STATE OF COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

Approval of SWSP Renewal Request for the Timnath-Connell Pit (M-1999-050, Plan ID 3615)

Vargas-Johnson - DNR, Javier <javier.vargasjohnson@state.co.us> Mon, Mar 28, 2022 at 4:52 PM
To: tlwwater@msn.com
Cc: Michael Hein - DNR <michael.hein@state.co.us>, Mark Simpson - DNR <mark.simpson@state.co.us>, Louis Flink - DNR <louis.flink@state.co.us>, Dawn Ewing - DNR <Dawn.Ewing@state.co.us>, Amy Eschberger - DNR <amy.eschberger@state.co.us>, Brock Bowles - DNR <brock.bowles@state.co.us>

Dear Mr. Williams,

The Colorado Division of Water Resources has reviewed the application for the Timnath-Connell SWSP Renewal (DRMS Permit No. M-1999-050, Plan ID 3615). Please see the attached letter for the conditions of approval.

Please let me know if you have any questions or concerns.

Sincerely,

Javier Vargas-Johnson
Water Resources Engineer

COLORADO
Division of Water Resources
Department of Natural Resources

P 303.866.3581x8227
1313 Sherman St., Suite 821 Denver CO 80203
javier.vargasjohnson@state.co.us | www.colorado.gov/water

Timnath-Connell 2022-2023.pdf
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COLORADO
Division of Water Resources
Department of Natural Resources

March 28, 2022

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

RE: Timnath-Connell Substitute Water Supply Plan (WDID 0302526, Plan ID 3615)
Timnath-Connell Pit, DRMS Permit No. M-1999-050 (WDID 0303018)
Section 3, T6N, R68W, 6th P.M.
Water Division 1, Water District 3, Larimer County

Approval Period: April 1, 2022 through March 31, 2023
Contact Information for Mr. Williams: 303-653-3940; tlwwater@msn.com

Dear Mr. Williams:

We have reviewed your letter received February 15, 2022 requesting renewal of the above referenced substitute water supply plan ("SWSP") in accordance with section 37-90-137(11), C.R.S., for a sand and gravel pit on behalf of Connell Resources ("Applicant"). The required fee of $257.00 for the renewal of this substitute water supply plan has been submitted (receipt number 10018981). The original substitute water supply plan for this site was approved on July 22, 1999, and was most recently approved on May 4, 2021 for operations through March 31, 2022.

SWSP Operation

The Timnath-Connell Pit is located in Section 3, Township 6 North, Range 68 West of the 6th P.M., south of the town of Timnath and west of the Cache la Poudre River. Mining operations at the Timnath-Connell Pit during this plan period will consist of recycling asphalt and concrete material, dust control, and reclamation activities. The reclamation activity proposed to occur at the Timnath-Connell Pit during this plan period is limited to the backfilling of previously mined areas. No additional mining of sand and gravel is proposed to occur at this site during this plan period, and no product is proposed to be washed at the site during this plan period. Depletions at the site during this plan period will be limited to evaporation from exposed groundwater surface areas and water used for dust control purposes. Replacement of depletions at the site will be made via delivery of Box Elder Ditch Company shares to an on-site recharge pond or fully consumable water leased from the Fort Collins-Loveland Water District. Operations at the site are projected to continue for another five years or more. The final reclamation plan for the site calls for a lined reservoir for the area west of the Box Elder Ditch and backfilling of the mined area to the east of the Box Elder Ditch. An 8.10-acre recharge pond and a 2.74-acre unlined pond will remain onsite after reclamation.

Depletions

There are 6.03 acres of exposed groundwater remaining at the site and an 8.10-acre recharge pond. The 6.03 acres of groundwater currently exposed at the site consist of a total of 0.15 acres of dewatering trenches, a 0.53-acre dewatering sump, a 2.61-acre pond used to provide water for dust control purposes, and a 2.74-acre pond (see Map 1). Evaporative depletions were calculated using a gross annual evaporation of 39 inches, with a credit of 8.16 inches for effective precipitation [based on an average annual precipitation for the Northern Colorado Water Conservancy District's Loveland (2006-2015) and East Fort Collins (1994-2015) weather stations]. Net evaporative depletions are calculated as 20.82 acre-feet per year for the 8.10-acre recharge pond and 15.50 acre-feet per year for the remaining 6.03 acres of exposed groundwater (see attached Tables 1 and 2). The evaporative loss from the recharge pond is deducted from the deliveries to the recharge pond in the given month prior to determining the net positive accretion or depletion from recharge into the pond and is thus not included in the total net depletions covered in this SWSP.

It is anticipated that 0.80 acre-feet of water will be used for on-site dust control during this plan period, based on an estimate of 5 truckloads of 4,000 gallons of water per month. Water used for dust control purposes is assumed to be 100% consumed.

The Timnath-Connell Pit will not be mined for sand and gravel during this approval period, and no product will be washed at the site, therefore there will be no water lost in any mined product.

The total annual consumptive use from evaporation (excluding the recharge pond) and operational uses at the site is 16.30 acre-feet (see attached Table 4). The Alluvial Water Accounting System (AWAS) stream depletion model, developed by the Integrated Decision Support Group, was used to determine the lagged depletions from the Timnath-Connell Pit 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:

- Distance from the centroid of the 6.03 acres to the river (X) = 2,218 ft
- Alluvial aquifer width (W) = 5,300 ft
- Specific yield (S) = 0.2
- Transmissivity (T) = 50,000 (gpd/ft)

Lagged stream depletions are estimated to total 16.31 acre-feet during this plan period, as shown on the attached Table 4.

