COLORADO
Division of Water Resources
Department of Natural Resources

February 28, 2024

Mr. Todd Williams, P.E.
Williams and Weiss Consulting, LLC
5255 Ronald Reagan Boulevard, Ste 220
Johnstown, CO 80534

RE: Wagner-Kauffman No. 3 Substitute Water Supply Plan (WDID 0402529, Plan ID 3617)
Wagner-Kauffman No. 3 Pit, DRMS Permit No. M-1999-069 (WDID 0403008)
Sections 17 and 20, T5N, R68W, 6th P.M.
Water Division 1, Water District 4, Larimer County

Approval Period: January 1, 2024 through December 31, 2024
Contact Information for Mr. Todd Williams: 303-653-3940; tlwwater@msn.com

Dear Mr. Williams:

We have reviewed your letter dated November 16, 2023 requesting renewal of the above referenced substitute water supply plan on behalf of Jake Kauffman and Son, Inc. ("Applicant") in accordance with section 37-90-137(11), C.R.S., to cover depletions associated with a sand and gravel pit. The required fee of $257.00 for the renewal of this substitute water supply plan has been submitted (receipt number 10025582). The original substitute water supply plan was approved on December 16, 1999, and was most recently approved on December 15, 2022 for operations through December 31, 2023.

SWSP Operation

This plan seeks to replace depletions resulting from mining operations at the Wagner-Kauffman No. 3 Pit. The Wagner-Kauffman No. 3 Pit (WDID 0403008, well permit no. 65258-F) is located in Larimer County in portions of Sections 17, 20, and 21, Township 5 North, Range 68 West of the 6th P.M. Mining activities at the Wagner-Kauffman No. 3 Pit are complete but reclamation activities will continue into 2024. The remaining reclamation activities include finishing the construction of the impermeable liner for the pit in the northwest portion of the site and continuing to backfill previously mined portions of the site.

The pit in the center of the site was fully lined and a liner test initiated in 2013, however the test was suspended prior to completion due to flooding that occurred in September 2013. The Applicant monitored the water level in the lined gravel pit (as dewatering occurred in 2014, 2015 and 2016) to be sure that the liner for the pit was not damaged during the 2013 flood and was not intercepting groundwater. The monitoring done in 2014, 2015, and 2016 by the Applicant revealed that the compacted clay liner is intact, the lined pit is not intercepting groundwater, and the lined pit is not storing any out-of-priority surface water. During the summer and fall of 2016 the Applicant performed the required 90-day leak test. The liner was approved in a letter dated January 17, 2017

as meeting the design standard, and the Kauffman Reservoir (aka East Reservoir, WDID 0403385) is now classified as a lined reservoir. In 2018, 98.30 acres primarily located in Section 21, including the East Reservoir, were released from the Division of Reclamation, Mining, and Safety permit boundary.

In the spring of 2017, the mined pit in the northeast portion of the site had an exposed water surface area due to wet weather and silt deposited by the 2013 flood. The Applicant backfilled the area with clean fill material, and the exposed water surface area was eliminated by mid-September of 2017. Lagged depletions associated with the additional exposed water surface area were fully replaced as of June 2021. A Division of Reclamation, Mining and Safety inspection in July of 2019 observed some shallow puddles in this area. A subsequent inspection in November of 2020 did not observe any ponded water and found this pit to have been backfilled and graded relatively flat with a gentle slope. This northeast portion of the site, consisting of approximately 34 acres lying east of the Boyd Lake Outlet Ditch, was released from the Division of Reclamation, Mining, and Safety permit boundary in November of 2020.

A total of 52.7 acres remain within the permit boundary, consisting of the West Cell in the northwest portion of the site and a roadway right-of-way, as shown on the attached Map 2. During this SWSP approval period, consumptive use will be limited to evaporative losses from exposed groundwater in the dewatering trench at the northwest gravel pit. There will be no aggregate production or other consumption of groundwater at the site during this SWSP approval period. The replacement water will be supplied through a lease from the City of Loveland.

Depletions

Depletions at the site during this plan period are limited to evaporation from exposed groundwater in the dewatering trench at the northwest pit. The current exposed groundwater surface area is 0.0145 acres, based on an estimated trench width of 3 feet and length of 210 feet. Net evaporative depletions were calculated using a gross annual evaporation of 38 inches from the exposed groundwater surface, with a credit of 9.7 inches for effective precipitation. The net depletion of groundwater due to evaporation from the 0.0145 acres exposed at the Wagner-Kauffman No. 3 Pit totals 0.034 acre-feet for this plan period, as shown on the attached Table 1.

The Wagner-Kauffman No. 3 Pit site will continue to be dewatered during this plan period. Since 2000, all water pumped from the dewatering trench has been discharged into an adjacent unlined 20.68-acre pond which is part of the Kauffman No. 1 Pit (DRMS Permit No. M-1978-327, WDID 0403009). The Kauffman No. 1 Pit is covered under a separate SWSP (WDID 0402530) and is owned and operated by the Applicant. The current exposed groundwater in Kauffman No. 1 Pit was exposed prior to 1981 in connection with sand and gravel mining and as such evaporation from the Kauffman No. 1 Pit is not required to be augmented (see § 37-90-137(11)(b), C.R.S., and 2009CW49). Due to the large size of the Kauffman No. 1 Pit relative to the volume of water projected to be pumped from the dewatering trench, the additional volume attributable to the dewatering flows will not create a measurable increase in evaporation. The dewatering pump discharges into the Kauffman No. 1 Pit at a location approximately 100 feet from the intake point. You have estimated that water discharged into the Kauffman No. 1 Pit will accrue to the Big Thompson River at approximately the same timing as depletions from pumping the water out of the Wagner-Kauffman No. 3 Pit. So long as dewatering at the Wagner-Kauffman No. 3 Pit is continuous during this plan period and all dewatering flows continue to be discharged into the adjacent unlined Kauffman No. 1 Pit, the assumption that there will be no net depletion as a result of dewatering at the Wagner-Kauffman No. 3 Pit is accepted for the purposes of this SWSP.

The monthly depletions to the Big Thompson River due to past and projected use at the Wagner-Kauffman No. 3 Pit were lagged from the pit site using the AWAS program developed by the IDS Group at Colorado State University. The following parameters were used in the stream depletion model for the period of 2016 through 2024: a distance from the centroid of the exposed groundwater to the river (X) of 2,130 feet; a distance from the river through the site to the no flow aquifer boundary (W) of 4,000 ft; an aquifer transmissivity (T) of 50,000 gallons/ft/day; and a specific yield (S) of 0.2. For the period of 2012-2015, a distance from the centroid of the exposed groundwater to the river (X) of 2,400 feet was used. Lagged depletions resulting from mining operations prior to 2012 were determined using a previously approved distance from the exposed water surface area to the river (X value) of 200 feet. Depletions from the Wagner-Kauffman No. 3 Pit are assumed to impact the Big Thompson River perpendicular to the site in the E½ of Section 20, Township 5 North, Range 68 West of the 6th P.M. The lagged stream depletions due to past and projected operations at the site are estimated to total 0.033 acre-feet during this plan period, as shown on the attached Table 4.

Replacements

Replacement water for this pit will be made available throughout the year from a lease of up to ten (10) acre-feet of fully consumable water from the City of Loveland ("Loveland"). A copy of the lease, dated December 7, 2021, is attached to this letter. The duration of the lease is from January 1, 2022 through December 31, 2024.

