COLORADO
Division of Water Resources
Department of Natural Resources

January 17, 2025

Ms. Lauren Tiedemann Loob, 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, 2025 through December 31, 2025
Contact information for Ms. Tiedemann Loob: 303-806-8952; ltiedemann@bbawater.com

Dear Ms. Tiedemann Loob:

We have received your letter dated November 1, 2024 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. 2016CW3093, 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. 10039213).

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).

Mining of the northeastern portion of the Home Office Pit site concluded in September 2022 and mining has transitioned to an area directly west of the Currie Pit, denoted on the attached Figure 1. The compacted clay liner around the northeast portion of the site has been completed and approved by the State Engineer's Office (Home Office Phase I Reservoir, a portion of North Shores Reservoir, WDID 0303350). 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 under this SWSP 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).

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, and lagged depletions from past mining activities at the site.

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 areas without specific mention of its location. Therefore, the State Engineer's Office allowed the pre-81 areas 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 areas. Of the 100 total acres recognized as being pre-81 areas, 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 12-acre portion of the 30.9-acre pond has been backfilled. Therefore, a total of 49.6 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 25.52 acres of groundwater exposed at the Home Office Pit after December 31, 1980, will be exposed at the site during this plan period, consisting of 25.4 acres in the Currie Pit and 0.12 acres in a dewatering trench (5 ft wide × 1,000 ft long) along the southwest corner of the Currie Pit mining area. Evaporative depletions were calculated using a gross annual evaporation of 38 inches, with a credit of 10.44 inches for effective precipitation based on an average annual precipitation of 14.92 inches for the Fort Collins weather station (053005) obtained from the Western Regional Climate Center for the period of 1893-2022. Based on the published data available at http://ccc.atmos.colostate.edu/, the average annual precipitation over this time period is actually 14.93 inches. The value of 14.92 inches is less than the most recent ten-year average annual precipitation (15.80 inches) and will therefore be accepted for the purposes of this SWSP, but should be corrected in any renewal request and extended through the most recent year precipitation data is available for. 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 58.60 acre-feet for this plan period, as shown on the attached Table 1.

Dust Control

Water for dust control purposes at the site will be pumped from the Currie Pit. You have estimated that a total of 22.02 acre-feet of water will be pumped from the Currie Pit for dust control purposes during this plan period. 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 260,000 tons of aggregate will be mined from the Home Office Pit during this plan period. Of this amount, 130,000 tons of aggregate is anticipated to be crushed (not washed) and 130,000 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 5.74 acre-feet.

Dewatering

The Currie Pit was temporarily dewatered between January and April of 2021. After dewatering ceased, the pit was refilled with water pumped into the pit during free river conditions, thereby eliminating depletions associated with the "first fill" of the pit. Lagged depletions associated with the temporary dewatering of the Currie Pit ceased in 2024 and are no longer included in the lagged depletions to be replaced under this SWSP.

The mined area of the Home Office Pit will be continuously dewatered throughout this plan period. All water pumped for dewatering purposes will be delivered to the unlined Currie Pit. As long as the site is continuously dewatered at a relatively constant rate, the water returned to the stream system is expected to be adequate to offset the depletions attributable to dewatering operations.

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 (former mining areas)	1,675	4,675	160,000	0.2
Home Office Pit (Currie Pit and current mining area)	1,000	6,500	160,000	0.2

Total Depletions

Consumptive use from the Currie Pit and adjacent mined portion of the Home Office Pit will total 86.35 acre-feet during this plan period, consisting of evaporation from the pit surface, water pumped for dust control, and water lost with the mined material. Lagged depletions from past and projected consumptive use at the Currie Pit and adjacent mined portion of the Home Office Pit will total 86.79 acre-feet during this plan period. There will be no consumptive use from the other areas of the Home Office Pit during this plan period and there are no lagged depletions from past consumptive use at other areas of the Home Office Pit remaining.

Replacements

Replacements for this plan will come from credits associated with 14.175 shares in the Taylor & Gill Ditch owned by MMM, either directly or after storage; 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

MMM previously 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. 2016CW3093. Under this SWSP, a portion of the water associated with MMM's 14.175 shares will be delivered directly to the river for immediate credit and a portion will be delivered to storage in the lined portion of the site known as North Shores Reservoir and released to replace depletions and return flow obligations during the non-irrigation season.

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. 2016CW3093. The 19.3 shares were part of 20.35 shares historically used for the irrigation of 347 acres. Of the 19.3 shares, MMM owned 14.175 shares and Mr. Seaworth owned 5.125 shares. Of Mr. Seaworth's 5.125 shares, 1.125 shares

were to continue to be used for the irrigation of 19.19 acres. The remaining 18.175 shares (14.175 shares owned by MMM and 4.0 shares owned by Mr. Seaworth and changed in case no. 2016CW3093) were attributed to 309.91 acres of the historically irrigated 347 acres. The entire 309.91 acres were found in case no. 2016CW3093 to have been dried up by development and by sand and gravel operations. For each acre of dry-up, MMM was found to be entitled to 77.99% (14.175 shares/18.175 shares) of the dry-up credit. MMM may therefore take credit for the dry-up of 241.7 of the 309.91 acres.

In case no. 2016CW3093, the average annual farm headgate delivery for the 19.3 shares was found to be 1018.1 acre-feet, and the average annual consumptive use of the 19.3 shares was found to be 456.9 acre-feet. Therefore the 14.175 shares to be used in this SWSP will yield 747.75 acre-feet of total farm headgate delivery (1018.1 acre-feet × 14.175 shares/19.3 shares) and 335.57 acre-feet of consumptive use (456.9 acre-feet × 14.175 shares/19.3 shares) available for replacement of out-of-priority depletions under this SWSP. The diversion season for delivery of the shares was found to be April 20 through October 31.

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. 2016CW3093. 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 average of the previous two years of irrigation season total deliveries (April through October) by its respective monthly factor (shown in Table 2, column F). As shown, there are no return flow obligations to be replaced during this SWSP plan period.

MMM plans to deliver 376.16 acre-feet of farm headgate delivery associated with the Taylor & Gill Ditch shares directly to the Cache la Poudre River for replacement purposes. 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 166.98 acre-feet, the Taylor & Gill Ditch shares delivered directly to the Cache la Poudre River are projected to generate a total of 209.18 acre-feet of water for replacement of depletions associated with the Home Office Pit site during the irrigation season of April through October.

MMM plans to deliver the remaining 371.58 acre-feet of farm headgate delivery associated with the Taylor & Gill Ditch shares to storage in the North Shores Reservoir (WDID 0303350). All deliveries to storage will be measured and reported in the accounting for this SWSP. Deliveries to storage will incur return flow obligations of 158.66 acre-feet, which will be replaced by deliveries directly to the river during the irrigation season and releases from storage during the non-irrigation season. Of the 371.58 acre-feet projected to be delivered to storage, 35.68 acre-feet are anticipated to be released during the months of January through March, and November and December 2025 to replace depletions associated with the Home Office Pit site. Water released from storage will be delivered to the Cache la Poudre River at a point within the Home Office Pit site, as shown on the attached Figure 1.

Under previous SWSPs, a portion of MMM's Taylor & Gill Ditch shares were delivered to recharge in the Upper Poudre Recharge Ponds located within the Home Office Pit site. Although no water is proposed to be delivered to recharge during this plan period, lagged accretions from past deliveries to recharge will continue to accrue to the river and are proposed to be used for replacement purposes under this SWSP. Lagged recharge accretions to the river were calculated 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. According to the submitted accounting for this site, the net amount of water delivered to recharge during the irrigation season was 108.90 acre-feet in 2018, 174.68 acre-

feet in 2019, 137.41 acre-feet in 2020, 167.90 acre-feet in 2021, and 221.81 acre-feet in 2022. Lagged recharge accretions from past deliveries were calculated to total 0.59 acre-feet of replacement water during this plan period with no return flow obligations as shown in Table 2, column H.

A monthly breakdown of the projected stream depletions from the mining site as well as the net recharge credit, direct deliveries, storage deliveries and releases, and return flow obligations for 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, if needed. 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 Permit No. 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 Whitney Ditch Recharge

MMM also 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 historical 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, if needed.

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. 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 from the delivery of Whitney Ditch water to recharge under the Parsons Mine SWSP for replacement purposes 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 generated under the Parsons Mine SWSP to ensure out-of-priority depletions are adequately replaced to prevent injury to other water rights. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the water commissioner or division engineer. Water from these sources is not anticipated to be needed for replacement purposes during this plan period.

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.

Water shall not be impounded in the reservoirs except pursuant to lawful diversions allowed by statute or decree. At all other times, all inflow of water into the reservoir from any source, including precipitation and groundwater inflows, shall be removed by the Applicant. The water may be removed from within the lined area and returned to the stream system without need for replacement, so long as the operator does not put the water to beneficial use.

MMM has constructed two lined cells under the North Shores Reservoir. The Home Office Phase 1 Reservoir was lined with a compacted clay liner. The liner was approved in a letter dated April 6, 2021 as meeting the design standard, and the Home Office Phase I Reservoir is now classified as a lined reservoir. The Home Office Phase II Reservoir was lined with a compacted clay liner. The liner was approved in a letter dated May 8, 2023 as meeting the design standard, and the Home Office Phase II Reservoir is now classified as a lined reservoir.

The property which includes the Taft Hill Reservoir was sold to a neighboring landowner.

In accordance with approach nos. 1 and 3, the Applicant has obtained a bond for $4,894,870 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, 2025 through December 31, 2025 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, 2025**. 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 25.52 acres, which results in a maximum annual evaporative loss of 58.61 acre-feet.

4. Total depletions requiring replacement at the Home Office Pit during this plan period shall not exceed 86.79 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. Diversions of the Taylor & Gill Ditch shares changed in this SWSP are limited to the period of April 20 through October 31 and only when the ditch is delivering irrigation water to other shareholders.

7. 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 not spilling into the Cache la Poudre River.**

8. 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.

9. Replacement of lagged depletions, including those lagged depletions that occur to the stream after the expiration date of this SWSP, must continue until there is no longer an effect on stream flow.

10. 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.

11. The Applicant shall provide daily accounting (including, but not limited to diversions, depletions, replacement sources, and river calls) on a monthly basis. The accounting must be uploaded to the CDSS Online Reporting Tool within 30 days of the end of the month for which the accounting applies (https://dwr.state.co.us/Tools/reporting). Instructions for using the tool are available on the Division of Water Resources website on the "Services" → "Data & Information" page under the heading of Online Data Submittal. Accounting and reporting procedures are subject to approval and modification by the division engineer. Accounting forms need to identify the WDID number for each structure operating under this SWSP. Additional information regarding accounting requirements can be found in the attached Augmentation Plan Accounting Protocol. **NOTE:** Monthly accounting, even during the winter non-irrigation season, is required.