The Applicant has continuously dewatered the Timnath-Connell Pit since 1999. Water pumped for dewatering is discharged into the adjacent recharge pond and the adjacent 2.74-acre unlined pond. This diversion into the recharge pond is not a part of the metered Box Elder Ditch Shares that are also discharged into the recharge pond. The dewatering depletions are lagged to the river using the same parameters as the other lagged depletions from the Timnath-Connell Pit as described above. The dewatering accretions from the recharge pond are lagged to the river using the same parameters as given above for the mine site depletions with the exception of using a distance (X) from the centroid of the recharge pond to the river of 3,500 ft. This dewatering operation creates lagged accretions that mimic the lagged depletions. Thus at the cessation of dewatering the only depletion that would impact the river is that which is attributable to the "first fill" of the pit. The

Applicant intends to line the mined portion of the pit when mining activity is complete thereby eliminating the depletion caused by the "first fill". Should dewatering operations cease prior to the pit obtaining a liner approval from the Division Engineer, the Applicant must address the lagged depletions due to the "first fill."

Replacements

The operator proposes to provide replacement water for this pit using a combination of recharge of Box Elder Ditch Company shares and fully consumable water leased from the Fort Collins-Loveland Water District.

Recharge of Box Elder Ditch Company Shares

Connell Resources, Inc. owns a total of 4.0 shares out of 64 outstanding shares in the Box Elder Ditch Company ("BEDC") (WDID 0300926), representing 6.25% of the share ownership. The Applicant's 4.0 shares were historically used to irrigate 165 acres on the property known as the John Weitzel Farm, which includes the site of the Timnath-Connell Pit. The primary source of replacement water for this SWSP will be from recharge of 2.5 of these BEDC shares. The shares will be diverted into a recharge pit (WDID 0302003) located on the Timnath-Connell site. The recharge pit was constructed in an area of the mining site that was previously excavated for sand and gravel mining. The remaining 1.5 BEDC shares not delivered to recharge will continue to be used to irrigate the portion of the John Weitzel Farm still in agricultural production.

The pro-rata diversions available at the farm headgate for the 4.0 shares used on the John Weitzel property were estimated to total 373.62 acre-feet per year, based on the average headgate diversions for the Box Elder Ditch for the years 1950 to 2019, assuming a 10% ditch loss. The amount of water available for crop consumption was estimated to be 205.49 acre-feet, based on 55% field efficiency for flood irrigation. The potential crop consumptive use was calculated as 170.02 acre-feet per year, using the SPCU Model. Historical consumptive use for the 4.0 shares was determined as the lesser of the water available for crop consumption or potential crop consumptive use if a full water supply was available on a monthly basis, and was calculated as 169.09 acre-feet per year. Total return flow obligations from the use of the 4.0 shares were calculated as 204.54 acre-feet per year by subtracting the historical consumptive use from the pro-rata amount of diversions available at the farm headgate. One-third of the return flows (68.18 acre-feet) were assumed to occur as surface return flows and the remaining two-thirds (136.36 acre-feet) were assumed to occur as subsurface return flows. Subsurface return flows were lagged to the river using the AWAS stream depletion model with the following parameters:

- Distance from the centroid of the irrigated property to the river (X) = 3,300 ft
- Alluvial aquifer width (W) = 5,000 ft
- Specific yield (S) = 0.2
- Transmissivity (T) = 50,000 (gpd/ft)

The monthly net accretion/depletion for the 4.0 BEDC shares were calculated as the monthly diversions available at the farm headgate, minus the surface return flow obligation and lagged subsurface return flow obligation for that month. The monthly net accretion/depletion for the 2.5 BEDC shares to be delivered to recharge were calculated by pro-rating the monthly net accretion/depletion for the 4.0 BEDC shares.

The expected volume of water available for diversion into the recharge pond for the subject 2.5 shares is 233.51 acre-feet per year. This figure represents the pro-rata average headgate diversion less a 10% ditch loss. The pro-rata historical consumptive use credit for the 2.5 shares is estimated to total 105.67 acre-feet for this plan period and the pro-rata return flow obligation for the 2.5 shares is estimated to be 127.83 acre-feet. As indicated above, the evaporation losses from the recharge pond are estimated to total 20.82 acre-feet per year, resulting in a net amount of 212.69 acre-feet of water delivered to recharge.

The lagged accretions from the Timnath-Connell recharge pond were estimated by the Applicant's consultant using the AWAS stream depletion model with the following parameters:

- Distance from the recharge pond centroid to the river (X) = 3,500 ft
- Alluvial aquifer width (W) = 5,300 ft
- Specific yield (S) = 0.2
- Transmissivity (T) = 50,000 (gpd/ft)

The lagged accretions to the Cache la Poudre River are projected to total 294.13 acre-feet during this plan period. This amount includes deliveries to recharge from previous years. Pursuant to previously submitted accounting, 286.54 acre-feet were diverted into the recharge site during the 2012 irrigation season, 257.27 acre-feet were diverted into the recharge site during the 2013 irrigation season, 502.69 acre-feet were diverted into the recharge site during the 2014 irrigation season, 406.81 were diverted into the recharge site during the 2015 irrigation season, 240.10 were diverted into the recharge site during the 2016 irrigation season, 317.95 acre-feet were diverted into the recharge site during the 2017 irrigation season, 229.69 acre-feet were diverted into the recharge site during the 2018 irrigation season, 252.31 acre-feet were diverted into the recharge site during the 2019 irrigation season, 258.41 acre-feet were diverted into the recharge site during the 2020 irrigation season, and 486.28 acre-feet were diverted into the recharge site during the 2021 irrigation season. In 2014, 2015, and 2021, long periods of no call on the Cache la Poudre River allowed for a considerable amount of free river water to be delivered into the recharge pond in addition to the historical yield of the 2.5 Box Elder shares. The summer and winter return flow obligations from the use of the 2.5 Box Elder Ditch shares will be maintained under this substitute water supply plan. A monthly breakdown of the stream depletions and accretions are shown in the attached Table 8. As shown in column (H), the net recharge accretion credits from the Box Elder Ditch shares are sufficient to cover both the return flow obligations from the use of the shares and the depletions from operations at the Timnath-Connell Pit.

Long Term Augmentation

The final reclamation plan for this site includes both a lined reservoir and unlined ponds for the portion of the site west of the Box Elder Ditch, while all of the disturbed areas to the east of the Box Elder Ditch will be backfilled. The successful completion of a lined reservoir will eliminate long-term depletions that would require an augmentation plan for the western portion of the site. After completion and approval of the reservoir liner this area must continue to be covered by a valid SWSP until the lagged depletions from mining operations are no longer impacting the river.

