily used as a replacement source in MMM's Parsons Mine SWSP (WDID 0302583, Plan ID 5822). When the historic consumptive use credit from the 12 Whitney Ditch shares exceeds what is needed to replace depletions at the Parsons Mine, MMM has requested the ability to utilize the excess credit for replacement of depletions at the Home Office Pit.

As more fully described in the Parsons Mine SWSP, MMM's 12 shares in the Whitney Ditch Company were quantified and changed for a variety of uses including augmentation/replacement in case no. 2008CW65, which relied on a ditch-wide analysis of the 320 total shares in the Whitney Ditch. The total average annual consumptive use for MMM's 12 Whitney Ditch shares was determined to equal 164.25 acre-feet per year and 337.88 acre-feet of total deliveries. The return flow obligations associated with the use of the Whitney Ditch shares will be calculated and replaced under the Parsons Mine SWSP. The excess credit attributable to the Whitney Ditch shares available for use in this SWSP, after accounting for return flow obligations, will be shown in the Parsons Mine SWSP accounting and will match the amount claimed in the accounting for this SWSP. The Greeley 35th Avenue Pit SWSP (WDID 0302456, Plan ID 2945) also allows for the use of excess recharge credits from the Parsons Mine as a replacement source if needed, however this source is not anticipated to be utilized under the April 1, 2020 - March 31, 2021 or April 1, 2021 - March 31, 2022 approvals. The Applicant must provide written notice to the Division Engineer and District 3 Water Commissioner at least 30 days in advance of the desired commencement of use of any excess recharge credits in this SWSP, which must include the annual and monthly amount of excess replacement credit available and the location at which the water will be delivered to the stream.

The Applicant is required to coordinate with the water commissioner the delivery location of the 35th Avenue West Cell Reservoir water and the excess recharge accruals from the Parsons MIne to ensure out-of-priority depletions are adequately replaced to prevent injury to other water rights. As shown in the attached Table 3, water from these sources is not anticipated to be needed for replacement purposes during this plan period. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the water commissioner or division engineer.

Long Term Augmentation

In accordance with the letter dated April 30, 2010 (copy attached) from the Colorado Division of Reclamation, Mining, and Safety ("DRMS"), all sand and gravel mining operators must comply with the requirements of the Colorado Reclamation Act and the Mineral Rules and Regulations 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. The DRMS letter identifies four approaches to satisfy this requirement.

The approved reclamation plan for this site is lined storage reservoirs. MMM will maintain a SWSP for the Home Office Pit until the SEO approves each of the constructed reservoir liners, or until Greeley/Tri-Districts have taken over augmentation responsibilities for the site. In accordance with approach nos. 1 and 3, the Applicant has obtained a bond for $3,203,345 through the DRMS to cover the cost of lining areas of post-1980 exposed groundwater within the Home Office Pit site.

Conditions of Approval

I hereby approve this substitute water supply plan, 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 January 1, 2021 through December 31, 2021 unless otherwise revoked or superseded by decree. If the site will not be fully lined with all lagged depletions replaced by the plan's expiration date, or if a permanent plan for augmentation is not obtained, a renewal request must be submitted to this office with the statutory fee (currently $257) **no later than November 1, 2021**. If a renewal request is received after the expiration date of this plan, it may be considered a request for a new SWSP in which case a $1,593 filing fee will apply.
2. Well permit no. 75423-F was obtained for the Home Office Pit in accordance with section 37-90-137(2) and (11), C.R.S. This permit allows for up to 348 acres of exposed groundwater (248 acres exposed after January 1, 1981) and allows for operational losses from the mining of aggregate, dewatering, and dust control. The water use projected in this SWSP remains within the permit's limits.
3. The total surface area of the groundwater exposed at the Home Office Pit after December 31, 1980 shall not exceed 26.44 acres, which results in a maximum annual evaporative loss of 49.33 acre-feet.
4. Total depletions requiring replacement at the Home Office Pit during this plan period shall not exceed 232.14 acre-feet, consisting of past and projected depletions from evaporation, dust control, water lost with the mined aggregate, and lagged depletions associated with the cessation of dewatering at and refilling of the Currie Pit.
5. Approval of this plan is for the purposes as stated herein. Any additional uses of water at the Home Office Pit must first be approved by this office.
6. All releases of replacement water must be sufficient to cover all out-of-priority depletions in time, place, and amount and must be made under the direction and/or the approval of the water commissioner. **The Applicant is required to notify the water commissioner any time deliveries are made to the 8.5-acre pond via the Taylor & Gill Wasteway while the pond is <u>not</u> spilling into the Cache la Poudre River.**
7. The replacement water that is the subject of this SWSP cannot be sold or leased to any other entity. The replacement water must be appurtenant to this site until a plan for augmentation is obtained. All replacement water must be concurrent with depletions in quantity, timing and locations.

8. The Applicant shall replace the net evaporative depletions from the exposed groundwater surface area that may occur during the assumed ice-covered period (January and February) for any time that the exposed groundwater in the pit is not completely covered by ice.

9. The name, address, and phone number of the contact person who will be responsible for the operation and accounting of this plan must be provided on the accounting forms submitted to the division engineer and the water commissioner.

10. Adequate accounting of depletions and replacements must be provided to the division engineer in Greeley (DNR_Div1Accounting@state.co.us) and the water commissioner (Mark Simpson at Mark.Simpson@state.co.us) on a monthly basis, or more frequent if required by the water commissioner. The accounting form provided with your application is subject to modification and approval by the division engineer. All amounts shall be in acre-feet. Submitted accounting shall conform to the attached *Administrative Protocol - Augmentation Plan Accounting*. **NOTE:** Monthly accounting, even during the winter non-irrigation season, is required.

11. All pumping for dust control purposes and dewatering shall be measured in a manner acceptable to the division engineer. Submitted accounting must include monthly meter readings from the dewatering pump(s).

