

STATE OF COLORADO

Colorado Water Conservation Board Department of Natural Resources

1313 Sherman Street, Room 721
Denver, Colorado 80203
Phone: (303) 866-3441
Fax: (303) 866-4474
www.cwcb.state.co.us



July 13, 2012

Mr. Dick Wolfe
State Engineer
Colorado Division of Water Resources
1313 Sherman St., Rm 818
Denver, CO 80203

Mr. Alan Martellaro
Division Engineer, Water Division 5
Colorado Division of Water Resources
P.O. Box 396
Glenwood Springs, CO 81602

John W. Hickenlooper
Governor

Mike King
DNR Executive Director

Jennifer L. Gimbel
CWCB Director

Re: Temporary Lease of Water Right to CWCB for Instream Flow Use from Colorado Water Trust and Coyote River Ranch, LLC: Yost Ditch, Deep Creek; Water Division 5, Eagle County, Colorado.

Dear Mr. Wolfe and Mr. Martellaro:

The Colorado Water Conservation Board ("CWCB") hereby requests approval of a Temporary Lease of Water Right owned by Coyote River Ranch, LLC ("Ranch") and presented to CWCB by the Colorado Water Trust ("CWT") for instream flow ("ISF") use pursuant to C.R.S. 37-83-105. This request is for a 10-year period beginning on July 31, 2012 and continuing until June 30, 2022. CWCB, the Ranch and CWT acknowledge that the lease only may be implemented starting on the date of approval by the State and Division Engineers.

The subject water right consists of a direct flow water right decreed to the Yost Ditch, Priority 172. The Ranch will lease 2 cfs of the Yost Ditch water right under Priority 172 ("Leased Water") to CWCB for ISF use on Deep Creek, tributary to the Colorado River, up to the decreed ISF rate of 14 cfs (5/1-9/30) and 8 cfs (10/1-4/30), for a period not to exceed 120 days in a calendar year, and for up to 3 years in a 10-year period. See map at Attachment 1.

The CWCB has provided a written notice of this request for approval by electronic mail to all parties listed on the Division 5 substitute water supply plan notification list established pursuant to C.R.S. 37-92-308(6).

I. Summary of Proposal and Statement of Duration

Under a lease agreement among the Ranch, CWCB and CWT, upon approval of this request by the State and Division Engineers, the Ranch will make water available to CWCB for ISF use when conditions permit. See Lease Agreement at Attachment 3. CWCB will use the water for instream flow purposes in Deep Creek between the Yost Ditch headgate downstream to the confluence with

the Colorado River. All use for instream flow purposes will be upstream of the point of historical return flow; therefore, CWCB proposes to use the historical diversion amounts in this reach. Once the water enters the Colorado River, under this proposal, both the consumptive use portion and the return flow portion of the water will be available for use by others. Evidence of proponent's legal right to use the leased water right is provided as follows. The Ranch owns the portion of the Yost Ditch water right to be leased. See deed at Attachment 2. Rule 6(k) of the Rules Concerning CWCB's Instream Flow and Natural Lake Level Program sets forth procedures for accepting temporary loans and leases of water for ISF use, in accordance with C.R.S. 37-83-105. Provided that the State Engineer has made a determination of no injury pursuant to 37-83-105(2)(a)(III), the CWCB Board has delegated authority to the CWCB Director to accept loans and leases and to take any administrative action necessary to put the water to ISF use. Such acceptance and water use is subject to Board ratification at the following Board meeting.

Beginning on the date of approval of this request by the State and Division Engineers, or soon thereafter, the Ranch, in coordination CWCB, will make water under the Yost Ditch water right available to CWCB for ISF use in an amount up to 2 cfs to bring flows on Deep Creek up to the decreed ISF rate of amount of 14 cfs (5/1-9/30) and 8 cfs (10/1-4/30). The period of use by CWCB under the lease agreement will not exceed 120 days in a calendar year, and will occur for up to 3 years in the identified 10-year period. The lease agreement provides that prior to April 1 each year, CWCB, CWT and the Ranch will consult to determine if the lease will be implemented in that year.

II. Historical Use and Reasonable Estimate of Consumptive Use

This request is to use the full diversion amount on Deep Creek only, releasing dominion and control of the water at a point upstream of the historical return flow location. No claim is made here to use the historical consumptive use ("HCU") portion downstream of that return flow location; therefore, a full HCU analysis is not necessary. However, in order to compute return flow obligation, an HCU analysis was performed and is summarized here.

Priority 172 of the Yost Ditch water right was decreed in Case No. CA0466, with an adjudication date of 12-9-1907 and appropriation date of 7-10-1900, for 5.680 cfs out of Deep Creek. In Case No. W-2120, decreed in 1974, 2.282 cfs of Priority 172 was transferred to the Erickson Ditch, leaving 3.398 cfs of Priority 172 in the Yost Ditch. See decrees at Attachment 4. The Yost Ditch diverts water from Deep Creek, approximately ½ mile upstream from the confluence with the Colorado River. Diversions fully deplete Deep Creek; approximately ½ mile down the ditch, the Ranch splits off Priority 172 and pipes it to the east, across the Colorado River. The water is used to irrigate about 27 acres of alfalfa and pasture grass adjacent to the Colorado River. A recent field inspection identified additional diversions from the Yost Ditch on the west side of the river, which are assumed to be part of the remaining water decreed to Priority 172 and not part of the subject lease. Priority 203, which is junior and not part of this lease, is used to irrigate 8-10 acres on the west side of the Colorado River.

Diversions under the Yost Ditch typically begin in May of most years, and continue into September. Occasionally, diversions begin in April and continue into October. In 2002, a total of 938 AF was diverted for both priorities between April and August, which was slightly above the average diversion of 875 AF. Of that amount, 607 acre-feet are attributable to the 2 cfs of Priority 172 owned by the Ranch.

To evaluate the amount of water available for lease, Leonard Rice Engineers, Inc. ("LRE") computed the average diversions and historical consumptive use attributable to the Leased Water

for the period 1978 through 2010. The results of that analysis are summarized in the LRE Letter Report at Attachment 5.

The average of historical diversions for the period of record was 875 acre-feet. Because the Ranch's diversions are fully consumptive to Deep Creek, CWCB's use of the water under the lease agreement will be based upon diversion amounts, as more fully described below.

A portion of the water diverted to irrigate the Coyote River Ranch lands historically accrued to the Colorado River in the form of surface and ground water return flow. Rapid Engineering has completed a delayed depletion analysis to characterize the amount and timing of ground water return flows. The results of this analysis are set forth in the Delayed Depletion Analysis at Attachment 6. Because the irrigated lands are immediately adjacent to the river, it appears that 30% of the total unlagged return flows to the Colorado River accrued from surface water returns the same month as the diversion. The remaining 70% of the total unlagged return flows to the Colorado River accrued through the ground water system.

The Glover analysis indicates that 89.7% of ground water return flows accrued to the stream during the first month of diversion, with 10.3 % returning in the following month. All return flows accrued to the stream within 2 months after diversion at a location immediately downstream from the irrigated acreage.

III. Proposed Use

Water decreed to Priority 172 and diverted at the Yost Ditch headgate was fully depletive to approximately ½ mile of Deep Creek. See Attachment 1. Water historically diverted by the Ranch into the Yost Ditch will be made available to help bring the existing decreed ISF water right on Deep Creek up to its decreed amounts. The ISF water right on Deep Creek was decreed to preserve the natural environment to a reasonable degree. At the time of the original appropriation, biologists documented an above-average population of brook and brown trout in Deep Creek. The ISF water right is described below:

CWCB Case No.	Stream/Lake	Amount (cfs)	Approp. Date	Watershed	Counties
5-80CW312	Deep Creek	14 (5/1-9/30) 8 (10/1-4/30)	5/7/1980	Colorado headwaters	Garfield and Eagle

The amount of water claimed from Priority 172 of the Yost Ditch for ISF use is based upon the historical average monthly diversions, shown in the table below. However, the amount of water used by CWCB under the lease agreement will not exceed the flow rate decreed to the Deep Creek ISF water right. Priority 172 will only be used to supplement the ISF on lower Deep Creek during the historical irrigation season. While there is no gage on Deep Creek, the water commissioner and the Yost Ditch water right owner have indicated that Yost Ditch diversions could cause stream flows to drop below the decreed ISF amounts in dry years. None of the leased water will be used on the Colorado River and CWCB will not claim credit for the historical consumptive use associated with the Leased Water. The Leased Water will be available for use by other downstream water users below the downstream terminus of the Deep Creek ISF at the confluence with the Colorado River.

Amount of Leased Water Claimed for Instream Flow Use in Deep Creek (cfs)

April	May	June	July	August	September	October
0.18	1.01	1.62	1.54	1.3	1.01	0.42

Because the leased water will be beneficially used under an ISF water right and will be available for other beneficial uses downstream of the ISF reach, this lease will not adversely affect Colorado's compact entitlements.

IV. Terms and Conditions to Prevent Injury

To prevent injury to other water users from the exercise of this lease agreement, CWCB, CWT and the Ranch ("Proponents") propose to operate the lease in accordance with the following terms and conditions:

- The amount of water that CWCB will use under the lease is limited to the average monthly historical diversion amount and will not exceed the decreed flow rate of the Deep Creek ISF water right.
- The Ranch will not irrigate with the leased water in a lease implementation year.
- Proponents shall install and maintain any measuring devices or structures required by the State and Division Engineers to administer the lease.
- Proponents shall submit records and accounting as required by the State and Division Engineers to administer the lease.
- Each year of the lease agreement, prior to the commencement of the irrigation season, CWCB shall notify the State and Division Engineers if the Proponents intend to implement the lease in the upcoming season.
- CWCB shall notify the State and Division Engineers when it is using the leased water for the Deep Creek ISF.

V. Conclusion

The CWCB respectfully requests approval of the temporary lease of the Yost Ditch water rights for ISF use on Deep Creek. If operated in the manner presented herein, no injury will occur to other water rights.

Thank you for your assistance in this matter. Please let us know if you have any questions or require additional information.

Sincerely,

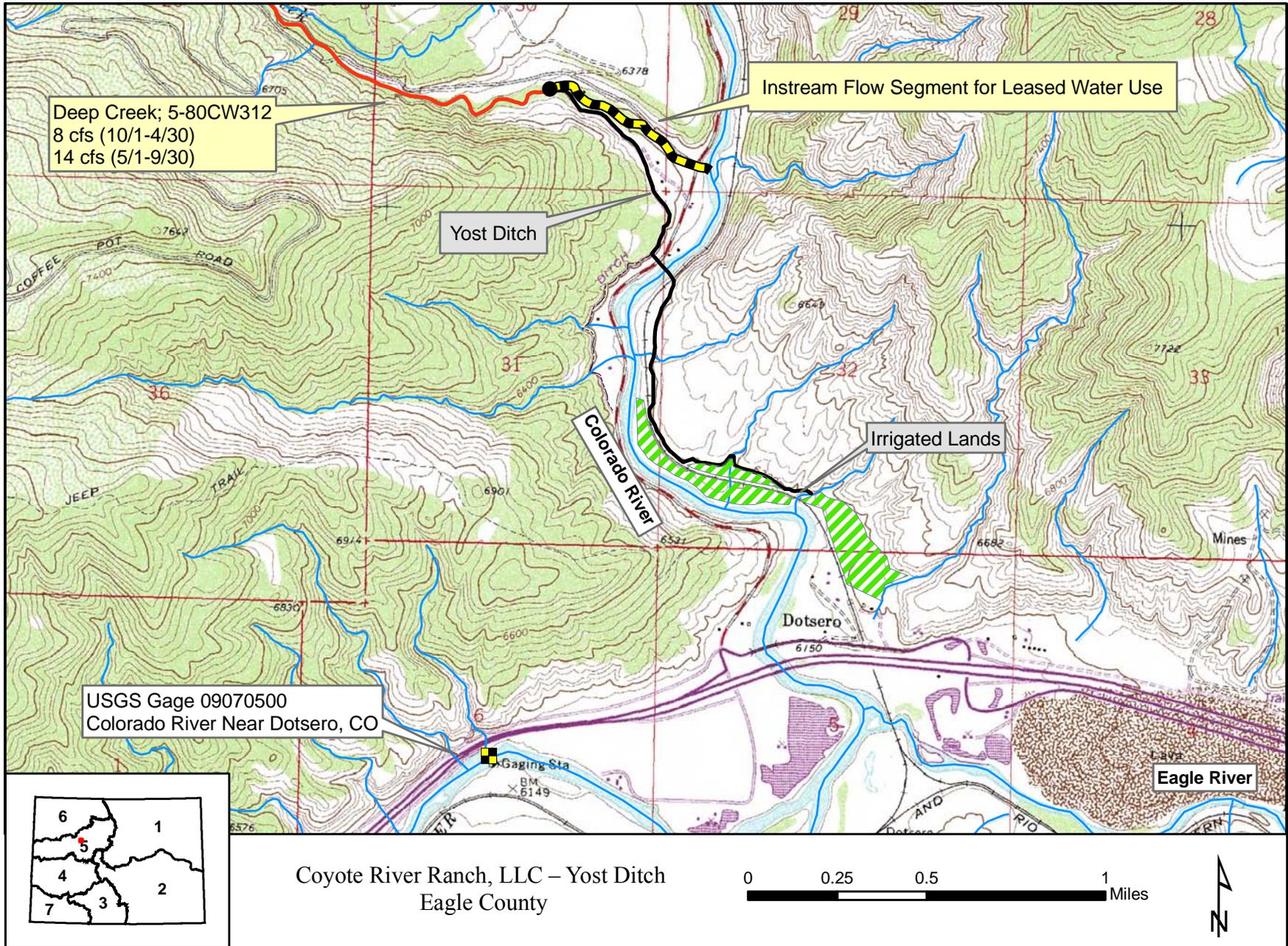
Linda J. Bassi, Chief
Stream and Lake Protection Section

cc: Kaylea White, CWCB; Don West, PE, CWCB; CWT; Coyote River Ranch, LLC

Encl: Attachment 1 – Map; Attachment 2 – Deed; Attachment 3 – Lease Agreement; Attachment 4 – Decrees; Attachment 5 – LRE Letter Report; Attachment 6 – Delayed Depletion Analysis; Attachment 7 – CWT offer to CWCB; Attachment 8 – CWCB Response Letter to CWT and Coyote River Ranch, LLC

ATTACHMENT 1

MAP



ATTACHMENT 2

DEED



EXISTENCE OR NONEXISTENCE OF ANY ENVIRONMENTAL HAZARDS, POLLUTION OR CONDITIONS (INCLUDING BUT NOT LIMITED TO THE PRESENCE OF ASBESTOS OR OTHER HAZARDOUS MATERIALS) OR COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS, RULES OR REGULATIONS; AND (iv) THE COMPLIANCE OF THE LAND OR ITS OPERATION WITH ANY LAWS, ORDINANCES OR REGULATIONS OF ANY GOVERNMENTAL ENTITY OR BODY, INCLUDING WITHOUT LIMITATION, ZONING, ENVIRONMENTAL AND LAND USE LAWS AND REGULATIONS. GRANTEE ACKNOWLEDGES THAT HE HAS INSPECTED THE LAND AND ALL OTHER PROPERTIES AND INTERESTS CONVEYED TO GRANTEE HEREBY OR IN CONNECTION HEREWITH (COLLECTIVELY THE "CONVEYED INTERESTS"), AND GRANTEE HAS RELIED SOLELY ON ITS OWN INVESTIGATION OF THE LAND AND NOT ON ANY INFORMATION PROVIDED BY OR ON BEHALF OF GRANTOR. GRANTEE FURTHER ACKNOWLEDGES THAT THE INFORMATION PROVIDED WITH RESPECT TO THE LAND WAS OBTAINED FROM A VARIETY OF SOURCES AND GRANTOR (1) HAS NOT MADE ANY INDEPENDENT INVESTIGATION OR VERIFICATION OF SUCH INFORMATION; AND (2) DOES NOT MAKE ANY REPRESENTATIONS AS TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION. THIS CONVEYANCE IS MADE ON AN "AS IS", "WHERE IS" AND "WITH ALL FAULTS" BASIS, AND GRANTEE EXPRESSLY ACKNOWLEDGES THAT GRANTOR HAS NOT MADE, AND IS NOT HEREBY MAKING, ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, OR ARISING BY OPERATION OF LAW, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF CONDITION, ELIGIBILITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ANY OF THE CONVEYED INTERESTS, OR ANY PORTION THEREOF, ALL SUCH REPRESENTATIONS AND WARRANTIES, AS WELL AS ANY IMPLIED WARRANTIES BEING HEREBY EXPRESSLY DISCLAIMED.