12. All water pumped for dust control purposes, dewatering, deliveries of water to storage and deliveries of replacement water shall be measured in a manner acceptable to the division engineer. The Applicant shall install and maintain measuring devices as required by the division engineer for operation of this SWSP. **A staff gage must be installed in North Shores Reservoir and reservoir accounting submitted for the structure (WDID 0303350).**

13. The decree entered in case no. 2016CW3093 found that the Seaworths demonstrated dry-up of the total historically irrigated acreage of 309.91 acres, therefore annual dry-up reporting is not required for this SWSP. In addition, the quantification of the historical consumptive use of 19.3 shares in the Taylor & Gill Ditch performed in support of the decree entered in case no. 2016CW3093 took into consideration areas that may have been sub-irrigated, and the resulting consumptive use and return flow factors relied upon in this SWSP account for sub-irrigation on the acres historically irrigated by the subject shares, therefore monitoring of depth to groundwater is not required for this SWSP.

14. 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 Shores Reservoir) was decreed in case no. 1992CW0157. 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).

15. Dewatering at this site will produce delayed depletions to the stream system. As long as the pit is continuously dewatered at a relatively constant rate, the water returned to the stream system should be adequate to offset the depletions attributable to the dewatering operation. <u>Dewatering operations must be measured by totalizing flow</u>

meters that can accurately show the monthly volume of dewatered water that is pumped and returns to the stream. If dewatering at the site ceases, or is significantly reduced, the monthly meter readings will be used to determine post pumping depletions that must be replaced. At least three years prior to completion of dewatering, a plan must be submitted that specifies how the post pumping dewatering depletions (including refilling of the pit) will be replaced, in time, place and amount. Should it be determined by the water commissioner or division engineer that dewatering water is being diverted for any purpose by the operator and accounting is not adequate to show that 100 percent of the dewatering water is returned back to the South Platte River, the Applicant will need to account for any lagged dewatering depletions at the site. In addition, if it is determined by the water commissioner or division engineer that the pit is not continuously dewatered at a relatively constant rate, the Applicant must track depletions and dewatering return flows in their accounting and replace any dewatering depletions that are not offset by dewatering return flows.

16. 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 $4,894,870 through the DRMS to cover the cost of lining the Home Office Pit site.

17. The state engineer may revoke this SWSP or add additional restrictions to its operation if at any time the state engineer determines that injury to other vested water rights has 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.

18. In accordance with amendments to section 25-8-202(7), C.R.S., and Senate Bill 89-181 Rules and Regulations adopted on February 4, 1992, the state engineer shall determine whether the substitute supply is of a quality to meet requirements of use

of senior appropriators. As such, water quality data or analysis may be requested at any time to determine if the water quality is appropriate for downstream water users.

19. The decision of the state engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in any 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 Kate Fuller in Denver at (303) 866-3581 ext. 8245 or Michael Hein in Greeley at (970) 352-8712.

Sincerely,

Joanna Williams, P.E.
Chief of Water Supply

Attachments: Figure 1
Figure 2
Tables 1–3
April 30, 2010 letter from DRMS
Augmentation Plan Accounting Protocol

Ec: Michael Hein, Lead Assistant Division Engineer, Michael.Hein@state.co.us
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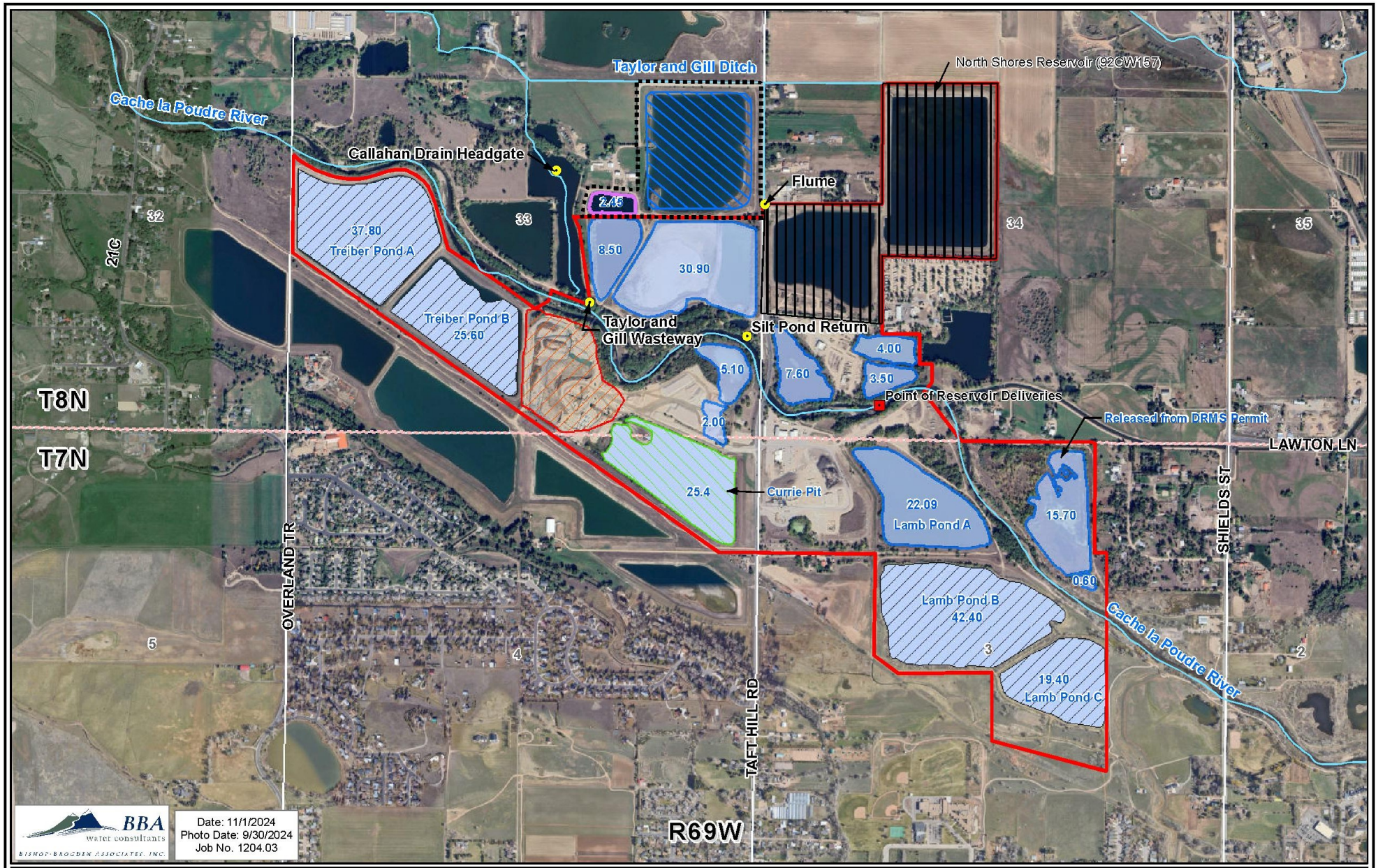
Amy Eschberger, Division of Reclamation Mining and Safety



Legend

- Point of Reservoir Deliveries
- Stream / Ditch
- Considered Pre-1981 by DWR
- Exposed surface area (acres)
- Lined
- Exposed Surface Area Augmented Under 16CW3093
- Evap. Augmented by
- Evap. Augmented by Tri-Districts
- Mining Area
- North Taft Hill (approx.)
- Home Office Mining
- North Shores Reservoir (92CW157)

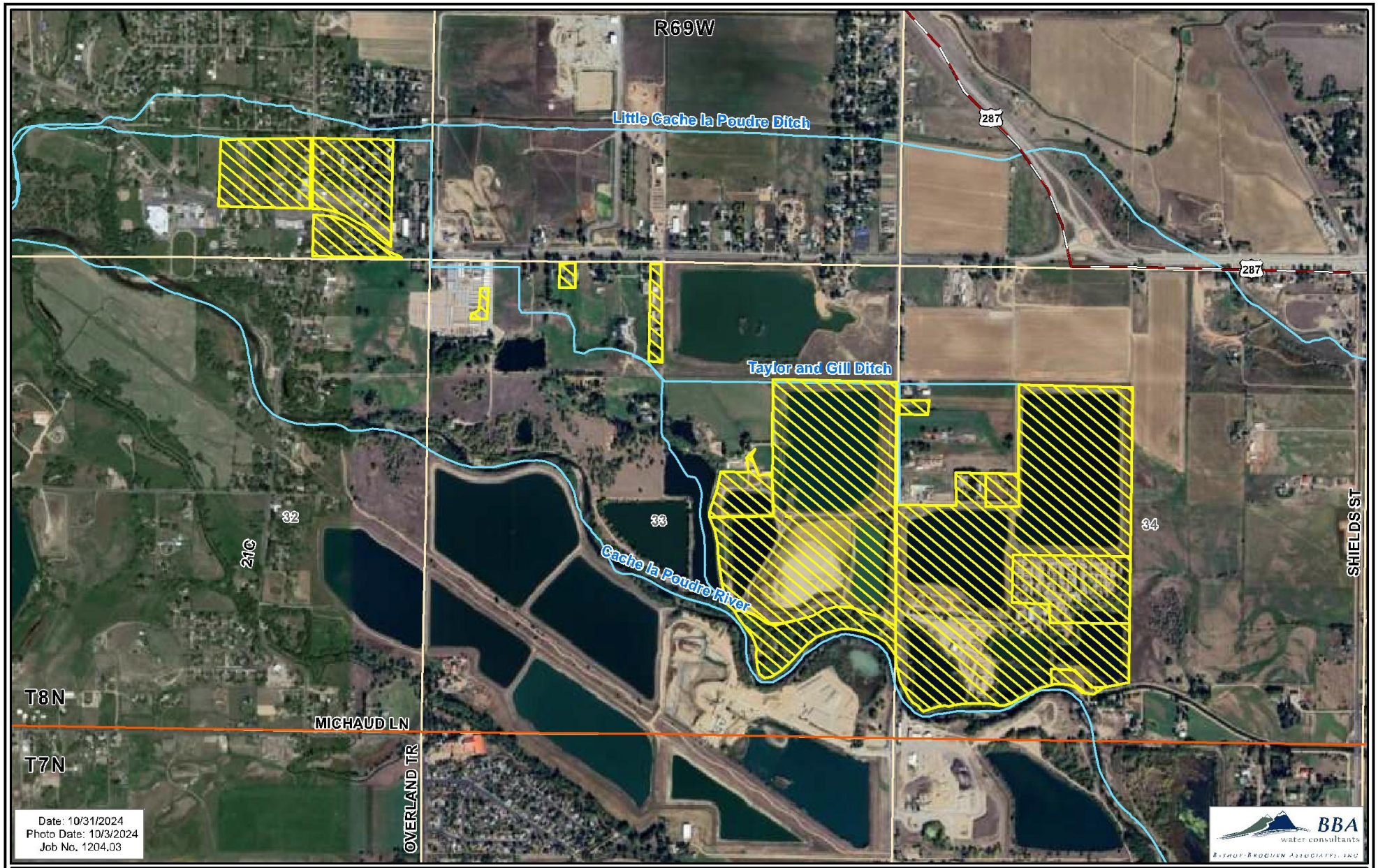
Figure 1
Martin Marietta
Upper Poudre Combined
Mining Area Map

