



**COLORADO**  
Division of Water Resources  
Department of Natural Resources

January 25, 2022

Michelle L. Hatcher  
Clear Water Solutions  
8010 S. Country Road 5, Suite 105  
Windsor, CO 80528

**Re: NCCI Pit #1 Substitute Water Supply Plan (WDID 0202566)**  
**NCCI Pit #1, M-2001-107 (WDID 0203016)**  
**Section 24, T 2N, R 67W, 6<sup>th</sup> P.M.**  
**Water Division 1, Water District 2, Weld County**  
**SWSP Plan ID 3670**

**Approval period: January 1, 2022 through December 31, 2022**

*Contact for Michelle L. Hatcher: 970-223-3706 and [michelle@clearwatercolorado.com](mailto:michelle@clearwatercolorado.com)*

Dear Michelle L. Hatcher:

We have received your December 29, 2021 renewal request for the above-referenced substitute water supply plan ("SWSP") to cover depletions caused by an existing gravel mining operation operated by Northern Colorado Constructors, Inc. ("NCCI" or "Applicant"), which was purchased by the City of Thornton. The required fee of \$257.00 for the renewal of this SWSP has been submitted (receipt no. 10017790). The original supply plan was approved on December 30, 2002 and the SWSP was most recently renewed on February 16, 2021.

### **Plan Operation**

Mining operations at the NCCI Pit #1 began in mid-2003 and have since ceased. This plan seeks to replace lagged depletions resulting from past mining operations at the NCCI Pit #1, ongoing evaporative losses, and ongoing dewatering.

In 2022, the operation will consist of 15.83 acres of exposed water surface area through recharge ditches, sedimentation ponds, and dewatering ditches, as shown on attached Figure 1. The exposed surface area is anticipated to be reduced to zero at the end of 2022. The operation will also result in a maximum volume of 3,225.0 acre-feet of water pumped for dewatering. Liner construction began in 2020 and is ongoing, anticipated to continue through December 2022. Any water which enters the pit during liner construction will be pumped back to the river system; dewatering is anticipated to be completed by January 2023.

The lagged depletions will be replaced using fully consumable effluent provided by the City of Thornton ("Thornton") and accretion credits from dewatered water returned directly back to the stream system.

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 groundwater. The DRMS letter identifies four approaches to satisfy this requirement. In accordance with approach no. 3, you have indicated that a bond has



been obtained for \$1,030,074 that can cover the cost of lining the NCCI Pit #1 to prevent the exposure of groundwater.

### Depletions

The exposed groundwater surface area will be 15.83 acres for 2022, after which the pit will be lined and the exposed surface area will be zero. Net evaporative depletions were calculated using a gross annual evaporation of 45 inches (based on the NOAA Technical Report NWS 33) from the exposed groundwater surface, with a credit of 9.4 inches for effective precipitation based on an average precipitation of 13.4 inches per year (Brighton Weather Station, period of record 1973-2020). The net depletions of groundwater due to evaporation from the 15.83 acres at the site totals 46.9 acre-feet, as shown on the attached amended Table 2.

The mining operation has continuously dewatered directly back to the South Platte River since mining operations commenced in 2003. The Applicant estimates pumping a maximum of 3,271.9 acre-feet of water during this SWSP period (attached amended Table 3-A). However, since dewatering may fluctuate from month-to-month, an alternate dewatering scenario was evaluated for a total pumping of 806.9 acre-feet if dewatering operations cease after April 2022 (attached amended Table 3-B). Dewatering operations must be metered to the satisfaction of the Division Engineer. Meters were installed on the dewatering pumps in May 2012.

The IDS AWAS stream depletion model was used to determine the lagged depletions to the South Platte River caused by the NCCI #1 Pit. The following parameters were used in the model:

- Transmissivity (T) = 150,000 gallons per day per foot;
- Specific yield (SY) = 0.2;
- Distance from the South Platte River to the edge of the alluvium (W) = 5,000 feet; and
- Distance from the centroid of the exposed surface water areas to the South Platte River (X) = 3,300 feet.

The total lagged depletions during 2022 caused by past and projected operations at the NCCI #1 Pit is 3,448.2 acre-feet, as shown on the attached amended Table 4-A (including anticipated dewatering depletions). The alternate total lagged depletions during 2022 caused by past and projected operations at the NCCI #1 Pit is 1,837.6 acre-feet, as shown on the attached amended Table 4-B (including anticipated alternate dewatering depletions). After accounting for the anticipated 3,225.0 acre-feet of dewatering water that is returned directly back to the stream, the net depletion for 2022 is 223.2 acre-feet. After accounting for the 760.0 acre-feet of alternate values of dewatering water that is returned directly to the stream, the net depletion for 2022 is 1,077.6 acre-feet.

Depletions from the mining operation accrue to the South Platte River in Section 19, Township 2 North, Range 66 West, 6th P.M. For purposes of this SWSP, the point of depletion will be considered the point where the South Platte River crosses the South line of Section 19, Township 2 North, Range 66 West, which is just upstream of the Meadow Island No. 1 Ditch.

### Replacements

The source of replacement water is fully consumable water from Thornton. Thornton purchased the NCCI Pit #1 site for future reservoir storage and entered into an agreement (attached) allowing NCCI to continue mining the site. The agreement requires Thornton to replace depletions caused by NCCI's mining operations. The water from Thornton will be released from the Metropolitan Wastewater Treatment Plant ("Metro", WDID 0200700). Thornton is anticipated to be able to provide between 606.7 and 1,253.1 acre-feet of replacement supplies in 2022. A 0.5% per mile

transit loss (14% overall loss for the 28 miles between Metro and the point of depletion) was accounted for in the SWSP. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the Water Commissioner and/or Division Engineer.

The lagged depletions include depletions resulting from past uses at the site and the replacements are shown on attached amended Tables 4-A and 4-B.

### Conditions of Approval

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

1. This SWSP shall be valid for the period of January 1, 2022 through December 31, 2022, unless otherwise revoked or superseded by decree. If this plan will not be made absolute by a water court action by the plan's expiration date, a renewal request must be submitted to this office with the statutory fee by November 1, 2022. If a renewal request is received after the expiration date of this plan, it will be considered a request for a new SWSP and the \$1,593 filing fee will apply.
2. Well Permit 74792-F has been issued for this pit, and this permit remains valid. The permit covers up to 111.14 acres of exposed surface area and dewatering activities. The average annual amount of groundwater that can be appropriated shall not exceed 366.2 acre-feet, including dewatering and up to 330.10 acre-feet of evaporative loss, 6.2 acre-feet of water used for dust control, 22.1 acre-feet of water lost in mined product (750,000 tons/year), 7.4 acre-feet for concrete production, and 0.4 acre-feet of asphalt production. Actual depletions cannot exceed these amounts and are limited to those uses specifically approved through this SWSP.
3. The total exposed groundwater surface area at the NCCI Pit #1 must not exceed 15.83 acres during the period of January 2022 through December 2022 resulting in an annual evaporative loss of 46.9 acre-feet.
4. Total consumption at the NCCI Pit #1 Pit must not exceed the aforementioned amounts unless an amendment is made to this plan.
5. Approval of this plan is for the purposes as stated herein. Any additional uses of this water must first be approved by this office.
6. The Applicant shall provide daily accounting (including, but not limited to diversions, depletions, replacement sources, and river calls) on a monthly basis. The accounting must be uploaded to the CDSS Online Reporting Tool within 30 days of the end of the month for which the accounting applies (<https://dwr.state.co.us/Tools/reporting>). Instructions for using the tool are available on the Division of Water Resources website on the "Services" → "Data & Information" page under the heading of Online Data Submittal DWR's website under Services / Data and Information in the Online Data Submittal Section. Accounting and reporting procedures are subject to approval and modification by the division engineer. Accounting forms need to identify the WDID number for each structure operating under this SWSP. Additional information regarding accounting requirements can be found in the attached Augmentation Plan Accounting Administration Protocol for Division One. **NOTE:** Monthly accounting, even during the winter non-irrigation season, is required.

In addition, the applicant shall verify that entities making replacement for this SWSP are including that use on their monthly accounting submitted to this office. For the purposes of this SWSP, that entity is the City of Thornton (WDID 0202611).

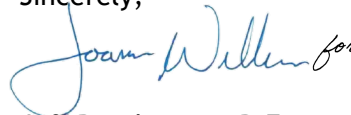
7. All diversions shall be measured in a manner acceptable to the Division Engineer. The Applicant shall install and maintain such measuring devices as required by the Division Engineer for operation of this SWSP.
8. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the Division Engineer. Currently 0.5% per mile conveyance loss is being accounted for in the SWSP; this is subject to change depending upon current conditions.
9. All releases of replacement water must be sufficient to cover all out of priority depletions and be made under the direction and/or approval of the Water Commissioner. The replacement may be aggregated to maximize beneficial use. The Water Commissioner and/or Division Engineer shall determine the rate and timing of an aggregated release.
10. The Division Engineer, or their designated representative, will administer all such water transported in the South Platte River or its tributaries under this SWSP, including water for replacement of depletions, past intervening headgates to ensure that such water is not intercepted or otherwise diminished in quantity by diversion, use or other interference by intervening water rights and to assure that such water remains available and suitable for Applicant's uses under this SWSP, except when any intervening headgate is diverting the entire flow of ("sweeping") the river. In the event that delivery past headgates which sweep the river requires the installation of a bypass structure or the use of an existing bypass structure by agreement with a third-party, Applicant is responsible for either installing a new bypass structure with a continuous recording measuring device(s) as approved by the Water Commissioner or securing an agreement with a third-party to use an existing bypass structure and providing such information and agreement to the Division Engineer.
11. The Division of Water Resources will not be responsible for any enforcement or administration of third party agreements that are not included in a decree of the water court. The name, mailing address, and phone number of the contact person who will be responsible for operation and accounting of this plan must be provided on the accounting forms to the Division Engineer and Water Commissioner.
12. The approval of this SWSP does not relieve the Applicant and/or landowner of the requirement to obtain a Water Court decree approving a permanent plan for augmentation or mitigation to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions after gravel mining operations have ceased. If reclamation of the mine site will produce 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 and lagged depletions. If a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow.
13. 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.
14. Dewatering at this site will produce delayed depletions to the stream system. At least three years prior to completion of dewatering, a plan must be submitted that specifies how the post pumping dewatering depletions (including refilling of the pit) will be replaced, in time, place and amount. In order for the Applicant to claim net accretion credit for dewatering operations,

the actual use as demonstrated by the dewatering meters, must be analyzed to show true pumping impacts.

15. 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, a bond through DRMS for \$1,030,074 for lining of the pit has been obtained. Therefore, in case of abandonment the bond can finance the completion of the lining of the pit or the backfilling, thus preventing depletions to the stream system.
16. In accordance with amendments to section 25-8-202-(7), C.R.S. and "Senate Bill 89-181 Rules and Regulations" adopted on February 4, 1992, the State Engineer shall determine if this substitute water supply plan 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 substitute water supply plan. This decision shall not bind the State Engineer to act in a similar manner in any other applications involving other plans or in any proposed renewal of this plan, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant.

Should you have any comments or questions, please contact Dean Santistevan, Assistant Division Engineer in Greeley, at 970-352-8712, or Wenli Dickinson of this office at 303-866-3581 x8206.

Sincerely,



Jeff Deatherage, P.E.  
Chief of Water Supply

Attachments: Figures  
Tabless  
City of Thornton Agreement  
DRMS Letter April 30, 2010  
Augmentation Plan Accounting, Division One - South Platte River

cc: Dean Santistevan, Assistant Division Engineer, [Div1Accounting@state.co.us](mailto:Div1Accounting@state.co.us)  
Brent Schantz, River Operations & Compact Coordinator, [Brent.Schantz@state.co.us](mailto:Brent.Schantz@state.co.us)  
Jorge Vidal, District 2 Water Commissioner, [Jorge.Vidal@state.co.us](mailto:Jorge.Vidal@state.co.us)  
Louis Flinck, Tabulations/Diversion Records Coordinator, [Louis.Flink@state.co.us](mailto:Louis.Flink@state.co.us)  
Division of Reclamation Mining and Safety, [Peter.Hayes@state.co.us](mailto:Peter.Hayes@state.co.us)

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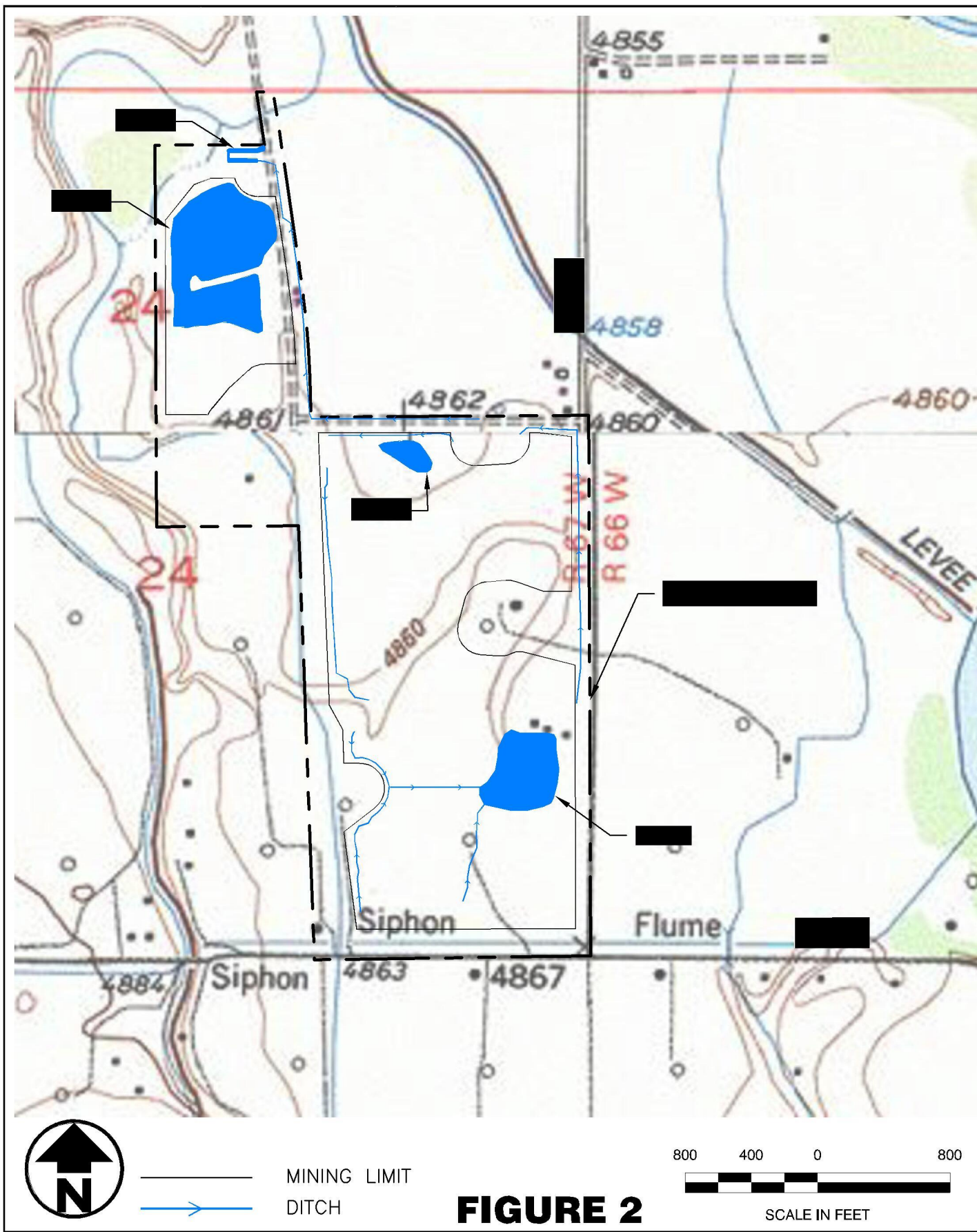
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Date	12.17.2
Drawn By	WS
Designed By	TP
Checked By	JC
File	JT-2022 Condition
Scale	1" = 20'