Under the terms of the lease, replacements may be made using a variety of water owned by Loveland including, but not limited to, Windy Gap reusable effluent, water stored in Green Ridge Glade Reservoir (aka Loveland Storage Reservoir) (WDID 0403659) as decreed in case no. 82CW202A, decant water from the Loveland Water Treatment Plant (WDID 0402804), effluent from the Loveland Waste Water Treatment Plant (WDID 0402300), or any other water source legally and physically available to Loveland that may be used for augmentation or replacement. In the event that Loveland plans to use Colorado-Big Thompson Project ("C-BT") water as a replacement source, Loveland shall comply with the Interim Rule issued by the Northern Colorado Water Conservancy District ("Northern District") in May 2005, regarding the use of Colorado-Big Thompson Project water in substitute water supply plans. **Prior to such use of C-BT Project water, Loveland is required to notify this office, the division engineer and the water commissioner of the amount of C-BT Project water dedicated to this plan and provide a copy of the Northern District's approval letter as required by paragraph I(g) of the Northern District's May, 2005 Interim Rule.**

For the 2024 plan period, a total of 6.32 acre-feet of reusable effluent will be provided by Loveland. This leased water is also used to replace depletions at the Kauffman No. 1 Pit (M-1978-327, WDID 0403009). A total of 6.28 acre-feet of replacement water has been dedicated to the Kauffman No. 1 Pit SWSP (Plan ID 3039, WDID 0402530) during this plan period. The monthly depletions and replacement requirements for the Wagner-Kauffman No. 3 Pit are indicated on the attached Table 5. A four percent (4%) transit loss has been applied to the required replacement water deliveries, based on the distance from the most upstream augmentation source, Green Ridge Glade Reservoir, to the Wagner-Kauffman No. 3 Pit. The total amount of replacement water dedicated to the Wagner-Kauffman No. 3 Pit for this plan period therefore equals 0.034 acre-feet (0.033 acre-feet for replacement of depletions plus 0.0012 acre-feet for transit loss).

Long Term Augmentation

In accordance with the attached letter dated April 30, 2010 from the Colorado Division of Reclamation, Mining, and Safety ("DRMS"), all sand and gravel mining operators must comply with the requirements of the Colorado 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. Approach no. 4 is to obtain approval from the Division of Water Resources that acknowledges compliance with the SEO's requirements pursuant to section 37-90-137(11), C.R.S. Approach no. 3 is to file a financial warranty to cover the cost of installing a liner. The operator has obtained approval of the liner for the East Reservoir, which has subsequently been removed from the mining permit. There is currently a surety bond outstanding for this project in the amount of $150,225.00 to ensure reclamation of the remaining portion of site is completed as currently proposed.

Conditions of Approval

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

1. This plan is approved with the effective date of January 1, 2024 and shall be valid through December 31, 2024 unless otherwise revoked or superseded by decree. If depletions will extend beyond the plan's expiration date, a renewal request must be submitted to this office with the statutory fee (currently $257) no later than November 1, 2024. 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 the $1,593 filing fee will apply.
2. A well permit was obtained for the current use and exposed pond surface area of the gravel pit in accordance with sections 37-90-137(2) and (11), C.R.S., permit no. 65258-F.
3. The total surface area of the groundwater exposed at the site must not exceed 0.0145 acres, which results in a maximum evaporative annual loss at the Wagner-Kauffman No. 3 Pit of 0.034 acre-feet.
4. No product shall be mined below the groundwater table at this site, nor shall any groundwater be used for aggregate washing, dust control, or any other purpose not specifically allowed by this SWSP.
5. Total consumption at the Wagner-Kauffman No. 3 Pit must not exceed 0.034 acre-feet unless an amendment is made to this plan.
6. Approval of this plan is for the purposes stated herein. Any additional uses for which the water may be used must first be approved by this office.
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. Notice must be provided and approval made by the water commissioner at least 48 hours prior to the release of replacement water, or as required by the water commissioner.
8. 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. As shown in the projection attached as Table 4, lagged depletions will extend through September 2025.

9. The release of replacement water may be aggregated to maximize beneficial use. The water commissioner and/or the division engineer shall determine the rate and timing of an aggregated release.

10. The replacement water that is the subject of this plan cannot be sold or leased to any other entity. As a condition of subsequent renewals of this substitute water supply plan, 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.

11. In the event Loveland plans to use C-BT Project water as a replacement source, Loveland shall comply with the Interim Rule issued by the District in May 2005 regarding the use of C-BT Project water in substitute water supply plans. Prior to the use of the C-BT Project water, Loveland shall notify this office, the division engineer and the water commissioner of the amount of C-BT Project water dedicated to this plan and provide a copy of the District's approval letter as required by paragraph I(g) of the District's May, 2005 Interim Rule.

12. 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 with the accounting form to the division engineer and water commissioner.

13. 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.

    In addition, the Applicant shall verify that the City of Loveland ("Loveland") includes replacement water for this SWSP in their monthly accounting. It is the Applicant's responsibility to ensure Loveland releases the leased water in the correct time, place, and amount.

14. Conveyance loss for delivery of replacement water to the location where depletions from the Wagner-Kauffman No. 3 Pit affect the Big Thompson River is subject to assessment and modification as determined by the division engineer.

15. In order to prevent injury to other water rights, the division engineer and water commissioner must be able to administer Applicants' replacement water past headgates on the river at times when those headgates would otherwise be legally entitled to divert all available flow in or "sweep" the Big Thompson River or its tributaries. Applicant shall not receive credit for replacement of depletions to the Big Thompson River below such diversion structures unless bypass and measurement structures are in place to allow the division engineer and water commissioner to confirm that Applicant's replacement water is delivered past the headgates. In the event that delivery past dry-up points requires the use of a structure for which a carriage or use agreement with a third party is required, Applicant shall be responsible for

securing such agreement. Until such time as the Applicant provides a copy of the carriage or use agreement to the division engineer and water commissioner, no credit will be allowed for replacement of depletions to the Big Thompson River below such diversion structure.

16. The Division of Water Resources will not be responsible for any enforcement or administration of third party agreements that are not included in a decree of the water court.
17. The approval of this substitute water supply plan does not relieve the Applicant and/or the landowner of the requirement to obtain a water court decree approving a permanent plan for augmentation or mitigation to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions after gravel mining has ceased. If reclamation of the mine site produces 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 (3) 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. Granting of this plan does not imply approval by this office of any such court application(s).
18. If dewatering of the site is discontinued, the pit would fill, creating additional depletions to the stream system due to increased evaporation. To assure that additional depletions to the river do not occur, a bond for $570,000 has been obtained through the Colorado Division of Reclamation, Mining, and Safety (“DRMS”) for lining or backfilling of the pits. Therefore, if the dewatering is discontinued this bond can finance the completion of the lining of these pits or the backfilling, thus preventing depletions to the stream system. This bond is required to be in place until the remaining liner is approved by the State Engineer’s Office and DRMS authorizes the release of the site.
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 the substitute supply is of a quality to meet requirements of use to which the senior appropriation receiving the substituted supply has normally been put. As such, water quality data or analysis may be requested at any time to determine if the requirements of use of the senior appropriator are met.
20. 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 SWSP expire without renewal or be revoked prior to adjudication of a permanent plan for augmentation, all use of water at the pit must cease immediately.
21. 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 SWSPs, or in any proposed renewal of this SWSP, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant.

Please contact Kate Fuller in Denver at (303) 866-3581 ext. 8245, or Michael Hein in Greeley at (970) 352-8712, if you have any questions concerning this approval.

