COLORADO
Division of Water Resources
Department of Natural Resources

June 19, 2019

Mr. John Shuler
Bishop-Brogden Associates, Inc.
333 West Hampden Ave, Ste 1050
Englewood, CO 80110

Re: City of Fort Collins East Rigden Pit Substitute Water Supply Plan
(WDID 0302570, Plan ID 3055)
DRMS File No. M-1979-097 (WDID 0303021)
Section 28, T7N, R68W, 6th P.M.
Water Division 1, Water District 3, Larimer County

Approval Period: July 1, 2019 through June 30, 2020
Contact information for Mr. Shuler: 303-806-8952; jshuler@bbawater.com

Dear Mr. Shuler:

We have reviewed your letter dated May 8, 2019 requesting approval of a substitute water supply plan ("SWSP") on behalf of the City of Fort Collins ("Applicant" or "Fort Collins") in accordance with § 37-90-137(11), C.R.S., to cover depletions caused by an existing gravel pit operation known as the East Rigden Pit (M-1979-097). The required renewal fee of $257 has been received (receipt no. 3691766).

SWSP Operations

The East Rigden Pit is located along the Cache la Poudre River in Sections 21, 27, and 28, Township 7 North, Range 68 West of the 6th P.M. as shown on the attached Figure 1. Sand and gravel mining exposed groundwater at the pit site but the area has not been mined in many years according to a January 2019 inspection report from the Division of Reclamation, Mining and Safety ("DRMS"). The 2015-2016 SWSP determined that all 25 acres of groundwater exposed at that time were documented as having been exposed at the site prior to January 1, 1981. Pursuant to § 37-90-137(11)(b), C.R.S. and 2009CW49, a gravel pit operator or property owner does not need to replace depletions that occur due to evaporation from groundwater exposed prior to January 1, 1981 ("pre-81") as a result of open mining of sand and gravel, regardless of whether mining continued after December 31, 1980 ("post-80"). The pre-81 pond extents approved in the 2015-2016 East Rigden SWSP are shown in Figure 1, and may not be re-allocated to other areas of groundwater exposure within the gravel pit boundary. The 2015-2016 SWSP stated that with the SEO approval of the compacted clay liner in the Fort Collins Parcel, no depletions associated with the East Rigden Pit will remain after the conclusion of that plan period and no subsequent SWSP will be required for the site. However, a DRMS field inspection in January 2019 found that the acreage of the exposed groundwater had increased beyond the pre-81 extent. Fort Collins does not plan to conduct any mining activities during the term of this SWSP, therefore the only consumptive use of water at the East Rigden Pit will consist of evaporation from exposed groundwater.

Depletions

DRMS estimated the areas of the post-80 exposed groundwater of the north, west, and northwest ponds to have expanded by 18, 0.67, and 0.38 acres respectively. DRMS estimated the acreage of the southeast pond to have decreased by 0.08 acres, however this decrease does not provide credit that can be allocated elsewhere. The Applicant agrees with the new acreage for the north and west ponds, but believes that the northwest and southeast ponds have maintained the extent of their approved pre-81 areas. The Applicant attributes the minor differences in surface area between that determined by DRMS and the prior mapping by Applegate to mapping accuracy discrepancies. This office conducted an analysis of currently exposed areas shown on aerial imagery and concurs that the minor differences in surface area could be attributed to mapping accuracy discrepancies and accepts the Applicant's proposal to maintain the extents of the area of the northwest and southeast ponds as were approved in the 2015-2016 SWSP.

In September 2014, Fort Collins installed a liner around the 127-acre Rigden Reservoir. The compacted clay liner for the Rigden Storage Reservoir (WDID 0303326) was approved by the State Engineer's Office as meeting the design standard for liners on May 20, 2015, and Rigden Reservoir is now classified as a lined reservoir in accordance with the 1999 SEO Guidelines.

