

Considered: _____

WATER PERMIT NO. 2218-2

Phone: 394-4165

Name of Applicant: City of Rapid City

Post Office Address: 300 6th St. Rapid City SD 57701

Amount of Water Claimed: 2.22 cfs Total Acres: NA

Source of Water Supply: Rapid Creek

Water to be used for: municipal County: Pennington

About _____ miles _____ of _____

PROOF OF PUBLICATION: Received _____ Not Received _____

APPLICATION: Approved _____ Subject to _____

F.F.& C/.L. Adopted _____ Not Approved _____ Deferred _____

PRIORITY Date Received: 2-10-92 Fee: \$50 Remarks Change in use

of a portion of irrigated land under South Side Ditch - Stromer Property

Corrected Application Received _____ Period of Annual Use _____

WATER QUALITY APPROVAL RECEIVED NA APPROVED/CONDITIONAL (Circle one)

WI-1 Description same as Application YES _____ NO _____ REMARKS _____

Diversion Point: SE 1/4 NE 1/4, SW 1/4 SW 1/4

Sec 3, NW 1/4 SE 1/4 Sec 8, SE 1/4 NE 1/4 Sec 9;
(Pactola Reservoir Diversion)
all in T1N-R7E; & NW 1/4 SW 1/4 Sec 2-T1N-R5E

Land to be Irrigated: _____

Well Log: Driller: _____ Licensed YES _____ NO _____

Depth of Well: _____ REMARKS _____

Type of Map: topo PREPARED BY: Daniel Bjerke Reviewed and the Number

Assigned on 2-10-92 By Karen Schlaak

No. 221B-2 Hydrologic Unit 10120110
 Map No. Basin Upper Cheyenne
 Newspaper Rapid City Journal, PO Box 450

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use of water: Industrial ☒ Commercial ☒ Municipal ☒ Other Common Distribution System ☒
 Rural Water System ☒ Suburban Housing ☒ Geothermal Heat ☐ Institutional ☐ Recreational ☐
 Domestic ☒ (above 18gpm) Other ☐

Type of Application: Check one or more of the following

New ☐ Vested Right ☐ Future Use ☐ Change Use ☒

☒ Amend Permit No. 2040-2 with old priority date retained

Change diversion point(s) ☒ Add diversion point(s) ☒ Other ☐

☐ Application to: Change diversion point(s) ☐ Add diversion point(s) ☐ on Permit No. N/A

☐ Construction to use water reserved by Future Use Permit No. N/A



1. Name of Applicant CITY OF RAPID CITY Phone No. (605) 394-4165

Post Office Address 300 6TH STREET RAPID CITY State SD 57701
(Street, RR or Box) (City) Zip Code

2. Amount of water claimed (c.f.s) 2.22 CFS NOT TO EXCEED 353.5 AF/YR OR 228.9 AF/YR
AT ALTERNATE PACTOLA RESERVOIR DIVERSION.

3. Source of water supply RAPID CREEK (SEE ATTACHED EXHIBIT 1)

4. Location of point of diversion SEE ATTACHED EXHIBIT 2 FOR LEGAL DESCRIPTIONS OF CITY
OF RAPID CITY WATER TREATMENT PLANT, INFILTRATION GALLERIES AND ALTERNATE
PACTOLA RESERVOIR DIVERSION POINTS. County PENNINGTON

5. Counties where water will be used PENNINGTON COUNTY, SOUTH DAKOTA

6. Annual period during which water is to be used May 1 through Oct 31
APRIL 15 THROUGH NOVEMBER 1 (JANUARY 1
 THROUGH DECEMBER 31 FOR PACTOLA DIVERSION RELEASES FROM STORAGE)

7. Give a brief description of proposed project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)
 THE PROJECT IS DESCRIBED IN DETAIL IN THE ACCOMPANYING WRIGHT WATER ENGINEERS, INC. REPORT (STROMER PROPERTY). THE PROJECT WILL DIVERT WATER FROM RAPID CREEK TO THE CITY OF RAPID CITY WATER TREATMENT PLANT THROUGH THE EXISTING INFILTRATION STRUCTURE ON RAPID CREEK, AND TO THE EXISTING INFILTRATION GALLERIES. THE PROJECT WILL ALSO, IN THE ALTERNATIVE BUT NOT SIMULTANEOUSLY, DIVERT WATER FROM RAPID CREEK TO STORAGE IN PACTOLA RESERVOIR.

Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map (see instruction)

STATE OF SOUTH DAKOTA)

County of Pennington)^{ss}

Joe Bailey Acting

I, EDWARD R. MCLAUGHLIN, MAYOR FOR THE CITY OF RAPID CITY

this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.

ATTEST:

Signed

Francis Kellum
 FINANCE OFFICER

Subscribed and sworn to before me this 6 day of February 1992

Francis Kellum
 Notary Public

My Commission expires 12-20-99



LOCATION OF POINTS OF DIVERSION

City of Rapid City Water Treatment Plant:

North 71° 39' West, 1205 ft. from East 1/4 corner of Section Three (3), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Sioux Park "Girlscout" Gallery:

1270 ft. North 51° 05' East of Southwest corner of Section Three (3), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Meadowbrook Gallery:

2032 ft. South 31° 41' West of Northeast corner of Section Nine (9), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Jackson Springs Gallery:

2943 ft. North 58° 54' West of Southeast corner of Section Eight (8), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Pactola Reservoir (inlet to the service spillway):

South 19° East, 3740 ft. of Northwest corner of Section Two (2), Township One (1) North, Range Five (5) East of the Black Hills Meridian.

LOCATION OF PROPOSED ALTERNATE POINTS OF DIVERSION FOR THE CITY OF RAPID CITY WATER RIGHTS TRANSFER

[Signature]
2-4-92
DANIEL L. BJERKE, P. E.
RAPID CITY WATER AND WATER RECLAMATION DIVISION MANAGER



Supplemental Information

(type or print in ink)



1. Well Information - Proposed construction N/A

- a) Drill Hole Diameter _____ Depth _____
- b) Casing Type _____ Diameter _____ Thickness _____
- c) Screen Type _____ Diameter _____ Thickness _____
- d) Gravel Pack Thickness _____ Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material _____
- f) Depth to Water (ground surface to water level) _____
- g) Distance to nearest existing domestic well:
 On applicants property _____ On property owned by others _____

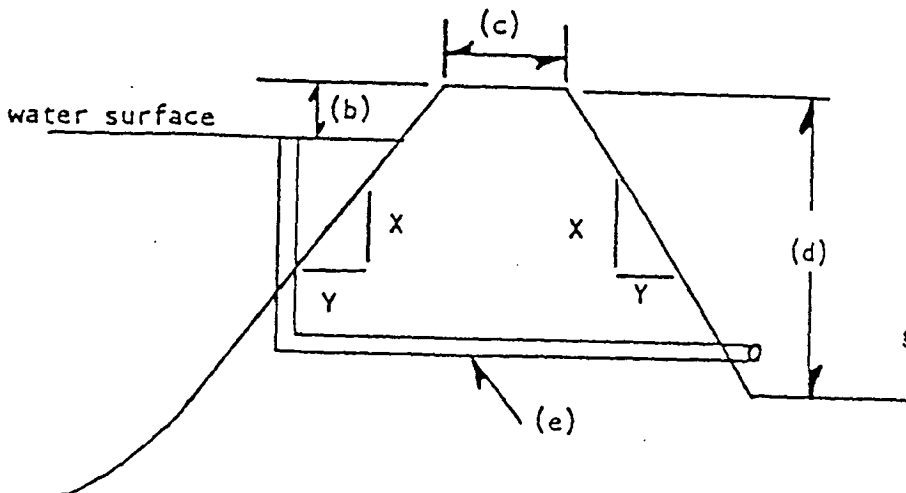
2. Dugout Information Estimates N/A

- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

3. Water Storage Dams (EXISTING PACTOLA RESERVOIR)

If the proposed water use system contains one or more storage dams, please furnish the information requested below. The locations of each dam should be shown on the map submitted with the application.

- a) If a private engineering firm or government agency was involved in the design of this dam please give their name and address



- b) Freeboard 3.3 FT.
- c) Crest Width 40 FT.

Crest Length 5,200 FT.
 (INCLUDING DIKES)

- d) Height 245 FT.

- e) Primary Outlet Capacity 1,150 CFS
 If Pipe, diameter TWO 2.75 FT. X
2.75 FT. GATES

- f) Secondary Spillway Capacity 245,000 CFS
 Spillway width 425 FT.

- g) X & Y Slope 2 - 1/2:1
 Upstream _____
 Downstream 2:1

Surface Area of Impoundment 1,232 ACRES
 1/

Storage 99,029 1/ _____ acre feet

Drainage area above dam 319 SQ. MI.
 1/ INCLUDES FLOOD POOL

Signature of Applicant Joe Bailey
 ATTEST [Signature]
 4-87
 FINANCE OFFICER

SOUTH DAKOTA
WATER PERMIT No. 2218-2

Date of first receipt of application February 10, 1992.

The Water Management Board approved Water Permit Application No. 2218-2 on July 22, 1992 for City of Rapid City, 300 6th St, Rapid City SD 57701 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 2218-2 transfers the use of a portion of Rapid Creek natural flows appropriated for irrigation use by South Side Ditch to municipal, industrial, commercial, common distribution system, rural water system, suburban housing, and domestic uses. The portion of Rapid Creek natural flows transferred to the city is 2.16 cubic feet of water per second (cfs) with an annual volume limitation of 378.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 193.2 acre-feet, if stored in Pactola Reservoir. Historically, the 2.16 cfs has been used to irrigate approximately 192.5 acres located in that portion of Section 29 lying south of Rapid Creek, except for that portion of the SE 1/4 SE 1/4 lying south of Rapid Creek, and except for that portion of the SW 1/4 SW 1/4 lying south of the South Side Ditch, all in T1N-R9E also known as the Stromer property. The existing diversion point on Rapid Creek for South Side Ditch is located in the SE 1/4 NW 1/4 Section 15-T1N-R8E. This permit changes the diversion point for the 2.16 cfs to diversion points for use by the city to be located in the SE 1/4 NE 1/4 Section 3 (Rapid City Water Treatment Plant); SW 1/4 SW 1/4 Section 3 (Sioux Park Gallery); SE 1/4 NE 1/4 Section 9 (Meadowbrook Gallery); NW 1/4 SE 1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E or to allow storage in Pactola Reservoir. The location of the Pactola Reservoir diversion point is the NW 1/4 SW 1/4 Section 2-T1N-R5E and the reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E. This permit does not authorize any new water appropriation from Rapid Creek.
2. The water appropriated shall be used for the purpose of meeting Rapid City's water needs and may not exceed the amount of water needed for beneficial use for municipal, industrial, commercial, common distribution system, rural water system, suburban housing and domestic purposes.
3. The water is to be used during the following described annual period: May 1 - October 31 for diversion from the Water Treatment Plants, Sioux Park Gallery, Meadowbrook Gallery and Jackson Springs Gallery and January 1 - December 31 for Pactola Reservoir diversion releases from storage.
4. The date from which applicant may claim right is May 3, 1880.
5. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

(continued)

QUALIFICATIONS

1. That Permit No. 2218-2 is limited to a diversion rate of 2.16 cfs for a total annual volume of 193.2 acre feet at Pactola Reservoir or a total annual volume of 378.6 acre feet at Sioux Park Gallery (SW 1/4 SW 1/4 Section 3), Meadowbrook Gallery (SE 1/4 NE 1/4 Section 9) Jackson Springs Gallery (NW 1/4 SE 1/4 Section 8) and the Rapid City Water Treatment Plant (SE 1/4 NE 1/4 Section 3), all in T1N-R7E. Maximum monthly diversion volumes at Pactola or the diversion points within Rapid City area as follows:

<u>Month</u>	<u>Monthly acre feet at at Pactola</u>	<u>Monthly acre feet at diversion points within Rapid City</u>
May	25.2	51.9
June	38.3	74.5
July	39.6	77.0
August	46.4	90.1
September	35.1	68.3
October	8.6	16.7

Diversions during a month may be made at either Pactola Reservoir or at the diversion points within Rapid City, but not simultaneously at both Pactola and the Rapid City diversion points.

2. That approval of Permit No. 2218-2 authorizes diversions of only natural flow water by the City of Rapid City.
3. That the City of Rapid City report to the chief engineer annually the amount of water withdrawn each month at Pactola Reservoir or the diversion points within Rapid City.
4. That the Water Management Board is retaining jurisdiction of Permit No. 2218-2 in the event that additional information shows that changes need to be made in the monthly or total annual volumes authorized by Permit No. 2218-2.
5. Diversions under Permit No. 2218-2 may not interfere with existing water rights in effect prior to approval of No. 2218-2 or any domestic rights.
6. The amount of water with a May 3, 1880, priority date, which may be appropriated under Vested Water Right No. 2040-2 is reduced by 2.16 cfs.

(continued)

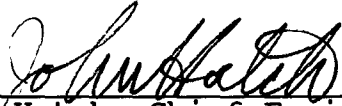
Water Permit No. 2218-2

Page 3

7. Approval of Permit No. 2218-2 cancels irrigation of 48.5 acres in the S 1/2 NW 1/4, SW 1/4, SE 1/4 Section 29-T1N-R9E which have been abandoned or forfeited and reduced No. 2040-2 by an additional 0.60 cfs. Total reduction of No. 2040-2 is 2.76 cfs and 241 acres.

WATER MANAGEMENT BOARD

By:



MAR 17 1993

John Hatch, Chief Engineer, Water Rights Division
Department of Environment Water and Natural Resources

date

EXHIBIT 1

**LEGAL DESCRIPTION OF STROMER IRRIGATED LAND
AFFECTED BY APPLICATION**



That portion of Section 29 lying south of Rapid Creek, except for that portion of the Southeast Quarter of the Southeast Quarter (SE $\frac{1}{4}$ SE $\frac{1}{4}$) lying south of Rapid Creek, and except for that portion of the Southwest Quarter of the Southwest Quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$) lying south of the South Side Ditch, all in Township One (1) North, Range Nine (9) East of the Black Hills Meridian, Pennington County, South Dakota, containing 192.5 irrigated acres, more or less.

EXHIBIT 2

**APPLICATION FOR PERMIT TO APPROPRIATE WATER
WITHIN THE STATE OF SOUTH DAKOTA**



4. Location of Points of Diversion (continued)

City of Rapid City Water Treatment Plant:

North 71° 39' West, 1025 ft. from East $\frac{1}{4}$ corner of Section Three (3), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Sioux Park "Girlscout" Gallery:

1270 ft. North 54° 05' East of Southwest Corner of Section Three (3), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Meadowbrook Gallery:

2032 ft. South 31° 41' West of Northeast corner of Section Nine (9), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Jackson Springs Gallery:

2943 ft. North 58° 54' West of Southeast Corner of Section Eight (8), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Alternate Pactola Reservoir Diversion (Inlet to Service Spillway):

South 19° East, 3740 feet of Northwest Corner of Section Two (2), Township One (1) North, Range Five (5) East of the Black Hills Meridian.

Reservoir generally located in portions of Sections Two (2), Three (3), Four (4), Five (5), Ten (10) and Eleven (11), Township One (1) North, Range Five (5) East of the Black Hills Meridian, and portions of Sections Thirty-One (31), Thirty-Two (32), Thirty-Three (33) and Thirty-Four (34), Township Two (2) North, Range Five (5) East of the Black Hills Meridian.

All of the above in Pennington County, South Dakota.

RECEIPT

Division of Water Rights

413062

South Dakota Department of Water and Natural Resources

Pierre, February 10, 19 92

RECEIVED OF Leslie J. England, 331 St. Joseph St., Rapid City, SD 57701

the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>2218-2</u> to Appropriate Water, to construct works and to put water to beneficial use	50	00
Fee for Application for Permit No. _____ to Appropriate Water for Future Use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for _____		
(Any Other Work Provided by Law)	Total	50 00

By John Hatch CF
Chief Engineer

TRANSFERABLE YIELD TO WTP

SUMMARY TABLETransferable Amounts (acre-feet)To Pactola Res.To WTP/Infil. Galleries1. Original Calculation Procedures

AS	a) 9.8% seepage loss 50% field efficiency	193.2	378.6
3.7	b) 21.7% seepage loss 50% field efficiency	170.2	291.2

2. Claim Credit for Soil Moisture Calculations

a) 9.8% seepage loss 50% field efficiency	271.1	378.6
b) 21.7% seepage loss 50% field efficiency	241.7	291.2



CALCULATIONS TO DETERMINE TRANSFERABLE YIELD TO WTP

I. 9.8% Seepage Loss, 50% Field Efficiency, Average Year Conditions, Original Calculation and New Calculation Procedures

We can transfer 389.4 acre-feet (gross) to the WTP. This includes that portion of the Stromer property's share of the South Side Ditch diversion that originated from return flows from the Cyclone Ditch and Murphy Ditch to Rapid Creek upstream from the South Side Ditch headgate.

- o The 389.4 acre-feet has had the Stromer property proportionate share of the South Side Ditch carriage loss netted out. This proportionate share is:

(Avg. year South Side Ditch diversion) x (Stromer share) x (carriage loss)

$$(2,815 \text{ acre-feet})(.179)(.098) = 49.4 \text{ acre-feet}$$

- o The Stromer share of the Cyclone/Murphy Ditch return flows which accrue to Rapid Creek upstream from the South Side Ditch headgate is:

(Return flows upstream from x (Stromer share)
South Side Ditch headgate,
Appendix N)

$$(336.1 \text{ acre-feet})(.179) = 60.2 \text{ acre-feet}$$

- o The bypassed diversion of the Cyclone/Murphy Ditch return flows can be used to supply the Stromer portion of the South Side Ditch carriage losses. Therefore, the net deduction to the 389.4 acre-feet of gross transfer to the water treatment plant to account for the Cyclone/Murphy Ditch return flows is:

$$60.2 \text{ acre feet} - 49.4 \text{ acre-feet} = 10.8 \text{ acre-feet}$$

- o Therefore, the net transfer to the WTP is:

$$389.4 \text{ acre-feet} - 10.8 \text{ acre-feet} = 378.6 \text{ acre-feet.}$$

2. 21.7% Seepage Loss, 50% Field Efficiency, Average Year Conditions, Original Calculation and New Calculation Procedures

We can transfer 340.3 acre-feet (gross) to the WTP. This includes that portion of the Stromer property's share of the South Side Ditch diversion that originated from return flows from the Cyclone Ditch and Murphy Ditch to Rapid Creek upstream from the South Side Ditch headgate.

- o The 340.3 acre-feet has had the Stromer property proportionate share of the South Side Ditch carriage loss netted out. This proportionate share is:

(average year South Side x (Stromer share) x (carriage loss)
Ditch diversion)

$$(2,815 \text{ acre-feet}) (0.179) (0.217) = 109.3 \text{ acre-feet}$$

- o The Stromer share of the Cyclone/Murphy Ditch return flows which accrue to Rapid Creek upstream from the South Side Ditch headgate is:

(Return flows upstream x (Stromer share)
from South Side Ditch
headgate, Appendix N)

$$(336.1 \text{ acre-feet}) (0.179) = 60.2 \text{ acre-feet}$$

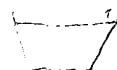


- o The bypass diversion of the Cyclone/Murphy Ditch return flows can be used to supply a portion of the Stromer share of the South Side Ditch carriage loss. Therefore, the net deduction to the 340.3 acre-feet of gross transfer to the water treatment plant to account for the Cyclone/Murphy Ditch return flows is:

$$109.3 \text{ acre-feet} - 60.2 \text{ acre-feet} = 49.1 \text{ acre-feet}$$

- o Therefore, the net transfer is:

$$340.3 \text{ acre-feet} - 49.1 \text{ acre-feet} = 291.2 \text{ acre-feet}$$



1. Derivation of the 0.48 cfd/ft²

$$(0.83 \text{ ft}^3/\text{sec}) \left(\frac{1}{16,100 \text{ ft.}} \right) \left(\frac{1}{11 \text{ ft.}} \right) \frac{86,400 \text{ sec/day}}{0.85} = 0.48 \text{ cfd/ft}^2$$

The use of the 0.85 factor prorates the data obtained for the ditch flowing at 85 percent of the wetted perimeter (3.83 cfs) to a situation with the ditch flowing full. Therefore, the 0.48 cfd/ft² is for the ditch flowing full.

2. Derivation of the 293 acre-feet

$$\frac{(0.48 \text{ cfs/ft}^2) (16,100 \text{ ft}) (11 \text{ ft}) (150 \text{ days/season})}{43,560 \text{ ft}^3/\text{acre-foot}} = 293 \text{ acre-feet}$$

The 293 acre-feet is based on a full ditch for the 150 days.

3. Therefore, to estimate the percentage carriage loss, the actual flow in the ditch should be used and not the flow at the time of the carriage loss study. Therefore use:

1989 South Side Ditch (including Little Giant) diversion is 3,644 acre-feet

Estimated Little Giant Ditch diversion at South Side Ditch headgate of 652 acre-feet in 1989

$$\text{Therefore, percentage ditch seepage loss is } 293 / (3,644 - 652) = \frac{217}{3,000} = 8.0\%$$

TABLE A ORIGINAL CALCULATION PROCEDURE, 9.8% SEEPAGE LOSS 50% IRRIGATION EFFICIENCY

DETERMINATION OF CONSUMPTIVE USE FOR TRANSFER

RAPID CITY WATER RIGHTS

901-048.010

MARCH 3, 1992

FILENAME: B:\STROMER\AVCU50%.WQ1

Q	R
MONTH	SOUTH SIDE WATER (AF)
MAY	404
JUN	580
JUL	509
AUG	701
SEP	531
TOTAL	2815

TRANSFERABLE AMOUNT FROM STROMER PROPERTY PORTION OF SOUTH SIDE DITCH WATER RIGHTS (AVERAGE)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
MONTH	Q.U. (IN)	PRECIP. (IN)	EFFECT PRECIP. (IN)	PRECIP. ADJ. Q.U. (IN)	EXCESS PRECIP. TO SOIL MOIST. DURING MONTH (IN)	SOIL MOIST. USED TO SATISFY ADJUST. C.U. (IN)	REMAIN. CROP REQUIRE. (IN)	GROSS CROP NEEDS (IN)	FARM IRRIG. SUPPLY (IN)	EXCESS IRRIG. SOIL MOIST. CONTAIN. (IN)	ADJUST. SOIL MOIST. STORAGE AFTER IRRIG. (IN)	ADDITIONAL WATER REQUIRED TO MEET C.U. NEEDS FROM SUBSINK. (IN)	DEEP PERC. (25.0%) (IN)	SURFACE WATER RETURN FLOW (25.0%) (IN)	% OF STROMER HISTORIC DIVERSION (NO)	CLAIMED IRRIG. C.U. FOR TRANSFER (NO)
NOV	0.00	0.53	0.37	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00
DEC	0.00	0.41	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00
JAN	0.00	0.50	0.35	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00
FEB	0.00	0.59	0.41	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00
MAR	0.00	1.11	0.78	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00
APR	0.55	2.11	1.48	0.17	0.93	0.17	0.00	0.00	0.00	0.00	1.31	0.00	0.00	0.00	0.00	0.00
MAY	3.29	2.58	1.72	1.57	0.00	1.57	0.00	0.00	3.33	2.16	3.72	0.00	0.63	0.63	1.67	1.57
JUN	4.71	3.29	2.31	2.40	0.00	2.40	0.00	0.00	4.78	3.11	4.43	0.00	1.20	1.20	2.99	2.39
JUL	6.43	1.87	1.54	4.94	0.00	4.43	0.51	1.02	4.94	2.54	2.54	0.00	1.28	1.28	2.47	2.47
AUG	5.70	1.55	1.24	4.45	0.00	2.54	1.92	3.83	5.75	1.27	1.27	0.00	1.44	1.44	2.89	2.89
SEP	3.24	1.10	0.78	2.46	0.00	1.27	1.19	2.39	4.86	1.29	1.29	0.00	1.09	1.09	2.19	2.19
OCT	1.47	0.75	0.53	1.07	0.00	1.07	0.00	0.00	1.07	0.70	0.92	0.00	0.27	0.27	0.54	0.54
TOTAL	25.45	16.39	11.80	17.07	3.13	13.48	3.82	7.25	24.28	11.07	22.91	0.00	8.07	8.07	12.14	12.04

AVERAGE CONDITIONS, CROP = HAY

SOUTH SIDE DITCH AND LITTLE GIANT DITCH IRRIGATED ACREAGE (1989) = 1079 + 235 = 1313

9.8% WEIGHTED SEEPAGE LOSS IN 1989

STROMER IRRIGATED ACREAGE = 192.5

50% IRRIGATION EFFICIENCY USING FLOOD IRRIGATION

DEEP PERCOLATION IS ONE HALF OF IRRIGATION INEFFICIENCY (25.0%) PLUS EXCESS SOIL MOISTURE

OTHER HALF OF IRRIGATION INEFFICIENCY (25.0%) IS SURFACE WATER RETURN FLOW

PACT. = PACTOLA RESERVOIR

WTP = RAPID CITY WATER TREATMENT PLANT AND INFILTRATION GALLERIES

SOUTH SIDE DITCH AVERAGE MONTHLY DIVERSION IS FOR YEARS 1949-1979 DUE TO CONSISTENCY OF DATA

GROSS TRANSFERABLE AMOUNT FROM STROMER PROPERTY UNDER SOUTH SIDE DITCH			
	(INCHES)	(FEET)	(AC.FT)
TO PACT.	12.04	1.0038	193.2
TO WTP	24.28	2.0230	389.4



TABLE B ORIGINAL CALCULATION PROCEDURE, 21.7% SEEPAGE LOSS 50% IRRIGATION EFFICIENCY

DETERMINATION OF CONSUMPTIVE USE FOR TRANSFER

RAPID CITY WATER RIGHTS

90-046.010

MARCH 11, 1992

FILENAME: BASTROMER,AVOLU50%B.WQ1

D	R
MONTH	SOUTH SIDE WATER (AF)
MAY	404
JUN	580
JUL	598
AUG	701
SEP	531
TOTAL	2815

TRANSFERABLE AMOUNT FROM STROMER PROPERTY PORTION OF SOUTH SIDE DITCH WATER RIGHTS (AVERAGE)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		P
MONTH	C.U. (IN)	PRECIP (IN)	EFFECT PRECIP (IN)	PRECIP ADJ. C.U. (IN)	EXCESS PRECIP TO SOIL MOIST. DURING MONTH (IN)	SOIL MOIST. USED TO SATISFY ADJUST. C.U. (IN)	REMAIN. CROP MOISTURE (IN)	GROSS CROP NEEDS (IN)	FARM IRRIG. SUPPLY (IN)	EXCESS IRRIG. SOIL MOIST. CONTAIN. (IN)	ACCUM. SOIL MOIST. STORAGE AFTER IRRIG. (IN)	ADDITIONAL WATER REQUIRED TO MEET C.U. NEEDS FROM SUBFREQ. (IN)	DEEP PERC. (25.0%) (IN)	SURFACE WATER RETURN FLOW (0.0%) (IN)	AMT OF STROMER HISTORIC DIVERSION (AF)	CLAIMED NEED. C.U. FOR TRANSFER (AF)
NOV	0.00	0.53	0.37	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00
DEC	0.00	0.41	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.00	0.00	0.00	0.00
JAN	0.00	0.50	0.35	0.00	0.35	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00	0.00
FEB	0.00	0.59	0.41	0.00	0.41	0.00	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.00	0.00
MAR	0.00	1.11	0.79	0.00	0.79	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00	0.00	0.00
APR	0.55	2.11	1.46	0.17	0.93	0.17	0.00	0.00	0.00	0.00	3.13	0.00	0.00	0.00	0.00	0.00
MAY	3.29	2.58	1.72	1.57	0.00	1.57	0.00	0.00	2.89	1.88	3.43	0.00	0.72	0.72	1.45	1.45
JUN	4.71	3.29	2.31	2.40	0.00	2.40	0.00	0.00	4.15	2.70	3.73	0.00	1.04	1.04	2.08	2.08
JUL	5.49	1.87	1.54	4.94	0.00	3.73	1.21	2.42	4.29	1.22	1.22	0.00	1.07	1.07	2.14	2.14
AUG	5.70	1.55	1.24	4.49	0.00	1.22	3.24	6.49	5.02	0.00	0.00	0.74	1.25	1.25	2.51	2.51
SEP	3.24	1.10	0.78	2.49	0.00	0.00	2.49	4.92	3.80	0.00	0.00	0.58	0.95	0.95	1.90	1.90
OCT	1.47	0.75	0.53	1.07	0.00	0.00	1.07	2.14	1.07	0.00	0.09	0.54	0.27	0.27	0.54	0.54
TOTAL	25.45	16.39	11.90	17.07	3.13	9.09	7.98	15.96	21.21	5.79	17.16	1.83	5.30	5.30	10.61	10.61

AVERAGE CONDITIONS, CROP = HAY

SOUTH SIDE DITCH AND LITTLE GIANT DITCH IRRIGATED ACREAGE (1969) = 1076 + 235 = 1313

21.7% WEIGHTED SEEPAGE LOSS IN 1989

STROMER IRRIGATED ACREAGE = 112.5

50% IRRIGATION EFFICIENCY USING FLOOD IRRIGATION

DEEP PERCOLATION IS ONE HALF OF IRRIGATION INEFFICIENCY (25.0%) PLUS EXCESS SOIL MOISTURE

OTHER HALF OF IRRIGATION INEFFICIENCY (25.0%) IS SURFACE WATER RETURN FLOW

PACT. = PACTOLA RESERVOIR

WTP = RAPID CITY WATER TREATMENT PLANT AND INFILTRATION GALLERIES

SOUTH SIDE DITCH AVERAGE MONTHLY DIVERSION IS FOR YEARS 1949-1979 DUE TO CONSISTENCY OF DATA

GROSS TRANSFERABLE AMOUNT FROM STROMER PROPERTY UNDER SOUTH SIDE DITCH			
	(INCHES)	(FEET)	(AC.FT)
TO PACT.	10.61	0.8839	170.2
TO WTP	21.21	1.7679	340.3



P.07

16057736035

TO

FROM URIGHT WATER DENVER

15:21

MAR-12-1992

TABLE C SOIL MOISTURE STORAGE CALCULATION PROCEDURE REVISED 21.7% SEEPAGE LOSS, 50% IRRIGATION EFFICIENCY

DETERMINATION OF CONSUMPTIVE USE FOR TRANSFER

RAPID CITY WATER RIGHTS

901-046.010

MARCH 11, 1992

FILENAME: B1STROMER/AVC/USO%0.WQ1

THIS SPREADSHEET USES THE LESS CONSERVATIVE METHOD FOR CALCULATING THE TRANSFERABLE CONSUMPTIVE USE

Q	R
MONTH	SOUTH SIDE WATER (AF)
MAY	404
JUN	580
JUL	590
AUG	701
SEP	531
TOTAL	2815

TRANSFERABLE AMOUNT FROM STROMER PROPERTY PORTION OF SOUTH SIDE DITCH WATER RIGHTS (AVERAGE)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
MONTH	C.U. (IN)	PRECIP. (IN)	EFFECT PRECIP. (IN)	PRECIP. ADJ. C.U. (IN)	EXCESS PRECIP. TO SOIL MOIST. DURING MONTH (IN)	SOIL MOIST. USED TO SATISFY ADJUST. C.U. (IN)	REMAIN. CROP REQUIR. (IN)	GROSS CROP NEEDS (IN)	FARM HRSQ. SUPPLY (IN)	EXCESS IRRIG. SOIL MOIST. CONTRIB. (IN)	ACCUM. SOIL MOIST. STORAGE AFTER IRRIG. (IN)	ADDITIONAL WATER REQUIRED TO MEET C.U. NEEDS FROM SUBSRRG. (IN)	DEEP PERCO. (25.0%) (IN)	SURFACE WATER RETURN FLOW (25.0%) (IN)	SOA OF STROMER HISTORIC DIVERSION (IN)	CLAIMED IRRIG. C.U. FOR TRANSFER (IN)
NOV	0.00	0.53	0.37	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00
DEC	0.00	0.41	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.00
JAN	0.00	0.50	0.36	0.00	0.36	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00	0.00
FEB	0.00	0.59	0.41	0.00	0.41	0.00	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.00	0.00
MAR	0.00	1.11	0.76	0.00	0.76	0.00	0.00	0.00	0.00	0.00	2.20	0.00	0.00	0.00	0.00	0.00
APR	0.55	2.11	1.48	0.17	0.83	0.17	0.00	0.00	0.00	0.00	3.13	0.00	0.00	0.00	0.00	0.00
MAY	3.29	2.58	1.72	1.57	0.00	1.57	0.00	0.00	2.89	1.88	3.43	0.00	0.72	0.72	1.45	1.57
JUN	4.71	3.29	2.31	2.40	0.00	2.40	0.00	0.00	4.15	2.70	3.73	0.00	1.04	1.04	2.08	2.40
JUL	6.49	1.87	1.54	4.94	0.00	3.73	1.21	2.42	4.29	1.22	1.22	0.00	1.07	1.07	2.14	4.94
AUG	5.70	1.55	1.24	4.46	0.00	1.22	3.24	6.49	5.02	0.00	0.00	0.74	1.25	1.25	2.51	3.72
SEP	5.24	1.10	0.78	2.46	0.00	0.00	2.46	4.92	9.80	0.00	0.00	0.56	0.95	0.95	1.90	1.90
OCT	1.47	0.75	0.53	1.07	0.00	0.00	1.07	2.14	1.07	0.00	0.00	0.54	0.27	0.27	0.54	0.54
TOTAL	25.45	16.29	11.80	17.07	3.13	9.09	7.88	16.96	21.21	5.79	17.16	1.63	8.30	8.30	10.81	15.07

AVERAGE CONDITIONS, CROP = HAY

SOUTH SIDE DITCH AND LITTLE GIANT DITCH IRRIGATED ACREAGE (1969) = 1078 + 235 = 1313

21.7% WEIGHTED SEEPAGE LOSS IN 1969

STROMER IRRIGATED ACREAGE = 192.5

50% IRRIGATION EFFICIENCY USING FLOOD IRRIGATION

DEEP PERCOLATION IS ONE HALF OF IRRIGATION INEFFICIENCY (25.0%) PLUS EXCESS SOIL MOISTURE

OTHER HALF OF IRRIGATION INEFFICIENCY (25.0%) IS SURFACE WATER RETURN FLOW

PACT = PACTOLA RESERVOIR

WTP = RAPID CITY WATER TREATMENT PLANT AND INFILTRATION GALLERIES

SOUTH SIDE DITCH AVERAGE MONTHLY DIVERSION IS FOR YEARS 1943-1979 DUE TO CONSISTENCY OF DATA

GROSS TRANSFERABLE AMOUNT FROM STROMER PROPERTY UNDER SOUTH SIDE DITCH			
	(INCHES)	(FEET)	(AC.FT)
TO PACT.	15.07	1.2558	241.7
TO WTP	21.21	1.7679	340.3

Comments: This spreadsheet calculates the transferable consumptive use to Pactola by a new method which allows credit for unused soil moisture in storage. The equation for Column P is;

IF $K_i = 0$ then $P_i = E_i - M_i$ else $P_i = F_i$

for April, P_i is set equal to 0 because there are no diversions in April.