Sincerely,

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

Attachments: Map 2
Tables 1, 4, and 5
City of Loveland Lease
April 30, 2010 letter from DRMS
Augmentation Plan Accounting Protocol

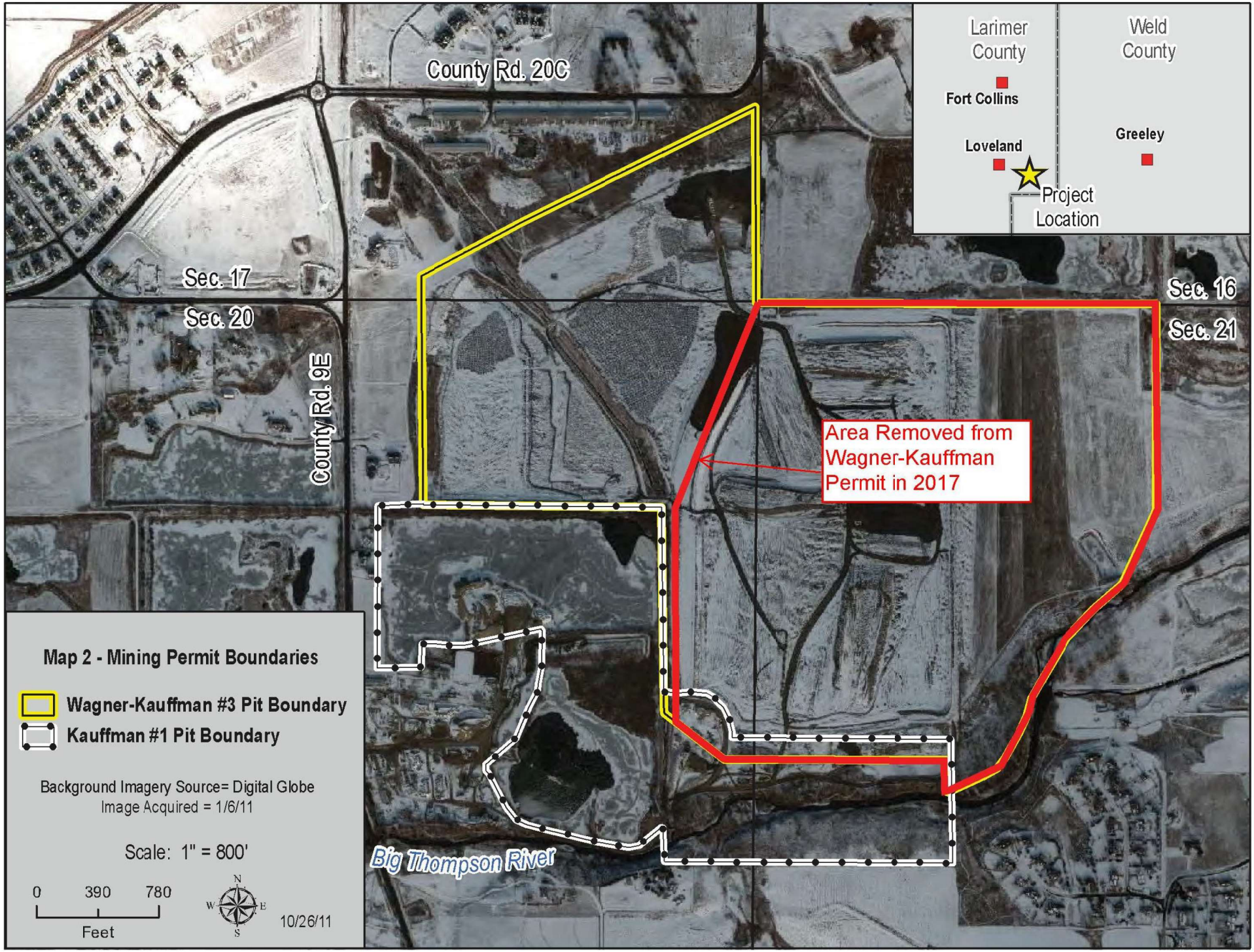
Cc: Michael Hein, Lead Assistant Division Engineer, Michael.Hein@state.co.us
1809 56th Avenue, Greeley, CO 80634

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

Dawn Ewing, Accounting Coordinator, Dawn.Ewing@state.co.us

Jean Lever, Water Commissioner, Water District 4, Jean.Lever@state.co.us

Amy Eschberger, Division of Reclamation Mining and Safety, Amy.Eschberger@state.co.us


County Rd. 20C
Sec. 17
Sec. 20
County Rd. 9E
Sec. 16
Sec. 21
Area Removed from Wagner-Kauffman Permit in 2017
Big Thompson River
Larimer County
Weld County
Fort Collins
Loveland
Greeley
Project Location
Map 2 - Mining Permit Boundaries
Wagner-Kauffman #3 Pit Boundary
Kauffman #1 Pit Boundary
Background Imagery Source= Digital Globe
Image Acquired = 1/6/11
Scale: 1" = 800'
0 390 780
Feet
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W
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S
10/26/11

Table 1

Wagner Kauffman #3 Pit

Jake Kauffman and Son, Inc.

2024 Post-1981 Exposed Water Surface Evaporative Losses

Total Exposted Water Surface Area (Dewatering Trench) = 0.0145 acres

		January	February	March	April	May	June	July	August	September	October	November	December	Totals
Distribution of Annual Evap.		0.03	0.035	0.055	0.09	0.12	0.15	0.15	0.14	0.10	0.07	0.04	0.03	1.00
Pond Evaporation	inches	1.14	1.33	2.09	3.42	4.56	5.51	5.7	5.13	3.8	2.66	1.52	1.14	38.0
Effective Precipitation	inches	0.31	0.25	0.84	1.39	1.43	1.11	0.96	1.07	0.98	0.84	0.35	0.21	9.7
Net Pond Evap	af/acre	0.07	0.09	0.10	0.17	0.26	0.37	0.40	0.34	0.24	0.15	0.10	0.08	2.35
Net Evaporation	**acre-feet**	**0.001**	**0.001**	**0.002**	**0.002**	**0.004**	**0.005**	**0.006**	**0.005**	**0.003**	**0.002**	**0.001**	**0.001**	**0.034**

Notes:

- Total exposed water surface for the dewatering trench is width of de-watering trench (3 ft) multipled by length (210 ft). See Map 1 for the location of the de-watering trench.
- See Maps 2 and 3 for the exposed water surface for the northeast triangle property. The acreage was backfilled between May and September, with all water surface being removed as of September 18, 2017
- Evaporation rates are taken from NOAA Technical Repor: NWS 33. Distribution of evaporation taken from State Engineers Office.
- Effecitive Precipitation = 0.7 * Average Precipitation (from 1996 through 2009 for Loveland Weather Station from NCWCD)

Table 4

Wagner Kauffman #3 Pit

Jake Kauffman and Son, Inc.

Lagged Depletion Values (ac-ft) Resulting From Consumptive Use Values from 2000 - 2024