Sheet: **1** of: **1**

2022 Conditions

**JT** **J&T Consulting, Inc.**  
305 Denver Avenue - Suite D  
Fort Lupton, CO 80821  
Ph: 303-457-4222 Fax: 303-457-4224  
[www.jtconsulting.com](http://www.jtconsulting.com)





**J&T Consulting, Inc.**

305 Denver Avenue-Suite D  
Fort Lupton, CO 80621  
303-857-6222

Northern Colorado Constructors, Inc.  
NCCI Pit #1  
2022 Mining Conditions

Date:	12.17.21
Job No:	06109
Drawn:	WSS
Scale:	1" = 800'
Sheet: 1	Of: 1

**Table No. 1**  
**Summary of Groundwater Use (2012-2020)**  
Northern Colorado Constructors, Inc.  
NCCI Pit #1

Year	Water Surface Exposed (ac)	Evaporative Uses (ac-ft)	Aggregate Production (tons)	Water Retained in Product (ac-ft)	Water Used for Dust Control (ac-ft)	Water Used for Concrete Production (ac-ft)	Water Used for Asphalt Production (ac-ft)	Total Amount Dewatering (ac-ft)	Total Groundwater Consumptive Use (ac-ft)	Total Consumptive Use and Dewatering (ac-ft)
2012	9.8	29.1	418,215	12.3	2.9	0.0	0.0	3442.4	44.3	3486.7
2013	9.8	29.0	326,054	9.6	0.03	0.0	0.0	5195.2	38.6	5233.8
2014	8.5	25.2	355,221	10.5	0.00	0.0	0.0	8330.3	35.6	8366.0
2015	23.7	70.2	380,611	11.2	0.08	0.0	0.0	7459.5	81.5	7541.0
2016	29.2	86.6	505,308	14.9	0.17	0.0	0.0	7214.9	101.7	7316.6
2017	26.0	77.2	460,756	13.6	0.14	0.0	0.0	7394.1	90.9	7485.0
2018	20.3	60.3	0	0.0	0.00	0.0	0.0	6269.6	60.3	6329.9
2019	20.3	59.6	0	0.0	0.00	0.0	0.0	6512.2	59.6	6571.8
2020	6.0	17.5	0	0.0	0.00	0.0	0.0	3729.0	17.5	3746.5
2021*	6.0	17.5	0	0.0	0.00	0.0	0.0	3449.3	17.5	3466.8

\* Dec 2021 water use estimated.



**Table No. 2**  
**Evaporative Uses**

Northern Colorado Constructors, Inc.  
 NCCI Pit #1

Month	Percent of Annual Evaporation (%)	Exposed Water Surface Area (ac)	Gross Evaporation (ft)	Precipitation (in)	Effective Precipitation (ft)	Net Evaporation (ft)	Total Evaporative Consumptive Use (ac-ft)
Jan-22	3.0%	15.83	0.1	0.42	0.0	0.1	1.4
Feb-22	3.5%	15.83	0.1	0.41	0.0	0.1	1.7
Mar-22	5.5%	15.83	0.2	1.08	0.1	0.1	2.3
Apr-22	9.0%	15.83	0.3	1.69	0.1	0.2	3.8
May-22	12.0%	15.83	0.5	2.21	0.1	0.3	5.1
Jun-22	14.5%	15.83	0.5	1.44	0.1	0.5	7.3
Jul-22	15.0%	15.83	0.6	1.58	0.1	0.5	7.4
Aug-22	13.5%	15.83	0.5	1.47	0.1	0.4	6.7
Sep-22	10.0%	15.83	0.4	1.05	0.1	0.3	5.0
Oct-22	7.0%	15.83	0.3	0.92	0.1	0.2	3.3
Nov-22	4.0%	15.83	0.2	0.71	0.0	0.1	1.7
Dec-22	3.0%	15.83	0.1	0.47	0.0	0.1	1.3
<b>Total</b>	<b>100%</b>	<b>-</b>	<b>3.8</b>	<b>13.45</b>	<b>0.8</b>	<b>3.0</b>	<b>46.9</b>

Annual Precipitation = 13.45 inches -Taken from Brighton Weather Stations (73-20)  
 Gross Annual Evaporation = 45 inches -Taken from NOAA Technical Report NWS 33

**Table No. 3-A**  
**Operational Uses - Anticipated Operations**  
 Northern Colorado Constructors, Inc.  
 NCCI Pit #1

Month	Percent of Annual Aggregate Production (%)	Aggregate Production (tons)	Water Retained in Product (ac-ft)	Water Used For Dust Control (ac-ft)	Water Used for Concrete Production (ac-ft)	Water Used for Asphalt Production (ac-ft)	Total Pumped from Dewatering Wells (ac-ft)	Total Operational Consumptive Use (ac-ft)	Total Evaporative Consumptive Use* (ac-ft)	Total Consumptive Use (ac-ft)
Jan-22	1.0%	0	0.0	0.0	0.0	0.0	230.0	0.0	1.4	231.4
Feb-22	2.0%	0	0.0	0.0	0.0	0.0	135.0	0.0	1.7	136.7
Mar-22	6.0%	0	0.0	0.0	0.0	0.0	175.0	0.0	2.3	177.3
Apr-22	9.0%	0	0.0	0.0	0.0	0.0	220.0	0.0	3.8	223.8
May-22	13.0%	0	0.0	0.0	0.0	0.0	490.0	0.0	5.1	495.1
Jun-22	16.0%	0	0.0	0.0	0.0	0.0	355.0	0.0	7.3	362.3
Jul-22	17.0%	0	0.0	0.0	0.0	0.0	325.0	0.0	7.4	332.4
Aug-22	15.0%	0	0.0	0.0	0.0	0.0	320.0	0.0	6.7	326.7
Sep-22	9.0%	0	0.0	0.0	0.0	0.0	285.0	0.0	5.0	290.0
Oct-22	7.0%	0	0.0	0.0	0.0	0.0	280.0	0.0	3.3	283.3
Nov-22	4.0%	0	0.0	0.0	0.0	0.0	205.0	0.0	1.7	206.7
Dec-22	1.0%	0	0.0	0.0	0.0	0.0	205.0	0.0	1.3	206.3
<b>Total</b>	<b>100%</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3,225.0</b>	<b>0.0</b>	<b>46.9</b>	<b>3,271.9</b>

Total Maximum Material Mined = 0 tons  
 Moisture Content = 4.0%  
 Maximum Dust Control = 0.0 ac-ft  
 2022 Concrete Production = 0.0 ac-ft  
 2022 Asphalt Production = 0.0 ac-ft

\*Evaporative Consumptive Use from Table 2

**Table No. 3-B**  
**Operational Uses - Alternate Scenario**  
 Northern Colorado Constructors, Inc.  
 NCCI Pit #1

Month	Percent of Annual Aggregate Production (%)	Aggregate Production (tons)	Water Retained in Product (ac-ft)	Water Used For Dust Control (ac-ft)	Water Used for Concrete Production (ac-ft)	Water Used for Asphalt Production (ac-ft)	Total Pumped from Dewatering Wells (ac-ft)	Total Operational Consumptive Use (ac-ft)	Total Evaporative Consumptive Use* (ac-ft)	Total Consumptive Use (ac-ft)
Jan-22	1.0%	0	0.0	0.0	0.0	0.0	230.0	0.0	1.4	231.4
Feb-22	2.0%	0	0.0	0.0	0.0	0.0	135.0	0.0	1.7	136.7
Mar-22	6.0%	0	0.0	0.0	0.0	0.0	175.0	0.0	2.3	177.3
Apr-22	9.0%	0	0.0	0.0	0.0	0.0	220.0	0.0	3.8	223.8
May-22	13.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	5.1
Jun-22	16.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	7.3
Jul-22	17.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	7.4
Aug-22	15.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.7
Sep-22	9.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0
Oct-22	7.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	3.3
Nov-22	4.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7
Dec-22	1.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3
<b>Total</b>	<b>100%</b>	<b>0</b>	<b>0.0</b>	<b>0.00</b>	<b>0.0</b>	<b>0.0</b>	<b>760.0</b>	<b>0.0</b>	<b>46.9</b>	<b>806.9</b>

Total Maximum Material Mined = 0 tons  
 Moisture Content = 4.0%  
 Maximum Dust Control = 0.0 ac-ft  
 2022 Concrete Production = 0.0 ac-ft  
 2022 Asphalt Production = 0.0 ac-ft

\*Evaporative Consumptive Use from Table 2

**Table No. 4-A****Water Balance - Anticipated Operations**

Northern Colorado Constructors, Inc.

NCCI Pit #1

Month	Total Consumptive Use (ac-ft) (A)	Total Lagged Stream Depletions (ac-ft) (B)	Dewater Return Accretions (ac-ft) (C)	Transit Loss (ac-ft) (D)	Lease from City of Thornton (ac-ft) (E)	Net River Balance (ac-ft) (F)
Jan-22	231.4	308.9	230.0	12.8	91.8	0.0
Feb-22	136.7	256.8	135.0	19.8	141.6	0.0
Mar-22	177.3	253.7	175.0	12.8	91.5	0.0
Apr-22	223.8	229.5	220.0	1.5	11.0	0.0
May-22	495.1	254.0	490.0	0.0	0.0	236.0
Jun-22	362.3	295.5	355.0	0.0	0.0	59.5
Jul-22	332.4	321.9	325.0	0.0	0.0	3.1
Aug-22	326.7	324.7	320.0	0.8	5.5	0.0
Sep-22	290.0	313.0	285.0	4.6	32.6	0.0
Oct-22	283.3	316.4	280.0	5.9	42.3	0.0
Nov-22	206.7	293.4	205.0	14.4	102.8	0.0
Dec-22	206.3	280.2	205.0	12.2	87.5	0.0
<b>Total</b>	<b>3,271.9</b>	<b>3,448.2</b>	<b>3,225.0</b>	<b>84.9</b>	<b>606.7</b>	<b>298.6</b>

## Notes:

(A) Total depletions at NCCI Pit #1 from Table No. 3-A

(B) From IDSAWAS Version 1.5.85, Total lagged stream depletions to South Platte River since 2003

(C) 100% of dewatering volume returned to river, data same as "Total Pumped from Dewatering Wells" displayed in Table 3-A

(D) Transit loss from Metro WWTP assumed at 0.5% per mile for 28 miles

(E) Replacements from City of Thornton

(F) Net River Balance, (E)+(C)-(B)-(D)



**Table No. 4-B**  
**Water Balance - Alternate Scenario**  
 Northern Colorado Constructors, Inc.  
 NCCI Pit #1

Month	Total Consumptive Use (ac-ft) (A)	Total Lagged Stream Depletions (ac-ft) (B)	Dewater Return Accretions (ac-ft) (C)	Transit Loss (ac-ft) (D)	Lease from City of Thornton (ac-ft) (E)	Net River Balance (ac-ft) (F)
Jan-22	231.39	308.91	230.00	12.85	91.76	0.0
Feb-22	136.70	256.81	135.00	19.83	141.64	0.0
Mar-22	177.27	253.70	175.00	12.81	91.51	0.0
Apr-22	223.79	229.49	220.00	1.54	11.03	0.0
May-22	5.08	218.57	0.00	35.58	254.15	0.0
Jun-22	7.27	160.50	0.00	26.13	186.63	0.0
Jul-22	7.45	124.55	0.00	20.28	144.83	0.0
Aug-22	6.65	93.56	0.00	15.23	108.79	0.0
Sep-22	4.97	68.52	0.00	11.15	79.67	0.0
Oct-22	3.31	53.60	0.00	8.73	62.33	0.0
Nov-22	1.72	39.10	0.00	6.37	45.47	0.0
Dec-22	1.34	30.33	0.00	4.94	35.27	0.0
<b>Total</b>	<b>806.9</b>	<b>1,837.6</b>	<b>760.0</b>	<b>175.4</b>	<b>1,253.07</b>	<b>0.0</b>

Notes:

(A) Total depletions at NCCI Pit #1 from Table No. 3-B

(B) From IDSAWAS Version 1.5.85, Total lagged stream depletions to South Platte River since 2003

(C) 100% of dewatering volume returned to river, data same as "Total Pumped from Dewatering Wells" displayed in Table 3-B

(D) Transit loss from Metro WWTP assumed at 0.5% per mile for 28 miles

(E) Replacements from City of Thornton

(F) Net River Balance, (E)+(C)-(B)-(D)





## WATER STORAGE RESERVIOR CONSTRUCTION AGREEMENT

THIS WATER STORAGE RESERVOIR CONSTRUCTION AGREEMENT ("Construction Agreement") is made on May 14, 2008 between the CITY OF THORNTON, a Colorado municipal corporation whose address is 9500 Civic Center Drive, Thornton, Colorado 80229 ("Owner" or "Thornton") and Northern Colorado Constructors, Inc. a Colorado corporation whose address is 9075 WCR 10, Fort Lupton, Colorado 80621 ("Contractor" or "NCC"), or collectively (the "Parties").