TABLE D
SOIL MOISTURE STORAGE CALCULATION PROCEDURE REVISED
9.8% SEEPAGE LOSS, 50% IRRIGATION EFFICIENCY

DETERMINATION OF CONSUMPTIVE USE FOR TRANSFER
 RAPID CITY WATER RIGHTS
 901-046.010
 MARCH 11, 1992

FILENAME: B:\STROMER\AVOU50%0.WQ1

THIS SPREADSHEET USES THE LESS CONSERVATIVE METHOD FOR CALCULATING THE TRANSFERABLE CONSUMPTIVE USE

Q	R
MONTH	SOUTH SIDE WATER (AF)
MAY	404
JUN	580
JUL	598
AUG	701
SEP	631
TOTAL	2615

TRANSFERABLE AMOUNT FROM STROMER PROPERTY PORTION OF SOUTH SIDE DITCH WATER RIGHTS (AVERAGE)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
MONTH	C.U. (IN)	PRECIP. (IN)	EFFECT. PRECIP. (IN)	PRECIP. ADJ. C.U. (IN)	EXCESS PRECIP. TO SOIL MOIST. DURING MONTH (IN)	SOIL MOIST. USED TO SATISFY ADJUST. C.U. (IN)	REMAIN. CROP REQUIRE. (IN)	GROSS CROP NEEDS (IN)	FARM IRRIG. SUPPLY (IN)	EXCESS IRRIG. SOIL MOIST. CONTRIB. (IN)	ACCUM. SOIL MOIST. STORAGE AFTER IRRIG. (IN)	ADDITIONAL WATER REQUIRED TO MEET C.U. NEEDS FROM SUBIRRIG. (IN)	DEEP PERC. (25.0%) (IN)	SURFACE WATER RETURN FLOW (25.0%) (IN)	80% OF STROMER HISTORIC DIVERSION (IN)	CLAIMED IRRIG. CAL FOR TRANSFER (IN)
NOV	0.00	0.53	0.37	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00
DEC	0.00	0.41	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.00
JAN	0.00	0.50	0.35	0.00	0.35	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00	0.00
FEB	0.00	0.59	0.41	0.00	0.41	0.00	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.00	0.00
MAR	0.00	1.11	0.78	0.00	0.78	0.00	0.00	0.00	0.00	0.00	2.20	0.00	0.00	0.00	0.00	0.00
APR	0.55	2.11	1.48	0.17	0.90	0.17	0.00	0.00	0.00	0.00	3.13	0.00	0.00	0.00	0.00	0.00
MAY	3.29	2.58	1.72	1.57	0.00	1.57	0.00	0.00	3.83	2.16	5.72	0.00	0.63	0.63	1.97	1.57
JUN	4.71	3.29	2.31	2.40	0.00	2.40	0.00	0.00	4.78	3.11	4.41	0.00	1.20	1.20	2.38	2.40
JUL	6.49	1.97	1.54	4.94	0.00	4.43	0.51	1.02	4.64	2.54	2.54	0.00	1.23	1.23	2.47	4.94
AUG	5.70	1.65	1.24	4.46	0.00	2.54	1.92	3.63	5.78	1.27	1.27	0.00	1.44	1.44	2.68	4.46
SEP	3.24	1.10	0.78	2.46	0.00	1.27	1.19	2.39	4.38	1.29	1.29	0.00	1.09	1.09	2.19	2.46
OCT	1.47	0.75	0.53	1.07	0.00	1.07	0.00	0.00	1.07	0.70	0.81	0.00	0.27	0.27	0.54	1.07
TOTAL	25.45	16.39	11.80	17.07	3.13	13.45	3.62	7.28	24.28	11.07	22.96	0.00	6.07	6.07	12.14	18.90

AVERAGE CONDITIONS, CROP = HAY
 SOUTH SIDE DITCH AND LITTLE GIANT DITCH IRRIGATED ACREAGE (1389) = 1076 + 235 = 1313
 9.8% WEIGHTED SEEPAGE LOSS IN 1969
 STROMER IRRIGATED ACREAGE = 142.5
 50% IRRIGATION EFFICIENCY USING FLOOD IRRIGATION
 DEEP PERCOLATION IS ONE HALF OF IRRIGATION INEFFICIENCY (25.0%) PLUS EXCESS SOIL MOISTURE
 OTHER HALF OF IRRIGATION INEFFICIENCY (25.0%) IS SURFACE WATER RETURN FLOW
 PACT. = PACTOLA RESERVOIR
 WTP = RAPID CITY WATER TREATMENT PLANT AND INFILTRATION GALLERIES
 SOUTH SIDE DITCH AVERAGE MONTHLY DIVERSION IS FOR YEARS 1949-1979 DUE TO CONSISTENCY OF DATA

GROSS TRANSFERABLE AMOUNT FROM STROMER PROPERTY UNDER SOUTH SIDE DITCH			
	(INCHES)	(FEET)	(AC.FT)
TO PACT.	16.90	1.4063	271.1
TO WTP	24.28	2.0230	399.4



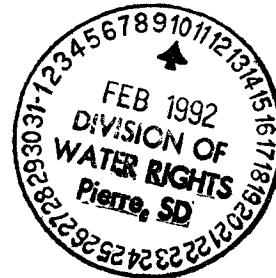
LESLIE J. ENGLAND
(ALSO ADMITTED IN COLORADO)

LAW FIRM OF
LESLIE JAMES ENGLAND
SUITE 102, WESTERN MUTUAL BUILDING
731 ST. JOSEPH STREET
RAPID CITY, SOUTH DAKOTA 57701

TELEPHONE (605) 341-7600
FAX (605) 343-4131

February 7, 1992

TRANSMITTED VIA FEDERAL EXPRESS



Mr. John Hatch, Chief Engineer
Water Rights Division
Department of Environment and
Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181

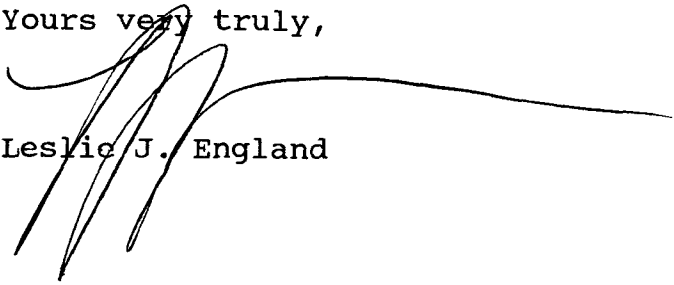
Re: City of Rapid City/Stromer Change of Use Application
(Irrigation to Municipal Use)

Dear Mr. Hatch:

Enclosed for filing please find two (2) completed and executed copies of Form 2, Application to Appropriate Water, and two (2) completed and executed copies of Form 2A, along with my law firm check in the amount of \$50.00 representing the application fee. Two (2) maps entitled "Location of Proposed Alternate Points of Diversion for the City of Rapid City Water Rights Transfer" signed and sealed by Daniel L. Bjerke, PE, are enclosed as a part of this application. Also transmitted under separate cover this date are two (2) copies of the February 1992 Wright Water Engineers, Inc., report describing the Stromer transfer. The City of Rapid City intends to seek a firm hearing date at the May 1992 Water Management Board Meeting.

If you have any questions about the application or enclosures, or any other matter in these regards, please do not hesitate to contact me. Thank you for your kind attention to this application.

Yours very truly,


Leslie J. England

LJE/kmr

Enclosures: As Stated
cc: Daniel L. Bjerke
Robert R. Jackson



Wright Water Engineers, Inc.

DENVER OFFICE

2490 West 26th Ave., Suite 100 A
Denver, Colorado 80211
(303) 480-1700

March 5, 1992

GLENWOOD SPRINGS OFFICE

818 Colorado Avenue
P. O. Box 219
Glenwood Springs, Colorado 81602
(303) 945-7755
Denver Direct Line: 893-1608

Mr. Mark Rath
Mr. Del Brosz
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181



Re: Stromer Property Calculations

Dear Mark and Del:

Attached are some additional calculations for the Stromer property. These include: calculations indicating that the carriage loss for the South Side Ditch should be 9.8 percent, and calculations and tables showing the transferable amounts from the Stromer property based on a 50 percent irrigation efficiency and the 9.8 percent carriage loss.

We need to carefully discuss both sets of calculations in our telephone conference scheduled for 2:00 p.m. CST on Monday, March 9.

We can also discuss at that time any concerns you have with the accounting tables in the Stromer report with regard to return flows and storage in Pactola.

Thank you for your continuing cooperation.

Sincerely,
WRIGHT WATER ENGINEERS, INC.

By _____
Leo M. Eisel, P.E.

By _____
Gary D. Witt

LME/GDW:ard
901-046.010
Encls.
cc: Leslie England
(RAPIDC/STROLTRT.LME)

SOUTH SIDE DITCH LOSS CALCULATIONS



South Side Ditch loss estimates are complicated by the diversion of Little Giant priority water at the South Side Ditch headgate.

The South Side Ditch loss estimates are based on the following:

1. 1989 diversion of 3,644 acre-feet at South Side Ditch headgate. (Appendix C in WWE Stromer property report. The 3,644 is from Water Master records sent to the Bureau of Reclamation.
2. Based on May 2, 1991 telecom between Guy Warren and Mark Rath, the Little Giant Ditch diversion in 1989 of 217 acre-feet was only for the Little Giant water diverted at the Murphy Ditch headgate. (This makes sense because as indicated below, the Little Giant water diverted at the South Side irrigated 235 acres in 1989; therefore, this would mean only $217/235 = 0.92$ acre-feet per acre delivery which is not adequate.) Therefore, the Little Giant diversion at the South Side Ditch headgate is estimated based on prorated acreage (see #5).
3. On May 5 and 6, 1991, Little Giant Ditch irrigators were telephoned to determine the acreage irrigated by Little Giant Ditch priority water diverted at the South Side Ditch headgate:

Wayne Anderson	33
Lyle Morris	40
Brian Dale	115
Northwestern Engr.	0
Ruth Anderson	<u>47</u>
Total	235 acres

Mark Rath (May 2, 1992 telecom with Guy Warren) indicated 304 acres were being irrigated by Little Giant priority diverted at South Side Ditch headgate.

4. Total irrigated acreage irrigated by South Side Ditch priority is 1,078 acres based on Bureau of Reclamation Rapid Valley Water Management Report, 1990, Map 494-623-10/11. Therefore, total acreage irrigated by South Side Ditch priority and Little Giant Ditch priority diverted at South Side Ditch headgate is:

$$1,078 + 235 = 1,313 \text{ acres}$$

5. Delivery by the South Side Ditch is:

$$\frac{3,644 \text{ acre-feet}}{1,313 \text{ acres}} = 2.77 \text{ acre-feet per acre}$$

Delivery to Little Giant acreage is:

$$(235 \text{ acres}) (2.77 \text{ acre-feet per acre}) = 652 \text{ acre-feet in 1989}$$

6. From Appendix J, page 6 in Rapid Valley Water Management Study, the South Side Ditch had estimated losses of 293 acre-feet in 1989. Therefore:

$$293 / (3,644 - 652) = 293 / 2,992 = 9.8 \text{ percent}$$

7. From Appendix J in Rapid Valley Water Management Study, Little Giant Ditch lost 33 acre-feet to seepage in 1989. It is assumed that this is Little Giant Ditch water diverted at South Side Ditch headgate because the Bureau of Reclamation study did not include consideration of the Murphy Ditch which is not part of the Rapid Valley Water Conservancy District. Therefore, seepage loss for Little Giant diverting at South Side Ditch is:

$$33 \text{ acre-feet} / 652 \text{ acre-feet} = 5.1 \text{ percent}$$

8. In the case of the Stromer transfer, we only have to be concerned about leaving the carriage losses associated with the Stromer property South Side Ditch in the South Side Ditch. We do not have to be concerned about the Little Giant losses. Therefore, the 9.8 percent loss for the South Side Ditch must be left in the South Side Ditch for the remaining irrigators.

DETERMINATION OF CONSUMPTIVE USE FOR TRANSFER

RAPID CITY WATER RIGHTS

901-046.010

MARCH 3, 1992

FILENAME: B:\STROMER\VCU50%.WQ1

Q	R
MONTH	SOUTH SIDE WATER (AF)
MAY	404
JUN	580
JUL	599
AUG	701
SEP	531
TOTAL	2815

TRANSFERABLE AMOUNT FROM STROMER PROPERTY PORTION OF SOUTH SIDE DITCH WATER RIGHTS (AVERAGE)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
MONTH	C.U. (IN)	PRECIP. (IN)	EFFECT. PRECIP. (IN)	PRECIP. ADJ. C.U. (IN)	EXCESS PRECIP. TO SOIL MOIST. DURING MONTH (IN)	SOIL MOIST. USED TO SATISFY ADJUST. C.U. (IN)	REMAIN. CROP REQUIR. (IN)	GROSS CROP NEEDS (IN)	FARM IRRIG SUPPLY (IN)	EXCESS IRRIG. SOIL MOIST. CONTRIB. (IN)	ACCUM. SOIL MOIST. STORAGE AFTER IRRIG. (IN)	ADDITIONAL WATER REQUIRED TO MEET C.U. NEEDS FROM SUBIRRIG. (IN)	DEEP PERC. (25.0%) (IN)	SURFACE WATER RETURN FLOW (25.0%) (IN)	50% OF STROMER HISTORIC DIVERSION (IN)	CLAIMED IRRIG. C.U. FOR TRANSFER (IN)
NOV	0.00	0.53	0.37	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00
DEC	0.00	0.41	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.00
JAN	0.00	0.50	0.35	0.00	0.35	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00	0.00
FEB	0.00	0.59	0.41	0.00	0.41	0.00	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.00	0.00
MAR	0.00	1.11	0.78	0.00	0.78	0.00	0.00	0.00	0.00	0.00	2.20	0.00	0.00	0.00	0.00	0.00
APR	0.55	2.11	1.48	0.17	0.93	0.17	0.00	0.00	0.00	0.00	3.13	0.00	0.00	0.00	0.00	0.00
MAY	3.29	2.58	1.72	1.57	0.00	1.57	0.00	0.00	3.33	2.16	3.72	0.00	0.83	0.83	1.67	1.57
JUN	4.71	3.29	2.31	2.40	0.00	2.40	0.00	0.00	4.78	3.11	4.43	0.00	1.20	1.20	2.39	2.39
JUL	6.49	1.87	1.54	4.94	0.00	4.43	0.51	1.02	4.94	2.54	2.54	0.00	1.23	1.23	2.47	2.47
AUG	5.70	1.55	1.24	4.46	0.00	2.54	1.92	3.83	5.78	1.27	1.27	0.00	1.44	1.44	2.89	2.89
SEP	3.24	1.10	0.78	2.46	0.00	1.27	1.19	2.39	4.38	1.29	1.29	0.00	1.09	1.09	2.19	2.19
OCT	1.47	0.75	0.53	1.07	0.00	1.07	0.00	0.00	1.07	0.70	0.92	0.00	0.27	0.27	0.54	0.54
TOTAL	25.45	16.39	11.80	17.07	3.13	13.45	3.62	7.25	24.28	11.07	22.95	0.00	6.07	6.07	12.14	12.04

AVERAGE CONDITIONS, CROP = HAY

SOUTH SIDE DITCH AND LITTLE GIANT DITCH IRRIGATED ACREAGE (1989) = 1078 + 235 = 1313

9.8% WEIGHTED SEEPAGE LOSS IN 1989

STROMER IRRIGATED ACREAGE = 192.5

50% IRRIGATION EFFICIENCY USING FLOOD IRRIGATION

DEEP PERCOLATION IS ONE HALF OF IRRIGATION INEFFICIENCY (25.0%) PLUS EXCESS SOIL MOISTURE

OTHER HALF OF IRRIGATION INEFFICIENCY (25.0%) IS SURFACE WATER RETURN FLOW

PACT. = PACTOLA RESERVOIR

WTP = RAPID CITY WATER TREATMENT PLANT AND INFILTRATION GALLERIES

SOUTH SIDE DITCH AVERAGE MONTHLY DIVERSION IS FOR YEARS 1949-1979 DUE TO CONSISTENCY OF DATA

GROSS TRANSFERABLE AMOUNT FROM STROMER PROPERTY UNDER SOUTH SIDE DITCH			
	(INCHES)	(FEET)	(AC.FT)
TO PACT.	12.04	1.00	193.2
TO WTP	24.28	2.02	389.4

**AVERAGE YEAR DIVERSION AT THE WATER TREATMENT
PLANT AND INFILTRATION GALLERIES
FROM STROMER PROPERTY PORTION
OF THE SOUTH SIDE DITCH WATER RIGHTS**

MONTH	AVERAGE YEAR DIVERSION (ACRE-FEET)
MAY	47.6
JUN	67.9
JUL	70.1
AUG	82.1
SEP	62.5
OCT	14.8
TOTAL	345.0

This is based on a total of 345.1 acre-feet of net transferable diversion from Table III-5. This 345.1 acre-feet is net of contributions to the South Side Ditch headgate diversions from return flows. The monthly distribution is based on the monthly distribution of farm irrigation supply for the South Side Ditch detailed in Column J of Table III-3.

TRANSFERABLE AMOUNTS FROM STROMER PROPERTY PORTION OF THE SOUTH SIDE DITCH WATER RIGHTS

CONDITION	GROSS STROMER TRANSFER (IN)	GROSS STROMER TRANSFER (AF)	RETURN FLOW CONTRIBUTION (%)	RETURN FLOW CONTRIBUTION (AF)	NET TRANSFERABLE AMOUNT (AF)
AVERAGE TO WTP	24.3	389.4	11.4	44.4	345.0
AVERAGE TO PACTOLA	12.0	193.2	--	--	193.2
1989 TO WTP	30.6	491.5	10.3	50.6	440.9
1989 TO PACTOLA	15.3	245.6	--	--	245.6

The return flow contribution is that portion of the Stromer property South Side Ditch water rights that is composed of return flows from upstream ditches which reach Rapid Creek upstream from the South Side Ditch point of diversion. These percentages and amounts are calculated in Appendix N.

Conversation or File Documentation

NAME OF PERSON OR FILE: LEO EISEL WITH WWE
ADDRESS: DENVER CO COUNTY PENNINGTON
DATE: 3/11/92 TELEPHONE _____
RE: DITCH LOSS ON SOUTH SIDE DITCH

COMMENTS:

LEO EISEL CALLED, HE SAID THAT THEY WANTED ME
TO RECONSIDER USING THE REPORTED ANNUAL DITCH LOSS OF 293 ac-ft/yr.
HE ASKED ME TO EXPLAIN HOW I CAME UP WITH THE 21.7% LOSS
FOR SOUTH SIDE DITCH. I DID.

HE ASKED ME TO CONSIDER THAT OF THE 1078 ac-ft IRRIGATED
FROM SOUTH SIDE DITCH IN 1989, MERLIN STROMER IRRIGATED 192.5 ac-ft
OR 17.9% OF THE TOTAL ACRES IRRIGATED. 17.9% OF 293 ac-ft/yr
EQUALS 52.4 ac-ft/yr ^{LOSS} ATTRIBUTED TO MERLIN STROMER IRRIGATION
PROJECT.

I TOLD HIM THAT I DID NOT AGREE WITH USING THE 293 ac-ft
PER YEAR LOSS FOR THIS PURPOSE. HE FELT THAT THIS WAS A PUBLISHED
NUMBER AND IT COULD BE DEFENDED AND STILL PROTECT THE
OTHER IRRIGATORS. I TOLD HIM I DID NOT BELIEVE
THE BUREAU OF RECLAMATION'S NUMBER WAS VALID FOR THIS PURPOSE.
BUT I DID SAY THAT IF THEY WOULD MAKE THE CALCULATIONS
AS WE HAD EARLIER AGREED ALONG WITH THEIR NEW PROPOSAL,
I WOULD LOOK AT THEM.

LEO EISEL WANTED THE BOR PHONE NUMBER SO THEY COULD
DISCUSS THE TEST WITH THEM.

File in Permit or other file as necessary. Use to document conversations and what the other party was told; why action or decision was made.

NAME: Mark R. R. R.

**Wright Water Engineers, Inc.**

DENVER OFFICE
2490 West 26th Ave., Suite 100 A
Denver, Colorado 80211
(303) 480-1700

GLENWOOD SPRINGS OFFICE
818 Colorado Avenue
P. O. Box 219
Glenwood Springs, Colorado 81602
(303) 945-7755
Denver Direct Line: 893-1608

March 13, 1992

Mr. Del Brosz
Mr. Mark Rath
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Re: Stromer Property Water Rights Transfer

Dear Messrs. Brosz and Rath:

The purpose of this letter is to revise the calculations for the Stromer property transfer in accordance with the decisions reached in the telephone conference of March 13, 1992 among Dan Bjerke, Leslie England, Del Brosz, and Leo Eisel. A revised copy of the Stromer property engineering report will be provided to you and will include all changes based on the March 13, 1992 telephone conference call. This letter is intended to provide you with the data required for further processing of the City of Rapid City's application concerning the Stromer property water rights.

The attached revisions are based on a ditch carriage loss for the South Side Ditch of 9.8 percent. The calculations supporting this 9.8 percent carriage loss are enclosed. The calculations are based on data from the U.S. Bureau of Reclamation as indicated.

The attached revisions are based on a 50 percent irrigation field efficiency. This field efficiency was agreed to in our telephone conference of March 11, 1992.

Necessary calculations to determine transferable amounts from the Stromer property are presented in the attached Table A. These calculations indicate that 389.4 gross acre-feet can be transferred to the water treatment plant or infiltration galleries as alternate points of diversion without injury to water rights holders on Rapid Creek or remaining irrigators on the South Side Ditch.

As previously discussed, it is necessary to net out return flows from the Cyclone and Murphy ditches which reach Rapid Creek upstream from the South Side Ditch headgate. Netting out these return flows results in 378.6 acre-feet of net transferable diversion to the water treatment plant and infiltration gallery alternate points of diversion. This 378.6 acre-feet is the requested transfer by the City of Rapid City to the water treatment plant and infiltration gallery. Calculations supporting this 378.6 acre-feet are attached.



Mr. Del Brosz
Mr. Mark Rath
March 13, 1992
Page 2

Calculations in Table A indicate that 193.2 acre-feet can be transferred to an alternate point of diversion at Pactola Reservoir. This 193.2 acre-feet is the requested transfer by the City of Rapid City to the alternate point of diversion at Pactola Reservoir.

The rate of diversion for the transferable amount from the Stromer property is calculated by the following method:

$$\frac{192.5 \text{ acres}}{1,877 \text{ acres}} \times 23.4 \text{ cfs at the ditch headgate} \times (1.0 - 0.098) = 2.16 \text{ cfs}$$

where the 9.8 percent carriage loss would remain in the ditch and the 1,877 acres is the licensed acreage for the South Side Ditch.

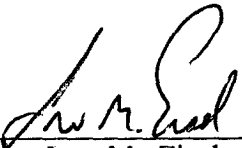
Table C presents the monthly transferable amounts for the Stromer property for transfer to storage in Pactola Reservoir or for diversion at the Rapid City water treatment plant and infiltration galleries.

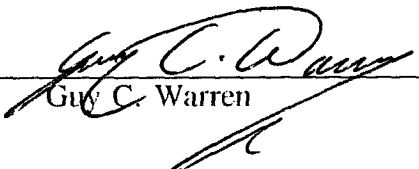
With these transferable amounts and this maximum rate of diversion, there will be no injury to downstream water rights on Rapid Creek or remaining irrigators on the South Side Ditch.

If you have questions, please contact me.

Sincerely,

WRIGHT WATER ENGINEERS, INC.

By _____
Leo M. Eisel, P.E.

By _____
Guy C. Warren

LME/GCW:ard
901-046.010
(RAPIDC/STROMTRA.LME)

CALCULATIONS TO DETERMINE TRANSFERABLE NET YIELD TO WTP

9.8% Seepage Loss, 50% Field Efficiency and Average Year Conditions

We can transfer 389.4 acre-feet (gross) to the WTP. This includes that portion of the Stromer property's share of the South Side Ditch diversion that originated from return flows from the Cyclone Ditch and Murphy Ditch to Rapid Creek upstream from the South Side Ditch headgate.

- o The 389.4 acre-feet has had the Stromer property proportionate share of the South Side Ditch carriage loss netted out. This proportionate share is:

(Avg. year South Side Ditch diversion) x (Stromer share) x (carriage loss)

$$(2,815 \text{ acre-feet})(.179)(.098) = 49.4 \text{ acre-feet}$$

- o The Stromer share of the Cyclone/Murphy Ditch return flows which accrue to Rapid Creek upstream from the South Side Ditch headgate is:

(Return flows upstream from x (Stromer share)
South Side Ditch headgate,
Appendix N)

$$(336.1 \text{ acre-feet}) (.179) = 60.2 \text{ acre-feet}$$

- o The bypassed diversion of the Cyclone/Murphy Ditch return flows can be used to supply the Stromer portion of the South Side Ditch carriage losses. Therefore, the net deduction to the 389.4 acre-feet of gross transfer to the water treatment plant to account for the Cyclone/Murphy Ditch return flows is:

$$60.2 \text{ acre-feet} - 49.4 \text{ acre-feet} = 10.8 \text{ acre-feet}$$

- o Therefore, the net transfer to the WTP is:

$$389.4 \text{ acre-feet} - 10.8 \text{ acre-feet} = 378.6 \text{ acre-feet.}$$

CALCULATION OF SOUTH SIDE DITCH CARRIAGE LOSS

1. Derivation of the 0.48 cfd/ft²

$$(0.83 \text{ ft}^3/\text{sec}) \left(\frac{1}{16,100 \text{ ft.}} \right) \left(\frac{1}{11 \text{ ft.}} \right) \frac{86,400 \text{ sec/day}}{0.85} = 0.48 \text{ cfd/ft}^2$$

The use of the 0.85 factor prorates the data obtained for the ditch flowing at 85 percent of the wetted perimeter (3.83 cfs) to a situation with the ditch flowing full. Therefore, the 0.48 cfd/ft² is for a condition in which 100 percent of the wetted perimeter is utilized. All data used in these calculations were obtained in the U.S. Bureau of Reclamation, September 1989 ditch loss investigation for the South Side Ditch (U.S. Bureau of Reclamation, Rapid Valley Water Management Study, 1990, Appendix J and March 11, 1992 telephone conference by Leo Eisel to Kurt Anderson, USBR).

2. Derivation of the 293 acre-feet

$$\frac{(0.48 \text{ cfd/ft}^2) (16,100 \text{ ft}) (11 \text{ ft}) (150 \text{ days/season})}{43,560 \text{ ft}^3/\text{acre-foot}} = 293 \text{ acre-feet}$$

The 293 acre-feet is based on a full ditch for the 150 days.

3. Therefore, to estimate the percentage carriage loss, the actual flow in the ditch should be used and not the flow at the time of the carriage loss study. Therefore use:

1989 South Side Ditch (including Little Giant) diversion is 3,644 acre-feet (see Appendix K in Stromer Engineering Report).

Estimated Little Giant Ditch diversion at South Side Ditch headgate of 652 acre-feet in 1989. This is based on:

- a) Total irrigated acreage for the South Side Ditch is 1,078 acres based on USBR Rapid Valley Water Management Report, 1990 Map 494-623-10/11. Total irrigated acreage for the Little Giant Ditch diverting at the South Side

Ditch headgate 15,235 acres (see Appendix I in Stromer engineering report). Therefore, total irrigated acreage is $1,078 + 235 = 1,313$ acres.