A 2.74-acre unlined pond and the 8.10-acre recharge pond are proposed to remain on the site after final reclamation. The creation of permanent unlined ponds will result in long-term evaporation of groundwater which requires a long-term augmentation plan. The Applicant is

required to obtain a water court approved augmentation plan to cover the long term-depletions associated with such groundwater ponds.

In accordance with the letter dated April 30, 2010 (see 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 required that you provide information to DRMS to demonstrate you can replace long term injurious stream depletions that result from mining related exposure of groundwater. In accordance with approach nos. 1 and 3 identified in that letter, the applicant holds a bond through DRMS in the amount of $532,504.72. The bond was increased to this amount pursuant to a site inspection and reclamation cost estimate conducted by DRMS staff on May 15, 2017. In addition, Connell has confirmed that they understand that an augmentation plan must be filed three years prior to completion of mining at the site to address long-term depletions from the evaporation of groundwater from the unlined ponds.

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 plan shall be valid for the period of April 1, 2022 through March 31, 2023 unless otherwise revoked or superseded by a decree. If a court-decreed augmentation plan will not be obtained by the plan's expiration date, a renewal request must be submitted to this office with the statutory fee (currently $257) no later than **February 1, 2023.** 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 53419-F has been 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.
3. The total surface area of the groundwater exposed at the Timnath-Connell Pit (not including the recharge pond) must not exceed 6.03 acres, resulting in 15.50 acre-feet per year of evaporative loss.
4. The total amount of groundwater used for operational purposes at the Timnath-Connell Pit during this plan period shall not exceed 0.8 acre-feet used for dust control purposes. No product shall be mined at the site during this plan period.
5. Total consumption at the Timnath-Connell Pit shall not exceed the aforementioned amounts unless an amendment is made to this plan.
6. Approval of this plan is for the purposes as stated herein. Any additional uses of this water must first be approved by this office. Any future additional historical consumptive use credit given (e.g., agricultural water transfer) for this site must consider all previous credits given.
7. All pumping for dust control purposes shall be measured in a manner acceptable to the division engineer.
8. The water attributable to the 2.5 shares of the Box Elder Ditch Company must continue to be diverted in priority at the ditch and then measured into the Timnath-Connell recharge site. Adequate measuring devices acceptable to the water commissioner must be installed.

9. The Division of Water Resources will not acknowledge any recharge activity conducted without the knowledge of the water commissioner. The flow into the recharge site must be metered and equipped with a continuous flow recorder unless the water commissioner, in conjunction with the division engineer, determines adequate records may be kept without such equipment.

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

11. The replacement water which 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 and/or liner approval is obtained for the entire site. All replacement water must be concurrent with depletions in quantity, timing, and locations.

12. 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 approval of the water commissioner. 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. The Applicant is required to coordinate the delivery location of replacement water with the water commissioner to ensure the out-of-priority depletions are adequately replaced to prevent injury to other water rights.

13. 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 Cache la Poudre River or its tributaries. Applicant shall not receive credit for replacement of depletions to the Cache la Poudre 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 Cache la Poudre River below such diversion structure.

14. 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.

15. 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 Administration Protocol for Division One. NOTE: Monthly accounting, even during the winter non-irrigation season, is required.

16. 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.

17. The Applicant shall follow the Augmentation Plan Accounting Protocol for the operation of this SWSP. The applicant shall follow the latest version of the recharge protocol found on https://dwr.colorado.gov/services/water-administration under "Guidance Documents — Formal Directives".

18. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the division engineer.

19. The amount and location of the dry-up of the irrigated acreage associated with the subject 2.5 shares of the Box Elder Ditch Company has been previously documented and approved by the division engineer and water commissioner (see attached Map 2), therefore no annual reporting is required to verify dry-up.

20. Reclamation of the mine site will produce a permanent water surface exposing groundwater to evaporation, therefore 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. Granting of this plan does not imply approval by this office of any such court application(s). For the portion of the site proposed to be lined, replacement of lagged depletions shall continue until there is no longer an effect on stream flow.

21. The Timnath-Connell Pit has been continuously dewatered. Dewatering operations at this site create lagged accretions that mimic its lagged depletions due to the recharge of dewatering water. The Applicant intends to line the mined portion of the site when mining activity is complete, and none of the currently dewatered areas will be within the unlined lakes after reclamation. Therefore the site should not experience water loss associated with a "first fill" that occurs when unlined gravel pits are allowed to fill with groundwater. The Applicant proposes that in accordance with the current dewatering plan, once dewatering at the site ceases, there will not be any post-pumping depletions that must be addressed.

22. If dewatering of the Timnath-Connell Pit is discontinued prior to the completion of a liner, the pit would fill, creating additional depletions to the stream system and resulting in increased evaporation. Additionally, should an augmentation plan not be obtained for the unlined ponds, long term depletions to the stream system would result. To assure that additional or long term depletions to the river do not occur, a bond for $532,504.72 for the lining or backfilling of the Timnath-Connell Pit was obtained in 2017 through DRMS.

23. The State Engineer may revoke this SWSP or add additional restrictions to its operation if at any time the State Engineer determines that injury to other vested water rights has occurred or will occur as a result of the operation of this SWSP. Should this substitute water 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.

24. 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 to which the senior appropriators receiving the substitute supply has normally been put. As such, water quality data or analysis may be requested at any time to determine if the requirement of use of the senior appropriator is met.

25. 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 or comments, please contact Michael Hein, Lead Assistant Division Engineer, in Greeley at 970-352-8712 or Javier Vargas-Johnson in Denver at 303-866-3581.