A net evaporation rate of 2.37 feet per year was determined in the Fort Collins augmentation plan decreed in Division 1 water court case no. 14CW3167. You have anticipated the ice covered period to occur during the months of December and January based on below-freezing average monthly temperatures for the Fort Collins weather station. The ice covered periods may be used to reduce the amount of evaporative losses that need to be replaced; however, for the purposes of this SWSP, the Applicant shall replace the net evaporation depletions from the exposed groundwater surface area that may occur during the anticipated ice covered period (December through January) for any time that the exposed groundwater surface is not completely covered by ice. Computation of the net evaporation during any time that the exposed groundwater surface is not completely covered by ice shall be determined as the pro-rata amount of the monthly gross evaporation rate distribution amount identified in the State Engineer's *General Guidelines for Substitute Supply Plans for Sand and Gravel Pits,* subtracting the pro-rata amount of the effective precipitation for that period. The net depletion of groundwater due to evaporation is projected to total 41.52 acre-feet during this plan period, as shown on the attached Table 1 (assuming ice cover).

The Alluvial Water Accounting System (AWAS) program developed by the Integrated Decision Support (IDS) Group at Colorado State University was used to lag depletions from evaporation and operational losses at the mine site to the Cache la Poudre River. The model requires the following parameters: distance (X) from the centroid of the exposed water surface to the river, aquifer width (W), transmissivity (T), and specific yield (S). The T and S parameters were determined in case no. 14CW3176. The aquifer parameters used the site are listed in the table below:

Aquifer Parameters – East Rigden Pit

X (ft)	W (ft)	T (gpd/ft)	S
674	1,335	49,500	0.2

Unit response factors derived from the AWAS analysis were normalized to 97% of depletions, which occurred after three months. The total lagged depletions for the East Rigden Pit site were determined to be 41.52 acre-feet for this plan period. Lagged depletions from the three months

previous to July 2019 were included to account for depletions occurring prior to the beginning of this SWSP period. A monthly breakdown of total lagged depletions is shown in the attached Table 1.

Replacements

The City of Fort Collins has committed to replace the depletions described in this SWSP from the City's fully consumable sources. The replacement water will come from reusable sources owned or controlled by the City of Fort Collins that have been previously decreed for augmentation, which may include:

- Arthur Irrigation Company Shares (391.3642 shares changed in case no. 92CW129)
- Larimer County Canal No. 2 Irrigation Company Shares (67.5615 shares changed in case no. 92CW129)
- New Mercer Ditch Company Shares (44.81716 shares changed in case no. 92CW129)
- Warren Lake Reservoir Company Shares (83.1892 shares changed in case no. case no. 92CW129)
- The Michigan Ditch Supply System (146 cfs of transmountain water per case no. 88CW206)
- Joe Wright Reservoir (decreed for augmentation use in case nos. CA-11217 & W-9322-78)
- Windy Gap Project (annual reuse agreement with Platte River Power Authority for use of this water per case no. W-9322-78)
- Rigden Reservoir (decreed for augmentation use in case no. 14CW3158)

The decree entered in case no. 92CW129 changed the use of the above-identified ditch shares, collectively referred to as the "Southside Ditches Water Rights", from irrigation to all municipal uses, including augmentation and replacement, and to allow diversion and storage at multiple locations as specified in the decree, including storage in Fossil Creek Reservoir.

Replacement water will be delivered to the confluence of the Foothills Outfall Channel and the Cache la Poudre River in the NW¼ of the NW¼ of Section 34, Township 7 North, Range 68 West, 6th P.M., just below Rigden Reservoir (WDID 0303326).

All replacements will be based on actual depletions determined from tracking actual evaporation losses. Replacement deliveries will be reported in Fort Collins' existing accounting. Conveyance loss for delivery of replacement water is subject to assessment and modification as determined by the division engineer. The Applicant shall coordinate with the water commissioner to apply appropriate transit losses for delivery of replacement water from any source other than Rigden Reservoir.

Long Term Augmentation

In accordance with the letter dated April 30, 2010 (copy attached) from the Colorado Division of Reclamation, Mining and Safety, 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 operators provide information to DRMS to demonstrate you can replace long-term injurious stream depletions that result from mining-related exposure of groundwater. The DRMS letter identifies four approaches to satisfy this requirement. According to the SWSP request, any lagged depletions that will affect the

Cache la Poudre River after June 2020 will be carried over and included in subsequent SWSP renewals. This office does not consider this as addressing long-term injurious stream depletions.