### RECITALS

WHEREAS, Owner is a municipal corporation of the State of Colorado that *inter alia* provides water services to the inhabitants of the City of Thornton and others; and

WHEREAS, Contractor is the operator of a gravel pit on property in southeast Weld County, more particularly described in **Exhibit A - Property Description** (the "Property") that has been purchased by Thornton concurrent with the execution of this Construction Agreement; and

WHEREAS, simultaneous with the execution of this Construction Agreement, Thornton has entered into a Purchase and Sale Agreement with the Zadel Family LLLP for the purchase of the Property, whereby some of the individuals associated with the Zadel Family LLLP are also associated with NCC; and

WHEREAS, Contractor desires to continue mining and develop the mined gravel pit for delivery to Owner for use as lined water storage; and

WHEREAS, Contractor is the sole mining operator and has no obligations or relationships with any third party operators to mine or otherwise extract the minerals on the Property; and

WHEREAS, in connection with the mining activities to be conducted on the Property, Contractor intends to construct interconnected lined water storage facilities with the capability of diverting and releasing water to Lupton Meadows Ditch and/or the South Platte River; and

WHEREAS, upon completion of gravel mining/mineral extraction and after installation of necessary permeability barrier, and interconnects the Property would be suitable for Owner's use as off-channel water storage reservoirs; and

WHEREAS, Owner has a need and desire to develop water storage facilities to meet growing demand and facilitate the maximum utilization of its water resources portfolio through the water storage facilities that are part of this Construction Agreement, so that Owner will be able to further advance its already diligent efforts and

continued pursuit of water reuse and further implement reuse of its water to enlarge and enhance its water supply system; and

WHEREAS, more than one water storage facility may be constructed on the Property and construction of all the water storage facilities on the Property may not be completed at the same time, and each completed lined water storage facility, including that additional portion of the Property necessary for access and use of each lined water storage facility by Owner for the purposes set forth above, shall constitute and be referred to as a "Cell"; and

WHEREAS the Cells collectively shall constitute and be referred to as the "Reservoir," which may consist of a single body of water or interconnected bodies of water which function as a single reservoir, and

WHEREAS the Cells comprising the Reservoir are to be constructed by the Contractor and delivered to the Owner, upon completion and acceptance of a Cell or Cells (the "Delivery" or "Delivery Date").

#### AGREEMENT

NOW THEREFORE, in consideration of the foregoing recitals, the mutual covenants and agreements contained herein and other good and valuable consideration, the adequacy, sufficiency, and receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. **Contract Amount:** Owner shall compensate Contractor for the completed and approved Useable Active Storage ("Storage") Capacity in the Reservoir as defined in Paragraph 11 herein in an amount of \$3,200 per acre foot of Useable Active Storage. This compensation amount is the actual cash compensation regardless of Delivery Date with no adjustments for the time value of money.

Upon execution of this Construction Agreement, Owner shall pay Contractor \$209,350. This amount will represent the "Down Payment" for future Useable Active Storage Capacity in an amount of 65.42 acre feet. The Parties agree and understand that this Down Payment will be applied to the first 65.42 acre feet of Storage delivered to the Owner per the terms of this Construction Agreement.

2. **Contractor's Use of Mineral Interest:** Owner grants Contractor the right to extract, convey, sell or otherwise use the minerals from the Property prior to delivery of the Storage to Owner under this Construction Agreement. This right shall include the use of the Property for the purpose of mining, extraction, and processing of sand and gravel and minerals contained therein, the extraction of any related materials encountered in the course of sand and gravel mining, and the normal and customary activities of Contractor, its employees, subcontractors and agents associated therewith. Contractor's right to extraction, use and/or sale of the minerals and collection of royalties from the Property expires for each Cell

upon Delivery of the Cell to Owner pursuant to paragraph number 16 or on December 31, 2021 whichever occurs first ("Extraction Deadline"). Any minerals remaining on the Property after the Extraction Deadline shall be the exclusive property of Owner. This right to extract minerals does not include oil, gas or any other minerals beyond those normally extracted as part of a sand and gravel mining operation.

3. **Design and Construction:** The design of each Cell to be constructed on the Property and the associated appurtenances including but not limited to interconnects shall be subject to Owner's approval prior to commencement of construction, which approval will not be unreasonably withheld. The Cells comprising the Reservoir shall be substantially similar in size, volume and configuration to the design drawings shown in **Exhibit A - NCCI Pit #1**, attached hereto and incorporated herein by this reference. Owner will be responsible for the construction of all ancillary facilities such as inlet structures, outlet works, access roads, and perimeter fencing. Contractor will be responsible for construction of the interconnects between cells, perimeter roads, and cell linings.
4. **Permits and Reclamation Plan:** Contractor will obtain approval of, and when necessary amend, the mining and reclamation and any mitigation plans and other permits necessary to construct the reservoir and mine the sand and gravel deposit on the Property (the "Permits"). Contractor shall provide Owner with copies of all existing and future Permits. Contractor shall comply with and perform all requirements in the Permits prior to Delivery, except any reclamation requirements which shall continue past Delivery. Owner shall have an opportunity to comment on the proposed mining, reclamation mitigation plans, and any amendments. Any comments by the Owner will be made promptly, and the Contractor shall favorably consider any such comments on the plans and amendments that are both consistent with the design specifications set forth in this Construction Agreement and the overall purpose of this Construction Agreement. The final approved mining, reclamation, and mitigation plans and any amendments shall be added as a supplement to this Construction Agreement. Contractor shall timely apply for any necessary Permits and shall agree to the requirements, restrictions, or conditions on such Permits as are common in the sand and gravel mining industry for the issuance of such Permits. Contractor will use good faith efforts in pursuit of a mined land reclamation permit to minimize the permit requirement for freeboard.
5. **Changes in Design and Additional Work by Contractor:** Contractor shall reasonably cooperate with Owner to obtain amendments to the Permits or changes in the mining plan or design of the Reservoir and each Cell to provide for the design and installation of any additional improvements or facilities desired by Owner for its use of the Property. Upon mutual agreement of the Parties, Contractor will negotiate with Owner for the construction of any such improvements or facilities, at Owner's expense but provided that the amount to

be charged Owner for such work shall not exceed Contractor's cost of having such work performed plus overhead and profit together not to exceed 10%.

6. **Evaporation Replacement on Sand and Gravel Operations:** Contractor shall be responsible for obtaining and maintaining all required permits, substitute water supply plans and approvals required concerning the replacement to the stream system for evaporation or other water losses required to be replaced on, or in connection with, the gravel mining operation on the Property until the Delivery Date. Owner shall be responsible for making any required replacements. Such replacement will be carried out from sources provided to Contractor by Owner.
7. **Mining and Reclamation of the Property:** Contractor will mine the sand and gravel and related materials from the Property and complete reclamation in accordance with the approved plan for mining and reclamation and as required by all regulatory agencies. Prior to the Delivery Date for each Cell as set forth herein, Contractor shall have responsibility for maintaining and managing the Property including the Cell, undertaking all actions in that regard that would ordinarily be required of a Property owner, and shall do so in the manner required by Weld County or other applicable State of Colorado or other government regulations appropriate for sand and gravel mining operations. Contractor shall be responsible for obtaining final approval by all regulatory authorities of each Cell and all required reclamation, including acceptance by the Colorado State Engineer's Office ("SEO") of the permeability barrier in accordance with the State Engineer Guidelines for Lining Criteria for Gravel Pits (August 1999), or any subsequent revision thereof issued prior to the initiation of construction of the liner for each Cell, before the Cell is transferred to Owner. Subsequent to the Delivery Date of each Cell as set forth herein, Owner shall have responsibility for maintaining and managing the Cell, and Contractor shall have no further responsibility with respect to such cell except for Warranty and Post Delivery Reclamation Responsibilities as outlined herein.
8. **Seller Retained Property (house):** Pursuant to the provisions in the Purchase and Sale Agreement associated with this Construction Agreement, the Zadel Family LLLP ("Zadel") will either continue to own or have the right to re-acquire ownership of the property described in **Exhibit A-1**, including the existing structures ("Seller Retained Property"). At any and all times when this Construction Agreement is in effect and Thornton is the fee owner of the Seller Retained Property, Contractor shall have the right to possession and use of the Seller Retained Property pursuant to the following terms and conditions:
  - A. Contractor agrees to place improvements upon the Seller Retained Property only with the prior, written approval of Thornton;
  - B. Contractor agrees to indemnify and hold harmless, Thornton, its agents, officers, employees and contractors from and against any default, violation, or agreement contained in this Construction Agreement and to be performed by Contractor, or any damage to any person or property occasioned by Contractor's use and occupancy of the Seller Retained

Property or by any use or occupancy which Contractor may permit or suffer to be made of the Seller Retained Property or any injury to person or persons occurring on or about the Seller Retained Property;

- C. Contractor agrees, at Contractor's expense to keep in good working condition all fencing, buildings, wells, well fixtures, pumps, lawns, trees, shrubbery and all other improvements. Contractor also agrees to keep in good working condition all appliances, electrical and mechanical, owned by Thornton and located on the Seller Retained Premises;
- D. Contractor agrees, at Contractor's expense to maintain all buildings and improvements in as good a condition as they existed at the time of execution of this Construction Agreement; and
- E. Contractor agrees that the Seller Retained Property shall be included and covered by the terms of this Construction Agreement, including but not limited to the insurance and indemnification provisions in paragraph numbers 18 and 19 of this Construction Agreement.

9. **General Reservoir Requirements and Design Specification:** The parties agree to the following requirements and specifications, which are to be undertaken during the course of Contractor's mining activities:

A. General Requirements and Specifications.

i. *Upon or before the execution of this Construction Agreement, Contractor shall provide to Owner a copy of the following:*

- a) *An ALTA survey of the Property.*
- b) *Division of Minerals and Geology (DMG) Permit, all revisions and amendments to the permit and all correspondence with the DMG.*
- c) *Agreements and permits with or from any governmental agency, special district, private individual, or corporation that may impact, restrict, or otherwise effect the use of the property.*
- d) *Mining Plan and Reclamation Plan that includes the proposed final configuration of the Reservoir, interconnects, and all other items that are or will be contained on or within the Property to be purchased by the Owner.*

ii. *Contractor shall continue to provide to Owner, until Delivery Date copies of the following:*

- a) *All correspondence with the DMG.*
- b) *New agreements and permits or modifications to existing agreements and permits with or from any governmental agency, special district, private individual, or corporation that may impact, restrict, or otherwise effect the use of the Property or Storage volume of the Reservoir.*



- c) *All proposed changes to the Property boundaries or to easements and right-of ways.*
  - d) *Any proposed or anticipated modifications to the current Mining Plan and Reclamation Plan that was provided to the Owner at Delivery.*
  - e) *Any other modification that would change the proposed final configuration of the Reservoir, interconnects and all other items that are contained within the property to be purchased by the Owner.*
- iii. *Contractor shall mine and reclaim the Property to provide the following:*
  - a) *A Reservoir bottom with either 1) a slope of not less than 1 percent in each cell and so that water from all cells will drain to a single low point on the east side of the Reservoir or Cell or 2) a slope that will enable all water to drain to a single low point or pool at the east side of the Reservoir or Cell so that the pump inlet with an invert at the elevation of the Reservoir bottom can move all but the final 100 ac-ft of the Reservoir or Cell at a rate of at least 25 cfs.*
  - b) *A pad adjacent to the low point in the Reservoir with a surface area of 200 feet by 200 feet and at the elevation of the existing ground prior to mining. This site will be used by the Owner to construct a future pump station. The fill pad shall consist of either native, undisturbed materials or compacted fill. All slopes shall meet the criteria for Reservoir Slopes as defined in Item B. If compacted fill is used to construct the pad, the fill shall be suitable to provide a bearing capacity of not less than 3,000 pounds per square foot with less than 1 inch of settlement. All fill shall be compacted to at least 95 percent of standard Proctor maximum density at a moisture content between minus 2 and plus 3 percent of Proctor optimum moisture content.*
  - c) *A 20-foot-wide gravel surfaced access road with a minimum radius of 50 feet around the perimeter of each cell and to the pump station pad.*
  - d) *Lined below grade water Storage that meets the Design Standard as defined by the State Engineer Guidelines for Lining Criteria for Gravel Pits and the criteria of this Construction Agreement.*
  - e) *Hydraulic interconnect facilities to convey water between each of the cells that meets the criteria in this Construction Agreement.*
  - f) *Any trenches excavated into the bottom of the Reservoir to facilitate drainage and conveyance of water shall have side slopes at 3H:1V or flatter and a bottom width of at least 20 feet.*
- iv. *Owner shall have the option, at its expense, of having surveys of the Property conducted by its agents, representatives, and contractors.*

v. The Parties shall provide each other with copies of whatever surveys are obtained without charge.

vi. Contractor shall give Owner notification of the completion of the Reservoir at least 1 year prior to the expected date of completion (Delivery Date).

**B. Reservoir Clay Liner and Side Slopes**

i. The clay liner shall be designed to meet the "Design Standard" described in the State Engineer Guidelines for Lining Criteria for Gravel Pits (August 1999), as amended from time to time, in effect at the time of construction and approval of the clay liner. The liner design shall be performed by a Colorado registered engineer and be submitted to Owner for its approval ninety (90) days prior to the start of construction of any part of the liner. Any modifications to the liner design occurring subsequent to the approval of the design by Owner shall be submitted to Owner for review, comment, and approval at least sixty (60) days before the start of implementation of any modifications to the approved design.

ii. The Reservoir side slopes shall be designed by a Colorado registered engineer and be submitted to Owner for its approval ninety (90) days prior to the start of construction of any part of the Cell slopes. The Cell side slopes shall have a slope of 3H:1V or flatter, have adequate seepage stability to prevent erosion when the reservoir is empty, and be designed have a slope stability factor of safety (FOS) of not less than the following:

Steady state seepage with a full Reservoir – 1.5

Steady state seepage with an empty Reservoir – 1.5

Rapid drawdown from full to empty Reservoir at an evacuation rate of 25 cfs – 1.4

Rapid drawdown from full to empty Reservoir at an evacuation rate of 50 cfs – 1.2

Earthquake with a full Reservoir – 1.0

Earthquake with an empty Reservoir - 1.0

Any modifications to the liner or slope design occurring subsequent to the approval of the design shall be submitted to Owner for review, comment, and approval at least sixty (60) days before the start of implementation of any modifications to the approved design.

iii. The design documents submitted to Owner shall include, at a minimum, the following:

a) A plan drawing that shows the final proposed ground surface topography of the site.

b) A profile drawing that shows the top and bottom elevation of the clay liner and key depth into bedrock.