Sincerely,

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

Attachments: Maps 1 and 2
Tables 1, 2, 4, and 8
April 30, 2010 DRMS letter
Accounting Protocol

Cc: Michael Hein, Lead Assistant Division Engineer, Michael.Hein@state.co.us
1809 56th Avenue, Greeley, CO 80634, (970) 352-8712

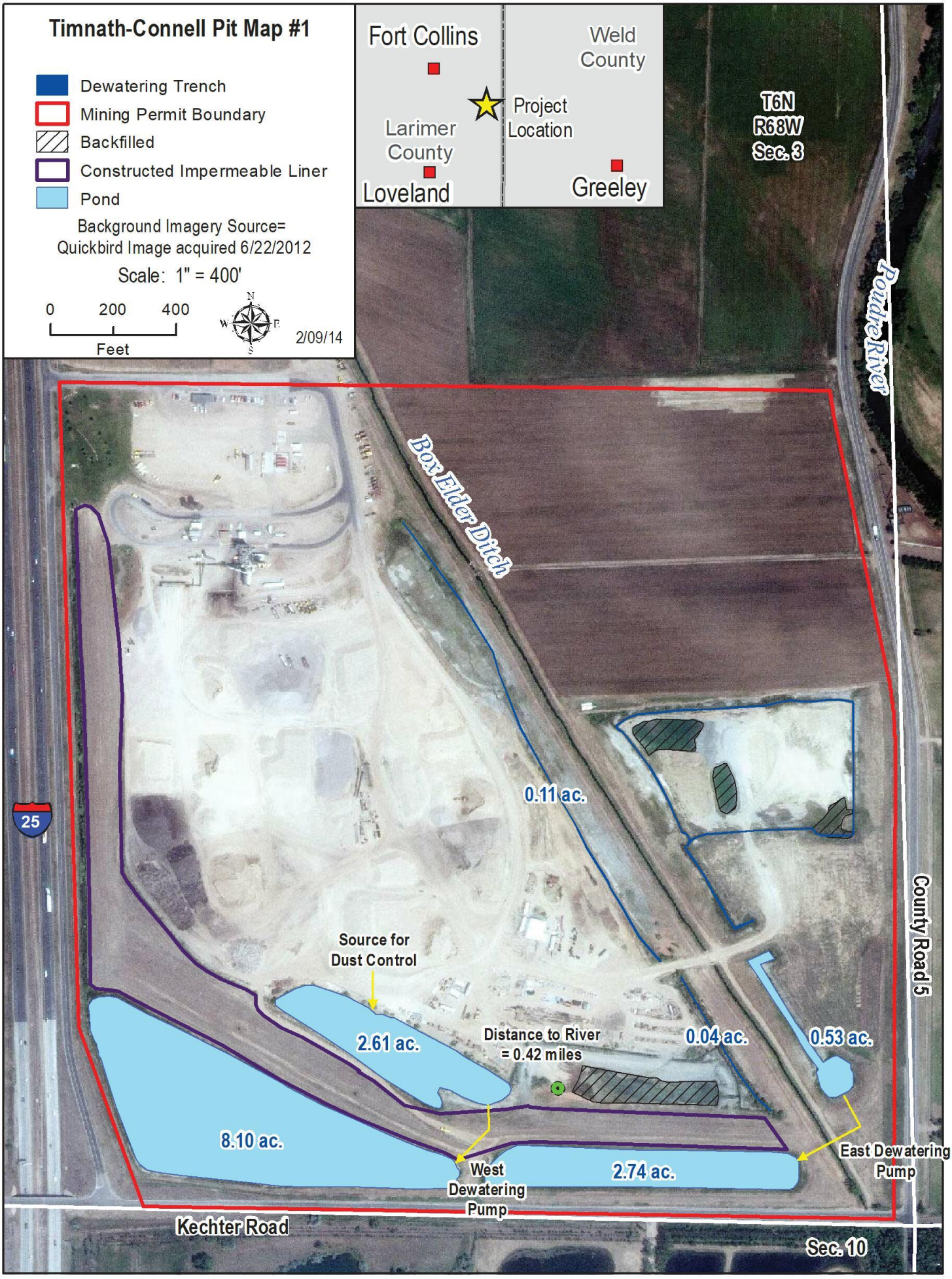
Louis Flink, Tabulation/Diversion Records Coordinator, Louis.Flink@state.co.us

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

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

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

Brock Bowles, Division of Reclamation, Mining and Safety, Brock.Bowles@state.co.us


Timnath-Connell Pit Map #1
Dewatering Trench
Mining Permit Boundary
Backfilled
Constructed Impermeable Liner
Pond
Background Imagery Source=
Quickbird Image acquired 6/22/2012
Scale: 1" = 400'
0
200
400
Feet
N
W
E
S
2/09/14
Fort Collins
Loveland
Larimer County
Weld County
Greeley
Project Location
T6N
R68W
Sec. 3
Poudre River
Box Elder Ditch
0.11 ac.
25
Source for Dust Control
2.61 ac.
Distance to River
= 0.42 miles
0.04 ac.
0.53 ac.
8.10 ac.
West Dewatering Pump
2.74 ac.
East Dewatering Pump
County Road 5
Kechter Road
Sec. 10