12. The Applicant shall perform an inspection and provide verification that the land associated with the changed water right in this SWSP has been removed from irrigation during the term of this SWSP. Verification of dry-up must be submitted on the Dry-Up Certification Form, available at https://drive.google.com/drive/folders/1TF0alNt6f5fla0Xz_n1_jAGCg4xusRN2, for the entire irrigation season for the parcel of land associated with the change of water right in this SWSP. In accordance with the attached *Administrative Protocol - Dry-Up of Irrigated Land*, the Applicant shall provide a written notification to the water commissioner and division engineer **by April 1, 2021** identifying the lands to be dried-up for the **2021** irrigation season, if different from what is shown on Figure 2**. By October 31, 2021**, the Applicant shall provide an affidavit to the water commissioner and division engineer that confirms dry-up during the **2021** irrigation season. If the dry up is different from the 2016 irrigation season, a new GIS shapefile outlining the dry-up must accompany each affidavit and be emailed to DNR_Div1Accounting@state.co.us for each notification. The shapefile shall include the WDID of the plan, a delineation of the dried-up land, the acreage of dry-up, and any accompanying metadata. In addition, the datum must be NAD83 and the UTM projection must be Zone 13.

    The historical consumptive use attributed to the changed surface water right(s) under this SWSP shall not include groundwater contributions. As a result, the historical consumptive use ("HCU") credit calculated for the subject water right to be changed by this SWSP shall be reduced by any ongoing sub-irrigation from groundwater. In order to ensure the required dry-up conditions exist during the approval period of this SWSP, and to ensure no sub-irrigation from groundwater is occurring, the Applicant shall provide records of monthly monitoring of depth to groundwater for all land associated with the change of water right in this SWSP. Information regarding depth to groundwater may be provided using existing irrigation wells, existing or new monitoring wells, or piezometers located on the dried-up fields. The Applicant may utilize wells or piezometers located within ¼ mile of each field provided that the Applicant can demonstrate the depth to groundwater information available off-site is representative of the depth to groundwater on the dried-up land. The Applicant

shall modify its accounting to reduce the amount of the calculated HCU that may be claimed in this SWSP according to the table below. Measurements taken at the start of each month will determine the necessary reduction in credit to be applied during the following month. The Applicant may use another methodology upon review and prior approval by the state engineer and division engineer. (Construction of monitoring holes/wells, or piezometers requires that permits or notices be obtained as described in Table 1 of the Water Well Construction Rules.)

Depth to Groundwater (Feet)	Percent Reduction in Calculated HCU[1]	
	Native Grass	Alfalfa
1	85%	100%
2	50%	90%
3	30%	75%
4	20%	50%
5	15%	35%
6	10%	20%
7	5%	15%
8	0%	10%

[1]Adapted from *EVAPOTRANSPIRATION AND AGRONOMIC RESPONSES IN FORMERLY IRRIGATED MOUNTAIN MEADOWS, South Park, Colorado*, March 1, 1990; Revised September 1, 1991

13. The Division of Water Resources will not acknowledge any recharge activity conducted without the knowledge of the water commissioner. The flow into the recharge structure must be metered and equipped with a continuous flow recorder unless the water commissioner in conjunction with the division engineer determines adequate records may be kept without such equipment. If the recharge structure is designed to discharge water via a surface outlet, such discharge must also be metered and equipped with a continuous flow recorder. The applicant shall follow the latest version of the recharge protocol found on https://dwr.colorado.gov/services/water-administration under "Guidance Documents - Formal Directives".

14. Water may be delivered to recharge only if the net impact of this plan is not negative. Water must first be delivered or exchanged to offset negative impacts of this plan before it may be diverted for recharge.

15. 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 1 Water Court at least three years prior to the completion of mining to include, but not be limited to, long-term evaporation losses. If a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow. A conditional storage right for the Home Office Pit (North Shore Reservoir) was decreed in case no. 92CW157. This office has no knowledge of any application(s) for a plan for augmentation that covers evaporation from unlined groundwater ponds at the Home Office site. Granting of this plan does not imply approval by this office of any such court application(s).

16. The mining area of the Home Office Pit has been continuously dewatered. As long as the mining area is continuously dewatered, the water returned to the stream system should be adequate to offset the depletions, thus dewatering of the mining area is required to continue

during the term of this plan. Once dewatering at this site ceases or is reduced in its flow, the river will experience a net depletion as the pit gradually fills. At least three years prior to completion of dewatering, a plan must be submitted that specifies how the post-pumping dewatering depletions will be replaced, in time, place and amount. The post-pumping analysis shall use the meter data from the dewatering totalizing flow meter. Depletions associated with the cessation of dewatering of the Currie Pit portion of the site and gradual refilling of the Currie Pit shall be accounted for and replaced under this SWSP.

17. To assure that long-term depletions to the river do not occur in the unforeseen event, or events, that would lead to abandonment of the site, the Applicant has obtained a bond for $3,203,345 through the DRMS to cover the cost of lining the Home Office Pit site.

18. 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 or will occur as a result of this plan. Should this supply plan expire without renewal or be revoked prior to adjudication of a permanent plan for augmentation, all excavation of product from below the water table, and all other use of water at the pit, must cease immediately.

19. 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 this 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.

20. 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 plan. This decision shall not bind the state engineer to act in a similar manner in any other applications involving other plans, or in any proposed renewal of this plan, 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 concerning this approval, please contact Sarah Brucker in Denver at (303) 866-3581 or Michael Hein in Greeley at (970) 352-8712.