GRANTEE AGREES THAT GRANTOR SHALL NOT BE RESPONSIBLE OR LIABLE TO GRANTEE FOR ANY CONSTRUCTION DEFECT, ERROR OR OMISSION, OR ON ACCOUNT OF ANY OTHER CONDITIONS AFFECTING ANY OF THE CONVEYED INTERESTS, INASMUCH AS GRANTEE IS PURCHASING THE LAND AS IS, WHERE IS, AND WITH ALL FAULTS. GRANTEE, AND ANYONE CLAIMING BY THROUGH OR UNDER GRANTEE, HEREBY FULLY RELEASES GRANTOR AND ITS EMPLOYEES, OFFICERS, DIRECTORS, REPRESENTATIVES, ATTORNEYS AND AGENTS FROM ANY AND ALL CLAIMS THAT GRANTEE MAY NOW HAVE OR HEREAFTER ACQUIRE AGAINST GRANTOR AND ITS EMPLOYEES, OFFICERS, DIRECTORS, REPRESENTATIVES, ATTORNEYS AND AGENTS FOR ANY COST, LOSS, LIABILITY, DAMAGE, EXPENSE, DEMAND, ACTION OR CAUSE OF ACTION ARISING FROM OR RELATED TO ANY CONSTRUCTION DEFECTS, ERRORS, OMISSIONS, OR OTHER CONDITIONS AFFECTING THE CONVEYED INTERESTS.

GRANTEE FURTHER ACKNOWLEDGES AND AGREES THAT THIS RELEASE SHALL BE GIVEN FULL FORCE AND EFFECT, ACCORDING TO EACH OF ITS EXPRESSED TERMS AND PROVISIONS, INCLUDING, BUT NOT LIMITED TO, THOSE RELATING TO UNKNOWN AND UNSUSPECTED CLAIMS, DAMAGES OR CAUSES OF



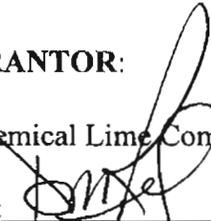
ACTION. THIS COVENANT RELEASING GRANTOR SHALL BE A COVENANT RUNNING WITH THE LAND AND SHALL BE BINDING UPON GRANTEE AND ITS HEIRS, PERSONAL REPRESENTATIVES, SUCCESSORS AND ASSIGNS. GRANTOR HEREBY ASSIGNS WITHOUT RECOURSE OR REPRESENTATION (EXPRESS OR IMPLIED) OF ANY NATURE TO GRANTEE ANY AND ALL CLAIMS THAT GRANTOR MAY HAVE FOR ANY SUCH DEFECTS, ERRORS, OMISSIONS OR CONDITIONS. AS A MATERIAL COVENANT AND CONDITION OF THIS CONVEYANCE, GRANTEE AGREES THAT IN THE EVENT OF ANY SUCH CONSTRUCTION DEFECTS, ERRORS, OMISSIONS OR CONDITIONS, GRANTEE SHALL LOOK SOLELY TO GRANTOR'S PREDECESSORS IN INTEREST OR TO SUCH CONTRACTORS AND CONSULTANTS AS MAY HAVE CONTRACTED FOR WORK IN CONNECTION WITH THE LAND FOR ANY REDRESS OR RELIEF. IN CONSIDERATION OF SUCH ASSIGNMENT BY GRANTOR OF ITS CLAIMS, GRANTEE HEREBY RELEASES GRANTOR FROM ALL RIGHTS, EXPRESS OR IMPLIED, GRANTEE MAY HAVE AGAINST GRANTOR ARISING OUT OF OR RESULTING FROM ANY DEFECTS, ERRORS OR OMISSIONS IN THE LAND. GRANTEE FURTHER UNDERSTANDS THAT SOME OF GRANTOR'S PREDECESSORS IN INTEREST MAY BE OR BECOME INSOLVENT, BANKRUPT, JUDGEMENT PROOF OR OTHERWISE INCAPABLE OF RESPONDING IN DAMAGES, AND MAY HAVE NO REMEDY AGAINST SUCH PREDECESSORS, CONTRACTORS OR CONSULTANTS; PROVIDED, HOWEVER, THE FOREGOING DISCLAIMERS OF WARRANTY AND CONDITION SHALL NOT BE CONSTRUED TO DISCLAIM ANY WARRANTY OF TITLE OTHERWISE EXPRESSED IN THIS DEED.

The Grantor shall and will WARRANT AND FOREVER DEFEND the above-bargained premises in the quiet and peaceable possession of the Grantee, its successors and assigns, against all and every person or persons lawfully claiming the whole or any part thereof through or under Grantor, but not otherwise.

IN WITNESS WHEREOF, Grantor has executed this deed on the day and year first above written.

GRANTOR:

Chemical Lime Company of Arizona

By: 

Authorized Representative

PRESIDENT AND CHIEF EXECUTIVE OFFICER





STATE OF TEXAS

§
§
§

COUNTY OF TARRANT

The foregoing instrument was acknowledged before me on this 8th day of December, 2004, by David M. Kelly as the authorized agent of Chemical Lime Company of Arizona, on behalf of the company.

President and Chief Executive Officer

Kathleen M. Reade
Notary Public In and For the State of Texas



SCHEDULE A

Order Number: 04036162-C2

LEGAL DESCRIPTION

PARCEL ONE:

That Portion of Tract 49 in Section 31 and Section 32
 In Township 4 South and in Section 5 in Township 5 South,
 Range 86 West of the 6th Principal Meridian,
 According to the Independent resurvey approved by the U.S. Surveyor
 General's Office June 20, 1922 and accepted November 20, 1923, and Originally
 described as Lot 10 of Section 31,
 Lot 2 of Section 32 and
 All that part of Lot 5 of Section 32, Township 4 South, Range 86
 West of the 6th Principal Meridian, being more particularly described as
 follows:

Commencing at a found U.S.G.L.O. Brass Cap in place for the
 Section Corner common to Sections 31 and 32 of said Township 4 South, Range 86
 West and Sections 5 and 6 of said Township 5 South, Range 86 West;
 thence along the South line of Section 32 N 89°57'55" E 923.01 feet to a
 found G.L.O. Brass Cap in place for a closing corner at the intersection of the
 West boundary of said Tract 49 and said South line of said Section 32;
 thence continuing along the South line of said Section 32 East, 2350.50
 feet (the basis of bearings) to a found G.L.O. Brass Cap in place for a closing
 corner at the intersection of the East boundary of said Tract 49 and the South
 line of said Section 32, The True Point of Beginning;
 thence along the Easterly boundary of said tract 49 N 27°41'52" W
 663.22 feet to a found G.L.O. Brass cap in place for Corner No. 9 of said Tract
 49;
 thence continuing along said Easterly boundary N 73°45'00" W 754.29
 feet to a rebar and plastic cap LS#22580 in place for Corner No. 10 of said
 Tract 49;
 thence continuing along said Easterly boundary North, 813.20 feet to a
 found G.L.O. Brass Cap in place for Corner No. 1 Tract 49 and Corner No. 4
 Tract 51;
 thence along the North boundary of said Tract 49 N 89°57'12" W 1316.93
 feet to a found G.L.O. Brass Cap in place for Corner No. 6 Tract 48, Corner No.
 3 Tract 51 and the North line of said Tract 49;
 thence continuing along said North boundary S 89°45'31" W 1243.67 feet
 to a found G.L.O. Brass Cap in place for a Meander Corner and Corner No. 2 of
 said Tract 49;
 thence along the North boundary of said Tract 49 S 89°45'31" W 23.42 feet to
 a point on the Easterly Mean High Water Line as determined December 16, 1992 by
 Field Survey;
 thence along said easterly Mean High Water Line the following 19 Courses:
 1) S 04°22'54" W 164.23 feet;
 2) S 28°26'13" E 163.44 feet;
 3) S 48°04'48" E 101.99 feet;
 4) S 60°38'21" E 315.85 feet;
 5) S 71°06'26" E 406.72 feet;
 6) S 45°10'08" E 193.62 feet;
 7) S 50°10'02" E 154.80 feet;



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~~8) S 70°39'24" E 207.26 feet, whence a rebar and cap set for a~~
meander corner and Corner No. 3 of said Tract 49 bears N 00°01'30" W 26.32 feet;
9) S 80°30'50" E 180.54 feet;
10) S 86°58'56" E 304.96 feet;
11) N 82°59'18" E 197.10 feet;
12) N 85°53'16" E 191.15 feet;
13) N 80°46'05" E 249.58 feet;
14) S 50°29'36" E 201.76 feet;
15) S 39°41'23" E 195.59 feet;
16) S 15°28'23" E 58.82 feet;
17) S 19°53'54" W 377.54 feet;
18) S 08°34'08" W 127.87 feet;
19) S 27°37'21" W 253.15 feet to a point at the Centerline of the
Southeasterly End of an Old Abandoned Iron Bridge;
thence along a line directly towards a point 35 feet North of the
Original 1/4 Corner Common, to Section 32 of said Township 4 South, Range 86
West and Section 5 of said Township 5 South, Range 86 West (said Original 1/4
Corner also being the Angle Point on the North line of Tract 40, according to
the Supplemental Plats and field notes of said Independent Resurvey of Township
4 South and Township 5 South, the position of which being mathematically
determined)
S 66°42'48" E 1499.12 feet to a point on the Easterly line of said Tract
49;
thence along said Easterly line N 06°57'00" E 494.33 feet to a found
G.L.O. Brass Cap in place for Corner No. 8 of said Tract 49;
thence along said Easterly line N 27°10'53" W 509.22 feet To The True
Point Of Beginning.

EXCEPTED from the above described Parcel

- 1) A strip of land for the Denver and Rio Grand Western Railroad Company said strip of land being a portion of the Denver and Salt Lake Railroad Parcel described in Book 116 at Page 147;
- 2) A parcel of land described in Deed recorded May 1, 1951 in Book 133 at Page 445 and in Document No. 108199 of the records of the Eagle County Clerk and Recorders Office.
- 3) A parcel of land sometimes known as Cotton Lane or Wagon Road conveyed to Eagle County through Quitclaim Deed recorded in Book 58 at Page 30 of the records of Eagle County, Colorado, and through a Right of Way Deed recorded in ~~Book 106 at Page 5 of the records of Eagle County, Colorado~~

~~PARCEL TWO:~~

Tract 50 situated in Section 31, Township 4 South, Range 86
West of the 6th P.M.

Tract 48 situated in Sections 31 and 32, Township 4 South,
Range 86 West of the 6th P.M.

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Continuation of Schedule A - Legal Description

Order Number: 04036162-C2

EXCEPTING the following, to-wit:

(a) A tract of land consisting of 0.47 acres as particularly described in Warranty Deed from Clarence Stephens and Alama H. Stephens to Raymond V. Boyles and Mary E. Boyles dated November 2, 1970 and recorded in the office of the Clerk and Recorder of Eagle County in Book 219 at Page 34 thereof;

(b) A tract of land containing 24.79 acres as particularly described in Warranty Deed from Clarence Stephens and Alma H. Stephens to Ronald P. Piel and Lorraine J. Piel dated May 21, 1970 and recorded in the office of the Clerk and Recorder of Eagle County in Book 217 at Page 754 thereof;

(c) A tract of land 50 feet in width as particularly described in deed from George S. Yost to The Auto Transportation and Toll Road Company dated August 4, 1913 and recorded in Book 69 at Page 544 of the Eagle County records;

(d) A tract of land 120 feet in width as particularly described in Warranty Deed from George S. Yost to The Denver and Salt Lake Western Railroad Company, dated November 1, 1932 and recorded in Book 116 at Page 148 of the Eagle County records.

AND EXCEPTING ALL LAND CONVEYED IN THE QUITCLAIM DEED RECORDED OCTOBER 27, 1995 IN BOOK 679 AT PAGE 411 AS RECEPTION NO. 575421.
AND FURTHER EXCEPTING ALL LAND CONVEYED IN THE WARRANTY DEED RECORDED JUNE 30, 1997 IN BOOK 730 AT PAGE 743 AS RECEPTION NO. 628703.

COUNTY OF EAGLE
STATE OF COLORADO



Teak J Simonton Eagle, CO

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SCHEDULE B

Section 2

Order Number: 04036162-C2

EXCEPTIONS

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

1. Rights or claims of parties in possession, not shown by the public records.
2. Easements, or claims of easements, not shown by the public records.
3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, and any facts which a correct survey and inspection of the premises would disclose and which are not shown by the public records.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof, but prior to the date the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this commitment.
6. Unpatented mining claims; reservations or exceptions in patents, or an act authorizing the issuance thereof; water rights, claims or title to water.
7. Any and all unpaid taxes and assessments and any unredeemed tax sales.
8. The effect of inclusions in any general or specific water conservancy, fire protection, soil conservation or other district or inclusion in any water service or street improvement area.

NOTE: THE ABOVE EXCEPTIONS APPLY BOTH PARCEL ONE AND TWO, THE FOLLOWING EXCEPTIONS APPLY TO PARCEL ONE ONLY, UNTIL OTHERWISE INDICATED:

9. Reservations and exceptions in Patents, or Acts authorizing the issuance thereof, including the reservation of the right of proprietor of a vein or lode to extract and remove his ore therefrom should the same be found to penetrate or intersect the premises as reserved in United States Patent recorded January 28, 1902 in Book 48 at Page 257.
10. Right of way for the uninterrupted flow of the Colorado River and all ditches, creeks and pipelines crossing over subject property.
11. Right of way easement granted to Holy Cross Electric Association Inc., as contained in the instrument recorded June 17, 1976 in Book 247 at Page 26 as Reception No. 143259.
12. Easement across subject property as reserved by Kenneth W. Schultz and Marion E. Schultz in the Deed to C.F. & I. Steel Corporation recorded March 29, 1979 in Book 283 at Page 490 as Reception No. 179896.
13. Order of Inclusion of Lands into the Western Eagle County Metropolitan Recreation District, recorded January 16, 1991 in Book 545 at Page 782 as Reception No. 441926.

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Teak J Simonton Eagle, CO

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14. Boundary Agreement and Amendment of Legal Description by and between Rocky Mountain Lime Company and Chemical Lime Company, and Bonnie L. Colbenson and Kirby Colbenson, recorded July 17, 1995 in Book 671 at Page 390 as Reception No. 567408.
15. The exceptions contained in the Judgment and Decree, Case No. 92CV 285, District Court Eagle County recorded January 11, 2001 as Reception No. 747941.
16. As to the Colorado River:
 - (a) All right, title or claim or any character by the United States, state, local government or by the public generally in and to any portion of the land lying within the current or former bed, or below the ordinary high water mark, or between the cut banks of a stream navigable in fact or in law.
 - (b) Right of riparian water rights owners to the use and flow of the water.
 - (c) The consequence of any past or future change in the location of the bed.
17. Lack of access to all land lying east of the Colorado River and the Denver & Rio Grande Western Railroad.
18. Any and all existing leases and tenancies.

THE FOLLOWING EXCEPTIONS APPLY TO PARCEL TWO ONLY:

19. Reservations or exceptions in Patents, or in Acts authorizing the issuance thereof, including the reservation of a right of way for ditches or canals constructed by the authority of the United States, as reserved in United States Patent recorded July 3, 1940 in Book 124 at Page 580.
20. Right of way for the uninterrupted flow of the Colorado River and all ditches, creeks and pipelines crossing over subject property.
21. Right of way easement granted to Holy Cross Electric Association, Inc. by Carol J. Day, recorded February 11, 1988 in Book 478 at Page 738 as Reception No. 374949.
22. Right of way easement granted to Holy Cross Electric Association, Inc., by Debra Jo Boggess, Carol J. Day, Michal E. Day, Patrick A. Day, and Cynthia Jane Day, recorded March 28, 1990 in Book 525 at Pages 559, 560 and 561, Reception Nos. 421723 through 421725.
23. Right of way for Eagle County Road crossing over subject property.
24. Easement granted to Russel G. Ammon and Angela Ammon, recorded June 30, 1997 in Book 730 at Page 744 as Reception No. 626704.
25. Any questions, dispute or adverse claims as to any loss or gain of land as a

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Continuation of Schedule B - Section 2
Order Number: 04036162-C2

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result of any change in the river bed location by other than natural causes, or alternation through accretion, reliction, erosion or avulsion of the center thread, bank channel or flow of waters in the Colorado River lying within subject land and any questions as to the location of such center thread, bed, bank, or channel as a legal description monument or marker for purposes of describing or locating subject lands.

26. Lack of a right of access to all that property lying easterly of the Colorado River and easterly of the Denver and Rio Grande Western Railroad.

27. As to the Colorado River:

- (a) All right, title or claim or any character by the United States, state, local government or by the public generally in and to any portion of the land lying within the current or former bed, or below the ordinary high water mark, or between the cut banks of a stream navigable in fact or in law.
- (b) Right of riparian water rights owners to the use and flow of the water.
- (c) The consequence of any past or future change in the location of the bed.

