COLORADO
Division of Water Resources
Department of Natural Resources

January 25, 2018

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

Re: Loloff Substitute Water Supply Plan (WDID 0302524, Plan ID 3270)
Loloff Pit, DRMS Permit No. M-1985-112 (WDID 0303012)
Section 4, T5N, R65W, 6th P.M.
Water Division 1, Water District 3, Weld County

Approval Period: January 1, 2018 through December 31, 2018
Contact information for Mr. Weiss: 970-221-5159; pswwater@msn.com

Dear Mr. Weiss:

We have reviewed your letter dated December 19, 2017 requesting approval of a substitute water supply plan ("SWSP") on behalf of Loloff Construction, Inc. ("Loloff" or "Applicant") to cover depletions at an existing gravel pit operation known as the Loloff Pit. This site was previously covered under the combined SWSP for Aggregate Industries ("AI"); however a separate SWSP was obtained by Loloff for the site in 2008. The required renewal fee of $257 (receipt no. 3684007) has been received.

SWSP Operations

The Loloff Pit is a gravel pit operation located in the SE¼ of the NW¼ of Section 4, Township 5 North, Range 65 West of the 6th P.M., in Weld County. Amended well permit no. 77467-F has been issued for the site. This SWSP will make replacements to the Cache La Poudre River for depletions resulting from mining operations at the Loloff Pit during the 2018 plan year, and for lagged depletions from past operations at the site. Loloff began lining the pit in 2017 and anticipates completing construction and conducting a leak test on the pit some time in 2018. At present, dewatering at the site continues. During this plan period, consumptive uses at the Loloff Pit site will include evaporative losses from exposed ground water within the permit boundaries, and operational uses. The replacement sources proposed to be utilized in this SWSP are yield from one share of the Greeley Irrigation Company and a lease of wholly consumable supplies from the City of Greeley.

Depletions

Consumptive use at the Loloff Pit site will include both evaporative and operational losses. Depletions are assumed to impact the Cache La Poudre River perpendicular to the Loloff Pit, just above the headgate of the Ogilvy Ditch (WDID 0300937).

The pit is proposed to be continuously dewatered up until the point of the finalized slurry wall construction. Because the pit will be lined, there will be no "first fill" or "intermittent fill"; however, lagged depletions due to past dewatering will need to be replaced. Loloff currently proposes to cover such depletions with excess dewatering discharge from the adjacent Derr Pit (WDID 0303035), if available. Otherwise, additional sources of replacement water will be secured.

Based on a November 21, 2014 survey, there are a total of 1.52 acres of ground water exposed in dewatering ditches at the site. Net evaporative depletions were calculated using a gross annual evaporation of 45 inches from the exposed water surface, with a credit of 9.97 inches for effective precipitation. No credit was claimed for ice cover periods. The net depletion of ground water due to evaporation of exposed ground water surface was calculated to be 4.43 acre-feet for this plan year. The estimated monthly depletions due to evaporation during 2018 are shown on the attached Table 1.

Operational losses associated with mining activities will consist of water removed with the mined product and water used for dust control. Approximately 600,000 tons of material is projected to be mined in 2018. A 2% water loss is assessed as the material will be mined in a dewatered state and will not be washed. The quantity of water removed with the mined product is therefore estimated to be 8.83 acre-feet. A total of 5.10 acre-feet of water are estimated to be used for dust control purposes in 2018 based on a usage rate of 2,100 to 5,600 gallons per day. All water used for dust control purposes is assumed to be 100% consumed. The estimated monthly depletions due to operational losses during 2018 are shown on the attached Table 2.

The IDS Alluvial Water Accounting System (AWAS) analytical stream depletion model was used to calculate the lagged depletions to the Cache la Poudre River. The model was executed in Effective SDF mode, using a stream depletion factor (SDF) of 60 days for the Loloff Pit site. The total lagged depletions were determined to be 18.87 acre-feet for this plan period, as shown in the attached Table 4. This amount includes lagged depletions resulting from past consumptive use at the site that are projected to impact the river during this plan period.