N
W E
S

1 inch = 1,500 feet

0 750 1,500 Feet

Overview Map



Legend

- Stream/Ditch
- MM Proposed Dry-Up Area

Figure 2
Martin Marieta
Upper Poudre Combined Site
Historically Irrigated Areas & 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	Gross Lake Evaporation (ft)	Precipitation (in)	Effective Precipitation (ft)	Net Evaporation (acre-ft/acre)	Net Exposed Water Surface (acre)	Total Evaporation (acre-feet)	Crushed Aggregate (tons)	Washed Aggregate (tons)	Water Retained in Product (acre-feet)	Water Used for Dust Control (acre-feet)	Consumptive Use from Currie Pond (acre-feet)	Consumptive Use from Mining Area (acre-feet)	Depletions from Currie Pond (acre-feet)	Depletions from Mining Area (acre-feet)	Lagged Depletions (acre-feet)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)
Jan-25	3.0%	0.10	0.37	0.02	0.07	25.52	1.87	10,000	10,000	0.44	0.46	2.78	0.00	3.99	0.00	3.99
Feb-25	3.5%	0.11	0.50	0.03	0.08	25.52	2.09	10,000	10,000	0.44	0.54	3.07	0.00	3.87	0.00	3.87
Mar-25	5.5%	0.17	1.17	0.07	0.11	25.52	2.70	11,000	11,000	0.49	1.23	4.41	0.00	4.45	0.00	4.45
Apr-25	9.0%	0.29	1.91	0.11	0.17	25.52	4.43	11,000	11,000	0.49	1.69	6.60	0.00	5.75	0.00	5.75
May-25	12.0%	0.38	2.74	0.16	0.22	25.52	5.62	11,000	11,000	0.49	1.69	7.79	0.00	6.85	0.00	6.85
Jun-25	14.5%	0.46	1.75	0.10	0.36	25.52	9.11	11,000	11,000	0.49	4.60	14.20	0.00	10.68	0.00	10.68
Jul-25	15.0%	0.48	1.61	0.09	0.38	25.52	9.72	11,000	11,000	0.49	4.60	14.81	0.00	12.65	0.00	12.65
Aug-25	13.5%	0.43	1.36	0.08	0.35	25.52	8.89	11,000	11,000	0.49	1.69	11.06	0.00	11.26	0.00	11.26
Sep-25	10.0%	0.32	1.32	0.08	0.24	25.52	6.11	11,000	11,000	0.49	1.69	8.28	0.00	9.25	0.00	9.25
Oct-25	7.0%	0.22	1.11	0.06	0.16	25.52	4.00	11,000	11,000	0.49	1.69	6.18	0.00	7.52	0.00	7.52
Nov-25	4.0%	0.13	0.60	0.03	0.09	25.52	2.34	11,000	11,000	0.49	1.69	4.51	0.00	6.04	0.00	6.04
Dec-25	3.0%	0.10	0.48	0.03	0.07	25.52	1.72	11,000	11,000	0.49	0.46	2.66	0.00	4.48	0.00	4.48
2025 Total	**100%**	**3.17**	**14.92**	**0.87**	**2.30**	-	**58.60**	**130,000**	**130,000**	**5.74**	**22.02**	**86.35**	**0.00**	**86.79**	**0.00**	**86.79**

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 1893-2022, 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 as specified by Martin Marietta.
(L) Total consumptive use from Currie Pond consists of evaporation from the 25.52 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) 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-25	0.00	0.00	0.00	0.12		0.88%	0.00	0.12
Feb-25	0.00	0.00	0.00	0.10		0.68%	0.00	0.10
Mar-25	0.00	0.00	0.00	0.08		0.67%	0.00	0.08
Apr-25	0.00	0.00	0.00	0.06	38.00%	0.60%	0.00	0.06
May-25	0.00	0.00	0.00	0.05	39.00%	0.81%	0.00	0.05
Jun-25	0.00	0.00	0.00	0.04	40.00%	1.30%	0.00	0.04
Jul-25	0.00	0.00	0.00	0.03	40.00%	1.79%	0.00	0.03
Aug-25	0.00	0.00	0.00	0.03	40.00%	2.03%	0.00	0.03
Sep-25	0.00	0.00	0.00	0.03	42.00%	2.00%	0.00	0.03
Oct-25	0.00	0.00	0.00	0.02	39.00%	1.88%	0.00	0.02
Nov-25	0.00	0.00	0.00	0.02		1.38%	0.00	0.02
Dec-25	0.00	0.00	0.00	0.02		1.08%	0.00	0.02
2025 Total	**0.00**	**0.00**	**0.00**	**0.59**	-	-	**0.00**	**0.59**

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. A clay liner was installed in November 2022 and there is no longer a recharge pond at the site.

(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. 2021 irrigation season deliveries totaled 175.6 ac-ft and 2022 irrigation season deliveries totaled 229.5 ac-ft.
(G) Equals (E) + (F).
(H) Equals (D) - (G).

Table 3
Martin Marietta
Upper Poudre Combined Sites
2024 Water Balance

	Lagged Depletions			Replacements									
Month	Home Office Lagged Depletions (acre-feet)	Percent of the Month Call on River (%)	Total Lagged Depletions Requiring Replacement (acre-feet)	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)	Ditch Credit Directly to Storage in North Shores Reservoir (acre-	Return Flow Requirement for Deliveries Sent to Storage (acre-feet)	Releases from North Shores Reservoir for Replacement (acre-feet)	35th Ave Reservoir Releases (acre-feet)	Excess Parsons Mine Recharge Accruals (acre-feet)	Net Impact to Poudre River (acre-feet)
	(A)	(B)		(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
Jan-25	-3.99	100%	-3.99	0.12	0.00	-0.70	-0.70	0.00	-0.09	4.66	0.00	0.00	0.00
Feb-25	-3.87	100%	-3.87	0.10	0.00	-0.54	-0.54	0.00	-0.07	4.39	0.00	0.00	0.00
Mar-25	-4.45	100%	-4.45	0.08	0.00	-0.53	-0.53	0.00	-0.07	4.98	0.00	0.00	0.00
Apr-25	-5.75	100%	-5.75	0.06	10.41	-4.43	5.98	0.58	-0.29	0.00	0.00	0.00	0.00
May-25	-6.85	100%	-6.85	0.05	56.17	-22.55	33.62	68.57	-26.83	0.00	0.00	0.00	0.00
Jun-25	-10.68	100%	-10.68	0.04	75.24	-31.13	44.11	83.34	-33.48	0.00	0.00	0.00	0.00
Jul-25	-12.65	100%	-12.65	0.03	80.28	-33.53	46.75	84.86	-34.14	0.00	0.00	0.00	0.00
Aug-25	-11.26	100%	-11.26	0.03	70.40	-29.77	40.63	72.94	-29.40	0.00	0.00	0.00	0.00
Sep-25	-9.25	100%	-9.25	0.03	58.73	-26.26	32.48	54.84	-23.25	0.00	0.00	0.00	0.00
Oct-25	-7.52	100%	-7.52	0.02	24.92	-11.21	13.71	6.45	-6.21	0.00	0.00	0.00	0.00
Nov-25	-6.04	100%	-6.04	0.02	0.00	-3.55	-3.55	0.00	-2.71	12.28	0.00	0.00	0.00
Dec-25	-4.48	100%	-4.48	0.02	0.00	-2.78	-2.78	0.00	-2.12	9.37	0.00	0.00	0.00
2025 Total	**-86.79**	-	**-86.79**	**0.59**	**376.16**	**-166.98**	**209.18**	**371.58**	**-158.66**	**35.68**	**0.00**	**0.00**	**0.00**

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) 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) Deliveries of Taylor & Gill water directly to storage in North Shores Reservoir based on Taylor & Gill historical average farm headgate deliveries.
(H) Return flow requirements associated with Taylor & Gill water being sent directly to the river. Winter return flow requirements are subtracted from recharge credits.
(I) Releases made from North Shores reservoir to the river for replacement.
(J) Replacement supply using excess City of Greeley effluent lease credits currently used under MM's Greeley 35th Avenue SWSP (WDID 0302945).
(K) Replacement supply from the exchange of excess recharge accruals associated with MM's Parsons Mine (WDID 0302583).
(L) Equals (B) + (C) + (F) + (H) + (I) + (J) + (K).

April 30, 2010

Permittee Address

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: Permit Id Site Name

COLORADO
Division of Water Resources
Department of Natural Resources

Augmentation Plan Accounting Protocol
June 2022

Accounting is an administrative tool to confirm water use is in accordance with a decree or other approval including that any required replacement is made to the stream system at the correct time, location, and amount. This guideline is subordinate to any decree language or Division Engineer specific accounting requirements. It describes basic augmentation plan accounting scenarios. Accounting for more complex scenarios can build on the fundamentals described herein.

Contents

1. Background and definitions

A thorough description of augmentation plans for well pumping is available in the Beginners Guide to Augmentation Plans for Wells. The following terms are used in this document:

- **Diversions** are withdrawals from a well, stream, or pond/reservoir.
- **Depletions** are the volume of reduced streamflow caused by a diversion. Lagged depletions are those that occur at a later time than when water is diverted by well pumping or groundwater pond evaporation due to the timing of water movement through the subsurface between the well/groundwater pond and the stream.
- **Hydrobase** is DWR's database of water information.
- **Colorado's Decision Support Systems ("CDSS")** is a State of Colorado website (https://cdss.colorado.gov/) providing access to water data and tools.
- **Replacement water** is a volume of water provided to the stream system to replace depletions and satisfy the unmet needs of senior water rights. Replacement water is typically provided from a reservoir release or another source that has been contracted for the purpose of replacing depletions. Replacement water may also be provided in the form of historic consumptive use ("HCU") credits derived from a change of water right where the use of a water right was changed to augmentation.
- **Transit loss** is the diminishment of the amount of water in a stream as water travels from upstream to the downstream location.
- **Priority Admin Number** indicates the seniority of a water right; equal to the number of days between a water right's priority date and the earliest decreed priority, December 31, 1849. For example, the Priority Admin Number for a water right with a priority date of May 5, 1950 is 36650.00000. The lower the Priority Admin Number, the more senior the water right. The five digits to the right of the period are used when the postponement doctrine applies to a water right due to a delay in decreeing the water right in the court (read more about this in the Administrative Call Standard, Appendix A).
- **Administrative Call** is a term that indicates there are unfulfilled downstream water rights "calling" for curtailment of upstream junior water rights to fulfill their need. In accounting, when the downstream Administrative Call is from a senior water right (with a lower Priority Admin Number), diversions/depletions are out-of-priority and replacement water must be provided.
- **Balance** is the amount of replacement water minus the depletions and obligations, not considering the Administrative Call. The balance may be negative when the diversions resulting in the depletions are in priority.
- **Net Effect** is the amount of replacement water minus the depletions and obligations, considering the Administrative Call. When the net effect is zero or positive, it shows that the Augmentation Plan prevented injury by replacing all out-of-priority diversions/depletions.