Sincerely,

for Jeff Deatherage, P.E.
Chief of Water Supply

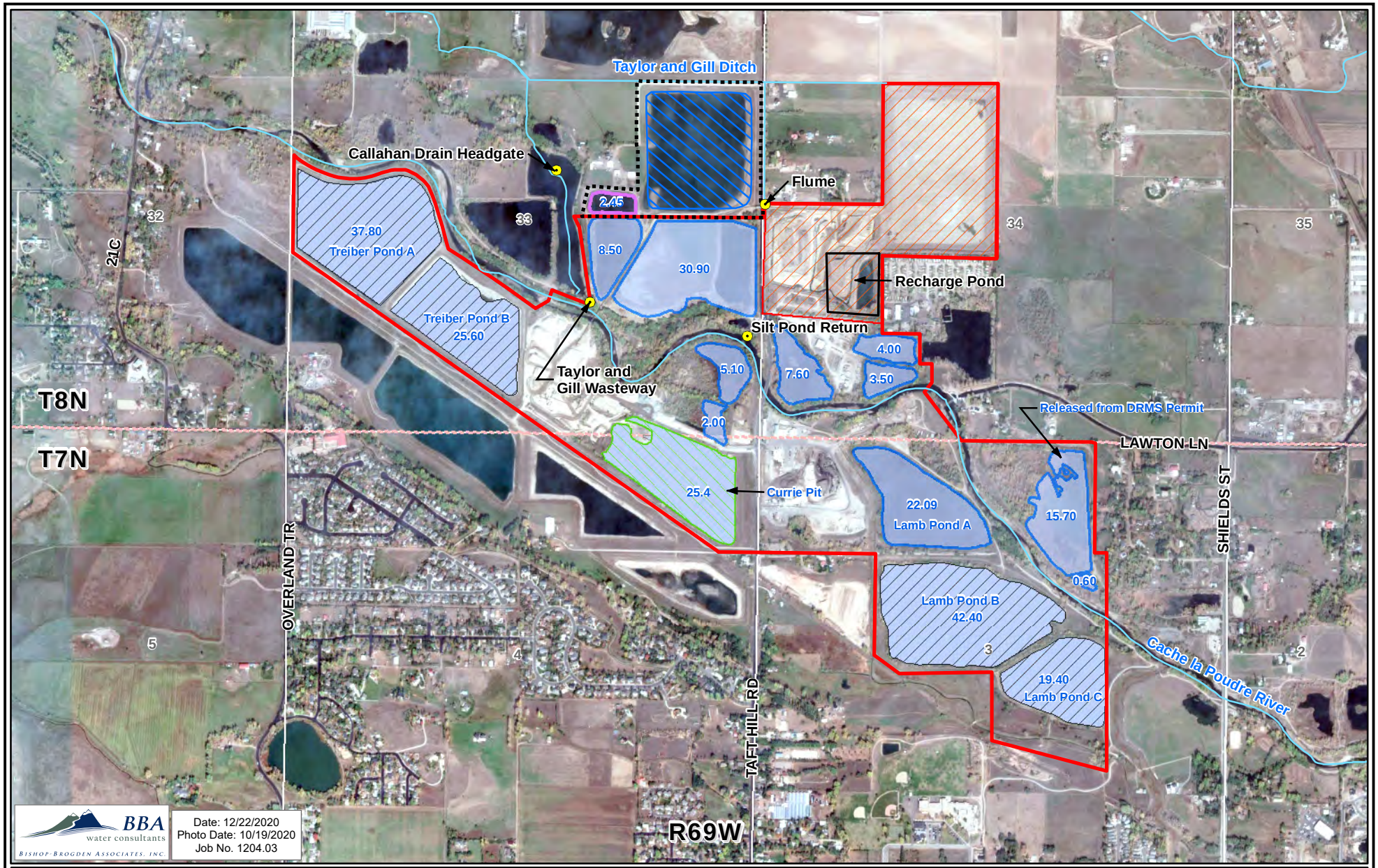
Attachments: Figure 1
Figure 2
Tables 1 – 3
Administrative Protocol - Augmentation Plan Accounting
Administrative Protocol - Dry-Up of Irrigated Land

Cc: Michael Hein, Lead Assistant Division Engineer, Michael.Hein@state.co.us
810 9th Street, Suite 200, Greeley CO 80631

Mark Simpson, Water Commissioner, Water District 3, Mark.Simpson@state.co.us

Louis Flink, Tabulation/Diversion Records Coordinator, Louis.Flink@state.co.us

Amy Eschberger, Division of Reclamation Mining and Safety



BBA water consultants
Bishop-Brogden Associates, Inc.

Date: 12/22/2020
Photo Date: 10/19/2020
Job No. 1204.03

Legend

- Stream / Ditch
- Considered Pre-1981 by DWR
- Exposed surface area (acres)
- Lined
- Exposed Surface Area Augmented Under 16CW3093
- Evap. Augmented by MM
- Evap. Augmented by Tri-Districts
- Home Office Site (approx.)
- North Taft Hill (approx.)
- Home Office Mining

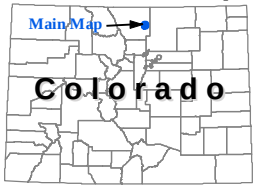
Figure 1
Martin Marietta
Upper Poudre Combined
Mining Area Map