Map 2

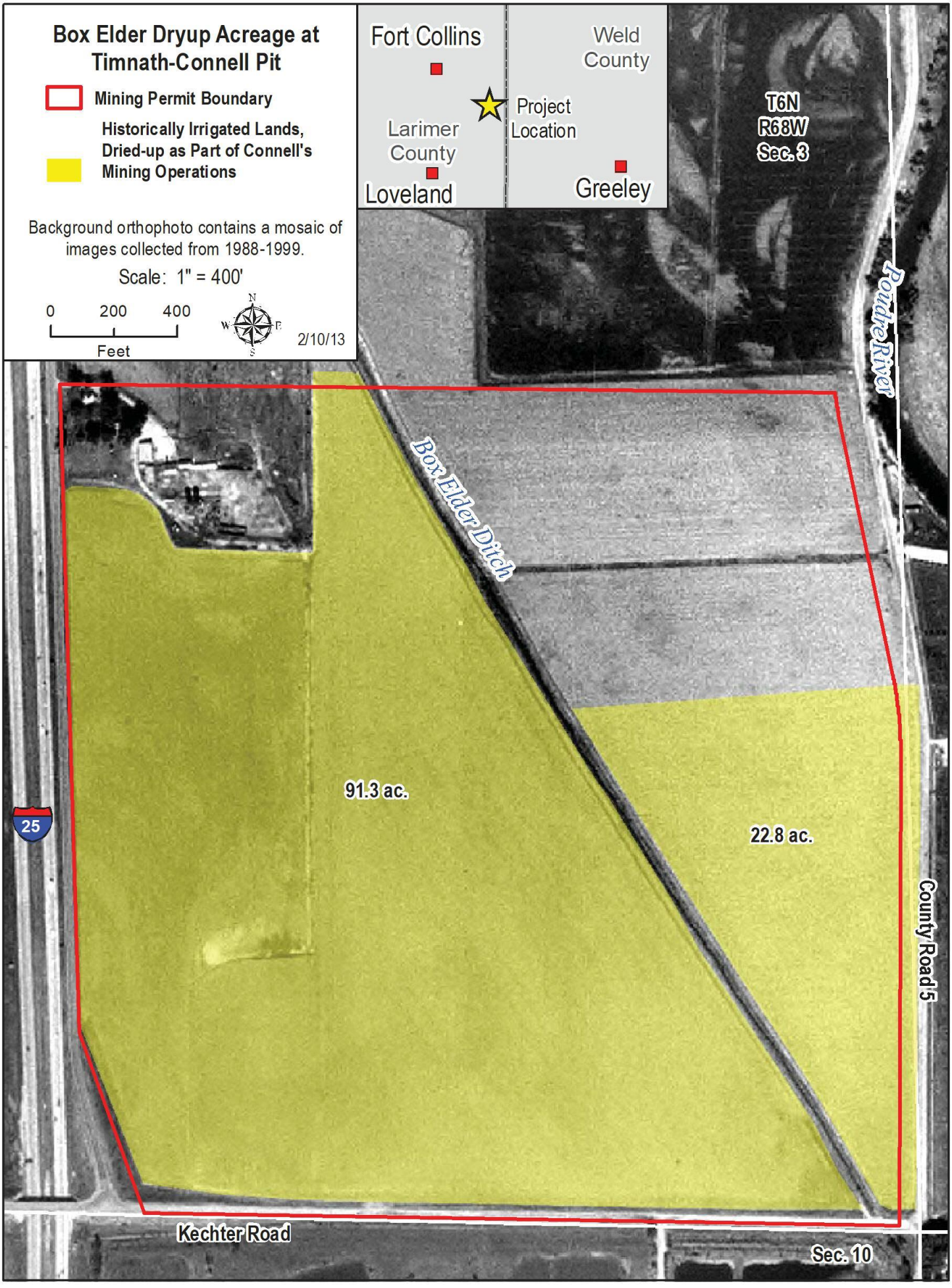

Box Elder Dryup Acreage at Timnath-Connell Pit
Mining Permit Boundary
Historically Irrigated Lands, Dried-up as Part of Connell's Mining Operations
Background orthophoto contains a mosaic of images collected from 1988-1999.
Scale: 1" = 400'
0
200
400
Feet
N
W
E
S
2/10/13
Fort Collins
Weld County
Project Location
Larimer County
Loveland
Greeley
T6N
R68W
Sec. 3
Poudre River
Box Elder Ditch
91.3 ac.
22.8 ac.
25
County Road 5
Kechter Road
Sec. 10

Table 1

Timnath-Connell Pit
Connell Resources

Prepared by: Williams and Weiss Consulting, LLC
Date Revised: 2/14/2022

Evaporative Loss - Timnath-Connell Recharge Pond

Total Exposted Water Surface Area[1] = 8.1 acres

		2022									2023			
		April	May	June	July	August	September	October	November	December	January	February	March	Totals
Distribution of Annual Evaporation[2]		0.09	0.12	0.15	0.15	0.14	0.10	0.07	0.04	0.03	0.03	0.035	0.055	1.00
Pond Evaporation[3]	inches	3.51	4.68	5.66	5.85	5.27	3.90	2.73	1.56	1.17	1.17	1.37	2.15	39.00
Effective Precipitation[4]	inches	1.12	1.73	0.90	0.91	0.67	0.92	0.69	0.28	0.17	0.16	0.21	0.39	8.16
Net Pond Evap	af/acre	0.20	0.25	0.40	0.41	0.38	0.25	0.17	0.11	0.08	0.08	0.10	0.15	2.57
Net Evaporation	**acre-feet**	**1.61**	**1.99**	**3.21**	**3.34**	**3.10**	**2.01**	**1.38**	**0.86**	**0.67**	**0.68**	**0.78**	**1.18**	**20.82**

Notes:
[1] See Map 1 for the delineation of the de-watering pond exposed water surface area.
[2]Distribution of Annual Evaporation per DWR Guidelines for gravel pits at elevations below 6,500 feet.
[3]Annual evaporation rate are taken from NOAA Technical Report NWS 33.
[4]Effecitive Precipitation = 0.7 * Avg. Precip.. Avg. Monthly Precip. = averaging monthly data from the Northern Colorado Water Conservancy District's Loveland (2006 - 2015) and East Ft. Collins (1994 - 2015) weather stations.

Table 2

Timnath-Connell Pit
Connell Resources

Prepared by: Williams and Weiss Consulting, LLC
Date Revised: 2/14/2022

Evaporative Losses within Mining Area

Total Exposted Water Surface Area[1] = 6.03 acres

		2022									2023			
		April	May	June	July	August	September	October	November	December	January	February	March	Totals
Distribution of Annual Evaporation[2]		0.09	0.12	0.15	0.15	0.14	0.10	0.07	0.04	0.03	0.03	0.035	0.055	1.00
Pond Evaporation[3]	inches	3.51	4.68	5.66	5.85	5.27	3.90	2.73	1.56	1.17	1.17	1.37	2.15	39.00
Effective Precipitation[4]	inches	1.12	1.73	0.90	0.91	0.67	0.92	0.69	0.28	0.17	0.16	0.21	0.39	8.16
Net Pond Evap	af/acre	0.20	0.25	0.40	0.41	0.38	0.25	0.17	0.11	0.08	0.08	0.10	0.15	2.57
Net Evaporation	**acre-feet**	**1.20**	**1.48**	**2.39**	**2.48**	**2.31**	**1.50**	**1.02**	**0.64**	**0.50**	**0.51**	**0.58**	**0.88**	**15.50**

Notes:
[1] See Map 1 for the delineation of the de-watering pond exposed water surface area.
[2]Distribution of Annual Evaporation per DWR Guidelines for gravel pits at elevations below 6,500 feet.
[3]Annual evaporation rate are taken from NOAA Technical Report NWS 33.
[4]Effecitive Precipitation = 0.7 * Avg. Precip.. Avg. Monthly Precip. = averaging monthly data from the Northern Colorado Water Conservancy District's Loveland (2006 - 2015) and East Ft. Collins (1994 - 2015) weather stations.

