



COLORADO

Division of Water Resources

Department of Natural Resources

May 29, 2019

Joshua Oliver
Environmental Manager
Brannan Sand and Gravel Company, LLC

RE: Trout Valley Ranch Substitute Water Supply Plan (WDID 2302537, Plan ID 5900)
Trout Valley Ranch, DRMS M-2016-080 (WDID 2307166)
Sections 2, 3, 10, and 11, T10S, R77W, 6th P.M.
Water Division 1, Water District 23, Park County

Approval Period: June 1, 2019 through October 31, 2019

Contact Information for Mr. Oliver: 303-853-5159; joliver@brannan1.com

Dear Mr. Oliver:

We have reviewed your letter dated March 29, 2019 requesting renewal of the above referenced substitute water supply plan ("SWSP") for Brannan Sand and Gravel Company ("Brannan" or "Applicant") in accordance with § 37-90-137(11), C.R.S. to cover depletions associated with the Trout Valley Ranch sand and gravel mining operation. The required renewal fee of \$257 has been submitted (receipt no. 3691208). This plan was initially approved on June 19, 2017 for operations through May 31, 2019.

SWSP Operation

The Trout Valley Ranch site consists of 472.3 acres located approximately 1 mile south of Fairplay, Colorado. A portion of the property was mined for gold in the early 20th century by a dredge, leaving behind large piles of washed rock. The Applicant plans to mine these piles for sand and gravel, along with some areas not previously dredge mined. Mining of the site began in July of 2017 and is anticipated to continue for at least 50 years. No mining will take place below the groundwater table under this SWSP. A small groundwater pond has been excavated to provide water for mining operations at the site. Consumptive use at the Trout Valley Ranch during this plan period will consist of evaporation from the exposed surface area of the pond, wash water for the wash plant, evaporation from the recirculation pond, and water used for dust control purposes. Replacement water will be provided pursuant to a lease between the Applicant and North Fork Associates, LLC and Mountain Mutual Reservoir Company.

Depletions

The Applicant has excavated a small groundwater pond, known as the "Freshwater Pond", to supply water for mining operations at the site. The material excavated from below the groundwater table created a groundwater depletion due to the "first fill". The "first fill" is the water that fills an unlined pit or pond and occupies the volume previously occupied by the removed sand, gravel, or



other solid material. The Freshwater Pond was excavated to a depth of approximately 10 feet below the groundwater table, with a surface area of 0.49 acres (21,344 square feet) and a porosity of 0.3. A depletion of 3.43 acre-feet for the first fill was accounted for in July 2017 and is included in the lagged depletions for this SWSP period.

The Freshwater Pond is connected to a Recirculation Pond which captures process water for reuse on site. The total water surface area between the two ponds is 1.0 acre. Evaporation from the ponds will be calculated using a gross annual evaporation of 35 inches from the exposed water surface, with a credit of 9.15 inches for effective precipitation, based on an average annual precipitation of 13.07 inches obtained from the Western Regional Climate Center. The resulting net evaporation is more conservative than the net evaporative loss estimated by DWR and therefore is acceptable for the purposes of this SWSP. The period of this SWSP is outside of the months where ice cover may occur so no adjustments were made for the ice covered period. Net evaporative depletions from groundwater are estimated to total 1.29 acre-feet for this plan period (June-October).

You have estimated that 390,000 tons of mined material will be removed from the site during this plan period, of which approximately 20% will be washed. For the purposes of this SWSP, you have assumed that 50% of the material mined during this plan period will be washed. The material mined above the water table and not washed has a moisture content of 2% of the mined material by weight, but none of the moisture is a groundwater diversion. The material mined above the water table that is washed will have a 4% moisture content, of which 2% is from the soil profile and 2% is from the groundwater used for washing. This results in a consumptive use of approximately 4.79 gallons per ton, or 2.88 acre-feet for the 195,000 tons of washed material.

Dust control during crushing and screening will use approximately 2.28 gallons of groundwater per ton, or 2.73 acre-feet of water for the 390,000 tons of material anticipated to be mined during this plan period.

You have estimated that an additional 5.85 acre-feet of water will be required for dust control along unpaved roads, non-vegetated product stockpiles, and disturbed areas during this plan period. All water used for dust control purposes is assumed to be 100% consumed.

Total out-of-priority diversions are projected to be 12.74 acre-feet for this plan period (June - October). The monthly groundwater depletions were lagged from the Freshwater Pond to the Middle Fork of the South Platte River in Section 2, T10S, R77W, using the Alluvial Water Accounting System (AWAS) program developed by the Integrated Decision Support (IDS) Group at Colorado State University with the following parameters:

- Distance from the pond centroid to the river (X) = 3,400 feet
- Specific yield (S) = 0.16
- Transmissivity (T) = 58,900 gallons per day per foot

Lagged depletions resulting from the use of groundwater at the site are estimated to total 15.41 acre-feet for this plan period. A monthly breakdown of projected consumptive use and lagged depletions is shown in the attached Table 1.