Replacement Sources

The replacement sources proposed for this operation consist of the yield from one share of the Greeley Irrigation Company ("GIC") during the irrigation season, and leased water from the City of Greeley ("Greeley") during the non-irrigation season, in addition to the use of excess dewatering accretions generated at the Derr Pit as described above.

Greeley Irrigation Company Share

Loloff owns one share of the Greeley Irrigation Company, Certificate No. 3391. A share of GIC water provides the shareholder with GIC direct flow water and Fossil Creek Reservoir water. The share was historically used for the irrigation of approximately 8.3 acres of land which have been removed from production as part of the share acquisition.

A portion of the Greeley Canal No. 3 (WDID 0300934) was changed in Division 1 Water Court in case no. 1996CW658 based on a ditch-wide analysis by the Poudre Prairie Mutual Reservoir and Irrigation Company. The use of the subject ditch share in this plan shall be in accordance with the terms and conditions decreed in case no. 1996CW658, including monthly and annual volumetric limits on water deliveries and monthly return flow requirements. The decree in case no. 1996CW658 found that 519.7 shares were used to irrigate 3,501 acres with an average historical consumptive use of 5,358 acre-feet per year, which yields an average consumptive use credit of 10.31 acre-feet per share (5,358 acre-feet/519.7 shares).

In paragraph 6.7.4 of the decree in case no. 1996CW658, future farm headgate deliveries of the 67.75 shares were limited to 1,712 acre-feet per year (25.26 acre-feet per share) and 12,631 acre-feet (186.43 acre-feet per share) in any consecutive 10 year period. Deliveries of Loloff's share of GIC water under this plan must comply with these limits. The historical return flows shall be maintained in accordance with the return flow factors identified in case no. 1996CW658. The return flows associated with the delivery of Fossil Creek Reservoir water that is attributable to the subject GIC share shall also be maintained in accordance with the surface and subsurface factors decreed in case no. 1996CW658.

For projections of 2018 deliveries, the Applicant used the historic irrigation delivery attributable to GIC direct flow diversions of 18.6 acre-feet per share and the historic irrigation delivery attributable to Fossil Creek Reservoir deliveries of 1 acre-foot per share as determined in case no. 1996CW658 for the study period of 1950-1979. According to a letter received in this office on behalf of The North Poudre Irrigation Company, GIC's 60 preferred rights in Fossil Creek Reservoir may not be available to GIC during WY2018. As specified in case no. 1996CW658, all deliveries of GIC water incur an immediate surface return flow obligation of 23.7% for direct deliveries and 20.1% for Fossil Creek deliveries, which corresponds to surface return flow obligations of 4.41 acre-feet and 0.20 acre-feet, respectively, for this plan period. Pursuant to paragraph 6.7.6 of case no. 1996CW658, the subsurface component of the return flow obligation shall be calculated by multiplying the 5-year running average annual farm headgate deliveries of GIC water (direct flow water and Fossil Creek Reservoir water). The average annual river headgate deliveries for the last 5 years are shown on the attached Table No. 3. The subsurface return flow obligations for the GIC direct deliveries and Fossil Creek Reservoir deliveries are 3.93 acre-feet and 0.00 acre-feet during this plan period, respectively (see Table 3).

The area formerly irrigated by the subject GIC share continues to contain residual pasture grass. The measured depth to ground water in the area ranges between 6 and 7.5 feet. In order to ensure the required dry-up conditions exist during the approval period of this SWSP, and to ensure the historical consumptive use calculated for the ditch shares changed by this SWSP do not include any credit resulting from the consumption of ground water, the Applicant has applied a 5% reduction to the monthly consumptive use credits claimed for their GIC share.

Based on conversations the Applicant has had with the GIC, the Applicant can request delivery of the yield from the subject share at either the 16th Street or F Street augmentation stations. The 16th Street augmentation return (WDID 0302319) is located approximately 1.8 miles downstream of the point of depletions and downstream of the Ogilvy Ditch headgate, which is the first senior water right that could be injured by depletions from the Loloff Pit. The F Street return (WDID 0302320) is located approximately 7.9 miles upstream of the point of depletions and upstream of the Ogilvy Ditch headgate. At times when the Ogilvy Ditch is calling, the Applicant must make replacements at or above the Ogilvy Ditch headgate. A transit loss may be assessed by the water commissioner for the delivery of such replacement water.