NOTE: EXCEPTIONS 1 AND 4 ABOVE WILL BE DELETED ON THE FINAL OWNERS POLICY, PROVIDED BOTH SELLER(S) AND PURCHASER(S) EXECUTE THE HEREIN REQUIRED AFFIDAVITS AND SAID AFFIDAVITS ARE APPROVED BY THE COMPANY. EXCEPTIONS 2 AND 3 WILL BE DELETED ON THE FINAL OWNERS POLICY, UPON RECEIVING AND APPROVING THE HEREIN REQUIRED SURVEY. EXCEPTION 5 WILL NOT APPEAR ON THE OWNERS POLICY, AND GAP PROTECTION WILL BE GRANTED PROVIDED THAT STEWART TITLE OF EAGLE COUNTY PERFORMS CLOSING, DISBURSEMENTS AND RECORDING OF DOCUMENTS.

SEE "DISCLOSURES" INCLUDED HERewith.

ATTACHMENT 3
LEASE AGREEMENT

TEMPORARY WATER LEASE AGREEMENT:
CWT REQUEST FOR WATER 2012

This water lease agreement ("Lease") is entered into by and between the COLORADO WATER CONSERVATION BOARD ("CWCB"), an agency of the State of Colorado; the COLORADO WATER TRUST ("CWT"), a Colorado nonprofit corporation; and COYOTE RIVER RANCH, LLC, a Colorado limited liability company ("Lessor"), collectively, the Parties.

RECITALS

- A. Section 37-92-102(3), C.R.S. (2011) authorizes CWCB to acquire by lease or other contractual agreement such water, water rights, or interests in water as CWCB determines may preserve and improve the natural environment to a reasonable degree.
- B. CWT is a Colorado nonprofit dedicated to protecting and restoring streamflows in Colorado through voluntary, market-based efforts. CWT works within CWCB's acquisition program to accomplish this mission. This Lease supports that mission.
- C. Section 37-83-105(2) authorizes water rights owners to lease or loan water to CWCB for instream flow use pursuant to a decreed instream flow water right held by CWCB and administrative approval, subject to certain conditions and procedures ("Short Term Lease Program").
- D. Under the Short Term Lease Program, a lease may have a term for up to ten years, but may only be used for instream flows for three of those ten years. For each year the water right is used in the Short Term Lease Program, it may only be used for instream flows up to 120 days in that calendar year.
- E. Colorado snowpack totals for the spring of 2012 are similar to those of the drought year of 2002. That year, many CWCB decreed instream flows were not satisfied and the lack of water negatively impacted the state's aquatic ecosystems. This year, CWT and CWCB anticipate many decreed instream flows will not be met again. However, CWT and CWCB will use the Short Term Lease Program - not available in 2002 - to supply water to those decreed, but not met, instream flows to protect Colorado's aquatic ecosystems.
- F. CWT issued a statewide "Request for Water" to solicit water rights to lease into the Short Term Lease Program on April 23, 2012. This Lease is a result of that effort.

- G. Lessor owns a water right in the Yost Ditch on Deep Creek, tributary to the Colorado River ("Water Right"). Lessor wishes to lease the Water Right to CWCB for instream flow use in Deep Creek, pursuant to the procedures and subject to the conditions set forth herein, in Section 37-83-105(2), and in CWCB Rule 6(k) of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program.
- H. CWCB holds an instream flow water right on Deep Creek ("Instream Flow"), decreed in Case No. 5-80CW312 for 14 cfs (May 1 to September 30) and 8 cfs (October 1 to April 30), in the reach of Deep Creek extending from its headwaters to the Colorado River.
- I. Subject to the terms of this Lease, Lessor will lease to CWCB the Water Right for instream flow purposes. CWCB will use the Water Right to maintain the Instream Flow for a period not to exceed one hundred twenty days in one calendar year.
- J. Subject to the terms of this Lease, CWT will pay Lessor for the use of the Water Right in the Short Term Lease Program.
- K. The Water Right to be leased is not currently decreed for instream flow use. The use of the Water Right by CWCB for instream flow purposes will require State and Division Engineer approval and final ratification by CWCB Board of Directors, pursuant to section 37-83-105(2).
- L. The amount of water to be used by CWCB under this Lease will not exceed the amount of water decreed to the Instream Flow.

NOW THEREFORE, in consideration of the mutual agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, CWCB, CWT, and Lessor agree as follows:

LEASE OF WATER RIGHT

- 1. Term.
 - a. The term of this Lease shall be from July 1, 2012, until June 30, 2022 ("Ten-Year Term"), pursuant to section 37-83-105(2).
 - b. The Lease is only implemented this year, from July 1, 2012, until June 30, 2013 ("Implementation Term").
 - c. The Parties agreed in good faith to consult on or before April 1 of each year during the Ten-Year Term to determine if the Lease shall be implemented.

- d. Implementation after the first year of the Ten-Year Term shall only require the completion and execution of the Water Lease Agreement Implementation attached hereto as Appendix A.

2. Purchase Price and Payment Procedure.

- a. For and in consideration of the payment of the sum of Three Thousand Three Hundred and Twenty One Dollars (\$3,321) ("Purchase Price") for the current year of implementation paid to Lessor by CWT and the keeping and performance of the covenants and agreements contained herein, Lessor shall lease to CWCB the Water Rights, more particularly described below:

2.0 cfs of Priority No. 172 in the Yost Ditch, decreed by the District Court in and for Eagle County on December 9, 1907, in Civil Action 466, with an appropriation date of July 7, 1900.

- b. Payment by CWT to Lessor shall occur only upon the approval by the State and Division Engineers and acceptance by CWCB Director of the use of the Water Right in the Short Term Lease Program and the Lease, pursuant to sections 37-83-105(2)(a)(IV) and 37-83-105(2)(b)(VII).
- c. Payment by CWT shall not occur if the Division Engineer or State Engineer denies or CWCB Director does not accept the proposed use of the Water Right in the Short Term Lease Program and the Lease, and payment shall only occur in the years of implementation.
- d. For the current year of implementation, CWT shall pay the Lessor half the Purchase Price one (1) week after this Lease is approved by the State and Division Engineers and accepted by CWCB Director. CWT shall pay the remaining half by September 30, 2012.

3. Operations, Accounting and Monitoring.

- a. CWCB shall notify the State and Division Engineers when the Water Right is being used for instream flow pursuant to this approval for administrative purposes.
- b. The Parties agree to coordinate record keeping and accounting as reasonably required by the State and Division Engineers to administer the water right use for ISF purposes.
- c. The Parties agree to coordinate to install and maintain any

measuring devices or structures reasonably required by the State and Division Engineers to administer the water right use for ISF purposes.

4. CWCB Acceptance of Lease. CWCB's acceptance of the Lease of the Water Right is contingent upon the State and Division Engineers' determination that CWCB's use of the Water Right in the Short Term Lease Program will not injure existing water rights of others and will not affect Colorado's compact entitlements. Approval may include terms and conditions to ensure the non-injury standard is met pursuant to section 37-83-105(2)(b)(VI).
5. Cessation of Historic Use. Lessor agrees and acknowledges that Lessor may not irrigate with the Water Right within a year that the Water Right is used for instream flow. However, in any other year that the Water Right is not used for instream flow during the Ten-Year Term of this Lease, the Lessor may irrigate with the Water Right.
6. Protections of Lessor's Water Rights. The Lessor's Water Right is protected from diminishment of historical consumptive use and abandonment under this Lease by sections 37-83-105(2)(c) and 37-92-103(2)(b)(V).
7. Use of Water Leased. CWCB will use the Water Right to maintain its Instream Flow water right decreed to preserve the natural environment to a reasonable degree. Downstream of the Instream Flow, the Water will be available for other water users and other beneficial uses.
8. Inspections.
 - a. Lessor grants CWCB or CWT staff and any of their representatives access to inspect all facilities related to the water right (e.g. source, headgate, other diversion structures, ditch system, irrigated acreage) upon request at reasonable times, for the purpose of evaluating the stream and habitat characteristics in the reach of stream that would benefit from the Lease.
 - b. Lessor grants CWCB or CWT staff and any of their representatives access to any of the Lessor's land subject to the Lease upon request at reasonable times to ensure compliance with the terms of the Lease.

STATE AND DIVISION ENGINEER APPROVAL OF LEASE

9. Statement to State Engineer. Prior to accepting the Lease, CWCB shall compile a statement requesting approval of and explaining the Lease in sufficient detail for the State Engineer to determine that such Lease does not injure existing decreed water rights. Lessor and CWT shall use best efforts to assist CWCB in compiling said statement and in obtaining State and Division Engineer approval of the Lease as described below.
10. Request for Approval. CWCB shall file the request for approval of the Lease with the State and Division Engineers pursuant to section 37-83-105, which request shall include the following information:
 - a. Evidence of proponent's legal right to use the Water Right;
 - b. A statement of the duration of the Lease;
 - c. A description of the original points of diversion, the return flow pattern, the stream reach, and the time, place, and types of use of the Water Right;
 - d. A description of the stream reach, and the time, place, and types of use of the Water Right; and
 - e. A reasonable estimate of the historic consumptive use of the Water Right.
11. Notice to Substitute Water Supply Plan. CWCB shall provide written notice of the request for approval of the Lease by first-class mail or electronic mail to all parties on the substitute water supply plan notification list established pursuant to section 37-92-308 (6) for the water division in which the proposed Lease is located, and shall file proof of such notice with the Division Engineer.
12. Compliance. The Parties shall use their best efforts to comply with all the requirements of section 37-83-105(2), to obtain approval of the Lease, and to address any comments submitted by any party concerning potential injury to that party's water rights, either as part of the initial approval process or after a year in which the Lease has been exercised.
13. Denial and/or Termination.
 - a. If the request for approval is denied in whole or in part, or if the approval is conditioned in such manner as to prevent this Lease

from being completely fulfilled, then this Lease may be terminated within 30 days of written notice by any party to this Lease.

- b. Separately, CWT and Lessor are negotiating an option contract for the outright purchase of the Water Right for permanent use in the Instream Flow Program. If CWT chooses to exercise that option, this Lease shall terminate automatically.
- c. Lease shall terminate at the end of the Ten-Year Term.

14. Miscellaneous Provisions.

- a. CWCB shall take such action as is necessary or desirable to protect the use of the Water Right for instream flow purposes, including requesting the Division Engineer to administer the Water Right. CWT and Lessor shall work with CWCB to provide information concerning implementation and monitoring of this Lease.
- b. The Parties will implement this Lease in accordance with any terms and conditions imposed by the State and Division Engineers.
- c. This Lease shall not be assignable by any party without the prior written consent of the others.
- d. This Lease shall be a covenant that runs with the Water Right and shall be binding upon the parties hereto, their successors, and assigns. CWCB shall record this Lease with the Clerk and Recorder of Eagle County, Colorado, with a conformed copy provided by CWCB to the Lessor and CWT.
- e. Any notices required or permitted hereunder shall be sent to the addresses or email addresses set forth below, as may be changed from time to time by proper notice.

If to CWT:

Colorado Water Trust
1430 Larimer Street, Suite 300
Denver, CO 80202
Attn: Amy Beatie, abeatie@coloradowatertrust.org
Attn: Zach Smith, zsmith@coloradowatertrust.org

If to CWCB:

Colorado Water Conservation Board
Stream and Lake Protection Section
1313 Sherman Street, Room 721
Denver, CO 80203
Attn: Kaylea White, kaylea.white@state.co.us

If to Lessor:

Coyote River Ranch, LLC
PO Box 88
Wolcott, CO 81655
Attn: Karl Berger, kberger@vail.net

15. Limited Representations By Lessor.

- a. Lessor represents and warrants that it has full power and authority to execute this Lease, lease the Water Right, and perform its obligations hereunder.
- b. Lessor represents and warrants that the Water Right has been used in compliance with decreed terms during the period from ~~2000~~ to 2011.

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16. Enforcement of this Lease.

- a. Pursuant to section 37-92-102(3), the terms of this Lease shall be enforceable by each party as a water matter in a court of competent jurisdiction; provided, however, that before commencing any action for enforcement of this Lease, the party alleging violation shall notify the other parties in writing of the alleged violation and the parties shall make a good faith effort to resolve their differences through informal consultation.
- b. Specific performance of this Lease shall be the exclusive remedy for the failure of either party to comply with any provision of this Lease.

17. Effective Date. The effective date of this Lease shall be the date it is executed by all parties.

IN WITNESS HEREOF, CWCB, CWT, and Lessor have executed this Lease.

COYOTE RIVER RANCH, LLC (Lessor) COLORADO WATER CONSERVATION BOARD

By: [Signature]
NAME: Michelle Beaton
TITLE: Manager

By: _____
Jennifer Gimbel
Director

DATE: 6/12/12

DATE: _____

COLORADO WATER TRUST

By: [Signature]
~~Michael Browning~~ Amy W. Beatie
~~President~~ Executive Director

~~By: _____
Leo Eisel
Secretary~~

DATE: 6/25/2012

ATTACHMENT 4
DECREES

State of Colorado)
County of Eagle) X ss

In the District Court.

In the Matter of the Application of the
Glenwood Light and Water Company, a Corpora-
tion, for the Adjudication of its priority of } Rig
Right to the use of water for Domestic and }
other beneficial purposes from Grizzley Creek }
in Water District No., 53, Garfield County }
Colorado; }

No. ~~888~~ 466
D E C R E E

AND
and in the matter of the Adjudication of Pri-
orities of Water Rights in Water District
No. 53, in the State of Colorado, for benefi-
cial Purposes other than Irrigation. }

Now on the 9th day of December A.D. 1907, this matter coming on for
final hearing before the Court, pursuant to the order of this Court, made
and entered herein, dated the 8th day of July, A.D. 1907, upon the petiti-
on and amended or supplemental petition of the Glenwood Light and Water
Company, a corporation, praying the court to proceed to an adjudication
of the priorities of rights to the use of water for beneficial purposes
other than irrigation between the several ditches, canals and reservoirs
in Water District No. 53, in the State of Colorado, And,

at the same time
This matter coming on to be heard upon the protest filed by the Town
of Glenwood Springs, Colorado, against the Petition, as well as the state-
ment and claim of said Town of Glenwood Springs, for an adjudication
establishing a right in its favor to the waters of No Name and Grizzley
Creeks, and also upon the protest against the petition of Kamm and others
as citizens and tax payers of said Town of Glenwood Springs, Colorado, and
said The Glenwood Light and Water Company appearing by its counsel C. F.
Darrow and Wm. O'Brian, the said Town of Glenwood Springs, appearing by
its counsel Charles W. Taylor, and the said Kamm and other citizens ap-
pearing by their counsel J.A. Ewing, And,

it appearing to the Court, and the Court doth so find, that the clerk
of this Court has given notice of the time appointed for this hearing by
publishing a notice in one public newspaper in each County into which
such Water District No. 53, extends, to-wit: in the Eagle County Blade,
published in the Town of Red Cliff, County of Eagle; The Grand County
Advocate, published in the Town of Granby, County of Grand; in the Senti-
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In regard to the Ditch Owned by George S. Yost, whose Post Office address is Gypsum, Eagle County, Colorado, which said ditch is known as the Yost Ditch, the Court finds:

That work was commenced on said First Enlargement of said Ditch on the 10th day of April, 1906, from which time the appropriation of water therethrough should date; That said ditch is used for irrigation purposes; That the headgate of said ditch is situated on the South bank of Deep Creek, from which stream said ditch derives and diverts its supply of water at a point about one fourth of a mile Westerly from Grand River and about one mile east of the range line between ranges 86 and 87 W. 6th P.M. that from the headgate said ditch runs in a general Southerly direction, that the length of said ditch is two miles, that its width is three feet, that its depth is two feet, that its grade is two tenths of one inch per one hundred feet, that the carrying capacity of said ditch is 0.80 cubic feet of water per second of time, that the number of acres of land lying under and capable of being irrigated by water from said Enlargement is Forty.

The Court doth therefore order, adjudge and decree, that the owner of said ditch Enlargement, by virtue of said First Enlargement is entitled to a priority in the use of 0.80 cubic feet of water per second of time, from said natural stream; that said ditch is numbered as ditch number 154, that the appropriation therethrough shall be numbered as appropriation number 203, in said Water District No. 53.

In regard to the ditch owned by Nelson Yost, whose Post Office address is Gypsum, Eagle County, Colorado, which said ditch is known as the Yost Ditch, the Court finds:

That work was commenced on said ditch, on the 10th day of July, 1900, from which time the appropriation of water therethrough should date; that said ditch is used for irrigation purposes: that the headgate of said ditch is situated on the South bank of Deep Creek, from which stream said ditch derives and diverts its supply of water at a point about 1/4 mile Westerly from the mouth of said Creek into Grand River and about one mile east of the range line between Ranges 86 & 87, from the headgate said ditch runs in a general Southerly direction, that the length of said ditch is 2 miles, that its width is three feet, its depth is two feet, that the grade of said ditch is 2/10 of one inch to 100 feet, that the carrying capacity of said ditch is 8 cubic feet of water per second of time, that the number of acres of land lying under and capable of being irrigated by water from said ditch is One Hundred.