- c) *Section drawings that depict the limits of excavation, final ground topography, configuration and geometry of the liner, and locations and contacts between fill zones of each different material that will comprise the fill materials between the limits of excavation and the final surface of the slopes.*
- d) *Geotechnical data such as boring logs and laboratory tests used to evaluate the subsurface materials and prepare the design.*
- e) *Calculations that were used to develop the material properties for the seepage and stability analyses.*
- f) *Calculations that were used to develop the estimate of steady state leakage into an empty pit and a comparison to the allowable SEO leakage rate for each cell; and to confirm that the slopes will have acceptable seepage and stability factors of safety.*
- g) *Descriptions of each type of material that will be used in installation of the liner and slopes, and any laboratory tests that have been performed on the materials to be used in installation.*
- h) *Technical specifications for slope and clay liner construction. These shall include requirements for dewatering and management of groundwater, excavation, foundation preparation, side slopes for excavation and fill placement against native materials and previously placed fill material; description of material that will be acceptable for use in liner and slope construction, borrow material processing and moisture conditioning, fill placement and compaction procedures, sequencing requirements, protection for completed portions of work and required quality control testing and observation. The degree of compaction shall not be less than ninety-five percent (95%) Standard Proctor Maximum Dry Density.*
- i) *Sources of materials and the material properties of the materials to be used in construction of the clay liner and slopes.*
- j) *Normal pool elevation for the completed facility.*
- k) *Other pertinent backup information used to prepare the design.*
- l) *A quality control/quality assurance plan for liner and slope construction prepared by a Colorado licensed professional engineer shall be submitted to Owner after acceptance of the design and at least sixty (60) days before the start of liner and slope construction for review,*

*comment, and approval by the Owner. The quality assurance plan shall include, at a minimum, the following:*

- i) Procedures that will be used to provide horizontal and vertical control and measure and record the excavation limits and geometry of the liner and other zones within the slope.*
- ii) Descriptions of the field and laboratory tests that will be performed and the frequency of each type of test.*
- iii) Actions to be taken if unsatisfactory material or workmanship is discovered in the installation.*
- iv) Qualifications of field and office personnel that will perform the quality control.*
- v) Extent of involvement of the design engineer or representative thereof in the field during construction (full or part time).*

*iv. Owner shall have the right to observe and document any portion of the liner, slope, or other construction and to perform field tests at Owner's expense to confirm conformance to approved design documents at any time during the performance of the work.*

*v. Contractor shall provide interim written quality control observation reports and results of field and laboratory tests at least monthly during construction of the slopes and liner. Owner may also have a representative present at any meetings between Contractor and its consultants or contractors relating to the construction of the slopes and liner, and Contractor shall notify Owner of any such meetings at least twenty-four (24) hours prior to the time of the meeting.*

*vi. A final completion report prepared by a Colorado registered engineer confirming that each cell and all fill placed and other parts the completed work was completed in accordance with the plans and specifications shall be provided to Owner within sixty (60) days after completion of slopes and liner. The final completion report shall include at a minimum the following:*

- a) A plan drawing that shows the as-constructed final ground surface topography of the site at a scale of 1 inch equals 50 feet and at a contour interval of 1 foot.*
- b) A profile drawing that shows the as-constructed top and bottom elevation of the clay liner and, key depth into bedrock.*

- c) *Section drawings that depict the as-constructed limits of excavation, final ground topography, configuration and geometry of the liner, and locations and contacts between fill zones of different materials that comprise the materials between the limits of excavation and the final surface of the slopes.*
- d) *Descriptions of material(s) that were used to construct the Cell side slopes and the liner.*
- e) *Results of the field and laboratory tests performed and daily observation reports.*
- f) *Description of any modifications to the original design that occurred during installation.*
- g) *A volume/elevation-capacity table and curve for each cell. The table shall include the Storage volume at 1-foot intervals.*
- vii. *Any modifications to the liner or slope, remedial work to reduce seepage work or to correct substantial deficiencies, or penetrations of the liner that deviate from the approved plans shall be designed by a Colorado registered engineer and be submitted to Owner for review, comment, and approval at least sixty (60) days before the start of any such work. The design documents submitted to Owner shall include at a minimum (a) plan and section drawings that depict the proposed work, (b) technical specifications for the work, (c) other pertinent backup information used to prepare the design, and (d) calculations that provide an estimate of the effect on the steady state leakage rate into an empty pit after the work is completed and to the slope stability factor of safety and the seepage stability factor of safety.*

**C. Jurisdictional Dam Issues.**

- i. *Contractor shall provide at least sixty (60) days notice to Owner prior to changing the topography on the Property so as to retain water above the elevation of the natural grade of the perimeter of the Reservoir that existed prior to mining.*
- ii. *Contractor shall provide least sixty (60) days notice to Owner prior to making any modifications that would require review by the SEO, Dam Safety Branch.*
- iii. *Prior to providing the notice to the Owner and to obtaining approval from the SEO, Contractor shall not place fill above the elevation of the natural ground surface that existed prior to the start of mining or make any modifications to the site that would require review and approval by the SEO, Dam Safety Branch.*



iv. Contractor shall not permanently place such fill or make modifications that Owner believes would require review by the SEO, Dam Safety Branch, without Contractor first obtaining Owner's written agreement.

v. Any dam or modification shall be designed by a Colorado registered engineer and submitted to Owner for review and comment at least sixty (60) days before the design documents are submitted to the SEO for review. The design documents submitted to Owner shall include at a minimum the following:

a) Design report and calculations as required by the SEO, Dam Safety Branch.

b) Drawings and technical specifications as required by the SEO, Dam Safety Branch.

vi. Subsequent to submitting the design documents to the SEO for review and approval, Owner may negotiate concerning the inclusion of a jurisdictional dam on the Property, limitations on the height of jurisdictional dams, the amount of Storage developed above the original ground surface, and changes to the locations and design of dam facilities, such as the embankment configuration and slope protection, spillway, and outlet works to improve the ability of the completed facility to meet Owner's long-term objectives. However, if the Parties cannot agree, Owner may proceed with construction in accordance with the design documents approved by the SEO.

vii. Should Owner become aware that the Reservoir contains elements of a jurisdictional dam, not previously identified in the plans, it shall notify Contractor in writing of its concern. If after discussion between Owner and Contractor, Owner is still concerned that the Reservoir contains elements of a jurisdictional dam, Contractor shall, at its expense, request the assistance of the SEO in determining whether the Property includes a jurisdictional dam. If the parties reasonably disagree as to whether the Reservoir contains elements of a jurisdictional dam, and Owner requires Contractor to request the assistance of the SEO, and the SEO determines that the Reservoir does not include a jurisdictional dam, Owner shall reimburse Contractor for its out of pocket expenses paid to outside consultants for presenting the issue to the SEO.

viii. If the SEO determines there is or may be a jurisdictional dam on the Property, Contractor will have the right prior to Delivery to pursue either (a) obtaining from the SEO final approval of the jurisdictional dam, indicating the installation is in accordance with the Rules and Regulations for Dam Safety and Dam Construction, 2 CCR 402-1, as amended, and that Contractor has permission from the SEO to store water, or (b) a written determination by the SEO that no jurisdictional dam exists and/or no permit or approval is necessary.

ix. Contractor shall also notify any permitting authority or jurisdiction and will seek amendments to the Permits if required or requested. If any parts of the site are within the flood plain, Contractor will coordinate with the required agencies and not make any modifications to the property prior to obtaining the required permits.

D. Cell Interconnects

i. The Contractor shall design and construct all interconnect pipelines between individual Cells of the reservoir to meet the criteria defined in this contract. The interconnect shall include a stilling well or wells for Reservoir/Cell water level measurement. The interconnect and stilling well design shall be performed by a Colorado registered engineer and be submitted to Owner for its approval ninety (90) days prior to the start of construction of any part of the interconnect. Any modifications to the interconnect design occurring subsequent to the approval of the design shall be submitted to Owner for review, comment and approval at least sixty (60) days before the start of implementation of any modifications to the approved design.

ii. The design shall be based on the following criteria:

a) Minimum pipe size for an interconnect is thirty-six (36) inches in diameter.

b) Pipe velocity at design flow shall not exceed ten (10) feet per second.

c) Pipe shall be designed to convey flow in both directions. The design flow rate shall be 50 cfs with a 5-foot head differential between cells

d) Pipe shall be:

i) Conventional Installation: Epoxy coated (min. 80 mils AWWA C209 and C214) steel pipe with cement mortar lining (AWWA C205). Pipe shall be cathodically protected. Steel pipe shall conform to AWWA C200. Pipe joints shall be restrained.

ii) Bore/Jack Installation: Casing pipe shall be epoxy coated (min. 80 mils AWWA C209 and C214) steel pipe. Carrier pipe shall be Steel (see criteria under Conventional Installation) or DIP pipe (AWWA C-150 and C-151) with cement mortar lining (AWWA C104). Carrier pipe shall have bituminous exterior coating and wrapped with polyethylene (min. 8 mils AWWA C105). Carrier pipe shall be Pressure Class 150 for all sizes. Carrier pipe joints shall be restrained. Pipe skids are required for installation of Carrier

*pipe. Annular space between Casing pipe and Carrier pipe shall be grouted.*

- e) Hydraulically operated and controlled sluice gates shall be placed on both ends of interconnect to allow for water from either Cell and the interconnect pipe to be drained completely while the other Cell remains full. The gate shall be designed for the seating and unseating heads of the cells on either side of the gate. The gate shall conform to AWWA C501. The stem, all bolts, and hydraulic lines shall be stainless steel. An underground hydraulic control vault shall be placed at the top of the embankment. A minimum of two (2) conduits shall be provided for hydraulic lines for each gate. The minimum size of conduits shall be two (2) inches in diameter and shall be Schedule 80 PVC.*
- f) Energy dissipation shall be provided at both ends of the interconnect. Energy dissipation shall be sufficient to handle maximum possible headwater at inlet with no tailwater at outlet.*
- g) A removable hinged trashrack shall be provided at both ends of interconnect. The trashrack and all embedded and connection elements shall be galvanized steel.*
- h) A drain and inspection manhole shall be placed within the embankment crest. The manhole shall provide access to the interconnect pipe. An access tee shall be placed in-line on the interconnect pipe within the manhole. The tee shall be flanged, capped, and facing up. The flanged end shall be a minimum size of twenty-four (24) inches in diameter to allow for inspection of the interconnect. An eight (8) inch diameter PVC or HDPE drain pipe, valve, and tap shall be located within manhole. For manholes greater than fifteen (15) feet, alternating platforms shall be included.*
- i) Clay plugs shall be installed to prevent water migration through pipe bedding and Cell embankment.*
- j) Provide a connection detail at the interconnection between the clay liner and pipe to manage and control seepage along the conduit.*
- k) Provide a stilling well for the north cell. The stilling well shall consist of a 24-inch vertical HDPE pipe located near the interconnect control vault and shall be connected to an 8-inch or larger HDPE pipe located at the invert of the interconnect that extends to the Reservoir near the inlet structure at the north Cell. The Owner will mount its equipment on the top of the 24-inch pipe and install a recorder to monitor Reservoir levels. The top of the 24-*

*inch pipe shall be located between 2'-6" and 3'-0" above the top of the final ground surface.*

*iii. The design documents submitted to Owner shall include, at a minimum, the following:*

*a) Design drawings that include a plan and profile drawing that shows the horizontal and vertical alignment of the pipe, inlets/outlets, and other components of the interconnect; limits of excavation and backfill types along the pipe and around the structures; plan and section drawings that depict structural details, thickness of reinforced concrete, and types and locations of reinforcing steel, connection details for gates and other embedded items; and any other facilities that are part of the interconnect; sections and details that depict the connection between the pipe and the liner; and sections and details that depict all pipe connections and cathodic protection system components.*

*b) Hydraulic calculations that were used to size the pipe, trashracks, and gates; geotechnical calculations for lateral earth pressures, bearing capacity, consolidation/swell, and structural calculations for structural stability and design of the reinforced concrete, structural members, and trashracks.*

*c) Technical specifications for interconnect construction. These shall include requirements for dewatering and management of groundwater, excavation, foundation preparation, side slopes for excavation and fill placement against native materials and previously placed fill material, and for connection to the liner; description of all materials for pipe, concrete, steel, gates, and other materials that will be used to construct the interconnect; sequencing requirements and procedures that will be required to construct the various parts of the interconnect; requirements for commissioning and testing the interconnect, protection for completed portions of work, and required quality control testing for earthwork, pipe, and concrete and frequency of observation by the design engineer.*

#### **E. Exceptions**

*Notwithstanding anything to the contrary above, in the event that design or installation activities have begun prior to the execution of this Construction Agreement, any requirement for the notification of an event or planned activity by Contractor to Owner or the delivery of any document or plans by Contractor to Owner, shall be modified to require such notification or delivery prior to the execution of this Construction Agreement.*