Greeley Lease

The applicant has entered into a rental agreement with the City of Greeley for 15.50 acre-feet of fully consumable water that has been changed for augmentation use. A copy of the agreement showing the monthly replacement schedule was provided with this SWSP request and is attached. Greeley anticipates delivering the replacement water to the Cache la Poudre River at Greeley's wastewater treatment plant (WDID 0302312), located approximately 0.42 mile upstream of the point of depletions and upstream of the Ogilvy Ditch headgate. A transit loss may be assessed by the water commissioner for the delivery of such replacement water. Any releases of

replacement water at a location other than the Greeley wastewater treatment plant must be coordinated with the water commissioner to insure the proper transit losses are applied and that no intervening water rights are injured.

Dewatering Accretions

The Applicant proposes to offset lagged depletions that will impact the stream after dewatering at the Loloff Pit ceases with excess dewatering accretions from the adjacent Derr Pit, if available. Accretions that may occur at the beginning of the dewatering operation may be claimed as replacement water to offset depletions at a pit at another location, operated by the same operator, that occur due to mining operations and/or the dewatering process, so long as the Applicant can account for the amount, location, and timing of these accretions. The delivery or exchange of such water and application of appropriate transit losses is subject to the approval of the Division Engineer. All dewatering at the Derr Pit must be accounted for in a method satisfactory to the division engineer and water commissioner in order to claim credit for excess dewatering accretions. Adequate measuring devices may be required in order to adequately account for the dewatering accretions.

Additional Sources

Supplemental leases will be obtained in the event that the above-described sources are insufficient to replace all depletions from the Loloff Pit. Such supplemental leases may be obtained from any authorized augmentation source contained in a gravel pit approved pursuant to § 37-90-137(11) that is capable of making replacements at the most upstream calling right impacted by the Loloff Pit depletions.

A water balance showing projected depletions, return flow obligations, and replacements for this plan period is provided in the attached Table 4. Note that this projection assumes that the Loloff Pit is continuously dewatered during the entire plan period. **At least 30 days before the anticipated cessation of dewatering at the site, the Applicant must submit an updated projection including lagged dewatering depletions and must obtain written approval from the SEO prior to ceasing dewatering at the Loloff Pit.** Otherwise, dewatering at the site must continue for the duration of this plan period to ensure that there are no un-replaced depletions.

Long Term Augmentation

In accordance with the letter dated April 30, 2010 (copy attached) from the Colorado Division of Reclamation, Mining, and Safety ("DRMS"), all sand and gravel mining operators must comply with the requirements of the Colorado Reclamation Act and the Mineral Rules and Regulations for the protection of water resources. The April 30, 2010 letter from DRMS requires that you provide information to DRMS to demonstrate you can replace long term injurious stream depletions that result from mining related exposure of ground water. The DRMS letter identifies four approaches to satisfy this requirement.

The proposed reclamation of the site is to a lined reservoir with a surface area of approximately 46.94 acres. In accordance with approach no. 3, the Applicant has a financial warranty surety on file with the DRMS in the amount of $1,104,455.00 towards the cost of installing a slurry wall around the mining area. In accordance with approach no. 4, you have provided an affidavit dated May 30, 2014 that dedicates the Applicant's one share of the Greeley Irrigation Company (certificate no. 3391) and one share of the New Cache La Poudre Irrigation Company (certificate no. 4635) as replacement water solely for this SWSP for as long as there are depletions at this gravel pit site or until such time as another replacement source is obtained. A copy of the

affidavit is attached to this letter. For the purposes of this SWSP, this affidavit will be accepted for the dedication of the shares; however, if the State Engineer determines that a different affidavit or dedication process is necessary to assure proper dedication of the shares, additional information may be required prior to future SWSP approvals.