- b) In 1989, the diversion at the South Side Ditch headgate under both the South Side Ditch and Little Giant Ditch priorities was 3,644 acre-feet (see Appendix C in Stromer engineering report).
- c) Therefore, the gross delivery to lands served by the South Side Ditch headgate is:

$$\frac{3,644 \text{ acre-feet}}{1,313 \text{ acres}} = 2.77 \text{ acre-feet/acre}$$

- d) Delivery to Little Giant Ditch acreage is:

$$(235 \text{ acres}) (2.77 \text{ acre-feet/acre}) = 652 \text{ acre-feet in 1989}$$

Therefore, percentage ditch seepage loss is $293/(3,644-652) = 9.8\%$

TABLE A

Q	R
MONTH	SOUTH SIDE WATER (AF)
MAY	404
JUN	580
JUL	599
AUG	701
SEP	531
TOTAL	2815

TRANSFERABLE AMOUNT FROM STROMER PROPERTY PORTION OF SOUTH SIDE DITCH WATER RIGHTS (AVERAGE)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		P
MONTH	C.U. (IN)	PRECIP. (IN)	EFFECT. PRECIP. (IN)	PRECIP. ADJ. C.U. (IN)	EXCESS PRECIP. TO SOIL MOIST. DURING MONTH (IN)	SOIL MOIST. USED TO SATISFY ADJUST. C.U. (IN)	REMAIN. CROP REQUIR. (IN)	GROSS CROP NEEDS (IN)	FARM IRRIG. SUPPLY (IN)	EXCESS IRRIG. SOIL MOIST. CONTRIB. (IN)	ACCUM. SOIL MOIST. STORAGE AFTER IRRIG. (IN)	ADDITIONAL WATER REQUIRED TO MEET C.U. NEEDS FROM SUBIRRIG. (IN)	DEEP PERC. (25.0%) (IN)	SURFACE WATER RETURN FLOW (25.0%) (IN)	50% OF STROMER HISTORIC DIVERSION (IN)	CLAIMED IRRIG. C.U. FOR TRANSFER (IN)
NOV	0.00	0.53	0.37	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00
DEC	0.00	0.41	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.00
JAN	0.00	0.50	0.35	0.00	0.35	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00	0.00
FEB	0.00	0.59	0.41	0.00	0.41	0.00	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.00	0.00
MAR	0.00	1.11	0.78	0.00	0.78	0.00	0.00	0.00	0.00	0.00	2.20	0.00	0.00	0.00	0.00	0.00
APR	0.55	2.11	1.48	0.17	0.93	0.17	0.00	0.00	0.00	0.00	3.13	0.00	0.00	0.00	0.00	0.00
MAY	3.29	2.58	1.72	1.57	0.00	1.57	0.00	0.00	3.33	2.16	3.72	0.00	0.83	0.83	1.67	1.57
JUN	4.71	3.29	2.31	2.40	0.00	2.40	0.00	0.00	4.78	3.11	4.43	0.00	1.20	1.20	2.39	2.39
JUL	6.49	1.87	1.54	4.94	0.00	4.43	0.51	1.02	4.94	2.54	2.54	0.00	1.23	1.23	2.47	2.47
AUG	5.70	1.55	1.24	4.46	0.00	2.54	1.92	3.83	5.78	1.27	1.27	0.00	1.44	1.44	2.89	2.89
SEP	3.24	1.10	0.78	2.46	0.00	1.27	1.19	2.39	4.38	1.29	1.29	0.00	1.09	1.09	2.19	2.19
OCT	1.47	0.75	0.53	1.07	0.00	1.07	0.00	0.00	1.07	0.70	0.92	0.00	0.27	0.27	0.54	0.54
TOTAL	25.45	16.39	11.80	17.07	3.13	13.45	3.62	7.25	24.28	11.07	22.95	0.00	6.07	6.07	12.14	12.04

AVERAGE CONDITIONS, CROP = HAY

SOUTH SIDE DITCH AND LITTLE GIANT DITCH IRRIGATED ACREAGE (1989) = 1078 + 235 = 1313

9.8% WEIGHTED SEEPAGE LOSS IN 1989

STROMER IRRIGATED ACREAGE = 192.5

50% IRRIGATION EFFICIENCY USING FLOOD IRRIGATION

DEEP PERCOLATION IS ONE HALF OF IRRIGATION INEFFICIENCY (25.0%) PLUS EXCESS SOIL MOISTURE

OTHER HALF OF IRRIGATION INEFFICIENCY (25.0%) IS SURFACE WATER RETURN FLOW

PACT. = PACTOLA RESERVOIR

WTP = RAPID CITY WATER TREATMENT PLANT AND INFILTRATION GALLERIES

SOUTH SIDE DITCH AVERAGE MONTHLY DIVERSION IS FOR YEARS 1949-1979 DUE TO CONSISTENCY OF DATA

GROSS TRANSFERABLE AMOUNT FROM STROMER PROPERTY UNDER SOUTH SIDE DITCH			
	(INCHES)	(FEET)	(AC.FT)
TO PACT.	12.04	1.0036	193.2
TO WTP	24.28	2.0230	389.4

TABLE B**TRANSFERABLE AMOUNTS FROM STROMER PROPERTY
PORTION OF THE SOUTH SIDE DITCH WATER RIGHTS**

DIVERSION POINT	GROSS STROMER TRANSFER (IN)	GROSS STROMER TRANSFER (AF)	RETURN FLOW CONTRIBUTION (%)	RETURN FLOW CONTRIBUTION (AF)	NET TRANSFERABLE AMOUNT (AF)
WATER TREATMENT PLANT	24.3	389.4	2.8	10.8	378.6
PACTOLA RESERVOIR	12.0	193.2	0.0	0.0	193.2

The return flow contribution is that portion of the Stromer property South Side Ditch water rights that is composed of return flows from upstream ditches which reach Rapid Creek upstream from the South Side Ditch point of diversion. These percentages and amounts are calculated in Appendix N.

TABLE C

MONTHLY TRANSFER SUMMARY STROMER PROPERTY

MONTH	DIVERSION TO STORAGE IN PACTOLA RESERVOIR (AC.FT)*	DIVERSION AT THE RAPID CITY WTP AND INFILTRATION GALLERIES (AC.FT)**
MAY	25.2	51.9
JUNE	38.3	74.5
JULY	39.6	77.0
AUGUST	46.4	90.1
SEPTEMBER	35.1	68.3
OCTOBER	8.6	16.7
TOTAL	193.2	378.6

* Monthly amount transferable to storage in Pactola Reservoir:

Column P (Table A) x 192.5 acres x 1 foot/12 inches

** Monthly amount transferable to Rapid City WTP and infiltration galleries:

(Column J (Table A) x 192.5 acres x 1 foot/12 inches) -
2.8 percent return flows from Murphy and Cyclone
ditches (See attached Table B)



Wright Water Engineers, Inc.



DENVER OFFICE

2490 West 26th Ave., Suite 100 A
Denver, Colorado 80211
(303) 480-1700

GLENWOOD SPRINGS OFFICE

818 Colorado Avenue
P. O. Box 219
Glenwood Springs, Colorado 81602
(303) 945-7755
Denver Direct Line: 893-1608

March 16, 1992

Mr. Mark Rath
Mr. Del Brosz
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Dear Mark and Del:

Attached are revised copies of the summary reports for the Stromer property and the Keller property. These revised versions have the typos and other small mistakes corrected, these changes were telephoned to Mark Rath on March 16.

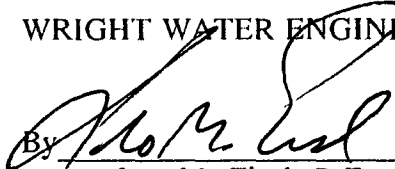
I suggest that you throw away the March 13 version and substitute the enclosed March 16 version.

If you have questions, please call.

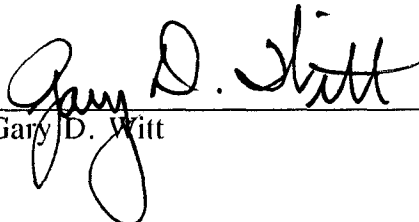
Sincerely,

WRIGHT WATER ENGINEERS, INC.

By


Leo M. Eisel, P.E.

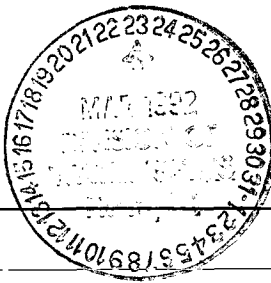
By


Gary D. Witt

LME/GDW:ard
901-046.010
Encls.
(RAPIDUC/RATHCOVE.LME)



Wright Water Engineers, Inc.



DENVER OFFICE

2490 West 26th Ave., Suite 100-A
Denver, Colorado 80211
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GLENWOOD SPRINGS OFFICE

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March 16, 1992

Mr. Del Brosz
Mr. Mark Rath
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Re: Stromer Property Water Rights Transfer

Dear Messrs. Brosz and Rath:

The purpose of this letter is to revise the calculations for the Stromer property transfer in accordance with the decisions reached in the telephone conference of March 13, 1992 among Dan Bjerke, Leslie England, Del Brosz, and Leo Eisel. A revised copy of the Stromer property engineering report will be provided to you and will include all changes based on the March 13, 1992 telephone conference call. This letter is intended to provide you with the data required for further processing of the City of Rapid City's application concerning the Stromer property water rights.

The attached revisions are based on a ditch carriage loss for the South Side Ditch of 9.8 percent. The calculations supporting this 9.8 percent carriage loss are enclosed. The calculations are based on data from the U.S. Bureau of Reclamation as indicated.

The attached revisions are based on a 50 percent irrigation field efficiency. This field efficiency was agreed to in our telephone conference of March 11, 1992.

Necessary calculations to determine transferable amounts from the Stromer property are presented in the attached Table A. These calculations indicate that 389.4 gross acre-feet can be transferred to the water treatment plant or infiltration galleries as alternate points of diversion without injury to water rights holders on Rapid Creek or remaining irrigators on the South Side Ditch.

As previously discussed, it is necessary to net out return flows from the Cyclone and Murphy ditches which reach Rapid Creek upstream from the South Side Ditch headgate. Netting out these return flows results in 378.6 acre-feet of net transferable diversion to the water treatment plant and infiltration gallery alternate points of diversion. This 378.6 acre-feet is the requested transfer by the City of Rapid City to the water treatment plant and infiltration gallery. Calculations supporting this 378.6 acre-feet are attached.

Mr. Del Brosz
Mr. Mark Rath
March 16, 1992
Page 2

Calculations in Table A indicate that 193.2 acre-feet can be transferred to an alternate point of diversion at Pactola Reservoir. This 193.2 acre-feet is the requested transfer by the City of Rapid City to the alternate point of diversion at Pactola Reservoir.

The rate of diversion for the transferable amount from the Stromer property is calculated by the following method:

$$\frac{192.5 \text{ acres}}{1,877 \text{ acres}} \quad \times \quad 23.4 \text{ cfs at the ditch headgate} \quad \times \quad (1.0 - 0.098) = 2.16 \text{ cfs}$$

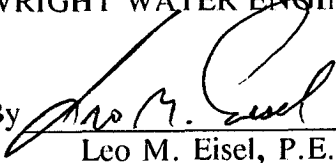
where the 9.8 percent carriage loss would remain in the ditch and the 1,877 acres is the licensed acreage for the South Side Ditch.

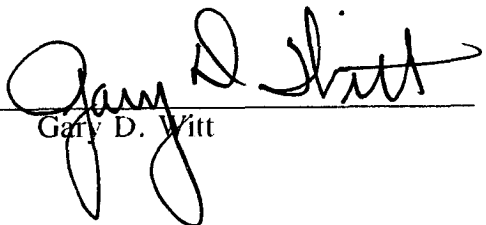
Table C presents the monthly transferable amounts for the Stromer property for transfer to storage in Pactola Reservoir or for diversion at the Rapid City water treatment plant and infiltration galleries.

With these transferable amounts and this maximum rate of diversion, there will be no injury to downstream water rights on Rapid Creek or remaining irrigators on the South Side Ditch.

If you have questions, please contact me.

Sincerely,
WRIGHT WATER ENGINEERS, INC.

By 
Leo M. Eisel, P.E.

By 
Gary D. Witt

LME/GDW:ard
901-046.010
(RAPIDC/STROMTRA.LME)
cc: Leslie J. England
Dan Bjerke

CALCULATIONS TO DETERMINE TRANSFERABLE NET YIELD TO WTP

9.8% Seepage Loss, 50% Field Efficiency and Average Year Conditions

We can transfer 389.4 acre-feet (gross) to the WTP. This includes that portion of the Stromer property's share of the South Side Ditch diversion that originated from return flows from the Cyclone Ditch and Murphy Ditch to Rapid Creek upstream from the South Side Ditch headgate.

- o The 389.4 acre-feet has had the Stromer property proportionate share of the South Side Ditch carriage loss netted out. This proportionate share is:

(Avg. year South Side Ditch diversion) x (Stromer share) x (carriage loss)

$$(2,815 \text{ acre-feet})(.179)(.098) = 49.4 \text{ acre-feet}$$

- o The Stromer share of the Cyclone/Murphy Ditch return flows which accrue to Rapid Creek upstream from the South Side Ditch headgate is:

(Return flows upstream from x (Stromer share)
South Side Ditch headgate,
Appendix N)

$$(336.1 \text{ acre-feet}) (.179) = 60.2 \text{ acre-feet}$$

- o The bypassed diversion of the Cyclone/Murphy Ditch return flows can be used to supply the Stromer portion of the South Side Ditch carriage losses. Therefore, the net deduction to the 389.4 acre-feet of gross transfer to the water treatment plant to account for the Cyclone/Murphy Ditch return flows is:

$$60.2 \text{ acre-feet} - 49.4 \text{ acre-feet} = 10.8 \text{ acre-feet}$$

- o Therefore, the net transfer to the WTP is:

$$389.4 \text{ acre-feet} - 10.8 \text{ acre-feet} = 378.6 \text{ acre-feet.}$$

CALCULATION OF SOUTH SIDE DITCH CARRIAGE LOSS

1. Derivation of the 0.48 cfd/ft²

$$(0.83 \text{ ft}^3/\text{sec}) \left(\frac{1}{16,100 \text{ ft.}} \right) \left(\frac{1}{11 \text{ ft.}} \right) \frac{86,400 \text{ sec/day}}{0.85} = 0.48 \text{ cfd/ft}^2$$

The use of the 0.85 factor prorates the data obtained for the ditch flowing at 85 percent of the wetted perimeter (3.83 cfs) to a situation with the ditch flowing full. Therefore, the 0.48 cfd/ft² is for a condition in which 100 percent of the wetted perimeter is utilized. All data used in these calculations were obtained in the U.S. Bureau of Reclamation, September 1989 ditch loss investigation for the South Side Ditch (U.S. Bureau of Reclamation, Rapid Valley Water Management Study, 1990, Appendix J and March 11, 1992 telephone conference by Leo Eisel to Kurt Anderson, USBR).

2. Derivation of the 293 acre-feet

$$\frac{(0.48 \text{ cfd/ft}^2) (16,100 \text{ ft}) (11 \text{ ft}) (150 \text{ days/season})}{43,560 \text{ ft}^3/\text{acre-feet}} = 293 \text{ acre-feet}$$

The 293 acre-feet is based on a full ditch for the 150 days.

3. Therefore, to estimate the percentage carriage loss, the actual flow in the ditch should be used and not the flow at the time of the carriage loss study. Therefore use:

1989 South Side Ditch (including Little Giant) diversion is 3,644 acre-feet (see Appendix K in Stromer Engineering Report).

Estimated Little Giant Ditch diversion at South Side Ditch headgate of 652 acre-feet in 1989. This is based on:

- a) Total irrigated acreage for the South Side Ditch is 1,078 acres based on USBR Rapid Valley Water Management Report, 1990 Map 494-623-10/11. Total irrigated acreage for the Little Giant Ditch diverting at the South Side

Ditch headgate 235 acres (see Appendix I in Stromer engineering report).
Therefore, total irrigated acreage is $1,078 + 235 = 1,313$ acres.

- b) In 1989, the diversion at the South Side Ditch headgate under both the South Side Ditch and Little Giant Ditch priorities was 3,644 acre-feet (see Appendix C in Stromer engineering report).
- c) Therefore, the gross delivery to lands served by the South Side Ditch headgate is:

$$\frac{3,644 \text{ acre-feet}}{1,313 \text{ acres}} = 2.77 \text{ acre-feet/acre}$$

- d) Delivery to Little Giant Ditch acreage is:

$$(235 \text{ acres}) (2.77 \text{ acre-feet/acre}) = 652 \text{ acre-feet in 1989}$$

Therefore, percentage ditch seepage loss is $293/(3,644-652) = 9.8\%$

TABLE A

Q	R
MONTH	SOUTH SIDE WATER (AF)
MAY	404
JUN	580
JUL	599
AUG	701
SEP	531
TOTAL	2815

TRANSFERABLE AMOUNT FROM STROMER PROPERTY PORTION OF SOUTH SIDE DITCH WATER RIGHTS (AVERAGE)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MONTH	C.U. (IN)	PRECIP. (IN)	EFFECT. PRECIP. (IN)	PRECIP. ADJ. C.U. (IN)	EXCESS PRECIP. TO SOIL MOIST. DURING MONTH (IN)	SOIL MOIST. USED TO SATISFY ADJUST. C.U. (IN)	REMAIN. CROP REQUIR. (IN)	GROSS CROP NEEDS (IN)	FARM IRRIG. SUPPLY (IN)	EXCESS IRRIG. SOIL MOIST. CONTRIB. (IN)	ACCUM. SOIL MOIST. STORAGE AFTER IRRIG. (IN)	ADDITIONAL WATER REQUIRED TO MEET C.U. NEEDS FROM SUBIRRIG. (IN)	DEEP PERC. (25.0%) (IN)	SURFACE WATER RETURN FLOW (25.0%) (IN)	CLAIMED IRRIG. C.U. FOR TRANSFER (IN)
NOV	0.00	0.53	0.37	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00
DEC	0.00	0.41	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00
JAN	0.00	0.50	0.35	0.00	0.35	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00
FEB	0.00	0.59	0.41	0.00	0.41	0.00	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.00
MAR	0.00	1.11	0.78	0.00	0.78	0.00	0.00	0.00	0.00	0.00	2.20	0.00	0.00	0.00	0.00
APR	0.55	2.11	1.48	0.17	0.93	0.17	0.00	0.00	0.00	0.00	3.13	0.00	0.00	0.00	0.00
MAY	3.29	2.58	1.72	1.57	0.00	1.57	0.00	0.00	3.33	2.16	3.72	0.00	0.83	0.83	1.57
JUN	4.71	3.29	2.31	2.40	0.00	2.40	0.00	0.00	4.78	3.11	4.43	0.00	1.20	1.20	2.39
JUL	6.49	1.87	1.54	4.94	0.00	4.43	0.51	1.02	4.94	2.54	2.54	0.00	1.23	1.23	2.47
AUG	5.70	1.55	1.24	4.46	0.00	2.54	1.92	3.83	5.78	1.27	1.27	0.00	1.44	1.44	2.89
SEP	3.24	1.10	0.78	2.46	0.00	1.27	1.19	2.39	4.38	1.29	1.29	0.00	1.09	1.09	2.19
OCT	1.47	0.75	0.53	1.07	0.00	1.07	0.00	0.00	1.07	0.70	0.92	0.00	0.27	0.27	0.54
TOTAL	25.45	16.39	11.80	17.07	3.13	13.45	3.62	7.25	24.28	11.07	22.95	0.00	6.07	6.07	12.04

AVERAGE CONDITIONS, CROP = HAY

SOUTH SIDE DITCH AND LITTLE GIANT DITCH IRRIGATED ACREAGE (1989) = 1078 + 235 = 1313

9.8% SEEPAGE LOSS IN 1989

STROMER IRRIGATED ACREAGE = 192.5

50% IRRIGATION EFFICIENCY USING FLOOD IRRIGATION

DEEP PERCOLATION IS ONE HALF OF IRRIGATION INEFFICIENCY (25.0%) PLUS EXCESS SOIL MOISTURE

OTHER HALF OF IRRIGATION INEFFICIENCY (25.0%) IS SURFACE WATER RETURN FLOW

PACT. = PACTOLA RESERVOIR

WTP = RAPID CITY WATER TREATMENT PLANT AND INFILTRATION GALLERIES

SOUTH SIDE DITCH AVERAGE MONTHLY DIVERSION IS FOR YEARS 1949-1979 DUE TO CONSISTENCY OF DATA

GROSS TRANSFERABLE AMOUNT FROM STROMER PROPERTY UNDER SOUTH SIDE DITCH			
	(INCHES)	(FEET)	(AC.FT)
TO PACT.	12.04	1.00	193.2
TO WTP	24.28	2.02	389.4

TABLE B**TRANSFERABLE AMOUNTS FROM STROMER PROPERTY
PORTION OF THE SOUTH SIDE DITCH WATER RIGHTS**

DIVERSION POINT	GROSS STROMER TRANSFER (IN)	GROSS STROMER TRANSFER (AF)	RETURN FLOW CONTRIBUTION (%)	RETURN FLOW CONTRIBUTION (AF)	NET TRANSFERABLE AMOUNT (AF)
WATER TREATMENT PLANT	24.3	389.4	2.8	10.8	378.6
PACTOLA RESERVOIR	12.0	193.2	0.0	0.0	193.2

The return flow contribution is that portion of the Stromer property South Side Ditch water rights that is composed of return flows from upstream ditches which reach Rapid Creek upstream from the South Side Ditch point of diversion. These percentages and amounts are calculated in Appendix N.

TABLE C

MONTHLY TRANSFER SUMMARY STROMER PROPERTY

MONTH	DIVERSION TO STORAGE IN PACTOLA RESERVOIR (AC.FT)*	DIVERSION AT THE RAPID CITY WTP AND INFILTRATION GALLERIES (AC.FT)**
MAY	25.2	51.9
JUNE	38.3	74.5
JULY	39.6	77.0
AUGUST	46.4	90.1
SEPTEMBER	35.1	68.3
OCTOBER	8.6	16.7
TOTAL	193.2	378.6

* Monthly amount transferable to storage in Pactola Reservoir:

Column P (Table A) x 192.5 acres x 1 foot/12 inches

** Monthly amount transferable to Rapid City WTP and infiltration galleries:

(Column J (Table A) x 192.5 acres x 1 foot/12 inches) -
2.8 percent return flows from Murphy and Cyclone
ditches (See attached Table B)



2218-2

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

Dear :

Enclosed is a copy of the Notice of Hearing for Water Permit Application Nos. 2217-2 and 2218-2 for the City of Rapid City. These applications propose to transfer the use of a portion of Rapid Creek natural flows appropriated for irrigation use by South Side Ditch for use by the city. The notice of hearing is scheduled to be published in the Rapid City Journal for two consecutive weeks.

I am sending you a copy of this notice since you filed a petition to intervene in one of Rapid City's previous water permit applications to transfer use.

If you have any questions regarding the applications, please feel free to contact Mark Rath or myself at 773-3352.

Sincerely,

Eric Gronlund
Water Rights Division
(605) 773-3352

enclosure

Parties of Record for Water Permit Application No. 2142-2
City of Rapid City
November 5, 1990

Proponent

Leslie J. England, Attorney
Suite 102, Western Mutual Bldg
731 St. Joseph Street
Rapid City SD 57701

attorney for:

- City of Rapid City
300 Sixth Street
Rapid City SD 57701

Bruce Laymon, Project Manager
Bureau of Reclamation
PO Box 226
Newell, SD 57760

David Lamb
RR2 Box 223
Rapid City, SD 57701

Don Jundt
South Side Ditch
Rt. 2, Box 4920A
Rapid City, SD 57701

Opponents

Michael M. Hickey, Attorney
818 St Joseph Street
Box 2670
Rapid City SD 57709

attorney for:

- Hawthorne Ditch Co., c/o Charles Johnson 1508 E 57th St RC, SD 57701
- Mary McMasters & Harry Morris, RR #5 Box 480, Rapid City SD 57701
- Rapid Valley Water Conservancy Dist., c/o Jerry Hammerquist
- Rapid Valley Water Co. Inc., c/o David Lamb Rte 2 - Box 160 RC, SD 57701

A. Carl Ham
Ham Ranch, Inc.
HCR 36 Box 34
Caputa SD 57725

Keith Ham, President
St. Germain Ditch
HCR 36 Box 34
Caputa SD 57725

Jerry Marsh
Marsh Hereford Ranch
HCR 36 Box 35
Caputa SD 57725

Melvin Brassfield
Box 24
Caputa SD 57725

Jerry Hammerquist
Box 26
Caputa SD 57725

Robert Dustman
Dustman Ranch Partnership
Box 53
Caputa SD 57725

Walter Jones, Secretary
Lone Tree Water Co.
RR #2 Box 4970
Rapid City SD 57701

Report on Water Permit Application No. 2218-2
City of Rapid City
~~March 13, 1992~~

Application No. 2218-2, City of Rapid City, proposes to transfer an annual volume of 378.6 acre-feet of water (ac-ft), if diverted at the city's water treatment plant and infiltration galleries, or 193.2 ac-ft, if stored in Pactola Reservoir. The maximum diversion rate proposed for this transfer is 2.16 cubic feet of water per second (cfs) from the natural flows of Rapid Creek. The transfer is from irrigation to municipal, industrial, commercial, common distribution system, rural water system, suburban housing, and domestic uses for the City of Rapid City. Application No. 2218-2 proposes to transfer water which has been historically used to irrigate 192.5 acres located in SW1/4 NW1/4, SE1/4 NW1/4, NW1/4 SW1/4, NE1/4 SW1/4, SW1/4 SW1/4, SE1/4 SW1/4, NW1/4 SE1/4, SW1/4 SE1/4, AND NE1/4 SE1/4 all in Section 29-T1N-R9E, also known as the Stromer property.

The source of the water for the proposed transfer is from the natural flow of Rapid Creek when available through South Side ditch. Vested Water Right No. 2040-2, South Side Ditch, was validated for 23.40 cfs with a priority date of May 3, 1880. The existing diversion point for South Side ditch is located in the SE1/4 NW1/4 of Section 15 T1N-R8E. The locations of the diversion points for the proposed transfer are in the SE1/4 NE1/4 Section 3 (Rapid City Water Treatment Plant); SW1/4 SW1/4 Section 3 (Sioux Park Gallery); SE1/4 NE1/4 Section 9 (Meadowbrook Gallery); NW1/4 SE1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E and NW1/4 SW1/4 Section 2 T1N-R5E (Pactola Reservoir). Pactola Reservoir impounds water in portions of Section 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E. This application does not authorize any new water appropriation from Rapid Creek and the claimed priority date of May 3, 1880 is to be retained by the city.

Review of Existing Water Rights

The water to be transferred has been appropriated under Vested Water Right No. 2040-2, South Side Ditch, with a priority date of May 3, 1880. The water has been historically used to irrigate 192.5 acres located in the S1/2 NW1/4, SW1/4 and SE1/4 all in Section 29-T1N-R9E.

There are 62 existing water rights/permits on Rapid Creek from Pactola Reservoir to the Cheyenne River. Of these, 9 water rights which appropriate approximately 28.57 cfs have priority dates which are senior to this proposed transfer.

Review of the Proposed Transfer

SDCL 46-5-34.1 states that no transfer can occur unless the transfer can be made without detriment to existing rights having a priority before July 1, 1978, or to individual domestic users.

The volume of water which could be stored at Pactola Reservoir is 193.2 ac-ft annually. This volume of water is equal to the amount of water predicted to have been consumed by the crop. The amount of water which can be diverted at Rapid City water system intakes is 378.6 ac-ft annually. This volume of water is equal to the amount of water consumed by the crop plus the amount of return water which is not used by the crop and is returned to Rapid Creek.

The volume of water predicted to have been consumed by the crop is calculated on a monthly basis and totaled for an annual amount. For each month the maximum amount of water the crop would use is calculated. This is compared to the amount of water that is available for the crop's use based on historical ditch diversion and the total acreage irrigated annually from the ditch. A determination is made, on a monthly basis, whether maximum crop water usage or available water supply is the limiting factor. The lesser of these is used as the volume of crop consumed water for that particular month. It has been determined that water which has been returned to Rapid Creek through the irrigation process would also be returned to Rapid Creek by Rapid City through their waste water treatment system. (Wright, 1992)

These assigned diversion rates have been ignored during actual operations. Farm turnouts do not have measuring devices, so actual individual diversions from the ditch are unknown. Water in the ditch is shared by the users as needed. Based on actual past operations, the calculated diversion rate transfer is based on a pro rata share of the total ditch diversion. The proposed diversion rate transfer is based on water beneficially used as described under SDCL 46-1-8.

The transferable diversion rate, based on the pro rata share of water, is calculated by taking the individual irrigated acreage and dividing by the total irrigated acreage under the specific priority. This value is then multiplied by the authorized diversion rate at the ditch headgate and in this case equals 23.4 cfs. This amount is decreased by the 9.8% carriage loss that is to remain in the ditch, giving a transferable diversion rate of 2.16 cfs.

If this transfer is approved, the diversion rate and acreage covered by the May 3, 1880 priority date of Water Right 2040-2 should be decreased by an additional 0.60 cfs and 48.5 acres.

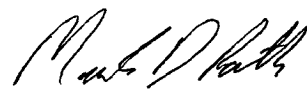
To insure that the transfer of the water can be made without detriment to existing water rights, the Water Management Board should monitor the management and operation of the proposed transfer.

Conclusions

1. SDCL 46-5-34.1 allows for the transfer of irrigation water rights apart from the land to municipal use when the transfer can be made without causing detriment to existing rights.
2. The water has been historically used to irrigate 192.5 acres.
3. The priority date of May 3, 1880 should be retained.
4. The diversion rate to be transferred is 2.16 cfs, and is based on the pro-rated share of the total diversion rate.
5. The amount of water requested to be transferred, 378.6 ac-ft and 193.2 ac-ft seem reasonable. The following table lists the monthly diversion associated with each volume:

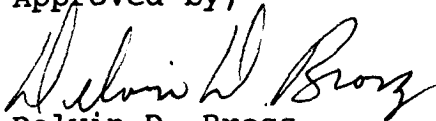
Month	Diversion at Pactola (ac-ft)	Diversion at Intakes (ac-ft)
-----	-----	-----
May	25.2	51.9
June	38.3	74.5
July	39.6	77.0
Aug	46.4	90.1
Sept	35.1	68.3
Oct	8.6	16.7

6. If application No. 2218-2 is approved, the authorized diversion rate and acreage for South Side Ditch under the April 6, 1878 priority date should be decreased by 2.16 cfs and 192.5 acres.
7. The Water Management Board should continue to monitor the management and operation of the transfer of the water right and of existing water rights.



Mark D. Rath
Natural Resources Engineer II

Approved by,



Delvin D. Brosz
Natural Resources Engineer IV

References

1. Wright Water Engineers, Inc. 1992. Engineering Report for Transfer of Stroman Property Portion of South Side Ditch Water Rights. Wright Water Engineers, Inc. Engineering Consultants, Denver, Colorado.
2. U.S. Bureau of Reclamation. 1990. Rapid Valley Water Management Study. U.S. Bureau of Reclamation, Belle Fourche Projects Office, Newell, South Dakota.
3. S.D. Department of Environment and Natural Resources. Division of Water Rights Records.

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2218-2, City of Rapid City

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Environment and Natural Resources concerning Water Permit Application No. 2218-2, City of Rapid City, 300 Sixth Street, Rapid City, SD 57701.

The Chief Engineer is recommending APPROVAL of Application No. 2218-2 because 1) the proposed diversion can be developed without unlawful impairment of existing rights, 2) the proposed use is a beneficial use and 3) in the public interest with the following qualifications:

1. That Permit No. 2218-2 is limited to a diversion rate of 2.16 cfs for a total annual volume of 193.2 acre feet at Pactola Reservoir or a total annual volume of 378.6 acre feet at Sioux Park Gallery (SW1/4 SW1/4 Section 3), Meadowbrook Gallery (NW1/4 NE1/4 Section 9) Jackson Springs Gallery (NW1/4 SE1/4 Section 8) and the Rapid City Water Treatment Plant (SE1/4 NE1/4 Section 3), all in T1N-R7E. Maximum monthly diversion volumes at Pactola or the diversion points within Rapid City are as follows:

<u>Month</u>	<u>Monthly acre feet at Pactola</u>	<u>Monthly acre feet at diversion points within Rapid City</u>
May	25.2	51.9
June	38.3	74.5
July	39.6	77.0
August	46.4	90.1
September	35.1	68.3
October	8.6	16.7

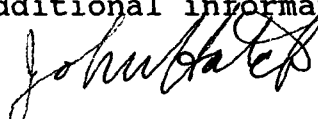
Diversions during a month may be made at either Pactola Reservoir or at the diversion points within Rapid City, but not simultaneously at both Pactola and the Rapid City diversion points.

2. That the City of Rapid City report to the Chief Engineer annually the amount of water withdrawn each month at Pactola Reservoir or the diversion points within Rapid City.
3. That the Water Management Board is retaining jurisdiction of Permit No. 2217-2 in the event that additional information shows that changes need to be made in the monthly or total annual volumes authorized by Permit No. 2217-2.
4. Diversions to Pactola will be made so as not to interfere with the prior water rights of Leedy Ditch or Cleghorn Springs, any other prior water rights or any domestic rights.

(continued)

5. The amount of water with a May 3, 1880, priority date, which may be appropriated under Vested Water Right Claim No. 2040-2 is decreased by 2.16 cfs.

See report on application for additional information.

A handwritten signature in cursive script, appearing to read "John Hatch", written in dark ink.

JOHN HATCH, Chief Engineer
March 16, 1992

Revised Report on Water Permit Application No. 2218-2
City of Rapid City
April 22, 1992

Application No. 2218-2, City of Rapid City, proposes to transfer an annual volume of 378.6 acre-feet of water (ac-ft), if diverted at the city's water treatment plant or infiltration galleries, or 193.2 ac-ft, if stored in Pactola Reservoir. The maximum diversion rate proposed for this transfer is 2.16 cubic feet of water per second (cfs) from the natural flows of Rapid Creek. The transfer is from irrigation to municipal, industrial, commercial, common distribution system, rural water system, suburban housing, and domestic uses for the City of Rapid City. Application No. 2218-2 proposes to transfer South Side Ditch Company stockholder/landowner's water which has been historically used to irrigate 192.5 acres located in SW1/4 NW1/4, SE1/4 NW1/4, NW1/4 SW1/4, NE1/4 SW1/4, SW1/4 SW1/4, SE1/4 SW1/4, NW1/4 SE1/4, SW1/4 SE1/4, AND NE1/4 SE1/4 all in Section 29-T1N-R9E, also known as the Stromer property.