This office was unable to replicate the AWAS results obtained by the Applicant using the provided aquifer parameters and consumptive use. In addition, a review by the Division of Water Resources' hydrogeological staff indicated that a transmissivity of 42,400 gallons per day per foot may be more appropriate for the area. However, the replacements proposed to be provided by the Applicant are greater than the depletions calculated by this office, and therefore the Applicant's values will be accepted for the purposes of this SWSP.

Replacements

The Applicant entered into an agreement with North Fork Associates, LLC and Mountain Mutual Reservoir Company, dated January 31, 2016, for the lease of an annual amount of 28.0 acre-feet of replacement water, with the option of leasing an additional 10.0 acre-feet. The lease was initially valid through October 31, 2017, with the option of leasing replacement water for two additional one-year periods. The lease was extended twice and is currently valid through October 31, 2019. A copy of the lease and extension letter are attached.

The water rights available pursuant to the lease include: 1) fully consumable water attributable to the Slaght Ditch (WDID 8000660) and Mack Ditch No. 2 (WDID 8000661) water rights as quantified and decreed in case no. 2003CW238 (located on the North Fork of the South Platte River); 2) fully consumable water attributable to the Nickerson No. 2 Ditch (WDID 8000797), Parmalee No. 1 Ditch (WDID 8000790), and Carruthers No. 2 Ditch (WDID 8000789) water rights as quantified and decreed in case no. 2000CW174 and all located on Deer Creek, a tributary to the North Fork of the South Platte River; 3) fully consumable water attributable to the Guiraud 3T Ditch (WDID 2300679), located on the Middle Fork of the South Platte River downstream of the point of depletion, previously quantified and changed in various decrees; and 4) fully consumable water stored in Lower Sacramento Creek Reservoir No. 1 (WDID 2304494) located on Sacramento Creek, upstream of the point of diversion in Section 32, T9S, R77W, pursuant to the decree in case no. W-7741-74. The water quantified and decreed in case nos. 2000CW174 and 2003CW238 may also be stored in Maddox Reservoir (WDID 8003929), located on the North Fork of the South Platte River, and released from Maddox Reservoir for use in this SWSP. Reservoir accounting is required for the proper administration of such water diverted to storage and stored for later release. Replacement water will be delivered at the headgates of the referenced ditches and/or the outlets of the referenced reservoirs. To the extent that the decreed place of use of any of the leased water rights conflict with the proposed place of use, this SWSP constitutes approval of a change of place of use of the leased water to allow for use at the location of the Trout Valley Pit or upstream of the calling right.

It is the responsibility of the Applicant to ensure that replacement water is provided in time, place, and amount. Replacements may be provided downstream of the point of depletion but must be provided upstream of the calling water right. The Applicant must notify the District 23 and District 80 water commissioners at least 48 hours prior to making replacement deliveries. The applicant is required to obtain the water commissioner's approval on a daily basis or as required by the water commissioner. Our office has previously expressed to North Fork Associates, LLC and Mountain Mutual Reservoir Company the need for measurement devices, particularly on Deer Creek and the North Fork of the South Platte, to allow administration of these water rights. Our office will continue to work with North Fork Associates, LLC and Mountain Mutual Reservoir Company to ensure that replacement water can be adequately measured and accounted for on Deer Creek.

Long Term Augmentation

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 Colorado Division of Reclamation, Mining, and Safety ("DRMS") requires that you provide information to demonstrate you can replace long term injurious stream depletions that result from mining-related exposure of groundwater. Upon completion of mining operations and reclamation, there will be no permanent groundwater exposure and the site will be reclaimed to rangeland. A total bond amount of \$415,073, which includes the cost of backfilling the pond(s), has been set by DRMS and obtained by the Applicant.

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 June 1, 2019 through October 31, 2019 unless otherwise revoked or superseded by decree. If this SWSP will not be made absolute by a water court action by the SWSP expiration date, a renewal request must be submitted to this office with the statutory fee (currently \$257) **no later than August 31, 2019**. 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. 81022-F has been obtained for the current use and exposed surface area of the gravel pit in accordance with § 37-90-137(2) and (11), C.R.S., in conjunction with this plan.
3. The total surface area of the groundwater exposed at the site must not exceed a combined total of 1.0 acre between the Freshwater Pond and Recirculation Pond, which results in a maximum evaporative loss of 1.29 acre-feet for this plan period. Should the exposed water surface area exceed this amount, an amendment will need to be filed with this office.
4. The amount of water used at the Trout Valley Ranch during this plan period, in addition to evaporation, is limited to 11.46 acre-feet (estimated based on 390,000 tons product mined at the site, of which 50% is washed, which results in 2.88 acre-feet of water removed with the mined product and 2.73 acre-feet of water used for processing, and 5.85 acre-feet of water used for additional dust control at the site).
5. Total consumption at the Trout Valley Ranch must not exceed these aforementioned amounts unless a new SWSP is obtained.
6. Approval of this SWSP is for the purposes as stated herein. Additional wells (groundwater ponds) and/or additional uses for the water that is the subject of this SWSP will be allowed only if a new SWSP is approved for those additional wells/uses.
7. All pumping for dust control and/or processing shall be measured in a manner acceptable to the division engineer. The Applicant shall install and maintain measuring devices as required by the division engineer for operation of this SWSP.
8. The name, address and phone number of the contact person who will be responsible for the operation and accounting of this plan must be provided with the accounting form to the division engineer and water commissioner.