#### **F. Approval of Reservoir or Cell by SEO**

i. *Not later than fourteen (14) days after completion of mining activities for the Reservoir or any Cell, Contractor shall, at its expense:*

a) *Request an inspection of the Reservoir or Cell by the SEO.*

b) *Diligently pursue obtaining a permit and/or approval letter indicating that the Reservoir or Cell meets all requirements for design or performance set forth in the State Engineer Guidelines for Lining Criteria for Gravel Pits (August 1999), as amended.*

c) *If applicable, take those steps necessary to obtain SEO approval of a jurisdictional dam.*

ii. *Contractor shall, at its expense, have the Reservoir or Cell surveyed by an independent engineer or surveyor, licensed to practice surveying in the State of Colorado, with such survey to include a) a topographic ALTA survey mapping the Reservoir with an accuracy equivalent to scale of one (1) inch equals fifty (50) feet with one (1) foot interval contours, (b) horizontal control referenced to the NAD-83-92 Modified Colorado Central State Plane Coordinate System, and (c) vertical control referenced to NAVD 1988.*

iii. *Contractor shall, at its own expense, have prepared a set of "as built" installation drawings certified by an independent engineer licensed in the State of Colorado upon the completion of all installation activities, including any activities required by the SEO.*

iv. *Contractor shall use the survey to have an elevation-capacity table and curve of the Reservoir prepared by an independent engineer licensed in the State of Colorado. The table and curve shall start at the top of the dead storage pool, if any, and extend to the top of the Reservoir. The capacity of the Reservoir or Cell shall not include any Passive (Dead) Storage.*

v. *In the event that the Reservoir or Cell is not approved by the SEO within twelve (12) months of the cessation of mining activities, either party may terminate the Construction Agreement upon giving the other party written notice thirty (30) days prior to such termination. Notwithstanding the above, if Contractor is taking action to obtain such permits and final approvals, and substantial progress has and is being made in such progress; such twelve (12) month period shall be extended for a reasonable period of time to obtain such permits and approvals.*

vi. *If Contractor is successful in obtaining the approval of the SEO of a jurisdictional dam, and if Owner decides to purchase the additional storage, then upon the SEO issuing a final approval of the jurisdictional dam, the parties will calculate the additional Usable Water Storage Capacity resulting from the construction of the dam using as the Normal Maximum Water Surface the*



*elevation which is the highest water elevation approved by the SEO for the permanent (not temporary routing storage flow) storage of water behind the dam.*

*vii. Should at any time during the term of this Construction Agreement the expected Reservoir capacity or the expected Delivery Date change substantially from that communicated to Owner, Contractor shall promptly notify Owner of such changes. Contractor agrees to make all commercially reasonable efforts to meet the expected Delivery Date.*

**G. Warranty**

*Contractor shall warrant the design, installation, and construction of the earthwork, dikes, and other Reservoir facilities constructed by the Contractor as suitable for their intended purpose upon Delivery of the Reservoir or a Cell:*

*i. For a period of twelve (12) months after the Delivery Date, if Owner does not at any time store water in an amount of at least 75% of the Useable Active Storage Capacity; or*

*ii. For a period of twelve (12) months after the first fill of at least 20% of the Useable Active Storage Capacity, but in no case longer than 24 months after the Delivery Date of the Reservoir or a Cell.*

**H. Additional Warranties**

*Contractor shall assign to Owner upon Delivery for the water Storage any and all warranties received by Contractor from its contractors and subcontractors which pertain to the Reservoir or a cell and shall cooperate with Owner in the event it becomes necessary for Owner to enforce such warranties. Should said warranties not be assignable without the warrantor's consent, Contractor and Owner shall use their reasonable best efforts to obtain that consent. For any contracts or agreements entered into by Contractor subsequent to the execution of this Construction Agreement, Contractor shall require that any warranties contained in such agreements or contracts shall be assignable by Contractor to Owner.*

- 10. Completion of Mining:** Contractor shall notify Owner at such time as the mining of each cell on the Property is completed and will cause the pit to be dewatered so that the Storage capacity may be accurately determined. Contractor will obtain all permits necessary to dewater the pit, including any temporary substitute water supply plan as may be required by the State or Division Engineer.
- 11. Timing and Calculation of Final Water Storage Contract Amount and Payment:** The Contract Amount ("Contract Amount") for each Cell delivered

shall be determined in accordance with the unit price in Paragraph 1 herein, for Useable Active Storage Capacity of each Cell, based on an appropriate detailed survey of the final water Storage capacity of each Cell ("Final Survey"). For purposes of this Construction Agreement, Useable Active Storage Capacity shall be defined as that volume of water below the Normal Maximum Water Surface being two feet below the lowest point of the crest of the reservoir or spillway; less any Dead Storage, being any volume of water that will not gravity drain to the reservoir's pump inlet with an invert at the elevation of the Reservoir bottom; less any Passive Storage being any water absorbed into the walls or bottom of the Reservoir; and, less any additional reduction in storage capacity as required by the State Engineer's Office. Within ninety (90) days of Contractor's notification of the completion of mining, the Owner at its sole cost will have the Final Survey performed by a registered professional engineer who will certify the exact quantity of Useable Active Storage Capacity available in each Cell delivered and said volume will be used for calculation of the Contract Amount of each Cell. The capacity for the purposes of calculating the Contract Amount will be based upon the Useable Active Storage Capacity. Owner will provide Contractor at the Delivery of each Cell with a copy of the Final Survey and the corresponding calculation of the Useable Active Storage Capacity and an area-capacity chart. Contractor and Owner shall agree on a Delivery Date pursuant to paragraph 16 of this Construction Agreement. On the Delivery Date Owner shall pay Contractor the Contract Amount calculated for the Cell and Contractor shall relinquish control of the Cell to Owner, notwithstanding contractual obligations beyond delivery set forth herein. The Contractor shall deliver the smaller cell first. If the larger cell is completed prior to the smaller cell, the Contractor will not be paid for the larger cell until such time that the smaller cell is delivered, unless the smaller cell cannot be delivered due to circumstances totally beyond the control of the Contractor.

**12. Contractor Representations and Warranties:**

Contractor represents and warrants as follows:

a. Encumbrances. Contractor agrees that it will not encumber the Property in any way including, but not limited to mechanics liens, nor grant any property or contract right relating to the Property or other interests without the prior written consent of Owner. Contractor further agrees that if any encumbrances are created by actions of Contractor, Contractor will cause any and all such encumbrances to be removed, released, and cleared prior to the Delivery Date of the Reservoir or any Cell.

b. Compliance with Government Regulations. Contractor warrants that there are no orders or directives of any city, county, state, federal or other governmental authority for repairs, maintenance work, or improvements to be performed on the Property. To the best of Contractor's current, actual knowledge, Contractor has received no written notice from any municipal, state,

or other statutory authority relating to defects in any improvements, or noncompliance with any building code or restriction, applicable to the Property that has not been corrected, or any written notice of or impending expropriation or condemnation of the Property.

c. Condition of Property at the time of Delivery of Water Storage. Contractor warrants that there are and will be no material defects or conditions affecting the use, development, or value of the Property as regards its use for storage of water for domestic use as of the Delivery Date of the Reservoir or any Cell. Contractor warrants that the Property has not been used by it, and to the best of its knowledge has not been used in the past, as a waste disposal or landfill facility, and that no underground storage tanks are or have been present. Contractor further warrants that to the best of its knowledge the Property is free of hazardous wastes and hazardous substances as those terms are defined by applicable federal and state statutes now in existence. Contractor further warrants that during its occupancy of the premises and to the best of its knowledge prior to its occupancy no petroleum products, including motor vehicle fuels and equipment maintenance fluids, have been spilled or released on the Property or that if such spills or releases have occurred, they have been fully reported to the appropriate regulatory agencies and necessary cleanup or remedial actions have been completed. Contractor, at its sole cost and expense, shall remove all mined materials; fines; overburden; construction materials or debris; equipment; supplies; and any other personal property from the Property prior to Delivery of the water Storage.

d. Litigation. Contractor warrants that there is not now, nor will there be as of the Delivery Date of the Reservoir or any Cell, any dispute, action, or litigation pending or threatened respecting its use of the Property or other interests.

e. Contracts, Leases, and Agreements. Unless accepted by Owner in writing, Contractor will not enter into any contracts, leases, licenses, commitments, or undertakings respecting the use or maintenance of the Property or the performance of services on the Property by which Owner would become obligated or liable to any third party except that Owner will cooperate with Contractor in connection with Contractor's applications for permits to open and operate a sand and gravel pit on the Property and construct the Reservoir.

f. Compliance with Law. Contractor warrants that it has complied in all material respects with all laws, rules, regulations, ordinances, orders, judgments, and decrees applicable to the Property, and Contractor warrants that there is no proposed order, judgment, decree, governmental taking, or other proceeding applicable to Contractor which might materially adversely affect the Property or its ability to comply with the terms of this Construction Agreement.

g. Utilities. Contractor warrants that it has not received any written notice of the curtailment of any utility service supplied to the Property.

h. Zoning. Contractor has not requested, applied for, or given its consent to, and warrants that there are no pending requests for zoning variances or changes with respect to the Property or its zoning. Contractor further warrants that it will not give its consent to or request any zoning variances or changes with respect to the Property or its zoning without the written consent of Owner.

13. **Termination for Permitting Issues:** Contractor, at any time before the commencement of construction of the Reservoir or any Cell, may terminate this Construction Agreement as to any Cell only in the event Contractor is not able to obtain the necessary permits from governmental authorities having jurisdiction over the Property to permit the mining of sand and gravel for the Cell. In the event Contractor is unable to acquire necessary permits or unable to complete construction of the water storage facilities upon the Property, in addition to any other remedies available to the Owner, the Owner at its sole discretion may, subject to any applicable terms of this Construction Agreement, seek and complete permitting and construction of water storage facilities upon the Property. In the event of Termination of this Construction Agreement by Contractor as to a Cell, the following requirements shall apply:

a. Contractor shall give notice to Owner that it is unable to obtain the necessary permits and finds it necessary to terminate this Construction Agreement as to a particular Cell.

b. Within thirty (30) days after such notice is given by Contractor, the Owner shall receive possession of the Cell and Contractor shall have no further rights to the sand, gravel and other minerals in the Cell.

14. **Default:**

a. In the event Owner is in default prior to Delivery of the water storage, Contractor shall have the right to retain all amounts paid to Contractor, and to recover amounts otherwise due from Owner. Contractor shall have the right to seek damages incurred as a result of Owner's Default.

b. In the event Contractor is in default prior to Delivery of the water storage, or if the Reservoir is not delivered prior to December 31, 2021, Contractor shall be deemed in Default and relinquish possession of the Property and the remaining sand, gravel and other mineral rights to the Owner. Owner shall have the sole right to renegotiate a later delivery date if it is in the Owner's best interest. Contractor shall have the right to retain all amounts paid to Contractor, and to recover amounts otherwise due from Owner, for the developed, approved and delivered Reservoir or completed Cells at the time of default based on the acre foot price as stated in Paragraph 1 of this Construction Agreement.

15. **Proof, Title Defects, Resolution of Title Defects and Deeds:**

a. Contractor provided items. No later than ninety (90) days before Delivery of the water Storage, Contractor, at its sole cost, shall furnish Owner with then current updates of the following materials that pertain to the Property or subject Cell, which must demonstrate no change in the status of title since Owner's purchase of the Property. Contractor shall provide before each Delivery:

i. A title insurance commitment for the Property which Commitment demonstrates that no encumbrances have been placed on the Property during the term of this Construction Agreement.

ii. Copies of all governmental applications, permits, licenses, certificates, or agreements relating to the zoning, operation, occupancy, or use of the Property and Cells.

iii. Copies of any surveys, soils geotechnical and engineering reports, feasibility studies, site plats and plans, and other reports, studies, or documents relating to the Cell or Cells.

iv. An independent environmental assessment, satisfactory to Thornton in its sole discretion, and further in compliance with ASTM Standard E 1527 commonly referred to as a "Phase One Audit," or any successor standard, demonstrating the absence of any "recognized environmental condition," as defined by the ASTM Standard, associated with the Cells and Property.

## **16 Delivery of the Water Storage:**

a. Delivery of each Cell will occur within sixty (60) days after the Final Survey for the Cell is completed and all approvals have been received.

b. Events at Delivery. The following events shall take place at the time and place of Delivery and transfer of each Cell ("Delivery" or the "Delivery Date"). No payment or Delivery shall be made or deemed made until after all the events have been completed:

i. Owner shall pay to Contractor the amount set forth herein.

ii. Contractor shall execute and deliver to Owner a certificate that the Cell to be Delivered has been constructed, surveyed, inspected and approved for its intended use free and clear of any and all liens, taxes, or other encumbrances of any kind whatsoever.

c. Payment of Encumbrances. Any encumbrance required to be paid shall be paid at or before Delivery from the proceeds of this transaction or from any other source of Contractor.

17. **Post-Delivery Reclamation Responsibilities:** Contractor shall remain responsible for compliance with all the terms and conditions of the Permits. Upon execution of this Construction Agreement, no amendment shall be made to any mining or reclamation plan, or any special or conditional use permit without Owner's prior written approval. Contractor will obtain Owner's written approval prior to the release of any reclamation bond, which approval will not be unreasonably withheld.
- a. Contractor's Access to the Property for Reclamation Purposes. Contractor will be permitted to enter and have access to the Property for purposes of complying with and completing any reclamation or other post mining work necessary under the Permits after the Delivery Date. In performing any reclamation or post mining work necessary under the Permits, Contractor shall not destroy, damage, or injure the Property or any improvements on the Property.
18. **Insurance.** So long as it has not been released from the bonds and obligations under the Permits, Contractor shall procure and maintain in force, at its own cost, the following coverages:
- a. Workers' Compensation Insurance as required by the Labor Code of the State of Colorado and Employer's Liability Insurance.
- b. Commercial General Liability Insurance with minimum combined single limits of Five Million Dollars (\$5,000,000.00) each occurrence and Five Million Dollars (\$5,000,000.00) general aggregate, with such policy to be applicable to all premises and operations, including coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, independent contractors, products, and completed operations, and also including coverage for explosion, collapse, and underground hazards.
- c. Automobile Liability Insurance with minimum combined single limits for bodily injury and property damage of not less than One Million Dollars (\$1,000,000.00) for any one occurrence, with respect to each of Contractor's owned, hired or non-owned vehicles assigned to or used in performance of the Construction Agreement, reclamation or other post mining work necessary under the Permits.
- d. Contractor shall procure and maintain, and shall cause any Subcontractor of Contractor to procure and maintain, the minimum insurance coverages listed herein. Such coverages shall be procured and maintained with forms and insurers acceptable to Owner. All coverages shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by Contractor. In the case of any claims-made policy, the necessary retroactive dates and

extended reporting periods shall be procured to maintain such continuous coverage.

e. A Certificate of Insurance shall be completed by Contractor's Insurance Agent(s) as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect and shall be subject to review and approval by Owner prior to any entry onto the Property by Contractor after Delivery. The Certificate shall identify this Construction Agreement and shall provide that the coverages afforded under the policies shall not be canceled, terminated or materially changed until at least thirty (30) Days prior written notice has been given to Owner. The Certificate shall name Owner, its officers and its employees as additional insured with respect to the General Liability Insurance. The completed Certificate of Insurance shall be sent to:

City of Thornton  
Risk Management  
P.O. Box 291220  
Thornton, CO 80229-1220

f. Owner reserves the right to request and receive a certified copy of any policy and any endorsement thereto. Contractor shall execute any and all documents necessary to allow Owner access to any and all insurance policies and endorsements pertaining to this particular job.

g. Every policy required above shall be primary insurance, and any insurance carried by Owner, its officers, or its employees shall be excess and not contributory insurance to that provided by Contractor. Contractor shall be solely responsible for any deductible losses under the policies required above.

h. Contractor shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to this Construction Agreement or under the Permits by reason of its failure to procure and maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

19. **Indemnification:** Contractor hereby indemnifies, agrees to hold harmless, and agrees to reimburse Owner, its employees, agents, contractors, licensees, invitees, lenders, and holders of security interests, and their respective heirs, successors, and assigns against any and all claims, demands, judgments, penalties, liabilities, contractual obligations costs, damages, and expenses, directly or indirectly incurred by Owner arising from the Contractor's actions, including but not limited to operations on the Property under this Construction Agreement, or arising out of the gravel pit mining or reservoir construction projects.