The Court doth therefore order, adjudge and decree, that the owner of said ditch, by virtue of Original Construction is entitled to a priority in the use of 2.00 cubic feet of water per second of time; from said natural stream; that said ditch shall be numbered as ditch number 154, that the appropriation therethrough shall be numbered as appropriation number 172, in said Water District No. 53.

In regard to the ditch owned by George S. Yost, whose Post Office address is Gypsum, Eagle County, Colorado, which said ditch is known as the Yost Ditch, the Court finds;

That work was commenced on said ditch, on the 10th day of July, 1900, from which time the appropriation of water therethrough should date; That said ditch is used for irrigation purposes; that the headgate of said ditch is situated on the South bank of Deep Creek, from which stream said ditch derives and diverts its supply of water at a point about 1/4 mile westerly from Grand River and about 1 mile east of the Range line between Ranges 86 & 87 West. That from the headgate of said ditch it runs in a general Southerly direction, that the length of said ditch is 2 miles, that the width of said ditch is three feet, that its depth is two feet, that the grade of said ditch is 2/10 of one inch per 100 feet, that the carrying capacity of said ditch is 8 cubic feet of water per second of time, that the number of acres of land lying under and capable of being irrigated by water from said ditch is forty.

The Court Doth therefore order, adjudge and decree, that the owner of said ditch, by virtue of Original Construction is Entitled to a priority in the use of 0.80 cubic feet of water per second of time, from said natural stream; that said ditch shall be numbered as ditch number 154, that the appropriation therethrough shall be numbered as appropriation number 172, in said Water District No. 53.

In regard to the Ditch owned by H. J. Van Horn, whose Post Office address is Gypsum, Eagle County, Colorado, which said ditch is known as the Yost Ditch, the Court finds:

That work was commenced on said ditch, on the 10th day of July, 1900, that said ditch is used for irrigation purposes; that the headgate of said ditch is situated on the South bank of Deep Creek, from which stream said ditch derives and diverts its supply of water at a point about 1320 feet from Grand River and about one mile East of the Range line between Ranges 86 & 87 West, that from the headgate said ditch runs in a general Southerly direction, that the length of said ditch is two miles, that its width is three feet, that its depth is two feet, that the grade of said ditch is $\frac{2}{10}$ of one foot per mile, that the carrying capacity of said ditch is 8 cubic feet of water per second of time, that the number, of acres of land lying under and capable of being irrigated by water from said ditch is One Hundred and one.

The Court doth therefore order adjudge and decree, that the owner of said ditch, by virtue of Original Construction entitled to a priority in the use of 2.02 cubic feet of water per second of time, from said natural stream; that said ditch shall be numbered as ditch number 154, that the appropriation therethrough shall be numbered as appropriation number 172, in said Water District No. 53.

In regard to the Ditch owned by Claude C. Carr, whose Post Office address is Gypsum, Eagle County, Colorado, which said ditch is known as the Yost Ditch, the Court finds:

That work was commenced on said Ditch, on the 10th day of July, 1900, from which time the appropriation of water therethrough should date; that said ditch is used for irrigation purposes; that the headgate of said ditch is situated on the South bank of Deep Creek, from which stream said ditch derives and diverts its supply of water at a point, about 1/4 mile west from Grand River and about one mile east from the range line between ranges 86 & 87 West, that from the headgate said ditch runs in a general Southerly direction, that the length of said ditch is two miles, that the width of said ditch is three feet, that its depth is two feet, that the grade of said ditch is 2/10 of one inch to the 100 feet, that the carrying capacity of said ditch is 8 cubic feet of water per second of time, that the number of acres of land lying under and capable of being irrigated by water from said ditch is Forty three.

The Court doth therefore order, adjudge and decree, that the owner of said ditch, by virtue of Original Construction is entitled to a priority in the use of 0.86 cubic feet of water per second of time, from said natural stream; that said ditch shall be numbered as ditch number 154, that the appropriation therethrough shall be numbered as appropriation number 172, in said Water District No. 53.

IN THE DISTRICT COURT IN AND FOR

WATER DIVISION NO. 5

STATE OF COLORADO

Case No. W-2120

IN THE MATTER OF THE APPLICATION)	
FOR CHANGE OF WATER RIGHTS OF THE)	FINDINGS OF FACT, CONCLUSIONS
R. A. NIELSEN CONSTRUCTION COMPANY,) OF LAW AND DECREE APPROVING	
a Colorado corporation, and)	CHANGE OF WATER RIGHTS
MAXWELL R. BARZ and DAPHNA E. BARZ)	

THIS MATTER, having come on for hearing upon the application of the R. A. Nielsen Construction Company, a Colorado corporation, and Maxwell R. Barz and Daphna E. Barz, for approval of a change of water right which was filed on November 27, 1973, and the Court having considered the pleadings, the files herein and the evidence presented, FINDS:

1. That this matter was re-referred to the Water Judge on February 27, 1974; that timely and adequate notice of this proceeding has been given in the manner required by law; and that the Water Judge sitting in this Court has jurisdiction over the subject matter of this proceeding and over all parties affected hereby, whether they have appeared or not. The City and County of Denver, acting by and through its Board of Water Commissioners, has timely filed a Statement of Opposition in this proceeding, and the time for the filing of additional Statements of Opposition has expired.

2. Applicants own the following water right:

The Yost Ditch, district priority no. 172, being stream priority no. 154 for 2.88 c.f.s., appropriation date July 10, 1900, adjudicated by decree of the District Court in and for Eagle County, entered December 9, 1907. The decreed headgate location is the South bank of Deep Creek at a point about 1320 feet from Grand (Colorado) River, and about one mile East of the Range line between Ranges 86 and 87 West. This corresponds with the actual present location in the SE 1/4 SE 1/4 of Section 30, Township 4 South, Range 86 West of the 6th P.M.

Applicant R. A. Nielsen Construction Company owns 1.982 c.f.s. of the 2.88 c.f.s. originally decreed to A. J. Van Horn and Calude C. Carr under priority no. 172 for the Yost Ditch.

Applicants Maxwell R. Barz and Daphna E. Barz own 0.3 c.f.s. of the 2.88 c.f.s. originally decreed to A. J. Van Horn and Calude C. Carr under priority no. 172 for the Yost Ditch.

3. The headgate of the Erickson Ditch, to which applicants propose to transfer the points of diversion of the Yost Ditch, decreed as being "located on the South bank of said [Eagle] River, at a point about one mile above the mouth of Eagle River," which location is not correct; the actual location being on the North bank of the Eagle River, at a point from which corner 4 of tract 55, Section 4, Township 5 South, Range 86 West of the 6th P.M. (according to the Independent Survey of said Township and Range approved by the Surveyor General in Denver, Colorado, June 20, 1922), bears S84°10'40" E 394.04 feet distant. There are no water rights below the Erickson Ditch on the Eagle River. Because the proposed transfer might place an additional burden on the Eagle River, exercise of the Yost Ditch priority could adversely affect rights upstream on said River. However, if applicants waive their right to place a call on any other rights on the Eagle River in order to supply the Yost Ditch water right, no injurious effect will be caused to the rights of other water users on said River by applicant's proposed change of point of diversion.
4. Because the proposed uses will be on the same land and will return as much or more water at the same places as historically, no injury will occur to other water rights as a result of applicants' change of use.

CONCLUSIONS OF LAW

The court finds as a matter of law:

1. The change of water right proposed by applicant is one contemplated by law and if administered in accordance with this decree, there will be no adverse effect on any vested water rights on the Eagle River.

2. The State Engineer may be lawfully required to administer the priority in the manner set forth herein.

DECREE

IT IS, THEREFORE, ORDERED, ADJUDGED AND DECREED:

1. The change of water right contemplated by applicants herein is hereby approved subject to the following condition: That applicants may not place a call upon any other rights on the Eagle River in order to supply the water transferred herein.
2. It is hereby specifically ordered, adjudged, and decreed that the point of diversion for the Yost Ditch water right be transferred to the headgate of the Erickson Ditch, the location of which is on the North bank of the Eagle River, at a point from which corner 4, Tract 55, Section 4, Township 5 South, Range 86 West of the 6th P.M. (according to the Independent Survey of said Township and Range approved by the Surveyor General in Denver, Colorado June 20, 1922) bears South 84°10'40" East 294.04 feet distant.
3. Further, it is hereby ordered, adjudged and decreed that the Yost Ditch water right may hereafter be used for irrigation, fish and wildlife propagation and commercial and industrial uses specifically including gravel washings and processing operations.

Done in Chambers at Glenwood Springs, Colorado June 26, 1974

BY THE COURT:

John J. Arnold
Water Judge

Approved as to form and content:

CITY AND COUNTY OF DENVER
acting by and through its
BOARD OF WATER COMMISSIONERS

By *Kenneth L. Broadhurst*
Attorney for Objector
144 West Colfax
Denver, Colorado 80202
Telephone: 222-5511

ATTACHMENT 5
LRE LETTER REPORT

July 2, 2012

Amy Beatie
Executive Director
Colorado Water Trust
1430 Larimer Street, Suite 300
Denver, CO 80202

RE: Short Term Loan of Water Rights to the Colorado Water Conservation Board for Instream Flow Use Pursuant to C.R.S. §37-83-105(2)

Dear Ms. Beatie,

The Colorado Water Trust (CWT) is proposing a Short Term Loan of Water Rights (STL) to allow for the water rights decreed to Priority 172 under the Yost Ditch to be used by the Colorado Water Conservation Board (CWCB) to help meet the Instream Flow (ISF) water right for Deep Creek, decreed in Case No 80CW0312. This report is intended to provide a summary of the information required under C.R.S. §37-83-105(2), including a reasonable estimate of historic consumptive use of the loaned water right.

The following is a description of the Yost Ditch water demands, water supply, projected stream depletions, and irrigation return flows during the 2012 STL period.

1.0 Introduction

The Yost Ditch provides irrigation water supply to approximately 27 acres in north central Colorado. The service area is generally located in Section 30, Township 4 South, Range 86 West of the 6th P.M., Eagle County, Colorado. The Yost Ditch diverts water from Deep Creek near the confluence with the Colorado River to irrigated pasture grass along the Colorado River. **Figure 1** shows the general location of Yost Ditch and the Deep Creek ISF. The Yost Ditch diversions are 100 percent depletive to Deep Creek and the lower portion of the Deep Creek ISF Reach. The portion of diversions consumed by irrigation is depletive to the Colorado River, as return flows accrue to the Colorado River downstream of the confluence with Deep Creek.

Historical water diversions average 875 ac-ft, including diversions under free river conditions; recent 20-year July through October diversions average 225 ac-ft. Use of the Yost Ditch water rights under this STL will be limited to physically and legally available supply. Water entitled to be diverted will be left in the river to meet shortages through the lower portion of the Deep Creek ISF Reach. The consumptive use portion of the available water will be left in the Colorado River for downstream uses.

2.0 Water Rights

The Yost Ditch has two water rights. The first direct flow irrigation water right was decreed for 5.680 cfs in Case No CA0466 for irrigation. The decree was entered on December 9, 1907 awarding an appropriation date of July 10, 1900. The second direct flow irrigation water right (Priority 203) was decreed for 0.8 cfs in Case No CA0466 for irrigation. The decree awarded an appropriation date of April 10, 1906. In Case No. CA2120, 2.282 cfs of priority 172 was transferred to the Erikson Ditch, leaving 3.398 decreed at the Yost Ditch. Coyote River Ranch owns 2 cfs of the remaining increment of water. This water has been used to irrigate pasture grass on 27 acres on the east side of the Colorado River, downstream from the Deep Creek confluence. The STL use only includes the 2 cfs of Priority 172 water owned by Coyote River Ranch.



Figure 1 Yost Ditch and Deep Creek ISF General Location Map.

3.0 Historical Use of Water Right

3.1 Historical Irrigation

Historical use of Yost Ditch water rights was evaluated over the period 1978 through 2010. The attached map prepared by the CWCB based on information provided by the owner and information provided to the water court in case no. 07CW0016 shows the currently irrigated acreage. A portion of Priority 172 was transferred to Water District 37 in 1974 (Case W2120), and it appears that the diversions began reflecting the transfer in 1978. Measurements continue through the current year. The estimated irrigated acreage developed for the Colorado Decision Support System (CDSS) using GIS mapping, ranges from 39.53 acres in 1993 to 21.74 acres in 2005. Water Commissioner comments and interviews with the water right owner indicate the actual irrigated acreage under Yost Ditch is closer to 35 acres, as reported in 2007. Twenty-seven acres is irrigated by Coyote River Ranch under Priority 172. Water diverted by the Yost Ditch is carried approximately ½ mile in the ditch to point where 2 cfs of Priority 172 is split off and carried by pipe to irrigate land on the east side of the Colorado River downstream from the confluence of Deep Creek.

3.2 Water Budget Model

Analyses were performed to determine the historical consumptive use and depletions to Deep Creek resulting from irrigation through the Yost Ditch. A water budget of Yost Ditch was constructed wherein the crop irrigation water requirement was compared with available water supply to determine the historic consumptive use. For each month of the analysis, water available to the crop but not used directly by the crop was allowed to fill a soil moisture reservoir. In subsequent months of the analysis, crop irrigation water requirements not met by direct flow water were then met from the soil moisture reservoir to the extent stored soil moisture was available. Therefore, the historical river depletion on a monthly basis was calculated to be the sum of that month's (1) diversion used to meet crop demands and (2) diversion stored in the soil moisture reservoir.

If the total available water supply to the crop (diversion less conveyance and application losses) exceeded the crop irrigation water requirement, the crop irrigation consumptive use was fully satisfied for that month. If the total available water supply to the crop was less than the crop irrigation water requirement, then the crop irrigation consumptive use was equal to the total available water supply to the crop.

If the total available water supply exceeded the crop irrigation water requirement, the difference (i.e., total available water supply minus crop irrigation water requirement) was allocated to refill any remaining capacity of the soil moisture reservoir. Any additional water was allocated to return flows. The land irrigated by the Yost Ditch is directly adjacent to the Colorado River, and all returns flows accrue to the Colorado River. Therefore, all Yost Ditch diversions are 100 percent depletive to Deep Creek.

3.3 Modeling Parameters

Water budget parameters are listed below for reference.

- Study Period: 1978 through 2010
- Modeling Software: StateCU
- Yost Ditch Maximum Daily Diversion under Adjudicated Water Right: 2.0 cfs
- Yost Ditch Diversions: Historical recorded diversions for irrigation, adjusted to limit to adjudicated water right of 2.0 cfs
- Yost Ditch Conveyance Efficiency/Ditch Loss: 90 percent/10 percent
- Maximum Farm Headgate Delivery: Adjusted historical diversions reduced to account for ditch loss
- Estimated Demand Based Farm Headgate Delivery: Maximum farm headgate delivery limited to the amount required to meet farm demands (based on crop irrigation requirement and maximum irrigation efficiency)
- Potential Consumptive Use Method: Modified Blaney-Criddle with Elevation Adjustment
- Crop Coefficients: TR-21
- Available Water Content: 0.090 inches of water per inch of soil
- Effective Precipitation Calculation: Soil Conservation Service methodology
- Irrigation Practices: Flood irrigated
- Cropping: A total of 27.0 acres of pasture grass were irrigated from 1978 through 2010
- Maximum Irrigation Water Application Efficiency: Flood irrigation was estimated to have a maximum irrigation efficiency 60 percent
- Return Flows from Farm Headgate Delivery: 100 percent of the return flows were estimated to the Colorado River mainstem downstream of the confluence with Deep Creek
- Timing of Lagged Deep Percolation Return Flows: Estimated to return during the month of diversion based on the location of the irrigated land adjacent to the Colorado River

3.4 Historical Depletions

The average monthly results of the analysis of the historical use of the Yost Ditch water right are summarized in **Table 1** and presented in detail in **Table 3** through **Table 12**.