9. Adequate accounting of depletions and replacements must be provided to the division engineer in Greeley (DNR.Div1Accounting@state.co.us) and the water commissioners (Garver Brown at Garver.Brown@state.co.us and Tim Buckley at Tim.Buckley@state.co.us) on a monthly basis, or more frequent if required by the water commissioner, within 30 days of the end of the month for which the accounting applies. All amounts shall be in acre-feet. All submitted accounting must conform to the Administration Protocol "*Augmentation Plan Accounting - Division One, South Platte River*" (attached). **NOTE:** Monthly accounting, even during the winter non-irrigation season, is required.
10. Applicant shall verify that the entity making replacement, in this case North Fork Associates, LLC and Mountain Mutual Reservoir Company, has included them on their accounting submitted to our office.
11. 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 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.
12. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the division engineer.
13. The replacement water, which 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. All replacement water must be concurrent with depletions in quantity, timing and locations.
14. To assure that depletions from groundwater evaporation do not occur in the unforeseen event, or events, that would lead to the abandonment of the pit, the Applicant has obtained a bond in the amount of \$415,073, which includes the cost of backfilling the pond(s).
15. If reclamation of the mine site produces a permanent water surface exposing groundwater to evaporation, an application for a plan for augmentation must be filed with the Division 1 Water Court at least three (3) years prior to the completion of mining to include, but not be limited to, long-term evaporation losses. If a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow. Granting of this SWSP does not imply approval by this office of any such court application(s).
16. The Applicant has not proposed to dewater the site, therefore no dewatering shall be allowed under this SWSP.
17. The State Engineer may revoke this SWSP or add additional restrictions to its operation if at any time the State Engineer determines that injury to other vested water rights has 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 at the pit must cease immediately.
18. 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 the requirements of use of senior appropriators. As such, water quality data or analysis may be requested at any time to determine if the water quality is appropriate for downstream water users.

19. The decision of the state engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in any pending water court case or any other legal action that may be initiated concerning this plan. This decision shall not bind the state engineer to act in a similar manner in any other applications involving other SWSPs, or in any proposed renewal of this SWSP, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant.

Please contact Sarah Brucker in Denver at (303) 866-3581, or Dean Santistevan in Greeley at (970) 352-8712, if you have any questions concerning this approval.

Sincerely,



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

Attachments: Table 1

North Fork/MMRC lease agreement and extension
Administration Protocol - Augmentation Plan Accounting

cc: Alex Schatz, Brannan Sand and Gravel Company, aschatz@brannan1.com
Dean Santistevan, Assistant Division Engineer, Dean.Santistevan@state.co.us
Louis Flink, Tabulation/Diversion Records Coordinator, Louis.Flink@state.co.us
Garver Brown, Water Commissioner, Water District 23, Garver.Brown@state.co.us
Tim Buckley, Water Commissioner, Water Districts 9 & 80, Tim.Buckley@state.co.us
Michael A. Cunningham, Division of Reclamation Mining and Safety,
michaela.cunningham@state.co.us