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
2004	-0.26	-0.31	-0.52	-0.84	-1.16	-1.51	-1.67	-1.55	-1.05	-0.82	-0.5	-0.32	-10.51
2005	-0.26	-0.31	-0.52	-0.84	-1.16	-1.51	-1.67	-1.55	-1.05	-0.82	-0.5	-0.32	-10.51
2006	-0.26	-0.31	-0.52	-0.84	-1.16	-1.51	-1.67	-1.55	-1.05	-0.82	-0.5	-0.32	-10.51
2007	-0.32	-0.43	-0.79	-1.28	-1.8	-2.33	-2.58	-2.39	-1.61	-1.27	-0.78	-0.46	-16.04
2008	-0.76	-0.73	-0.91	-1.43	-2.02	-2.03	-2.47	-1.71	-1.61	-1.71	-0.72	-0.41	-16.51
2009	-0.46	-1.08	-0.54	-1.23	-1.41	-1.6	-1.74	-1.64	-1.76	-1.18	-1.15	-0.99	-14.78
2010	-0.44	-0.48	-0.83	-1.31	-1.82	-2.35	-2.6	-2.4	-1.62	-1.28	-0.79	-0.47	-16.39
2011	-0.38	-0.47	-0.82	-1.31	-1.82	-2.35	-2.6	-2.4	-1.62	-1.28	-0.79	-0.47	-16.31
2012	-0.16	-0.11	-0.09	-0.08	-0.07	-0.07	-0.06	-0.06	-0.06	-0.06	-0.05	-0.04	-0.91
2013	-0.04	-0.03	-0.03	-0.03	-0.02	-0.03	-0.03	-0.04	-0.04	-0.04	-0.04	-0.03	-0.4
2014	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.03	-0.02	-0.02	-0.02	-0.26
2015	-0.02	-0.02	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.21
2016	-0.02	-0.01	-0.011	-0.011	-0.012	-0.013	-0.005	-0.006	-0.007	-0.007	-0.006	-0.006	-0.114
2017	-0.020	-0.100	-0.190	-0.290	-0.440	-0.650	-0.820	-0.860	-0.770	-0.620	-0.510	-0.410	-5.680
2018	-0.34	-0.27	-0.22	-0.18	-0.15	-0.12	-0.1	-0.09	-0.07	-0.06	-0.05	-0.04	-1.690
2019	-0.03	-0.03	-0.02	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.190
2020	-0.005	-0.004	-0.004	-0.003	-0.003	-0.003	-0.004	-0.004	-0.004	-0.004	-0.004	-0.003	-0.045
2021	-0.003	-0.002	-0.002	-0.002	-0.002	-0.003	-0.003	-0.004	-0.004	-0.004	-0.003	-0.003	-0.035
2022	-0.003	-0.002	-0.002	-0.002	-0.002	-0.003	-0.003	-0.004	-0.004	-0.004	-0.003	-0.003	-0.035
2023	-0.002	-0.002	-0.002	-0.002	-0.002	-0.003	-0.003	-0.004	-0.004	-0.004	-0.003	-0.003	-0.0329
2024	**-0.002**	**-0.002**	**-0.002**	**-0.002**	**-0.002**	**-0.003**	**-0.003**	**-0.004**	**-0.004**	**-0.004**	**-0.003**	**-0.003**	**-0.0329**
2025	-0.002	-0.002	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.000	-0.012

Notes:

For the 2000 - 2011 period, the following parameters were used in the AWAS Model: W -= 4,000 ft, Transmissivity = 50,000, Specific Yield = 0.2, X = 200 ft

For the 2012 - 2015 period, the following parameters were used in the AWAS Model: W -= 4,000 ft, Transmissivity = 50,000, Specific Yield = 0.2, X = 2,400 ft

For the 2016-2024 period, the following parameters were used in the AWAS Model: W -= 4,000 ft, Transmissivity = 50,000, Specific Yield = 0.2, X = 2,130 ft

Table 5

Wagner Kauffman #3 Pit
Jake Kauffman and Son, Inc.

2024 Water Balance - Lagged Depletions and Replacement Supplies from City of Loveland

Month	Consumptive Use (ac-ft)	Lagged Depletions (ac-ft)	City of Loveland Transit Losses (ac-ft)	Total Water Required from City of Loveland (ac-ft)
January	0.002	-0.002	-0.0001	-0.002
February	0.003	-0.002	-0.0001	-0.002
March	0.003	-0.002	-0.0001	-0.002
April	0.005	-0.002	-0.0001	-0.002
May	0.008	-0.002	-0.0001	-0.002
June	0.011	-0.003	-0.0001	-0.003
July	0.012	-0.003	-0.0001	-0.003
August	0.010	-0.004	-0.0001	-0.004
September	0.007	-0.004	-0.0001	-0.004
October	0.005	-0.004	-0.0001	-0.004
November	0.003	-0.003	-0.0001	-0.003
December	0.002	-0.003	-0.0001	-0.003
Totals	**0.07**	**-0.0329**	**-0.001**	**-0.034**

2025 Water Balance - Lagged Depletions and Replacement Supplies from City of Loveland

Month	Consumptive Use (ac-ft)	Lagged Depletions (ac-ft)	City of Loveland Transit Losses (ac-ft)	Total Water Required from City of Loveland (ac-ft)
January	0.00	-0.002	-0.0001	-0.002
February	0.00	-0.002	-0.0001	-0.002
March	0.00	-0.002	-0.0001	-0.002
April	0.00	-0.001	-0.0001	-0.001
May	0.00	-0.001	0.0000	-0.001
June	0.00	-0.001	0.0000	-0.001
July	0.00	-0.001	0.0000	-0.001
August	0.00	-0.001	0.0000	-0.001
September	0.00	-0.001	0.0000	-0.001
October	0.00	0.000	0.0000	0.000
November	0.00	0.000	0.0000	0.000
December	0.00	0.000	0.0000	0.000
Totals	**0.00**	**-0.012**	**0.000**	**-0.012**

WATER LEASE

2021 THIS WATER LEASE ("Lease") is made and entered into this 7 day of December, ~~2022~~, by and between the CITY OF LOVELAND, COLORADO, a home rule municipality, whose address is 500 East Third Street, Loveland, Colorado 80537 ("City"), and JAKE KAUFFMAN & SON, INC. ("Lessee"), A Colorado corporation, whose address is 808 South County Road 9E, Loveland, Colorado 80537.

WHEREAS, Lessee desires to lease water that may be used for augmentation or replacement for the purpose of augmenting certain wells, ponds, or pumps along the Big Thompson River; and

WHEREAS, the City is the owner of certain water that may be used for purposes of augmentation or replacement and is willing to lease, on a temporary basis, a portion of its water to Lessee on the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the parties agree as follows:

1. Term. This Water Lease shall be effective for a term of three (3) years commencing January 1, 2022 and ending December 31, 2024, unless sooner terminated as provided herein. It is understood by Lessee that the leased water may not be available to Lessee in any future year and Lessee specifically waives any claim, legal or equitable, for the renewal of this lease and specifically disclaims any expectation for such renewal.

2. Water. The City shall provide up to ten (10) acre-feet of water for Lessee's purposes, which may include, but is not limited to Windy Gap water, water stored in Green Ridge Glade Reservoir, decant water from the Loveland Water Treatment Plant, effluent from the Loveland Waste Water Treatment Plant, and any other source legally and physically available to the City that may be used for augmentation or replacement.

Lessee must use the water for replacement of depletions, including evaporation, at Kauffman #1 Pit and Wagner/Kauffman #3 Pit, M-99-069, or as directed by the River Commissioner or the Office of the State Engineer. Lessee shall use the leased water only for augmentation or replacement purposes according to the terms of a substitute water supply plan (SWSP) approved by the Colorado Division of Water Resources. Lessee may not sell or lease the water and may not use it for any other purposes. Lessee shall take and use the leased water to the fullest extent possible, and shall undertake no action that could be construed as abandonment of the water rights.

3. Annual Lease Payment.

a. Regardless of water supply source, Lessee shall annually pay the City five hundred dollars ($500) per acre-foot of water delivered under this Lease.

b. The City will submit an annual bill to the Lessee for all water supplied, in accordance with this Water Lease.

c. Lessee shall pay said amount to the City within thirty (30) days of receiving the City's bill.

d. Lessee shall supply to the City an anticipated schedule of replacement for the upcoming calendar year by December 1 of the previous calendar year. The Lessee is responsible for notifying the City if this schedule changes.

e. The City shall coordinate replacement or delivery of the leased water to the Big Thompson River with the River Commission or the Office of the Division Engineer for Water Division 1. Accounting of such delivery shall be made available to the River Commission or the Office of the Division Engineer for Water Division 1

4. Termination by City. In the event the City has an urgent need for water, as determined in the sole discretion of the City, the City may unilaterally terminate this Water Lease without cause. The City will endeavor to give Lessee thirty (30) days notice of such termination, but shall not be required to do so.

5. Termination by Lessee. After December 2024, the Lessee may terminate this lease providing written notice to the City prior to January 1 of the year in which the Water Lease is intended to be terminated. So long as lessee provides such advance notice, Lessee shall not be obligated to pay the Annual Lease payment for the year in which the Water Lease is terminated or any subsequent year.