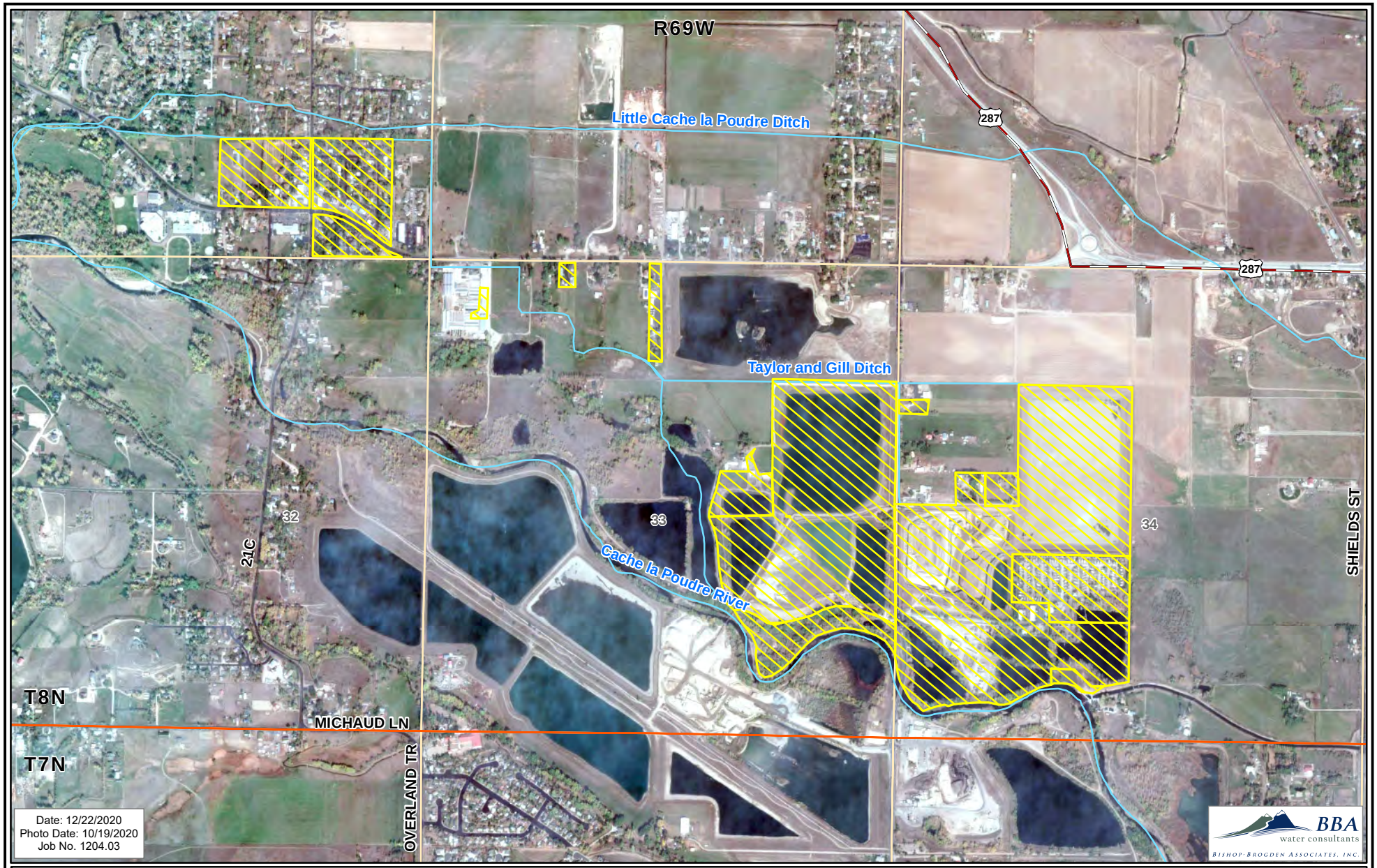
N
W E
S

1 inch = 1,500 feet

0 750 1,500 Feet

Overview Map





Legend

- Stream/Ditch
- MM 2021 Proposed Dry-Up Area

Figure 2
Martin Marieta
Upper Poudre Combined Site
Historically Irrigated Areas & 2021 Dry-Up Map

N
W E
S

1 inch = 1,500 feet

0 375 750 1,500 Feet

Overview Map

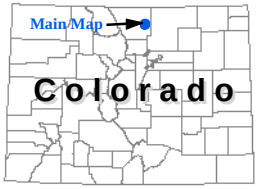


Table 1
Martin Marietta
Home Office Pit
Evaporative and Operational Consumptive Use

	Evaporative Consumptive Use							Operational				Total	Total	Lagged	Lagged	Total
Month	Percent of Annual Evaporation (A)	Gross Lake Evaporation (ft) (B)	Precipitation (in) (C)	Effective Precipitation (ft) (D)	Net Evaporation (acre-ft/acre) (E)	Net Exposed Water Surface (acre) (F)	Total Evaporation (acre-feet) (G)	Crushed Aggregate (tons) (H)	Washed Aggregate (tons) (I)	Water Retained in Product (acre-feet) (J)	Water Used for Dust Control (acre-feet) (K)	Consumptive Use from Currie Pit (acre-feet) (L)	Consumptive Use from Mining Area (acre-feet) (M)	Depletions from Currie Pit (acre-feet) (N)	Depletions from Mining Area (acre-feet) (O)	Lagged Depletions (acre-feet) (P)
Jan-21	3.0%	0.10	0.36	0.02	0.00	1.04	0.00	18,697	14,943	0.71	0.19	0.00	0.71	1.67	0.83	2.50
Feb-21	3.5%	0.11	0.48	0.03	0.00	1.04	0.00	26,250	0	0.39	0.00	0.00	0.39	1.22	0.63	1.86
Mar-21	5.5%	0.17	1.18	0.07	0.11	1.04	0.11	33,600	0	0.49	0.00	0.00	0.60	0.92	0.69	1.61
Apr-21	9.0%	0.29	1.97	0.11	0.17	1.04	0.18	33,600	0	0.49	0.00	0.00	0.67	0.65	0.72	1.37
May-21	12.0%	0.38	2.74	0.16	0.22	26.44	5.82	14,400	19,200	0.78	1.84	7.43	1.01	45.18	0.90	46.08
Jun-21	14.5%	0.46	1.83	0.11	0.35	26.44	9.32	16,000	17,600	0.75	3.07	12.02	1.12	54.55	1.00	55.55
Jul-21	15.0%	0.48	1.62	0.09	0.38	26.44	10.06	16,000	17,600	0.75	3.07	12.73	1.15	57.68	1.04	58.72
Aug-21	13.5%	0.43	1.42	0.08	0.34	26.44	9.11	12,800	20,800	0.80	3.07	11.82	1.16	31.43	1.07	32.50
Sep-21	10.0%	0.32	1.27	0.07	0.24	26.44	6.41	14,400	19,200	0.78	3.07	9.23	1.03	18.81	1.02	19.83
Oct-21	7.0%	0.22	1.13	0.07	0.16	26.44	4.12	11,250	15,000	0.61	2.61	6.56	0.77	13.75	0.87	14.61
Nov-21	4.0%	0.13	0.59	0.03	0.09	26.44	2.44	10,000	16,250	0.63	2.46	4.80	0.72	10.66	0.81	11.47
Dec-21	3.0%	0.10	0.49	0.03	0.07	26.44	1.76	13,750	12,500	0.57	0.46	2.15	0.64	7.65	0.74	8.39
Total	**100%**	**3.17**	**15.08**	**0.88**	**2.13**	**-**	**49.33**	**220,747**	**153,093**	**7.75**	**19.84**	**66.75**	**9.97**	**244.17**	**10.32**	**254.49**