Conditions of Approval

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

1. This SWSP shall be valid for the period of January 1, 2018 through December 31, 2018, unless otherwise revoked, modified, or superseded by decree. If the pit is not fully lined with all lagged depletions replaced by 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, 2018.**
2. Well permit no. 77467-F, as amended, was obtained for the current use and exposed pond surface area of the gravel pit in accordance with § 37-90-137(2) and (11), C.R.S.
3. The total surface area of the groundwater exposed at the site during this plan period must not exceed 1.52 acres, resulting in 4.43 acre-feet of evaporative loss.
4. The annual amount of water used at the Loloff Pit, in addition to evaporation and dewatering, is limited to 13.93 acre-feet for dust control purposes (approximately 5.10 acre-feet) and water lost in the mined product (approximately 8.83 acre-feet for an estimated 600,000 tons of mined aggregate).
5. Total consumption at the Loloff Pit during this plan period must not exceed these 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 for which the water may be used will be allowed only if a new SWSP is approved for those additional uses.
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. The Applicant is required to coordinate with the water commissioner the delivery location of replacement water to ensure out-of-priority depletions are adequately replaced to prevent injury to other water rights.
8. 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.
9. 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. A copy of this approval letter should be recorded with the county clerk and recorder. All replacement water must be concurrent with depletions in quantity, timing, and location.
10. The Applicant has proposed to use for augmentation, water available from any other source legally available for augmentation and which can be provided in the amount, at the time, and at the location required to replace out of priority depletions from the Loloff Pit.

Additional sources of replacement water in this SWSP may only be used if the Applicant complies with the attached Division One Administration Protocol *"Use of Replacement Sources Not Specifically Identified in an SWSP or Augmentation Plan"*.

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

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 on the accounting forms submitted to the division engineer and the water commissioner.

13. Adequate accounting of depletions and replacements must be provided to the division engineer in Greeley (DNR_Div1Accounting@state.co.us) and the water commissioner (Mark.Simpson@state.co.us) on a monthly basis or other interval acceptable to both of them. Submitted accounting shall conform to the attached Division One Administration Protocol *"Augmentation Plan Accounting, Division One – South Platte Basin"*.

    In addition, the Applicant shall verify that entity providing replacement water for this plan, in this case the City of Greeley, has included such use on their accounting submitted to the Division Engineer.

14. All pumping for dust control purposes shall be measured in a manner acceptable to the division engineer. Permanent records of all diversions must be maintained by the well owner (recorded at least monthly) and submitted to the division engineer on submitted accounting forms.

15. The Applicant shall perform an inspection and provide verification for all parcels of dried up land used to generate augmentation credits during the term of this SWSP. The final verification of dry up will be in the form of an affidavit signed by an individual having personal knowledge of the dry up for the entire irrigation season for each parcel of land used in this SWSP. In accordance with the attached protocol for dry-up of irrigated land, the Applicant shall provide a written notification to the water commissioner and division engineer **by April 1, 2018** identifying the lands to be dried up for the **2018** irrigation season. **By October 31, 2018** the Applicant shall provide an affidavit to the water commissioner and division engineer that identifies and confirms the lands that were dried up during the **2018** irrigation season in order that the final determination of augmentation credits for the irrigation season can be made along with mapping showing any revisions to the dried-up acreage. A GIS shapefile must be emailed to DNR_Div1Accounting@state.co.us for each dry-up notification and affidavit. The shapefile shall include the WDID of the plan, the acreage of dry-up, and any accompanying metadata. In addition, the datum must be NAD83 and the UTM projection must be Zone 13 North.

    The historical consumptive use calculated for the ditch shares to be changed by this SWSP shall not include any credit resulting from the consumption of ground water. In order to ensure the required dry-up conditions exist during the approval period of this SWSP, and to ensure no credit is given for the consumption of ground water, the Applicant shall provide records of monthly monitoring of depth to ground water for all fields required to be dried-up under this SWSP. Information regarding depth to ground water may be provided using existing irrigation wells, existing or new monitoring wells, or piezometers located on the dried-up fields. Applicant may utilize wells or piezometers located within ¼ mile of each field provided the Applicant can demonstrate the depth to ground water information available off-site is representative of the depth to ground water on the dried-up field. The

Applicant shall modify accounting to reflect that the credit from any dried- up fields containing alfalfa or native grass was reduced according to the following table. Measurements taken at the start of each month will determine the necessary reduction in credit to be applied during the following month. The Applicant may use another methodology upon review and prior approval by the State Engineer and Division Engineer.