6. Termination of Delivery for Nonpayment. In the event Lessee fails to pay for water when payment is due as set forth in paragraph 3, above, the City, in addition to seeking recovery of sums due, may terminate delivery of irrigation water to Lessee.

7. No Sublease Allowed. The Lessee shall not rent, sublet, or otherwise convey to any person or entity the right to use the leased water.

8. Limitations of Water Lease. The City grants no interest in the leased water to the Lessee other than as explicitly set forth in this Water Lease. Lessee shall make no claims to any rights, title, or interest in the leased water other than as explicitly set forth in this Water Lease. This Water Lease does not create a partnership or joint venture of any kind between the Parties, and the Lessee shall bear the entirety of any loss, cost, or expense incurred through its use of the leased water on the Property.

9. No Warranties. The City represents that it is the owner of the shares leased to Lessee but does not make any express or implied warranties or representations concerning the quality of the leased water or its suitability for use for irrigation purposes by Lessee. Delivery of water by the City under this Water Lease shall be on an "as is" basis only, and the City neither expressly nor impliedly warrants or guarantees the quality of the water or the quantity of water that will be yielded from the shares leased to Lessee. Lessee shall not hold the City liable for

any failure in delivery of the leased water, including, but not limited to, any failure in delivery due to force of nature or failure of water supply infrastructure.

10. Notices. Written notices required under this Water Lease and all other correspondence between the parties shall be directed to the following and shall be deemed received when hand-delivered or three (3) days after being sent by certified mail, return receipt requested:

If to the City: City of Loveland Water and Power Department
Attention: Todd Hanlin, Water Resources Manager
200 North Wilson Avenue
Loveland, Colorado 80537

If to Lessee: Jake Kauffman & Son, Inc.
808 South County Road 9E
Loveland, Colorado 80537

11. Lessee agrees to exercise its rights under this Water Lease at its own risk. Lessee shall, to the extent authorized by Colorado law, indemnify and hold harmless the City from and against any cost, expense, or liability arising out of this Water Lease or related activities. Nothing in this Water Lease is intended to constitute a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions of the Colorado Governmental Immunity Act, C.R.S. §24-10-101 *et seq.*, as applicable now or hereafter amended.

12. Governing Law and Venue. This Water Lease shall be governed by the laws of the State of Colorado, and venue shall be in the County of Larimer, State of Colorado or the Water Court for Water Division 1 in the State of Colorado.

13. Severability. In the event a court of competent jurisdiction holds any provision of this Water Lease invalid or unenforceable, such holding shall not invalidate or render unenforceable any other provision of this Water Lease.

14. Headings. Paragraph headings used in this Water Lease are for convenience of reference and shall in no way control or affect the meaning or interpretation of any provision of this Lease.

15. Assignability. Lessee shall not assign this Water Lease without the City's prior written consent.

16. Binding Effect. This Water Lease shall be binding upon, and shall inure to the benefit of, the parties hereto and their respective heirs, personal representatives, successors, and assigns.

17. Entire Agreement. This Water Lease contains the entire agreement of the parties relating to the subject matter hereof and, except as provided herein, may not be modified or amended except by written agreement of the parties.

IN WITNESS WHEREOF, the parties have executed this Water Lease on the day and year first above written.

CITY OF LOVELAND, COLORADO

By: _____
Todd Hanlin
Department of Water and Power

ATTEST:

_____ 12-9-2021
Assistant City Clerk

CITY OF LOVELAND SEAL COLORADO

APPROVED AS TO FORM:

_____
Assistant City Attorney

Jake Kauffman & Son, Inc.

By: _____

) ss.
COUNTY OF LARIMER)

The foregoing Water Lease was acknowledged before me this 3rd day of December, 2021.

Witness my hand and official seal.

_____
Notary Public

My commission expires 6/2/2024.

MICHELLE KRISTINE SWENSON
Notary Public
State of Colorado
Notary ID # 20204019145
My Commission Expires 06-02-2024

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

M-1999-069
#3

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

April 30, 2010

Jake Kauffman & Son, Inc
808 SCR 9E
Loveland, CO 805370000

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: ✓ M1999069 Wagner/Kauffman Pit #3
M1978327 Kauffman Pit

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.

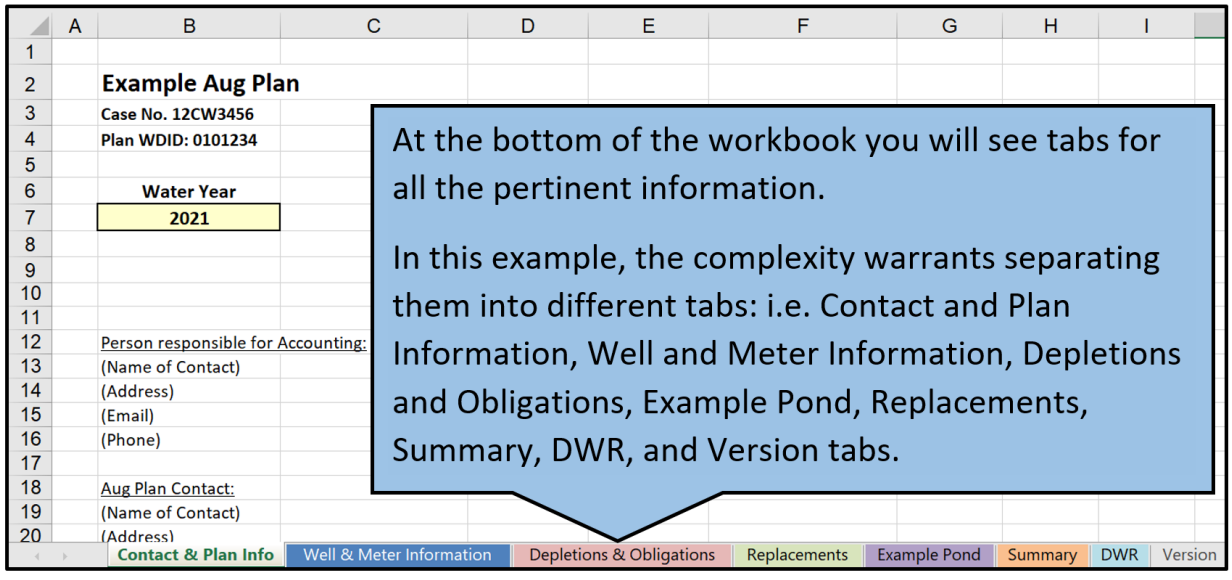
h. When there are multiple stream reaches involved, organize accounting from upstream to downstream.