Table No. 4
Timnath-Connell Pit
Connell Resources

Prepared by: Williams and Weiss Consulting, LLC
Date Revised: 2/14/2022

Total Losses - Evaporative and Operational Losses and Lagged Depletions

Month	Evaporative Losses[1] (ac-ft)	Operational Losses[2] (ac-ft)	Total Consumptive Use[3] (ac-ft)	Lagged Stream Depletions[4] (ac-ft)
Apr-22	1.20	0.07	1.27	-1.12
May-22	1.48	0.07	1.55	-1.19
Jun-22	2.39	0.07	2.46	-1.30
Jul-22	2.48	0.07	2.55	-1.50
Aug-22	2.31	0.07	2.38	-1.65
Sep-22	1.50	0.07	1.56	-1.70
Oct-22	1.02	0.07	1.09	-1.61
Nov-22	0.64	0.07	0.71	-1.47
Dec-22	0.50	0.07	0.57	-1.33
Jan-23	0.51	0.07	0.57	-1.21
Feb-23	0.58	0.07	0.65	-1.13
Mar-23	0.88	0.07	0.95	-1.10
Total	15.50	0.80	16.30	-16.31

[1]Evaporative losses are calculated in Table 2.

[2]Operational losses are calculated in Table 3.

[3]Total consumptive use is total of evaporative and operational losses.

[4]Lagged stream depletions are calcuated using the AWAS stream where X = 2218 ft, W = 5,300 ft, S = 0.2, T = 50,000 gpd/ft. Lagged depletions include lagged depletions from previous years hitting the Poudre River during the renewal period.