Table 1
Depletion Occuring During Mining Period
Trout Valley Ranch

All values in ac-ft unless noted

Month	Pumped from Pit							Depletions								Total		
								Evaporation								First Fill (ac-ft)	Total CU	Lagged Depletions (ac-ft)
	Aggregate Production abv GW (tons)	Aggregate Production in GW (tons)	Water Retained in Product abv GW	Water Retained in Product in GW	Water Used for Fugitive Dust Control	Water Used for Dust Control in Spray Bars	Subtotal Consumption of Pumped Water	Monthly Net Evap (%)	Monthly Net Evap (in)	Precip. Park County (in/ac)	Evap. Credit (70%) (in)	Evap After Eff Precip Credit (in)	Evap After Eff Precip Credit (ft)	Exposed Water Surface (acres)	Subtotal Evap Losses			
Nov-16			0.00	0.00	0.00		0.00	4.0%	1.40	0.44	0.31	1.09	0.09	0.0	0.00		0.00	0.00
Dec-16			0.00	0.00	0.00		0.00	1.5%	0.53	0.62	0.43	0.09	0.01	0.0	0.00		0.00	0.00
Jan-17			0.00	0.00	0.00		0.00	1.0%	0.35	0.40	0.28	0.00	0.00	0.0	0.00		0.00	0.00
Feb-17			0.00	0.00	0.00		0.00	3.0%	1.05	0.42	0.29	0.76	0.06	0.0	0.00		0.00	0.00
Mar-17	0		0.00	0.00	0.00		0.00	6.0%	2.10	0.86	0.60	1.50	0.12	0.0	0.00		0.00	0.00
Apr-17	0		0.00	0.00	0.00		0.00	9.0%	3.15	1.04	0.73	2.42	0.20	0.0	0.00		0.00	0.00
May-17	0		0.00	0.00	0.00		0.00	12.5%	4.38	0.88	0.62	3.76	0.31	0.0	0.00		0.00	0.00
Jun-17	0		0.00	0.00	0.00	0.00	0.00	15.5%	5.43	0.91	0.64	4.79	0.40	0.0	0.00		0.00	0.00
Jul-17	10,084		0.07	0.00	1.17	0.07	1.31	16.0%	5.60	2.80	1.96	3.64	0.30	0.5	0.15	3.43	4.89	-0.09
Aug-17	61,646		0.45	0.00	1.17	0.43	2.05	13.0%	4.55	2.63	1.84	2.71	0.23	0.5	0.11		2.17	-0.68
Sep-17	46,715		0.34	0.00	1.17	0.33	1.84	11.0%	3.85	1.14	0.80	3.05	0.25	0.5	0.12		1.97	-1.03
Oct-17	36,770		0.27	0.00	1.17	0.26	1.70	7.5%	2.63	0.93	0.65	1.97	0.16	0.5	0.08		1.78	-1.25
Annual Total	155,215	0	1.14	0.00	4.68	1.09	5.82	100.0%	35.00	13.07	9.15	25.78	2.15		0.46		10.80	-3.05
Nov-17	26,235		0.39	0.00	0.35	0.18	0.92	4.0%	1.40	0.44	0.31	1.09	0.09	0.5	0.05		0.97	-1.27
Dec-17	25,303		0.37	0.00	0.35	0.18	0.72	1.5%	0.53	0.62	0.43	0.09	0.01	0.5	0.00		0.90	-1.24
Jan-18	26,255		0.39	0.00	0.35	0.18	0.74	1.0%	0.35	0.40	0.28	0.07	0.01	0.5	0.00		0.92	-1.10
Feb-18	28,969		0.43	0.00	0.35	0.20	0.98	3.0%	1.05	0.42	0.29	0.76	0.06	0.5	0.03		1.01	-0.91
Mar-18	42,278		0.62	0.00	0.35	0.30	1.27	6.0%	2.10	0.86	0.60	1.50	0.12	0.5	0.06		1.33	-0.99
Apr-18	42,850		0.63	0.00	1.17	0.30	2.10	9.0%	3.15	1.04	0.73	2.42	0.20	0.5	0.10		2.20	-1.03
May-18	73,176		0.54	0.00	1.17	0.51	2.22	12.5%	4.38	0.88	0.62	3.76	0.31	0.5	0.16		2.38	-1.27
Jun-18	78,778		0.58	0.00	1.17	0.55	2.30	15.5%	5.43	0.91	0.64	4.79	0.40	0.5	0.20		2.50	-1.49
Jul-18	42,309		0.31	0.00	1.17	0.30	1.78	16.0%	5.60	2.80	1.96	3.64	0.30	0.5	0.14		1.92	-1.82
Aug-18	64,874		0.48	0.00	1.17	0.45	2.10	13.0%	4.55	2.63	1.84	2.71	0.23	0.5	0.11		2.21	-1.94
Sep-18	67,009		0.49	0.00	1.17	0.47	2.13	11.0%	3.85	1.14	0.80	3.05	0.25	1.0	0.24		2.38	-1.95
Oct-18	39,546		0.29	0.00	1.17	0.28	1.74	7.5%	2.63	0.93	0.65	1.97	0.16	1.0	0.16		1.90	-2.24
Annual Total	557,582	0	5.51	0.00	9.94	3.90	9.94	100.0%	35.00	13.07	9.15	25.85			1.26		20.62	-17.25
Nov-18	40,560		0.60	0.00	0.35	0.28	0.95	4.0%	1.40	0.44	0.31	1.09	0.09	1.0	0.09		1.32	-2.26
Dec-18	12,540		0.18	0.00	0.35	0.09	0.53	1.5%	0.53	0.62	0.43	0.09	0.01	1.0	0.01		0.63	-2.20
Jan-19	11,088		0.16	0.00	0.35	0.08	0.51	1.0%	0.35	0.40	0.28	0.07	0.01	1.0	0.01		0.60	-1.88
Feb-19	43,231		0.64	0.00	0.35	0.30	0.99	3.0%	1.05	0.42	0.29	0.76	0.06	1.0	0.06		1.35	-1.45
Mar-19	75,681		1.11	0.00	0.35	0.53	1.46	6.0%	2.10	0.86	0.60	1.50	0.12	1.0	0.12		2.11	-1.55
Apr-19	70,000		1.03	0.00	1.17	0.49	2.20	9.0%	3.15	1.04	0.73	2.42	0.20	1.0	0.19		2.88	-1.69
May-19	80,000		0.59	0.00	1.17	0.56	1.76	12.5%	4.38	0.88	0.62	3.76	0.31	1.0	0.30		2.62	-2.11
Jun-19	80,000		0.59	0.00	1.17	0.56	1.76	15.5%	5.43	0.91	0.64	4.79	0.40	1.0	0.38		2.70	-2.47
Jul-19	80,000		0.59	0.00	1.17	0.56	1.76	16.0%	5.60	2.80	1.96	3.64	0.30	1.0	0.29		2.61	-3.02
Aug-19	80,000		0.59	0.00	1.17	0.56	1.76	13.0%	4.55	2.63	1.84	2.71	0.23	1.0	0.22		2.54	-3.27
Sep-19	80,000		0.59	0.00	1.17	0.56	1.76	11.0%	3.85	1.14	0.80	3.05	0.25	1.0	0.24		2.56	-3.24
Oct-19	70,000		0.52	0.00	1.17	0.49	1.69	7.5%	2.63	0.93	0.65	1.97	0.16	1.0	0.16		2.33	-3.41
Annual Total	723,100	0	7.18	0.00	9.94		9.94	100.0%	35.00	13.07	9.15	25.85			2.07		24.25	-28.55