As previously discussed, the Rigden Reservoir portion of the site has been lined and the liner approved by the SEO in accordance with approach no. 4. However, the Applicant has not identified an approach to mitigate the long-term depletions from the additional post-80 groundwater exposed in the north and west ponds. The two ponds are on land owned by a private landowner, Cottonwood Land and Farms, LTD. In discussions with the Applicant, our office has learned that Fort Collins is in preliminary negotiations with the private landowner to acquire the property and incorporate the pond(s) into their existing augmentation plan. In the event that such negotiations are unsuccessful, please be advised this office will not support the release of the land containing any post-80 exposed groundwater surface area from the DRMS permit unless the depletions are first included in a decreed plan for augmentation or otherwise mitigated. This may require the Applicant to backfill the ponds to their pre-81 area in order to fulfill their reclamation obligations. This office will require proof of diligence towards a plan that will meet the requirements of the DRMS for approval of future SWSPs.

Conditions of Approval

I hereby approve the proposed SWSP 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 July 1, 2019 through June 30, 2020, unless otherwise revoked or superseded by decree. If a court decreed plan for augmentation is not obtained for the proposed uses by the SWSP expiration date, a renewal request must be submitted to this office with the statutory fee of $257 no later than May 1, 2020. If a renewal request is received after the expiration date of this plan, it may be considered a request for a new SWSP in which case the $1,593 filing fee will apply.
2. Well permit no. 76136-F 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 post-81 groundwater exposed at the East Rigden Pit site must not exceed 18.67 acres, which results in an annual net evaporative loss of 41.52 acre-feet.
4. Total consumption at the East Rigden site must not exceed the aforementioned amount unless an amendment is made to this SWSP.
5. Approval of this SWSP is for the purposes as stated herein. This office must first approve any additional uses for the water.
6. All releases of replacement water must be sufficient to cover all out-of-priority depletions in time, place, and amount and must be made under the direction and/or the approval of the water commissioner. The 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.
7. Computation of evaporation under this plan may be reduced during the ice-covered period. You have anticipated the ice-covered period to occur during the months of December and January. However, for the purpose of this SWSP, the Applicant shall replace the net evaporation depletions from the exposed groundwater surface area that may occur during

the anticipated ice-covered period (the months of December and January) for any time that the exposed water surfaces are not completely covered by ice.

8. The replacement water that is the subject of this SWSP cannot be sold or leased to any other entity. As a condition of subsequent renewals of this SWSP, the replacement water must be appurtenant to this site until a plan for augmentation is obtained.

9. The Applicant shall install and maintain such measuring devices as required by the division engineer for operation of this SWSP.

10. The Applicant shall provide daily accounting (including, but not limited to diversions, depletions, replacement sources, and river calls) on a monthly basis, or more frequent if required by the water commissioner. The accounting must be emailed to the water commissioner (Mark Simpson at Mark.Simpson@state.co.us) **and** DNR_Div1Accounting@state.co.us within 30 days of the end of the month for which the accounting applies. Accounting and reporting procedures are subject to approval and modification by the division engineer. Accounting forms need to identify the WDID number for each well operating under this SWSP. **NOTE:** Monthly accounting, even during the winter non-irrigation season, is required.

    For the duration of this SWSP, it is acceptable for the East Rigden Pit accounting to be incorporated with the City's comprehensive accounting forms and not reported separately.

11. Applicant shall follow the attached Augmentation Plan Accounting Protocol for the operation of this SWSP.

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

13. The approval of this SWSP does not relieve the Applicant of the requirement to obtain a Water Court decree approving a permanent plan for augmentation or mitigation to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions. If reclamation of the mine site will produce a permanent water surface exposing post-80 groundwater to evaporation, an application for a plan for augmentation must be filed with the Division 1 Water Court to include, but not be limited to, long-term evaporation losses. If a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow.

14. 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 SWSP expire without renewal or be revoked prior to adjudication of a permanent plan for augmentation, all use of water under this SWSP must cease immediately.

15. 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 the groundwater.

16. 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 if the

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

17. 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 the SWSP. 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 Javier Vargas-Johnson in Denver at (303) 866-3581 or Michael Hein in Greeley at (970) 352-8712.