2. Methods to submit accounting

a. Accounting and Reporting Uploader (preferred)

The preferred method to submit accounting is through the use of the CDSS Accounting and Reporting Uploader tool. To set up an online account, call or email the Division contacts for the appropriate Water Division as shown in Table 1. Additional information is available on DWR's website under Data and Information/Online Data Submittal.

b. Email

Submit via email to the Water Commissioner and the Division Accounting email shown in Table 1. File names for accounting sheets should include the 7 digit Augmentation Plan WDID assigned by the Division Engineer's office.

3. Timing of accounting submittal

Accounting must be submitted as specified by your decree, DWR administrative approval (SWSP, Replacement Plan, etc.), or as requested by the Division Engineer or designated representative(s). If timing is not specified, submit accounting with the timing shown in Table 1.[1]

Table 1. Accounting Submittal Emails and Phone Number by Division

Division	Accounting Question & Submittal Email	Contact Phone Number	Standard Submittal Timing
1 - South Platte	Div1Accounting@state.co.us	970-352-8712	30 days after the end of the reporting month
2 - Arkansas	water.reporting@state.co.us	719-542-3368	10 days after the end of the reporting month*
3 - Rio Grande	Michelle.Lanzoni@state.co.us	719-589-6683	10 days after the end of the reporting month
4 - Gunnison	gregory.powers@state.co.us	970-249-6622	10 days after the end of the reporting month
5 - Colorado	dnr_div5acct@state.co.us	970-945-5665	10 days after the end of the reporting month
6 - Yampa/White	brian.romig@state.co.us	970-846-0036	10 days after the end of the reporting month unless approved for annual submission (by November 15)
7 - San Juan/ Dolores	dnr_div7acct@state.co.us	970-247-1845	10 days after the end of the reporting month**
Designated Ground Water Basins	chris.grimes@state.co.us	303-866-3851 ext. 8253	Annually by February 15 for the prior year

*for approvals deemed critical for administration; all others (including simple subdivisions) bi-annual readings before and after the irrigation season

**for approvals deemed critical for administration; annual submittals for others

[1] For proper administration, Water Commissioners may request regular and direct submission of water data in addition to accounting submittals described herein.

4. Overall organization of accounting spreadsheet and required information per tab

a. Overall organization

The following are typical spreadsheet tab names in accounting. See the example and screenshots section for an overview of what this might look like:

i. Contact/Plan Information tab
ii. Input tab(s)
iii. Depletions & Obligations tab
iv. Replacement tab
v. Summary tab
vi. DWR tab
vii. DWR Meters tab
viii. Version/Notes tab

Fewer or additional tabs as necessary for more simple or complex accounting, subject to approval by the Division Engineer

b. Contact/Plan Information Tab

The accounting must provide the contact information including name and email address for:

i. The party(s) responsible for submitting the accounting
ii. The plan administrator and/or the plan attorney
iii. Water court case number (format of YYCWXXXX), SWSP name and 4-digit Plan ID, or Ground Water Commission Order represented in the accounting.
iv. The 7-digit overall WDID(s) associated with the augmentation plan (not the individual structure WDIDs).[2]

c. Input Tab(s)

When possible, all cells showing diversion of water (well pumping and stream diversions) should be located on one or multiple input tabs as shown below. Cells with regular input, such as meter readings and reservoir releases, should be shaded a specifically identified color to distinguish them from cells that use formulas to convert or summarize the input.

Depending on the specific operation, the following may be included on Input tabs:

i. Estimated water use or evaporation:

When meters or measurement structures are not required, water consumption is estimated based on counts (number of homes, number of domestic animals, acreage of pond surface area, etc.) multiplied by a factor. Include a column or row for each of the following that are relevant to the augmentation plan:

1. Type of use: single family dwellings, domestic animals, area of lawn and garden (include units - square feet or acres), area of pond evaporation (include units - square feet or acres), etc.
2. Count or area input value for each type: the number of homes or domestic animals or the area (square footage or acres of home lawn and garden irrigation or pond surface evaporation). [this is the "Input" that could change regularly]

[2] Colorado Decision Support System Tools (https://dwr.state.co.us/Tools) can be used to find WDIDs (see Structures), court case numbers (see Water Rights), and other supporting information.

3. Factor to convert input to consumption in acre-feet.
4. Acre-feet of consumption.

ii. Well diversion data using flow meters:

Enter raw readings or measurements (e.g., from totalizing flow meters) and how those raw readings or measurements are converted to volumes of water. There should be one row or column for each well with a meter as described below. Once the spreadsheet formulas have been established, generally only the meter reading is entered with every submittal. The well and meter information may be located in a separate well & meter information tab (see example and screenshots section).

1. Well WDID
2. Well Permit Number
3. Priority Admin Number
4. Flow Meter Serial Number
5. Reading Date
6. Reading[3] [this is the "Input" that will change regularly]
   Enter reading exactly as shown on the face of the meter as a non-negative integer.
7. Comment
   a. When a meter rolls over (such as from 999 to 000), is replaced or reset[4] , add a comment stating the old meter serial number, the maximum number before the rollover or replacement and then enter the number on the face of the meter at the end of the reporting period. Update the meter information section with the new meter's serial number.
8. Meter information:
   a. Make
   b. Model
   c. The units represented by the digits on the meter (such as gallons or acre-feet)
   d. Multiplier for meter reading (if applicable)
      i. Residential well meters typically have a multiplier of 1.0 with units of gallons. Readings should generally report all numbers on the face of the meter (including non-rotating digits) with a multiplier of 1.0.
      ii. Larger agricultural or commercial wells typically read in acre-feet and typically have a decimal multiplier. For instance, with a multiplier of 0.001, a meter reading of 123456 represents 123.456 acre-feet.
   e. Correction factor
      i. This is a multiplier used when a meter test shows a need to correct the installed meter to an accurate reading. This will be 1.0 when there is not a test showing a need for correction.
9. Acre-feet pumped
   Use a formula to convert from the meter reading to acre-feet using the multiplier and correction factor. To convert meter readings in gallons to acre-feet, divide by 325,851.

iii. Well diversion data using Electricity Consumption

For wells approved to use power records and a Power Conversion Coefficient (PCC) to estimate water pumped, the accounting information is similar to well diversion data using flow meters (section 4.c.ii) above with the following replacements (instead of 6. "Reading" and 8. "Meter information):

[3] A comment on the Meter Reading cell is used to note "Actual, Estimated, Corrected, or Calculated" for all wells subject to measurement rules when the entry is not based on a reading taken on the actual date specified.
[4] Resetting a meter may be prohibited by local well measurement rules.

6. Power meter reading [this is the “Input” that will change regularly]
8. Power Meter Information
    a. PCC

iv. Surface diversion data

Include a column or row for each surface diversion with the following information:

1. Diversion structure name or a.k.a.
2. Structure WDID
3. Measured flow through the measurement structure and units
    a. If more than one water right is diverted through the structure, there should be adjacent columns for each. Each source should have a designated column or row and labeling should include the measuring structure WDID and the source of the water (e.g. case number).
    b. If there is a multiplier that adjusts the standard measurement-flow relationship to reflect the actual measurement-flow relationship of the specific structure (“shift”), the adjusted value should be reflected in a separate column.
4. Priority Admin Number
5. Storage and release

If the diversion is to storage, which will be followed by a release of water, follow the instructions in the Reservoir Accounting Guideline.

v. Administrative Call (are diversions in-priority?)

In portions of Colorado, there may be times when depletions are in-priority, and do not require replacement. Depletions are in-priority when water rights on the stream system that are senior to the diversion have enough water and are not “calling” for more water.

1. **Simplified (percent of month administrative call)**
   For certain basic accounting, such as subdivision well depletions, the Division Engineer may allow or apply an estimate of the days of expected administrative call each month. Typically, replacement water is provided based on projected call days, which is later compared to actual administrative call data to ensure that adequate replacement was provided. In this case, the accounting should have an input field either for the number of call days or the percentage of days in the month with a call.
2. **Daily record of administrative call**
   Provide a column that shows whether depletions are either “IN” or “OUT” of priority each day.
    - Locations with minimal call variation: In areas with minimal variation in the call, the Division Office may not require a formula comparing Priority Admin Numbers, but will accept manual entries of “IN” or “OUT” of priority each day.
    - All other locations: “IN” or “OUT” of priority is determined daily using formulas comparing the Priority Admin Number of depletions to the Priority Admin Number of the calling water right in each depleted stream reach. Include a column for each of the following:
        - The Priority Admin Number of the calling water right. Calling structure information can be obtained programmatically from:
            - CDSS REST services - insert a link that pulls the required information directly from DWR’s database.
            - CDSS Administrative Calls tool.

          DWR accounting staff can provide guidance on incorporating this information within an accounting spreadsheet.