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

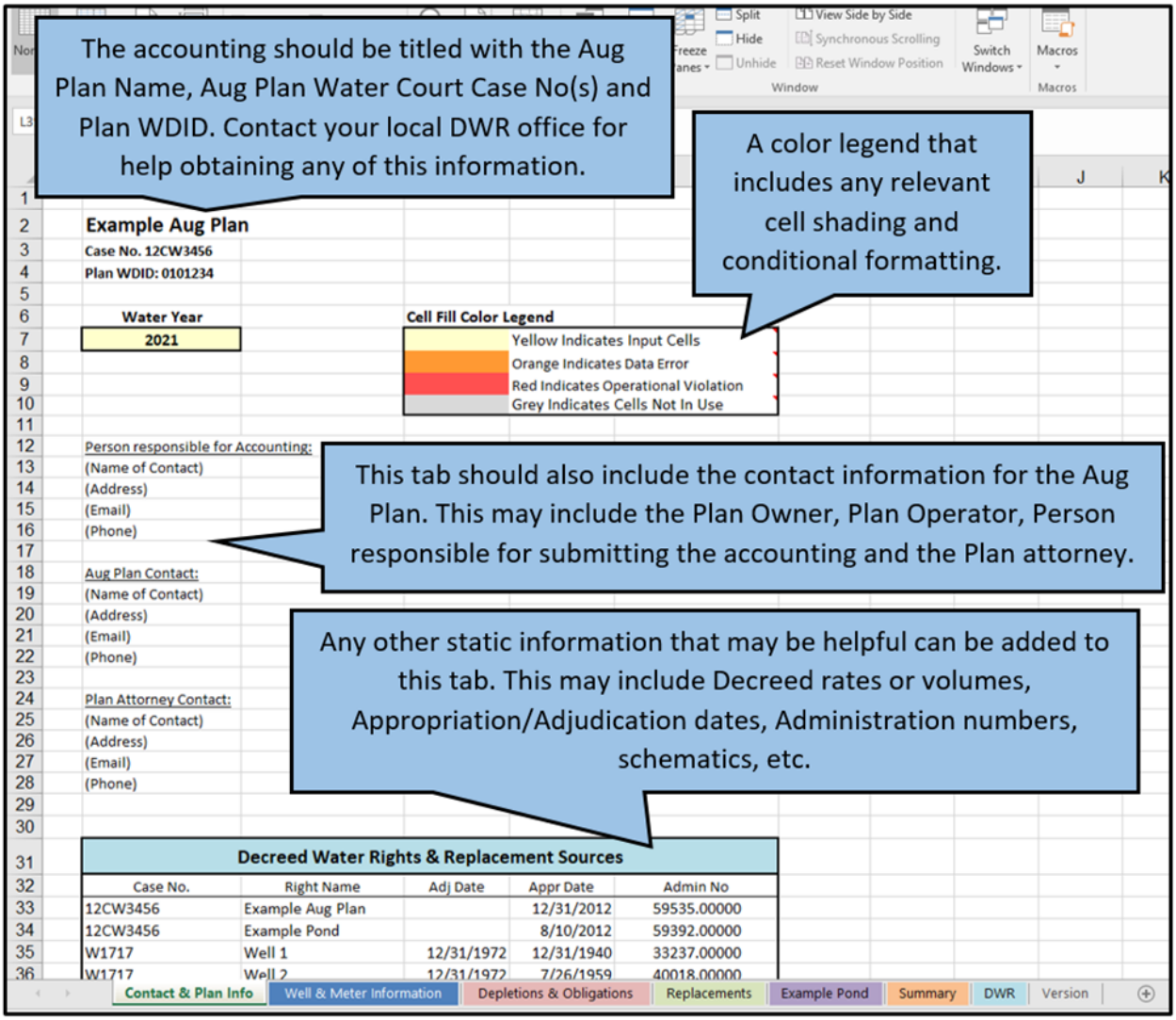
6. Example, Screenshots, and Spreadsheet Templates

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.

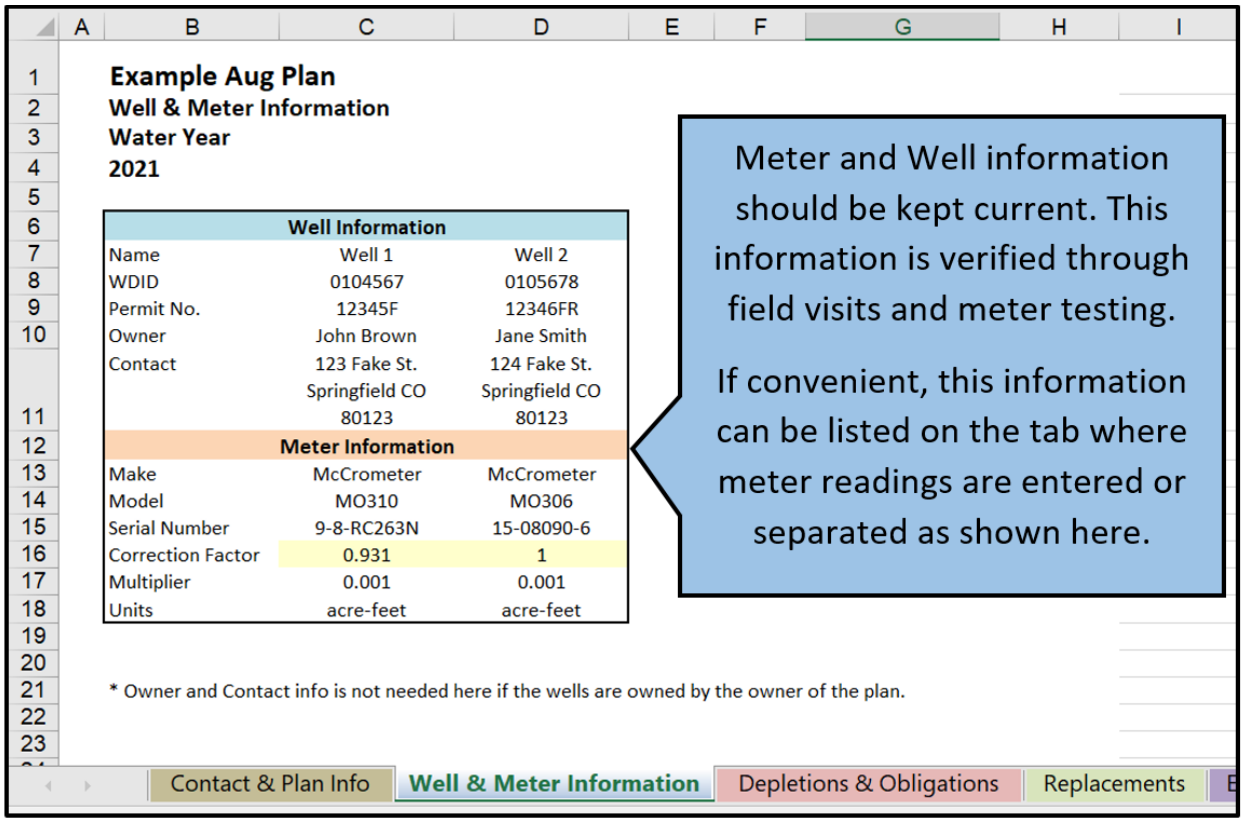
a. (List of relevant tabs)



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

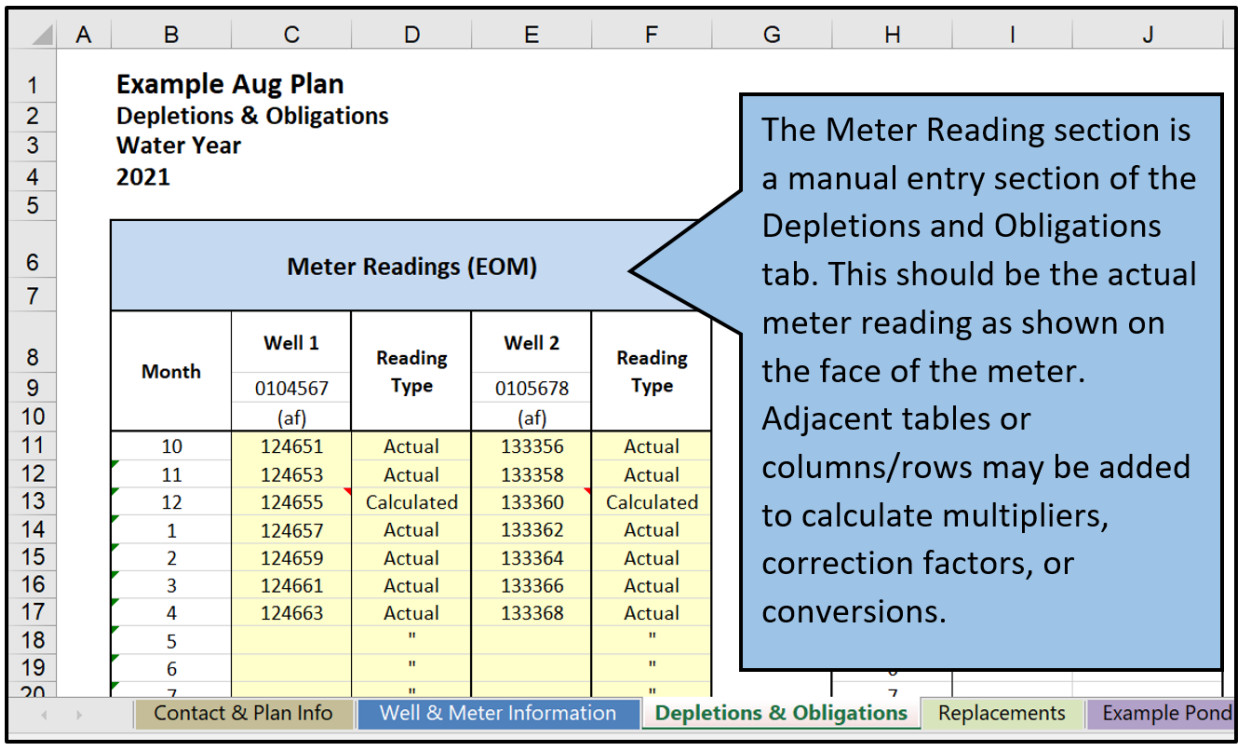
Meter and Well information should be kept current. This information is verified through field visits and meter testing.