Notes:
(A) Based upon SEO *General Guidelines for Substitute Water Supply Plans for Sand and Gravel Pits.*
(B) Gross lake evaporation = (A) *(Gross Annual Evaporation / 12).
(C) Estimated using annual precipitation and average monthly distribution of precipitation from the Western Regional Climate Center - Fort Collins, CO (050035).
(D) Effective precipitation = 0.7*(C)/12.
(E) Net evaporation from exposed water surfaces = (B) - (D). Based on information from the Western Regional Climate Center Station for Fort Collins, CO (053005) over a study period of 1893-2017, there is no evaporation December - February due to below-freezing average monthly temperatures.
(F) Net exposed surface area; equals total surface area minus pre-81 surface area and surface area augmented by Greeley/Tri-Districts.
(G) Total lake evaporation from exposed water surfaces = (E) * (F).
(H) Crushed aggregate amounts provided by Martin Marietta.
(I) Washed aggregate amounts provided by Martin Marietta.
(J) Water retained in product equals 4% of total weight of washed aggregate produced and 2% of total weight of crushed aggregate produced.
(K) Water used for dust control pumped from the Currie Pit as specified by Martin Marietta.
(L) Total consumptive use from Currie Pit consists of evaporation from the 25.4 ac surface area and all dust suppression pumping.
(M) Total consumptive use from mining area consists of evaporation from 9,100 feet of 5 foot wide dewatering trench and water lost in mining of the material.
(N) Lagged depletions associated with the Currie Pit include post pumping depletions for dewatering the pit and first fill of the pit. Lagging values calculated using following parameters:
Distance from stream = 1000 ft, Transmissivity = 160,000 gpd/ft, Specific Yield = 0.2, No-flow Boundary = 6,500 ft
(O) Lagging values calculated using following parameters:
Distance from stream = 1,675 ft, Transmissivity = 160,000 gpd/ft, Specific Yield = 0.2, No-flow Boundary = 4,675 ft
(P) Column (N) + Column (O).

Table 2
Martin Marietta
Upper Poudre Combined Sites
Recharge Ponds Accretions

Month	Total Taylor & Gill FHG Deliveries (acre-feet) (A)	Estimated Recharge Ponds Evaporation (acre-feet) (B)	Net Recharge (acre-feet) (C)	Lagged Recharge Credit Accretion (acre-feet) (D)	Surface Water Return Flow Factor (%) (E)	Groundwater Return Flow Factor % (F)	Return Flow Obligations (acre-feet) (G)	Net Recharge Accretion (acre-feet) (H)
Jan-21	0.00		0.00	7.03		0.88%	1.43	5.60
Feb-21	0.00		0.00	5.77		0.68%	1.11	4.66
Mar-21	0.00		0.00	4.78		0.67%	1.09	3.69
Apr-21	9.77	0.51	9.26	5.69	38.00%	0.60%	4.69	1.00
May-21	35.00	0.66	34.34	12.14	39.00%	0.81%	14.97	-2.83
Jun-21	35.00	1.06	33.94	19.06	40.00%	1.30%	16.11	2.94
Jul-21	35.00	1.14	33.86	22.32	40.00%	1.79%	16.91	5.41
Aug-21	35.00	1.03	33.97	24.44	40.00%	2.03%	17.30	7.14
Sep-21	35.00	0.73	34.27	26.19	42.00%	2.00%	17.95	8.24
Oct-21	26.28	0.47	25.81	26.00	39.00%	1.88%	13.30	12.70
Nov-21	0.00		0.00	20.14		1.38%	2.45	17.69
Dec-21	0.00		0.00	13.44		1.08%	1.92	11.53
Total	**211.05**	**5.60**	**205.45**	**186.99**	**-**	**-**	**109.22**	**77.77**

Notes:

(A) Total average farm headgate deliveries (FHG) to the recharge ponds based on HCU for portion of Taylor & Gill Ditch water sent to the recharge ponds.

(B) Evaporation estimated based on total recharge pond surface area when deliveries are being made. Surface area of recharge ponds are expected to be 3 acres during the 2019 irrigation season.

(C) Equals (A) - (B)

(D) Lagging calculations were based on the following parameters:

Distance from stream = 2,300 ft, Transmissivity = 160,000 gpd/ft, Specific Yield = 0.2, No-flow Boundary = 6,500 ft

(E) Surface water return flow factors are based on Taylor & Gill shares HCU quantification decreed in Case 16CW3093.

(F) Ground water return flow factors are based on Taylor & Gill shares HCU quantification decreed in Case 16CW3093. Ground water return flow factors are multiplied by the previous two years of irrigation season deliveries. 2019 irrigation season deliveries totaled 181.52 ac-ft and 2020 irrigation season deliveries totaled 143.59 ac-ft.

(G) Equals (E) + (F).

(H) Equals (D) - (G).