Sincerely,

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

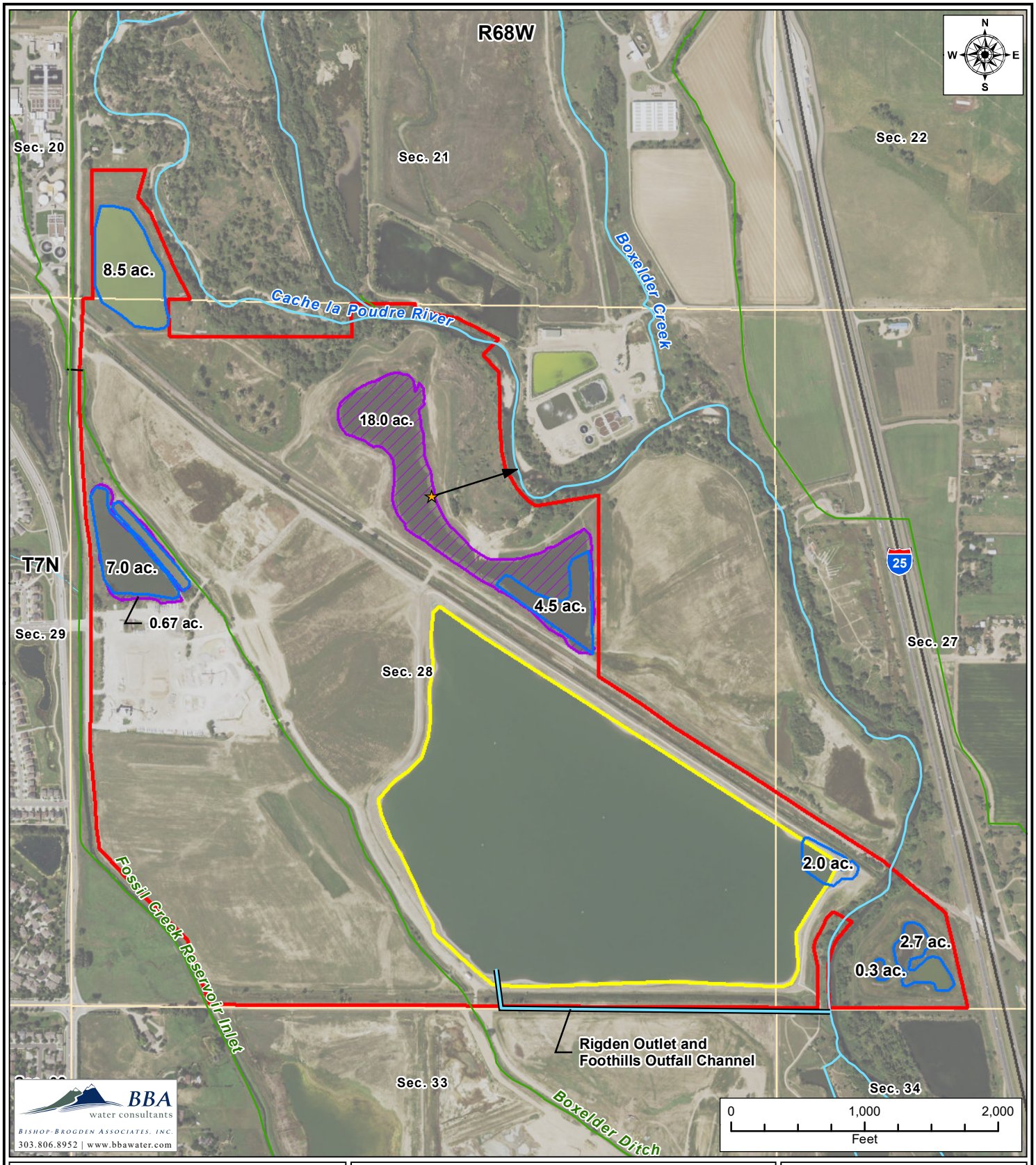
Attachments: Figure 1
Table 1
Augmentation Plan Accounting Protocol
Letter from DRMS dated April 30, 2010

Cc: Michael Hein, Lead 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

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

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



BBA water consultants
Bishop-Brogden Associates, Inc.
303.806.8952 | www.bbawater.com