Table 1: Average Monthly Summary of Historical Depletion Analysis – Yost Ditch (ac-ft)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Historical Diversions	0.0	0.0	0.0	10.6	62.3	96.1	94.6	79.7	60.1	25.7	0.0	0.0	429.2
Ditch Loss	0.0	0.0	0.0	1.1	6.2	9.6	9.5	8.0	6.0	2.6	0.0	0.0	42.9
Farm Headgate Deliveries	0.0	0.0	0.0	9.6	56.1	86.5	85.1	71.8	54.0	23.1	0.0	0.0	386.3
Potential CU	0.0	0.0	0.2	4.0	8.6	12.6	16.2	14.0	8.7	3.8	0.1	0.0	68.3
Effective Precipitation	0.0	0.0	0.0	0.7	1.2	0.8	0.9	0.9	1.2	0.8	0.0	0.0	6.6
Irrigation Water Requirement	0.0	0.0	0.2	3.3	7.4	11.8	15.3	13.0	7.5	3.0	0.0	0.0	61.7
River Headgate to CU	0.0	0.0	0.0	0.4	5.0	10.3	13.7	9.6	3.8	0.7	0.0	0.0	43.5
River Headgate to Soil	0.0	0.0	0.0	0.5	3.5	0.9	0.0	0.0	0.0	0.2	0.0	0.0	5.2
Unlagged Return Flows	0.0	0.0	0.0	9.7	53.9	84.9	80.8	70.2	56.2	24.8	0.0	0.0	380.5
River Depletions	0.0	0.0	0.0	0.9	8.4	11.2	13.7	9.6	3.8	0.9	0.0	0.0	48.6

Average Historical Depletion Analysis – Yost Ditch (cfs)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Historical Diversions	0.00	0.00	0.00	0.18	1.01	1.62	1.54	1.30	1.01	0.42	0.00	0.00	7.07
Ditch Loss	0.00	0.00	0.00	0.02	0.10	0.16	0.15	0.13	0.10	0.04	0.00	0.00	0.71
Farm Headgate Deliveries	0.00	0.00	0.00	0.16	0.91	1.45	1.38	1.17	0.91	0.38	0.00	0.00	6.36
Potential CU	0.00	0.00	0.00	0.07	0.14	0.21	0.26	0.23	0.15	0.06	0.00	0.00	1.12
Effective Precipitation	0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.00	0.00	0.11
Irrigation Water Requirement	0.00	0.00	0.00	0.06	0.12	0.20	0.25	0.21	0.13	0.05	0.00	0.00	1.02
River Headgate to CU	0.00	0.00	0.00	0.01	0.08	0.17	0.22	0.16	0.06	0.01	0.00	0.00	0.71
River Headgate to Soil	0.00	0.00	0.00	0.01	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Unlagged Return Flows	0.00	0.00	0.00	0.16	0.88	1.43	1.31	1.14	0.95	0.40	0.00	0.00	6.27
River Depletions	0.00	0.00	0.00	0.02	0.14	0.19	0.22	0.16	0.06	0.02	0.00	0.00	0.80

Return Flows: A portion of the water diverted at the Yost Ditch to irrigate the Coyote River Ranch lands historically accrued to the Colorado River in the form of surface and ground water return flows. **Table 2** summarizes the average monthly historical surface and ground water return flows that accrued to the Colorado River. It is expected that 30% of the total unlagged return flows to the Colorado River will be from surface water returns the same month as the diversion. The remaining 70% of the total unlagged return flows to the Colorado River will be through the ground water system.

Rapid Engineering has completed a Glover analysis to characterize the amount and timing of ground water return flows. The irrigated lands are adjacent to the river, and the Glover analysis indicates 89.7% of ground water return flows would be expected to accrue to the stream during the first month of diversion, with 10.3 % returning in the following month. All return flows are expected to accrue to the stream within 2 months after diversion at a location immediately downstream from the irrigated acreage. The results of this analysis are included in **Table 2** and presented in detail in the attached memorandum from Rapid Engineering.

Due to the extremely small amount of water associated with the lagged return flows to the Colorado River mainstem, this STL does not contemplate providing replacement water to the stream system beyond the irrigation season.

Table 2: Average Monthly Summary of Historical Surface and Ground Water Return Flows – Yost Ditch (ac-ft)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Unlagged Return Flows	0.0	0.0	0.0	9.7	53.9	84.9	80.8	70.2	56.2	24.8	0.0	0.0	380.5
Surface Water Return Flows	0.0	0.0	0.0	2.9	16.2	25.5	24.3	21.0	16.9	7.4	0.0	0.0	114.2
Ground Water Return Flows	0.0	0.0	0.0	6.1	34.5	57.2	56.9	49.9	40.4	19.6	1.8	0.0	266.4
Total Lagged Return Flows	0.0	0.0	0.0	9.0	50.7	82.7	81.1	70.9	57.3	27.0	1.8	0.0	380.5

Average Historical Surface and Ground Water Return Flows – Yost Ditch (cfs)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Unlagged Return Flows	0.00	0.00	0.00	0.16	0.88	1.43	1.31	1.14	0.95	0.40	0.00	0.00	6.27
Surface Water Return Flows	0.00	0.00	0.00	0.05	0.26	0.43	0.39	0.34	0.28	0.12	0.00	0.00	1.88
Ground Water Return Flows	0.00	0.00	0.00	0.10	0.56	0.96	0.93	0.81	0.68	0.32	0.03	0.00	4.39
Total Lagged Return Flows	0.00	0.00	0.00	0.15	0.82	1.39	1.32	1.15	0.96	0.44	0.03	0.00	6.27

Table 3: Historical River Headgate Diversions Under Yost Water Rights limited to senior 2 cfs (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	0.0	59.5	119.0	123.0	123.0	119.0	123.0	0.0	0.0	666.5
1979	0.0	0.0	0.0	0.0	87.3	119.0	123.0	123.0	95.2	0.0	0.0	0.0	547.5
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	123.0	0.0	0.0	127.0
1981	0.0	0.0	0.0	0.0	87.3	119.0	123.0	123.0	95.2	0.0	0.0	0.0	547.5
1982	0.0	0.0	0.0	0.0	59.5	119.0	123.0	123.0	119.0	0.0	0.0	0.0	543.5
1983	0.0	0.0	0.0	0.0	27.8	119.0	123.0	123.0	119.0	7.9	0.0	0.0	519.7
1984	0.0	0.0	0.0	0.0	0.0	91.2	123.0	123.0	119.0	91.2	0.0	0.0	547.5
1985	0.0	0.0	0.0	0.0	4.0	119.0	123.0	123.0	119.0	63.5	0.0	0.0	551.4
1986	0.0	0.0	0.0	111.1	123.0	119.0	123.0	123.0	119.0	23.8	0.0	0.0	741.8
1987	0.0	0.0	0.0	0.0	0.0	87.3	123.0	123.0	119.0	0.0	0.0	0.0	452.2
1988	0.0	0.0	0.0	0.0	123.0	119.0	123.0	123.0	119.0	95.2	0.0	0.0	702.2
1989	0.0	0.0	0.0	19.8	123.0	119.0	123.0	123.0	119.0	111.1	0.0	0.0	737.9
1990	0.0	0.0	0.0	0.0	91.2	119.0	123.0	123.0	119.0	47.6	0.0	0.0	622.8
1991	0.0	0.0	0.0	0.0	71.4	119.0	123.0	123.0	119.0	51.6	0.0	0.0	607.0
1992	0.0	0.0	0.0	0.0	79.3	118.8	119.3	107.9	89.3	87.9	0.0	0.0	602.5
1993	0.0	0.0	0.0	0.0	64.0	73.8	103.1	80.3	0.0	0.0	0.0	0.0	321.1
1994	0.0	0.0	0.0	0.0	91.2	119.0	123.0	123.0	119.0	15.9	0.0	0.0	591.1
1995	0.0	0.0	0.0	0.0	0.0	52.5	17.5	64.2	35.0	0.0	0.0	0.0	169.1
1996	0.0	0.0	0.0	0.0	0.0	111.1	108.7	95.5	49.1	0.0	0.0	0.0	364.4
1997	0.0	0.0	0.0	43.8	103.5	119.0	51.6	0.0	0.0	0.0	0.0	0.0	318.0
1998	0.0	0.0	0.0	57.3	109.3	119.0	75.4	0.0	0.0	0.0	0.0	0.0	361.0
1999	0.0	0.0	0.0	0.0	30.7	70.8	51.9	0.0	0.0	0.0	0.0	0.0	153.4
2000	0.0	0.0	0.0	0.0	38.1	47.6	41.3	0.0	0.0	0.0	0.0	0.0	126.9
2001	0.0	0.0	0.0	0.0	68.5	70.8	73.2	21.2	0.0	0.0	0.0	0.0	233.7
2002	0.0	0.0	0.0	119.0	123.0	119.0	123.0	123.0	0.0	0.0	0.0	0.0	607.0
2003	0.0	0.0	0.0	0.0	63.3	67.8	70.1	70.1	22.6	0.0	0.0	0.0	294.0
2004	0.0	0.0	0.0	0.0	90.8	82.1	73.2	73.2	70.8	7.1	0.0	0.0	397.1
2005	0.0	0.0	0.0	0.0	51.6	119.0	123.0	90.4	37.9	0.0	0.0	0.0	421.9
2006	0.0	0.0	0.0	0.0	80.3	104.7	99.2	73.2	0.0	0.0	0.0	0.0	357.4
2007	0.0	0.0	0.0	0.0	39.2	42.3	43.7	0.0	0.0	0.0	0.0	0.0	125.1
2008	0.0	0.0	0.0	0.0	43.8	77.4	60.9	23.2	0.0	0.0	0.0	0.0	205.3
2009	0.0	0.0	0.0	0.0	61.4	82.8	74.3	73.2	54.6	0.0	0.0	0.0	346.1
2010	0.0	0.0	0.0	0.0	61.2	87.5	90.4	14.6	0.0	0.0	0.0	0.0	253.7
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	125.1
Max	0.0	0.0	0.0	119.0	123.0	119.0	123.0	123.0	119.0	123.0	0.0	0.0	741.8
Avg	0.0	0.0	0.0	10.6	62.3	96.1	94.6	79.7	60.1	25.7	0.0	0.0	429.2

Table 4: Historical Ditch Loss – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	0.0	6.0	11.9	12.3	12.3	11.9	12.3	0.0	0.0	66.6
1979	0.0	0.0	0.0	0.0	8.7	11.9	12.3	12.3	9.5	0.0	0.0	0.0	54.7
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	12.3	0.0	0.0	12.7
1981	0.0	0.0	0.0	0.0	8.7	11.9	12.3	12.3	9.5	0.0	0.0	0.0	54.7
1982	0.0	0.0	0.0	0.0	6.0	11.9	12.3	12.3	11.9	0.0	0.0	0.0	54.3
1983	0.0	0.0	0.0	0.0	2.8	11.9	12.3	12.3	11.9	0.8	0.0	0.0	52.0
1984	0.0	0.0	0.0	0.0	0.0	9.1	12.3	12.3	11.9	9.1	0.0	0.0	54.7
1985	0.0	0.0	0.0	0.0	0.4	11.9	12.3	12.3	11.9	6.3	0.0	0.0	55.1
1986	0.0	0.0	0.0	11.1	12.3	11.9	12.3	12.3	11.9	2.4	0.0	0.0	74.2
1987	0.0	0.0	0.0	0.0	0.0	8.7	12.3	12.3	11.9	0.0	0.0	0.0	45.2
1988	0.0	0.0	0.0	0.0	12.3	11.9	12.3	12.3	11.9	9.5	0.0	0.0	70.2
1989	0.0	0.0	0.0	2.0	12.3	11.9	12.3	12.3	11.9	11.1	0.0	0.0	73.8
1990	0.0	0.0	0.0	0.0	9.1	11.9	12.3	12.3	11.9	4.8	0.0	0.0	62.3
1991	0.0	0.0	0.0	0.0	7.1	11.9	12.3	12.3	11.9	5.2	0.0	0.0	60.7
1992	0.0	0.0	0.0	0.0	7.9	11.9	11.9	10.8	8.9	8.8	0.0	0.0	60.2
1993	0.0	0.0	0.0	0.0	6.4	7.4	10.3	8.0	0.0	0.0	0.0	0.0	32.1
1994	0.0	0.0	0.0	0.0	9.1	11.9	12.3	12.3	11.9	1.6	0.0	0.0	59.1
1995	0.0	0.0	0.0	0.0	0.0	5.2	1.7	6.4	3.5	0.0	0.0	0.0	16.9
1996	0.0	0.0	0.0	0.0	0.0	11.1	10.9	9.5	4.9	0.0	0.0	0.0	36.4
1997	0.0	0.0	0.0	4.4	10.4	11.9	5.2	0.0	0.0	0.0	0.0	0.0	31.8
1998	0.0	0.0	0.0	5.7	10.9	11.9	7.5	0.0	0.0	0.0	0.0	0.0	36.1
1999	0.0	0.0	0.0	0.0	3.1	7.1	5.2	0.0	0.0	0.0	0.0	0.0	15.3
2000	0.0	0.0	0.0	0.0	3.8	4.8	4.1	0.0	0.0	0.0	0.0	0.0	12.7
2001	0.0	0.0	0.0	0.0	6.8	7.1	7.3	2.1	0.0	0.0	0.0	0.0	23.4
2002	0.0	0.0	0.0	11.9	12.3	11.9	12.3	12.3	0.0	0.0	0.0	0.0	60.7
2003	0.0	0.0	0.0	0.0	6.3	6.8	7.0	7.0	2.3	0.0	0.0	0.0	29.4
2004	0.0	0.0	0.0	0.0	9.1	8.2	7.3	7.3	7.1	0.7	0.0	0.0	39.7
2005	0.0	0.0	0.0	0.0	5.2	11.9	12.3	9.0	3.8	0.0	0.0	0.0	42.2
2006	0.0	0.0	0.0	0.0	8.0	10.5	9.9	7.3	0.0	0.0	0.0	0.0	35.7
2007	0.0	0.0	0.0	0.0	3.9	4.2	4.4	0.0	0.0	0.0	0.0	0.0	12.5
2008	0.0	0.0	0.0	0.0	4.4	7.7	6.1	2.3	0.0	0.0	0.0	0.0	20.5
2009	0.0	0.0	0.0	0.0	6.1	8.3	7.4	7.3	5.5	0.0	0.0	0.0	34.6
2010	0.0	0.0	0.0	0.0	6.1	8.7	9.0	1.5	0.0	0.0	0.0	0.0	25.4
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5
Max	0.0	0.0	0.0	11.9	12.3	11.9	12.3	12.3	11.9	12.3	0.0	0.0	74.2
Avg	0.0	0.0	0.0	1.1	6.2	9.6	9.5	8.0	6.0	2.6	0.0	0.0	42.9

Table 5: Historical Farm Headgate Delivery – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	0.0	53.6	107.1	110.7	110.7	107.1	110.7	0.0	0.0	599.8
1979	0.0	0.0	0.0	0.0	78.5	107.1	110.7	110.7	85.7	0.0	0.0	0.0	492.7
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	110.7	0.0	0.0	114.3
1981	0.0	0.0	0.0	0.0	78.5	107.1	110.7	110.7	85.7	0.0	0.0	0.0	492.7
1982	0.0	0.0	0.0	0.0	53.6	107.1	110.7	110.7	107.1	0.0	0.0	0.0	489.1
1983	0.0	0.0	0.0	0.0	25.0	107.1	110.7	110.7	107.1	7.1	0.0	0.0	467.7
1984	0.0	0.0	0.0	0.0	0.0	82.1	110.7	110.7	107.1	82.1	0.0	0.0	492.7
1985	0.0	0.0	0.0	0.0	3.6	107.1	110.7	110.7	107.1	57.1	0.0	0.0	496.3
1986	0.0	0.0	0.0	100.0	110.7	107.1	110.7	110.7	107.1	21.4	0.0	0.0	667.7
1987	0.0	0.0	0.0	0.0	0.0	78.5	110.7	110.7	107.1	0.0	0.0	0.0	407.0
1988	0.0	0.0	0.0	0.0	110.7	107.1	110.7	110.7	107.1	85.7	0.0	0.0	632.0
1989	0.0	0.0	0.0	17.9	110.7	107.1	110.7	110.7	107.1	100.0	0.0	0.0	664.1
1990	0.0	0.0	0.0	0.0	82.1	107.1	110.7	110.7	107.1	42.8	0.0	0.0	560.5
1991	0.0	0.0	0.0	0.0	64.3	107.1	110.7	110.7	107.1	46.4	0.0	0.0	546.3
1992	0.0	0.0	0.0	0.0	71.4	106.9	107.4	97.1	80.3	79.1	0.0	0.0	542.2
1993	0.0	0.0	0.0	0.0	57.6	66.4	92.8	72.3	0.0	0.0	0.0	0.0	289.0
1994	0.0	0.0	0.0	0.0	82.1	107.1	110.7	110.7	107.1	14.3	0.0	0.0	532.0
1995	0.0	0.0	0.0	0.0	0.0	47.2	15.7	57.7	31.5	0.0	0.0	0.0	152.2
1996	0.0	0.0	0.0	0.0	0.0	100.0	97.8	85.9	44.2	0.0	0.0	0.0	327.9
1997	0.0	0.0	0.0	39.5	93.2	107.1	46.4	0.0	0.0	0.0	0.0	0.0	286.2
1998	0.0	0.0	0.0	51.6	98.4	107.1	67.8	0.0	0.0	0.0	0.0	0.0	324.9
1999	0.0	0.0	0.0	0.0	27.6	63.7	46.7	0.0	0.0	0.0	0.0	0.0	138.1
2000	0.0	0.0	0.0	0.0	34.3	42.8	37.1	0.0	0.0	0.0	0.0	0.0	114.2
2001	0.0	0.0	0.0	0.0	61.6	63.7	65.9	19.1	0.0	0.0	0.0	0.0	210.3
2002	0.0	0.0	0.0	107.1	110.7	107.1	110.7	110.7	0.0	0.0	0.0	0.0	546.3
2003	0.0	0.0	0.0	0.0	57.0	61.1	63.1	63.1	20.3	0.0	0.0	0.0	264.6
2004	0.0	0.0	0.0	0.0	81.7	73.9	65.9	65.9	63.7	6.4	0.0	0.0	357.4
2005	0.0	0.0	0.0	0.0	46.4	107.1	110.7	81.4	34.1	0.0	0.0	0.0	379.7
2006	0.0	0.0	0.0	0.0	72.3	94.3	89.3	65.9	0.0	0.0	0.0	0.0	321.6
2007	0.0	0.0	0.0	0.0	35.2	38.0	39.3	0.0	0.0	0.0	0.0	0.0	112.6
2008	0.0	0.0	0.0	0.0	39.5	69.6	54.8	20.9	0.0	0.0	0.0	0.0	184.8
2009	0.0	0.0	0.0	0.0	55.2	74.5	66.8	65.9	49.1	0.0	0.0	0.0	311.5
2010	0.0	0.0	0.0	0.0	55.1	78.7	81.4	13.1	0.0	0.0	0.0	0.0	228.3
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	112.6
Max	0.0	0.0	0.0	107.1	110.7	107.1	110.7	110.7	107.1	110.7	0.0	0.0	667.7
Avg	0.0	0.0	0.0	9.6	56.1	86.5	85.1	71.8	54.0	23.1	0.0	0.0	386.3