Table No. 8

Connel Resources, Inc.
Timnath-Connell Pit SWSP

Prepared by: Williams and Weiss Consulting, LLC
Date Revised: 2/14/2022

Water Balance for CRI's SWSP

Month	Farm Headgate Diversions into CRI Recharge Pond (acre-feet) (A)	Evaporative Loss From Recharge Pond (acre-feet) (B)	Net Recharge (acre-feet) (C)	Lagged Timing of Net Recharge (acre-feet) (D)	Summer Return Flow Component (acre-feet) (E)	Winter Return Flow Component (acre-feet) (F)	Timnath-Connell Lagged Depletions (acre-feet) (G)	Monthly Excess or Deficit Realized at River (acre-feet) (H)	Monthly Supplies Leased from Ft. Collins (acre-feet) (I)	Total Monthly Excess or Deficit Realized at River (acre -feet) (J)
Apr-18	0.00	1.61	-1.61	18.37		6.65	1.09	10.63	0.00	10.63
May-18	53.18	1.99	51.19	17.16	12.38		1.16	3.62	0.00	3.62
Jun-18	48.75	3.21	45.55	18.01	12.87		1.28	3.86	0.00	3.86
Jul-18	49.75	3.34	46.41	20.45	16.65		1.48	2.32	0.00	2.32
Aug-18	36.05	3.10	32.95	24.47	15.13		1.64	7.70	0.00	7.70
Sep-18	34.77	2.01	32.76	27.13	12.90		1.69	12.54	0.00	12.54
Oct-18	33.42	1.38	32.04	26.82		11.12	1.60	14.10	0.00	14.10
Nov-18	0.00	0.86	-0.86	24.72		8.85	1.47	14.40	0.00	14.40
Dec-18	0.00	0.67	-0.67	22.08		7.85	1.35	12.88	0.00	12.88
Jan-19	0.00	0.68	-0.68	19.69		7.11	1.22	11.36	0.00	11.36
Feb-19	0.00	0.78	-0.78	17.71		6.43	1.14	10.14	0.00	10.14
Mar-19	0.00	1.18	-1.18	16.02		5.95	1.10	8.97	0.00	8.97
Year-1 Total	**255.92**	**20.82**	**235.10**	**252.63**	**69.93**	**53.95**	**16.22**	**112.52**	**0.00**	**112.52**
Apr-19	0.00	1.61	-1.61	15.83		6.73	1.13	7.97	0.00	7.97
May-19	0.00	1.99	-1.99	14.89	12.47		1.23	1.19	0.00	1.19
Jun-19	47.50	3.21	44.29	15.94	12.96		1.36	1.62	0.00	1.62
Jul-19	43.20	3.34	39.86	18.58	16.73		1.55	0.30	0.00	0.30
Aug-19	50.68	3.10	47.58	22.77	15.15		1.68	5.94	0.00	5.94
Sep-19	93.36	2.01	91.35	25.56	13.07		1.73	10.76	0.00	10.76
Oct-19	17.57	1.38	16.19	25.40		11.29	1.63	12.48	0.00	12.48
Nov-19	0.00	0.86	-0.86	23.45		8.92	1.49	13.04	0.00	13.04
Dec-19	0.00	0.67	-0.67	20.92		7.91	1.34	11.67	0.00	11.67
Jan-20	0.00	0.68	-0.68	18.63		7.16	1.22	10.25	0.00	10.25
Feb-20	0.00	0.78	-0.78	16.73		6.48	1.14	9.11	0.00	9.11
Mar-20	0.00	1.18	-1.18	15.12		6.00	1.11	8.01	0.00	8.01
Year-2 Total	**252.31**	**20.82**	**231.49**	**233.82**	**70.38**	**54.48**	**16.61**	**92.35**	**0.00**	**92.35**
Apr-20	5.03	1.61	3.42	15.52		7.03	1.13	7.36	0.00	7.36
May-20	56.11	1.99	54.12	14.61	12.72		1.19	0.70	0.00	0.70
Jun-20	55.36	3.21	52.15	15.72	13.37		1.30	1.05	0.00	1.05
Jul-20	40.36	3.34	37.02	18.40	16.59		1.51	0.30	0.00	0.30
Aug-20	36.62	3.10	33.52	22.61	15.17		1.66	5.78	0.00	5.78
Sep-20	49.40	2.01	47.39	25.41	13.43		1.71	10.27	0.00	10.27
Oct-20	15.53	1.38	14.15	25.29		11.59	1.61	12.09	0.00	12.09
Nov-20	0.00	0.86	-0.86	23.37		8.90	1.48	12.99	0.00	12.99
Dec-20	0.00	0.67	-0.67	20.86		7.91	1.33	11.62	0.00	11.62
Jan-21	0.00	0.68	-0.68	18.56		7.16	1.21	10.19	0.00	10.19
Feb-21	0.00	0.78	-0.78	16.67		6.48	1.13	9.06	0.00	9.06
Mar-21	0.00	1.18	-1.18	15.07		5.99	1.10	7.98	0.00	7.98
Year-3 Total	**258.41**	**20.82**	**237.59**	**232.09**	**71.28**	**55.06**	**16.36**	**89.39**	**0.00**	**89.39**
Apr-21	5.30	1.61	3.69	14.73		7.05	1.12	6.56	0.00	6.56
May-21	86.08	1.99	84.09	14.39	12.75		1.19	0.45	0.00	0.45
Jun-21	110.68	3.21	107.47	20.03	13.29		1.30	5.44	0.00	5.44
Jul-21	111.79	3.34	108.45	28.94	16.81		1.50	10.63	0.00	10.63
Aug-21	93.01	3.10	89.91	36.97	15.36		1.65	19.96	0.00	19.96
Sep-21	68.91	2.01	66.90	42.17	13.52		1.70	26.95	0.00	26.95
Oct-21	9.99	1.38	8.62	43.94		11.75	1.61	30.58	0.00	30.58
Nov-21	0.00	0.86	0.00	40.78		9.11	1.47	30.20	0.00	30.20
Dec-21	0.00	0.67	-0.67	35.93		8.09	1.33	26.51	0.00	26.51
Jan-22	0.02	0.68	-0.66	31.82		7.33	1.21	23.28	0.00	23.28
Feb-22	0.03	0.78	-0.75	28.55		6.63	1.13	20.79	0.00	20.79
Mar-22	0.47	1.18	-0.71	25.82		6.15	1.10	18.57	0.00	18.57
Year-4 Total	**486.28**	**20.82**	**466.33**	**364.07**	**71.72**	**56.11**	**16.31**	**219.92**	**0.00**	**219.92**
Apr-22	5.30	1.61	3.69	23.49		7.05	1.12	15.32	0.00	15.32
May-22	29.98	1.99	27.99	21.92	12.75		1.19	7.98	0.00	7.98
Jun-22	43.01	3.21	39.80	22.43	13.29		1.30	7.84	0.00	7.84
Jul-22	68.61	3.34	65.27	24.55	16.81		1.50	6.24	0.00	6.24
Aug-22	50.47	3.10	47.36	28.22	15.36		1.65	11.21	0.00	11.21
Sep-22	24.77	2.01	22.76	30.55	13.52		1.70	15.33	0.00	15.33
Oct-22	9.99	1.38	8.62	30.02		11.75	1.61	16.66	0.00	16.66
Nov-22	0.86	0.86	0.00	27.74		9.11	1.47	17.16	0.00	17.16
Dec-22	0.00	0.67	-0.67	24.86		8.09	1.33	15.44	0.00	15.44
Jan-23	0.02	0.68	-0.66	22.22		7.33	1.21	13.68	0.00	13.68
Feb-23	0.03	0.78	-0.75	20.01		6.63	1.13	12.25	0.00	12.25
Mar-23	0.47	1.18	-0.71	18.12		6.15	1.10	10.87	0.00	10.87
Year-5 Total	**233.51**	**20.82**	**212.70**	**294.13**	**71.72**	**56.11**	**16.31**	**149.98**	**0.00**	**149.98**

(A) Projected recharge diversions during the requested plan period
(B) Evaporation from 8.1 acre recharge pond; assessed at gross evaporation rate [Column (B), Table No.1]
(C) = (A) - (B)
(D) Lagged timing of net recharge realized at the Poudre River during requested plan period from recharge model run
(E) Irrigation season return flow component; Years 1 - 5 based on 2.5 Box Elder Ditch shares
(F) Winter return flow component; Years 1 - 5 based on 2.5 Box Elder Ditch shares
(G) Total combined lagged mining depletions during the requested plan period
(H) = (D) - (E) - (F) - (G)

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

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

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

April 30, 2010

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

RE: Mining Operations with Exposed Ground water

To Whom It May Concern:

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

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

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

The Division has identified four approaches for operators:

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

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

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

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

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

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

cc:

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

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

COLORADO
Division of Water Resources
Department of Natural Resources

ADMINISTRATION PROTOCOL
Augmentation Plan Accounting
Division One - South Platte River
Revised October, 2021

This protocol establishes the accounting and reporting process required to enable the division engineer's office to determine if depletions from all out-of-priority diversions are being replaced so as to prevent injury to vested water rights. The accounting must follow "cradle to grave" accounting practices that track exactly how the data are manipulated from raw data input (e.g., meter readings) to the resultant impact on the river. While this protocol is subordinate to any decreed language addressing specific accounting requirements, it generally addresses the minimum requirements of such accounting.

The accounting must use the standard convention where a depletion is shown as a negative value and an accretion or other replacement source is shown as a positive value. The difference of depletions and replacements will then result in either a negative or positive impact on the stream.