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

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

16. The Applicant has amended DRMS permit no. M-1985-112 to change the final reclamation to lined storage. If a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow. 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. Granting of this plan does not imply approval by this office of any such court application(s).

17. Dewatering at this site will produce delayed depletions to the stream system. As long as the pit is continuously dewatered, the water returned to the stream system should be adequate to offset the depletions. However, once dewatering at this site ceases, the delayed depletions must be addressed. **At least 30 days before the anticipated cessation of dewatering at the site, the Applicant must submit an updated projection including lagged dewatering depletions and must obtain written approval from the SEO prior to ceasing dewatering at the Loloff Pit.** Otherwise, dewatering is required to continue during the term of this plan.

18. The monthly volume of water pumped for dewatering operations must be recorded through a totalizing flow meter and shown on the submitted accounting sheets.

19. If dewatering of the site is discontinued prior to completion of the slurry wall liner, the pit would fill creating additional depletions to the stream system due to increased evaporation. To assure that depletions from ground water evaporation do not occur in the unforeseen event, or events, that would lead to the abandonment of the pit, the Applicant has dedicated one share of the Greeley Irrigation Company (certificate no. 3391) and one share of the New Cache La Poudre Irrigation Company (certificate no. 4635) as replacement water solely for this SWSP for as long as there are depletions at this gravel pit site or until such time as another replacement source is obtained. A copy of the affidavit dated May 30, 2014 is attached to this letter. For the purposes of this SWSP, this affidavit will be accepted for

the dedication of the shares; however, if the State Engineer determines that a different affidavit or dedication process is necessary to assure proper dedication of the shares, additional information may be required prior to future SWSP approvals.

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 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.
21. In accordance with amendments to § 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 senior appropriators. As such, water quality data or analysis may be requested at any time to determine if the water quality is appropriate for downstream water users.
22. 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 water court case or any other legal action that may be initiated concerning this substitute water supply 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.

If you have any questions concerning this approval, please contact Sarah Brucker in Denver at (303) 866-3581 or Michael Hein in Greeley at (970) 352-8712.

Sincerely,

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

Attachments: Tables 1-4
City of Greeley Augmentation Water Rental Agreement
Share Dedication Affidavit
DRMS April 30, 2010 letter
Augmentation Plan Accounting, Division One – South Platte River
Dry-up of Irrigated Land, Division One – South Platte River
Use of Replacement Sources Not Specifically Identified in an SWSP or Augmentation Plan, Division One – South Platte River

Cc: Michael Hein, Assistant Division Engineer, Michael.Hein@state.co.us
810 9th Street, Suite 200, Greeley, CO 80631; (970) 352-8712

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

Peter S. Hays, Division of Reclamation Mining and Safety, Peter.Hays@state.co.us

Loloff Pit
Evaporation Losses
Table 1

Williams and Weiss Consulting, LLC

Submitted by:
Paul Weiss, P.E.
5255 Ronald Reagan Boulevard, Suite 220
Johnstown, CO 80534

Total Exposed Water Surface Area[1] 1.52 acres

	January	February	March	April	May	June	July	August	September	October	November	December	TOTAL
Distribution of Annual Evaporation[2]	0.030	0.035	0.055	0.090	0.120	0.145	0.150	0.135	0.100	0.070	0.040	0.030	1.000
Net Free Water Surface Evaporation (feet)[3]	0.088	0.102	0.160	0.263	0.350	0.423	0.438	0.394	0.292	0.204	0.117	0.088	2.917
Net Evaporation at Loloff Pit (ac-ft)	0.133	0.155	0.244	0.399	0.532	0.643	0.665	0.599	0.443	0.310	0.177	0.133	4.433

Notes:

[1] See Map 2 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 gross evaporation rate of 45 inches taken from NOAA Technical Report NWS 33.
Consistent with previously approved Loloff SWSP, a credit of 9.97 inches of effective precipitation results in approximately 35 inches net evaporation.