Table 6: Historical Potential Consumptive Use – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	3.8	7.5	12.7	15.2	12.3	8.6	5.2	0.4	0.0	65.7
1979	0.0	0.0	0.0	4.1	8.2	12.1	16.2	13.4	9.6	4.2	0.0	0.0	67.8
1980	0.0	0.0	0.0	3.2	7.7	13.1	16.1	12.8	8.7	3.0	0.0	0.0	64.6
1981	0.0	0.0	0.0	5.5	8.5	13.3	16.4	14.2	9.7	3.7	0.0	0.0	71.4
1982	0.0	0.0	0.0	2.1	7.4	12.2	15.7	15.2	8.0	2.1	0.0	0.0	62.7
1983	0.0	0.0	0.0	1.1	7.2	11.3	15.7	15.7	9.7	4.2	0.0	0.0	65.0
1984	0.0	0.0	0.0	1.7	9.1	12.6	16.1	14.0	9.1	2.9	0.0	0.0	65.6
1985	0.0	0.0	0.2	5.3	9.5	13.0	16.3	14.5	7.6	3.4	0.0	0.0	69.9
1986	0.0	0.0	1.0	4.8	8.5	12.6	14.6	13.5	7.5	3.5	0.0	0.0	66.1
1987	0.0	0.0	0.0	4.9	8.5	13.3	15.4	12.9	8.7	5.0	0.1	0.0	68.8
1988	0.0	0.0	0.0	5.0	8.5	14.6	16.3	13.7	7.6	4.8	0.0	0.0	70.6
1989	0.0	0.0	0.4	5.4	8.7	11.8	16.5	14.0	8.7	3.6	0.0	0.0	69.0
1990	0.0	0.0	0.0	5.1	7.8	13.6	15.8	13.1	10.0	3.3	0.0	0.0	68.8
1991	0.0	0.0	0.0	2.0	8.1	12.2	15.4	14.1	8.6	3.6	0.0	0.0	64.0
1992	0.0	0.0	0.8	5.9	9.6	11.7	14.2	13.4	8.3	4.1	0.0	0.0	68.0
1993	0.0	0.0	0.0	2.2	8.2	11.0	14.3	12.7	7.7	3.4	0.0	0.0	59.4
1994	0.0	0.0	0.5	5.0	9.9	14.6	17.1	15.3	9.2	3.4	0.0	0.0	75.1
1995	0.0	0.0	0.0	3.5	6.9	10.9	13.9	14.6	9.0	3.4	0.0	0.0	62.3
1996	0.0	0.0	0.0	4.7	9.5	13.1	17.2	15.0	8.4	3.9	0.0	0.0	71.8
1997	0.0	0.0	0.0	2.6	9.0	13.1	15.4	13.5	9.6	3.8	0.0	0.0	67.0
1998	0.0	0.0	0.0	3.6	9.0	10.8	17.3	14.5	10.5	4.7	0.1	0.0	70.5
1999	0.0	0.0	2.1	4.8	8.5	12.0	17.2	14.3	8.5	4.9	0.8	0.0	73.1
2000	0.0	0.0	0.5	6.2	10.1	12.6	16.2	14.0	8.7	4.8	0.0	0.0	73.1
2001	0.0	0.0	0.3	5.6	9.5	14.0	16.2	14.7	10.0	3.9	0.0	0.0	74.0
2002	0.0	0.0	0.0	5.5	8.9	14.6	18.4	13.8	8.5	2.7	0.0	0.0	72.3
2003	0.0	0.0	0.0	4.1	8.1	12.2	18.0	15.8	8.0	3.9	0.0	0.0	70.1
2004	0.0	0.0	1.4	5.2	8.6	12.4	15.1	13.1	8.6	4.4	0.0	0.0	68.8
2005	0.0	0.0	0.0	4.8	9.1	11.9	17.2	13.6	8.9	5.0	0.4	0.0	70.8
2006	0.0	0.0	0.0	4.1	9.6	13.7	17.3	13.9	6.8	3.1	0.0	0.0	68.5
2007	0.0	0.0	0.3	5.2	8.7	13.5	17.8	15.0	8.9	3.8	0.0	0.0	73.1
2008	0.0	0.0	0.0	1.3	7.4	11.9	16.7	14.4	8.4	4.1	0.0	0.0	64.2
2009	0.0	0.0	0.0	2.5	9.3	11.2	15.6	13.3	9.1	2.5	0.0	0.0	63.4
2010	0.0	0.0	0.0	2.8	7.4	13.3	17.0	13.5	9.2	4.3	0.0	0.0	67.3
Min	0.0	0.0	0.0	1.1	6.9	10.8	13.9	12.3	6.8	2.1	0.0	0.0	59.4
Max	0.0	0.0	2.1	6.2	10.1	14.6	18.4	15.8	10.5	5.2	0.8	0.0	75.1
Avg	0.0	0.0	0.2	4.0	8.6	12.6	16.2	14.0	8.7	3.8	0.1	0.0	68.3

Table 7: Historical Effective Precipitation – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	3.8	3.0	3.4	0.9	0.9	0.8	0.5	0.3	0.0	13.7
1979	0.0	0.0	0.0	1.9	3.7	3.6	0.0	2.1	0.0	1.0	0.0	0.0	12.3
1980	0.0	0.0	0.0	0.4	3.7	0.0	3.8	1.7	3.0	2.4	0.0	0.0	14.9
1981	0.0	0.0	0.0	1.8	2.9	2.6	4.9	2.8	2.4	3.7	0.0	0.0	21.1
1982	0.0	0.0	0.0	0.2	2.4	0.8	1.6	2.2	6.3	1.3	0.0	0.0	14.8
1983	0.0	0.0	0.0	1.0	5.8	4.6	3.0	2.7	0.8	1.9	0.0	0.0	19.9
1984	0.0	0.0	0.0	1.0	3.7	2.0	3.2	3.7	1.1	2.9	0.0	0.0	17.5
1985	0.0	0.0	0.2	4.4	2.7	2.1	3.4	2.3	5.2	2.6	0.0	0.0	23.0
1986	0.0	0.0	0.6	2.4	2.9	2.0	1.9	1.6	4.6	2.7	0.0	0.0	18.7
1987	0.0	0.0	0.0	1.8	2.9	0.8	3.0	2.0	2.0	2.6	0.1	0.0	15.1
1988	0.0	0.0	0.0	1.3	2.9	0.3	0.4	4.4	3.3	0.3	0.0	0.0	12.9
1989	0.0	0.0	0.1	1.7	0.6	0.6	1.6	2.3	3.0	2.0	0.0	0.0	11.7
1990	0.0	0.0	0.0	2.3	1.8	1.6	3.6	1.1	2.4	3.1	0.0	0.0	16.0
1991	0.0	0.0	0.0	0.6	1.3	4.6	1.7	2.3	2.1	1.6	0.0	0.0	14.3
1992	0.0	0.0	0.4	0.0	4.4	0.6	2.2	2.1	2.6	2.0	0.0	0.0	14.3
1993	0.0	0.0	0.0	1.8	5.3	1.9	0.9	2.8	1.7	1.9	0.0	0.0	16.2
1994	0.0	0.0	0.1	2.3	0.6	1.5	1.3	2.5	2.6	2.9	0.0	0.0	13.8
1995	0.0	0.0	0.0	1.9	6.9	3.2	3.7	1.7	2.9	1.3	0.0	0.0	21.7
1996	0.0	0.0	0.0	2.6	2.0	1.4	2.4	0.5	4.4	2.8	0.0	0.0	16.1
1997	0.0	0.0	0.0	1.3	3.7	2.4	3.4	3.0	6.3	3.2	0.0	0.0	23.4
1998	0.0	0.0	0.0	1.9	0.7	3.7	4.1	3.3	2.3	3.7	0.0	0.0	19.8
1999	0.0	0.0	0.5	4.8	5.1	1.8	1.0	3.6	3.6	0.6	0.0	0.0	21.0
2000	0.0	0.0	0.2	0.5	1.8	2.6	1.5	2.1	1.1	0.0	0.0	0.0	9.8
2001	0.0	0.0	0.1	1.6	2.7	1.1	2.1	2.2	2.8	2.1	0.0	0.0	14.7
2002	0.0	0.0	0.0	1.7	0.0	0.0	0.9	1.4	5.2	1.6	0.0	0.0	10.8
2003	0.0	0.0	0.0	1.1	5.0	0.8	1.4	2.3	3.5	0.0	0.0	0.0	14.2
2004	0.0	0.0	0.4	4.0	1.4	2.1	1.2	0.0	3.1	1.8	0.0	0.0	13.9
2005	0.0	0.0	0.0	2.1	1.8	3.7	1.6	1.4	4.5	3.0	0.3	0.0	18.4
2006	0.0	0.0	0.0	1.8	1.4	0.6	2.4	5.0	2.3	3.1	0.0	0.0	16.4
2007	0.0	0.0	0.1	0.5	0.3	2.1	0.0	2.3	4.4	0.9	0.0	0.0	10.6
2008	0.0	0.0	0.0	0.4	2.4	0.5	0.9	1.4	2.4	0.1	0.0	0.0	8.2
2009	0.0	0.0	0.0	0.6	4.6	3.2	1.3	1.4	1.9	0.8	0.0	0.0	13.9
2010	0.0	0.0	0.0	0.6	0.6	1.6	2.2	2.9	1.4	2.1	0.0	0.0	11.2
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2
Max	0.0	0.0	0.6	4.8	6.9	4.6	4.9	5.0	6.3	3.7	0.3	0.0	23.4
Avg	0.0	0.0	0.1	1.7	2.8	1.9	2.0	2.2	2.9	1.9	0.0	0.0	15.6

Table 8: Historical Irrigation Water Requirement – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	0.0	4.5	9.3	14.2	11.4	7.9	4.7	0.1	0.0	52.0
1979	0.0	0.0	0.0	2.2	4.5	8.5	16.2	11.3	9.6	3.3	0.0	0.0	55.4
1980	0.0	0.0	0.0	2.8	4.0	13.1	12.3	11.1	5.7	0.6	0.0	0.0	49.6
1981	0.0	0.0	0.0	3.7	5.6	10.7	11.5	11.4	7.3	0.0	0.0	0.0	50.3
1982	0.0	0.0	0.0	1.9	5.0	11.4	14.2	12.9	1.7	0.8	0.0	0.0	47.9
1983	0.0	0.0	0.0	0.1	1.4	6.7	12.7	13.0	8.9	2.4	0.0	0.0	45.1
1984	0.0	0.0	0.0	0.7	5.4	10.6	13.0	10.3	8.0	0.0	0.0	0.0	48.1
1985	0.0	0.0	0.0	0.9	6.8	11.0	12.8	12.2	2.3	0.8	0.0	0.0	46.8
1986	0.0	0.0	0.4	2.4	5.6	10.6	12.7	11.9	2.9	0.8	0.0	0.0	47.4
1987	0.0	0.0	0.0	3.1	5.6	12.5	12.5	10.9	6.7	2.4	0.0	0.0	53.7
1988	0.0	0.0	0.0	3.8	5.6	14.3	15.9	9.3	4.3	4.5	0.0	0.0	57.7
1989	0.0	0.0	0.3	3.7	8.1	11.2	14.9	11.7	5.7	1.7	0.0	0.0	57.3
1990	0.0	0.0	0.0	2.7	6.0	12.0	12.2	12.0	7.6	0.2	0.0	0.0	52.8
1991	0.0	0.0	0.0	1.4	6.7	7.5	13.7	11.8	6.5	1.9	0.0	0.0	49.7
1992	0.0	0.0	0.4	5.9	5.2	11.1	12.0	11.3	5.7	2.2	0.0	0.0	53.7
1993	0.0	0.0	0.0	0.3	2.9	9.1	13.4	9.9	5.9	1.6	0.0	0.0	43.2
1994	0.0	0.0	0.4	2.7	9.3	13.1	15.8	12.8	6.6	0.6	0.0	0.0	61.3
1995	0.0	0.0	0.0	1.6	0.0	7.7	10.2	12.9	6.1	2.1	0.0	0.0	40.6
1996	0.0	0.0	0.0	2.1	7.4	11.8	14.8	14.5	4.0	1.1	0.0	0.0	55.7
1997	0.0	0.0	0.0	1.3	5.3	10.7	12.1	10.4	3.3	0.6	0.0	0.0	43.7
1998	0.0	0.0	0.0	1.7	8.3	7.1	13.1	11.1	8.2	1.0	0.1	0.0	50.7
1999	0.0	0.0	1.6	0.0	3.5	10.2	16.2	10.7	4.9	4.3	0.8	0.0	52.1
2000	0.0	0.0	0.3	5.7	8.3	10.0	14.7	11.8	7.7	4.8	0.0	0.0	63.3
2001	0.0	0.0	0.2	4.0	6.7	12.9	14.1	12.5	7.1	1.7	0.0	0.0	59.2
2002	0.0	0.0	0.0	3.7	8.9	14.6	17.5	12.4	3.3	1.1	0.0	0.0	61.5
2003	0.0	0.0	0.0	3.0	3.1	11.4	16.6	13.5	4.5	3.9	0.0	0.0	55.9
2004	0.0	0.0	1.0	1.2	7.2	10.3	13.9	13.1	5.5	2.6	0.0	0.0	54.9
2005	0.0	0.0	0.0	2.7	7.3	8.2	15.6	12.2	4.4	1.9	0.1	0.0	52.4
2006	0.0	0.0	0.0	2.3	8.2	13.2	14.9	8.9	4.5	0.0	0.0	0.0	52.0
2007	0.0	0.0	0.2	4.7	8.4	11.4	17.8	12.7	4.5	2.9	0.0	0.0	62.5
2008	0.0	0.0	0.0	0.9	5.0	11.4	15.8	12.9	6.0	4.0	0.0	0.0	56.0
2009	0.0	0.0	0.0	1.8	4.7	8.0	14.3	11.8	7.2	1.7	0.0	0.0	49.5
2010	0.0	0.0	0.0	2.2	6.8	11.7	14.8	10.6	7.8	2.2	0.0	0.0	56.1
Min	0.0	0.0	0.0	0.0	0.0	6.7	10.2	8.9	1.7	0.0	0.0	0.0	40.6
Max	0.0	0.0	1.6	5.9	9.3	14.6	17.8	14.5	9.6	4.8	0.8	0.0	63.3
Avg	0.0	0.0	0.1	2.3	5.8	10.7	14.1	11.7	5.8	1.9	0.0	0.0	52.7