The source of water for the proposed transfer is from the natural flow of Rapid Creek, when available, through South Side ditch. Vested Water Right No. 2040-2, South Side Ditch, was validated for 23.40 cfs with a priority date of May 3, 1880. The existing diversion point for South Side ditch is located in the SE1/4 NW1/4 of Section 15 T1N-R8E. The locations of the diversion points for the proposed transfer are in the SE1/4 NE1/4 Section 3 (Rapid City Water Treatment Plant); SW1/4 SW1/4 Section 3 (Sioux Park Gallery); SE1/4 NE1/4 Section 9 (Meadowbrook Gallery); NW1/4 SE1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E and NW1/4 SW1/4 Section 2 T1N-R5E (Pactola Reservoir). Pactola Reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E. This application does not request any new water appropriation from Rapid Creek and the validated priority date of May 3, 1880, will be retained by the city, if Application No. 2218-2 is approved.

Review of Existing Water Rights

The water to be transferred has been appropriated under Vested Water Right No. 2040-2, South Side Ditch, with a priority date of May 3, 1880. The water right authorizes the irrigation of 241 acres of the Stromer property. There are 192.5 acres located in the S1/2 NW1/4, SW1/4 and SE1/4 all in Section 29-T1N-R9E which have been continually irrigated. Irrigation for the balance of the 48.5 acres under the Stromer property has been abandoned or forfeited. The 48.5 acres comprise 2.6 percent of the total irrigated South Side Ditch acreage authorized by Water Right No. 2040-2. The diversion rate and acreage authorized should be decreased by 0.60 cfs and 48.5 acres due to abandonment or forfeiture.

There are 62 existing water rights/permits on Rapid Creek from Pactola Reservoir to the Cheyenne River. Of these, 9 water

rights which appropriate approximately 28.57 cfs have priority dates which are senior to this proposed transfer. These are: Water Right No. 504-2, Cleghorn Springs Water Users, for 0.89 cfs; Water Right No. 2023-2, Leedy Ditch, for 1.00 cfs; Water Right No. 1788-2, Jerry and Donna Olson, for 0.20 cfs; Water Right No. 1727-2, Rapid Valley Water Company, for 16.36 cfs; Water Right No. 1101-2, Rapid Valley Water Service Company, for 1.73 cfs; Water Right No. 653-2, Little Giant Ditch, for 6.27 cfs. The City of Rapid City holds three Water Right/Permit Nos. 0646-2, 1998-2 and 2142-2, for a total of 2.12 cfs.

Review of the Proposed Transfer

SDCL 46-5-34.1 states that no transfer can occur unless the transfer can be made without detriment to existing rights, or to individual domestic use rights. SDCL 46-2A-12 allows a change in use "only if the change does not unlawfully impair existing rights and is for a beneficial use and in the public interest." Calculations using accepted scientific methods and available climatic and cropping data have been made to insure that adverse affects on existing water rights do not occur.

The volume of water which could be stored in Pactola Reservoir is 193.2 ac-ft annually. This volume of water is equal to the amount of water estimated to have been consumed annually by the crop. The amount of water which can be diverted at Rapid City water system intakes is 378.6 ac-ft annually. This volume of water includes the amount of water consumed by the crop plus the return water to Rapid Creek. Murphy and Cyclone Ditches contribute return water to Rapid Creek upstream of the South Side Ditch head gate. The Stromer property has historically received a portion of this water as part of its natural flow. Because the source of this natural flow is located downstream of any of Rapid City's proposed diversion points, this water cannot be included in the volume of water transferred to the City's intakes. This extra water will be a benefit to downstream water rights.

The volume of water estimated to have been consumed by the crop is calculated on a monthly basis. For each month the maximum amount of water the crop would use is calculated. This is compared to the amount of water that is available for the crop's use based on historical ditch diversions and the total acreage irrigated annually from the ditch. A determination is made, on a monthly basis, whether maximum crop water usage or available water supply is the limiting factor. The lesser of these is used as the volume of water consumed by the crop for that particular month. Water which has been returned to Rapid Creek through irrigation would also be returned to Rapid Creek by Rapid City through their waste water treatment system. (Wright, 1992) If in the future the City of Rapid City stops returning effluent to Rapid Creek, then the diversion proposed by this application will need to be recalculated to reflect that condition.

Farm turnouts do not have measuring devices, so actual individual

diversions from the ditch are unknown. Water in the ditch is shared by the users as needed. Based on actual past operations, the calculated diversion rate transfer is based on a pro rata share of the total ditch diversion. The proposed diversion rate transfer is based on water beneficially used as described under SDCL 46-1-8.

The transferable diversion rate is based on the pro rata share of water which is decreased by the 9.8 percent carriage loss that is to remain in the ditch. This gives a transferable diversion rate of 2.16 cfs.

If this transfer is approved, the diversion rate and acreage authorized by the May 3, 1880 priority date of Water Right No. 2040-2 should be decreased by 2.16 cfs and 192.5 acres due to the transfer. The diversion rate and acreage should be decreased by an additional 0.60 cfs and 48.5 acres due to abandonment or forfeiture of irrigation. The total reduction of the South Side Ditch water right will be 2.76 cfs and 241 acres.

The water available for transfer is only from the natural flow in Rapid Creek and does not include stored water or stored water releases from the Deerfield - Pactola Reservoirs.

To insure that the transfer of the water can be made without detriment to existing water rights, the Water Management Board should monitor the management and operation of the proposed transfer.

Conclusions

1. SDCL 46-5-34.1 allows for the transfer of irrigation water rights apart from the land to municipal use when the transfer can be made without causing detriment to existing rights. SDCL 46-2A-12 allows a change in use "only if the change does not unlawfully impair existing rights and is for a beneficial use and in the public interest."
2. The water has been historically used to irrigate 192.5 acres.
3. The priority date of May 3, 1880 should be retained.
4. The diversion rate to be transferred is 2.16 cfs, and is based on the pro-rated share of the total ditch diversion rate.
5. The amount of water requested to be transferred, 378.6 ac-ft and 193.2 ac-ft is reasonable. The following table lists the monthly diversion associated with each volume:

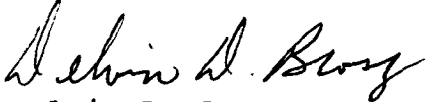
Month	Diversion at Pactola (ac-ft)	Diversion at Intakes (ac-ft)
May	25.2	51.9
June	38.3	74.5
July	39.6	77.0
Aug	46.4	90.1
Sept	35.1	68.3
Oct	8.6	16.7

6. If application No. 2218-2 is approved, the authorized diversion rate and acreage for the South Side Ditch Water Right No. 2040-2 under the May 3, 1880 priority date should be decreased by 2.16 cfs and 192.5 acres.
7. There are 48.5 acres associated with the Stromer property on which irrigation has been abandoned or forfeited. Water Right No. 2040-2 will be decreased by 48.5 acres and 0.60 cfs to reflect this.
8. The Water Management Board should continue to monitor the management and operation of the transfer of the water right and of existing water rights.
9. Approval of Application No. 2218-2 will only approve transfer of natural flow water and does not include any rights to stored irrigation water available under contract from Pactola Reservoir.
10. Because natural flow water has not been available for No. 2040-2 during lower flow periods, approval of No. 2218-2 does not guarantee that natural flow water will be available for No. 2218-2 for diversion or storage during low flow periods.
11. The effect of approval of No. 2218-2 will be to retire the Stromer property from irrigation by using neither natural flow water nor purchased stored water.



Mark D. Rath
Natural Resources Engineer II

Approved by,



Delvin D. Brosz
Natural Resources Engineer IV

References

1. Wright Water Engineers, Inc. 1992. Engineering Report for Transfer of Stroman Property Portion of South Side Ditch Water Rights. Wright Water Engineers, Inc. Engineering Consultants, Denver, Colorado.
2. U.S. Bureau of Reclamation. 1990. Rapid Valley Water Management Study. U.S. Bureau of Reclamation, Belle Fourche Projects Office, Newell, South Dakota.
3. S.D. Department of Environment and Natural Resources. Division of Water Rights Records.

REVISED RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2218-2, City of Rapid City

Pursuant to SDCL 46-2A-2, the following is the revised recommendation of the Chief Engineer, Water Rights Division, Department of Environment and Natural Resources concerning Water Permit Application No. 2218-2, City of Rapid City, 300 Sixth Street, Rapid City, SD 57701.

The Chief Engineer is recommending APPROVAL of Application No. 2218-2 because 1) the proposed diversion can be developed without unlawful impairment of existing rights, 2) the proposed use is a beneficial use and 3) in the public interest with the following qualifications:

1. That Permit No. 2218-2 is limited to a diversion rate of 2.16 cfs for a total annual volume of 193.2 acre feet at Pactola Reservoir or a total annual volume of 378.6 acre feet at Sioux Park Gallery (SW1/4 SW1/4 Section 3), Meadowbrook Gallery⁵⁶ (NW1/4 NE1/4 Section 9) Jackson Springs Gallery (NW1/4 SE1/4 Section 8) and the Rapid City Water Treatment Plant (SE1/4 NE1/4 Section 3), all in T1N-R7E. Maximum monthly diversion volumes at Pactola or the diversion points within Rapid City are as follows:

<u>Month</u>	<u>Monthly acre feet at Pactola</u>	<u>Monthly acre feet at diversion points within Rapid City</u>
May	25.2	51.9
June	38.3	74.5
July	39.6	77.0
August	46.4	90.1
September	35.1	68.3
October	8.6	16.7

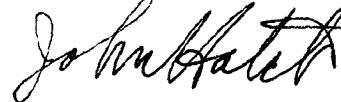
Diversions during a month may be made at either Pactola Reservoir or at the diversion points within Rapid City, but not simultaneously at both Pactola and the Rapid City diversion points.

2. That approval of Permit No. 2218-2 authorizes diversions of only natural flow water by the City of Rapid City.
3. That the City of Rapid City report to the Chief Engineer annually the amount of water withdrawn each month at Pactola Reservoir or the diversion points within Rapid City.
4. That the Water Management Board is retaining jurisdiction of Permit No. 2218-2 in the event that additional information shows that changes need to be made in the monthly or total annual volumes authorized by Permit No. 2218-2.
5. Diversions under Permit No. 2218-2 may not interfere with existing water rights in effect prior to approval of No. 2218-2 or any domestic rights.

(continued)

6. The amount of water with a May 3, 1880, priority date, which may be appropriated under Vested Water Right No. 2040-2 is reduced by 2.16 cfs.
7. Approval of Permit No. 2218-2 cancels irrigation of 48.5 acres in the S1/2 NW1/4, SW1/4, SE1/4 Section 29, T1N, R9E which have been abandoned or forfeited and reduces No. 2040-2 by an additional 0.60 cfs. Total reduction of No. 2040-2 is 2.76 cfs and 241 acres.

See report on application for additional information.

A handwritten signature in cursive script, appearing to read "John Hatch".

JOHN HATCH, Chief Engineer
April 23, 1992



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATES, CONTACT
THE NEWSPAPER RIGHT AWAY.

March 17, 1992

Les England
Western Mutual Bldg Ste 102
731 St Joseph Street
Rapid City, SD 57701

Dear Mr. England:

Water Permit Application No. 2217-2 and 2218-2 for municipal use have been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Rapid City Journal printed at Rapid City, SD. Copies of the report and the Chief Engineer's recommendation will be sent to you at a later date. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

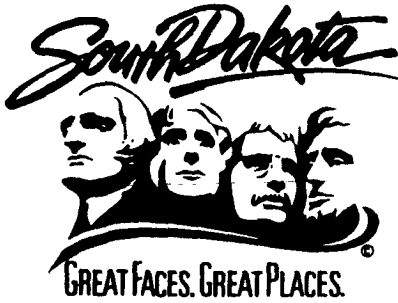
Be sure to contact the above newspaper to authorize publication of your Notice of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. The publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. The newspaper has been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund
Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

March 17, 1992

Rapid City Journal
PO Box 450
Rapid City, SD 57709

ATTENTION: Legal Department

Enclosed is a Notice of Hearing on Application No. 2217-2 and 2218-2 to be published twice. Please publish the first notice on March 20, 1992, with the second publication on March 27, 1992.

The APPLICANT MUST VERIFY TO YOU THAT THE NOTICE IS TO BE PUBLISHED, before you make the first publication. Please BILL the APPLICANT for the cost of publication. The APPLICANT is the City of Rapid City, 300 6th Street, Rapid City, SD.

A copy of BOTH publications must be SENT to the WATER RIGHTS DIVISION. IMMEDIATELY return the FIRST publication with the FIRST Transmittal form on the bottom of this page. The first copy is needed to check the publication for errors so any corrections can be made in the second publication. Publication errors can invalidate the public notice and cause the applicant costly delays.

Please be sure the SECOND publication is returned IMMEDIATELY with the enclosed Proof of Publication form. DO NOT WAIT until the end of the month or the billing cycle. No action may be taken on the permit application until proof of publication has been received.

Sincerely,

Eric Gronlund

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

-----CUT HERE-----

FIRST TRANSMITTAL NOTICE

TO: Eric Gronlund
Water Rights Division
Joe Foss Building
Pierre SD 57501-3181

No. _____

Date _____

We are in receipt of your letter of _____ enclosing Notice of Hearing to
Appropriate Water by Application No. _____ which was first published in our issue
of _____. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

Name _____

Newspaper _____

Instruction to Newspaper - Publish first Notice on March 20, 1992 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF HEARINGS on Application Nos. 2217-2 and 2218-2
to Appropriate Water to Transfer Use

Notice is given that the City of Rapid City, 300 6th Street, Rapid City SD 57701 has filed Water Permit Application Nos. 2217-2 and 2218-2 pursuant to 46-5-34.1 to transfer the use of a portion of Rapid Creek natural flows appropriated for irrigation use by South Side Ditch to municipal, industrial, commercial, common distribution system, rural water system, suburban housing, and domestic uses by the City of Rapid City.

Water Permit No. 2217-2 is to transfer the use of a portion of Rapid Creek natural flows historically used to irrigate 29.2 acres known as the Keller property. The portion of Rapid Creek natural flows to be transferred to the city is 0.33 cubic feet of water per second (cfs) with an annual volume limitation of 57.5 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 29.2 acre-feet, if stored in Pactola Reservoir. Historically, the 0.33 cfs has been used to irrigate approximately 29.2 acres located in the SE 1/4 SE 1/4 less Lot 1, Section 29-T1N-R9E also known as the Keller property. The existing diversion point on Rapid Creek for South Side Ditch is located in the SE 1/4 NW 1/4 Section 15-T1N-R8E. This application is to change the diversion point for the 0.33 cfs to diversion points for use by the city to be located in the SE 1/4 NE 1/4 Section 3 (Rapid City Water Treatment Plant); SW 1/4 SW 1/4 Section 3 (Sioux Park Gallery); SE 1/4 NE 1/4 Section 9 (Meadowbrook Gallery); NW 1/4 SE 1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E or to allow storage in Pactola Reservoir. The location of the Pactola Reservoir diversion point is the NW 1/4 SW 1/4 Section 2-T1N-R5E and the reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E. This application does not authorize any new water appropriation from Rapid Creek and the claimed priority date of May 3, 1880 for use of 0.33 cfs is to be retained by the city.

Water Permit No. 2218-2 is to transfer the use of a portion of Rapid Creek natural flows historically used to irrigate 192.5 acres know as the Stromer property. The portion of Rapid Creek natural flows to be transferred to the city is 2.16 cubic feet of water per second (cfs) with an annual volume limitation of 378.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 193.2 acre-feet, if stored in Pactola Reservoir. Historically, the 2.16 cfs has been used to irrigate approximately 192.5 acres located in that portion of Section 29 lying south of Rapid Creek, except for that portion of the SE 1/4 SE 1/4 lying south of Rapid Creek, and except for that portion of the SW 1/4 SW 1/4 lying south of the South Side Ditch, all in T1N-R9E also known as the Stromer property. The existing diversion point on Rapid Creek for South Side Ditch is located in the SE 1/4 NW 1/4 Section 15-T1N-R8E. This application is to change the diversion point for the 2.16 cfs to diversion points for use by the city to be located in the SE 1/4 NE 1/4 Section 3 (Rapid City Water Treatment Plant); SW 1/4 SW 1/4 Section 3 (Sioux Park Gallery); SE 1/4 NE 1/4 Section 9 (Meadowbrook Gallery); NW 1/4 SE 1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E or to allow storage in Pactola Reservoir. The location of the Pactola Reservoir diversion point is the NW 1/4 SW 1/4 Section 2-T1N-R5E and the reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E. This application does not authorize any new water appropriation from Rapid Creek and the claimed priority date of May 3, 1880 for use of 2.16 cfs is to be retained by the city.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application Nos. 2217-2 and 2218-2 because 1) existing rights will not be unlawfully impaired, 2) it is a beneficial use of water, and 3) it is in the public interest. Unless a petition is filed opposing the applications or the applicant files a petition contesting the chief engineer's recommendations, the Water Management Board will NOT CONDUCT a HEARING to consider the applications and the chief engineer will issue the permits as recommended. Petitions filed in support of the applications will NOT require the Board to hear the applications.

Any person interested in opposing or supporting the applications must file a written petition with BOTH the applicant and Chief Engineer. The applicant must also file a petition if opposed to the Chief Engineer's recommendations. The Chief Engineer's address is "Water Rights Division, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by April 6, 1992. The petition may be informal, but must include a statement describing the petitioner's interest in the applications, the petitioner's reasons for opposing or supporting the applications, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

For purposes of publishing 1) the notice of hearing on Application Nos. 2217-2 and 2218-2 and 2) the chief engineer's recommendations, a meeting at the Division of Water Rights office to hear the applications is scheduled for April 16, 1992 at 9:00 am in Room 413, Joe Foss Building, 523 E Capitol, Pierre SD. If the applications are opposed or the recommendations are contested, the April 16, 1992 hearing date will be rescheduled for a regularly scheduled Board meeting. Notice of the time and place of the rescheduled hearing before the Board will be given by First Class Mail to the applicant and persons filing petitions. Anyone not filing a petition, but interested in attending the hearing, may contact the Division of Water Rights to confirm a hearing date and location. The April 16, 1992 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any interested person opposing the applications. The request for an automatic delay must be filed by April 6, 1992.

If a hearing is held, the Chief Engineer's recommendations are not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny the applications based on the facts presented at the public hearing. Any hearing will be an adversary proceeding. Any person filing a petition and/or the applicant have the right to be represented by a lawyer and may present evidence or cross-examine witnesses according to SDCL 1-26. These and other due process rights will be forfeited if not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law. Contact the Water Rights Division to request copies of information pertaining to the applications or to assure access to the hearing by the handicapped.

These applications are made pursuant to SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-5-33 thru 46-5-35; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
 County Pennington) ss.

I, Helena M. Bauer

certify that the attached printed Notice was taken
 from the The Rapid City Journal

A newspaper which during the whole time of publication of
 said notice herein after stated, has been and is printed and
 published in the _____

city of Rapid City

County of Pennington and State of South Dakota;
 that the said notice was published in said newspaper on the
 following two dates:

March 20, 1992

March 27, 1992

Helena M. Bauer
 (Signature)

Bookkeeper

(Title)

March 27, 1992

(Date Signed)

Cost of Printing: 20 2/16 inch legal adv @ 4.90 per inch 2 times
\$197.24

March 20, 27 1539

NOTICE OF HEARING
 ON APPLICATION
 NOS. 2217-2 AND 2218-2
 TO APPROPRIATE WATER
 TO TRANSFER USE

Notice is given that the City of Rapid City, 300 8th Street, Rapid City, SD 57701 has filed Water Permit Application Nos. 2217-2 and 2218-2 pursuant to 46-5-34.1 to transfer the use of a portion of Rapid Creek natural flows appropriated for irrigation use by South Side Ditch to municipal, industrial, commercial, and distribution systems, rural water system, suburban housing, and domestic uses by the City of Rapid City.

Water Permit No. 2217-2 is to transfer the use of a portion of Rapid Creek natural flows historically used to irrigate 29.2 acres known as the Keller property. The portion of Rapid Creek natural flows to be transferred to the city is 0.33 cubic feet of water per second (cfs) with an annual volume limitation of 37.5 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 29.2 acre-feet if stored in Pactola Reservoir. Historically, the 0.33 cfs has been used to irrigate approximately 29.2 acres located in the SE¼ SE¼ less Lot 1, Section 29, T1N-R5E also known as the Keller property. The existing diversion point on Rapid Creek for South Side Ditch is located in the SE¼ NW¼ Section 15, T1N-R5E. This application is to change the diversion point for the 0.33 cfs to diversion points for use by the city to be located in the SE¼ NW¼ Section 3 (Rapid City Water Treatment Plant); SW¼ SW¼ Section 3 (Sioux Park Gallery); SE¼ NW¼ Section 9 (Meadowbrook Gallery); NW¼ SE¼ Section 8 (Jackson Springs Gallery); all in T1N-R7E or to allow storage in Pactola Reservoir. The location of the Pactola Reservoir diversion point is the NW¼ SW¼ Section 2, T1N-R5E. The reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T1N-R5E. This application does not authorize any new water appropriation from Rapid Creek and the claimed priority date of May 3, 1880 for use of 0.33 cfs is to be retained by the city.

Water Permit No. 2218-2 is to transfer the use of a portion of Rapid Creek natural flows historically used to irrigate 192.5 acres known as the Stronner property. The portion of Rapid Creek natural flows to be transferred to the city is 2.16 cubic feet of water per second (cfs) with an annual volume limitation of 376.8 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 192.5 acre-feet if stored in Pactola Reservoir. Historically, the 2.16 cfs has been used to irrigate approximately 192.5 acres located in that portion of Section 29 lying south of Rapid Creek, except for that portion of the SE¼ SE¼ lying south of Rapid Creek, and except for that portion of the SW¼ SW¼ lying south of the South Side Ditch in T1N-R7E also known as the Stronner property. The existing diversion point on Rapid Creek for the Stronner property is located in the SE¼ NW¼ Section 15, T1N-R5E. This application is to change the diversion point for the 2.16 cfs to diversion points for use by the city to be located in the SE¼ NW¼ Section 3 (Rapid City Water Treatment Plant); SW¼ SW¼ Section 3 (Sioux Park Gallery); SE¼ NW¼ Section 9 (Meadowbrook Gallery); NW¼ SE¼ Section 8 (Jackson Springs Gallery); all in T1N-R7E or to allow storage in Pactola Reservoir. The location of the Pactola Reservoir diversion point is the NW¼ SW¼ Section 2, T1N-R5E and the reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T1N-R5E. This application does not authorize any new water appropriation from Rapid Creek and the claimed priority date of May 3, 1880 for use of 2.16 cfs is to be retained by the city.

Pursuant to SDCL 46-1A-2, the Chief Engineer recommends APPROVAL of Application Nos. 2217-2 and 2218-2, because if existing rights will not be unlawfully im-

retained by the city.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application Nos. 2217-2 and 2218-2 because 1) existing rights will not be unlawfully impaired, 2) it is a beneficial use of water, and 3) it is in the public interest. Unless a petition is filed opposing the applications or the applicant files a petition contesting the chief engineer's recommendations, the Water Management Board will NOT CONDUCT a HEARING to consider the applications and the chief engineer will issue the permits as recommended. Petitions filed in support of the applications will NOT require the Board to hear the applications.

Any person interested in opposing or supporting the applications must file a written petition with BOTH the applicant and Chief Engineer. The applicant must also file a petition if opposed to the Chief Engineer's recommendations. The Chief Engineer's address is "Water Rights Division, Foss Building, 523 E. Capitol, Pierre SD 57501 (605-773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by April 6, 1992. The petition may be informal, but must include a statement describing the petitioner's interest in the applications, the petitioner's reasons for opposing or supporting the applications, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

For purpose of publishing 1) the notice of hearing on Application Nos. 2217-2 and 2218-2 and 2) the chief engineer's recommendations, a meeting at the Division of Water Rights office to hear the applications is scheduled for April 16, 1992 at 9:00 a.m. in Room 413, Joe Foss Building, 523 E. Capitol, Pierre, S.D. If the applications are opposed or the recommendations are contested, the April 16, 1992 hearing date will be rescheduled for a regularly scheduled Board meeting. Notice of the time and place of the rescheduled hearing before the Board will be given by First Class Mail to the applicant and persons filing petitions. Anyone not filing a petition, but interested in attending the hearing, may contact the Division of Water Rights to confirm a hearing date and location. The April 16, 1992 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any interested person opposing the applications. The request for an automatic delay must be filed by April 6, 1992.

If a hearing is held, the Chief Engineer's recommendations are not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny the applications based on the facts presented at the public hearing. Any hearing will be an adversary proceeding. Any person filing a petition and/or the applicant have the right to be represented by a lawyer and may present evidence or cross-examine witnesses according to SDCL 2-18. These and other due process rights will be forfeited if not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law. Contact the Water Rights Division to request copies of information pertaining to the applications or to assure access to the hearing by the handicapped.

These applications are made pursuant to SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-18; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-5-33 thru 46-5-35; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

PARTIES OF RECORD

WATER PERMIT APPLICATION NOS. 2217-2 and 2218-2

Applicant

Edward McLaughlin, Mayor
City of Rapid City
300 6th St.
Rapid City, SD 57701

Attorney

Leslie England
England Law Firm
Rushmore Professional Building
Suite 102
Rapid City, SD 57701

Petition of Opposition

Rapid Valley Water
Conservancy District

Represented by:

Joseph Butler, Attorney
Bangs, McCullen, Butler,
Foye & Simmons
P.O. Box 2670
Rapid City, SD 57709

Rapid Valley Water Company

Represented by:

Michael Hickey
Bangs, McCullen, Butler,
Foye & Simmons
P.O. Box 2670
Rapid City, SD 57709

Petition of Interest

Bruce Laymon, Project Manager
Bureau of Reclamation
P.O. Box 226
Newell, SD 57760



IN REPLY
REFER TO:

United States Department of the Interior

BUREAU OF RECLAMATION

GREAT PLAINS REGION
BELLE FOURCHE PROJECTS OFFICE
P.O. BOX 226
NEWELL, SOUTH DAKOTA 57760-0226



WTR 4.10-
BF-430

MAR 19 1992



Mr. John Hatch, Chief Engineer
Water Rights Division
South Dakota Department of
Water and Natural Resources
523 E Capitol
Pierre SD 57501-3181

Subject: Water Permit Application Nos. 2217-2 and 2218-2 (Water Rights)

Dear Mr. Hatch:

We have reviewed the subject applications and request to be listed as a party of interest in any hearings held by the Water Management Board that relate to these permits. We do not oppose the application or contest the recommendation to approve the applications, but would like the opportunity to testify in the event that a Water Management Board hearing is required.

As you are aware, the Bureau of Reclamation owns and operates Pactola Dam and Reservoir. As this facility is mentioned within these permit applications to the extent that both documents reference a quantity of water that can potentially be stored in Pactola Reservoir, we feel that it is important for this office to maintain an active presence in any proceedings associated with the permit applications.

If you have any questions, please contact Craig Kjar at (605) 456-2695.

Sincerely,

Bruce M. Laymon
Project Manager

LESLIE J. ENGLAND
(ALSO ADMITTED IN COLORADO)

LAW FIRM OF
LESLIE JAMES ENGLAND
SUITE 102, RUSHMORE PROFESSIONAL BUILDING
731 ST. JOSEPH STREET
RAPID CITY, SOUTH DAKOTA 57701

TELEPHONE (605) 341-7600
FAX (605) 341-7321

March 24, 1992



Mr. John Hatch, Chief Engineer
Water Rights Division
Department of Environment and
Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181

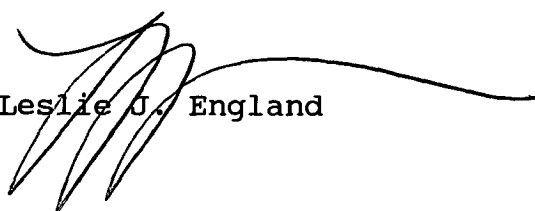
Dear Mr. Hatch:

For your information, please note highlighted changes in
address and FAX number:

Law Firm of Leslie J. England
Suite 102, **Rushmore Professional Building**
731 St. Joseph Street
Rapid City, SD 57701

Telephone: (605) 341-7600
FAX: (605) 341-7321

Yours very truly,


Leslie J. England

LJE/kmr

Bangs, McCullen, Butler, Foye & Simmons

Lawyers

George A. Bangs
W. A. McCullen (1943-1987)
Joseph M. Butler
Thomas H. Foye
Thomas E. Simmons
Ronald E. Clabaugh
Charles L. Riter
Allen G. Nelson
James P. Hurley

818 St. Joe Street
Mailing Address P. O. Box 2670
Rapid City, South Dakota 57709
605-343-1040
Telecopier 605-343-1503

March 27, 1992

Michael M. Hickey
Mark E. Marshall
Terry L. Hofet
Rebecca A. McMahon
Patrick K. Duffy
Rodney W. Schlager
Matthew V. Resseguie

Recycled Paper 



Eric Gronlund
Water Rights Division
Department of Environment
and Natural Resources
Joe Foss Bldg.
523 East Capitol
Pierre, SD 57501-3181

Dear Mr. Gronlund:

Our office represents the Rapid Valley Water Conservancy District. We hereby respectfully request a hearing in connection with the applications by the City of Rapid City with respect to water permits numbered 2217-2 and 2218-2 to transfer these permits to the City of Rapid City for domestic uses.

You are advised that the Conservancy District opposes this transfer and also opposes the recommendations of the Chief Engineer.

Existing rights, contrary to the statement of the Chief Engineer, will be unlawfully impaired because of the lessening of the natural flows and because of the change of the diversion point. Moreover, it should be expressly provided in the event the transfer is approved over this objection, that storage of this water not be permitted and Pactola Dam, as such storage, would obviously impair the rights of other permit holders.

We are also in the process of researching the question of whether the water rights in the south side ditch can be separated from the land which they irrigate. This is a potential legal question which might have to be resolved if our research indicates

Eric Gronlund
Water Rights Division
Department of Environment
and Natural Resources
March 27, 1992
Page 2

that legally it cannot be separated from the land. We wanted to advise you of this so that it would not be a surprise in the event it is raised at the hearing.

Sincerely,

BANGS, McCULLEN, BUTLER, FOYE & SIMMONS



Joseph M. Butler

JMB/ljd
cc: Jerry Hammerquist



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

March 30, 1992

Les England, Attorney
Suite 102, Rushmore Professional Building
731 St. Joseph Street
Rapid City, SD 57701

Dear Mr. England:

Enclosed is a petition received in connection with Water Permit Application Nos. 2217-2 and 2218-2. I noticed that the City was not sent a copy of this petition. You will be receiving a notice in the upcoming week scheduling a hearing for the May 6 & 7, 1992, Water Management Board meeting.

If you have any questions, please feel free to contact me.

Sincerely,

Eric Gronlund
Water Rights Division
(605) 773-3352

encl

LESLIE J. ENGLAND
(ALSO ADMITTED IN COLORADO)

LAW FIRM OF
LESLIE JAMES ENGLAND
SUITE 102, RUSHMORE PROFESSIONAL BUILDING
731 ST. JOSEPH STREET
RAPID CITY, SOUTH DAKOTA 57701

TELEPHONE (605) 341-7600
FAX (605) 341-7321

April 1, 1992



Mr. John Hatch, Chief Engineer
Water Rights Division
Department of Environment and
Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181

Re: Change of Use Transfer Application Nos. 2218-2 (Stromer) and
2217-2 (Keller)

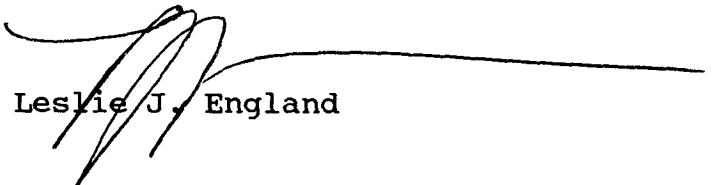
Dear Mr. Hatch:

Enclosed for filing please find the following original documents as they relate to the above-referenced matter:

- 1) Applicant's Interrogatories to Protestant
- 2) Applicant's Request for Production of Documents
- 3) Motion for Discovery Hearing

If you have any questions about these documents, please do not hesitate to call me.