Table 3
Martin Marietta
Upper Poudre Combined Sites
2021 Water Balance

	Lagged Depletions			Replacements							
Month	Home Office Lagged Depletions (acre-feet)	Percent of the Month Call on River (%)	Total Lagged Depletions Requiring Replacement (ac-ft)	Recharge Credit to River (acre-feet)	Taylor & Gill Deliveries Sent Directly to River (acre-feet)	Return Flow Requirement for Deliveries Sent Directly to River (acre-feet)	Ditch Credit Directly to River (acre-feet)	35th Ave Reservoir Releases (acre-feet)	Excess Parsons Mine Recharge Accruals (acre-feet)	Water Leased from Greeley/Tri-Districts (acre-feet)	Net Impact to Poudre River (acre-feet)
	(A)	(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Jan-21	-2.50	100%	-2.50	5.60	0.00	-0.56	-0.56	0.00	0.00	0.00	2.54
Feb-21	-1.86	100%	-1.86	4.66	0.00	-0.43	-0.43	0.00	0.00	0.00	2.38
Mar-21	-1.61	100%	-1.61	3.69	0.00	-0.42	-0.42	0.00	0.00	0.00	1.65
Apr-21	-1.37	100%	-1.37	1.00	1.21	-0.84	0.37	0.00	0.00	0.00	0.00
May-21	-46.08	100%	-46.08	-2.83	81.01	-32.11	48.91	0.00	0.00	0.00	0.00
Jun-21	-55.55	100%	-55.55	2.94	89.04	-36.44	52.60	0.00	0.00	0.00	0.00
Jul-21	-58.72	100%	-58.72	5.41	90.72	-37.42	53.30	0.00	0.00	0.00	0.00
Aug-21	-32.50	100%	-32.50	7.14	44.41	-19.04	25.36	0.00	0.00	0.00	0.00
Sep-21	-19.83	100%	-19.83	8.24	22.16	-10.57	11.59	0.00	0.00	0.00	0.00
Oct-21	-14.61	100%	-14.61	12.70	5.08	-3.17	1.92	0.00	0.00	0.00	0.00
Nov-21	-11.47	100%	-11.47	17.69	0.00	-2.85	-2.85	0.00	0.00	0.00	3.37
Dec-21	-8.39	100%	-8.39	11.53	0.00	-2.23	-2.23	0.00	0.00	0.00	0.90
Total	**-254.49**	**-**	**-254.49**	**77.77**	**333.64**	**-146.07**	**187.57**	**0.00**	**0.00**	**0.00**	**10.84**

Notes:
(A) Total lagged depletions calculated in Table 1.
(B) Equals (A) multiplied by percent of the month under downstream call. Assumed to be 100% for purposes of this SWSP.
(C) Total recharge credit calculated in Table 2.
(D) Estimated deliveries of Taylor & Gill water directly to the Cache la Poudre River based on Taylor & Gill historical average farm headgate deliveries.
(E) Return flow requirements associated with Taylor & Gill water being sent directly to the river. Winter return flow requirements are subtracted from recharge credits.
(F) Total credit to the river based on deliveries of Taylor & Gill water made directly to the river. Equals (D) - (E).
(G) Replacement supply using excess City of Greeley effluent lease credits currently used under MM's Greeley 35th Avenue SWSP (WDID 0302945).
(H) Replacement supply from the exchange of excess recharge accruals associated with MM's Parsons Mine (WDID 0302583).
(I) Replacement supply leased from Greeley/Tri-Districts.
(J) Equals (B) + (C) + (F) + (G) + (H) + (I).

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
FAX: (303) 832-8106

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

Bill Ritter, Jr.
Governor

James B. Martin
Executive Director

Loretta E. Piñeda
Director

April 30, 2010

Lafarge West, Inc.
10170 Church Ranch Way, Ste. 200
Westminister, CO 800210000

RE: Mining Operations with Exposed Ground water

To Whom It May Concern:

The Division of Reclamation Mining and Safety is responsible for ensuring that Sand and Gravel mining operators comply with the requirements of the Colorado Land Reclamation Act for the Extraction of Construction Materials (Act) and the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials (Rules). Among these requirements are provisions for the protection of water resources. The Act requires that reclamation plans must ensure minimization of disturbances to the prevailing hydrologic balance, including disturbances to the quantity of water in the area affected by mining and in the surrounding areas. § 34-32.5-116(4)(h). Rule 3.1.6(1)(a) requires compliance with Colorado water laws and regulations governing injury to existing water rights both during and after mining. Permits must specify how the permittee will comply with applicable Colorado water laws and regulations governing injury to existing water right rights. Rule 6.3.3(j); Rule 6.4.5(2)(c). After an extensive review, the Division determined that several operators may not have appropriate permit conditions to address certain reclamation liabilities arising from impacts to water resources.

In September 2009 the Division of Water Resources (DWR) updated its Guidelines for Sand and Gravel Pits. These guidelines provide guidance on achieving compliance with state law regarding replacement of depletions from sand and gravel mining, thus the guidelines provide a benchmark for the protection of hydrologic balance required under the Act and Rules. As noted in the Guidelines, sand and gravel operations which expose groundwater without complying with state law create a reclamation liability by impacting available groundwater.

State law requires that any person exposing ground water must obtain a well permit from the SEO pursuant to § 37-90-137(11). Because exposed groundwater results in out-of-priority water depletions, operations which expose ground water must also eventually obtain a water-court approved augmentation plan. Currently, several operators do not have either an augmentation plan or bonding to provide an alternative method to mitigate injurious stream depletions that result from mining-related exposure of ground water. The Division has a statutory duty to ensure that lands affected by mining are reclaimed in a manner that complies with state law and to ensure that operators have sufficient bonding to achieve reclamation. In order to assist operators in achieving compliance with these requirements, the Division proposes that, by April 30, 2011, operators should contact the Division and agree upon a plan for achieving compliance.

The Division has identified four approaches for operators:

1. File a financial warranty that will ensure backfilling of the pit to cover the exposed ground water to a depth of two feet above the static ground water level or,

2. Obtain a court approved augmentation plan prior to exposing ground water or,

3. File a financial warranty to cover the cost of installing a clay liner or slurry wall that meets the Division of Water Resources requirements for preventing ground water exposure or,

4. Obtain approval from the Division of Water Resources that acknowledges compliance with the SEO's requirements pursuant to § 37-90-137(11).