Figure 1
East Rigden Pit
Pre-1981 and
Expanded Pond Extents

Date: 5/8/2019 | Job No. 9625.15

Legend

- Expanded Pond Surface Area Centroid
- Centroid Point of Depletion
- Pre-1981 Pond Surface Area - Approx.
- Expanded Pond Surface Area - 18.67 ac.
- Rigden Reservoir
- DRMS Permit Boundary

Aerial Photo Date: 8/27/2017 USDA-NAIP
Data Source: DRMS, Applegate, CDSS, CDOT, BLM

Colorado

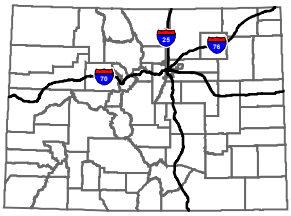


Table 1

City of Fort Collins

2019-2020 East Rigden Pit SWSP

Total Depletions

Month	Net Evaporation (feet)	Net Evaporation (ac-ft)	Total Lagged Depletions (ac-ft)
	[1]	[2]	[3]
Jul-19	0.40	7.39	6.86
Aug-19	0.35	6.57	6.92
Sep-19	0.25	4.65	5.67
Oct-19	0.16	2.99	3.98
Nov-19	0.09	1.75	2.52
Dec-19	0.00	0.00	0.98
Jan-20	0.00	0.00	0.17
Feb-20	0.09	1.59	0.81
Mar-20	0.11	2.05	1.67
Apr-20	0.18	3.40	2.69
May-20	0.23	4.37	3.77
Jun-20	0.36	6.76	5.49
Total	2.22	41.52	41.52

Notes:
[1] Net annual evaporation rate (2.37 feet) is based upon values determined in the Fort Collins augmentation plan, Division 1 Case No. 14CW3167. Annual net evaporation is distributed according to SEO Senate Bill 89-120 criteria. There is assumed to be no evaporation in December and January due to below-freezing average monthly temperatures.
[2] Equal to [1] * 18.67 acres of ground water exposed post-1980.
[3] Equal to values from [2] lagged based on the following lagging parameters: Distance from stream = 674 ft, Transmissivity = 49,500 gpd/ft, Specific Yield = 0.2, Aquifer Width = 1,335 ft. Lagged depletions from three months prior to July 2019 were included to account for depletions occuring before the beginning of this SWSP period.

EXHIBIT B
(City Water Interests)

The City Fully Consumable Water delivered under this Agreement will be attributable to the City Water Interests that are lawfully available for the Renter's use as defined above including, but not necessarily limited to, the following:

Water Interest Name	Decree References[1] and Notes
Arthur Irrigation Company Shares or Effluent	Case No. 1992CW129; Case No. 2005CW323
Colorado-Big Thompson Project Water	Attributable to North Poudre Irrigation Company Shares and allotment contracts with the Northern Colorado Water Conservancy District
Halligan Reservoir Enlargement Water Right	Case No. 2013CW3185
Joe Wright Reservoir Water Rights	Case No. W-9322-78
Larimer County Irrigating Canal No. 2 Company Shares and Effluent	Case No. 1992CW129; Case No. 2005CW323
Michigan Ditch Water Rights and Effluent	Case No. W-1424; Case No. 1988CW206
New Mercer Ditch Company Shares and Effluent	Case No. 1992CW129; Case No. 2005CW323
North Poudre Irrigation Company Shares	Multiple Use Portion
Rigden Reservoir and Effluent	Case No. 2014CW3158
Warren Lake Reservoir Company Shares and Effluent	Case No. 1992CW129; Case No. 2005CW323
Water Supply Storage Company Shares and Effluent	Case No. 1992CW129; Case No. 2005CW323
Windy Gap Units and Effluent	Case No. W-9322-78

[1] The decrees identified in the table are for reference purposes only and are not intended to be a comprehensive list of all relevant decrees.

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
Recharge
Division One – South Platte River

The purpose of a "recharge structure" as referenced in this document is to introduce water to the river alluvium that will result in accretions to a live stream. For the purposes of this document, a recharge structure does not include a well that is used to artificially recharge a Denver Basin bedrock aquifer. With that qualification, a recharge structure is defined as:

- A section of ditch, the losses from which can be reasonably modeled as a single source of water.
- A pond or group of ponds that receive water from the same delivery location and can be reasonably modeled as a single source of water.