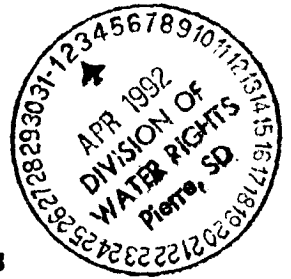
Yours very truly,


Leslie J. England

LJE/kmr

Enclosures: As Stated
cc: Diane Best
Daniel L. Bjerke
Joseph M. Butler

**STATE OF SOUTH DAKOTA
WATER MANAGEMENT BOARD**



IN THE MATTER OF WATER	)	
RIGHT CHANGE OF USE	)	
APPLICATIONS NO. 2218-2	)	APPLICANT'S INTERROGATORIES
AND NO. 2217-2 OF THE	)	TO
CITY OF RAPID CITY,	)	PROTESTANT
SOUTH DAKOTA, APPLICANT	)	

TO: PROTESTANT, RAPID VALLEY WATER CONSERVANCY DISTRICT, INC., AND
ITS ATTORNEY, JOSEPH M. BUTLER:

Comes now the above-named Applicant, City of Rapid City in the above-captioned applications, by and through its attorney, Leslie J. England, and pursuant to SDCL 15-6-33, propounds the following written interrogatories to the above-named Protestant for answer under oath within thirty (30) days of the service hereof. These interrogatories shall be deemed continuing in nature, requiring the Protestant to file supplemental or additional answers to these interrogatories when Protestant, its agents, or attorneys obtain information in addition or different from any information provided in Protestant's original answers to these interrogatories.

INTERROGATORY NO. 1: Identify by giving the name, address, telephone number and area of knowledge, any witness who has knowledge about any of the issues you have raised or will raise in opposition to the above-captioned applications.

INTERROGATORY NO. 2: Identify by giving the name, address, and telephone number of any person(s) you expect to call as an expert witness at the time of the Water Management Board hearing on the above-captioned applications and state the following:

- a) The subject matter on which the expert is expected to testify,
- b) The substance of the facts and opinions which the expert

is expected to testify to, and

c) A summary of grounds for each opinion.

INTERROGATORY NO. 3: Identify by name, address, telephone number and area of testimony, all witnesses you intend to call at the time of the hearing on the above-captioned applications.

INTERROGATORY NO. 4: State any and all legal or equitable theories you intend to raise in support of or with respect to issues identified in your March 27, 1992, letter of opposition to Eric Gronlund, Department of Environment and Natural Resources. Specifically, explain said theories and provide legal authorities in support of same. In addition, as sought in the accompanying Request for Production of Documents, produce or provide copies of any and all documents upon which you intend to rely in support of said theories. Produce or provide all of the aforementioned theories and documents with respect to any other issues you intend to raise at the hearing and not specifically identified in your letter of March 27, 1992.

INTERROGATORY NO. 5: List and specifically identify by description, all evidence you intend to submit at the hearing in the above-captioned applications, and produce or provide copies of documentary evidence as sought in the accompanying Request for Production of Documents.

INTERROGATORY NO. 6: Please state with specificity by type and permit number, the rights you are referring to in your March 27, 1992, letter, as follows:

a) ". . . existing rights, contrary to the statement of the Chief Engineer, will be unlawfully impaired because of the lessening of natural flows and because of the change of the diversion point."

b) Also, specifically describe how natural flows will be lessened, creating unlawful impairment.

c) Also, specifically state how the change of diversion point will cause unlawful impairment.

INTERROGATORY NO. 7: Please state with specificity the following, with respect to your statement in your March 27, 1992, letter that "it should be expressly provided in the event the transfer is approved over this objection, that storage of this water not be permitted and [sic] Pactola Dam, as such storage would obviously impair the rights of other permit holders":

a) How storage of "this water" would "obviously impair rights of other permit holders"?

b) Also, specifically describe what "this water" is referring to.

c) Specifically describe what "permit holders" you are referring to.

INTERROGATORY NO. 8: With respect to your letter of March 27, 1992, specifically describe your legal or equitable theory in opposition as to whether the "water rights in the South Side Ditch can be separated from the land which they irrigate," and also state with specificity by type and permit number the "water right" you are referring to.

INTERROGATORY NO. 9: Identify the person or persons preparing answers to these Interrogatories and accompanying Request for Production of Documents by name, address and telephone number.

Dated this 1st day of April, 1992.



Leslie J. England
Attorney for City of Rapid City
Suite 102, Rushmore Professional Building
Rapid City, SD 57701
(605) 341-7600

CERTIFICATE OF SERVICE

I, Leslie J. England, hereby certify that I served a true and correct copy of the foregoing Applicant's Interrogatories to Protestant on Protestant by hand delivery, to the office of its attorney this 1st day of April, 1992, at the following address:

Joseph M. Butler
818 St. Joseph Street
P.O. Box 2670
Rapid City, SD 57709

and, I, Leslie J. England, hereby certify that I served a true and correct copy of the foregoing Applicant's Interrogatories to Protestant by first class mail, proper postage affixed, this 1st day of April, 1992, on the following persons:

John Hatch, Chief Engineer
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 E. Capitol
Pierre, SD 57501-3181

Diane Best, Assistant Attorney General
Attorney General's Office
500 East Capitol
Pierre, SD 57501



Leslie J. England
Attorney for Applicant

STATE OF SOUTH DAKOTA
WATER MANAGEMENT BOARD



IN THE MATTER OF WATER)
RIGHT CHANGE OF USE)
APPLICATIONS NO. 2218-2) APPLICANT'S REQUEST FOR PRODUCTION
AND NO. 2217-2 OF THE) OF
CITY OF RAPID CITY,) DOCUMENTS
SOUTH DAKOTA, APPLICANT)

TO: PROTESTANT, RAPID VALLEY WATER CONSERVANCY DISTRICT, INC., AND
ITS ATTORNEY, JOSEPH M. BUTLER:

Applicant by its undersigned attorney hereby requests the Protestant to produce and permit the Applicant or its attorney to inspect and copy documents identified below, pursuant to SDCL 15-6-34, at the law office of Leslie J. England, Suite 102, Rushmore Professional Building, 731 St. Joseph Street, Rapid City, South Dakota 57701, within thirty (30) days after service of this request and no later than May 1, 1992.

DEFINITIONS AND INSTRUCTIONS

A. In responding to this request all requested documents in your "possession, custody or control" are to be produced. This includes documents in the possession, custody or control of your attorneys or their investigators or of any third party or parties to whom you have surrendered possession, custody or control, or who are acting in your behalf, or who have otherwise obtained possession, custody or control, or who, upon your request, would surrender possession, custody or control to you.

B. As used herein, the term "document" includes, without limitation, the original or any copies, regardless of origin or location, of any correspondence, book, pamphlet, periodical, letter, calendar or diary entry, memorandum, message, telegram, cable, report, record, study, stenographic or handwritten note, working paper or draft, invoice, voucher, check, statement, chart, graph, map, diagram, blueprint, table, or data processing card or disk or any other written typed, printed, recorded, transcribed, punched, taped, filmed, photographed or graphic matter, however produced or reproduced to which you have or have had access, and copies of reproductions of any of the above that differ in any respect from the original, such as copies containing marginal notations or other variations, and all other records or writings, however produced or reproduced, to which you have or have had access. Designated documents are to be taken as including all attachments, exhibits, enclosures, appendices and other documents that relate to or refer to such designated documents. The

enumeration of various specific items as included within the definition of the word "documents" shall not be taken to limit the generality of this word, and the requests herein are directed and intended to obtain all "documents" in the broadest and most comprehensive sense and meaning of this word.

C. Each request herein for documents to be produced, whether memoranda, reports, letters or other documents of any description, contemplates production of the document in its entirety, without abbreviation or expurgation.

D. If you cannot produce a document after exercising due diligence to secure it, so state in writing and produce whatever portion of said document possible, specifying your inability to answer the remainder and stating whatever information or knowledge you have concerning the document you are unable to produce including, but not limited to, the content of such document. If any such document was, but is no longer in your possession, custody or control, state what disposition was made of it and the reason for such disposition.

E. In the event that any document called for by this request has been destroyed, that document is to be identified in writing as follows: addressor, addressee, indicated or blind copies, date, subject matter, number of pages, attachments, exhibits or appendices, all persons to whom distributed, shown or explained, date of destruction, manner of destruction, reason for destruction, person who authorized destruction and person who destroyed the document.

F. This request shall be deemed continuing so as to require documents between the time of original production if you receive or generate additional documents between the time of original production and the time of hearing.

G. In the event that any document called for by this request is to be withheld on the basis of a claim of privilege, that document is to be identified in writing as follows: addressor, addressee, indicated or blind copies, date, subject matter, number of pages, attachments, exhibits or appendices, all persons to whom distributed, shown or explained, present custodian and nature of the privilege asserted.

H. "You" or "your" refers to Rapid Valley Water Conservancy District, Inc., or its attorney.

REQUEST NO. 1: Produce or provide copies of any and all documents relied upon in support of your opposition as specified in your letter dated March 27, 1992, to Eric Gronlund, Department of Environment and Natural Resources. Also, produce or provide copies of any and all documents relied upon in support of issues you intend to raise at the hearing on the above-captioned applications,

but not specifically identified in your letter of March 27, 1992.

REQUEST NO. 2: Produce or provide any and all documents in support of, and/or which you intend to rely upon, either as evidence or to support your statement indicated in your letter of March 27, 1992, that "existing rights, contrary to the statement of the Chief Engineer, will be unlawfully impaired because of the lessening of natural flows and because of the change of the diversion point."

REQUEST NO. 3: Produce or provide copies of any and all documents which support your argument made in your March 27, 1992, letter that "storage of this water not be permitted and [sic] Pactola Dam, as such storage, would obviously impair the right of other permit holders."

REQUEST NO. 4: Produce or provide copies of any and all documents, in support of any argument you may raise in the hearing in the above-captioned applications, concerning whether water rights in the South Side Ditch can be separated from the land which they irrigate, or legally cannot be separated from the land.

REQUEST NO. 5: Produce or provide copies of any and all documents referred to and sought in accompanying Interrogatory Nos. 4 and 5.

Dated this 1st day of April, 1992.



Leslie J. England
Attorney for City of Rapid City
Suite 102, Rushmore Professional Building
Rapid City, SD 57701
(605)341-7600

CERTIFICATE OF SERVICE

I, Leslie J. England, hereby certify that I served a true and correct copy of the foregoing Applicant's Request for Production of Documents on Protestant by hand delivery, to the office of its

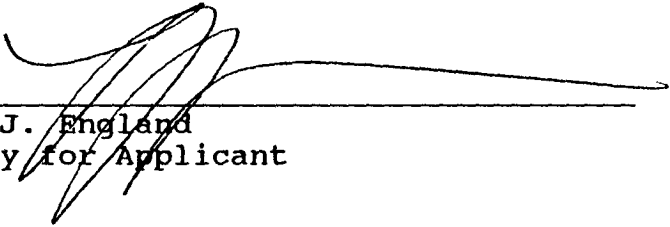
attorney this 1st day of April, 1992, at the following address:

Joseph M. Butler
818 St. Joseph Street
P.O. Box 2670
Rapid City, SD 57709

and, I, Leslie J. England, hereby certify that I served a true and correct copy of the foregoing Applicant's Request for Production of Documents by first class mail, proper postage affixed, this 1st day of April, 1992, on the following persons:

John Hatch, Chief Engineer
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 E. Capitol
Pierre, SD 57501-3181

Diane Best, Assistant Attorney General
Attorney General's Office
500 East Capitol
Pierre, SD 57501



Leslie J. England
Attorney for Applicant

STATE OF SOUTH DAKOTA
WATER MANAGEMENT BOARD

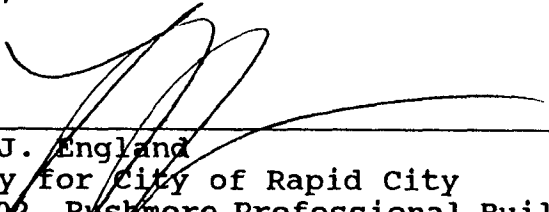


IN THE MATTER OF WATER)
RIGHT CHANGE OF USE)
APPLICATIONS NO. 2218-2)
AND NO. 2217-2 OF THE)
CITY OF RAPID CITY,)
SOUTH DAKOTA, APPLICANT)

MOTION FOR DISCOVERY HEARING

Comes now Applicant, City of Rapid City, in the above captioned matters, by and through undersigned counsel, and requests a discovery hearing be held on May 5, 1992, or sooner scheduled if allowed by, and prior to the regularly scheduled May meeting of, the Water Management Board, before a hearing officer to resolve any objections or questions raised by Protestant, Rapid Valley Water Conservancy District, Inc., in connection with providing discovery requested by the Applicant, City of Rapid City.

Dated this 1st day of April, 1992.



Leslie J. England
Attorney for City of Rapid City
Suite 102, Rushmore Professional Building
Rapid City, SD 57701
(605) 341-7600

CERTIFICATE OF SERVICE

I, Leslie J. England, hereby certify that I served a true and correct copy of the foregoing Motion for Discovery Hearing by hand delivery, to the office of its attorney this 1st day of April, 1992, at the following address:

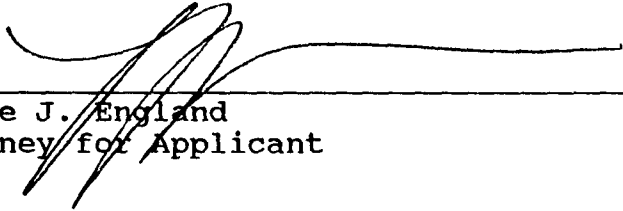
Joseph M. Butler
818 St. Joseph Street
P.O. Box 2670
Rapid City, SD 57709

and, I, Leslie J. England, hereby certify that I served a true and correct copy of the foregoing Motion for Discovery Hearing by first

class mail, proper postage affixed, this 1st day of April, 1992, on the following persons:

John Hatch, Chief Engineer
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 E. Capitol
Pierre, SD 57501-3181

Diane Best, Assistant Attorney General
Attorney General's Office
500 East Capitol
Pierre, SD 57501



Leslie J. England
Attorney for Applicant

Bangs, McCullen, Butler, Foye & Simmons**Lawyers**

George A. Bangs
W. A. McCullen (1943-1987)
Joseph M. Butler
Thomas H. Foye
Thomas E. Simmons
Ronald E. Clabaugh
Charles L. Riter
Allen G. Nelson
James P. Hurley

818 St. Joe Street
Mailing Address P. O. Box 2670
Rapid City, South Dakota 57709
605-343-1040
Telecopier 605-343-1503

April 6, 1992

Michael M. Hickey
Mark F. Marshall
Terry L. Hofer
Rebecca A. McMahon
Patrick K. Duffy
Rodney W. Schlauger
Matthew V. Ressegien

Recycled Paper 

Mr. John Hatch
Chief Engineer
Water Rights Division
Foss Building
523 E. Capitol
Pierre, SD 57501

SENT VIA FAX



Re: Water Permit Application Nos. 2217-2
and 2218.2

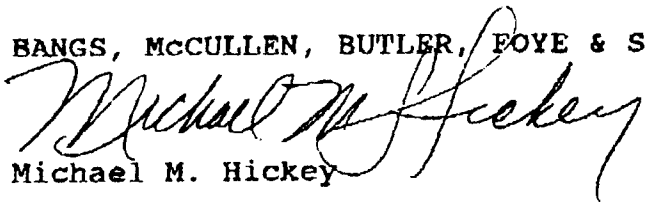
Dear Mr. Hatch:

Please find enclosed for filing in the above matter, two original Objections to Application for Water Permit Applications Nos. 2217-2 and 2218-2. Also enclosed is a copy of each of the objections and this is intended as service by mail upon you. By a copy of this letter, I am sending a copy of both objections to the City of Rapid City. This is also intended as service by mail upon the City of Rapid City.

If you have any questions or comments, please do not hesitate to contact me. Thank you.

Sincerely,

BANGS, MCCULLEN, BUTLER, FOYE & SIMMONS


Michael M. Hickey

MMH/dcc

Enclosures

cc: City of Rapid City
clients



STATE OF SOUTH DAKOTA
DEPARTMENT OF WATER AND NATURAL RESOURCES

IN THE MATTER OF WATER PERMIT
APPLICATION NO. 2218-2.

OBJECTION TO APPLICATION

Comes now Rapid Valley Water Company, Inc., by and through its undersigned counsel of record and hereby files its objection to the application filed by the City of Rapid City for a permit to transfer the use of a portion of Rapid Creek Natural Flows identified as the "Stromer property" from irrigation purposes to municipal and domestic uses of the City. Said protest and objection is based upon the following grounds and for the following reasons:

1) That the proposed transfer would injure and be prejudicial to the rights of the members and shareholders of Rapid Valley Water Company, Inc., as it would allow the diversion point to be changed to a position above Murphy Ditch.

2) That the proposed transfer is not in the public interest and would unlawfully impair other existing rights;

3) That in most years, South Side Ditch does not receive Rapid Creek natural flows and instead relies upon purchased water from the Rapid City Conservancy District.

Dated this 6th day of April, 1992.

BANGS, MCCULLEN, BUTLER, FOYE & SIMMONS

BY:

Michael M. Hickey
MICHAEL M. HICKEY

Attorneys for Rapid Valley Water
Company, Inc.

818 St. Joseph Street; P.O. Box 2670
Rapid City, SD 57709

CERTIFICATE OF SERVICE

The undersigned hereby certifies that he served a copy of this legal document upon the persons herein next designated, all on the date below shown, by depositing copies thereof in the United States mail at Rapid City, South Dakota, postage prepaid, in envelopes addressed to said addressees, to wit:

Chief Engineer
Water Rights Division
Foss Building
523 E. Capitol
Pierre, SD 57501

City of Rapid City
300 Sixth Street
Rapid City, SD 57701

which addresses are the last addresses of the addressees known to the subscriber.

Dated this 6th day of April, 1992.

Michael M. Hickey
MICHAEL M. HICKEY



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

April 7, 1992

NOTICE

TO: Edward McLaughlin, Mayor
City of Rapid City
300 6th Street
Rapid City, SD 57701
and Parties of Record (see attached list)

FROM: *for* John Hatch, Chief Engineer *Delvin W. King*
Water Rights Division
605 773-3352

SUBJECT: Rescheduling of Hearing For Water Permit Application Nos.
2217-2 and 2218-2

Petition in opposition to Water Permit Application Nos. 2217-2 and 2218-2 have been filed with this office. The meeting at the Division of Water Rights to hear these applications will no longer be held on April 16, 1992.

The Water Management Board will now consider Water Permit Application Nos. 2217-2 and 2218-2 on May 7, 1992 at 9:30 am in the Conference Room, Floyd Matthew Training Center, Joe Foss Building, 523 E. Capitol Ave., Pierre, SD 57501. The agenda time is an estimate. The actual time of hearing may be later than 10:00 am due to prior agenda items. Applicable provisions of the Notice of Hearing published March 20 and 27, 1992 in the Rapid City Journal will still apply at this hearing.

This hearing is an adversary proceeding. Any party has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

cc: Diane Best, Assistant Attorney General
Dan Bjerke, Rapid City Water Superintendent

CERTIFICATION

I hereby certify that on April 7, 1992, I have personally deposited with the United States Mail at Pierre, South Dakota, first class postage, prepaid envelopes containing a Notice dated April 7, 1992, regarding Rescheduling of Hearing for Water Permit Application Nos. 2217-2 and ~~2218-2~~ addressed as stated below:

Edward McLaughlin, Mayor, City of Rapid City, 300 6th Street, Rapid City, SD 57701.

Dan Bjerke, Rapid City Water Superintendent, City of Rapid City, 300
6th Street, Rapid City, SD 57701.

Rapid Valley Water Conservancy District, % Joseph Butler, Attorney,
Bangs, McCullen, Butler, Foye & Simmons, P.O. Box 2670, Rapid City,
SD 57709.

Joseph Butler, Attorney, Bangs, McCullen, Butler, Foye & Simmons, P.O.
Box 2670, Rapid City, SD 57709.

Rapid Valley Water Company, % Michael Hikey, Bangs, McCullen, Butler,
Foye & Simmons, P.O. Box 2670, Rapid City, SD 57709.

Michael Hickey, Bangs, McCullen, Butler, Foye & Simmons, P.O. Box
2670, Rapid City, SD 57709.

Bruce Laymon, Project Manager, Bureau of Reclamation, P.O. Box 226,
Newell, SD 57760.

Hand Delivered To:

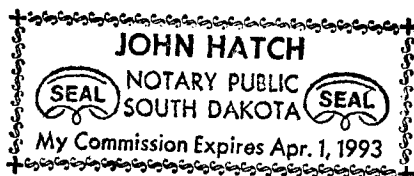
Diane Best, Assistant Attorney General, Capitol Building.

Cheryl A. Frost

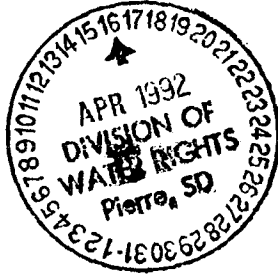
Cheryl F. Frost
Secretary

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 13th day of April, 1992.



John B. B. B.
Notary Public



April 15, 1992

Division of Water Rights
ATTN: Mark Rath
Joe Foss Building
523 E. Capitol
Pierre, SD 57501

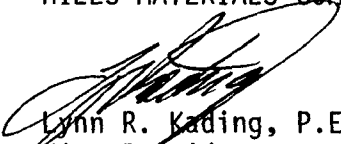
Dear Mr. Rath:

We have reviewed the Engineering Report prepared by Wright Water Engineers, Inc. dated March 1992 and find an incorrect statement concerning Northwestern Engineering on Page I-2.

Northwestern Engineering has irrigated the property covered by their Little Giant Ditch water right.

Sincerely,

HILLS MATERIALS COMPANY



Lynn R. Kading, P.E.
Vice President

LRK:gn

P.O. BOX 2320
RAPID CITY, SD 57709
OFFICE 605-394-3300
Quarry 605-394-3320
FAX: 605-341-3446

DIVISION OF NORTHWESTERN ENGINEERING COMPANY

LESLIE J. ENGLAND
(ALSO ADMITTED IN COLORADO)

LAW FIRM OF
LESLIE JAMES ENGLAND
SUITE 102, RUSHMORE PROFESSIONAL BUILDING
731 ST. JOSEPH STREET
RAPID CITY, SOUTH DAKOTA 57701

TELEPHONE (605) 341-7600
FAX (605) 341-7321

April 21, 1992



Mr. John Hatch, Chief Engineer
Water Rights Division
Department of Environment and
Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181

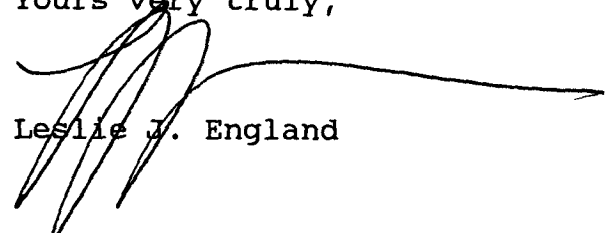
Re: In the Matter of Water Right Change of Use Applications
No. 2218-2 and No. 2217-2 of the City of Rapid City,
South Dakota

Dear Mr. Hatch:

Enclosed for filing please find an original Motion to Strike
Objections of Rapid Valley Water Conservancy District, Inc., in the
above-referenced matter.

If you have any questions in these regards please do not
hesitate to contact me. Thank you for your kind attention to this
matter.

Yours very truly,


Leslie J. England

LJE/kmr

Enclosures: Motion to Strike
cc: Daniel L. Bjerke

STATE OF SOUTH DAKOTA
WATER MANAGEMENT BOARD

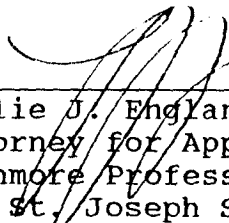


IN THE MATTER OF WATER)
RIGHT CHANGE OF USE)
APPLICATIONS NO. 2218-2)
AND NO. 2217-2 OF THE)
CITY OF RAPID CITY,)
SOUTH DAKOTA)

MOTION TO STRIKE
OBJECTIONS OF
RAPID VALLEY WATER
CONSERVANCY DISTRICT, INC.

COMES NOW the City of Rapid City, Applicant herein, by and through undersigned counsel, and moves to strike the letter petition containing objections of Protestant Rapid Valley Water Conservancy District, Inc., on the grounds and for the reasons that SDCL §46-2A-4(4) requires that in order for a protestant to participate in the hearing, ". . . a petition to oppose must be filed with the Chief Engineer and Applicant" Applicant herein, City of Rapid City, was not served with a petition to oppose by the Rapid Valley Water Conservancy District, Inc. Therefore, this protest, as a matter of law, should be stricken.

Dated this 21 day of April, 1992.



Leslie J. England
Attorney for Applicant
Rushmore Professional Building
731 St. Joseph Street, Suite 102
Rapid City, SD 57701
(605) 341-7600

CERTIFICATE OF SERVICE

I, Leslie J. England, hereby certify that I served a true and correct copy of the foregoing Motion to Strike by first class mail, proper postage affixed, this 21 day of April, 1992, on the following persons:

Joseph M. Butler
Attorney for Rapid Valley
Water Conservancy District, Inc.
818 St. Joseph Street
P.O. Box 2670
Rapid City, SD 57709



John Hatch, Chief Engineer
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 E. Capitol
Pierre, SD 57501-3181

Diane Best, Assistant Attorney General
Attorney General's Office
500 East Capitol
Pierre, SD 57501

Michael M. Hickey
Attorney for Rapid Valley Water Company, Inc.
P.O. Box 2670
Rapid City, SD 57709

Leslie J. England
Attorney for Applicant

Bangs, McCullen, Butler, Foye & Simmons

Lawyers

818 St. Joe Street

Mailing Address P. O. Box 2670

Rapid City, South Dakota 57709

605-343-1040

Telecopier 605-343-1503

George A. Bangs
W. A. McCullen (1943-1987)
Joseph M. Butler
Thomas H. Foye
Thomas E. Simmons
Ronald E. Clabaugh
Charles L. Riter
Allen G. Nelson
James P. Hurley



Michael M. Hickey
Mark E. Marshall
Terry L. Heler
Rebecca A. McMahon
Patrick K. Duffy
Rodney W. Schlauger
Matthew V. Resseguie

Recycled Paper 

April 22, 1992

John Hatch, Chief Engineer
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 E. Capitol
Pierre, SD 57501-3181

Diane Best, Assistant Attorney General
Attorney General's Office
500 East Capitol
Pierre, SD 57501

Re: In the Matter of Water Right Change of Use
Application Nos. 2218-2 and 2217-2 of the
City of Rapid City, South Dakota

Dear John and Ms. Best:

I received Mr. England's letter of April 21 along with his Motion to Strike Objections of Rapid Valley Water Conservancy District. Needless to say, this came as a surprise, especially in view of the fact that he has filed discovery requests on the Conservancy District with respect to these proceedings. Apparently he is now claiming that he did not receive notice of the protestant's objections. Obviously, he received a copy of the protest by mail from the Department. He now apparently claims that he must receive a copy of the protest directly from the protestant. The statute which he refers to requires a filing with the Chief Engineer and applicant. However, it requires this ten days in advance of the hearing. The scheduled hearing date is May 7, 1992, and we are hand delivering today to Mr. England a copy of the letter of protest.

April 22, 1992
Page 2

In all honestly, I cannot understand what Mr. England is doing. We have been meeting to try and resolve some of the issues and now he seems to want to claim that we are not involved at all. Nonetheless, we are hand delivering a copy of the letter of protest to him today, which is well in advance of ten days before the hearing.

Sincerely,

BANGS, McCULLEN, BUTLER, FOYE & SIMMONS

Joseph M. Butler

Joseph M. Butler

JMB:dae

cc: Les England (by hand delivery)



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

April 24, 1992

Dan Bjerke, Public Works Director
City of Rapid City
300 6th Street
Rapid City, SD 57701

Dear Mr. Bjerke:

Please find enclosed the following reports and recommendations for the City of Rapid City:

1. Report on the change in the diversion rate for Water Permit No. 2142-2.
2. Final report and recommendation for Water Permit Application No. 2217-2.
3. Final report and recommendation for Water Permit Application No. 2218-2.

These issues are scheduled to be considered by the Water Management Board on May 7, 1992, at 9:30 am in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Ave., Pierre, SD.

If you have any questions, please feel free to contact Mark Rath, Del Brosz, or myself.

Sincerely,

Eric Gronlund
Water Rights Division
(605) 773-3352

enclosure



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

April 24, 1992

Joseph Butler
Bangs, McCullen, Butler, Foye & Simmons
P.O. Box 2670
Rapid City, SD 57709

Dear Mr. Butler:

Please find enclosed the following reports and recommendations for the City of Rapid City:

1. Report on the change in the diversion rate for Water Permit No. 2142-2.
2. Final report and recommendation for Water Permit Application No. 2217-2.
3. Final report and recommendation for Water Permit Application No. 2218-2.

These issues are scheduled to be considered by the Water Management Board on May 7, 1992, at 9:30 am in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Ave., Pierre, SD.

If you have any questions, please feel free to contact Mark Rath, Del Brosz, or myself.

Sincerely,

Eric Gronlund
Water Rights Division
(605) 773-3352

enclosure



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

April 24, 1992

Michael Hickey
Bangs, McCullen, Butler, Foye & Simmons
P.O. Box 2670
Rapid City, SD 57709

Dear Mr. Hickey:

Please find enclosed the following reports and recommendations for the City of Rapid City:

1. Report on the change in the diversion rate for Water Permit No. 2142-2.
2. Final report and recommendation for Water Permit Application No. 2217-2.
3. Final report and recommendation for Water Permit Application No. 2218-2.

These issues are scheduled to be considered by the Water Management Board on May 7, 1992, at 9:30 am in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Ave., Pierre, SD.

If you have any questions, please feel free to contact Mark Rath, Del Brosz, or myself.

Sincerely,

Eric Gronlund
Eric Gronlund
Water Rights Division
(605) 773-3352

enclosure



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

April 24, 1992

Les England
Suite 102, Rushmore Professional Building
731 St. Joseph Street
Rapid City, SD 57701

Dear Mr. England:

Please find enclosed the following reports and recommendations for the City of Rapid City:

1. Report on the change in the diversion rate for Water Permit No. 2142-2.
2. Final report and recommendation for Water Permit Application No. 2217-2.
3. Final report and recommendation for Water Permit Application No. 2218-2.

These issues are scheduled to be considered by the Water Management Board on May 7, 1992, at 9:30 am in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Ave., Pierre, SD.

If you have any questions, please feel free to contact Mark Rath, Del Brosz, or myself.

Sincerely,

Eric Gronlund
Water Rights Division
(605) 773-3352

enclosure

LESLIE J. ENGLAND
(ALSO ADMITTED IN COLORADO)

LAW FIRM OF
LESLIE JAMES ENGLAND
SUITE 102, RUSHMORE PROFESSIONAL BUILDING
731 ST. JOSEPH STREET
RAPID CITY, SOUTH DAKOTA 57701

TELEPHONE (605) 341-7600
FAX (605) 341-7321

April 29, 1992



Mr. John Hatch, Chief Engineer
Water Rights Division
Department of Environment and
Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181

Re: In the Matter of Water Right Change of Use Applications
No. 2218-2 and No. 2217-2 of the City of Rapid City,
South Dakota

Dear Mr. Hatch:

Enclosed for filing please find an original Notice of Hearing
in the above-referenced matter.

If you have any questions in these regards please do not
hesitate to contact me. Thank you for your kind attention to this
matter.

Yours very truly,

Leslie J. England

LJE/kmr

Enclosures: Notice of Hearing
cc: Daniel L. Bjerke

STATE OF SOUTH DAKOTA
WATER MANAGEMENT BOARD



IN THE MATTER OF WATER)
RIGHT CHANGE OF USE)
APPLICATIONS NO. 2218-2)
AND NO. 2217-2 OF THE)
CITY OF RAPID CITY,)
SOUTH DAKOTA)

NOTICE OF HEARING

TO: PROTESTANT RAPID VALLEY WATER CONSERVANCY DISTRICT, INC.
AND ITS ATTORNEY JOSEPH M. BUTLER

You and each of you will please take notice and be advised that Applicant's Motion to Strike Objections of Rapid Valley Water Conservancy District, Inc. in the above-captioned matters, and Applicant's Motion for Discovery Hearing in the above-captioned matters, will be brought on for hearing before the Water Management Board at 9:15 a.m. on May 6, 1992, in the conference room, Floyd Matthew Training Center, Joe Foss Building, 523 East Capitol Avenue, Pierre, South Dakota 57501, or as soon thereafter as counsel can be heard, seeking an order striking objections of Protestant Rapid Valley Water Conservancy District, Inc. and/or an order compelling discovery.

Dated this 29 day of April, 1992.