1. Accounting must be submitted electronically to the division engineer and water commissioner through the online data submittal portal at the following link on our website: https://dwr.state.co.us/Tools/reporting. If not already registered, you will need to create a new account through that link.

   Typically, submittals are due within 30 days of the end of the month for which the accounting is being submitted, unless decreed otherwise. Additional data or more frequent submittals may be required by the water commissioner if required for administration. Accounting submittals not submitted through the online data submittal portal or questions regarding accounting submittals may be emailed to dnr_Div1Accounting@state.co.us.

   The following naming convention must be used for all files submitted via email:
   "PlanWDID_YYMMDD"

   where: PlanWDID is the WDID assigned by the division engineer's office

   YYMMDD corresponds to the date the accounting is submitted.

   As an example, the assigned WDID for the former GASP plan was 0103333. If accounting using Excel® was submitted for that plan on May 15, 2004, the file name would be:
   "0103333_040515.xls"

2. The accounting must include a Contact & Plan Information tab, that includes the 7-digit WDID for the plan for augmentation/SWSP, the 4-digit SWSP ID (if applicable), and contact information (i.e., name, phone number, email address) for the augmentation plan accounting including:
   a. the owner(s) of each augmented structure
   b. the person responsible for submitting the accounting
   c. the plan administrator and/or the plan attorney.

3. All of the raw input data (i.e., meter readings, water pumped from wells, etc.) must be provided and organized in a single location, such as an "Input" worksheet, etc. The accounting must include the following input data listed below, as well as relevant WDIDs and permit numbers.

    a. Diversion data from flumes or weirs and unit of measurement.

    b. The required input data for each well is:
        i. the monthly flow meter reading as shown on the flow meter; date of the meter reading; flow meter multiplier (i.e., 0.001, 10, 1); units of volume (i.e., gallons or acre-feet); the meter serial number; correction factor, if any.
        ii. The total volume pumped, showing the calculations using the information in Item "i" above.
        iii. factors from the decree or SWSP that provide for the well consumptive use and depletions (i.e., presumptive depletion factor (PDF), water balance methodology, lagging parameters, etc.).
        iv. Any well permitted or decreed as an alternate point of diversion (APOD) to a surface water right must report pumping on a daily basis if any of the diversions during the month is claimed as being "in priority". (See Administration Protocol - APOD Wells for more details.)

    c. If applicable, data for each recharge structure must be included and comply with the appropriate decree(s) or SWSP Approval requirements and any applicable current statewide Administration Protocol. At a minimum the following should be reported in the accounting:
        i. 7-digit WDID and name of recharge structure
        ii. daily volume in AF diverted into the site;
        iii. monthly volume in AF released from the site;
        iv. monthly gross evaporative loss in AF;
        v. volume of water in AF remaining at the end of the month.

    d. The accounting must identify each source of replacement water actually delivered to the stream and how replacement water at that location offset the depletions. To demonstrate the water was actually delivered to the required location will require the following information:
        i. the name (water court case, lease, etc.) and WDID of the originating source of the replacement water, date released and volume of water released;
        ii. transit losses from point of release to point of depletion or use, if any, using stream loss factors approved by the water commissioner;
        iii. the volume of water actually delivered on a daily basis past any surface water diversion that was sweeping the river as corroborated by the water commissioner. (See Administration Protocol - Delivery of Water for more details on delivering water).

    For each source of replacement water that has been "changed" for use as a source of augmentation, such as changed reservoir shares, changed rights from a ditch, or credits from dry-up, etc., the following input information must be reported:
        i. the decreed volume of return flow obligation;
        ii. if not specified in the decree or SWSP, the location and timing of the owed return flow on the stream(s).

4. If required by the decree or SWSP, the accounting must include a monthly projection of the plan's operation at least through March 31 of the next calendar year, or as specified in the decree or SWSP.

5. The accounting submittal must include output associated with modeling showing monthly delayed depletions (from well pumping or return flow obligations) and/or accretions (from recharge).

6. All accounting must provide a net impact summary that shows a daily balance of the out-of-priority depletions, accretions from each recharge site, volume of replacement water actually delivered and the resultant net impact. If necessary, a net impact must be shown for each applicable river and reach.

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

   The accounting should indicate that the replacement water is equal to the depletion(s) such that the daily net impact (using the simulated daily numbers from the modeling) is not negative, unless the water commissioner approves less frequent aggregation of replacements without injury to downstream water rights.

   In the instance that aggregation is allowed, replacement is needed only for days with out-of-priority depletions. For example, if a well is out-of-priority for 15 days during a month, replacement must be made only for the 15 days the well is out-of-priority. Likewise, any simulated daily accretions will only count toward replacing the depletion on the days the well is out-of-priority. The accretions that accrue to the river when the well is in priority cannot be applied to different days with out-of-priority depletions.

7. The basis for determining that the depletions are out-of-priority should be data from the Division of Water Resources' Administrative Calls & Analysis Tool (https://dwr.state.co.us/Tools/AdministrativeCalls/Active) and should be included in the accounting along with the relative steps in the determination of a structure being in or out of priority. The analysis may be done, unless otherwise limited by decree, for each well or groups of wells, provided the most junior water right associated with the group of wells is used as the reference water right for the group's out-of-priority status.

8. The accounting shall include all the required information for the month of the submittal in addition to the information submitted from previous months such that the information and monthly submittals are a cumulative report each month throughout the 12 month reporting period.

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

10. The following additional accounting requirements apply when sources of replacement water are used in more than one plan.
    a. The entity providing replacement water to the stream is responsible for accounting for the total amount of replacement water and how much of the total went to each plan.
    b. The amount of replacement water claimed for a particular augmentation plan must match the amount in the accounting from the entity providing the replacement water to the stream.
    c. The amount of replacement water claimed for use by one or more water users shall not exceed the amount of replacement water physically and legally available. (See Administration Protocol – Use Of Unnamed Sources For Replacement for additional requirements concerning required notice and approval of sources of replacement not specifically described in a SWSP or augmentation plan).