1. A written notification for each recharge structure must be provided to the water commissioner and division engineer. **The Division of Water Resources will not acknowledge any recharge activity conducted without the knowledge of the water commissioner.** The notification must include:
    a. a map showing the location of the structure and the court case number of the plan for augmentation authorized to use the structure;
    b. a map showing the location of the diversion point and the court case number for the decree authorizing the diversion, if any;
    c. a map showing the location of and all information for the metering location;
    d. the maximum water surface area of the structure;
    e. for ditch structures, if the ditch is divided into more than one recharge reach, an explanation of how the volume diverted will be allocated to the various sections.
2. Upon receiving written notification or decree by the water court, the division engineer will assign the structure a WDID number. The WDID number is the identification number that will be used for the administration of the structure and must be included in all correspondence and accounting reports. **(For structures that were included in a decreed plan for augmentation but were not physically constructed at the time of the decree, a written notification of the intent to construct the structure must be provided.)**
3. Any structure that intercepts groundwater must be permitted as a well and included in a plan for augmentation or substitute water supply plan approved by the state engineer. The division engineer strongly recommends avoiding recharge structures that intercept groundwater, in order to simplify the accounting process.
4. The flow into **EVERY** recharge structure **MUST** be metered and equipped with a continuous flow recorder unless the water commissioner in conjunction with the division engineer determines adequate records may be kept without such equipment. If the recharge structure is designed to discharge water via a surface outlet, such discharge must also be metered and equipped with a continuous flow recorder. The water commissioner **MUST** approve the use of the recharge structure **BEFORE** any credit will be given for water placed into recharge.

5. All recharge ponds must have a staff gauge installed such that the gauge registers the lowest water level in the pond. The staff gauge must be readable from a readily accessible location adjacent to the pond.
6. All recharge areas must be maintained in such a way as to minimize consumptive use of the water by vegetation. **No recharge area may be used for the planting of crops during the same irrigation year that it is used as a recharge site without prior approval from the water commissioner or division engineer.**
7. The amount of water recharged to the alluvial aquifer is determined by measuring the amount of water delivered to the recharge structure and subtracting:
    a. the amount of water discharged from the recharge structure,
    b. the amount of water lost to evaporation (see item 8, below),
    c. the amount of water lost to consumptive use due to vegetation located within the recharge structure, and
    d. the amount of water retained in the recharge structure that has not yet percolated into the ground.
8. Net evaporative losses from the recharge structure must be subtracted from the volume of water delivered to the pond. Evaporative losses must be taken every day the pond has a visible water level. If the pond does not have a stage-surface area curve approved by the water commissioner, the maximum surface area of the pond must be used to determine the evaporative losses. Monthly loss factors prorated for the number of days the pond had a visible water level may be used as may real time evaporation data from NOAA or a local weather station. If the pond is not inspected on a routine basis through the month, no prorating of monthly factors will be allowed.
9. The amount of accretions from the recharge structure will be credited only in accordance with a decreed plan of augmentation or substitute water supply plan approved by the State Engineer.
10. All water delivered for recharge must be fully consumable:
    a. changed reservoir rights or the CU portion of changed senior ditch rights;
    b. transbasin water that has been imported into the South Platte River basin;
    c. nontributary water;
    d. excess (unused) accretions from the previous recharge of fully consumable water;
    e. water diverted in priority after "notice" of intent to fully consume the water;
    f. water diverted under free river.
11. Water may be delivered to recharge only if the net impact of the associated plan for augmentation is not negative. Water must first be delivered or exchanged to offset negative impacts of the plan for augmentation before it may be diverted for recharge.
12. Accounting must be performed on a daily basis with reports submitted at least monthly and within 30 days of the end of the month for which the accounting is being made. The volume of water diverted into recharge must be provided to the water commissioner weekly when requested by the water commissioner.

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.

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	M1974070	Nelson Pit
M1979159	Brose Pit	M1979097	East Rigden Pit	M2000002	Tanabe Pit
M1998014	Gypsum Ranch Pit	M1991035	Bluestone Pit	M1994045	Bluestone Pit
M1999088	Kyger Pit	M1986159	Courtner Pit	M1986079	M & G Pit
M1998075	Andrews #3 (Mock Pit)				