Leslie J. England
Attorney for Applicant
731 St. Joseph Street, Suite 102
Rapid City, SD 57701
(605) 341-7600

CERTIFICATE OF SERVICE

I, Leslie J. England, hereby certify that I served a true and correct copy of the foregoing Notice of Hearing by first class mail, proper postage affixed, this 29th day of April, 1992, on the following persons:

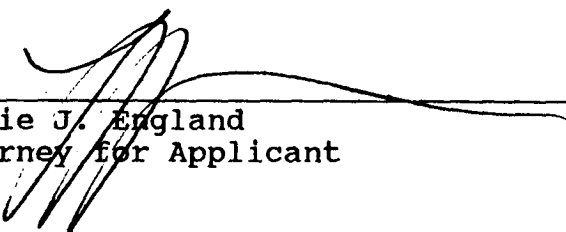
Joseph M. Butler
Attorney for Rapid Valley
Water Conservancy District, Inc.
P.O. Box 2670
Rapid City, SD 57709

John Hatch, Chief Engineer
Water Rights Division
Department of Environment and Natural Resources
Joe Foss Building
523 E. Capitol
Pierre, SD 57501-3181

Diane Best, Assistant Attorney General
Attorney General's Office
500 East Capitol
Pierre, SD 57501

Michael M. Hickey
Attorney for Rapid Valley Water Company, Inc.
P.O. Box 2670
Rapid City, SD 57709





Leslie J. England
Attorney for Applicant



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

May 8, 1992

NOTICE

TO: Edward McLaughlin, Mayor
City of Rapid City
300 6th Street
Rapid City, SD 57701
and Parties of Record (see attached list)

FROM: John Hatch, Chief Engineer
Water Rights Division
(605) 773-3352

A handwritten signature in cursive script, appearing to read 'John Hatch', is placed next to the 'FROM' line.

SUBJ: Preparation of Findings of Fact, Conclusions of Law and
Final Decision

The Water Management Board has directed John Guhin, The Board's attorney to prepare proposed Findings of Fact, Conclusions of Law and a Final Decision on approval of Water Permit Application Nos. 2217-2 and 2218-2, City of Rapid City. The Board will consider the proposed Findings, Conclusions and Final Decision at 8:45 am, July 22, 1992, American Legion, Main Street, Martin, SD.

The Board has requested that a copy of the proposed Findings, Conclusions and Final Decision be mailed to each Board member and all Parties of Record and their attorneys (copy enclosed) by July 2, 1992. Any comments pertaining to the proposed Findings, Conclusions and Decision are to be mailed to each Board member, the Board attorney and all Parties of Record and their attorneys by July 13, 1992.

The public hearing was completed May 7, 1992. No additional testimony will be received on July 22, 1992.

cc: John Guhin, Deputy Attorney General
Diane Best, Assistant Attorney General
Dan Bjerke, WS, City of Rapid City, 300 6th St, Rapid City, SD

CERTIFICATION

I hereby certify that on May 8, 1992, I have personally deposited with the United States Mail at Pierre, South Dakota, first class postage, prepaid envelopes containing a Notice dated May 8, 1992, regarding Preparation of Findings of Fact, Conclusions of Law and Final Decision on Water Permit Application Nos. 2217-2 and 2218-2, along with a copy of the Parties of Record addressed as stated below:

Edward McLaughlin, Mayor, City of Rapid City, 300 6th Street, Rapid City, SD 57701.

Dan Bjerke, Water Superintendent, City of Rapid City, 300 6th St.,
Rapid City, SD 57701.

Leslie England, England Law Firm, Rushmore Professional Building,
Suite 102, Rapid City, SD 57701.

Jerry Hammerquist, Rapid Valley Water Conservancy District, Box 26,
Caputa, SD 57725.

Joseph Butler, Attorney, Bangs, McCullen, Butler, Foye & Simmons, P.O.
Box 2670, Rapid City, SD 57709.

Hand Delivered To:

John Guhin, Deputy Attorney General, Capitol Building.

Diane Best, Assistant Attorney General, Capitol Building.

Cheryl F. Frost

Cheryl F. Frost
Secretary

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 11th day of May, 1992.



John [Signature]
Notary Public

NAME OF PERSON OR FILE: BRUCE WEBBER WITH SOUTHSIDE/MURPHY
ADDRESS: RAPID CITY SD COUNTY PENNINGTON CO.

DATE: 5/15/ TELEPHONE

RE: WATER RIGHT TRANSFERS IN THE RAPID VALLEY

COMMENTS:

Called About The Hearing On Water Right Transfers.
Nos 2217-2 & 2218-2. He Was Concerned About The Rapid
Valley Conservancy District's Opposition. He Felt The Water
Right Was Tied To The Land.
I Told Him The Transfers Were Not Final Until Findings
Of Fact & Conclusions Of Law Were Adopted Then There
Was An Appeal Opportunity To Contest The Final Decision.
He Asked About Land Tied To Water Rights, On Murphy &
South Side Ditches. I Told Him Our Opinion Was The ^{WATER RIGHT} ~~LAND~~
Was Tied To The Land And If Irrigation Was Forfeited, We
Would Reduce The Water Right By The Proportionate Amount Of
Water. I Told Him We ^{Believed} ~~Felt~~ The Ditches Operated By Pumping
Water Rather Operations On Shares.
He Said The Shares In The Ditches Were Not Consistent With
The Land The Owners Irrigate.

File in Permit or other file as necessary. Use to document conversations and what the other party was told; why action or decision was made.

NAME: M. D. Pelt

CERTIFICATION

I hereby certify that on May 15, 1992, I have personally deposited with the United States Mail at Pierre, South Dakota, first class postage, prepaid envelopes containing a Notice dated May 8, 1992, regarding Preparation of Findings of Fact, Conclusions of Law and Final Decision on Water Permit Application Nos. 2217-2 and 2218-2, City of Rapid City addressed as stated below:

Notice had come back "Unclaimed", and was re-mailed to:

Leslie England, England Law Firm, 731 St. Joseph St., Rushmore
Professional Building, Suite 102, Rapid City, SD 57701.

Cheryl A. Frost

Cheryl F. Frost
Secretary

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 21st day of May, 1992.



John Hatch
Notary Public

STATE OF SOUTH DAKOTA

BEFORE THE WATER MANAGEMENT BOARD

IN THE MATTER OF WATER	)	
PERMIT APPLICATION	)	
No. 2218-2, AN APPLICATION	)	
OF THE CITY OF RAPID CITY	)	FINDING OF FACT,
TO TRANSFER THE USE OF	)	CONCLUSIONS OF LAW
WATER APPROPRIATED UNDER	)	AND FINAL DECISION
VESTED WATER RIGHT	)	
No. 2040-2, SOUTH SIDE DITCH	)	

FINDINGS OF FACT

I

The City of Rapid City has applied for a change in the use of water which has been used to irrigate certain land known as the Stromer property in Pennington County. The water in question is supplied by the South Side Ditch Company from Rapid Creek and all of the water at issue constitutes "natural flows."

II

The water to be transferred has been appropriated under Vested Water Right No. 2040-2, South Side Ditch, with a priority date of May 3, 1880.

III

Rapid City wishes to change the diversion point either to several diversion points within the City of Rapid City itself, at points west of the present diversion point, or to Pactola Reservoir, a point to the west of the existing diversion point.

IV

The City of Rapid City seeks the transfer as part of a comprehensive approach to future water planning which

also includes water conservation, the search for new water supplies and negotiations with the United States seeking storage in Pactola Reservoir for its water.

V

The Board finds that 438.8 acre feet of water were diverted on the average on an annual basis at a maximum rate of 2.16 cfs in order to irrigate the property.

VI

Of the 438.8 acre feet, about 9.8 per cent, or 49.9 acre feet were lost in the ditch to seepage or evaporation, prior to being used on the property.

VII

The actual farm headgate diversion is found to have historically been 389.4 acre feet; 193.2 acre feet were consumptively used by the crop. Almost all of the remainder, or 194.7 acre feet, were returned to Rapid Creek either as ground water flow or surface water flow.

VIII

The findings of historical use and consumption are based primarily upon a single year's measurements. The Board finds that use of these measurements is satisfactory in the context of this case because there is no evidence to suggest that analysis of any other year's data would lead to a different result.

IX

As set forth above, Rapid City desires to transfer the use of water in question to one of two diversion points. The first of the two diversion points is actually a group of diversion points within the City of Rapid City. These points are upstream and westerly of the present diversion point. The City of Rapid City claims the right to use the 378.6 acre feet annually or slightly less than the historic amount applied to irrigation. This amount is appropriately used because it describes the amount of water actually beneficially used by Stromer. The Board finds the recognition of this portion of the claim will not cause any legal detriment to those who hold water rights in the present points of diversion and the Rapid City points of diversion. Certain of those rights appear to have a priority with the South Side ditch right. In the event of a conflict, those rights would therefore have a superior right to South Side ditch water, and means are reasonably available to vindicate that right. Furthermore, the Board finds no evidence that water rights users on Rapid Creek abuse the prior rights of other users.

X

Users below the present point of diversion will be protected, moreover, in that the times for the use of water are limited by the Final Decision to the times the water was historically used on the property in question, i.e., during

specific months of the irrigation season and at specific quantities.

XI

The City of Rapid City also desires the authority to change the proposed diversion, at times when the Rapid City points of diversion are not used, to Pactola Reservoir. Pactola Reservoir is upstream of the present point of diversion and is to the west.

XII

The Board concludes that the appropriate quantity of water which can be transferred to Pactola Reservoir storage is 193.2 acre feet in that this was the average crop consumptive use.

XIII

The Board furthermore finds that no harm can be shown to any user from the transfer of the average consumptive use in the present point of diversion to a diversion point upstream. Any prior user, of course, has the right to call that water. Any right which is not prior had no claim on that water in any event.

XIV

The Board finds further that the return flows from the city will be greater in volume than the return flows from the historic use of the water for irrigation. The Board finds that about 50 per cent of the water went back to Rapid Creek under an irrigation regime; if the water right

use is changed to municipal use, including certain proposed landscaping, about 58 per cent will go back to Rapid Creek as return flow and as effluent at the Rapid City Sewage Treatment Plant, a point to the east of the present South Side Ditch Diversion Point. There will, in other words, be more water in Rapid Creek available for diversion by downstream water rights than there has been historically if the change is granted.

CONCLUSIONS OF LAW

1. The Board has jurisdiction in this matter.
2. The applicant's request for a change in use can be made without detriment to existing rights as accomplished as set forth in the final decision.
3. The proposed change from irrigation use to municipal use is a beneficial use and is in the public interest. The Board finds specifically that the changes in water use is in support of Rapid City's long term comprehensive plans for the development and conservation of a municipal water supply and that such long-term planning and conservation is in the public benefit and should be encouraged.
4. Because this right was established for irrigation purposes, the transferred water right may likewise be used only during the irrigation season as set forth in the Final Decision below.

5. The water transferred under this application is limited to a diversion rate of 2.16 cfs, the historical maximum rate of for diversion for this property.

6. The water utilized under this permit is limited to a total annual volume of 378.6 acre feet if diverted at the Rapid City points of diversion and is limited to a total annual volume of 193.2 acre feet if diverted at Pactola Reservoir. Diversions under this regime will not adversely affect the exercise of existing rights when scheduled as set forth in the Final Decision.

7. Although the applicant is allowed under this permit to store water at Pactola under an anticipated agreement with the United States, the present action of the Board does not purport to direct or compel the United States or the applicant to enter into any such agreement.

8. The Board concludes that the protestant has failed to demonstrate a legal impediment to this transfer based upon the allegation that the water right may not be transferred separately from the land on which the water has been historically used. Article X, § 3 of the By-laws of the South Side Ditch and Water Company (Exhibit A) provide only that if the land actually has "water rights to water from this water system" then the transfer of that land will require a transfer of shares of stock proportionate to the land transfer. Article X § 3 does not, in the view of the Board, preclude a stockholder from transferring the water

rights prior to a sale of land. Nor has the protestant succeeded in demonstrating that the corporation must affirmatively participate in or concur in this transfer. Article X § 1 indicates, in fact, the contrary. Further there has been no showing or allegation that the transfer has not been "entered in the proper form on the books of the company." Nor is Article X, § 2 relevant because the city of Rapid City testified, without contradiction, that it had a pre-existing water right to South Side Ditch and that it was a stockholder in the South Side Ditch company.

9. SDCL 46-5-15 does not compel a different result. Assuming, without deciding, that the statute retains vitality despite the passage of subsequent legislation, the Board concludes (1) that there will be no water which is not "used" by the city and (2) even if waste water is considered to be water not "used" by the municipality, its return at the waste water treatment plant eight miles downstream of the city is "near" the place where it is diverted. The Board further concludes that the statute must be given a flexible reading so as to promote the objective of the development of the states water supplies "to the fullest extent of which they are capable" SDCL 46-1-4 and "for the greatest public benefit." SDCL 46-1-3.

10. SDCL 46-5-15 is not applicable to the situation now before the Board. This statute must, however,

be reconciled with SDCL 46-2A-12. The Board concludes that SDCL 46-5-15 allows the chief engineer to approve up to a 660 foot change in point of diversion without invocation of Board jurisdiction under SDCL 46-2A if the change "does not increase the potential for interference with existing diversions." SDCL 46-2A-12, in contrast, does not address the power of the chief engineer but addresses the power of the Board when the procedure set forth in SDCL 46-2A is invoked. Furthermore, it sets out different standards for approval of a change in point of diversion. Pursuant to SDCL 46-2A-12, a change in "point of diversion" may be approved by the Board "only if the change does not unlawfully impair existing rights and is for a beneficial use and in the public interest." The legislature, in enacting this statute, thus placed different standards for approval of a change in point of diversion on the Board than on the chief engineer, and at the same time omitted any limit on the distance a point of diversion could be changed by the Board if the standards were met. The Board thus concludes that SDCL 46-5-15 is applicable only when Board jurisdiction has not been invoked through the procedure under SDCL 46-2A; when SDCL 46-2A has been invoked, the Board has the power to grant changes in the point of diversion of distances greater than (or less than, if appropriate) 660 feet if the requirements of SDCL 46-2A-12 are other met.

11. Additional information may be made available to the Board with regard to seepage rates and with regard to hydrology of the area which may require adjustment of monthly or total annual volumes or division rates authorized by this permit. Therefore, the Board retains jurisdiction to make these and other appropriate adjustments.

FINAL DECISION

The application for Permit No. 2218-2 granted with the following qualifications:

1. That Permit No. 2218-2 is limited to a diversion rate of 2.16 cfs for a total annual volume of 193.2 acre feet at Pactola Reservoir or a total annual volume of 378.6 acre feet at Sioux Park Gallery (SW 1/4 SW 1/4 Section 3), Meadowbrook Gallery (SE 1/4 NE 1/4 Section 9) Jackson Springs Gallery (NW 1/4 SE 1/4 Section 8) and the Rapid City Water Treatment Plant (SE 1/4 NE 1/4 Section 3), all in T1N-R7E. Maximum monthly diversion volumes at Pactola or the diversion points within Rapid City are as follows:

feet points <u>Month</u> <u>City</u>	Monthly acre feet at <u>at Pactola</u>	Monthly acres at diversion <u>within Rapid</u>
May	25.2	51.9
June	38.3	74.5
July	39.6	77.0
August	46.4	90.1
September	35.1	68.3
October	8.6	16.7

Diversions during a month may be made at either Pactola Reservoir or at the diversion points within Rapid City, but not simultaneously at both Pactola and the Rapid City diversion points.

2. That approval of Permit No. 2218-2 authorizes diversions of only natural flow water by the city of Rapid City.

3. That the city of Rapid City report to the chief engineer annually the amount of water withdrawn each month at Pactola Reservoir or the diversion points within Rapid City.

4. That the Water Management Board is retaining jurisdiction of Permit No. 2218-2 in the event that additional information shows that changes need to be made in the monthly or total annual volumes authorized by Permit No. 2218-2.

5. Diversions under Permit No. 2218-2 may not interfere with existing water rights in effect prior to approval of No. 2218-2 or any domestic rights.

6. The amount of water with a May 3, 1880, priority date, which may be appropriated under Vested Water Right No. 2040-2 is reduced by 2.16 cfs.

7. Approval of Permit No. 2218-2 cancels irrigation of 48.5 acres in the S 1/2 NW 1/4, SW 1/4, SE 1/4 Section 29, T1N, R9E which have been abandoned or forfeited

and reduces No. 2040-2 by an additional 0.60 cfs. Total reduction of No. 2040-2 is 2.76 cfs and 241 acres.

Dated this 28 day of August, 1992.

BY THE BOARD:

Francis E. Bunk
Chairman



GREAT FACES. GREAT PLACES.

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

September 1, 1992

NOTICE

TO: Edward McLaughlin, Mayor
City of Rapid City
300 6th Street
Rapid City, SD 57701
and Parties of Record (see attached list)

FROM: *for* John Hatch, Chief Engineer
Water Rights Division
605 773-3352

SUBJECT: Adoption of Findings of Fact, Conclusions of Law and
Final Decision

This is to notify you that a Final Decision, including Findings of Fact and Conclusions of Law, was adopted by the Water Management Board for Water Permit Application Nos. 2217-2 and 2218-2 at the July 22, 1992, meeting.

A copy of the signed final Decision, Findings and Conclusions is enclosed for the applicant. Copies will be furnished to anyone else upon request. South Dakota Statutes provide that decisions of the Board may be appealed to the Courts.

cc: John Guhin, Deputy Attorney General
Diane Best, Assistant Attorney General
Dan Bjerke, WS, City of Rapid City, 300 6th St, Rapid City, SD

CERTIFICATION

I hereby certify that on September 1, 1992, I have personally deposited with the United States Mail at Pierre, South Dakota, First Class postage, prepaid envelopes containing a Notice dated September 1, 1992, regarding Adoption of Findings of Fact, Conclusions of Law and Final Decision for Water Permit Application Nos. 2217-2 and 2218-2 addressed to:

Edward McLaughlin, Mayor
City of Rapid City
300 6th Street
Rapid City, SD 57701

and Parties of Record (as shown on the attached list)

A copy of the Notice was sent to:

Dan Bjerke, WS, City of Rapid City, 300 6th St, Rapid City, SD 57701

A copy of the Notice was sent through inter-office mail to:

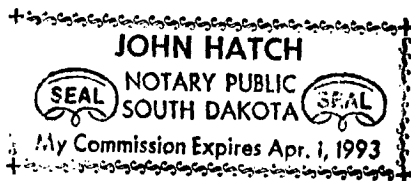
John Guhin, Deputy Attorney General
Diane Best, Assistant Attorney General

Jaci R Konop

JACI R. KONOP
Senior Secretary

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 9th day of September, 1992.



John Hatch
Notary Public



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

MAR 17 1993

Richard Wahlstrom, Finance Officer
City of Rapid City
300 6th Street
Rapid City, SD 57701

Dear Mr. Wahlstrom:

Enclosed is Water Permit No. 2218-2 authorizing your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

enclosures



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

November 5, 1998

Daniel L Bjerke
City of Rapid City
300 6th St
Rapid City SD 57701-2724

Dear Mr. Bjerke:

The investigation of the City of Rapid City's water use systems was conducted on September 9, 1998, by Mark Rath, staff engineer. The investigation included the extent of application of water to beneficial use, as developed under each permit. The final water right documents, the Water Licenses, can now be issued. Below is a list of the permits that were investigated.

Permit No.	amount	source	
2136-2	0.78 cfs	Rapid Creek	Sioux Park
2138-2	12.38 cfs	Rapid Creek	Water Treatment Plant
* 2274-2	0.78 cfs	Rapid Creek	Water Treatment Plant
2156-2	1.11 cfs	Madison Formation	SW ¼ SE ¼ Sec 16-T1N-R7E
transfer the use of a portion of Rapid Creek flows			formerly known as
2142-2	0.62 cfs	Murphy Ditch	Tyler property
2199-2	0.05 cfs	Murphy Ditch	Pelle property
2201-2	0.13 cfs	Murphy Ditch	Long property
2217-2	0.33 cfs	South Side Ditch	Keller property
2218-2	2.16 cfs	South Side Ditch	Stromer property
2234-2	0.79 cfs	South Side Ditch	Eisenbraun property
2249-2	1.19 cfs	South Side Ditch	Weber property
2296-2	2.85 cfs	South Side Ditch	Jundt property
2316-2	0.81 cfs	Murphy Ditch	Morris property
2317-2	0.84 cfs	Hawthorne Ditch	Morris property
2360-2	0.37 cfs	South Side Ditch	Soetaert property
2397-2	0.59 cfs	South Side Ditch	Eisenbraun property
2399-2	0.75 cfs	Murphy & Little Giant Ditch	Wileman property

* license fee already submitted

Statutes require that we charge \$50.00 fee for the investigation and issuance of the each Water License. Upon receipt of the \$800.00 fee (16 permits x \$50) we will process the Water Licenses.

Please sent fee to: Dept. of Environment & Natural Resources, Water Rights Program, 523 E. Capitol, Pierre, SD 57501-3181. If you have questions, please contact us.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

N2 415958

Pierre, December 9, 19 98

RECEIVED OF City of Rapid City, 300 6th St., Rapid City, SD 57701-2724
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct
and to put water to beneficial use _____

Fee for Application for Permit No. _____ to Appropriate Water, for Future
Use _____

Fee to retain Future Use Permit No. _____ after period of seven years.

Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water
License No. 2218-2

Fee for Filing Transfer Form _____

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

50 00

50 00

By _____
Chief Engineer

John Hatcher

Permit No. 2218-2
Cheyenne River - Water District

Report Of Examination Of Works

TO: Chief Engineer, Water Rights Program, DENR, Foss Bldg., Pierre, SD 57501

On, September 9, 1998, I made a thorough examination of the water use system constructed by City of Rapid City of 300 6th St, Rapid City SD holder of Permit No. 2218-2, bearing the priority of May 3, 1880 authorizing the diversion of 2.16 cu. ft. per second and an annual appropriation of 378.6 acre-feet if taken at Rapid City's municipal diversion points or 193.2 acre-feet if stored in Pactola Reservoir of the natural flow waters of surface water from Rapid Creek for municipal, industrial, commercial, common distribution system, rural water system, suburban housing, and domestic purposes, in Pennington County.

I have to report on the conditions of the same as follows:

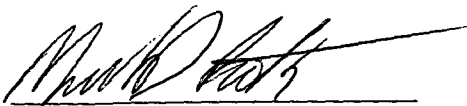
A. Works used to divert the water:

Pumps at the water treatment plant, Jackson Springs Gallery Sioux (aka Girl Scout) Gallery, Meadowbrook Gallery and storage in Pactola Reservoir.

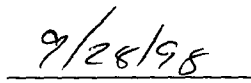
The system is in the following condition good. The points of diversion are located in the SE1/4 NE1/4 Section 3 (Rapid City Water Treatment Plant); SW1/4 SW1/4 Section 3 (Sioux Park Gallery); SE1/4 NE1/4 Section 9 (Meadowbrook Gallery); NW1/4 SE1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E and NW1/4 SW1/4 Section 2 T1N-R5E (Pactola Reservoir). Pactola Reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E. The permit holder is entitled to divert and convey to the place of use 2.16 cu. ft. per second of water and an annual appropriation of 378.6 acre-feet if taken at Rapid City's municipal diversion points or 193.2 acre-feet if stored in Pactola Reservoir which is to be used for municipal, industrial, commercial, common distribution system, rural water system, suburban housing, and domestic purposes. Water has been put to beneficial use to the maximum extent and the license should be issued for 2.16 cfs and an annual appropriation of 378.6 acre-feet if taken at Rapid City's municipal diversion points or 193.2 acre-feet if stored in Pactola Reservoir

Applicable permit qualifications have been complied with: yes

Exceptions to compliance are: none



Mark D. Rath
Natural Resources Engineer
DENR, Water Rights Program



Date

REPORT ON INSPECTION OF PERMIT NO. 2218-2

DATE OF INSPECTION: September 9, 1998

Contact Person & Address: John Wagner, 300 6th St, Rapid City SD 57701

DIVERSION POINT LEGAL LOCATIONS: are in the SE1/4 NE1/4 Section 3 (Rapid City Water Treatment Plant); SW1/4 SW1/4 Section 3 (Sioux Park a.k.a. Girl Scout Gallery); SE1/4 NE1/4 Section 9 (Meadowbrook Gallery); NW1/4 SE1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E and NW1/4 SW1/4 Section 2 T1N-R5E (Pactola Reservoir). Pactola Reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E.

WATER SUPPLY Source: Rapid Creek

WATER TREATMENT PLANT

Pump\ Motor:

- | | |
|---------------------------------------|-----------------------------------|
| 1) Pump Make <u>Peerless</u> | 2) Model <u>258595</u> |
| 3) Capacity <u>5600</u> GPM | 4) Motor Make <u>GE</u> |
| 5) Model No. <u>5K405DP7011B FR2G</u> | 6) Horsepower rating <u>75</u> hp |

- | | |
|----------------------------------|------------------------------------|
| 1) Pump Make <u>Layne Bowler</u> | 2) Model <u>14MSL</u> |
| 3) Capacity <u>2780</u> GPM | 4) Motor Make <u>US Electrical</u> |
| 5) Model No. <u>326UP</u> | 6) Horsepower rating <u>30</u> hp |

- | | |
|-------------------------------|------------------------------------|
| 1) Pump Make <u>Vertiline</u> | 2) Model <u>27908</u> |
| 3) Capacity <u>5560</u> GPM | 4) Motor Make <u>US Electrical</u> |
| 5) Model No. <u>445UPY</u> | 6) Horsepower rating <u>60</u> hp |

- | | |
|----------------------------------|-----------------------------------|
| 1) Pump Make <u>Layne Bowler</u> | 2) Model <u>85522</u> |
| 3) Capacity <u>5875</u> GPM | 4) Motor Make <u>Louis Allis</u> |
| 5) Model No. <u>COG5B</u> | 6) Horsepower rating <u>60</u> hp |

- | | |
|-------------------------------|------------------------------------|
| 1) Pump Make <u>Vertiline</u> | 2) Model <u>27989</u> |
| 3) Capacity <u>8000</u> GPM | 4) Motor Make <u>US Electrical</u> |
| 5) Model No. <u>CFU</u> | 6) Horsepower rating <u>100</u> hp |

SIOUX PARK (a.k.a. Girl Scout) GALLERY

Pump\ Motor:

- | | |
|---------------------------------|------------------------------------|
| 1) Pump Make <u>Worthington</u> | 2) Model <u>12H13501</u> |
| 3) Capacity <u>1400</u> GPM | 4) Motor Make <u>US Electrical</u> |
| 5) Model No. <u>324UP</u> | 6) Horsepower rating <u>25</u> hp |

- | | |
|---------------------------------|------------------------------------|
| 1) Pump Make <u>Worthington</u> | 2) Model <u>12H13501</u> |
| 3) Capacity <u>1400</u> GPM | 4) Motor Make <u>US Electrical</u> |
| 5) Model No. <u>324UP</u> | 6) Horsepower rating <u>25</u> hp |

MEADOWBROOK GALLERY

Pump\ Motor:

- | | |
|---------------------------------|------------------------------------|
| 1) Pump Make <u>Worthington</u> | 2) Model <u>10QHA0</u> |
| 3) Capacity <u>1525</u> GPM | 4) Motor Make <u>US Electrical</u> |
| 5) Model No. <u>2743715</u> | 6) Horsepower rating <u>15</u> hp |

- | | |
|---------------------------------|------------------------------------|
| 1) Pump Make <u>Worthington</u> | 2) Model <u>10QHA0</u> |
| 3) Capacity <u>1475</u> GPM | 4) Motor Make <u>US Electrical</u> |
| 5) Model No. <u>2745675</u> | 6) Horsepower rating <u>15</u> hp |

- | | |
|---------------------------------|------------------------------------|
| 1) Pump Make <u>Worthington</u> | 2) Model <u>10QHA0</u> |
| 3) Capacity <u>1525</u> GPM | 4) Motor Make <u>US Electrical</u> |
| 5) Model No. <u>2744261</u> | 6) Horsepower rating <u>15</u> hp |

JACKSON SPRINGS GALLERY

Pump\ Motor:

- | | |
|-------------------------------------|-----------------------------------|
| 1) Pump Make <u>Fairbanks-Morse</u> | 2) Model <u>T4B242990A</u> |
| 3) Capacity <u>1390</u> GPM | 4) Motor Make <u>GE</u> |
| 5) Model No. <u>5K6258XH1A</u> | 6) Horsepower rating <u>75</u> hp |

Pump\ Motor:

- | | |
|-------------------------------------|------------------------------------|
| 1) Pump Make <u>Fairbanks-Morse</u> | 2) Model <u>T4B242992A</u> |
| 3) Capacity <u>2085</u> GPM | 4) Motor Make <u>GE</u> |
| 5) Model No. <u>5K6268XH1A</u> | 6) Horsepower rating <u>125</u> hp |

Pump\ Motor:

- | | |
|-------------------------------------|------------------------------------|
| 1) Pump Make <u>Fairbanks-Morse</u> | 2) Model <u>T4B242991A</u> |
| 3) Capacity <u>2085</u> GPM | 4) Motor Make <u>GE</u> |
| 5) Model No. <u>5K6258XH1A</u> | 6) Horsepower rating <u>125</u> hp |

PACTOLA RESERVOIR : This is a US Bureau of Reclamation dam with 55, 972 acre-feet of active storage

DISTRIBUTION LINES OR CANALS:

Municipal distribution system

PERMIT QUALIFICATIONS AND REGULATIONS:

- 1) Special qualifications to permit being abided by yes
- 2) All structures, wells and lands on map yes

COMMENTS: #

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2218-2

(1) The City of Rapid City, 300 6th St, Rapid City SD 57701 made Application No. 2218-2, February 10, 1992 for a water permit to divert 2.16 cubic feet of water per second (cfs) from Rapid Creek with an annual volume limitation of 378.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 193.2 acre-feet, if stored in Pactola Reservoir, Pennington County, South Dakota for municipal, industrial, commercial, common distribution system, rural water system, suburban housing and domestic purposes. Permit No. 2218-2, with a priority date of May 3, 1880 (established by South Side Ditch) was approved July 22, 1992 and issued to the City of Rapid City for diversion of water with construction of the described water supply system and the application to beneficial use of said water completed.

(2) It is certified that the City of Rapid City has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 2.16 cfs from Rapid Creek with an annual volume limitation of 378.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 193.2 acre-feet, if stored in Pactola Reservoir for beneficial use. The location of the diversion points are: SE ¼ NE ¼ Section 3 (Rapid City Water Treatment Plant); SW ¼ SW ¼ Section 3 (Sioux Park Gallery); SE ¼ NE ¼ Section 9 (Meadowbrook Gallery); NW ¼ SE ¼ Section 8 (Jackson Springs Gallery); all in T1N-R7E and NW ¼ SW ¼ Section 2-T1N-R5E (Pactola Reservoir). Pactola Reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E.

(3) The City of Rapid City has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use.

(4) Pursuant to South Dakota Water Law 46-5-30.1 the City of Rapid City, 300 6th St, Rapid City SD 57701 the holder and/or owner of Water Right No. 2218-2 is issued a license to appropriate water, the right to use 2.16 cfs from Rapid Creek with an annual volume limitation of 378.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 193.2 acre-feet, if stored in Pactola Reservoir with a priority date of May 3, 1880 (established by South Side Ditch) from the locations specified in (2) of this license for municipal, industrial, commercial, common distribution system, rural water system, suburban housing and domestic purposes. This license is subject to any limitations or qualifications listed in Water Right No. 2218-2 and subject to South Dakota State Law.



JOHN HATCH, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JAN 15 1999

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

JAN 15 1999

Daniel L Bjerke
City of Rapid City
300 6th St
Rapid City SD 57701-2724

Dear Mr. Bjerke:

Enclosed are the Water Licenses and receipts for the investigation and issuance of the water licenses. These water licenses are the final document which complete the process of obtaining a water right.

As long as the City of Rapid City uses the water beneficially, as stated in the water licenses, State Water Law provides that the City has a continuing right to use the water.