20. **Governmental Immunity:** The parties hereto understand and agree that the City of Thornton, its officers, and its employees, are relying on, and do not waive or intend to waive, by any provision of this Construction Agreement, any rights, protections, or privileges provided by the Colorado Governmental Immunity Act, 24-10-101 C.R.S., et seq., as it is from time to time amended, or otherwise available to Thornton, its officers, or employees. However, Governmental Immunity shall not be available or asserted by the City of Thornton as a defense to any of the contract remedies available to Contractor under this Construction Agreement
21. **Authority of Thornton:** This Construction Agreement is expressly subject to and shall not become effective or binding on Thornton until the Construction Agreement is fully executed by all signatories of the City of Thornton. Thornton warrants that Thornton is a home rule municipal corporation duly organized, validly existing and in good standing under the laws of the State of Colorado; has the right, power, and legal capacity to enter into and perform its obligations under this Construction Agreement and the documents to be executed and delivered pursuant hereto; and the execution and delivery of this Construction Agreement and such documents and the performance and observance of their terms, conditions, and obligations have been duly and validly authorized by all necessary action on its part to make this Construction Agreement and such documents and such performance and observance valid and binding upon Thornton.
22. **Authority of Contractor:** Contractor warrants that Contractor is a Colorado Corporation duly organized, validly existing and in good standing under the laws of the State of Colorado; is qualified to transact business in the State of Colorado; has the right, power, and legal capacity to enter into and perform its obligations under this Construction Agreement and the documents to be executed and delivered pursuant hereto; and the execution and delivery of this Construction Agreement and such documents and the performance and observance of their terms, conditions, and obligations have been duly and validly authorized by all necessary action on its part to make this Construction Agreement and such documents and such performance and observance valid and binding upon Contractor.
23. **Veracity of Representations and Warranties:** No representations or warranty made by Contractor or Owner in this Construction Agreement, or any schedule or exhibit attached hereto or in any certificate or other document furnished by either party pursuant to this Construction Agreement contains any untrue statement of material fact or omits any material fact.
24. **Amendment:** This Construction Agreement may be modified, amended, changed, or terminated in whole or in any part only by an agreement in writing duly authorized and executed by both Parties with the same formality as this Construction Agreement.



25. **Notification of Default and Cure:** Notice of any default under this Construction Agreement shall be given to the defaulting party by the non-defaulting party. The defaulting party shall have twenty (20) days to cure any such default before any of the remedies identified in Paragraph 14 above are available to the non-defaulting party, provided that the period for curing any such default shall be extended for a reasonable period of time if the defaulting party is proceeding with all reasonable diligence to cure the default.
26. **Waiver:** The waiver of any breach of any provision of this Construction Agreement by any Party shall not constitute a continuing waiver of any subsequent breach of said Party, for either breach of the same or any other provision of this Construction Agreement.
27. **Entire Agreement:** This Construction Agreement along with a simultaneously executed Purchase and Sale Agreement represents the entire agreement of the Parties, and neither Party has relied upon any fact or representation not expressly set forth herein. This Construction Agreement executed or otherwise shall only be valid and enforceable if the Purchase and Sale Agreement is fully executed. This Water Storage Reservoir Construction Agreement supersedes all other prior agreements and understandings of any type both written and oral, among the parties with respect to the subject matter hereof. It has been made known to the Buyer that there currently exists a Royalties Agreement between Zadel Family, LLLP and Northern Colorado Constructors, Inc. (A copy of this Agreement has been supplied to the Buyer) The buyer having been notified of such Agreement will have no interest in this Royalties Agreement and any such Agreement will be between Zadel Family, LLLP and Northern Colorado Constructors, Inc. Any such Royalties Agreement shall be between the two parties and have no effect upon the Purchase and Sale Agreement or the Water Storage Reservoir Construction Agreement.
28. **Headings for Convenience Only:** Paragraph headings and titles contained herein are intended for convenience and reference only and are not intended to define, limit or describe the scope or intent of any provision of this Construction Agreement.
29. **Non-Severability and Effect of Invalidity:** Each paragraph of this Construction Agreement is intertwined with the others and is not severable unless by mutual consent of the Parties hereto.
30. **Assignability:** Contractor may not assign its rights or delegate its duties hereunder without the prior written consent of Owner. Owner may assign its rights or delegate its duties hereunder to another municipality or special district that has the demonstrated resources to meet the financial obligations of this Construction Agreement without the prior written consent of Contractor. Any other assignment or delegation by Owner will require Contractor's written consent.

31. **Binding Effect:** This Construction Agreement and the rights and obligations created hereby shall be binding upon and shall inure to the benefit of the Parties hereto and their respective successors and assigns, if any.
32. **Governing Law and Venue:** This Construction Agreement and its application shall be construed in accordance with the laws of the State of Colorado. The Parties agree that venue for any litigated disputes regarding this Construction Agreement shall be the District Court in and for Weld County, Colorado, unless any such issues are water matters as defined by C.R.S. § 37-92- 203, for which the Parties agree the venue for any litigated disputes shall be the District Court, Water Division 1. However, the Owner and Contractor may avail themselves of the procedures provided in C.R.S. § 13-3-111.
33. **Multiple Originals:** This Construction Agreement may be simultaneously executed in any number of counterparts, each of which shall be deemed original but all of which constitute one and the same Construction Agreement.
34. **Survival of Representations:** Each and every covenant, promise or payment contained in this Construction Agreement shall not merge in document or instrument but shall survive and be binding and obligatory upon each of the Parties hereto.
35. **Sole Obligation of Owner's Utility Enterprise:** The Parties agree any and all obligations of Owner under this Construction Agreement are the sole obligations of the City of Thornton Enterprise Fund and, as such, shall not constitute a general obligation or other indebtedness of the City of Thornton or a multiple fiscal year direct or indirect debt or other financial obligation whatsoever of the City of Thornton within the meaning of any constitutional, statutory, or charter limitation. The Parties agree that in the event of default by Owner or failure to meet any of its obligations under the terms of this Construction Agreement, Contractor shall have no recourse against any of the revenues of the City of Thornton except for the net revenues of the water utility system available therefore in the City of Thornton water fund, or any successor enterprise fund, after payment of all expenses relating to the operation and maintenance and periodic payments on bonds, loans, and other obligations of the City of Thornton water system.
36. **No Warranty Concerning Tax Status:** Owner makes no warranties nor guarantees that any interest paid by Owner to Contractor as a result of the transactions contemplated by this Construction Agreement is excludable from federal, state, or local income tax purposes.
37. **No Attorney's Fees or Costs:** In the event of any litigation, mediation, arbitration, or other dispute resolution process arising out of this Construction Agreement, the Parties agree that each shall be responsible for their own costs

and fees associated with any such legal action.

38. **Fees, Expenses, and Apportionment:** Except as otherwise expressly set forth in this Construction Agreement, each of the parties hereto will bear its own expenses in connection with the transactions contemplated by this Construction Agreement.
39. **Joint Draft:** The Parties agree they drafted this Construction Agreement jointly with each having the advice of legal counsel and an equal opportunity to contribute to its content.
40. **Intent of Agreement:** This Construction Agreement is intended to describe the rights and responsibilities of and between the Parties, and is not intended to, and shall not be deemed to, confer rights upon any persons or entities not signatories hereto, nor to limit, impair, or enlarge in any way the powers, regulatory authority, and responsibilities of either Party or any other governmental entity not a party hereto.
41. **No Limitation on Ability to Raise Funds:** Nothing in this Construction Agreement is intended to limit Owner's ability to raise necessary funds to pay for the Property through any form of internal or external borrowing that may be available to it.
42. **Notices:** Any notice required or permitted to be given hereunder shall be in writing and shall be deemed given when delivered personally or sent by certified or registered mail, return receipt requested, postage prepaid, addressed as follows:

Owner:                      City Manager  
                                 City of Thornton  
                                 9500 Civic Center Drive  
                                 Thornton, Colorado 80229; and,

                                 City Attorney  
                                 City of Thornton  
                                 9500 Civic Center Drive  
                                 Thornton, Colorado 80229

Contractor:                Northern Colorado Constructors, Inc.  
                                 9075 WCR 10  
                                 Fort Lupton, Colorado 80621

or at such other address as either party hereto may designate by giving written notice thereof to the other party hereto in the aforesaid manner. Notice shall be effective upon receipt.

43. **Contract Date:** The parties acknowledge that certain obligations of Contractor and Owner are to be performed within certain specified periods of time that are determined by reference to the date of mutual execution of this Construction Agreement. The date of this contract shall be the date the last party fully executes the document, and all calculations of date provided herein shall be from such date, which shall be the "Contract Date", and the parties agree that whenever the term "date of this Construction Agreement" or words of similar import are used herein, they shall mean the Contract Date. The Parties further agree to specify the date on which they execute this Construction Agreement beside their respective signatures in the space provided, and warrant and represent to the other that such date is in fact the date on which each has duly executed this Construction Agreement.
44. **Time of Essence/Force Majeure:** Time shall be of the essence with respect to performance required under this Construction Agreement. If the performance of any act required under this Construction Agreement is delayed by reason of fire, flood, acts of God, war, civil insurrection, strike or any other cause beyond the party's control, then the time for performance will be delayed a reasonable amount of time considering the circumstances causing the delay.
45. **Non-Business Days:** If the date for any action under this Construction Agreement falls on a Saturday, Sunday, or day that is a "holiday" as such term is defined in C.R.C.P. 6, then the relevant date shall be extended automatically until the next day that is not a Saturday, Sunday, or "holiday."
46. **Dispute Resolution:** In the event of a disagreement between the Parties, the Parties agree to enter into dispute resolution such as mediation or non-binding arbitration in an effort to resolve the dispute prior to proceeding to litigation.

*Signature Pages to Follow*

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed as of the day and year first above written.

CONTRACTOR

By: Jonathan M Zadel  
Title President

State of Colorado            )  
  ) ss.  
County of Weld            )

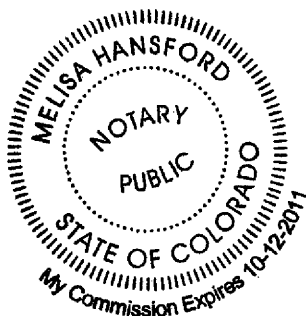
The foregoing instrument duly acknowledged before me, a Notary Public,  
by Jonathan M Zadel, as President of Northern Colorado Const. on  
May 1st, 2008.

Witness my hand and official seal.

My commission expires: 10-12-11.

[SEAL]

Melisa Hansford  
NOTARY PUBLIC



CITY OF THORNTON

By: 

Jack Ethredge, City Manager

ATTEST:

  
Nancy Vincent, City Clerk

Date: 5/14/08

APPROVED AS TO FORM:

Margaret Emerich  
Thornton City Attorney

By:   
Assistant City Attorney

# EXHIBIT A

SHEET 1 OF 5

## PROPERTY DESCRIPTION (TOTAL OF NCCI'S PARCELS)

PART OF THE SOUTHEAST AND NORTHEAST ONE QUARTERS OF SECTION 24, TOWNSHIP 2 NORTH, RANGE 67 WEST OF THE 6<sup>TH</sup> P.M., COUNTY OF WELD, STATE OF COLORADO BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

LOTS 3, 4, 5, AND 6 OF SAID SOUTHEAST ONE QUARTER AND LOTS 7 AND 12 AND A PORTION OF LOT 11 OF SAID NORTHEAST ONE QUARTER OF SECTION 24, TOWNSHIP 2 NORTH, RANGE 67 WEST OF THE 6<sup>TH</sup> P.M., WELD COUNTY, COLORADO, ACCORDING TO THE SUBDIVISION OF LANDS BY THE LUPTON MEADOWS LAND COMPANY DIVISION NO. 3 RECORDED JUNE 12, 1909 IN BOOK 5 OF MAPS AT PAGE 1, RECORDS OF SAID COUNTY; ALSO A STRIP OF LAND 100 FEET WIDE, BEING 50 FEET WIDE ON EACH SIDE OF THE CENTER LINE OF THE ABANDONED DENVER, LARAMIE AND NORTHWESTERN RAILWAY COMPANY RECORDED IN BOOK 314 AT PAGE 440, RECORDS OF SAID COUNTY AS ORIGINALLY LOCATED OVER, ACROSS AND THROUGH SAID SOUTHEAST AND NORTHEAST ONE QUARTERS OF SAID SECTION 24.

THE TOTAL PARCEL BEING DESCRIBED AS FOLLOWS:

CONSIDERING THE SOUTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24 AS BEING ON AN ASSUMED BEARING OF S89°45'11"W AND WITH ALL BEARINGS CONTAINED HEREIN BEING RELATIVE THERETO. SAID SOUTH LINE BEING MONUMENTED BY A 2" ALUMINUM CAP LS 25937 AT THE SOUTHEAST CORNER OF SAID SECTION 24 AND BY A 2" ALUMINUM CAP LS 25937 AT THE SOUTH ONE QUARTER CORNER OF SAID SECTION 24.

BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 24; THENCE ALONG THE SOUTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24 S89°45'11"W 1668.36 FEET TO THE WESTERLY LINE OF SAID STRIP OF LAND OF THE ABANDONED DENVER, LARAMIE AND NORTHWESTERN RAILWAY COMPANY; THENCE ALONG LAST SAID WESTERLY RIGHT OF WAY LINE N01°32'43"W 2621.09 FEET TO THE NORTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24; THENCE ALONG THE NORTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24 N89°56'51"W 858.59 FEET TO THE CENTER ONE QUARTER CORNER OF SAID SECTION 24; THENCE ALONG THE WEST LINE OF THE SOUTHWEST ONE QUARTER OF THE NORTHEAST ONE QUARTER OF SAID SECTION 24 N00°18'36"E 1311.97 FEET TO THE NORTHWEST CORNER OF THE SOUTHWEST ONE QUARTER OF THE NORTHEAST ONE QUARTER OF SAID SECTION 24; THENCE ALONG THE WEST LINE OF THE NORTHWEST ONE QUARTER OF THE NORTHEAST ONE QUARTER OF SAID SECTION 24 N00°19'18"E 992.76 FEET TO THE SOUTHWEST CORNER OF THE NORTHERLY 4.66 ACRES OF SAID LOT 11; THENCE ALONG THE SOUTHERLY LINE OF SAID NORTHERLY 4.66 ACRES OF SAID LOT 11 S89°41'03"E 660.27 FEET TO THE WESTERLY RIGHT OF WAY LINE OF THE ABANDONED DENVER, LARAMIE AND NORTHWESTERN RAILWAY COMPANY; THENCE ALONG THE LAST SAID WESTERLY RIGHT OF WAY LINE N08°01'03"W 322.41 FEET TO THE NORTH LINE OF THE NORTHEAST ONE QUARTER OF SAID SECTION 24; THENCE ALONG THE

# EXHIBIT A

## SHEET 2 OF 5

NORTH LINE OF THE NORTHEAST ONE QUARTER OF SAID SECTION 24 S89°41'24"E 101.12 FEET TO THE EASTERLY RIGHT OF WAY LINE OF THE ABANDONED DENVER, LARAMIE AND NORTHWESTERN RAILROAD COMPANY; THENCE ALONG LAST SAID EASTERLY RIGHT OF WAY LINE S07°58'50"E 1092.43 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 6°25'03" AND A RADIUS OF 5779.58 FEET; THENCE ALONG THE ARC OF SAID CURVE 647.35 FEET, THE LONG CHORD OF SAID CURVE BEARS S04°44'57"E 647.01 FEET; THENCE DEPARTING SAID CURVE S01°33'27"E 239.11 FEET; THENCE DEPARTING THE EASTERLY RIGHT OF WAY LINE OF THE ABANDONED DENVER, LARAMIE AND NORTHWESTERN RAILWAY COMPANY AND ALONG THE NORTH LINE OF THE SOUTH ONE HALF OF THE SOUTH ONE HALF OF SAID NORTHEAST ONE QUARTER S89°52'29"E 1676.08 FEET TO THE NORTHEAST CORNER OF THE SOUTH ONE HALF OF THE SOUTH ONE HALF OF THE NORTHEAST CORNER OF SAID SECTION 24; THENCE ALONG THE EAST LINE OF THE SOUTH ONE HALF OF THE SOUTH ONE HALF OF THE NORTHEAST ONE QUARTER OF SAID SECTION 24 S00°20'18"W 662.86 FEET TO THE EAST ONE QUARTER CORNER OF SAID SECTION 24; THENCE ALONG THE EAST LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24 S00°20'18"E 2611.38 FEET TO THE SOUTHEAST CORNER OF SAID SECTION 24 AND THE POINT OF BEGINNING.

SAID TRACT OF LAND CONTAINS 175.635 ACRES GROSS / 172.258 ACRES NET MORE OR LESS SUBJECT TO ALL EASEMENTS, RIGHTS OF WAY, RESERVATIONS AND RESTRICTIONS OF RECORD OR AS THEY NOW EXIST.

FOR AND ON BEHALF OF J.L. WALTER CONSULTING


  
Rodney A. Walters  
Colorado PLS 16847

4/04/08  
DATE







<p><b>BOUNDARY EXHIBIT</b></p>	 <p><b>JL Walter Consulting</b> 114 E. 5th Street Loveland, CO 80537 (970) 613-2037</p>	<p><b>DATE:</b> <u>4/3/08</u></p>
		<p><b>SCALE:</b> <u>NTS</u></p>
		<p><b>DRAWN:</b> <u>RAW</u></p>

# EXHIBIT A

S00°20'16"E  
1652.18'  
(MEAS.)

CENTER 1/4 COR.  
SEC. 24-2-67

N89°56'51"W  
1654.41'  
(MEAS.)

N89°56'51"W 1654.41' (MEAS.)  
N89°57'01"W 1654.38' (DEED.)

EAST 1/4 COR.  
SEC. 24-2-67

N89°57'01"W 2613.27' (MEAS.)  
(DEED.)  
MATCHLINE



N00°17'36"E  
2625.02'  
(MEAS.)

N01°32'43"W  
2621.08'  
(MEAS.)

N00°20'16"E  
2611.31'  
(MEAS.)

## SHEET 5 OF 5

POINT OF BEGINNING

S89°45'11"W  
1688.36'

S89°45'11"W 2611.31'

South One Quarter Corner of Section  
24, T.2N., R. 67 W. Found 2" aluminum  
Cap LS 25937 set in 1993 9 per  
monument record)

S.E. COR. SEC. 24, T.2N., R.67W.  
Found 2" alum. cap Ls. 25937  
Set 1996 9 per monument record)

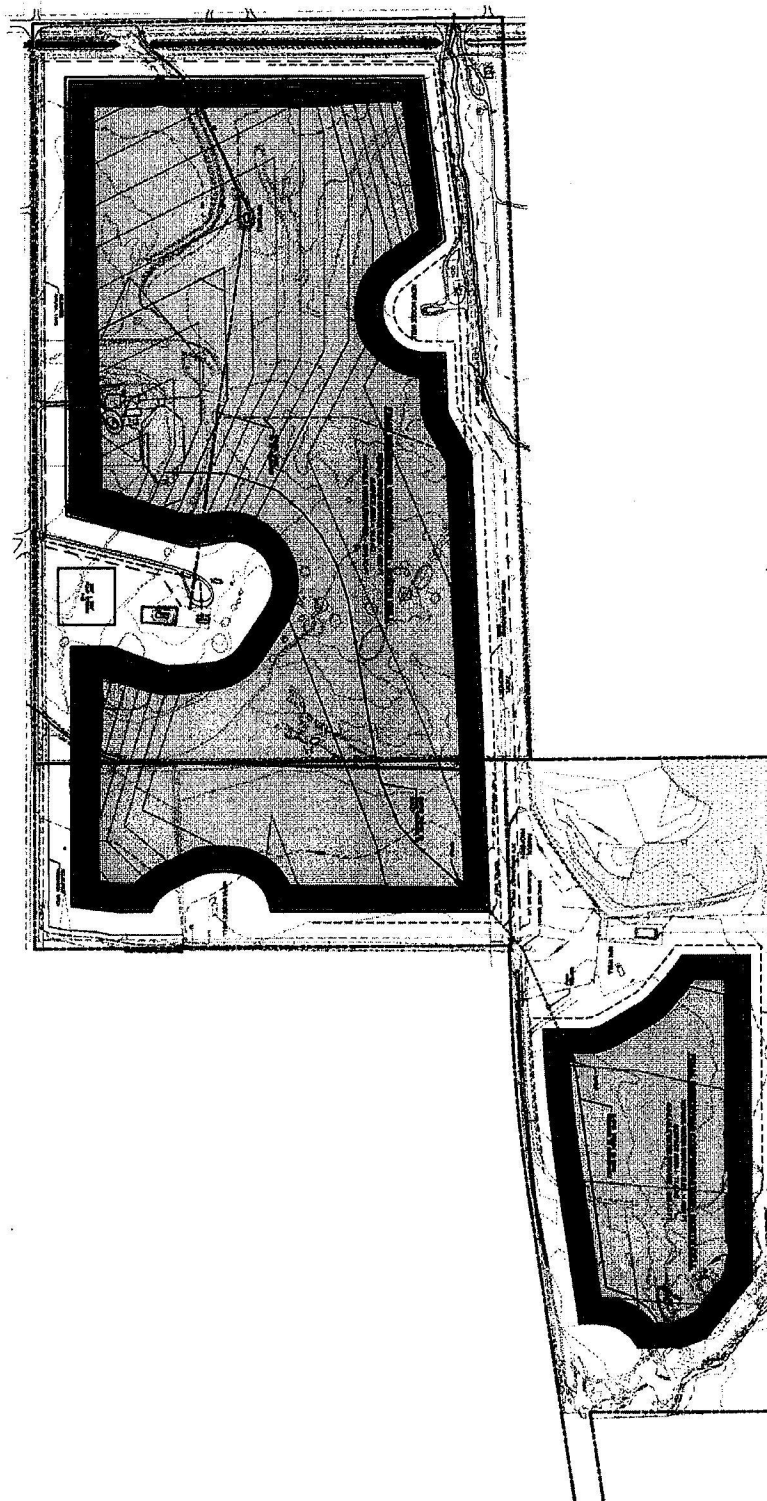
### BOUNDARY EXHIBIT



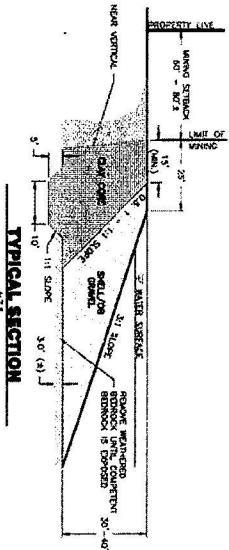
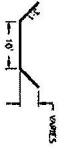
**JL Walter Consulting**  
114 E. 5th Street  
Loveland, CO 80537  
(970) 613-2037  
Mobile (970) 538-9179  
FAX (970) 203-1147

DATE: **4/3/08**  
SCALE: **NTS**  
DRAWN: **RAW**

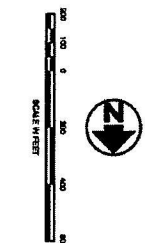
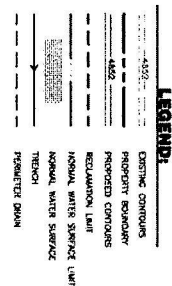
**to the Zadel - Water Storage Reservoir Construction Agreement**



**TYPICAL TRENCH SECTION**



### **TYPICAL SECTION**

[illegible]

**NCCI Pit #1**  
**Liner design Cost Update**  
Final Reservoir Configuration  
Clay Liner


**J&T Consulting, Inc.**

1400 W 122nd Avenue - Suite 120  
Westminster, CO 80234  
Ph: 303-457-0738 Fax: 303-420-0343  
info@4xconsulting.com

# EXHIBIT A-1

SHEET 1 OF 4

## PROPERTY DESCRIPTION (NCCI EXEMPTION PARCEL)

PART OF THE SOUTHEAST AND NORTHEAST ONE QUARTERS OF SECTION 24, TOWNSHIP 2 NORTH, RANGE 67 WEST OF THE 6<sup>TH</sup> P.M., COUNTY OF WELD, STATE OF COLORADO BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PORTION OF LOTS 3, 4, 5, AND 6 OF SAID SOUTHEAST ONE QUARTER AND A PORTION OF LOT 12 OF SAID NORTHEAST ONE QUARTER OF SECTION 24, TOWNSHIP 2 NORTH, RANGE 67 WEST OF THE 6<sup>TH</sup> P.M., WELD COUNTY, COLORADO, ACCORDING TO THE SUBDIVISION OF LANDS BY THE LUPTON MEADOWS LAND COMPANY DIVISION NO. 3 RECORDED JUNE 12, 1909 IN BOOK 5 OF MAPS AT PAGE 1, RECORDS OF SAID COUNTY; ALSO A STRIP OF LAND 100 FEET WIDE, BEING 50 FEET WIDE ON EACH SIDE OF THE CENTER LINE OF THE ABANDONED DENVER, LARAMIE AND NORTHWESTERN RAILWAY COMPANY RECORDED IN BOOK 314 AT PAGE 440, RECORDS OF SAID COUNTY, AS ORIGINALLY LOCATED OVER, ACROSS AND THROUGH SAID SOUTHEAST AND NORTHEAST ONE QUARTERS OF SAID SECTION 24.

THE TOTAL PARCEL BEING DESCRIBED AS FOLLOWS:

CONSIDERING THE SOUTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24 AS BEING ON AN ASSUMED BEARING OF S89°45'11"W AND WITH ALL BEARINGS CONTAINED HEREIN BEING RELATIVE THERETO. SAID SOUTH LINE BEING MONUMENTED BY A 2" ALUMINUM CAP LS 25937 AT THE SOUTHEAST CORNER OF SAID SECTION 24 AND BY A 2" ALUMINUM CAP LS 25937 AT THE SOUTH ONE QUARTER CORNER OF SAID SECTION 24.

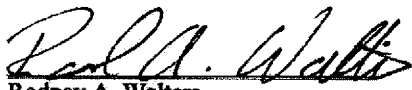
COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 24; THENCE ALONG THE SOUTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24 S89°45'11"W 1668.36 FEET TO THE TRUE POINT OF BEGINNING; THENCE ALONG THE WEST RIGHT OF WAY LINE OF THE ABANDONED DENVER, LARAMIE AND NORTHWESTERN RAILWAY RIGHT OF WAY N01°32'43"W 2621.09 FEET TO THE NORTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24; THENCE ALONG LAST SAID NORTH LINE N89°56'51"W 858.59 FEET TO THE CENTER ONE QUARTER CORNER OF SAID SECTION 24; THENCE ALONG THE WEST LINE OF THE SOUTHWEST ONE QUARTER OF THE NORTHEAST ONE QUARTER OF SAID SECTION 24 N00°18'36"E 547.75 FEET; THENCE DEPARTING LAST SAID LINE N89°04'43"E 291.08 FEET; THENCE N89°21'48"E 319.72 FEET; THENCE N00°31'32"E 89.41 FEET; THENCE N84°27'47"E 164.27 FEET; THENCE S84°26'45"E 163.93 FEET TO A POINT ON THE EASTERLY LINE OF THE ABANDONED DENVER, LARAMIE AND NORTHWESTERN RAILWAY RIGHT OF WAY; THENCE ALONG THE EASTERLY RIGHT OF WAY LINE OF LAST SAID RAILROAD RIGHT OF WAY LINE S01°32'42"E 1931.22 FEET; THENCE DEPARTING LAST SAID LINE S23°56'08"E 5.51 FEET; THENCE S03°17'17"E 265.03 FEET; THENCE S04°42'44"E 320.52 FEET; THENCE S06°32'37"E 563.41 FEET; THENCE S05°03'23"W 187.02 FEET TO THE SOUTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24; THENCE ALONG THE SOUTH LINE OF THE SOUTHEAST ONE QUARTER OF SAID SECTION 24 S89°45'11"W 155.50 FEET TO THE TRUE POINT OF BEGINNING.