- The Name of the calling water right
- "In" or "Out"-of-priority either for all structures covered by the accounting or for each structure in its own column. Use a formula to compare the Priority Admin Number of the calling structure to the Priority Admin Number of the structure(s) in the accounting.

d. Depletion & Obligation tab

Used to (1) convert well pumping (and groundwater pond evaporation) to lagged depletions impacting the stream and (2) show lagged depletions that are out-of-priority, and (3) include any additional water obligations of the plan for augmentation.

i. Calculate lagged depletions - Although well pumping and modeling may use a monthly step function to determine the depletions from pumping, the monthly result may, if requested by the Division Office or required by decree, then be divided by the number of days in the month in order to calculate a daily impact for daily water administration.
   1. Well Pumping (or groundwater pond evaporation) - Reference back to the Input tab for the acre-feet of water pumped or evaporated.
   2. Consumption factor (%) - If the decree or approval describes that a percentage of the water pumped is consumed and only the consumed amount is replaced.
   3. Acre-feet consumed - Multiply the acre-feet pumped by the consumption factor.
   4. Delay Factors - show factors that convert pumping in one month to depletions in future months. These may be percentages per month, that total 100 percent over an extended period of time.
   5. Depletions - a formula that combines previous months and present month pumping with the delay factors to determine depletions impacting the stream this month and in future months.

ii. Out-of-priority depletions are combined into one column for each reach considering the administrative call information included on the Input tab.

iii. Return flow obligations (if applicable): Replacement water sources changed from a historical irrigation use usually have a return flow obligation that must also be tracked in accounting. Return flow obligations are similar to depletions because they must be replaced in time, place, and amount. Depending on decree language and preference, return flow obligations may be included under the replacement tab in section 4.e. below. For each replacement source with return flow obligations, include the following:
   - the basis and volume of the return flow obligation,
   - the location of the return flow obligation,
   - replacement of the return flow obligation.

e. Replacement tab

List each structure providing replacement water, transit loss information, and volumes released:

i. Structure providing replacement water: name of reservoir, ditch, well, leased or other replacement water, its WDID, and the water court decree allowing its use for augmentation or replacement. For instructions on accounting for replacement using recharge accretions, refer to specific recharge guidance.

ii. Replacement water travel distance (miles)
the distance from the point of release to the location of the out-of-priority depletion where replacement is owed

iii. Transit loss percent per mile (%)

iv. Total transit loss (%)
v. Volume released (acre-feet)
vi. Transit loss volume (acre-feet)
vii. Volume delivered (acre-feet) - equal to volume released minus transit loss volume
viii. Return flow obligations (acre-feet): Depending on decree language as described above, these may be included here instead of in the depletion tab. See description under section 4.d. above.

f. Summary Tab

The Summary Tab is used to calculate the Net Effect of the Plan on each impacted stream reach. The summary should reference back to information and formulas in the other spreadsheet tabs. The summary tab compares obligations, replacements and that replacements equal or exceed obligations in time, place, and amount. The Summary tab should only summarize data and calculations located in other tabs of the accounting. It should not contain manual entries, input data, or make calculations that are used in other tabs.

The Summary Tab should contain the following for each impacted stream reach (typically on a daily basis or as required by the division office):

i. Total depletions and obligations
ii. Total replacement
iii. Balance - Total replacement minus total depletions and obligations, which may be negative when the diversions resulting in the depletions are in priority.
iv. Net Effect - Total replacement minus out-of-priority depletions and obligations. If the net effect is negative, the Plan resulted in injury.

g. DWR tab for Diversion Record Data Import

A tab titled **"DWR"** can be used to convert data input or numbers calculated in other tabs into rows that represent diversion record water classes, which DWR staff can upload to create official diversion records. When appropriate, DWR staff will develop this tab or work with plan owners to develop this tab, ensure it follows DWR's standard format and utilizes water classes according to the Diversion Records Standard. This format is necessary to allow the records to be imported directly into Hydrobase.

h. DWR Meters tab for Meter Reading Data Import

A tab titled **"DWR Meters"** can be included for use in bulk uploading meter readings. This calculates pumping totals in compliance with well rules or to meet other Division-specific requirements. In order for this tab to be bulk uploaded into Hydrobase, the columns in this tab must be formatted as shown in the "User Guide - How to Bulk Upload Meter Readings".

i. Version/Notes tab

A tab to document changes in accounting formulas and the date of those changes.

5. Requirements and recommendations for all tabs

a. Accounting should show how raw input data is manipulated using formulas to determine the resulting impact on the river. Accounting must therefore include a functional spreadsheet (ie no pdfs) showing all operations, formulas, etc. to clearly show calculations.

b. The use of a water year of November 1 through October 31 is required unless specifically decreed otherwise. When a different water year is required by decree, DWR may request additional months of data in the accounting to include the November 1 through October 31

time period, resulting in more than 12 months of data being reported.

c. For all tabs other than the Summary tab, include running accounting for the entire water year without monthly subtotals. Monthly subtotals commonly result in errors in the spreadsheet. The Summary tab can be used as a place to show monthly totals.

d. Date fields should be complete dates (month, day, and year, recognized as a date value by the spreadsheet software) but may be formatted to display as desired.

e. Use consistent cell color shading to clearly identify the different types of information, such as manual input cells and formula cells (provide a legend for data types, see example below)

f. Enter "0" in cells to document no diversion or use, rather than blanks, hyphens, or another character.

g. When a formula is overwritten with a manual entry, the cell should be highlighted and a comment added for the reasoning.

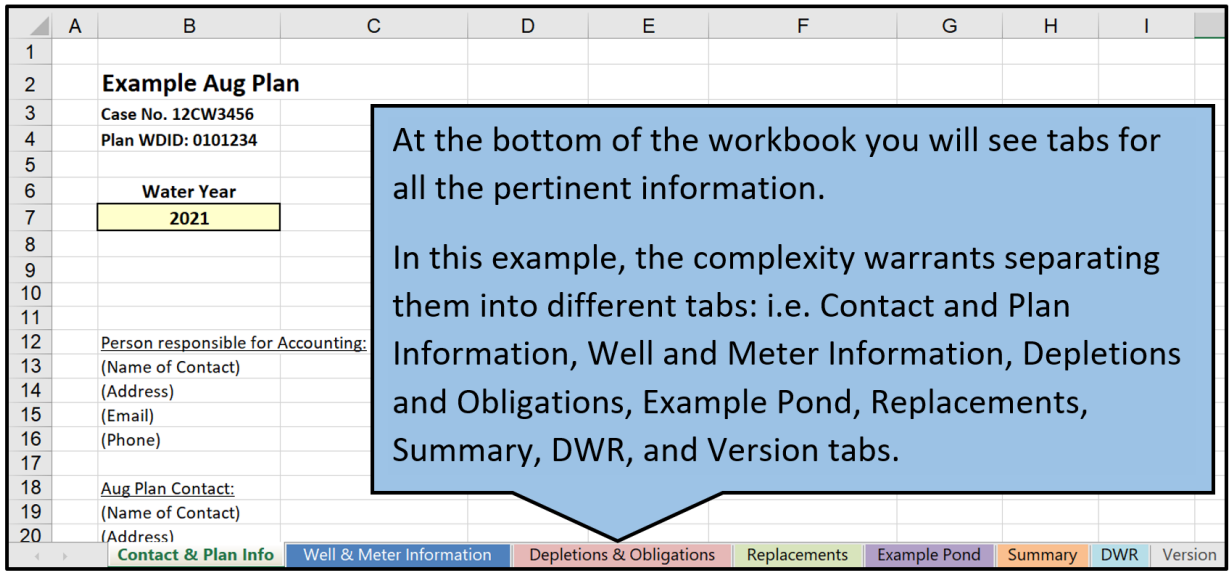
h. When there are multiple stream reaches involved, organize accounting from upstream to downstream.

i. Footnotes should be utilized, as necessary, to describe the basis for formulas, calculations imposed on the raw input data, and column descriptions.

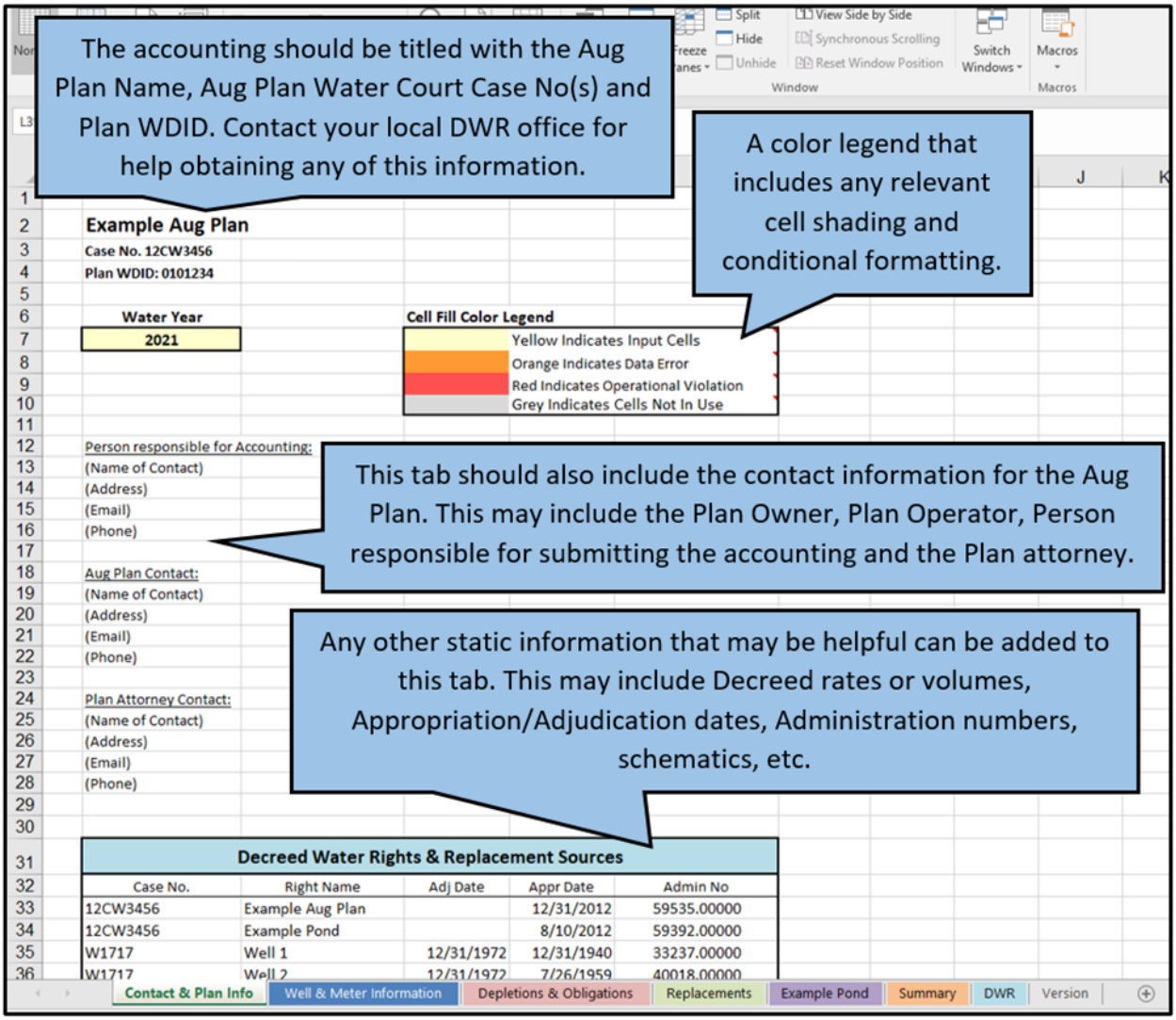
6. Example, Screenshots, and Spreadsheet Templates

Water users may request spreadsheet templates from their local division office for use as examples of how accounting may be assembled, but are responsible for developing their own functional accounting customized for their own Plan requirements. Note that example and actual accounting may have slightly different organization than what is described above.