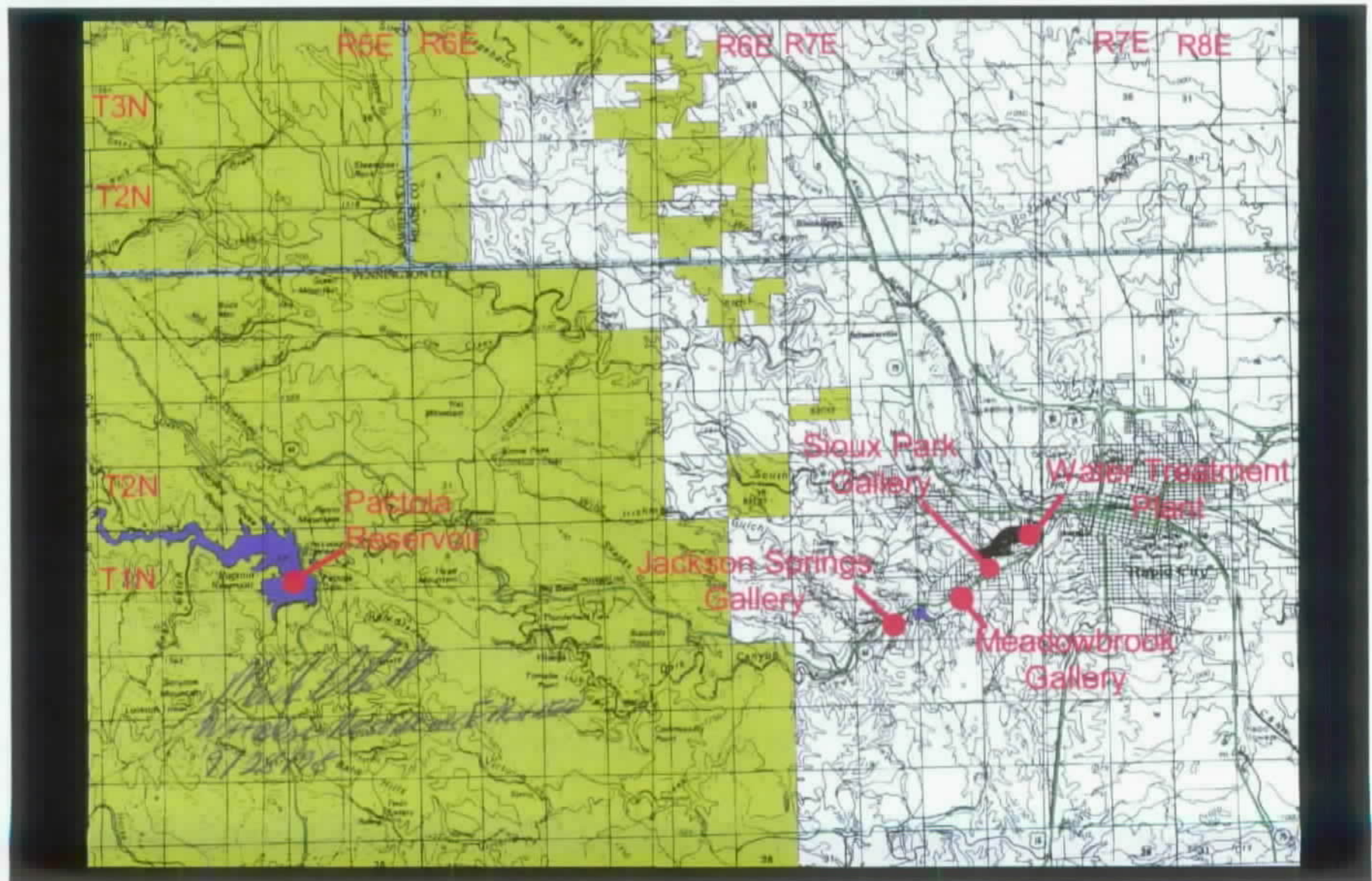
Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Program
605 773-3352

ks

enclosures

Area Map for Pactola Reservoir to Rapid City





2118-2

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

September 30, 2005

INTERNAL MEMORANDUM

TO: Garland Erbele, Chief Engineer
DENR Water Rights Program

FROM: Donald E. Stroup *Donald E. Stroup*
Natural Resources Project Engineer
DENR Water Rights Program

SUBJECT: Rapid City – Rapid Valley Water Rights Transfers

A total of 16.75 cubic feet per second (cfs) of water has been transferred from Rapid Valley irrigation ditches to Rapid City, SD. The amounts of flow transferred and acres retired by ditch are:

<u>Ditch</u>	<u>Flow (cfs)</u>	<u>Acres</u>
Murphy	4.12	325
Little Giant	0.99	26
South Side	10.80	1001.8
Hawthorne	0.84	46

The locations of the land retired from irrigation are shown on the Rapid City-Rapid Valley Water Rights Transfers Map. Following is a list summarizing the water transfers from Rapid Valley irrigators to Rapid City:

- 2399-2:** Retired 52-acres and 0.75-cfs of Wileman property from future irrigation, 26-acres and 0.33-cfs from Murphy Ditch and 26-acres and 0.42-cfs from Little Giant Ditch. Land located in the NE¼ Section 24 T1N R8E and water via Murphy Ditch at the same location.
- 2316-2:** Retired 64-acres and 0.81-cfs of Morris property from future irrigation via Murphy Ditch. Land located in the SE¼ Section 9 T1N R8E and water via Murphy Ditch at the same location.
- 2201-1:** Retired 10-acres and 0.13-cfs of Long property from future irrigation via Murphy Ditch. Land located in the center of Section 14 T1N R8E and water via Murphy Ditch at the same location.
- 2199-2** Retired 4-acres and 0.05-cfs of Pelle property from future irrigation via Murphy Ditch. Land located in the NW¼ Section 19 T1N R9E and water via Murphy Ditch at the same location.
- 2142-2** Retired 49-acres and 0.62-cfs of Tyler property from future irrigation via Murphy Ditch. Land located in the NW¼ and SW¼ Section 19 T1N R9E and water via Murphy Ditch at the same location.

- 2469-2** Retired 27-acres and 0.34-cfs of Murphy property from future irrigation via Murphy Ditch. Land located in the NW¼ and SW¼ Section 14 T1N R8E and water via Murphy Ditch at the same location.
- 2512-2** Retired 145-acres and 1.84-cfs of Schroeder property from future irrigation via Murphy Ditch. Land located in Section 19 T1N R9E and water via Murphy Ditch at the same location.
- 2513-2** Retired 74.9-acres and 0.84-cfs of Steen property from future irrigation via South Side Ditch. Land located in the NE¼ Section 25, and SW¼ and SE¼ Section 24 T1N R8E and water via South Side Ditch in Section 25 T1N R8E. The turnout for the supplying lateral has a turn screw gate that is functional.
- 2234-2** Retired 70-acres and 0.79-cfs of Eisenbraun property from future irrigation via South Side Ditch. Land located in the NE¼ Section 26 T1N R8E and water via South Side Ditch at the same location. The turnout for the supplying lateral is into a buried pipeline capped with a plastic bucket.
- 2411-2** Retired 3.6-acres and 0.04-cfs of Eisenbraun property from future irrigation via South Side Ditch. Land located in the NE¼ Section 26 T1N R8E and water via South Side Ditch at the same location. The turnout for the supplying lateral is into a buried pipeline capped with a plastic bucket.
- 2397-2** Retired 59.3-acres and 0.59-cfs of Eisenbraun property from future irrigation via South Side Ditch. Land located in the NE¼ Section 26 T1N R8E and water via South Side Ditch at the same location. The turnout for the supplying lateral is into a buried pipeline capped with a plastic bucket.
- 2468-2** Retired 34.8-acres and 0.57-cfs of Howie property from future irrigation via Little Giant Ditch water delivered via Murphy Ditch. Land located in the SW¼ Section 19 and NW¼ Section 30 T1N R9E and water via Murphy Ditch in the NE¼ Section 19 T1N R9E. The turnout for the supplying lateral is blocked by a silted-in board.
- 2249-2** Retired 105.5-acres and 1.19-cfs of Weber property from future irrigation via South Side Ditch. Land located in the NW¼ and SW¼ Section 30 T1N R9E and water via South Side Ditch in the SW¼ Section 30 T1N R9E.
- 2296-2** Retired 253.4-acres and 2.85-cfs of Jundt property from future irrigation via South Side Ditch. Land located in Section 33 T1N R9E and water via South Side Ditch in the NE¼ Section 33 T1N R9E. The turnout for the supplying lateral is not blocked and ditch and lateral do not appear to be maintained.
- 2360-2** Retired 32.6-acres and 0.37-cfs of Soetaert property from future irrigation via South Side Ditch. Land located in the E½ Section 33 T1N R9E and water via South Side Ditch in the NE¼ Section 33 T1N R9E. The turnout for the supplying lateral is not blocked and ditch and lateral do not appear to be maintained.
- 2415-2** Retired 146-acres and 1.64-cfs of Howie property from future irrigation via South Side Ditch. Land located in the NE¼ and SE¼ Section 32 T1N R9E and water via South Side Ditch in the NE¼ Section 32 T1N R9E. The turnout for the supplying lateral is not blocked and ditch and lateral do not appear to be maintained.

- 2217-2** Retired 29.2-acres and 0.33-cfs of Keller property from future irrigation via South Side Ditch. Land located in the SE¼ Section 29 T1N R9E and water via South Side Ditch in the NE¼ Section 32 T1N R9E. The turnout for the supplying lateral is not blocked and ditch and lateral do not appear to be maintained.
- 2218-2** Retired 192.5-acres and 2.16-cfs of Stromer property from future irrigation via South Side Ditch. Land located in the NW¼, SW¼ , and SE¼ of Section 29 T1N R9E and water via South Side Ditch in the SW¼ Section 29 T1N R9E. The turnout for the supplying lateral is not blocked and ditch and lateral do not appear to be maintained.
- 2317-2** Retired 46-acres and 0.84-cfs of Morris property from future irrigation via Hawthorne Ditch. Land located in the center of Section 9 T1N R8E and water via Hawthorne Ditch in the NE¼ Section 9 T1N R8E. Hawthorne Ditch is now piped underground through the area where the turnout for the supplying lateral was and the new Elk Vale Road by-pass, a school, and Western Electric have been constructed where the lateral previous ran. There is no evidence of a lateral at the location.

cc: Individual Files

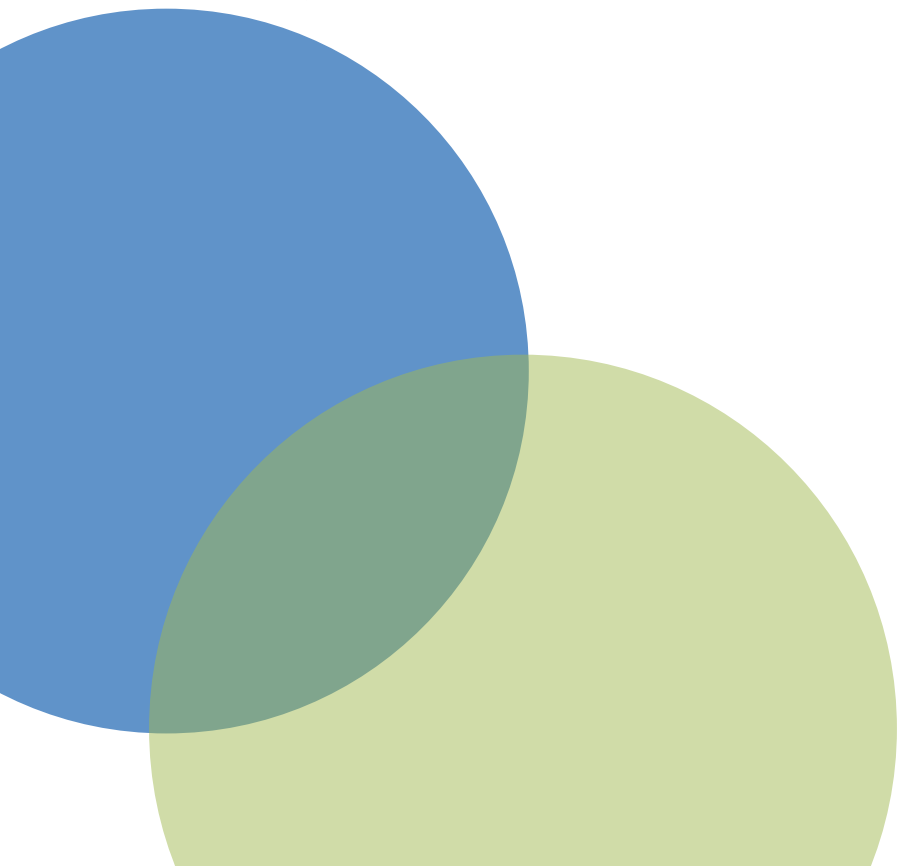
DOCUMENTATION OF
IRRIGATION DIVERSION POINT ABANDONMENT
FOR CITY OF RAPID CITY
PROJECT NO. 12-2034, CIP NO. 50922

Topical Report RSI-2317

prepared for

City of Rapid City
Public Works Department
Water Division
300 6th Street
Rapid City, SD 57701

January 2016



DOCUMENTATION OF
IRRIGATION DIVERSION POINT ABANDONMENT
FOR CITY OF RAPID CITY
PROJECT NO. 12-2034, CIP NO. 50922

Topical Report RSI-2317

by

Peter P. Rausch
Curtis D. Anderson
Adam J. Rutz
Jared K. Oswald

RESPEC
3824 Jet Drive
Rapid City, South Dakota 57703

prepared for

City of Rapid City
Public Works Department
Water Division
300 6th Street
Rapid City, SD 57701

January 2016

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1.0 BACKGROUND

The City of Rapid City has obtained the water permits from several irrigators served by Rapid Creek in the Rapid Valley area. According to the South Dakota Department of Environment and Natural Resources (SD DENR) Water Rights Division, the holder of a transferred permit shall permanently render inoperable the structural means of diverting water to land that is no longer subject to the water permit. The City of Rapid City has record of transfers and has now completed abandonment of the aforementioned diversion structures. The abandonment of the structures was performed by the City of Rapid City and reviewed by SD DENR personnel. This report documents the permits transferred, the diversion points associated with those permits, and the abandonment of those diversion points.

2.0 DATA SOURCES

Six sources were used to identify the diversion structures (turnouts) to be disabled. The first is the South Dakota Water Rights Program online permit database that is operated by the SD DENR [2012]. This database includes water rights documentation for each of the Rapid Valley irrigation ditches, identifies all permit transfers, and has documentation for individual water rights permits.

The second source is the Rapid Valley Water Management Study, which was completed in 1990 by the U.S. Bureau of Reclamation for ditches that have storage in Deerfield Reservoir, including the South Side, Cyclone, Little Giant, and Hawthorne irrigation ditches [U.S. Bureau of Reclamation, 1990]. The Murphy Ditch was excluded from the Rapid Valley Water Management Study because its water right is for natural Rapid Creek flows and, therefore, contractually has no storage in Deerfield Reservoir managed by the Bureau of Reclamation. The documentation from the study includes photographs of irrigation turnouts; associated notes; and irrigation ditch maps with turnout locations, photograph locations, and irrigated acreages.

The third source is an undocumented study conducted by the City of Rapid City in 2008. This study includes photographs of irrigation turnouts, associated notes, and maps that include data pertinent to water rights transferred to the city. The last three sources include parcel delineation and owner information from RapidMap [City of Rapid City and Pennington County, 2014], field investigations, and direct communication with irrigation ditch personnel and landowners.

Searches were conducted within the SD DENR Water Rights Program database to identify the water rights transferred to the City of Rapid City. Permit documentation associated with these transfers was downloaded. The water rights flow rate, acreage, location, previous owner, and approval date were identified for each transfer and this information is provided in Table 2-1.

By combining the information from Table 2-1 with the data from the RapidMap geodatabase, the parcels associated with each transfer were identified. Then, structure location maps from the Rapid Valley Water Management Study were used to identify the locations of turnouts requiring disablement. These locations were field-verified with help from ditch personnel and were recorded with Global Positioning System (GPS). Verified structure locations were digitized with ArcGIS mapping software.

Table 2-1. Information for Water Rights Transferred to the City of Rapid City

Permit No.	Ditch(s)	Previous Owner	Acres	Flow (cfs) ^(a)	Section	Township	Range	Quarter	Transfer Date
2655-2	Cyclone	Lamb	58	0.83	22	1N	8E	SW NW, NW NW	12/1/2010
2317-2	Hawthorne	Morris	46	0.84	9	1N	8E	SW NE, SE NW, NE SW, NW SE	5/1/1996
2399-2	Little Giant and Murphy	Wileman	52	0.75	24	1N	8E	E NE	5/7/1998
2468-2	Little Giant via Murphy	Howie	34.8	0.57	19; 30	1N	9E	W SW; NW NW	12/5/2001
2142-2	Murphy	Tyler	49	0.62	19	1N	9E	W NW, NW SW	5/1/1991
2199-2	Murphy	Pelle	4	0.05	19	1N	9E	NW NW	5/7/1992
2201-2	Murphy	Long	10	0.13	14	1N	8E	C	5/7/1992
2316-2	Murphy	Morris	64	0.81	9	1N	8E	W SE	5/1/1996
2469-2	Murphy	Murphy	27	0.34	14	1N	8E	S NW, N SW	12/5/2001
2512-2	Murphy	Schroeder	145	1.84	19	1N	9E	E NW, NE SW, SW SE, N SE, S NE	12/3/2003
2217-2	South Side	Keller	29.2	0.33	29	1N	9E	SE SE	7/22/1992
2218-2	South Side	Stromer	192.5	2.16	29	1N	9E	SW	7/22/1992
2234-2	South Side	Eisenbraun	70	0.79	26	1N	8E	E NE	5/1/1996
2249-2	South Side	Weber	105.5	1.19	30	1N	9E	E NW, NW SW, E SW	5/5/1993
2296-2	South Side	Jundt	253.4	2.85	28; 33	1N	9E	SW, SW SE; NW, W NE, NW SE, N SW	1/6/1994
2360-2	South Side	Soetaert	32.6	0.37	33	1N	9E	W NW	7/10/1996
2397-2	South Side	Eisenbraun	59.3	0.59	26	1N	8E	W NE	2/25/1998
2411-2	South Side	Eisenbraun	3.6	0.04	26	1N	8E	N NE	10/1/1998
2415-2	South Side	Howie	146	1.64	32	1N	9E	NE, N SE	12/2/1998
2513-2	South Side	Steen	74.9	0.84	24; 25	1N	8E	W SE; SW NE	12/3/2003

(a) cfs = cubic feet per second

3.0 IRRIGATION DITCH SUMMARIES

The information gathered for turnouts to parcels with water rights transferred from irrigation use to the City of Rapid City is described by permit number in the following sections. The information includes each turnout location, access, and disablement information. All maps can be found in Appendix A.

All references to compacted backfill or compacted embankment were completed according to City of Rapid City Specifications Section 14-Embankment. Rapid City Specifications are located at www.rcgov.org under Departments – Public Works – Engineering Services – Standard Specifications & Details 2007.

3.1 CYCLONE DITCH

A single Cyclone Ditch water right has been transferred to the City of Rapid City with a single associated turnout. Table 3-1 describes the turnout location and Figure A-1 maps the vicinity. The following section describes the turnout details.

Table 3-1. Cyclone Ditch Turnout Information

Turnout	Longitude	Latitude	Adjacent Landowner
2655-2	-103.151	44.034	David Lamb

3.1.1 Permit 2655-2

This permit is for 58 acres and 0.85 cubic feet per second (cfs) transferred from Mr. David Lamb.

3.1.1.1 Turnout

The single turnout for this permit was an open ditch cut through the bank of Cyclone Ditch. Water was directed down the turnout ditch by boarding up a steel flume immediately downstream in the Cyclone Ditch.

3.1.1.2 Access

The turnout was located adjacent to property owned by the Rapid City Area School District No. 51-4 (PIN 3822100004). Direct access to the site is along an over 1-mile, two-track road that runs through fields on property owned by Mr. David Lamb. It is accessible by a private driveway at 4555 Reservoir Road, south of East Highway 44.

3.1.1.3 Disablement

The flume has been removed, the turnout ditch filled, and the ditch reshaped by the landowner as illustrated in Figure 3-1.



Figure 3-1. The Turnout Ditch (Left Arrow) and Former Location of Flume (Right Arrow) Associated With Permit 2655-2. Cyclone Ditch Runs From Foreground to Background Through Large Concrete Pipe.

3.2 HAWTHORNE DITCH

A single Hawthorne Ditch water right has been transferred to the City of Rapid City with a single associated turnout. Table 3-2 provides the turnout location and Figure A-2 maps the vicinity. The following section describes the turnout details.

Table 3-2. Hawthorne Ditch Turnout Information

Turnout	Longitude	Latitude	Current Landowner
2317-2	-103.162	44.064	N/A

3.2.1 Permit 2317-2

This permit is for 46 acres and 0.84 cfs transferred from Mr. Morris.

3.2.1.1 Turnout

The supplying lateral and turnout for this permit no longer exist. An internal memorandum of SD DENR dated September 30, 2005, states “Hawthorne Ditch is now piped underground through the area where the turnout for the supplying lateral was and the new Elk Vale Road bypass, a school, and (the West River Electric Association building) have been constructed where the lateral previously ran. There is no evidence of a lateral at the location” [Stroup, 2005]. This statement was field-verified.

3.2.1.2 Access

The approximate, former location of the turnout is along East Highway 44 near the Elk Vale Road bypass.

3.2.1.3 Disablement

The turnout was previously disabled.

3.3 MURPHY DITCH

Eight Murphy Ditch water rights have been transferred to the City of Rapid City, and 11 associated turnout locations are described in Table 3-3 in order from upstream to downstream. Two vicinity maps of the turnouts are illustrated by Figures A-3 and A-4. The following sections describe each of the Murphy Ditch turnout locations by permit. The ditch has a 20-foot easement on either side for access and maintenance.

Table 3-3. Murphy Ditch Turnout Information

Turnout	Longitude	Latitude	Adjacent Landowner
2316-2	-103.158	44.059	Yasmeen Dream
2469-2 A	-103.128	44.049	Dennis Murphy
2469-2 B	-103.127	44.049	Dennis Murphy
2201-2	-103.121	44.047	Ramona Buchholz
2399-2 A	-103.097	44.038	Michelle Minnerath
2399-2 B	-103.091	44.037	Penn. Co. ROW
2468-2	-103.091	44.031	SD DOT
2142-2 and 2199-2	-103.089	44.037	Randall Albers or Melvin Ross
2512-2 A	-103.083	44.035	Rapid City
2512-2 B	-103.077	44.034	Rapid City
2512-2 C	-103.070	44.031	Rapid City ROW

3.3.1 Permit 2316-2

This permit is for 64 acres and 0.81 cfs transferred from Mr. Morris.

3.3.1.1 Turnout

A single turnout was associated with this permit. A wooden flume within the Murphy Ditch was used to check water up to a 12-inch-diameter corrugated metal pipe (CMP). The flume throat was 8 feet long, 4 feet 8 inches wide, and 4 feet 2 inches tall. The CMP was sedimented in and remained in segments. Figure 3-2 is a photograph of the flume and Figure 3-3 is a photograph of the CMP opening.



Figure 3-2. Wooden Flume Used as a Check for Permit 2316-2.



Figure 3-3. Opening to 12-Inch-Diameter Corrugated Metal Pipe Turnout for Permit 2316-2.

3.3.1.2 Access

The flume and pipe were adjacent to property owned by Yasmeen Dream that is accessible from Lytle Lane off of East Highway 44.

3.3.1.3 Disablement

The following are the procedures the City of Rapid City used in disabling the Permit 2316-2 turnout:

- Removed the wooden flume and all associated concrete from Murphy Ditch
- Removed the upstream CMP section from the ditch embankment
- Backfilled with compacted embankment material where items were removed
- Reshaped the ditch banks through the project area to match the cross section of existing banks outside of the project area

Figure 3-4 and Figure 3-5 document removal of the turnout.



Figure 3-4. Removal of Turnout associated with Permit 2316-2. Date 3/20/2014



Figure 3-5. Removal of Turnout associated with Permit 2316-2. Date 3/20/2014

3.3.2 Permit 2469-2

This permit is for 27 acres and 0.34 cfs transferred from Ms. Arlene Murphy.

3.3.2.1 Turnouts

Two turnouts were associated with this permit, and they were located at either end of an inverted siphon through which the Murphy Ditch passes. Both turnouts were approximately 10-inch-diameter plastic pipes through the ditch bank. The upstream pipe (Turnout A) was mostly buried and is shown in Figure 3-6. The downstream pipe (Turnout B) was exposed, as illustrated in Figure 3-7.



Figure 3-6. Pipe Turnout A for Permit 2469-2.

3.3.2.2 Access

Both turnouts were adjacent to property owned by Dennis Murphy (PIN 3814105010), and the sites are accessible from a private driveway at 5670 East Highway 44. Direct access to both turnouts was through fields along a two-track path. Access to the Turnout B site requires crossing an existing drainage or can alternatively be accessed by a two-track path off the end of Springfield Road.



Figure 3-7. Pipe Turnout B for Permit 2469-2.

3.3.2.3 *Disablement*

The following are the procedures the City of Rapid City used in disabling the Permit 2469-2 turnouts

- Removed both pipe turnouts from the ditch embankment
- Backfilled with compacted embankment material to match the existing bank cross section

Figures 3-8 and Figure 3-9 document removal of the turnouts.



Figure 3-8. Removal of Turnout A Associated With Permit 2469-2. Date 4/22/2014



Figure 3-9. Removal of Turnout B Associated With Permit 2469-2. Date 4/22/2014.

3.3.3 Permit 2201-2

This permit is for 10 acres and 0.13 cfs transferred from Mr. Long.

3.3.3.1 Turnout

The old turnout ditch for this permit was identified, but the turnout had been removed. No evidence of a turnout could be identified on the ditch side of the bank, as illustrated in Figure 3-10. The remains of wooden structures, possibly related to the turnout, were found nearby, as shown in Figure 3-11.

3.3.3.2 Access

The site is adjacent to property owned by Ms. Ramona Buchholz (PIN 3814326004) and is located directly west of Apple Tree Road. It is accessible from East Highway 44.

3.3.3.3 Disablement

The structure was previously disabled.



Figure 3-10. Photograph Taken From in the Murphy Ditch Running Right to Left (Bank in Foreground Is Likely Former Turnout Location for Permit 2201-2).



Figure 3-11. Wooden Remains Found Near the Site for Permit 2201-2.

3.3.4 Permit 2399-2

This permit is for 52 acres and 0.75 cfs transferred from Mr. Wesley Wileman.

3.3.4.1 *Turnouts*

Two turnout locations were associated with this permit. Turnout A had been removed but was not properly backfilled, as illustrated in Figure 3-12. A meeting on site with Mr. Jeep Williams, watermaster for Murphy Ditch, in April 2014 verified that the backfill at that site has been repaired since the photograph was taken. Turnout B was a 12-inch steel canal gate, as shown in Figure 3-13.

3.3.4.2 *Access*

The Turnout A site is adjacent to property owned by Ms. Michelle Minnerath (PIN 3824200002) and is north of Morris Lane. Direct access to the location is through a field with no defined path. Turnout B was located in the west ditch of Radar Hill Road.



Figure 3-12. Backfill Material at the Former Location of Turnout A for Permit 2399-2. This area has since had material added to the bank.



Figure 3-13. Turnout B for Permit 2399-2 (The 12-Inch Steel Canal Gate was Located on the Far Bank Adjacent to the Concrete Culvert, and Murphy Ditch Runs Right to Left).

3.3.4.3 *Disablement*

The following are the procedures the City of Rapid City used in disabling the Permit 2399-2 turnouts:

- Turnout A was previously disabled
- Turnout B
 - Removed the canal gate from Murphy Ditch
 - Removed a portion of the pipe from the ditch bank and backfilled with compacted embankment material to match the existing bank cross section

Figure 3-14 and Figure 3-15 document removal of Turnout B.



Figure 3-14. Removal of Turnout B for Permit 2399-2 Located on Murphy Ditch on Radar Road.
Date 4/22/2014



Figure 3-15. Removal of Turnout B for Permit 2399-2 Located on Murphy Ditch on Radar Road.
Date 4/22/2014

3.3.5 Permit 2468-2

This permit is for 34.8 acres and 0.57 cfs transferred from Mr. Gordon Howie.

3.3.5.1 *Turnouts*

A single turnout for this permit was once located on a lateral ditch. The turnout ditch was identified, as shown in Figure 3-16, but no turnout structure exists.



Figure 3-16. Disabled Turnout Ditch for Permit 2468-2 Running From the Foreground to the Background Along the East Side of Radar Hill Road (The Lateral Ditch Is in the Left Foreground, Turning Left at the Visible Tree Root).

3.3.5.2 *Access*

The site is located on property owned by the South Dakota Department of Transportation (SD DOT) on the east side of Radar Hill Road, south of East Highway 44 (PIN 3824427001).

3.3.5.3 *Disablement*

The structure was previously disabled.

3.3.6 Permits 2142-2 and 2199-2

Permit 2142-2 is for 49 acres and 0.62 cfs transferred from Mr. Tyler. Permit 2199-2 is for 4 acres and 0.05 cfs transferred from Mr. Pelle.

3.3.6.1 Turnout

A single turnout location was used for these two permits. Upon inspection, the turnout ditch was identified and a short, disconnected segment of a 12-inch-diameter CMP was found lying in the ditch at the site, but an existing turnout structure was not evident. The concrete check structure for the turnout has been removed and sits on the ditch bank at the location illustrated in Figure 3-17.



Figure 3-17. Former Location of the Turnout for Permits 2142-2 and 2199-2 (The Concrete Check Structure and a Disconnected Corrugated Metal Pipe Segment Sit on the Far Bank, and Murphy Ditch Flows Right to Left).

3.3.6.2 Access

The site is adjacent to property owned by Mr. Randall Albers (PIN 3919100002) along Morris Lane. Direct access to the site is through the Albers property or the neighboring property owned by Melvin Ross (PIN 391900001), or from the top side of the Murphy Ditch through Mr. Jerry Olson's property.

3.3.6.3 Disablement

The structure was previously disabled and no further action was required, as per a meeting with SD DENR personnel in April 2014.

3.3.7 Permit 2512-2

This permit is for 145 acres and 1.84 cfs transferred from Ms. Marilyn Schroeder.

3.3.7.1 Turnouts

Three turnouts were associated with this permit. Turnout A was a 10-inch-diameter plastic pipe through the ditch bank but was capped and buried, as shown in Figure 3-18. Turnout B was a clay pipe 12-inches in diameter and 20 feet long through the ditch bank. The downstream end of this pipe was previously buried. Figure 3-19 is a photograph of a plywood headgate used for Turnout B. Turnout C was a 24-inch steel canal gate secured in a concrete junction box, as shown in Figure 3-20. The junction box is on a lateral ditch and is shared with an identical gate for a separate, active permit.



Figure 3-18. Pipe Used for Turnout A of Permit 2512-2 (Red Arrow).

3.3.7.2 Access

Turnouts A and B were located adjacent to property owned by the City of Rapid City (PIN 3919200001). Turnout C was located in the west right-of-way for Airport Road.

3.3.7.3 Disablement

The following are the procedures the City of Rapid City used in disabling the Permit 2512-2 turnouts:

- Turnout A was previously disabled and no further action was required per discussion with the Murphy Ditch watermaster and SD DENR personnel in April 2014.
- Turnout B was previously disabled and no further action was required per discussion with the Murphy Ditch watermaster and SD DENR personnel in April 2014.

- Turnout C

- Removed the canal gate and disabled the pipe with a Class M-5 concrete plug.

Figure 3-21 and Figure 3-22 document disablement of the Turnout C structure.



Figure 3-19. Plywood Headgate for Turnout B of Permit 2512-2.



Figure 3-20. Junction Box With 24-Inch Canal Gate for Turnout C of Permit 2512-2 (Turnout C Shown With Red Arrow, Leading South).



Figure 3-21. Removal of Turnout C for Permit 2512-2 Located on Murphy Ditch on the East Side of Airport Road. Date 4/22/2014



Figure 3-22. Removal of Turnout C for Permit 2512-2 Located on Murphy Ditch on the East Side of Airport Road Going South to the Airport. Date 4/22/2014.

3.4 SOUTH SIDE DITCH

Ten South Side Ditch water rights have been transferred to the City of Rapid City, and 13 associated turnout locations were identified by using maps from the Rapid Valley Water Management Study [U.S. Bureau of Reclamation, 1990] and field investigations. The locations are described in Table 3-4 from upstream to downstream. Two vicinity maps of the turnouts are provided by Figures A-5 and A-6.