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

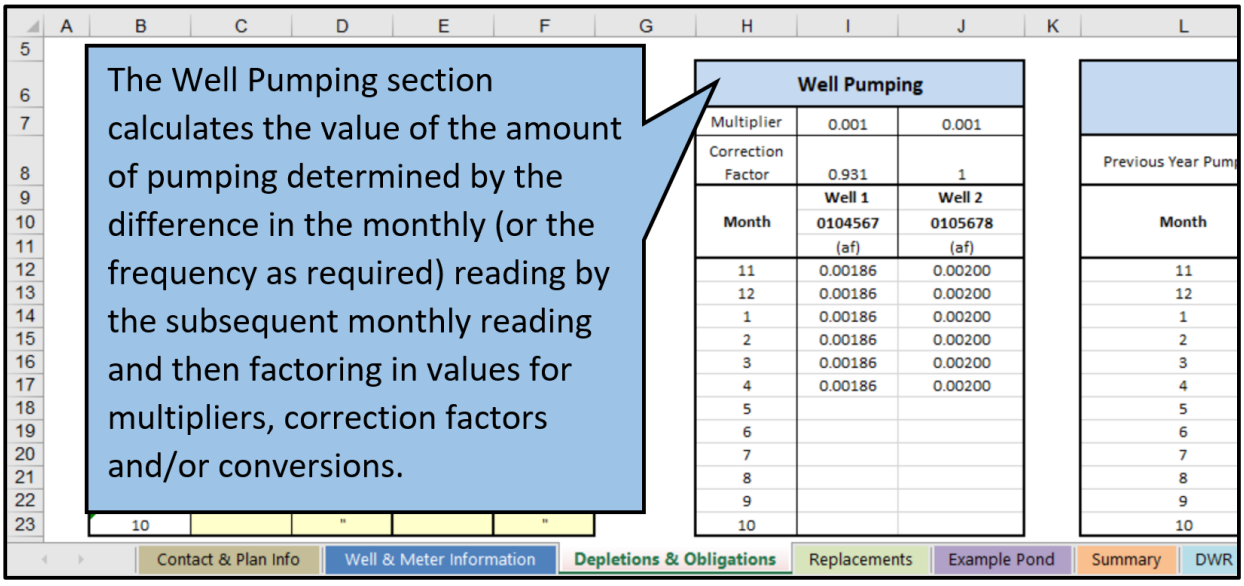
Meter Readings (EOM)

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.

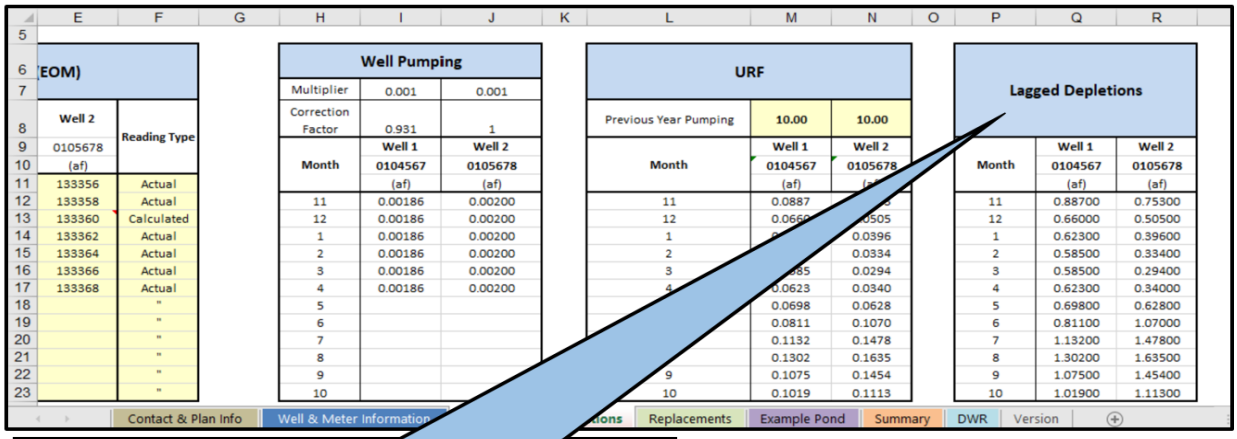
Well Pumping

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		

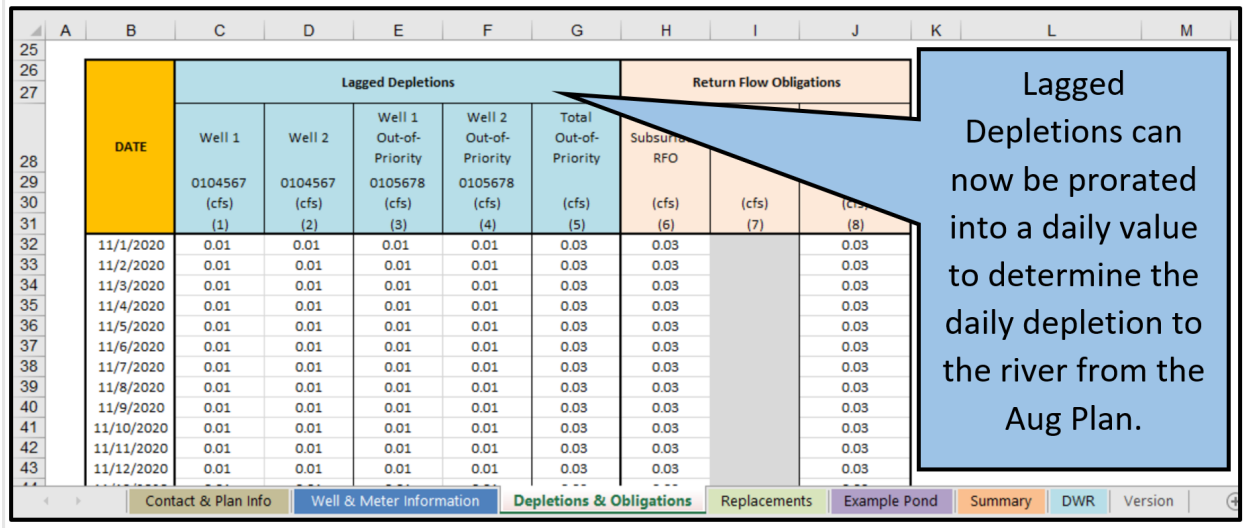
URF		
Previous Year Pumping	10.00	10.00
Month	Well 1 0104567 (af)	Well 2 0105678 (af)
11	0.0887	
12	0.0660	0505
1		0.0396
2		0.0334
3	585	0.0294
4	0.0623	0.0340
5	0.0698	0.0628
6	0.0811	0.1070
7	0.1132	0.1478
8	0.1302	0.1635
9	0.1075	0.1454
10	0.1019	0.1113