# EXHIBIT A-1

SHEET 2 OF 4

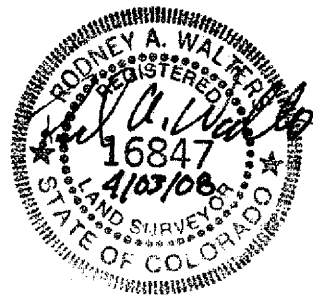
SAID PARCEL OF LAND CONTAINS 19.960 ACRES GROSS / 19.852 ACRES NET MORE OR LESS SUBJECT TO ALL EASEMENTS, RIGHTS OF WAY, RESERVATIONS AND RESTRICTIONS OF RECORD OR AS THEY NOW EXIST.

FOR AND ON BEHALF OF JL WALTER CONSULTING

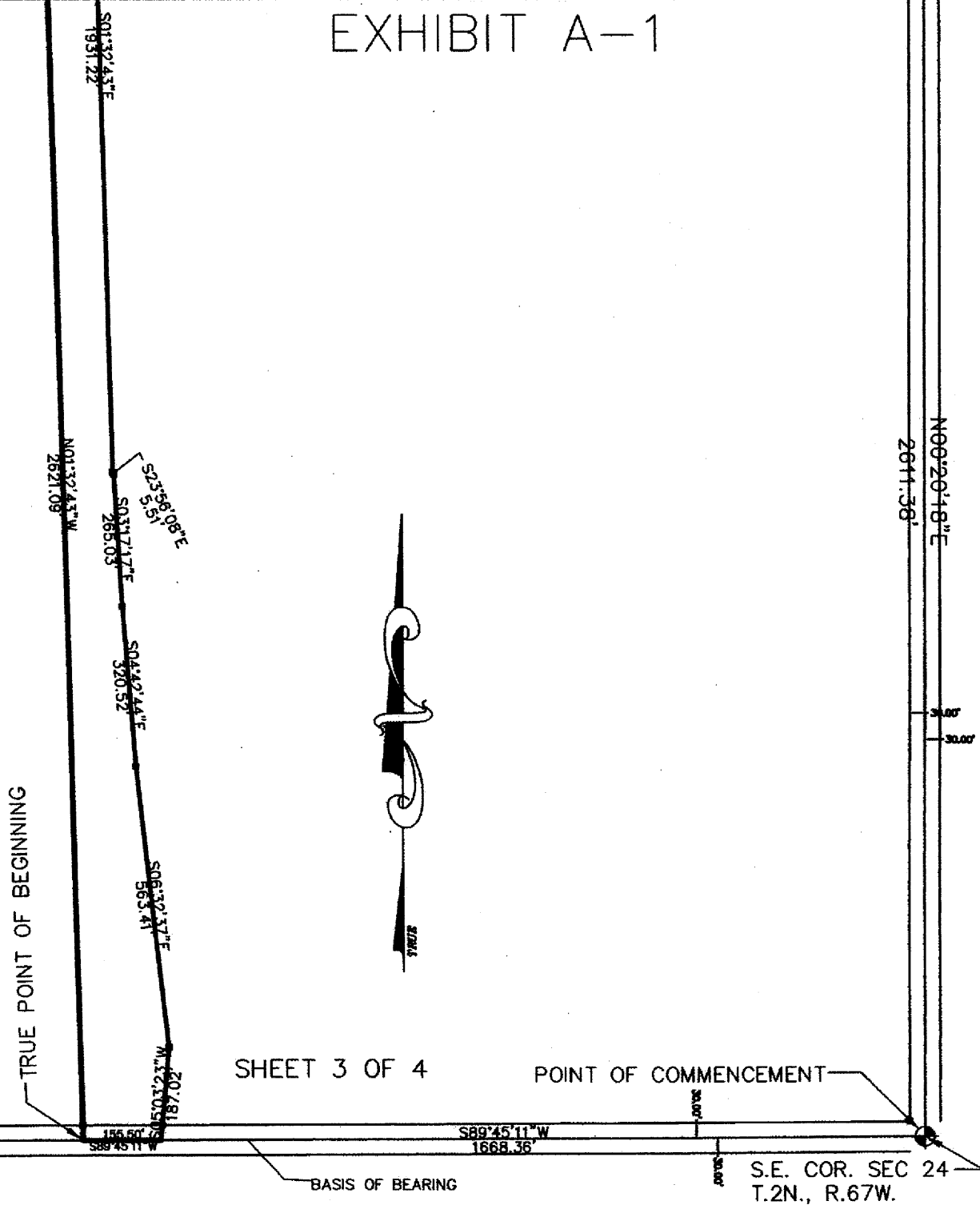


Rodney A. Walters  
Colorado PLS 16847

4/03/08  
Date



# EXHIBIT A-1



**BOUNDARY  
EXEMPTION**

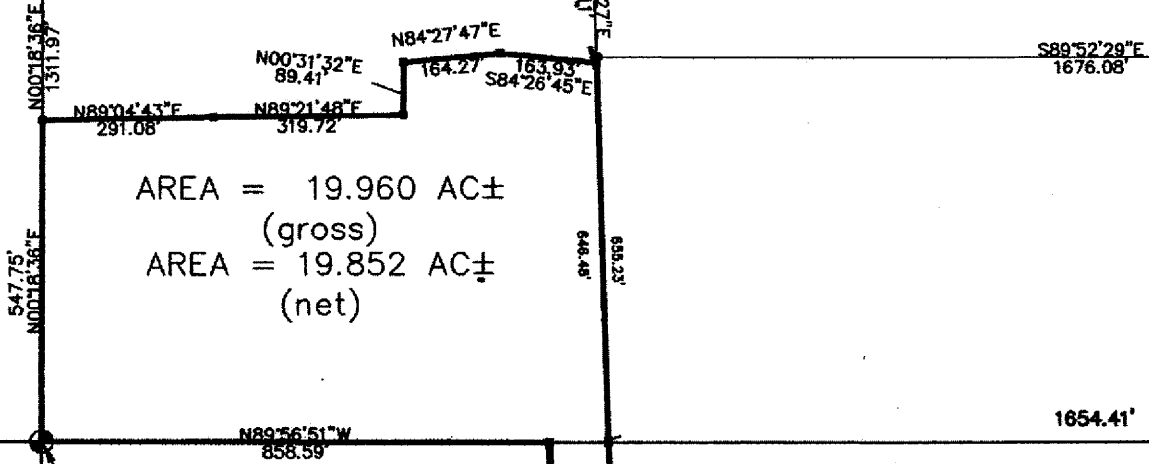


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DATE: **4/3/08**  
 SCALE: **NTS**  
 DRAWN: **RAW**

# EXHIBIT A-1

PARCEL B



CENTER 1/4  
SEC. 24, T.2N., R.67W.

SHEET 4 OF 4

**BOUNDARY  
EXEMPTION**



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Loveland, CO 80537  
(970) 613-2037

Mobile (970) 539-9179  
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DATE: **4/3/08**  
SCALE: **NTS**  
DRAWN: **RAW**





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## FW: NCC Pit No. 1 - 2022 SWSP

1 message

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**Michelle Hatcher** <michelle@clearwatercolorado.com>  
To: "Dickinson - DNR, Wenli" <wenli.dickinson@state.co.us>

Wed, Jan 19, 2022 at 4:03 PM

Hi Wenli,

Dave Diedrich from Thornton sent me the following email confirmation for the lease water. Is this enough or do you need something more formal?

Thanks Wenli!

Michelle

**Michelle Hatcher**, *Water Resource Specialist*

**Clear Water Solutions, Inc.**

(O) 970.223.3706

(M) 970.481.3421

[www.clearwatercolorado.com](http://www.clearwatercolorado.com)

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**From:** Dave Diedrich [mailto:[Dave.Diedrich@thorntonco.gov](mailto:Dave.Diedrich@thorntonco.gov)]  
**Sent:** Wednesday, January 19, 2022 2:01 PM  
**To:** Michelle Hatcher <[michelle@clearwatercolorado.com](mailto:michelle@clearwatercolorado.com)>  
**Cc:** Elena Acker <[Elena.Acker@thorntonco.gov](mailto:Elena.Acker@thorntonco.gov)>; Mary Jensen <[Mary.Jensen@thorntonco.gov](mailto:Mary.Jensen@thorntonco.gov)>; Ruthanne Schaffer <[Ruthanne.Schaffer@thorntonco.gov](mailto:Ruthanne.Schaffer@thorntonco.gov)>  
**Subject:** RE: NCC Pit No. 1 - 2022 SWSP

Hi Michelle,

Thanks for sending over the numbers. Doesn't look like the numbers changed much. Yes we can confirm that we will replace up to the maximum estimated monthly depletions listed in the 2022 SWSP (right column of table below), up to a total of 1,253.1 AF for the 2022 calendar year. If you need something more formal than an email, let us know.

NCCI requests for Augmentation Releases from City of Thornton  
2022 SWSP Renewal

Month	Lease from City of Thornton (ac-ft)	Lease from City of Thornton (ac-ft)
Jan-22	91.8	91.8
Feb-22	141.6	141.6
Mar-22	91.5	91.5
Apr-22	11.0	11.0
May-22	0.0	254.2
Jun-22	0.0	186.6
Jul-22	0.0	144.8
Aug-22	5.5	108.8
Sep-22	32.6	79.7
Oct-22	42.3	62.3
Nov-22	102.8	45.5
Dec-22	87.5	35.3
<b>Total</b>	<b>606.7</b>	<b>1,263.1</b>

Thanks,

Dave

April 30, 2010

Permittee Address

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:        Permit Id        Site Name



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

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

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

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

Typically, submittals are due within 30 days of the end of the month for which the accounting is being submitted, unless decreed otherwise. Additional data or more frequent submittals may be required by the water commissioner if required for administration. Accounting submittals not submitted through the online data submittal portal or questions regarding accounting submittals may be emailed to [dnr\\_Div1Accounting@state.co.us](mailto:dnr_Div1Accounting@state.co.us).

The following naming convention must be used for all files submitted via email:  
"PlanWDID\_YYMMDD"

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

YYMMDD corresponds to the date the accounting is submitted.

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

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

3. All of the raw input data (i.e., meter readings, water pumped from wells, etc.) must be provided and organized in a single location, such as an “Input” worksheet, etc. The accounting must include the following input data listed below, as well as relevant WDIDs and permit numbers.
  - a. Diversion data from flumes or weirs and unit of measurement.
  - b. The required input data for each well is:
    - i. the monthly flow meter reading as shown on the flow meter; date of the meter reading; flow meter multiplier (i.e., 0.001, 10, 1); units of volume (i.e., gallons or acre-feet); the meter serial number; correction factor, if any.
    - ii. The total volume pumped, showing the calculations using the information in Item “i” above.
    - iii. factors from the decree or SWSP that provide for the well consumptive use and depletions (i.e., presumptive depletion factor (PDF), water balance methodology, lagging parameters, etc.).
    - iv. Any well permitted or decreed as an alternate point of diversion (APOD) to a surface water right must report pumping on a daily basis if any of the diversions during the month is claimed as being “in priority”. (See Administration Protocol - APOD Wells for more details.)
  - c. If applicable, data for each recharge structure must be included and comply with the appropriate decree(s) or SWSP Approval requirements and any applicable current statewide Administration Protocol. At a minimum the following should be reported in the accounting:
    - i. 7-digit WDID and name of recharge structure
    - ii. daily volume in AF diverted into the site;
    - iii. monthly volume in AF released from the site;
    - iv. monthly gross evaporative loss in AF;
    - v. volume of water in AF remaining at the end of the month.
  - d. The accounting must identify each source of replacement water actually delivered to the stream and how replacement water at that location offset the depletions. To demonstrate the water was actually delivered to the required location will require the following information:
    - i. the name (water court case, lease, etc.) and WDID of the originating source of the replacement water, date released and volume of water released;
    - ii. transit losses from point of release to point of depletion or use, if any, using stream loss factors approved by the water commissioner;
    - iii. the volume of water actually delivered on a daily basis past any surface water diversion that was sweeping the river as corroborated by the water commissioner. (See Administration Protocol - Delivery of Water for more details on delivering water).

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

- i. the decreed volume of return flow obligation;
    - ii. if not specified in the decree or SWSP, the location and timing of the owed return flow on the stream(s).
4. If required by the decree or SWSP, the accounting must include a monthly projection of the plan’s operation at least through March 31 of the next calendar year, or as specified in the decree or SWSP.
5. The accounting submittal must include output associated with modeling showing monthly delayed depletions (from well pumping or return flow obligations) and/or accretions (from recharge).

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

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

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

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

7. The basis for determining that the depletions are out-of-priority should be data from the Division of Water Resources' Administrative Calls & Analysis Tool (<https://dwr.state.co.us/Tools/AdministrativeCalls/Active>) and should be included in the accounting along with the relative steps in the determination of a structure being in or out of priority. The analysis may be done, unless otherwise limited by decree, for each well or groups of wells, provided the most junior water right associated with the group of wells is used as the reference water right for the group's out-of-priority status.
8. The accounting shall include all the required information for the month of the submittal in addition to the information submitted from previous months such that the information and monthly submittals are a cumulative report each month throughout the 12 month reporting period.
9. If a well is covered in multiple SWSPs or augmentation plans, the monthly meter readings must be the same in the accounting for each plan covering the subject well. The accounting for every plan covering the well shall state the proportionate and total pumping amount covered by each plan to assure all out-of-priority depletions are replaced.
10. The following additional accounting requirements apply when sources of replacement water are used in more than one plan.
  - a. The entity providing replacement water to the stream is responsible for accounting for the total amount of replacement water and how much of the total went to each plan.
  - b. The amount of replacement water claimed for a particular augmentation plan must match the amount in the accounting from the entity providing the replacement water to the stream.
  - c. The amount of replacement water claimed for use by one or more water users shall not exceed the amount of replacement water physically and legally available. (See Administration Protocol - Use Of Unnamed Sources For Replacement for additional requirements concerning required notice and approval of sources of replacement not specifically described in a SWSP or augmentation plan).