Loloff Pit
Production Losses
Table 2

Williams and Weiss Consulting, LLC

Submitted by:
Paul Weiss, P.E.
5255 Ronald Reagan Boulevard, Suite 220
Johnstown, CO 80534

	January	February	March	April	May	June	July	August	September	October	November	December	TOTAL
Monthly Production (tons)	28,800	28,800	28,800	43,200	72,000	72,000	76,800	76,800	72,000	43,200	28,800	28,800	600,000
Water Retained in Product (ac-ft)[1]	0.42	0.42	0.42	0.64	1.06	1.06	1.13	1.13	1.06	0.64	0.42	0.42	8.83
Water used for Dust Control (ac-ft)	0.30	0.30	0.40	0.40	0.50	0.50	0.60	0.60	0.50	0.40	0.30	0.30	5.10
Total Production Losses (ac-ft)	0.72	0.72	0.82	1.04	1.56	1.56	1.73	1.73	1.56	1.04	0.72	0.72	13.93

Notes:

[1] Material mined below the ground water table, but in a dewatered state. Material has 2% moisture content.

Loloff Pit
GIC Yields and Return Flow Obligations
Table 3

Williams and Weiss Consulting, LLC

Submitted by:
Paul Weiss, P.E.
5255 Ronald Reagan Boulevard, Suite 220
Johnstown, CO 80534

	Direct Flow portion		return flows			Fossil Creek portion		return flows			Net
	diversion	c.u.	surf	sub	balance	diversion	c.u.	surf	sub	balance	Balance
JAN	0.00	0.00	0.00	0.29	-0.29	0.00	0.00	0.00	0.00	0.00	-0.29
FEB	0.00	0.00	0.00	0.28	-0.28	0.00	0.00	0.00	0.00	0.00	-0.28
MAR	0.00	0.00	0.00	0.26	-0.26	0.00	0.00	0.00	0.00	0.00	-0.26
APR	1.12	0.58	0.26	0.25	0.61	0.06	0.04	0.01	0.00	0.05	0.65
MAY	2.98	1.55	0.71	0.29	1.98	0.16	0.09	0.03	0.00	0.13	2.10
JUN	3.16	1.65	0.75	0.34	2.07	0.17	0.10	0.03	0.00	0.14	2.20
JUL	4.09	2.14	0.97	0.38	2.75	0.22	0.13	0.04	0.00	0.18	2.92
AUG	3.53	1.84	0.84	0.39	2.30	0.19	0.11	0.04	0.00	0.15	2.46
SEP	2.23	1.17	0.53	0.39	1.31	0.12	0.07	0.02	0.00	0.10	1.41
OCT	1.49	0.78	0.35	0.38	0.76	0.08	0.05	0.02	0.00	0.06	0.82
NOV	0.00	0.00	0.00	0.34	-0.34	0.00	0.00	0.00	0.00	0.00	-0.34
DEC	0.00	0.00	0.00	0.33	-0.33	0.00	0.00	0.00	0.00	0.00	-0.33
TOTAL	18.60	9.71	4.41	3.93	10.26	1.00	0.59	0.20	0.00	0.80	11.06

1) historical consumptive use on direct flow component of GIC share is 52.2%
2) historical consumptive use on Fossil Creek component of GIC share is 59.0%
3) monthly GIC return flows calculated using Appendix A-2 of 96-CW-658
4) subsurface return flows based upon 5-year average delivery (2013-2017)

GIC direct	16.37	Fossil Crk	0.01

from Appendix A-2 of Poudre Prairie Decree
RETURN FLOW OBLIGATION Factors

	DIRECT FLOW WATER		FOSSIL CREEK WATER	
	surface	sub	surface	sub
JAN	0.237	0.018	0.201	0.017
FEB	0.237	0.017	0.201	0.016
MAR	0.237	0.016	0.201	0.015
APR	0.237	0.015	0.201	0.014
MAY	0.237	0.018	0.201	0.013
JUN	0.237	0.021	0.201	0.012
JUL	0.237	0.023	0.201	0.015
AUG	0.237	0.024	0.201	0.024
SEP	0.237	0.024	0.201	0.025
OCT	0.237	0.023	0.201	0.021
NOV	0.237	0.021	0.201	0.02
DEC	0.237	0.02	0.201	0.018