Nov-19	45,000	0.66	0.00	0.35	0.00	1.01	4.0%	1.40	0.44	0.31	1.09	0.09	1.0	0.09		1.10	1.10
Dec-19	35,000	0.52	0.00	0.35	0.00	0.87	1.5%	0.53	0.62	0.43	0.09	0.01	1.0	0.01		0.87	0.00
Jan-20	40,000	0.59	0.00	0.35	0.00	0.94	1.0%	0.35	0.40	0.28	0.07	0.01	1.0	0.01		0.94	0.00
Feb-20	45,000	0.66	0.00	0.35	0.00	1.01	3.0%	1.05	0.42	0.29	0.76	0.06	1.0	0.06		1.07	0.00
Mar-20	45,000	0.66	0.00	0.35	0.00	0.00	6.0%	2.10	0.86	0.60	1.50	0.12	1.0	0.12		1.13	0.00
Apr-20	70,000	1.03	0.00	1.17	0.00	0.00	9.0%	3.15	1.04	0.73	2.42	0.20	1.0	0.19		2.39	0.00
May-20	80,000	0.59	0.00	1.17	0.00	0.00	12.5%	4.38	0.88	0.62	3.76	0.31	1.0	0.30		2.06	0.00
Jun-20	80,000	0.59	0.00	1.17	0.56	0.00	15.5%	5.43	0.91	0.64	4.79	0.40	1.0	0.38		2.70	0.00
Jul-20	80,000	0.59	0.00	1.17	0.56	0.00	16.0%	5.60	2.80	1.96	3.64	0.30	1.0	0.29		2.61	0.00
Aug-20	80,000	0.59	0.00	1.17	0.56	0.00	13.0%	4.55	2.63	1.84	2.71	0.23	1.0	0.22		2.54	0.00
Sep-20	80,000	0.59	0.00	1.17	0.56	0.00	11.0%	3.85	1.14	0.80	3.05	0.25	1.0	0.24		2.56	0.00
Oct-20	70,000	0.52	0.00	1.17	0.56	0.00	7.5%	2.63	0.93	0.65	1.97	0.16	1.0	0.16		2.40	0.00
Annual Total	750,000	0	7.58	0.00	9.94	9.94	100.0%	35.00	13.07	9.15	25.85		2.07			22.39	1.10
Nov-20	0	0.00	0.00	0.00	0.00	0.00	4.0%	1.40	0.44	0.31	1.09	0.09	0.0	0.00		0.00	0.00
Dec-20	0	0.00	0.00	0.00	0.00	0.00	1.5%	0.53	0.62	0.43	0.09	0.01	0.0	0.00		0.00	0.00
Jan-21	0	0.00	0.00	0.00	0.00	0.00	1.0%	0.35	0.40	0.28	0.07	0.01	0.0	0.00		0.00	0.00
Feb-21	0	0.00	0.00	0.00	0.00	0.00	3.0%	1.05	0.42	0.29	0.76	0.06	0.0	0.00		0.00	0.00
Mar-21	0	0.00	0.00	0.00	0.00	0.00	6.0%	2.10	0.86	0.60	1.50	0.12	0.0	0.00		0.00	0.00
Apr-21	0	0.00	0.00	0.00	0.00	0.00	9.0%	3.15	1.04	0.73	2.42	0.20	0.0	0.00		0.00	0.00
May-21	0	0.00	0.00	0.00	0.00	0.00	12.5%	4.38	0.88	0.62	3.76	0.31	0.0	0.00		0.00	0.00
Jun-21	0	0.00	0.00	0.00	0.00	0.00	15.5%	5.43	0.91	0.64	4.79	0.40	0.0	0.00		0.00	0.00
Jul-21	0	0.00	0.00	0.00	0.00	0.00	16.0%	5.60	2.80	1.96	3.64	0.30	0.0	0.00		0.00	0.00
Aug-21	0	0.00	0.00	0.00	0.00	0.00	13.0%	4.55	2.63	1.84	2.71	0.23	0.0	0.00		0.00	0.00
Sep-21	0	0.00	0.00	0.00	0.00	0.00	11.0%	3.85	1.14	0.80	3.05	0.25	0.0	0.00		0.00	0.00
Oct-21	0	0.00	0.00	0.00	0.00	0.00	7.5%	2.63	0.93	0.65	1.97	0.16	0.0	0.00		0.00	0.00
Annual Total	0	0	0.00	0.00	0.00	0.00	100.0%	35.00	13.07	9.15	25.85		0.00				0.00
Total Consumption During Mining Phase			0.0	34.5		35.6							5.9				-47.8