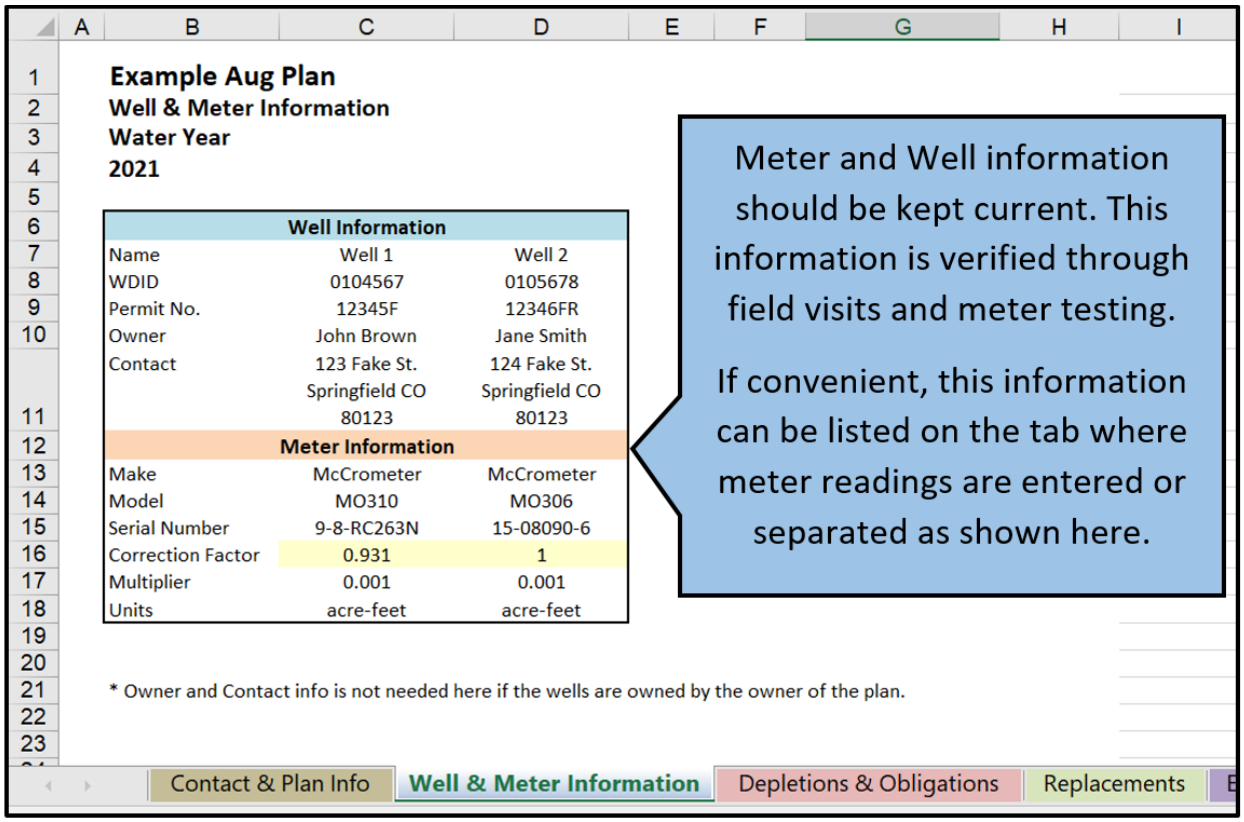
a. (List of relevant tabs)



b. (Contact & Plan Information)



c. (Well & Meter Information)



Example Aug Plan
Well & Meter Information
Water Year
2021

Well Information		
Name	Well 1	Well 2
WDID	0104567	0105678
Permit No.	12345F	12346FR
Owner	John Brown	Jane Smith
Contact	123 Fake St. Springfield CO 80123	124 Fake St. Springfield CO 80123
Meter Information		
Make	McCrometer	McCrometer
Model	MO310	MO306
Serial Number	9-8-RC263N	15-08090-6
Correction Factor	0.931	1
Multiplier	0.001	0.001
Units	acre-feet	acre-feet

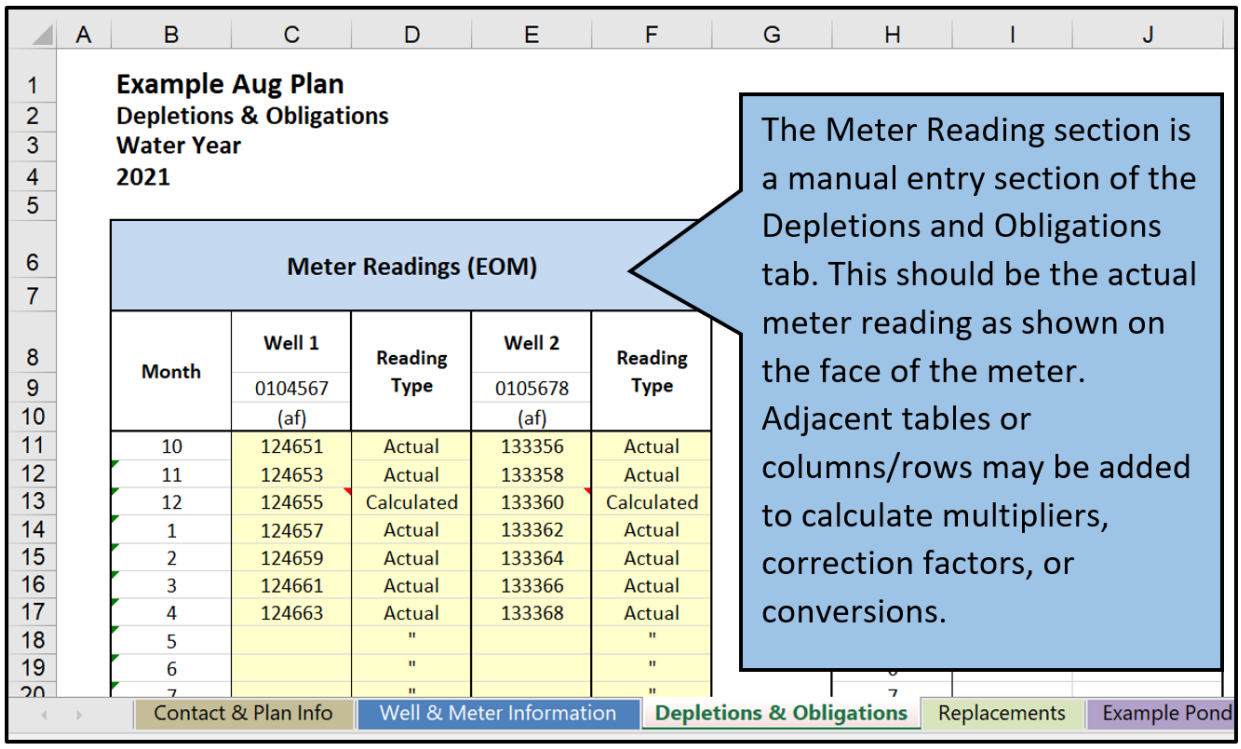
Meter and Well information should be kept current. This information is verified through field visits and meter testing.

If convenient, this information can be listed on the tab where meter readings are entered or separated as shown here.

* Owner and Contact info is not needed here if the wells are owned by the owner of the plan.

Contact & Plan Info | Well & Meter Information | Depletions & Obligations | Replacements

d. (Depletions & Obligations) - in this example, the Depletions & Obligations tab includes cells for entering meter readings, calculating well pumping over the period, and converting that to lagged depetions.



Example Aug Plan
Depletions & Obligations
Water Year
2021

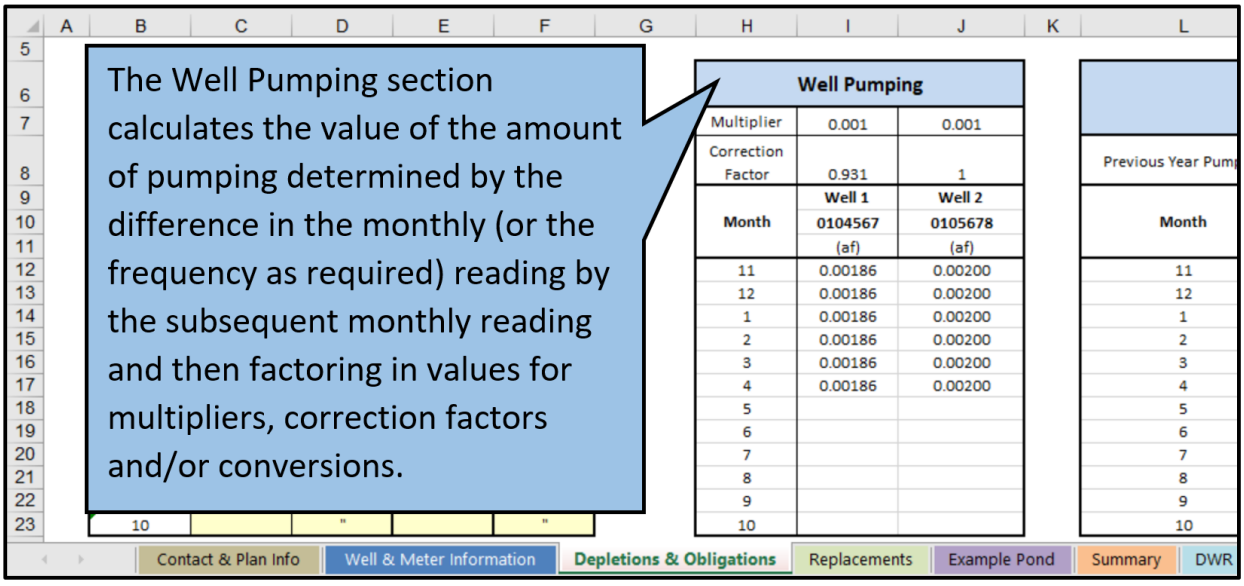
Meter Readings (EOM)

Month	Well 1 0104567 (af)	Reading Type	Well 2 0105678 (af)	Reading Type
10	124651	Actual	133356	Actual
11	124653	Actual	133358	Actual
12	124655	Calculated	133360	Calculated
1	124657	Actual	133362	Actual
2	124659	Actual	133364	Actual
3	124661	Actual	133366	Actual
4	124663	Actual	133368	Actual
5		"		"
6		"		"

The Meter Reading section is a manual entry section of the Depletions and Obligations tab. This should be the actual meter reading as shown on the face of the meter. Adjacent tables or columns/rows may be added to calculate multipliers, correction factors, or conversions.