	Per Share Delivery	
	GIC direct	Fossil Crk
2013	15.76	0.05
2014	14.92	0.00
2015	17.10	0.00
2016	16.07	0.00
2017	17.87	0.00
5-yr Avg	16.34	0.01

2018 Water Balance: Loloff Pit Substitute Water Supply Plan
Table 4

Williams and Weiss Consulting LLC

Submitted by:
Paul Weiss, P.E.
5255 Ronald Reagan Boulevard, Suite 220
Johnstown, CO 80534

	Depletions								Replacements				
Month	Monthly Net Evap (ft)	Exposed Water Surface Area (acres)	Evaporative Losses (ac-ft)	Mining Production (tons)	Water Retained in Material (ac-ft)	Water Used For Dust Control (ac-ft)	Total CU (ac-ft)	Lagged Depletions (ac-ft)	GIC Deliveries (ac-ft)	GIC Return Flow Obligation (ac-ft)	GIC Net Credit (ac-ft)	Greeley Leased Effluent (ac-ft)	Water Balance (ac-ft)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Jan-18	0.09	1.52	0.13	28,800	0.42	0.30	0.86	1.48	0.00	0.29	-0.29	2.49	0.72
Feb-18	0.10	1.52	0.16	28,800	0.42	0.30	0.88	1.30	0.00	0.28	-0.28	2.25	0.67
Mar-18	0.16	1.52	0.24	28,800	0.42	0.40	1.07	1.25	0.00	0.26	-0.26	2.00	0.48
Apr-18	0.26	1.52	0.40	43,200	0.64	0.40	1.43	1.30	1.18	0.52	0.58	1.20	0.47
May-18	0.35	1.52	0.53	72,000	1.06	0.50	2.09	1.48	3.14	1.03	1.89	0.25	0.66
Jun-18	0.42	1.52	0.64	72,000	1.06	0.50	2.20	1.70	3.33	1.13	1.98	0.25	0.53
Jul-18	0.44	1.52	0.67	76,800	1.13	0.60	2.40	1.84	4.31	1.39	2.63	0.00	0.79
Aug-18	0.39	1.52	0.60	76,800	1.13	0.60	2.33	1.94	3.72	1.27	2.21	0.20	0.47
Sep-18	0.29	1.52	0.44	72,000	1.06	0.50	2.00	1.94	2.35	0.95	1.25	1.15	0.46
Oct-18	0.20	1.52	0.31	43,200	0.64	0.40	1.35	1.78	1.57	0.75	0.72	1.50	0.43
Nov-18	0.12	1.52	0.18	28,800	0.42	0.30	0.90	1.53	0.00	0.34	-0.34	2.20	0.32
Dec-18	0.09	1.52	0.13	28,800	0.42	0.30	0.86	1.33	0.00	0.33	-0.33	2.00	0.34
TOTAL	2.92		4.43	600,000	8.83	5.10	18.36	18.87	19.6	8.54	9.75	15.47	6.35

Notes:
(A) Monthly evaporation
(B) Exposed water surface
(C) Monthly evaporation = (C) x (B)
(D) Estimated Production
(E) Water Retained in Material, assuming 2% Retention
(F) Estimated Water Use for Dust Control
(G) Total Consumptive Use = (C) + (E) + (F)
(H) Lagged Depletions computed with AWAS
(I) Estimated GIC Deliveries per share
(J) Return Flow associated with one share of GIC
(K) Net River Credit for GIC share. A 5% reduction in applied due to high groundwater and potential for sub-surface irrigation. Additionally, a 1.75% transit loss is applied.
(L) Effluent Credit from City of Greeley. A 0.21% transit loss is applied.
(M) Net Impact to Poudre River = (K) + (L) - (H)