Date Revised: 5/16/2019

AGREEMENT

1. **PARTIES:** This Agreement is made and entered into this 3/1 day of January, 2016, in duplicate counterpart originals, by and between BRANNAN SAND and GRAVEL COMPANY, (hereinafter referred to as "the Lessee"), and NORTH FORK ASSOCIATES, LLC, a Colorado Limited Liability Company and MOUNTAIN MUTUAL RESERVOIR COMPANY, a mutual company, (hereinafter referred to as "the Lessors").

2. **RECITALS AND PURPOSE:** The Lessee proposes to satisfy the needs for replacement water in the Middle Fork of the South Platte River, located in Park County, Colorado. To assure that sufficient water can be available for Brannan Sand and Gravel Co., associated with Lessee's operation, the Lessee seeks to lease replacement water on an interim basis.

Lessors are the owners of the following water rights:

MADDOX RESERVOIR

The Maddox Reservoir is located in the NE1/4 SW1/4, Section 22, Township 7 South, Range 73 West of the 6th P.M. in Park County. It was adjudicated on November 11, 1971 with an appropriation date of May 31, 1905. It is decreed for multiple purposes including irrigation, domestic, fish culture and recreation with a capacity of 54.0 acre-feet. It is filled by the Maddox Reservoir Feeder Ditch, which diverts from the North Fork of the South Platte River in the NE1/4 SE1/4 SW1/4, Section 22, Township 7 South, Range 73 West of the 6th P.M. and decreed as an alternate point of diversion for the Slaght Ditch.

SLAGHT DITCH

The Slaght Ditch, with a South Platte Priority No. 241 and North Fork Drainage Priority No. 4 has an appropriation date of May 1, 1863 as adjudicated by the District Court for Park County on May 22, 1913 in the amount of 2.0 cubic-feet-per-second. The headgate is located on the North Bank of the North Fork of the South Platte River in the NE ¼ SE ¼, Section 21, Township 7 South, Range 732 West of the 6th P.M. This headgate is still used for irrigation of the land North of Highway 285. In Case No. 82CW472 an alternate point of diversion was established at the headgate of the Maddox Feeder Ditch in the NE ¼ SE ¼, Section 21, Township 7 South, Range 73 West of the 6th P.M. Lessors interest in this right is 0.481 of a cubic-foot-per-second which is quantified in Water Court Case No. 2003CW238.

MACK DITCH NO. 2

The Mack Ditch No. 2, with a South Platte Priority No. 243 and North Fork Drainage Priority No. 6 has an appropriation date of May 1, 1863 as adjudicated by the District Court for Park County on May 22, 1913 in the amount of 1.0 cubic-feet-per-second. The headgate is located on the South Bank of the North Fork of the South Platte River in the NE ¼ SE ¼, Section 21, Township 7 South, Range 732 West of the 6th P.M. Lessors interest in this right is 0.44045 of a cubic-foot-per-second which is quantified in Water Court Case No. 2003CW238.

NICKERSON NO. 2 DITCH

The Nickerson No. 2 Ditch, with a South Platte Priority No. 262 and North Fork Drainage Priority No. 24 has an appropriation date of May 1, 1872 as adjudicated by the District Court for Park County on May 22, 1913 in the amount of 0.65 of a cubic-foot-per-second. The headgate is located on the North bank of Deer Creek at a point whence the SE Corner, Section 4, Township 7 South, Range 72 West of the 6th P.M., bears North 58°15' East, 2320 feet and has historically irrigated approximately 35 acres adjacent to Dear Creek in the SE1/4 Section 9, NW1/4 Section 15, and NE1/4, Section 16, Township 7 South, Range 72 West of the 6th P.M. all in Park County.