The Division will work with operators on an individual basis as they move to implement one of these plans. It is likely that options 1 and 3 will require the submittal of a technical revision or an amendment to the existing permit depending on the nature of the current mining and reclamation plan and the proposed changes. Increased financial warranties, as a result of these modifications, may be posted in a phased manner not to exceed three years. Amendments or revisions currently under review will be required to be approved by April 30, 2011 and may use the phased financial warranty approach described above. New applications going forward or presently under review by the Division will be required to meet the requirements of one of the options 1-4 at the time of application approval. Failure of affected operators to initiate contact with the Division and gain compliance as described above could result in an enforcement action being issued by the Division.

If you have any questions, please contact Tony Waldron at 303-866-3567, extension 8150.

cc:

M2006064	Shields at Fossil Creek Mine	M1983031	Stromquist Pit
M1994002	Andrews S & G #5 (Burlington Pit)	M1974072	Chantala Pit
M2006018	North Bank Resources	M1985218	Rich Pit
M2006073	Sundance Sand and Gravel Resource	M1985206	Boone-Martin Pit
M2009082	Parsons Mine	M1995022	Andrews #2
M1977081	Greeley West Pit	M1990144	Boone-Fillmore Pit
M2003091	Duckworth Pit	M1997087	Hartman Pit
M2000113	Mamm Creek Sand & Gravel	M2001094	Shaw Pit
M2001090	River Valley Resource	M2002009	Beeman Pit #1
M2000016	Riverbend Operation	M1981307	Fountain Pit
M1979134	Powers Pit	M1977439	Home Office Mine
M1977036	Greeley 35th Ave Pit	M1979191	Three Bells Pit
M2000034	Reichert Pit	M1982182	Port of Entry Pit
M2001051	North Taft Hill Expansion Site	M2002081	Overland Ponds
M1974015	Lyons Pit	M1981088	McCoy Pit
M1974004	Specification Aggregates Quarry	M1982034	Miller Pit
M1987176	Hamm Pit	M1996082	Blair Mesa Pit
M1988042	Cottonwood Pit	M1980136	Chambers Pit
M1990112	State Pit	M1977098	Sievers Pit
M1979002	North Delta Pit	M1983013	Latham - Burkett Pit
M1979159	Brose Pit	M1979097	East Rigden Pit
M1998014	Gypsum Ranch Pit	M1991035	Bluestone Pit
M1999088	Kyger Pit	M1986159	Courtner Pit
M1998075	Andrews #3 (Mock Pit)		

M1974070	Nelson Pit
M2000002	Tanabe Pit
M1994045	Bluestone Pit
M1986079	M & G Pit

ADMINISTRATION PROTOCOL
Augmentation Plan Accounting
Division One – South Platte River

This protocol establishes the accounting and reporting process required to enable the division engineer's office to confirm that depletions from all out-of-priority diversions are being replaced so as to prevent injury to vested water rights. The accounting must comport with established "cradle to grave" accounting standards, which allow an audit of the information to track exactly how the data is manipulated as it is translated from raw input data to the resultant impact on the river. While this protocol is subordinate to any decreed language addressing specific accounting requirements, it generally addresses the minimum requirements of such accounting.

The accounting must use the standard convention where a depletion is "negative" and an accretion or other replacement source is "positive". The sum of the impacts will then result in either a "negative" or "positive" impact on the stream.

Wells in plans that have a negative stream impact must provide additional replacement water, curtail pumping or both until the impact is no longer negative. Plans with a negative stream impact that fail to curtail pumping will be ordered to stop pumping until such time as the projected impact of the wells is no longer negative.

1. Accounting must be submitted electronically to the water commissioner (call 970-352-8712 to obtain email address) and division engineer at Div1Accounting@state.co.us within 30 days of the end of the month for which the accounting is being submitted.
2. The accounting must provide the **contact information** including name and address for:
    a. the owner(s) of each well
    b. the person responsible for submitting the accounting
    c. the plan administrator and/or the plan attorney.
3. All **input data** must be in one location, such as an "Input" worksheet, etc. The accounting must show all pumping. Input data includes the information listed below.
    a. The required input data for each **well** is:
        i. the monthly meter reading for wells that use a **presumptive depletion factor** (PDF) to determine the associated consumptive use (CU); or
        ii. the monthly CU in acre-feet (AF) for wells that have a decree or approved SWSP that allows the wells to use a **water balance methodology** to determine the CU of the well. The analysis used to determine the CU must be included with the accounting.
        iii. Wells that are decreed as an **alternate point of diversion** (APOD) to a surface water right must report pumping on a daily basis if any of the diversion during the month is claimed as being "in priority". (See *Administration Protocol – APOD Wells* for more details.)

iv. The well meter serial readings for each meter shall be included if there is more than one meter on a well.

b. Each **recharge site** must comply with the *Administration Protocol - Recharge* and must report the:

i. daily volume in AF diverted into the site;

ii. monthly volume in AF released from the site;

iii. monthly net evaporative loss in AF;

iv. volume of water in AF remaining at the end of the month.

c. The accounting must identify each source of **fully consumable replacement water** actually delivered to the location impacted by the depletions. To demonstrate the water was actually delivered to the required location will require the following information:

i. the originating source of the water, date released and volume of water released;

ii. transportation losses to point of diversion or use, if any, using stream loss factors approved by the water commissioner;

iii. the volume of water actually delivered on a daily basis past any surface water diversion that was sweeping the river as corroborated by the water commissioner.

(See *Administration Protocol – Delivery of Water* for more details on delivering water.)

d. For each source of **replacement water that has been "changed"** for use as a source of augmentation, such as changed reservoir shares, ditch bypass credits or credits from dry-up, etc., the following input information must be reported:

i. the basis and volume of the return flow obligation;

ii. the location the changed water was historically used; this will be the location used to determine the timing of the return flow impact on the river.

4. The accounting must include a monthly **projection** of the plan's operation at least through March 31 of the next calendar year.

5. The accounting must include all input and output files associated with **modeling the delayed impact** of diversions. The output from the modeling must report to a summary table that shows, by month, the ongoing depletions associated with pumping, return flow obligations, etc. and accretions from recharge operations.

6. A **net impact** summary must show the out-of-priority depletions, accretions from each recharge site, volume of replacement water actually delivered to the location of the depletions and the resultant net impact on **a daily basis**. If necessary, the net impact must be done by river reach.