Contact & Plan Info | Well & Meter Information | Depletions & Obligations | Replacements | Example Pond

e. (Depletions & Obligations)



The Well Pumping section calculates the value of the amount of pumping determined by the difference in the monthly (or the frequency as required) reading by the subsequent monthly reading and then factoring in values for multipliers, correction factors and/or conversions.

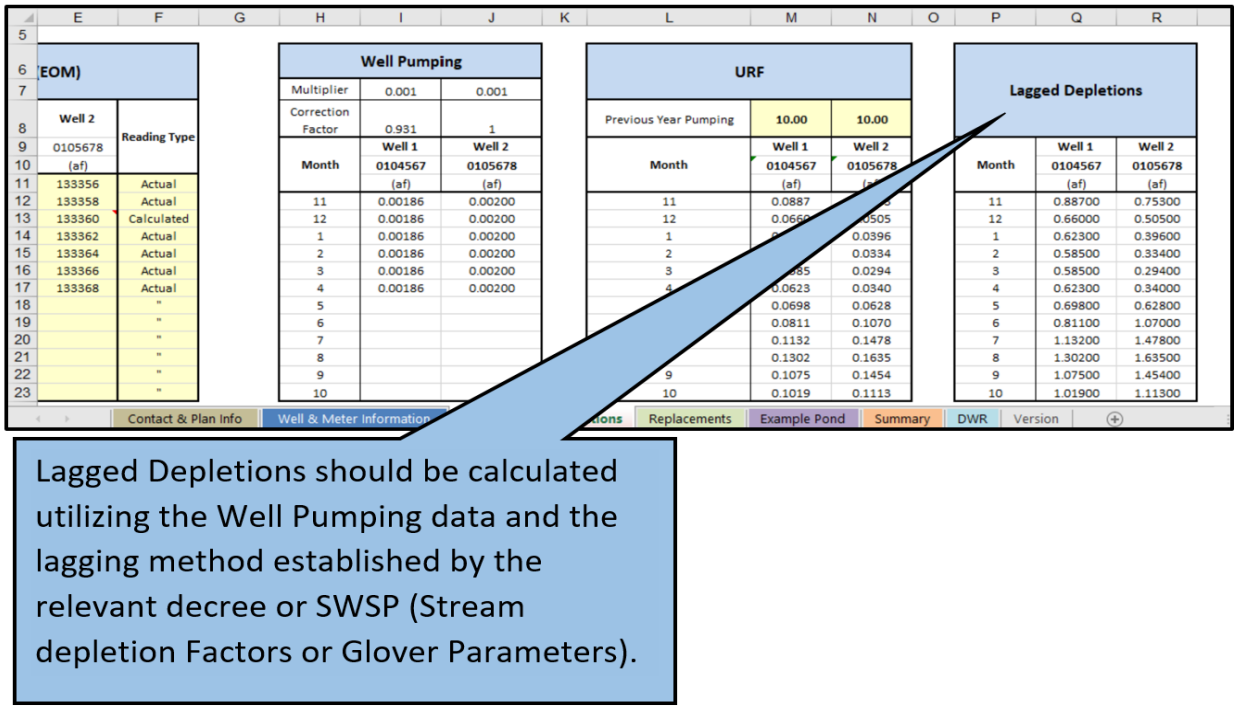
Well Pumping

Multiplier	0.001	0.001
Correction Factor	0.931	1
Month	Well 1 0104567 (af)	Well 2 0105678 (af)
11	0.00186	0.00200
12	0.00186	0.00200
1	0.00186	0.00200
2	0.00186	0.00200
3	0.00186	0.00200
4	0.00186	0.00200
5		
6		
7		
8		
9		
10		

Previous Year Pump
Month
11
12
1
2
3
4
5
6
7
8
9
10

Contact & Plan Info | Well & Meter Information | Depletions & Obligations | Replacements | Example Pond | Summary | DWR

f. (Depletions & Obligations) - calculate lagged depletions for the month



(EOM)	
Well 2 0105678 (af)	Reading Type
133356	Actual
133358	Actual
133360	Calculated
133362	Actual
133364	Actual
133366	Actual
133368	Actual

Well Pumping		
Multiplier	0.001	0.001
Correction Factor	0.931	1
Month	Well 1 0104567 (af)	Well 2 0105678 (af)
11	0.00186	0.00200
12	0.00186	0.00200
1	0.00186	0.00200
2	0.00186	0.00200
3	0.00186	0.00200
4	0.00186	0.00200
5		
6		
7		
8		
9		
10		

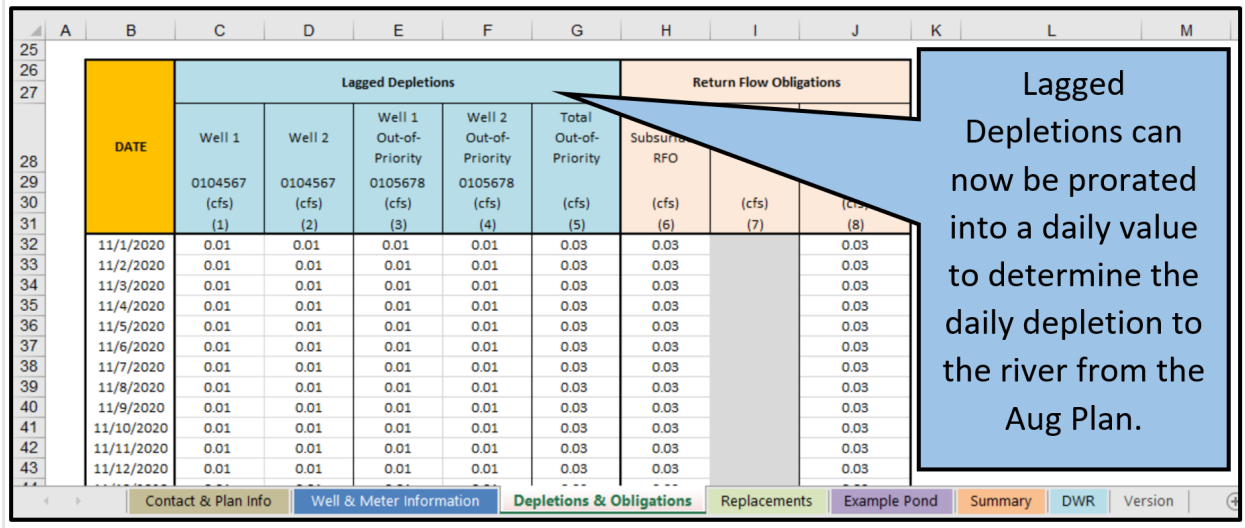
URF		
Previous Year Pumping	10.00	10.00
Month	Well 1 0104567 (af)	Well 2 0105678 (af)
11	0.0887	
12	0.0660	0505
1		0.0396
2		0.0334
3	585	0.0294
4	0.0623	0.0340
	0.0698	0.0628
	0.0811	0.1070
	0.1132	0.1478
	0.1302	0.1635
9	0.1075	0.1454
10	0.1019	0.1113

Lagged Depletions		
Month	Well 1 0104567 (af)	Well 2 0105678 (af)
11	0.88700	0.75300
12	0.66000	0.50500
1	0.62300	0.39600
2	0.58500	0.33400
3	0.58500	0.29400
4	0.62300	0.34000
5	0.69800	0.62800
6	0.81100	1.07000
7	1.13200	1.47800
8	1.30200	1.63500
9	1.07500	1.45400
10	1.01900	1.11300

Contact & Plan Info | Well & Meter Information | ...ions | Replacements | Example Pond | Summary | DWR | Version

Lagged Depletions should be calculated utilizing the Well Pumping data and the lagging method established by the relevant decree or SWSP (Stream depletion Factors or Glover Parameters).

g. (Depletions & Obligations) - convert monthly lagged depletions to daily

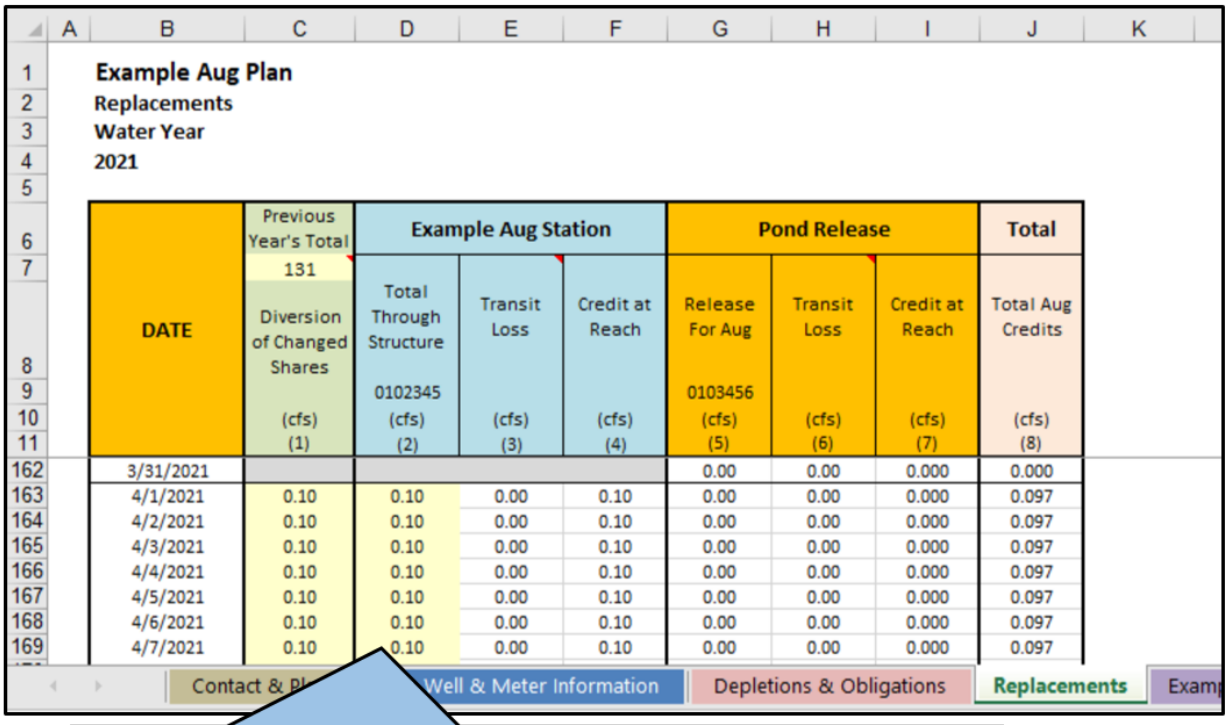


DATE	Lagged Depletions: Well 1 0104567 (cfs) (1)	Well 2 0104567 (cfs) (2)	Well 1 Out-of-Priority 0105678 (cfs) (3)	Well 2 Out-of-Priority 0105678 (cfs) (4)	Total Out-of-Priority (cfs) (5)	Return Flow Obligations: Subsurf... RFO (cfs) (6)	(cfs) (7)	(cfs) (8)
11/1/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/2/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/3/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/4/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/5/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/6/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/7/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/8/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/9/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/10/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/11/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03
11/12/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03