PARMELEE NO. 1 DITCH

The Parmelee No. 1 Ditch, with a South Platte Priority No. 251 and North Fork Drainage Priority No. 14 has an appropriation date of May 1, 1867 as adjudicated by the District Court for Park County on May 22, 1913 in the amount of 0.52 of a cubic-foot-per-second. In that decree the headgate was located on the North Bank of Deer Creek at a point whence the S1/4 Corner of Section 32, Township 6 South, Range 72 West of the 6th P.M., bears South 70° 6' East, 1210 feet. Water Division No. 1 District Court Case No. W-7434 changed the location of the headgate to the Nickerson No. 2 Ditch, as shown above.

CARRUTHERS NO. 2 DITCH

The Carruthers No. 2 Ditch, with a South Platte Priority No. 250 and North Fork Drainage Priority No. 13 has an appropriation date of May 1, 1967 as adjudicated by the District Court for Park County on May 22, 1913 in the amount of 0.52 of a cubic-foot-per-second. In that decree the headgate was located on the North Bank of Deer Creek at a point whence the S1/4 Corner between Section 31 and 32, Township 6 South, Range 72 West of the 6th P.M., bears North 85° 30' East, 1398 feet. Water Division No. 1 District Court Case No. W-7434 changed the location of the headgate for 0.28 of a cubic-foot-per-second to the Nickerson No. 2 Ditch, as shown above. This 0.28 of a cubic-foot-per-second is included in this contract.

Pursuant to the Decree issued in Case No. 2000CW174, dated October 11, 2002, the historic consumptive use associated with the Nickerson No 2, Parmelee No. 1, and Carruthers No. 2 Ditches (hereinafter referred to as "Nickerson Ditch Rights") was quantified.

GUIRAUD 3T DITCH

The headgate is located on the right bank of the Middle Fork of the South Platte River in the Northeast 1/4 of Section 8, Township 11 South, Range 76 West, 6th P.M., Park County, Colorado, at a point whence the Northeast corner of the Northeast 1/4 of said section bears North 63 degrees 35 minute East, 1,305 feet. Lessor owns 3.480 c.f.s. of the water rights decree to the Guiraud 3T Ditch as follows:

<u>Adjudication Date</u>	<u>Appropriation Date</u>	<u>Amount (c.f.s)</u>
October 18, 1889	July 1, 1867	20
Original adjudication		
Water Dist. 23		

LOWER SACRAMENTO CREEK RESERVOIR COMPANY

The Lower Sacramento Creek Reservoir Company, a Colorado corporation, owns and operates the Lower Sacramento Creek Reservoir No. 1. The Reservoir is located in the Northeast 1/4 Northwest 1/4, Section 32, and the Southeast 1/4 Southwest 1/4, Section 29, Township 9 South, Range 77 West, 6th P.M., Park County, Colorado. Seller/MMRC owns 772 shares of a total of 3,540 shares in the Company (a 21.8% interest). The Reservoir has been constructed and is entitled to store water under the following decree:

<u>Adjudication Date</u>	<u>Appropriation Date</u>	<u>Amount</u>
1974; Case No. W-7741-74	July 25, 1974	40 a.f.
Case No. 84CW250	Use of Res. as Recharge Facility	
Case No. 85CW465	Use of Res. as Recharge Facility	

The water may be used for domestic, municipal, commercial, industrial, irrigation, fish and wildlife propagation, recreational and all other beneficial purposes, including exchange to compensate for depletions in the South Platte River and its tributaries. Other ownerships in the reservoir have transferred water rights to Lower Sacramento Creek Reservoir No. 1 in which Seller has no interest.

Lessors are willing to lease water to the Lessee on a temporary basis. It is understood that the replacement water will be delivered at the headgates of the above referenced ditches and the outlets of the above referenced reservoirs.