   While **modeling** may use a **monthly step function** to determine the depletions from pumping and accretions from recharge, the monthly result must then be **divided by the number of days in the month** in order to **simulate a daily impact**, as water rights are administered on a daily and not monthly basis.

Replacement water must be provided such that the **daily net impact** (using the simulated daily numbers from the modeling) **is not negative**. If a well is out-of-priority for 15 days during a month, replacement must be made only for the 15 days the well is out-of-priority. The replacement must be made, however, on a daily basis as opposed to, for instance, making an aggregated release equal to the volume of the out-of-priority depletions. Likewise, the simulated daily accretion will only count toward replacing the depletion on the days the well is out-of-priority. The accretions that report to the river when the well is in priority cannot be used to replace the out-of-priority depletions.

The **accretions that impact the river when the well is in priority** are not considered "excess" unless the cumulative net impact of the well is not negative for the entire irrigation year to date. (The irrigation year for this purpose is April 1 thru the following March 31.) Until such time as the cumulative net impact is not negative, the accretions must simply be released to the river and cannot be leased to other plans or recaptured. Plans that show a positive cumulative net impact are still required to make replacements on a daily basis; the cumulative analysis only effects whether or not accretions reporting to the river when the well is in priority are considered "excess" and are, therefore, able to be recaptured.

7. The basis for determining that the depletions are **out-of-priority** must be clearly established and all steps in the calculation included in the accounting. The analysis may be done, unless otherwise limited by decree, for each well or groups of wells, provided the most junior water right associated with the group of wells is used as the reference water right for the group's out-of-priority status.

8. Accounting must include **actual information** for the irrigation year through the month for which the accounting is being submitted **AND projections** of the plan operation through March 31 of the next calendar year.

9. The following **naming convention** must be used for all files submitted pursuant to item 1:

   "Plan**WDID**_YYMMDD"

   where: PlanWDID is the WDID assigned by the division engineer's office
   YYMMDD corresponds to the date the accounting is submitted.

   As an example, the assigned WDID for the former GASP plan was 0103333. If accounting using Excel® was submitted for that plan on May 15, 2004, the file name would be:

   "0103333_040515.xls"

   The name of the file must be in the subject line of the email.

10. All accounting must be reported using the **WDID** for the structure, at a minimum. Other information such as well name, permit number, etc. may also be included as desired. <u>All wells must be decreed by the water court, permitted by the state engineer or included in a decreed plan for augmentation</u>. Unregistered and undecreed wells cannot, in the opinion of the division engineer, be effectively administered because of the need to know the location, allowable diversion rate and use of the well - information that is only available from the decree or permitting process.

11. If a well is covered in multiple SWSP's or augmentation plans, the monthly meter readings must be the same in the accounting for each plan covering the subject well. The accounting for every plan covering the well shall state the proportionate pumping amount covered by each plan to assure all out-of-priority depletions are replaced.

12. The following additional accounting is required for sources of replacement water used for more than one plan. The water right owner of the replacement water is responsible for accounting for the total replacement amount and how much each plan is using of that total amount. The accounting for portions of the replacement water by other users must match the accounting of the water right owner. The amount of replacement water used by the water right owner and other users together shall not exceed the total replacement amount available.

    (See *Administration Protocol – Use Of Unnamed Sources For Replacement* for additional requirements concerning required notice and approval of sources of replacement not specifically described in a SWSP or augmentation plan*)*

ADMINISTRATION PROTOCOL
Dry-Up of Irrigated Land
Division One – South Platte River

As required by either a decreed change of water rights or a substitute water supply plan, a source of irrigation water may be either permanently or temporarily removed from a parcel of land in order to make the historical consumptive use portion of that water supply available for other uses, typically augmentation. This protocol addresses the documentation required to administer the effective "dry-up". To the extent that one or more of the following directives are in direct contradiction with a decree of the court, the terms of the decree must be followed.

Permanent Dry-up Covenant

1. Must be decreed by the court.
2. Must be filed with clerk and recorder's office for the county wherein the land is located.
3. Must email a GIS shapefile to Div1Accounting@state.co.us that includes case number, WDID, and total acreage permanently dried-up, along with any accompanying metadata. The shapefile must be in NAD83 datum, UTM projection, Zone 13North.
4. Must address the issue of noxious weeds as required by §37-92-305(4.5)(a), C.R.S. and/or other county or local ordinances. (DWR is not authorized to administer the issue of noxious weeds; this statement is, therefore, simply informational).

Temporary Dry-up Agreement

1. May be made for a term that is not less than one irrigation season.
2. Unless otherwise stated in the approved SWSP, a written notification, reporting land of intended dry-up, must be submitted prior to April 1 of each irrigation season to the division engineer, water commissioner and Div1Accounting@state.co.us. Along with the written notification, a GIS shapefile reflecting the land of intended dry-up must be submitted. The shapefile must be emailed to Div1Accounting@state.co.us. The shapefile shall include case number, WDID, and acreage of dry-up, along with any accompanying metadata. The shapefile must be in NAD83 datum, UTM projection, Zone 13North.
3. Unless otherwise stated in the approved SWSP, a written affidavit, affirming land actually dried up, must be submitted prior to October 31 of each irrigation season to the division engineer, water commissioner and Div1Accounting@state.co.us. Along with the written affidavit, a GIS shapefile, reflecting the dried up acreage proclaimed in the affidavit, must be submitted. If the submitted affidavit indicates that the intended and actual dry-up acreages are identical, then no GIS shapefile is required. The shapefile must be emailed to Div1Accounting@state.co.us. The shapefile shall include case number, WDID, and acreage of dry-up, along with any accompanying metadata. The shapefile must be in NAD83 datum, UTM projection, Zone 13North.
4. Once written notice has been made to the division engineer and/or water commissioner, the dry-up requirement is irrevocable during the current irrigation season regardless of whether or not the water associated with the historical consumptive use is actually used.