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

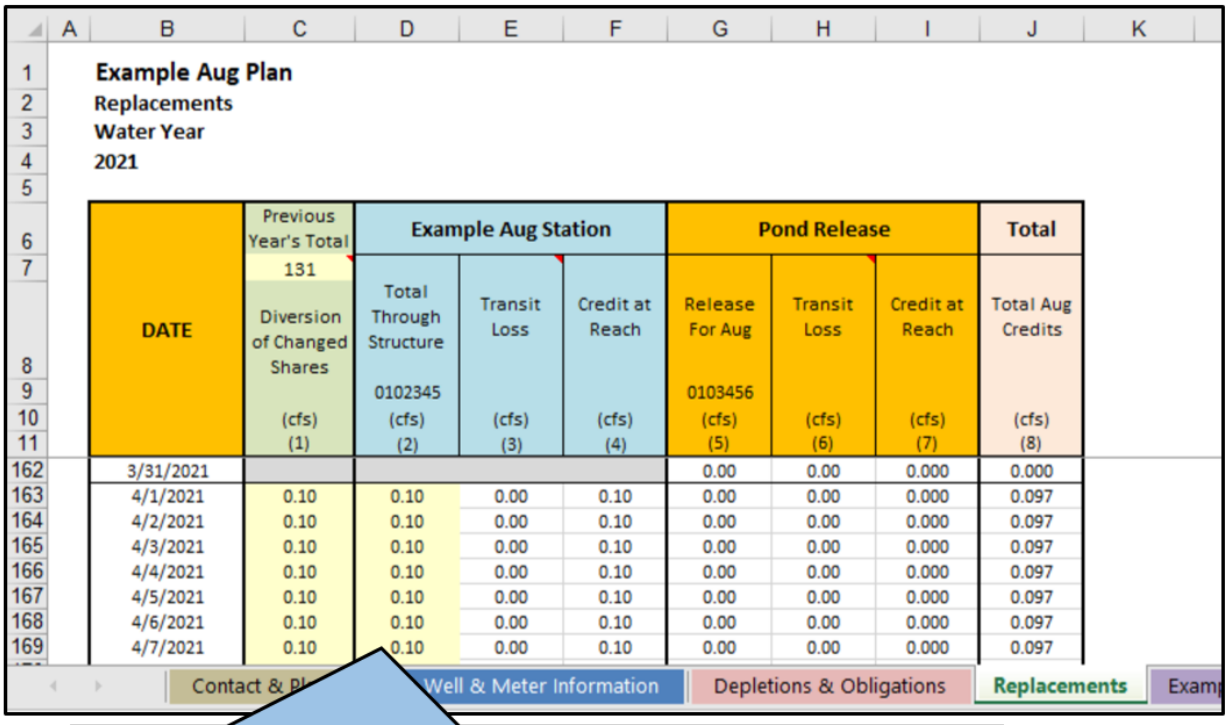


DATE	Lagged Depletions: Well 1 0104567 (cfs) (1)	Well 2 0104567 (cfs) (2)	Well 1 Out-of-Priority 0105678 (cfs) (3)	Well 2 Out-of-Priority 0105678 (cfs) (4)	Total Out-of-Priority (cfs) (5)	Return Flow Obligations: Subsurf... RFO (cfs) (6)	(cfs) (7)	(cfs) (8)
11/1/2020	0.01	0.01	0.01	0.01	0.03	0.03		0.03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



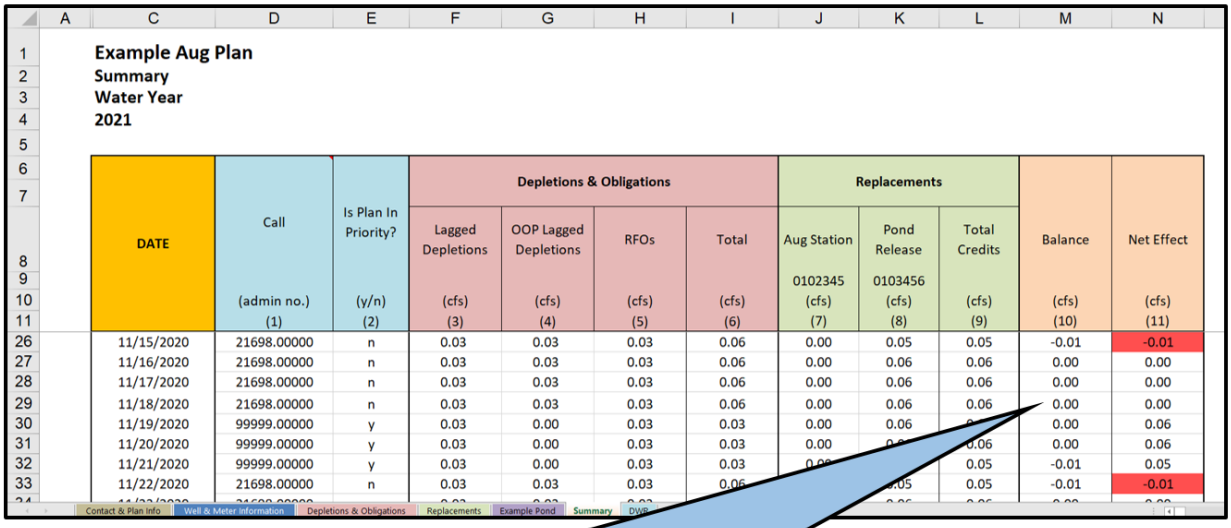
Example Aug Plan
Replacements
Water Year
2021

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



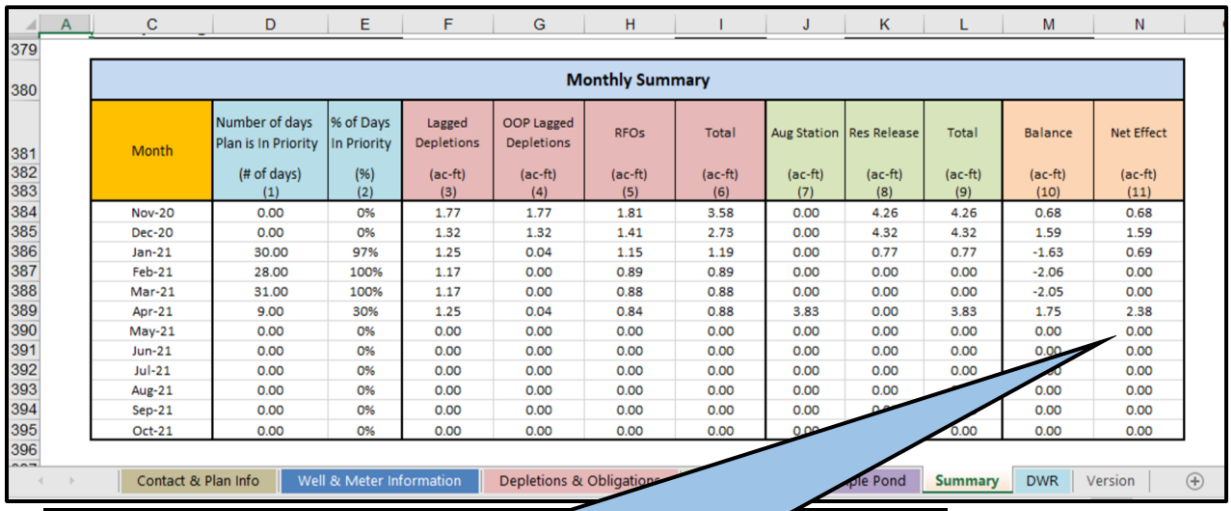
Example Aug Plan
Summary
Water Year
2021

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.