3. **AGREEMENT FOR THE LEASE OF WATER:** In consideration of the covenants and agreements of the Lessors and the payments to be made by the Lessee, Lessors agree to lease water to the Purchaser pursuant to the following terms and conditions:

- a. **Quantity of Water:** Pursuant to this Agreement, the Lessee shall be entitled to annually receive 28.0 acre-feet of water which Lessors presently own and control as set forth in Paragraph 2 above. Lessee has the option of leasing an additional 10.0 acre-feet pursuant to the terms below.
- b. **Compensation to Lessors:** As compensation for the lease of water as described herein, the Lessee agrees to pay to the order of North Fork Associates, \$4,650.00 (\$300.00 per acre foot per year) for 15.5 acre-feet of water delivered between the months of May and September, \$7,500 (\$600.00 per acre foot per year) for 12.5 acre-feet of water delivered for the balance of the year, and \$2,000 contract fee, upon both parties signing this agreement. For subsequent years the payment of \$12,150.00 will be due on November 1 for water use from November 1 through October of the following year.
- c. **Term of Water Lease:** The effective period of the Agreement shall be the date of execution through October 31, 2017. Subject to NFA's termination rights set out in Paragraph No. 3(d), Lessee shall have the option of leasing replacement water for two additional one year periods. In order to exercise the option to extend the lease beyond the initial term, Lessee shall provide NFA with written notification of its intent to extend the term on or before the expiration date and the a payment in the amount of \$300.00 per year for each

acre-foot of replacement water from May through September and \$600 per year for each acre-foot of replacement water for the balance of the year which is leased during a subsequent one year period.

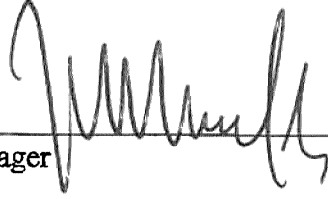
- d. **Termination of Lease Option:** In the event that NFA determines it does not have sufficient surplus replacement water to accommodate Lessee's needs beyond the initial term of this lease, NFA shall have the unilateral right to cancel the option provision by providing written notice to Lessee no later the date of expiration. In the event that the first one year extension option is exercised, but MMRC determines it cannot accommodate the second one year extension, NFA shall also have the right to cancel the second one year option provision by providing written notice to Lessee no later than the date of expiration of the first extension.
- d. **Responsibilities of the Parties:** The Lessee shall have the responsibility of notifying Lessors when all or a portion of the water described herein is to be released to the South Platte River or Bear Creek/Turkey Creek from any of the above described facilities. To the extent physically possible, Lessors agree to make said water available, at those times and at rates previously agreed upon or as requested by the Water Commissioner. Notification of the requested release must be received between 8:00 A.M. and 5:00 P.M. Monday through Friday. Water availability is subject to the down stream calls and the exchange potential on the South Platte River, Bear Creek and/or Turkey Creek. Lessee is responsible for the stream losses from the point of release to the point of exchange at the rate of 0.13% per mile. Lessors shall have the responsibility of coordinating its water rights to see that all requests for water are met and will determine from which facility the water shall be released.
- e. **Notice:** Whenever the terms of this Agreement require notice to be given to Lessors or Lessee, said notice shall be sufficient if given verbally to:

North Fork Associates
2686 S. Yukon Ct.
Lakewood, CO 80227
303 988 7111

Brannan Sand and Gravel Co.
2500 E. Brannan Wy
Denver, CO 80229
303 853 5161

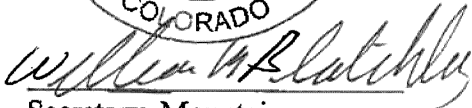
DATED this 31 day of January 2017.

BRANNAN SAND AND GRAVEL COMPANY

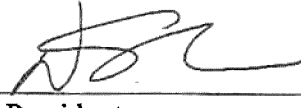


Manager

MOUNTAIN MUTUAL RESERVOIR COMPANY

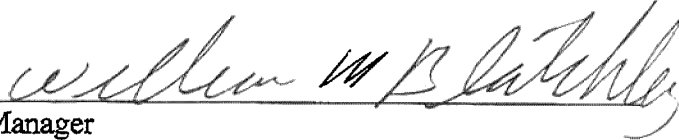


Secretary, Mountain
Mutual Reservoir Co.



Vice-President

NORTH FORK ASSOCIATES



Manager



October 1, 2018
North Fork Associates
2626 S. Yukon Ct.
Lakewood, CO 80227

Re: Extension of Lease

Brannan Sand and Gravel Company, L.L.C. (Brannan) intends to extend the lease of 228.0 acre feet of water plus an option for 10.0 additional acre feet., as agreed on January 31, 2017 by Curt Marvel of Brannan and William Blatchley of North Fork Associates.

This letter shall serve as written notice of extension of this contract. Brannan shall continue to abide by all terms of this agreement. This shall extend the water lease agreement until 10/31/2019, for the final extension of the original contract.

Sincerely,

A handwritten signature in blue ink, appearing to read "Josh", followed by a long horizontal line.

Joshua Oliver
Environmental Manager
Brannan Sand and Gravel Company, L.L.C.
(303) 472-1736
joliver@brannan1.com

A handwritten signature in blue ink, appearing to read "William M. Blatchley", followed by the text "NORTH FORK ASSOCIATES" in a stylized, cursive font.

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](tel:970-352-8712)) 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. All wells must be decreed by the water court, permitted by the state engineer or included in a decreed plan for augmentation. Unregistered and undeclared 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)