December 18, 2017

Loloff Construction, Inc.
801 8th Street, Suite 130
Greeley, CO 80631

Dear Loloff Construction Inc.,

The city of Greeley ("Greeley") accepts Loloff Construction, Inc.'s ("Loloff") augmentation water rental request for January 2018 through December 2018. Greeley will make available to Loloff wholly consumable water that has been changed for augmentation use at one of the following locations: 1) in the Cache la Poudre River immediately below Greeley's existing wastewater treatment plant outfall; 2) at the outlet of the Flatiron Reservoir Nos. 1-5 (aka Poudre Ponds at Greeley); 3) at delivery stations from the Greeley Canal No. 3; or 4) at such other point or points Greeley chooses by giving written notice to Loloff **OR** in the Cache la Poudre River at delivery stations or release structures owned and operated by Greeley or available for Greeley's use where Greeley has augmentation water legally and physically available. Greeley anticipates making releases from its wastewater treatment plant outfall located on the Cache la Poudre River. If Greeley changes the point of delivery, it will provide written notice to Loloff.

The request totals **15.50** acre-feet and replacements will be made per the schedule provided by Williams and Weiss Consulting:

Loloff Augmentation Requirement (acre-feet)												
Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total
2.5	2.25	2.00	1.20	0.25	0.25	0.00	0.20	1.15	1.50	2.20	2.00	15.50

The current rate for augmentation water is $800/acre-foot, for a total of **$12,400**. Please follow the directions on the attached invoice. The payment is due by **December 29, 2017**.

Please be aware that it is Loloff's responsibility to receive necessary approval to use the rented augmentation supplies provided by Greeley. Any transmission losses charged by State water officials will be the sole responsibility of Loloff.If you have any questions, please do not hesitate to call me at (970) 336-4039.

Sincerely,

Danielle Snyder
Water Resources
Cc: Paul Weiss, Williams and Weiss Consulting

Dedication Of Water Rights to the

Loloff Pit Permanent Water Supply Plan

I Don Loloff President of Loloff Construction Inc. which owns 1 share of the Greeley Irrigation Company evidenced by Certificate No 3391 one share of the New Cache La Pourde Irrigation Company evidenced by Certificate No 4635, hereby affirm that the two shares will be dedicated solely to the Loloff Pit Permanent Water Supply Plan for as long as there are depletion's at this gravel pit or until such time as another replacement source is obtained. The 2 shares will not be sold or traded to others during the term of this dedication.

Signed Don Loloff

Date May 30, 2014

State of Colorado

County of Weld

The foregoing instrument was acknowledged before me this 30 day of May 2014
By Don Loloff and _____

My commission expires: 6/10/2017

Witness my hand and official seal:

Erin Dahl
Notary Public

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

Loloff Construction, Inc.
P.O. Box 518
206 Hill St.
Kersey, CO 806440000

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: M1985112 Loloff Mine

ADMINISTRATION PROTOCOL
Augmentation Plan Accounting
Division One – South Platte River

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

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

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

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

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

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

i. daily volume in AF diverted into the site;

ii. monthly volume in AF released from the site;

iii. monthly net evaporative loss in AF;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

   "Plan**WDID**_YYMMDD"

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

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

   "0103333_040515.xls"

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

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

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

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

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

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

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

Permanent Dry-up Covenant

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

Temporary Dry-up Agreement

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

ADMINISTRATION PROTOCOL
Use Of Replacement Sources Not Specifically Identified In An SWSP Or Augmentation Plan
Division One – South Platte River

This protocol addresses the minimum standards required for use of a source of replacement water not specifically described in an SWSP or augmentation plan.

- Request to the Division Engineer and Water Commissioner must be in writing and must include:
    - the augmentation plan or SWSP provision in the purchasers plan that allows an unnamed source to be added to the plan for credit
    - the decree provision or SWSP provision in the sellers plan that allows water to be sold for use in the purchasers plan
    - the annual and monthly amount of water available from the water right to be used for replacement
    - the location at which the water will be delivered to the stream
    - a lease agreement between the seller and purchaser of the replacement water
- Applicant shall have written approval from the Division Engineer or Water Commissioner before an unnamed source is added to an augmentation plan or SWSP.
- Applicant must comply with the Augmentation Plan Accounting Protocol and, if appropriate, the Delivery of Water Protocol.

This protocol is subordinate to any decreed language addressing specific situations.