Contact & Plan Info | Well & Meter Information | Depletions & Obligations | Replacements | Example Pond | Summary | DWR | Version

Lagged Depletions can now be prorated into a daily value to determine the daily depletion to the river from the Aug Plan.

h. (Replacements)



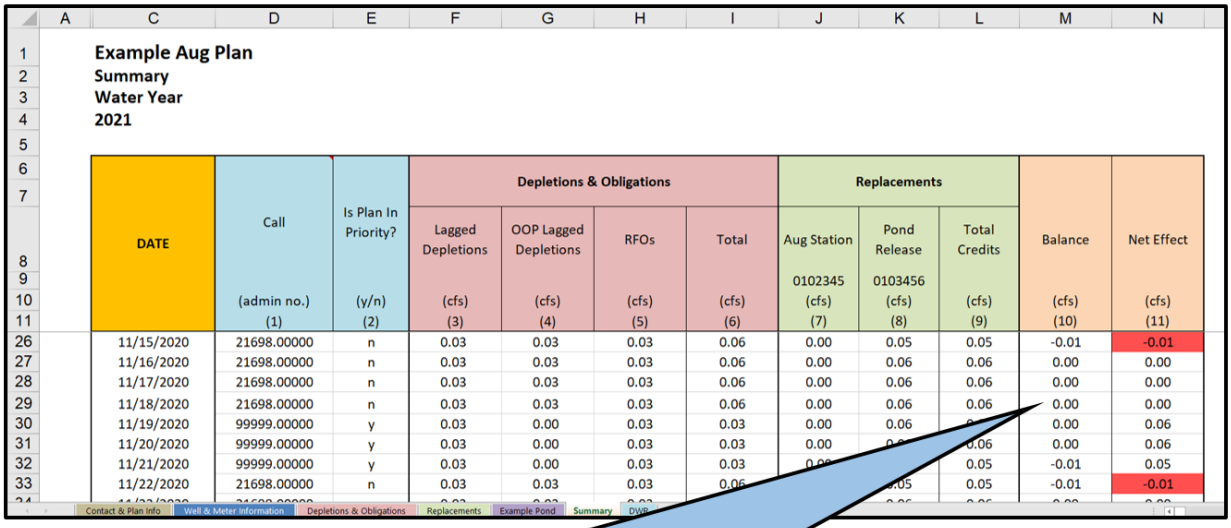
Example Aug Plan
Replacements
Water Year
2021

DATE	Previous Year's Total	Example Aug Station			Pond Release			Total
	131							
	Diversion of Changed Shares	Total Through Structure 0102345	Transit Loss	Credit at Reach	Release For Aug 0103456	Transit Loss	Credit at Reach	Total Aug Credits
	(cfs) (1)	(cfs) (2)	(cfs) (3)	(cfs) (4)	(cfs) (5)	(cfs) (6)	(cfs) (7)	(cfs) (8)
3/31/2021					0.00	0.00	0.000	0.000
4/1/2021	0.10	0.10	0.00	0.10	0.00	0.00	0.000	0.097
4/2/2021	0.10	0.10	0.00	0.10	0.00	0.00	0.000	0.097
4/3/2021	0.10	0.10	0.00	0.10	0.00	0.00	0.000	0.097
4/4/2021	0.10	0.10	0.00	0.10	0.00	0.00	0.000	0.097
4/5/2021	0.10	0.10	0.00	0.10	0.00	0.00	0.000	0.097
4/6/2021	0.10	0.10	0.00	0.10	0.00	0.00	0.000	0.097
4/7/2021	0.10	0.10	0.00	0.10	0.00	0.00	0.000	0.097

Contact & Pl... | Well & Meter Information | Depletions & Obligations | Replacements | Exam...

Input information should be shaded differently than the calculated (cells with formulas) cells. Please provide a legend with the color/shading scheme.

i. (Summary) - daily



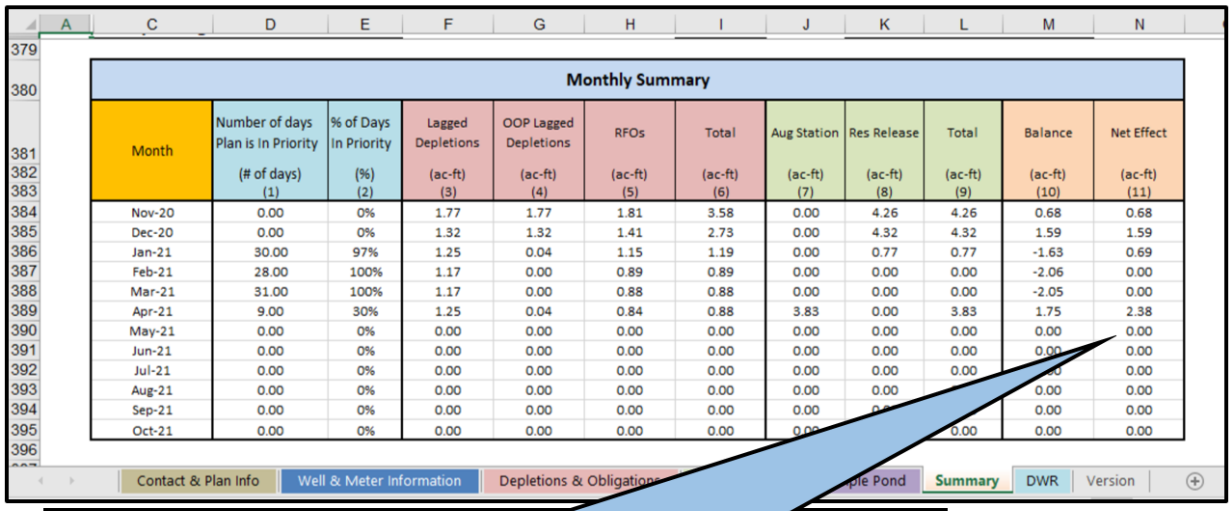
Example Aug Plan
Summary
Water Year
2021

DATE	Call (admin no.) (1)	Is Plan In Priority? (y/n) (2)	Depletions & Obligations: Lagged Depletions (cfs) (3)	Depletions & Obligations: OOP Lagged Depletions (cfs) (4)	Depletions & Obligations: RFOs (cfs) (5)	Depletions & Obligations: Total (cfs) (6)	Replacements: Aug Station 0102345 (cfs) (7)	Replacements: Pond Release 0103456 (cfs) (8)	Replacements: Total Credits (cfs) (9)	Balance (cfs) (10)	Net Effect (cfs) (11)
11/15/2020	21698.00000	n	0.03	0.03	0.03	0.06	0.00	0.05	0.05	-0.01	-0.01
11/16/2020	21698.00000	n	0.03	0.03	0.03	0.06	0.00	0.06	0.06	0.00	0.00
11/17/2020	21698.00000	n	0.03	0.03	0.03	0.06	0.00	0.06	0.06	0.00	0.00
11/18/2020	21698.00000	n	0.03	0.03	0.03	0.06	0.00	0.06	0.06	0.00	0.00
11/19/2020	99999.00000	y	0.03	0.00	0.03	0.03	0.00	0.06	[illegible]	0.00	0.06
11/20/2020	99999.00000	y	0.03	0.00	0.03	0.03	0.00	[illegible]	0.06	0.00	0.06
11/21/2020	99999.00000	y	0.03	0.00	0.03	0.03	[illegible]	[illegible]	0.05	-0.01	0.05
11/22/2020	21698.00000	n	0.03	0.03	0.03	0.06	[illegible]	[illegible]05	0.05	-0.01	-0.01

Contact & Plan Info | Well & Meter Information | Depletions & Obligations | Replacements | Example Pond | Summary | DWR

The Balance column is the balance of Replacements and actual Depletions/Obligations regardless of whether the plan is in or out of priority. It is calculated by subtracting Depletions and Obligations from Replacements.

j. (Summary) - a monthly summary table may be added at the bottom of the Summary tab below the daily summary



Monthly Summary

Month	Number of days Plan is In Priority (# of days) (1)	% of Days In Priority (%) (2)	Lagged Depletions (ac-ft) (3)	OOP Lagged Depletions (ac-ft) (4)	RFOs (ac-ft) (5)	Total (ac-ft) (6)	Aug Station (ac-ft) (7)	Res Release (ac-ft) (8)	Total (ac-ft) (9)	Balance (ac-ft) (10)	Net Effect (ac-ft) (11)
Nov-20	0.00	0%	1.77	1.77	1.81	3.58	0.00	4.26	4.26	0.68	0.68
Dec-20	0.00	0%	1.32	1.32	1.41	2.73	0.00	4.32	4.32	1.59	1.59
Jan-21	30.00	97%	1.25	0.04	1.15	1.19	0.00	0.77	0.77	-1.63	0.69
Feb-21	28.00	100%	1.17	0.00	0.89	0.89	0.00	0.00	0.00	-2.06	0.00
Mar-21	31.00	100%	1.17	0.00	0.88	0.88	0.00	0.00	0.00	-2.05	0.00
Apr-21	9.00	30%	1.25	0.04	0.84	0.88	3.83	0.00	3.83	1.75	2.38
May-21	0.00	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun-21	0.00	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul-21	0.00	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	[illegible]	0.00
Aug-21	0.00	0%	0.00	0.00	0.00	0.00	0.00	0.00	[illegible]	0.00	0.00
Sep-21	0.00	0%	0.00	0.00	0.00	0.00	0.00	[illegible]	[illegible]	0.00	0.00
Oct-21	0.00	0%	0.00	0.00	0.00	0.00	[illegible]	[illegible]	0.00	0.00	0.00

Contact & Plan Info | Well & Meter Information | Depletions & Obligations | [illegible]ple Pond | Summary | DWR | Version

Net Effect is the Balance or Net Impact value with the priority of the plan included. Plans considered in priority may not be required to replace depletions. This column represents whether the Aug plan shows injury to the river or has sufficiently replaced its uses.