Table 9: Historical River Headgate to CU – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	0.0	4.5	9.3	14.2	11.4	7.9	4.7	0.0	0.0	51.9
1979	0.0	0.0	0.0	0.0	4.5	8.5	16.2	11.3	9.6	0.0	0.0	0.0	50.0
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.6	0.0	0.0	2.8
1981	0.0	0.0	0.0	0.0	5.6	10.7	11.5	11.4	7.3	0.0	0.0	0.0	46.5
1982	0.0	0.0	0.0	0.0	5.0	11.4	14.2	12.9	1.7	0.0	0.0	0.0	45.2
1983	0.0	0.0	0.0	0.0	1.4	6.7	12.7	13.0	8.9	2.4	0.0	0.0	45.1
1984	0.0	0.0	0.0	0.0	0.0	10.6	13.0	10.3	8.0	0.0	0.0	0.0	41.9
1985	0.0	0.0	0.0	0.0	2.1	11.0	12.8	12.2	2.3	0.8	0.0	0.0	41.3
1986	0.0	0.0	0.0	2.4	5.6	10.6	12.7	11.9	2.9	0.8	0.0	0.0	47.0
1987	0.0	0.0	0.0	0.0	0.0	12.5	12.5	10.9	6.7	0.0	0.0	0.0	42.5
1988	0.0	0.0	0.0	0.0	5.6	14.3	15.9	9.3	4.3	4.5	0.0	0.0	54.0
1989	0.0	0.0	0.0	3.7	8.1	11.2	14.9	11.7	5.7	1.7	0.0	0.0	57.0
1990	0.0	0.0	0.0	0.0	6.0	12.0	12.2	12.0	7.6	0.2	0.0	0.0	50.1
1991	0.0	0.0	0.0	0.0	6.7	7.5	13.7	11.8	6.5	1.9	0.0	0.0	48.3
1992	0.0	0.0	0.0	0.0	5.2	11.1	12.0	11.3	5.7	2.2	0.0	0.0	47.4
1993	0.0	0.0	0.0	0.0	2.9	9.1	13.4	9.9	0.0	0.0	0.0	0.0	35.3
1994	0.0	0.0	0.0	0.0	9.3	13.1	15.8	12.8	6.6	0.6	0.0	0.0	58.1
1995	0.0	0.0	0.0	0.0	0.0	7.7	9.4	12.9	6.1	0.0	0.0	0.0	36.1
1996	0.0	0.0	0.0	0.0	0.0	11.8	14.8	14.5	4.0	0.0	0.0	0.0	45.1
1997	0.0	0.0	0.0	1.3	5.3	10.7	12.1	0.0	0.0	0.0	0.0	0.0	29.3
1998	0.0	0.0	0.0	1.7	8.3	7.1	13.1	0.0	0.0	0.0	0.0	0.0	30.3
1999	0.0	0.0	0.0	0.0	3.5	10.2	16.2	0.0	0.0	0.0	0.0	0.0	29.8
2000	0.0	0.0	0.0	0.0	8.3	10.0	14.7	0.0	0.0	0.0	0.0	0.0	32.9
2001	0.0	0.0	0.0	0.0	6.7	12.9	14.1	11.5	0.0	0.0	0.0	0.0	45.1
2002	0.0	0.0	0.0	3.7	8.9	14.6	17.5	12.4	0.0	0.0	0.0	0.0	57.2
2003	0.0	0.0	0.0	0.0	3.1	11.4	16.6	13.5	4.5	0.0	0.0	0.0	49.0
2004	0.0	0.0	0.0	0.0	7.2	10.3	13.9	13.1	5.5	2.6	0.0	0.0	52.7
2005	0.0	0.0	0.0	0.0	7.3	8.2	15.6	12.2	4.4	0.0	0.0	0.0	47.7
2006	0.0	0.0	0.0	0.0	8.2	13.2	14.9	8.9	0.0	0.0	0.0	0.0	45.2
2007	0.0	0.0	0.0	0.0	8.4	11.4	17.8	0.0	0.0	0.0	0.0	0.0	37.6
2008	0.0	0.0	0.0	0.0	5.0	11.4	15.8	12.5	0.0	0.0	0.0	0.0	44.7
2009	0.0	0.0	0.0	0.0	4.7	8.0	14.3	11.8	7.2	0.0	0.0	0.0	46.0
2010	0.0	0.0	0.0	0.0	6.8	11.7	14.8	7.9	0.0	0.0	0.0	0.0	41.2
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Max	0.0	0.0	0.0	3.7	9.3	14.6	17.8	14.5	9.6	4.7	0.0	0.0	58.1
Avg	0.0	0.0	0.0	0.4	5.0	10.3	13.7	9.6	3.8	0.7	0.0	0.0	43.5

Table 10: Historical River Headgate to Soil – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
1979	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	8.0
1981	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7
1982	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1983	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
1984	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	6.2
1985	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	5.5
1986	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
1987	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
1988	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2
1989	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
1990	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
1991	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
1992	0.0	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3
1993	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
1994	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
1995	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.8	0.0	0.0	0.0	0.0	2.4
1996	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
1997	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
1998	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
1999	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
2000	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
2001	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
2002	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
2003	0.0	0.0	0.0	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4
2004	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1
2005	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
2006	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4
2007	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
2008	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
2009	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
2010	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Max	0.0	0.0	0.0	8.0	8.0	8.0	0.0	0.8	0.0	8.0	0.0	0.0	8.0
Avg	0.0	0.0	0.0	0.5	3.5	0.9	0.0	0.0	0.0	0.2	0.0	0.0	5.2

Table 11: Historical Return Flows – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	0.0	47.0	109.7	108.7	111.6	111.1	118.3	0.0	0.0	606.5
1979	0.0	0.0	0.0	0.0	80.5	110.5	106.8	111.7	85.6	0.0	0.0	0.0	495.2
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	114.3	0.0	0.0	116.2
1981	0.0	0.0	0.0	0.0	77.9	108.3	111.5	111.6	87.9	0.0	0.0	0.0	497.2
1982	0.0	0.0	0.0	0.0	52.6	107.6	108.8	110.0	117.3	0.0	0.0	0.0	496.4
1983	0.0	0.0	0.0	0.0	25.5	112.3	110.3	110.0	110.1	5.6	0.0	0.0	473.7
1984	0.0	0.0	0.0	0.0	0.0	74.5	110.0	112.7	111.0	91.2	0.0	0.0	499.4
1985	0.0	0.0	0.0	0.0	1.8	102.5	110.1	110.8	116.7	62.6	0.0	0.0	504.6
1986	0.0	0.0	0.0	108.3	117.3	108.4	110.3	111.0	116.1	23.0	0.0	0.0	694.4
1987	0.0	0.0	0.0	0.0	0.0	66.8	110.5	112.0	112.3	0.0	0.0	0.0	401.7
1988	0.0	0.0	0.0	0.0	111.2	104.7	107.0	113.7	114.8	90.7	0.0	0.0	642.0
1989	0.0	0.0	0.0	15.9	114.9	107.8	108.0	111.3	113.3	109.4	0.0	0.0	680.6
1990	0.0	0.0	0.0	0.0	82.5	107.0	110.8	111.0	111.4	47.4	0.0	0.0	570.0
1991	0.0	0.0	0.0	0.0	63.3	111.5	109.3	111.2	112.5	49.6	0.0	0.0	557.3
1992	0.0	0.0	0.0	0.0	67.9	107.7	107.3	96.6	83.5	85.7	0.0	0.0	548.8
1993	0.0	0.0	0.0	0.0	60.7	64.7	89.7	70.4	0.0	0.0	0.0	0.0	285.4
1994	0.0	0.0	0.0	0.0	73.9	105.9	107.2	110.2	112.4	15.3	0.0	0.0	524.9
1995	0.0	0.0	0.0	0.0	0.0	43.2	8.0	50.4	28.9	0.0	0.0	0.0	130.6
1996	0.0	0.0	0.0	0.0	0.0	91.3	93.9	81.0	45.1	0.0	0.0	0.0	311.2
1997	0.0	0.0	0.0	41.5	98.2	108.3	39.5	0.0	0.0	0.0	0.0	0.0	287.5
1998	0.0	0.0	0.0	47.6	101.0	111.9	62.2	0.0	0.0	0.0	0.0	0.0	322.7
1999	0.0	0.0	0.0	0.0	19.2	60.6	35.7	0.0	0.0	0.0	0.0	0.0	115.6
2000	0.0	0.0	0.0	0.0	21.8	37.6	26.6	0.0	0.0	0.0	0.0	0.0	86.0
2001	0.0	0.0	0.0	0.0	53.7	57.9	59.1	9.8	0.0	0.0	0.0	0.0	180.5
2002	0.0	0.0	0.0	107.3	114.0	104.4	105.5	110.6	0.0	0.0	0.0	0.0	541.7
2003	0.0	0.0	0.0	0.0	52.9	56.5	53.5	56.6	18.1	0.0	0.0	0.0	237.6
2004	0.0	0.0	0.0	0.0	77.5	71.8	59.3	60.1	65.3	4.5	0.0	0.0	338.4
2005	0.0	0.0	0.0	0.0	41.6	110.8	107.4	78.2	33.5	0.0	0.0	0.0	371.5
2006	0.0	0.0	0.0	0.0	67.7	91.5	84.3	64.3	0.0	0.0	0.0	0.0	307.8
2007	0.0	0.0	0.0	0.0	22.7	30.8	25.9	0.0	0.0	0.0	0.0	0.0	79.5
2008	0.0	0.0	0.0	0.0	30.8	66.0	45.1	10.7	0.0	0.0	0.0	0.0	152.6
2009	0.0	0.0	0.0	0.0	48.7	74.8	60.0	61.3	47.4	0.0	0.0	0.0	292.1
2010	0.0	0.0	0.0	0.0	50.6	75.7	75.6	6.7	0.0	0.0	0.0	0.0	208.6
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.5
Max	0.0	0.0	0.0	109.1	117.3	112.3	111.5	113.7	117.3	118.3	0.0	0.0	694.4
Avg	0.0	0.0	0.0	9.7	53.9	84.9	80.8	70.2	56.2	24.8	0.0	0.0	380.5

Table 12: Historical Depletions – Yost Ditch (ac-ft)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1978	0.0	0.0	0.0	0.0	12.5	9.3	14.2	11.4	7.9	4.7	0.0	0.0	60.0
1979	0.0	0.0	0.0	0.0	6.7	8.5	16.2	11.3	9.6	0.0	0.0	0.0	52.3
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	8.6	0.0	0.0	10.8
1981	0.0	0.0	0.0	0.0	9.4	10.7	11.5	11.4	7.3	0.0	0.0	0.0	50.3
1982	0.0	0.0	0.0	0.0	6.9	11.4	14.2	12.9	1.7	0.0	0.0	0.0	47.1
1983	0.0	0.0	0.0	0.0	2.3	6.7	12.7	13.0	8.9	2.4	0.0	0.0	46.0
1984	0.0	0.0	0.0	0.0	0.0	16.8	13.0	10.3	8.0	0.0	0.0	0.0	48.1
1985	0.0	0.0	0.0	0.0	2.1	16.5	12.8	12.2	2.3	0.8	0.0	0.0	46.8
1986	0.0	0.0	0.0	2.8	5.6	10.6	12.7	11.9	2.9	0.8	0.0	0.0	47.4
1987	0.0	0.0	0.0	0.0	0.0	20.5	12.5	10.9	6.7	0.0	0.0	0.0	50.5
1988	0.0	0.0	0.0	0.0	11.8	14.3	15.9	9.3	4.3	4.5	0.0	0.0	60.1
1989	0.0	0.0	0.0	4.0	8.1	11.2	14.9	11.7	5.7	1.7	0.0	0.0	57.3
1990	0.0	0.0	0.0	0.0	8.7	12.0	12.2	12.0	7.6	0.2	0.0	0.0	52.8
1991	0.0	0.0	0.0	0.0	8.1	7.5	13.7	11.8	6.5	1.9	0.0	0.0	49.7
1992	0.0	0.0	0.0	0.0	11.5	11.1	12.0	11.3	5.7	2.2	0.0	0.0	53.7
1993	0.0	0.0	0.0	0.0	3.3	9.1	13.4	9.9	0.0	0.0	0.0	0.0	35.7
1994	0.0	0.0	0.0	0.0	17.3	13.1	15.8	12.8	6.6	0.6	0.0	0.0	66.2
1995	0.0	0.0	0.0	0.0	0.0	9.3	9.4	13.7	6.1	0.0	0.0	0.0	38.5
1996	0.0	0.0	0.0	0.0	0.0	19.8	14.8	14.5	4.0	0.0	0.0	0.0	53.1
1997	0.0	0.0	0.0	2.3	5.3	10.7	12.1	0.0	0.0	0.0	0.0	0.0	30.4
1998	0.0	0.0	0.0	9.8	8.3	7.1	13.1	0.0	0.0	0.0	0.0	0.0	38.3
1999	0.0	0.0	0.0	0.0	11.5	10.2	16.2	0.0	0.0	0.0	0.0	0.0	37.9
2000	0.0	0.0	0.0	0.0	16.3	10.0	14.7	0.0	0.0	0.0	0.0	0.0	41.0
2001	0.0	0.0	0.0	0.0	14.8	12.9	14.1	11.5	0.0	0.0	0.0	0.0	53.2
2002	0.0	0.0	0.0	11.8	8.9	14.6	17.5	12.4	0.0	0.0	0.0	0.0	65.2
2003	0.0	0.0	0.0	0.0	10.4	11.4	16.6	13.5	4.5	0.0	0.0	0.0	56.4
2004	0.0	0.0	0.0	0.0	13.3	10.3	13.9	13.1	5.5	2.6	0.0	0.0	58.8
2005	0.0	0.0	0.0	0.0	10.0	8.2	15.6	12.2	4.4	0.0	0.0	0.0	50.3
2006	0.0	0.0	0.0	0.0	12.6	13.2	14.9	8.9	0.0	0.0	0.0	0.0	49.6
2007	0.0	0.0	0.0	0.0	16.4	11.4	17.8	0.0	0.0	0.0	0.0	0.0	45.6
2008	0.0	0.0	0.0	0.0	13.0	11.4	15.8	12.5	0.0	0.0	0.0	0.0	52.7
2009	0.0	0.0	0.0	0.0	12.7	8.0	14.3	11.8	7.2	0.0	0.0	0.0	54.0
2010	0.0	0.0	0.0	0.0	10.7	11.7	14.8	7.9	0.0	0.0	0.0	0.0	45.0
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8
Max	0.0	0.0	0.0	11.8	17.3	20.5	17.8	14.5	9.6	8.6	0.0	0.0	66.2
Avg	0.0	0.0	0.0	0.9	8.4	11.2	13.7	9.6	3.8	0.9	0.0	0.0	48.6

4.0 PROPOSED USE OF THE LEASED WATER RIGHT

Water decreed to Coyote River Ranch under Priority 172 and diverted at the Yost Ditch headgate was fully consumptive to approximately ½ mile of Deep Creek. Historical diversions attributable to Priority 172 will be used for instream flows in Deep Creek from the Yost Ditch point of diversion, downstream approximately ½ mile, to the confluence of Deep Creek and the Colorado River. The CWCB ISF water right to be benefitted by this lease was decreed in Case No. 5-80CW312. The amount of water decreed for ISF use is 14 cfs for the period May 1 through September 30, and 8 cfs for the period October 1 through April 30.

The amount of water that may be claimed from Priority 172 of the Yost Ditch for ISF use is based upon the historical average monthly diversions as noted in Table 1, and may be used to supplement the ISF on lower Deep Creek during the historical irrigation season of April through October.

Amount of Leased Water Available for ISF Use in Deep Creek

	April	May	June	July	August	September	October
cfs	0.18	1.01	1.62	1.54	1.30	1.01	0.42

In accordance with statutory requirements, use of the Yost Ditch water right for ISF use will not exceed 120 days per calendar year.

All land historically irrigated by Coyote River Ranch under Priority 172 of the Yost Ditch will be removed from irrigation during any year in which the leased water is used for ISF use in Deep Creek. During years when the lease is not in effect, Coyote River Ranch will continue its normal irrigation practices.

4.1 Measurement, Delivery, and Accounting

CWT will work with the CWCB and State and Division Engineers to install, monitor and maintain whatever measuring devices or protocols are required for administration of this Short Term Water Right Lease.

Amy Beatie
July 2, 2012
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It is our opinion that operation of the Yost Ditch STL as described herein is sufficient to prevent injury to ditches on Deep Creek and the Colorado River mainstem.

Sincerely,

LEONARD RICE ENGINEERS, INC.



Erin M. Wilson, P.E.
Principal



Mark Mitisek, H.I.T.
Staff Hydrologist

ATTACHMENT 6
DELAYED DEPLETION ANALYSIS

July 10, 2012

Anne Janicki
Transaction Specialist
Colorado Water Trust
1430 Larimer Street, Suite 300
Denver, Colorado 80202

RE: Yost Ditch Glover Analysis

Dear Anne,

At your request Rapid Engineering has performed a delayed depletion analysis on the Yost Ditch to support a request for approval of a Short Term Loan of Water Rights (STL) to allow for the use of the water rights decreed to Priority 172 under the Yost Ditch to be used to help meet the Instream Flow (ISF) water right for Deep Creek, decreed in Case No 80CW0312. This letter presents the details of a Glover Analysis including assumptions, inputs and results. The resulting delayed depletion impacts were applied to the return flows outlined in the tables and draft reports you provided to assess the potential impact of drying up irrigated area under the Yost Ditch. See Leonard Rice Engineer's (LRE) report dated July 2, 2012 for details regarding diversions, HCU, etc.

Introduction

The delayed depletion analysis was performed using the Analytical Stream Depletion method (Schroeder, 1987) as applied in the IDS Alluvial Water Accounting System (AWAS) as recommended by the Division of Water Resources. The AWAS model requires the following inputs:

- Distance from no-flow boundary to Centroid of Irrigation, X (ft)
- Distance from no-flow boundary to River, W (ft)
- Hydraulic Conductivity, K_h (ft²/d)
- Aquifer thickness, d (ft)
- Transmissivity, T (gpd/ft, defined as $=K_h*d$)
- Aquifer Specific Yield, S

For ease of calculation, the complexities of groundwater flow have been simplified in the Analytical Stream Depletion method based on the following assumptions:

- The aquifer Transmissivity does not change with time.
- The water temperature of the stream and aquifer are identical and constant.
- The aquifer is isotropic, homogeneous, and semi-infinite in aerial extent.
- The stream that forms the boundary is straight and fully penetrates the aquifer.
- Water is released instantaneously from storage.

Model Inputs

Slightly more than 26 acres of irrigated pasture under the Yost Ditch were delineated from the 2011 NAIP aerial photograph (Figure 1). These lands lie adjacent to the Colorado River and span a 0.77 mile reach. To reduce the errors introduced by the simplifying assumptions outlined above, the irrigated parcel was divided into 11 irrigation zones. The USGS Geologic map of the Dotsero Quadⁱ was used to calculate the distance from the no-flow boundary (taken as the limit of Quaternary Alluvium) to the geometric centroid of each zone (X). The distance from the no-flow boundary to the river was also calculated (W). The area weighted average X distance is 350 ft and the area weighted average W distance is 619 ft. Figure 1 shows the irrigated parcels with X and W distances.

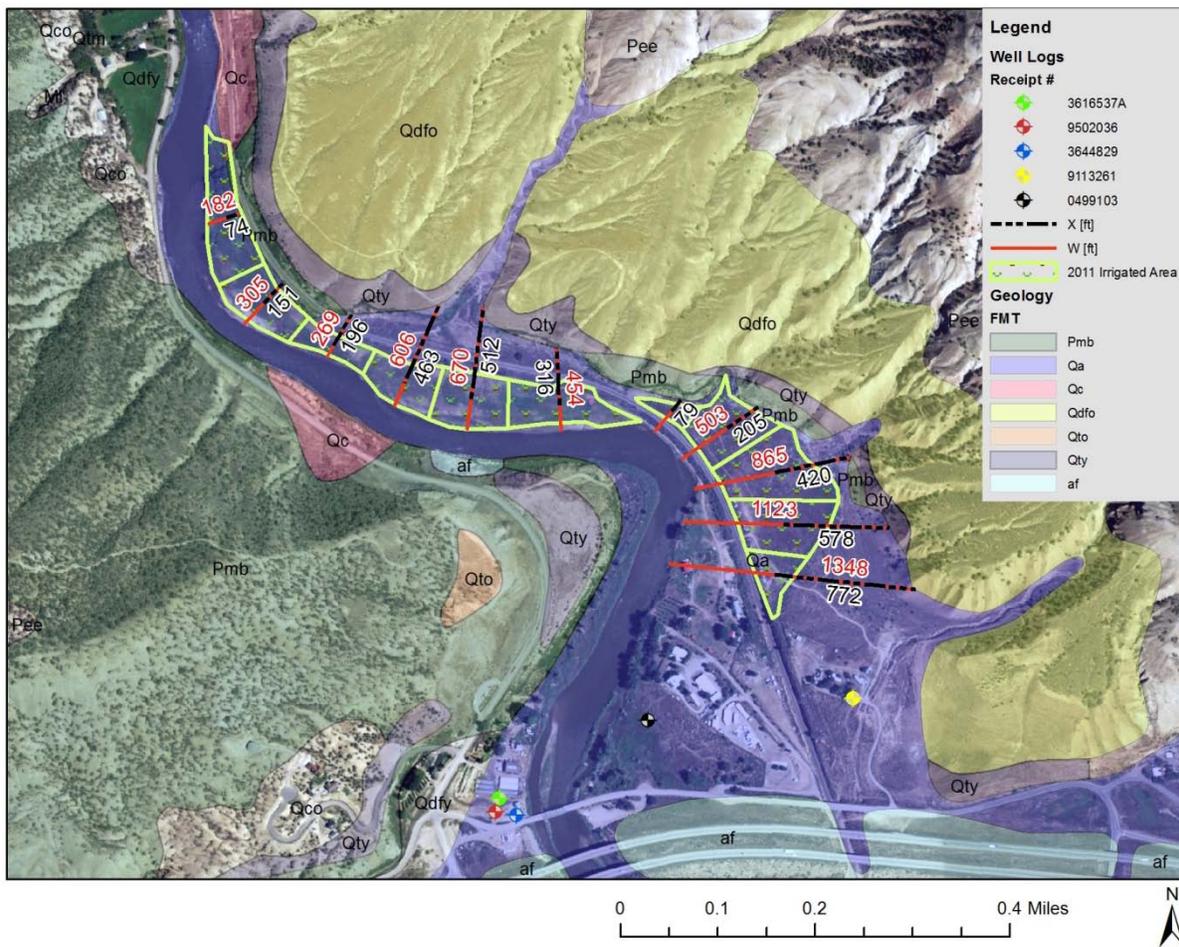


Figure 1 Yost Ditch Glover Analysis Map

Aquifer thickness was estimated from nearby well logs.ⁱⁱ All five wells were drilled into the Colorado River alluvium in the immediate area (<0.5 miles from parcel). The average depth of alluvium was calculated to be 66.4ft.

Aquifer hydraulic conductivity was estimated based on a variety of referencesⁱⁱⁱ. Reported conductivity values ranged from 5 ft/day to 1498 ft/day with an average value of 228 ft/day. The Glover Analysis was performed with a conservative estimate of hydraulic conductivity of 150 ft/day. When combined with the alluvial depth of 66.4 ft, the resulting calculated aquifer transmissivity is 74,500 gpd/ft (9960 ft²/d).

Specific Yields for sand and gravel can range from 15% to 25 %.^{iv} The Specific Yield was assumed to be 0.20.

Model Results

To ensure steady state during the AWAS analysis, the pumping rate of 5.6 cfs was applied during the first month of each year for 24 years. The results of this analysis are presented in Table 1. These results indicate that there is a two month delay in return flows resulting from the Yost Ditch irrigation.

Table 1 AWAS Delayed Depletion Analysis Results

Month, n=current	Flow Rate [cfs]	Depletion [AF]	%
n	5.6	301.6	89.7%
n+1	0.0	34.5	10.3%
n+2	0.0	0.00	0.0%
n+3	0.0	0.00	0.0%
n+4	0.0	0.00	0.0%
n+5	0.0	0.00	0.0%
n+6	0.0	0.00	0.0%
n+7	0.0	0.00	0.0%
n+8	0.0	0.00	0.0%
n+9	0.0	0.00	0.0%
n+10	0.0	0.00	0.0%
n+11	0.0	0.00	0.0%
Total		336.1	100.0%

Return Flow Analysis

The results of the Glover Analysis (Table 1) were applied to the LRE consumptive use analysis provided by CWT. Thirty percent of the return flow accrues to the river as surface flow in the month it was applied. Seventy percent accrues as groundwater flow and is subject to the delays presented above. Table 2 shows the impact of the delay on the historic return flows in Acre Feet per month and Table 3 presents the corresponding flow rates. On average, irrigation of these parcels results in excess return flow (i.e. more return flow than diversions) in the months of October and November due to the delayed groundwater impact on irrigation return flows in September and October.

Table 2 Delayed Return Flow Analysis [AF]^y

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Historical Diversions	0.0	0.0	0.0	10.6	62.3	96.1	94.6	79.8	60.1	25.7	0.0	0.0	429.2
Unlagged Return Flows	0.0	0.0	0.0	9.7	53.9	84.9	80.8	70.2	56.2	24.8	0.0	0.0	380.6
Surface Water Return Flows	0.0	0.0	0.0	2.9	16.2	25.5	24.3	21.0	16.9	7.4	0.0	0.0	114.2
Lagged Groundwater Return Flows	0.0	0.0	0.0	6.1	34.5	57.2	56.9	49.9	40.4	19.6	1.8	0.0	266.4
Total Lagged Return Flows	0.0	0.0	0.0	9.0	50.7	82.7	81.1	70.9	57.3	27.0	1.8	0.0	380.5
River Depletions (Excess Return Flow)	0.0	0.0	0.0	1.6	11.6	13.4	13.4	8.8	2.8	(1.3)	(1.8)	0.0	48.6

Table 3 Delayed Return Flow Analysis [cfs]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Historical Diversions	0.00	0.00	0.00	0.18	1.01	1.62	1.54	1.30	1.01	0.42	0.00	0.00	7.07
Unlagged Return Flows	0.00	0.00	0.00	0.16	0.88	1.43	1.31	1.14	0.95	0.40	0.00	0.00	6.27
Surface Water Return Flows	0.00	0.00	0.00	0.05	0.26	0.43	0.39	0.34	0.28	0.12	0.00	0.00	1.88
Lagged Groundwater Return Flows	0.00	0.00	0.00	0.10	0.56	0.96	0.93	0.81	0.68	0.32	0.03	0.00	4.39
Total Lagged Return Flows	0.00	0.00	0.00	0.15	0.82	1.39	1.32	1.15	0.96	0.44	0.03	0.00	6.27
River Depletions (Excess Return Flow)	0.00	0.00	0.00	0.03	0.19	0.23	0.22	0.14	0.05	(0.02)	(0.03)	0.00	0.07

The proposed dry-up of the lands under the Yost Ditch will result in an effective depletion of 1.3 AF in October and 1.8 AF in November. This corresponds to an effective depletion flow rate of 0.02 and 0.03 cfs respectively, which is extremely small compared to the flow of the Colorado River and would be difficult to measure.

Summary

The analysis presented in this letter shows that there is a two month delay in return flows from the 27 acres of irrigated land under the Yost Ditch. Specifically, 89.7% of the return flows accrue to the river in the month the water was applied, and 10.3% return in the following month. When applied to the historic return flows provided, the delay impact results in excess return flows in October and November. The volume and flow rate of the excess return flow is insignificant when compared to the flow of the Colorado River. It should be noted that the delayed return flow volumes and flow rates presented in Tables 2 and 3 are specific to the HCU and diversion values shown. These tables should be updated if there are any changes made to the HCU analysis (IRW, Diversions, efficiency, etc.).

Please don't hesitate to contact me if you have any questions or concerns regarding this matter.

Sincerely,



Chris Romeyn, PE, CFM
Principal Engineer

Rapid Engineering, LLC
1911 Colorow Rd.
Glenwood Springs, CO 81601
303.877.8802
chris@rapidh2o.com
www.rapidh2o.com

End Notes

ⁱ Geologic map of the Dotsero quadrangle, Eagle and Garfield Counties, Colorado [revised by Streufert, R.K., Kirkham, R.M., Schroeder, T.J., II, and Widman, B.L., 2008, Colorado Geological Survey Open-File Report [08-14](#)] **Author(s)**: Streufert, R.K., Kirkham, R.M., Schroeder II, T.J., and Widmann, B.L., **Publishing Organization**: [Colorado Geological Survey](#) **Publication Series and Number**: Open-File Report OF-97-2, **Publication Order No.**: OF97-02, **Publication Date**: 1997, **Map Scale**: 1:24,000.

ⁱⁱ Permit Nos. 58976-F, 30851, 75718-F, 59981-FR,65851-F

ⁱⁱⁱ The Ground Water Atlas of Colorado: <http://geosurvey.state.co.us/apps/wateratlas/index.asp>:Geohydrology and Potential Hydrologic Effects of Underground Coal Mining in the Rapid Creek Basin, Tom Brooks, USGS WRIR 86-4172, 1986; Final Site Observational Work Plan for the UMTRA Project Old Rifle Site, U.S. Department of Energy, Grand Junction Office, Grand Junction, Colorado, Project Number UGW-511-0017-06-000, Document Number U0042501, 1999; Water-Quality Characteristics and Ground-Water Quantity of the Fraser River Watershed, Grand County, Colorado, 1998-2001, By Nancy J. Bauch and Jeffrey B. Bails, Prepared in cooperation with the Grand County Board of County Commissioners; Water-Resources Investigations Report 03-4275 U.S. U.S. Geological Survey, Reston, Virginia: 2004; Draft Ground Water Compliance Action Plan for the New Rifle, Colorado, Uranium Mill Tailings Remedial Action (UMTRA) Project Site (TAC L51912) U.S. Department of Energy, 2003; Mineral Transformation with Biomass Accumulation Associated with uranium Bioremediation at Rifle, Colorado, Li *et. al.*, in *Environmental Science and Technology*, 43 (14), pp 5429-5435, June 16, 2009 .

^{iv} Groundwater and Wells, edited by Robert J. Sterrett, PhD, RG, 2007

^v Historical Diversion, River Headgate to CU, and Un-lagged Return Flow values provided by CWT.

ATTACHMENT 7
CWT OFFER LETTER TO CWCB



COLORADO WATER TRUST

Wednesday, July 11, 2012

1430 Larimer Street, Suite 300
Denver, Colorado 80202

TEL: 720.570.2897

FAX: 303.996.2017

WEB: coloradowatertrust.org

BOARD OF DIRECTORS:

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David Robbins, *Vice President*

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William A. Paddock

Lee Rozaklis

Michael A. Sayler

David C. Taussig

Erin M. Wilson

Ruth Wright

Peter Nichols, *Emeritus*

Jennifer Gimbel, Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

Dear Ms. Gimbel,

As you know, the Colorado Water Trust ("CWT") is a non-profit organization that acquires water rights from willing parties in order to place those water rights in Colorado's Instream Flow Program. CWT is pleased to offer to the Colorado Water Conservation Board ("CWCB") a Temporary Loan of a water right pursuant to C.R.S. 37-83-105. This water right is decreed to the Yost Ditch, which diverts from Deep Creek, a tributary to the Colorado River, located in Eagle County. CWT has worked with CWCB staff on this project, and believes this offer will benefit the CWCB's instream flow water right on Deep Creek. CWT requests CWCB staff initiate the process described in ISF Rule 6k. for review and approval of Temporary Loans of Water to the Board.

CWT has entered into a lease agreement with Karl Berger of Coyote River Ranch to use in the Instream Flow Program 2 cubic feet per second of water that was historically diverted from Deep Creek, a tributary to the Colorado River, and was used to irrigate pasture in Eagle County. CWT believes this Temporary Loan will bolster the existing junior instream flow right held by CWCB on Deep Creek, which was short in 2002, and will help preserve the natural environment in a year of record low flows. Moreover, the lease will continue to benefit the Instream Flow Program in future years, as the right holder is willing to lease the Yost Ditch rights, as provided by statute, for up to three years over a ten year period.

Please recall that this is a temporary loan of water right with different application standards than required for a permanent change or Substitute Water Supply Plan. Attached to this letter is the information required by C.R.S. 37-83-105(2)(b)(I), including a "reasonable estimate" of the loaned water right's historic consumptive use.

Over the past few months, CWT has worked closely with Linda Bassi and staff in the Stream and Lake Protection Section of the CWCB to make the following offer to you. I will attend the CWCB July Board meeting and will be prepared to describe the proposed transaction in more detail. We look forward to working with the CWCB to complete this transaction as well as other short-term leases to bolster instream flows in this extremely dry year.

Sincerely,

Amy W. Beatie
Executive Director

Enclosures (5): Signed Lease, Offer Summary, Map, Decrees, Check for \$100 for Division Engineer's filing fee

ATTACHMENT 8
CWCB RESPONSE LETTER TO CWT &
COYOTE RIVER RANCH, LLC

STATE OF COLORADO

Colorado Water Conservation Board Department of Natural Resources

1313 Sherman Street, Room 721
Denver, Colorado 80203
Phone: (303) 866-3441
Fax: (303) 866-4474
www.cwcb.state.co.us



July 12, 2012

Amy W. Beatie, Executive Director
Colorado Water Trust
1430 Larimer Street, Suite 300
Denver, CO 80202

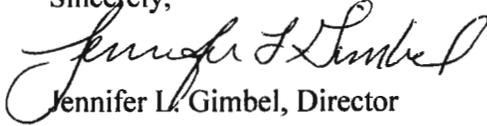
Coyote River Ranch, LLC
c/o Karl Berger
12 Cotton Lane
Dotsero, CO 81637

RE: Temporary Lease Offer on Deep Creek (Water Division 5)

Dear Ms. Beatie and Mr. Berger:

The CWCB staff has reviewed the July 11, 2012 offer from the Colorado Water Trust and Coyote River Ranch, LLC of a temporary lease of water rights associated with the Yost Ditch for instream flow use on Deep Creek in Water Division 5. Based upon that review, we believe that the proposed lease would benefit the CWCB's instream flow water rights on Deep Creek. I have directed the CWCB staff to coordinate with the Colorado Water Trust on preparing and submitting the necessary documentation to the State and Division Engineers to obtain approval of the lease, and on providing the statutorily required public notice of the proposed lease. Thank you for working with the CWCB to protect Colorado's streams.

Sincerely,



Jennifer L. Gimbel, Director

John W. Hickenlooper
Governor

Mike King
DNR Executive Director

Jennifer L. Gimbel
CWCB Director