Table 3-4. South Side Ditch Turnout Information

Turnout	Longitude	Latitude	Adjacent Landowner
2234-2, 2397-2 & 2411-2	-103.115	44.017	Reinhold Eisenbraun (south) Randy Christensen (north)
2513-2	-103.100	44.018	City of Rapid City
2249-2 A	-103.095	44.017	City of Rapid City
2249-2 B	-103.091	44.015	City of Rapid City
2249-2 C	-103.091	44.015	City of Rapid City
2249-2 D	-103.084	44.011	City of Rapid City
2218-2	-103.071	44.010	Merlin Stromer
2415-2 A	-103.065	44.008	Matt Bowen
2415-2 B	-103.061	44.006	Matt Bowen
2415-2 C	-103.059	44.006	Matt Bowen
2415-2 D	-103.056	44.006	Matt Bowen
2217-2	-103.056	44.011	Leonard V. Keller Trust
2296-2 and 2360-2	-103.05	44.007	Donald Jundt

3.4.1 Permits 2234-2, 2397-2, and 2411-2

Permit 2234-2 is for 70 acres and 0.79 cfs, Permit 2397-2 is for 59.3 acres and 0.59 cfs, and Permit 2411-2 is for 3.6 acres and 0.04 cfs, all transferred from Mr. Reinhold Eisenbraun.

3.4.1.1 Turnouts

One turnout structure could be found in the described vicinity of these permits, located in Section 26, 1N 8E. The ditch was walked for approximately 1/2 mile to the west and the only turnout found is shown in Figure 3-23.

3.4.1.2 Access

The turnout for Permit 2234-2 is accessed off of Highway 44 by turning south on Anderson Rd. and continuing south past Southside Dr. approximately 3/8 mile to South Side Ditch. The site is approximately 1/4 mile west. The land north of the ditch, including the structure, is owned by Mr. Randy Christensen, and the land south of the ditch is owned by Mr. Eisenbraun.

3.4.1.3 Disablement

The structure was previously disabled, and no further action was required by SD DENR personnel.



Figure 3-23. Turnout for Permit 2234-2. Note the headwall sticking out of the snow just upstream from the culvert crossing on the left or north side of the ditch (red arrow). The ditch behind the headwall has been filled in.

3.4.2 Permit 2513-2

This permit is for 74.9 acres and 0.84 cfs transferred from Mr. Steen.

3.4.2.1 Turnouts

One turnout was associated with Permit 2513-2. The turnout was located straight south of the Rapid City Water Treatment Plant near the middle of section 25 on South Side Ditch. The turnout inlet structure was concrete with a 15-inch canal gate and PVC pipe going under the north bank to a weir box. On the north side of the weir box, 15-inch PVC pipe ran from the box to a vertical PVC air vent and then continued north. Figures 3-24, 3-25, and 3-26 show the structures associated with Permit 2513-2.



Figure 3-24. Inlet Structure, Weir Box, and Air Vent Associated With Turnout 2513-2.



Figure 3-25. Inlet Structure, Weir Box, and Air Vent Associated With Turnout 2513-2.



Figure 3-26. Inside the Weir Box for Turnout 2513-2. Note center wall weir and PVC pipe exiting the box.

3.4.2.2 Access

The site is located on land owned by the City of Rapid City and occupied by Mr. Bud Steen. The site may be accessed by turning off Highway 44 on Anderson Rd., then turning east on Southside Dr. to the treatment plant, then south on Redemption Road at the west edge of the treatment plant. At South Side Ditch, the site is located just east of the road.

3.4.2.3 Disablement

The following are the procedures the City of Rapid City used in disabling the turnout associated with Permit 2513-2:

- Cut existing turnout pipe 5 feet north from air vent
- Removed the air vent, inlet structure, and appurtenances.
- Backfilled with compacted embankment material

Figure 3-27 documents disablement of the structure.



Figure 3-27. Removal of Turnout for Permit 2513-2. Headgate removed, measurement box filled with dirt and pipeline air vent removed. Date: 10/29/2015

3.4.3 Permit 2249-2

This permit is for 105.5 acres and 1.19 cfs transferred from Mr. Weber.

3.4.3.1 *Turnouts*

Four turnouts were associated with Permit 2249-2. Turnout A was located 1,500 feet downstream from the Permit 2513-2 turnout site and consisted of a steel-framed headgate and concrete headwall. The structure is shown in Figure 3-28.

Turnout B was located upstream from a culvert crossing, shown in Figure 3-29. This culvert was used as a check structure for Turnout B and is located just west of the line between Section 25, 1N 8E and Section 30, 1N 9E. Figure 3-30 shows the outlet end of the Turnout B pipe.

Turnout C consisted of a wooden structure on the north bank of South Side Ditch, just upstream from a second culvert crossing, shown in Figure 3-31. The Turnout C site is shown in Figure 3-32 and located just east of the line between Section 25, 1N 8E and Section 30, 1N 9E.

Turnout D was located in the SW1/4 of Section 30 T1N R9E and consisted of a steel frame canal gate and division box. The gate is shown in Figure 3-33 and the division box is shown in Figure 3-34.



Figure 3-28. Turnout A structure Associated with Permit 2249-2.



Figure 3-29. Culvert Crossing Used as a Check for Turnout B Associated with Permit 2249-2.



Figure 3-30. Outlet end of Turnout B pipe (Red Arrow). (Looking South, Towards South Side Ditch).



Figure 3-31. Second Culvert Crossing, Used as Check for Turnout C Associated With Permit 2249-2.



Figure 3-32. Wooden Structure (Red Arrow) for Turnout C Associated With Permit 2249-2. This structure is immediately upstream of the culvert crossing in Figure 3-31, on the north bank.



Figure 3-33. Metal Framed Canal Gate of Turnout D Associated With Permit 2249-2.



Figure 3-34. Turnout D Division Box Associated With Permit 2249-2. Date 10/30/2015.

3.4.3.2 Access

The turnout sites may be accessed by turning south from Highway 44 on Anderson Rd., then east on Southside Dr. to the treatment plant. The sites are adjacent to property owned by the City of Rapid City, southeast from the treatment plant.

3.4.3.3 Disablement

The following are the procedures the City of Rapid City used in disabling turnouts A, B, C, and D associated with Permit 2249-2:

- Turnout A
 - Removed turnout head gate
 - Placed concrete plug in turnout pipe
 - Filled turnout ditch with compacted material
- Turnout B
 - Removed pipe and structure
 - Backfilled with compacted embankment material to match existing ditch cross section
- Turnout C
 - Removed the wooden structure
 - Backfilled with compacted embankment material to match existing ditch cross section
- Turnout B
 - Removed the steel framed canal gate and structure
 - Backfilled with compacted embankment material to match the existing ditch cross section

Figures 3-35 through Figure 3-40 document the disablement of these four turnouts.



Figure 3-35. Turnout A Associated with Permit 2249-2. Headgate removed, turnout pipe filled with concrete, and outlet filled in. Date 10/29/2015



Figure 3-36. Turnout B Associated with Permit 2249-2. The old turnout structure has been removed. Date 10/29/2015.



Figure 3-37. Turnout C Associated With Permit 2249-2. Removed turnout structure. Date 10/29/2015.



Figure 3-38. Turnout D Associated With Permit 2249-2, removed by the City. Date 10/30/2015



Figure 3-39. Turnout D Associated With Permit 2249-2. Turnout being backfilled. Date 10/30/2015.



Figure 3-40. Turnout D Associated With Permit 2249-2. Photo of the division box being removed and backfilled by the City. Date 10/30/2015.

3.4.4 Permit 2218-2

This permit is for 192.5 acres and 2.16 cfs transferred from Mr. Merlin Stromer.

3.4.4.1 Turnouts

One turnout was associated with Permit 2218-2. The turnout consisted of a pipe inlet, a metal valve well, and an air vent immediately downstream of the valve well, shown in Figure 3-41.

3.4.4.2 Access

The turnout site for Permit 2218-2 is located turning south on Airport Road from Highway 44 and travelling about 0.7 miles to the driveway into Mr. Merlin Stromer's property, then another 0.3 miles south through the Stromer property to South Side Ditch.

3.4.4.3 Disablement

A discussion with Mr. Merlin Stromer in April of 2014 was that after Mr. Stromer sold his water rights to the city, he hired a contractor to disable the turnout. No water can be or has been delivered through the turnout since the water right transfer. Discussion with SD DENR was that this would satisfy abandonment requirements and the turnout would not be disturbed since it has been disabled.



Figure 3-41. Turnout for Permit 2218-2. This turnout has been disabled and will not be disturbed.

3.4.5 Permit 2415-2

This permit is for 146 acres and 1.64 cfs transferred from Mr. Gordon Howie.

3.4.5.1 Turnouts

Four turnouts were associated with Permit 2415-2, designated Turnout A through Turnout D (upstream to downstream on the South Side Ditch). Turnout A consisted of a gate structure composed of timber and is shown in Figure 3-42. A wooden flume was used as a check structure for Turnout A, located approximately 35 feet downstream and shown in Figure 3-43.

Turnout B was also a gate structure composed of timbers. As shown in Figure 3-44, a wooden flume was located next to Turnout B (Turnout B indicated by red arrow) and was used as a check structure.

Turnout C consisted of a wooden gate structure supported by concrete abutments. Figure 3-45 displays Turnout C (red arrow) along with a wooden weir check structure located downstream from Turnout C. The ditch from Turnout C led to a 24-inch-diameter concrete pipe that was used to convey diverted water, shown in Figure 3-46.

Turnout D consisted of a concrete flume/check structure, shown in Figure 3-47. The structure included outlets on both the north and south walls, with timbers used to convey diverted water from the structure. Figures 3-48 and 3-49 show the north and south outlets, respectively.



Figure 3-42. Turnout A for Permit 2415-2. The turnout is composed of timber.



Figure 3-43. Wooden Flume Used as a Check for Turnout A of Permit 2415-2.



Figure 3-44. Turnout B (Red Arrow) and the Flume Associated with Permit 2415-2.



Figure 3-45. Turnout C (Red Arrow) and the Wooden Weir Associated With Permit 2415-2.



Figure 3-46. Turnout C and the 24-Inch-Diameter Concrete Pipe (Red Arrow) Associated With Permit 2415-2.



Figure 3-47. Concrete Flume/Check Structure for Turnout D Associated With Permit 2415-2 (Looking Downstream).



Figure 3-48. North Flume/Check Structure Wall and Outlet for Turnout D Associated With Permit 2415-2.



Figure 3-49. South Flume/Check Structure Wall and Outlet for Turnout D Associated With Permit 2415-2.

3.4.5.2 Access

Turnouts A through D are adjacent to property owned by Mr. Matt Bowen (PINs 3932100003 and 3932200001). The sites are accessed by travelling approximately 1/2 mile south on Bradsky Road from Highway 44 to a private drive just north of the South Side Ditch crossing.

- The Turnout A and Turnout B sites are accessed by travelling west on the private drive for approximately 1/2 mile from Bradsky Road, crossing South Side Ditch, then leaving the private drive and following South Side Ditch along its south bank.
- The Turnout C and Turnout D sites are accessed from the private drive on the north bank of South Side Ditch, approximately 1/2 mile and 1/4 mile west of Bradsky Road, respectively.

3.4.5.3 Disablement

The following are the procedures the City of Rapid City used in disabling the four turnouts associated with Permit 2415-2.

- Turnout A
 - o Removed the timber turnout and the wooden flume structure
 - o Backfilled with compacted embankment material to match existing ditch cross section

- Turnout B
 - o Removed the timber turnout and the wooden flume structure
 - o Backfilled with compacted embankment material to match existing ditch cross section
- Turnout C
 - o Removed the wooden gate turnout structure, concrete abutments, and wooden weir check structure from South Side Ditch
 - o Backfilled ditch banks with compacted embankment material to match existing ditch cross section
 - o Backfilled existing turnout ditch from South Side Ditch to existing concrete pipe with compacted material to match existing adjacent grade
- Turnout D
 - o Removed the concrete inlets and wooden turnouts from the north and south banks.
 - o Backfilled with compacted embankment material to match existing ditch cross section.

Figures 3-50 through 3-57 document the disablement of the structures associated with the four turnouts.



Figure 3-50. Removal of Turnout A associated with Permit 2415-2. Date 7/30/2015



Figure 3-51. Turnout A Wooden Flume Structure Associated With Permit 2415-2, removed. Date 7/30/2015



Figure 3-52. Turnout B Associated With Permit 2415-2. Timber Turnout Removed. Date 7/30/2015.



Figure 3-53. Turnout B Associated With Permit 2415-2. Wooden Flume Structure Removed. Date 7/30/2015.



Figure 3-54. Turnout C Associated With Permit 2415-2 Timber Gate Turnout Structure, Concrete Abutments, and Timber Weir Check Structure Removed. Date 7/30/2015.



Figure 3-55. Turnout C Associated With Permit 2415-2. Turnout ditch filled in. Date 7/30/2015.



Figure 3-56. Turnout D Associated With Permit 2415-2. Headgate removed and concrete plug put in place for south turnout. Date 7/30/2015



Figure 3-57. Turnout D Associated With Permit 2415-2. Headgate removed and concrete plug put in place for north turnout. Date 7/30/2015.

3.4.6 Permit 2217-2

This permit is for 29.2 acres and 0.33 cfs transferred from Mr. Leonard Keller.

3.4.6.1 *Turnouts*

No turnouts associated with this permit were located.

3.4.6.2 *Access*

The site is along Back Country Trail off of Bradsky Road.

3.4.6.3 *Disablement*

This turnout was previously disabled.

3.4.7 Permit 2296-2 and Permit 2360-2

Permit 2296-2 is for 253.4 acres and 2.85 cfs transferred from Mr. Donald Jundt. Permit 2360-2 is for 32.6 acres and 0.37 cfs transferred from Mr. Soetaert.

3.4.7.1 Turnouts

The turnout structure associated with transferred Permit 2296-2 and transferred Permit 2360-2, shown in Figure 3-58, also serves the active Permit 2526-2 for 0.71 cfs currently serving 50 acres of irrigated land owned by Mr. Donald Jundt. The turnout will not be disabled.



Figure 3-58. Turnout Associated With Permit 2296-2 and Permit 2360-2, Currently Serving an Active Permit for 50 Acres Irrigated by Mr. Donald Jundt.

3.4.7.2 Access

The turnout for Permit 2296-2 and Permit 2360-2 is located approximately 1/2 mile south of Highway 44 on the east side of Bradsky Road at the South Side Ditch. All associated structures are on property owned by Mr. Donald Jundt.

3.4.7.3 Disablement

No disablement was required.

4.0 PERMITS AND REGULATIONS

4.1 CLEAN WATER ACT SECTION 404 PERMIT

According to the U.S. Army Corps of Engineers [2007]:

“Under Section 404(f)(1)(C) of the CWA (see also 33 CFR 323.4(a)(3) and 40 CFR 232.3(c)(3)), discharges of dredged or fill material associated with construction or maintenance of irrigation ditches, or the maintenance (but not construction) of drainage ditches, are not prohibited by or otherwise subject to regulation under Section 404 of the CWA (i.e., these activities are exempt from the need to obtain a Section 404 Permit from the Department of the Army (DA)). Discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches.”

A 404 Permit was not required.

4.2 CLEAN WATER ACT SECTION 402 PERMIT

According to the South Dakota Department of Environment and Natural Resources [2010] Section 2.2.2:

“Storm water discharges from operators disturbing less than one acre that are part of a larger common plan of development or sale that, combined, disturb one or more acres.”

The combination of ground area disturbed by the combination of all disablements associated with this project did not exceed 1 acre.

A 402 Permit was not required.

4.3 FLOODPLAIN DEVELOPMENT PERMITS

After reviewing both the Pennington County and Rapid City Flood Insurance Rate Maps, it was determined that none of the disablement sites lie within the 100-year floodplain.

Floodplain permits were not required.

4.4 HISTORIC PRESERVATION

As required by State Preservation Law (South Dakota Codified Law (SDCL) 1-19A-11.1), the Office of History was given notice and an opportunity to investigate and comment on this proposed project. The Office of History concluded that the irrigation ditches in Rapid Valley are listed on neither the State nor the National Register of Historic Places. Additionally, because federal funding will not be used for this proposed project, Section 106 of the National Historic Preservation Act did not apply.

5.0 REFERENCES

City of Rapid City and Pennington County, 2012. *RapidMap*, retrieved September 19, 2012, from <http://www.rcgov.org/GIS/rapidmap.html>

South Dakota Department of Environment and Natural Resources, 2012. *South Dakota Water Rights*, retrieved September 19, 2012, from <http://denr.sd.gov/des/wr/dbwrsearch.aspx>

South Dakota Department of Environment and Natural Resources, 2010. *General Permit for Storm Water Discharges Associated With Construction Activities*, prepared by the South Dakota Department of Environment and Natural Resources, Pierre, SD.

Stroup, D. E., 2005. *Rapid City – Rapid Valley Water Rights Transfers*, internal memorandum from D. E. Stroup, South Dakota Department of Environment and Natural Resources, Water Rights Program, Pierre, SD, to G. Eberle, South Dakota Department of Environment and Natural Resources, Water Rights Program, Pierre, SD, September 30.

U.S. Army Corps of Engineers, 1990. *Exemptions for Construction or Maintenance of Irrigation Ditches and Maintenance of Drainage Ditches under Section 404 of Clean Water Act*, Regulatory Guidance Letter, prepared by U.S. Army Corps of Engineers, Washington, DC, July 4.

U.S. Bureau of Reclamation, 1990. *Rapid Valley Water Management Study*, prepared by U.S. Bureau of Reclamation, Newell, South Dakota.

APPENDIX A

TURNOUT VICINITY MAPS

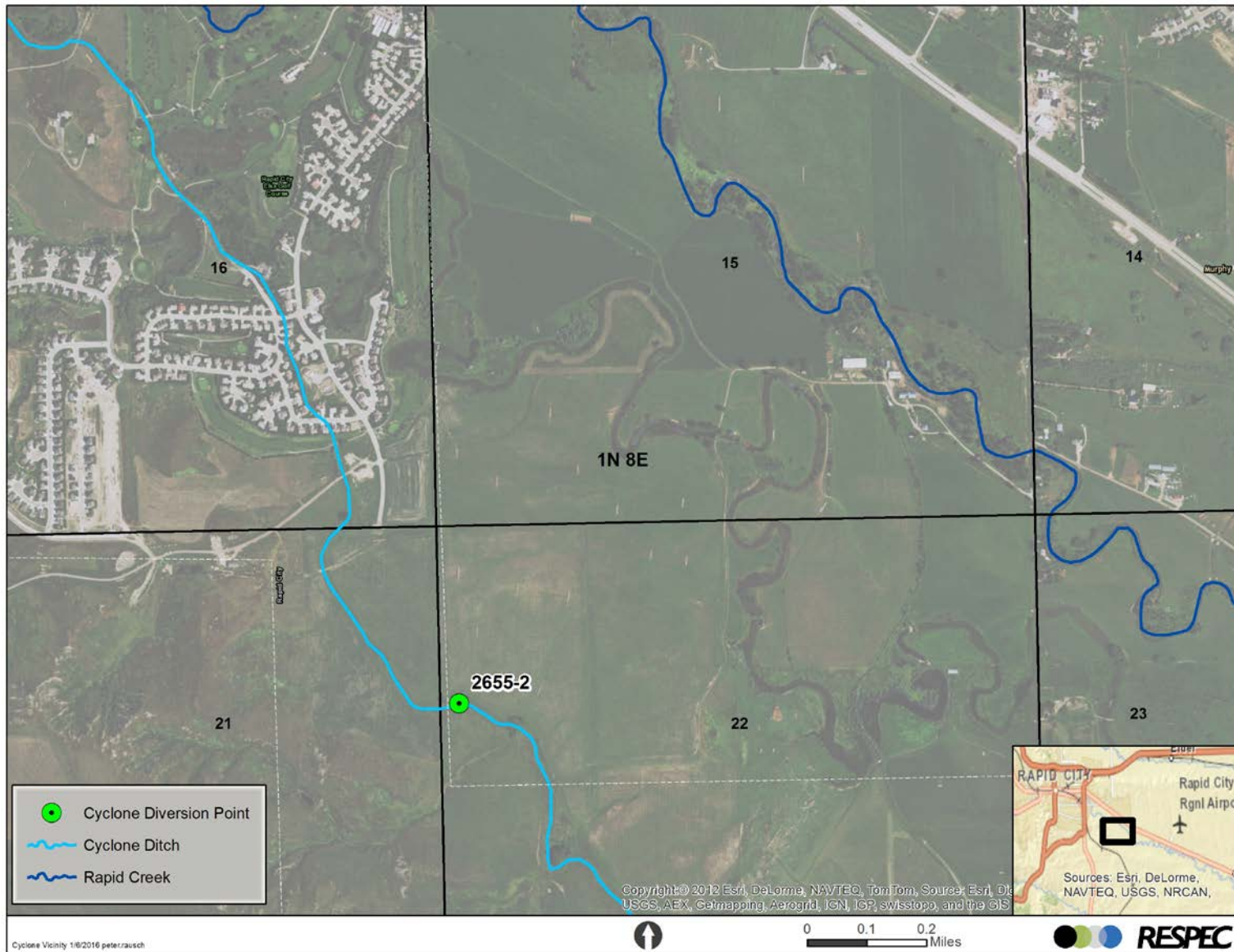


Figure A-1. Cyclone Ditch Turnout Vicinity Map.



Figure A-2. Hawthorne Ditch Turnout Vicinity Map.

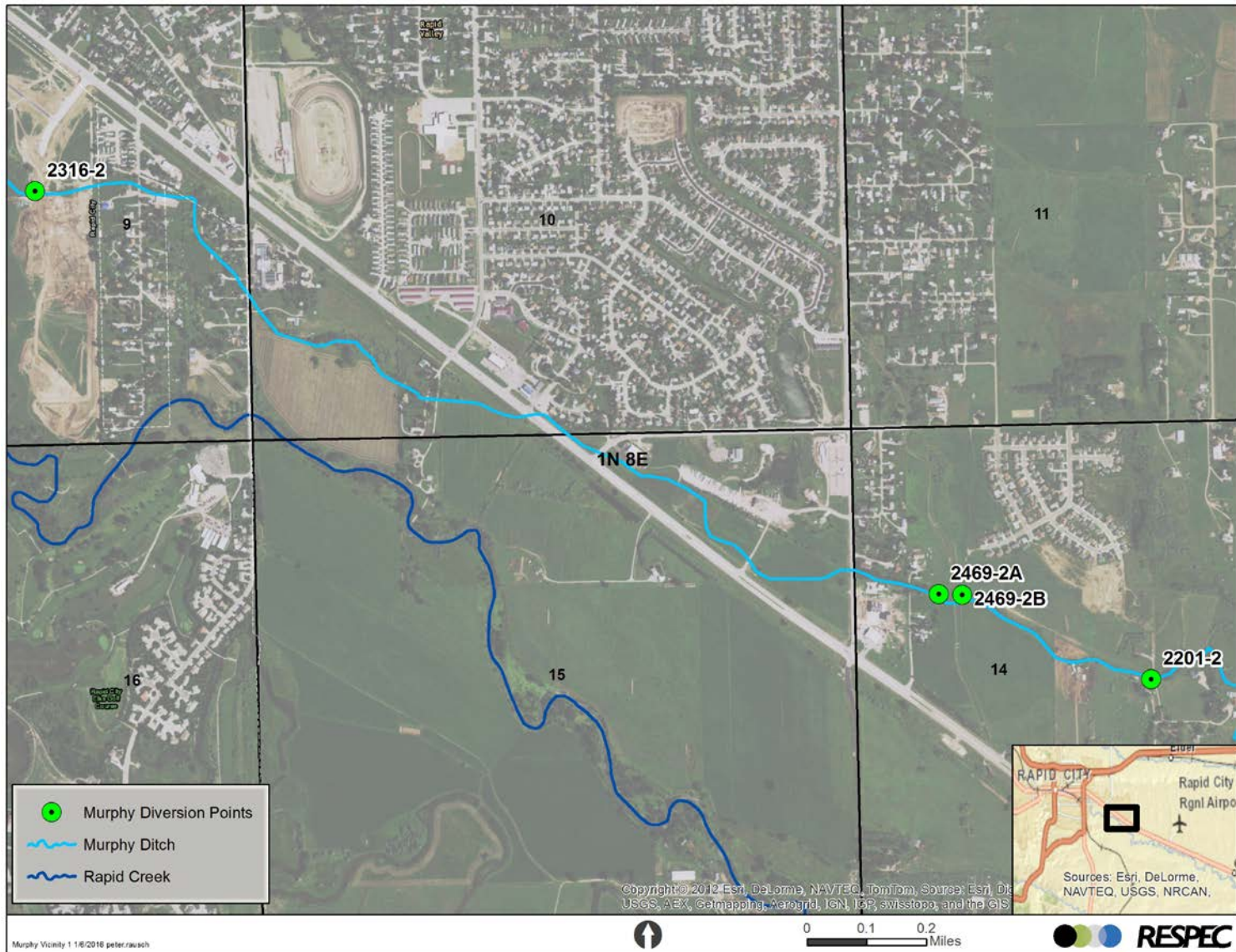


Figure A-3. Murphy Ditch Turnout Vicinity Map (1 of 2).

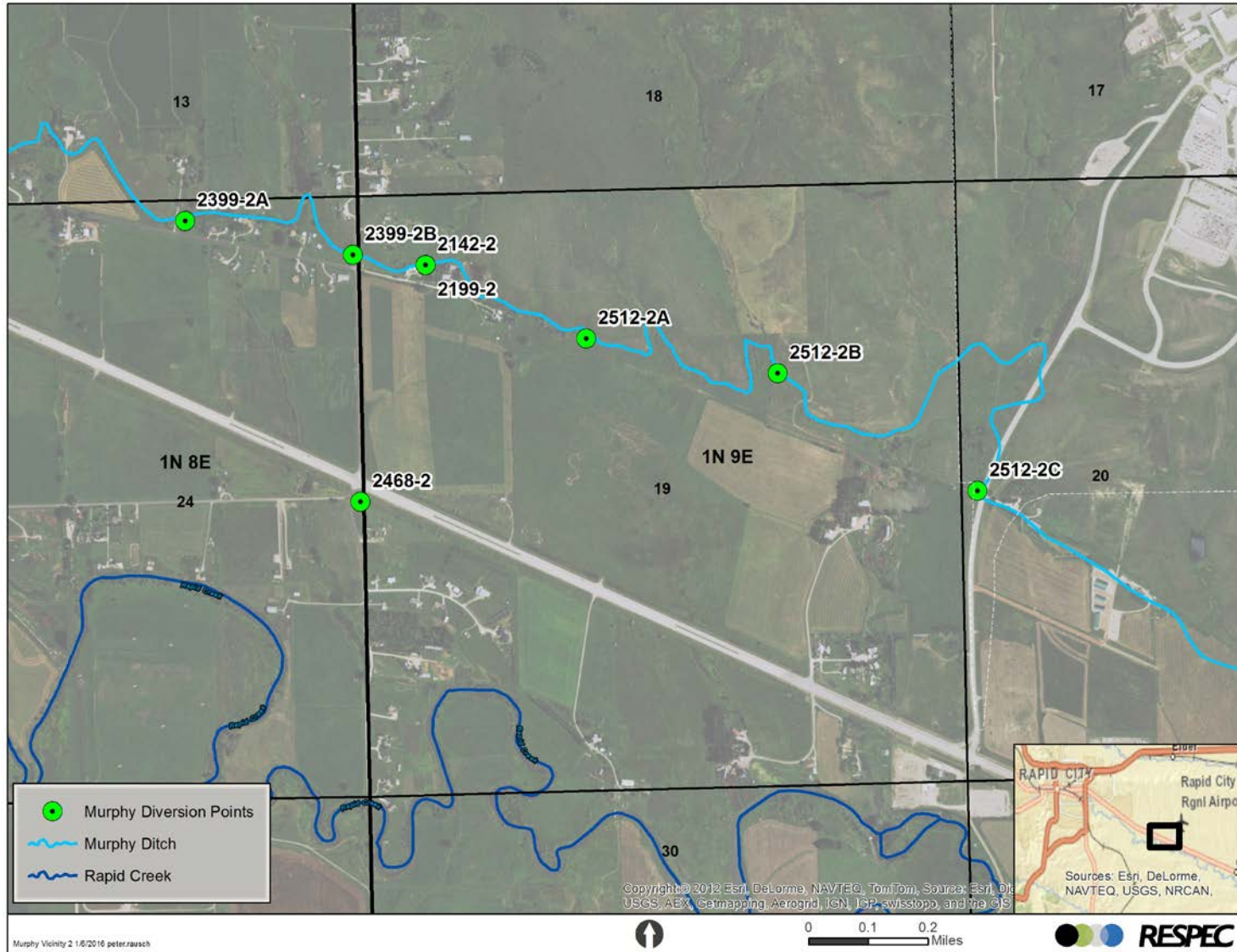


Figure A-4. Murphy Ditch Turnout Vicinity Map (2 of 2).



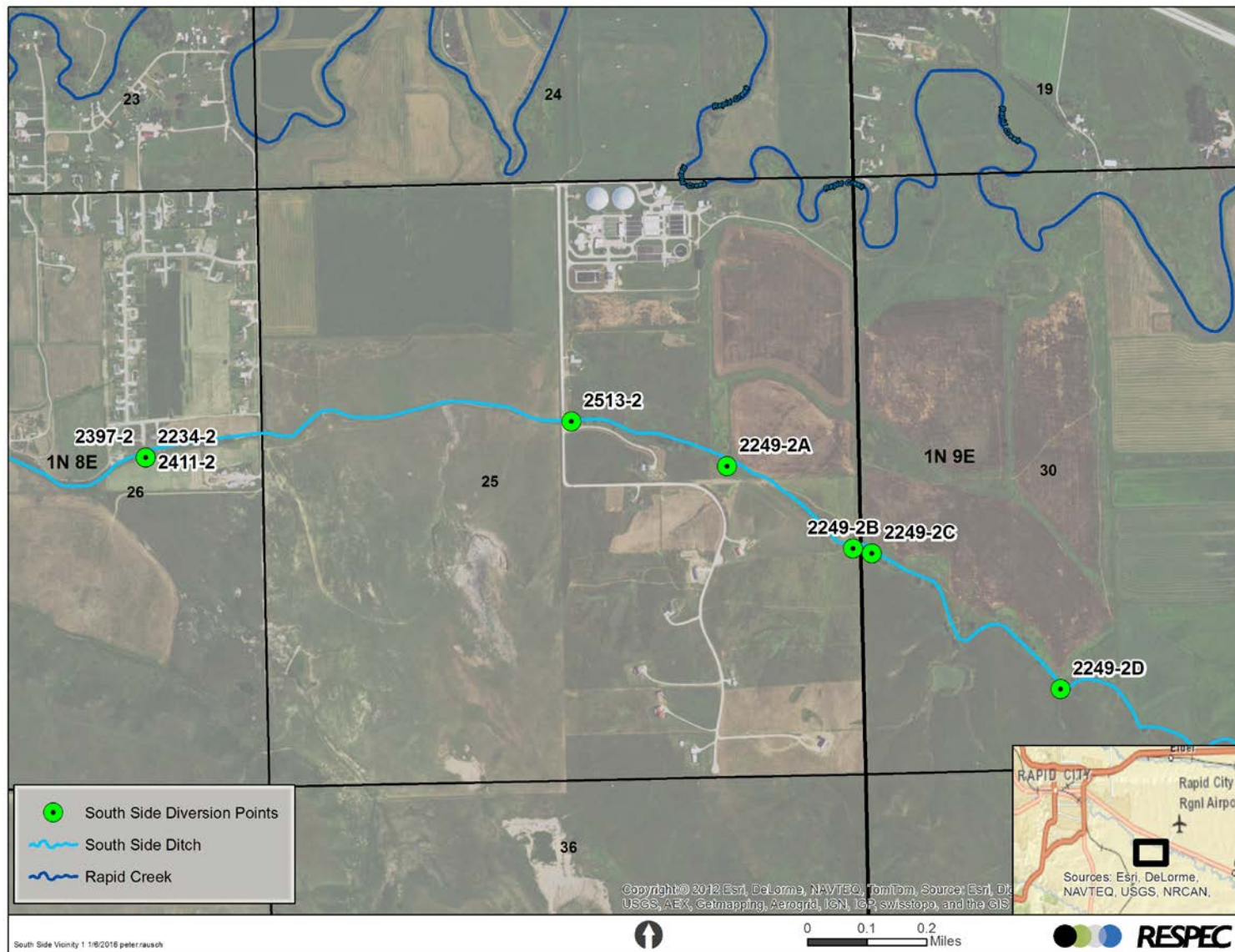


Figure A-5. South Side Ditch Turnout Vicinity Map (1 of 2).

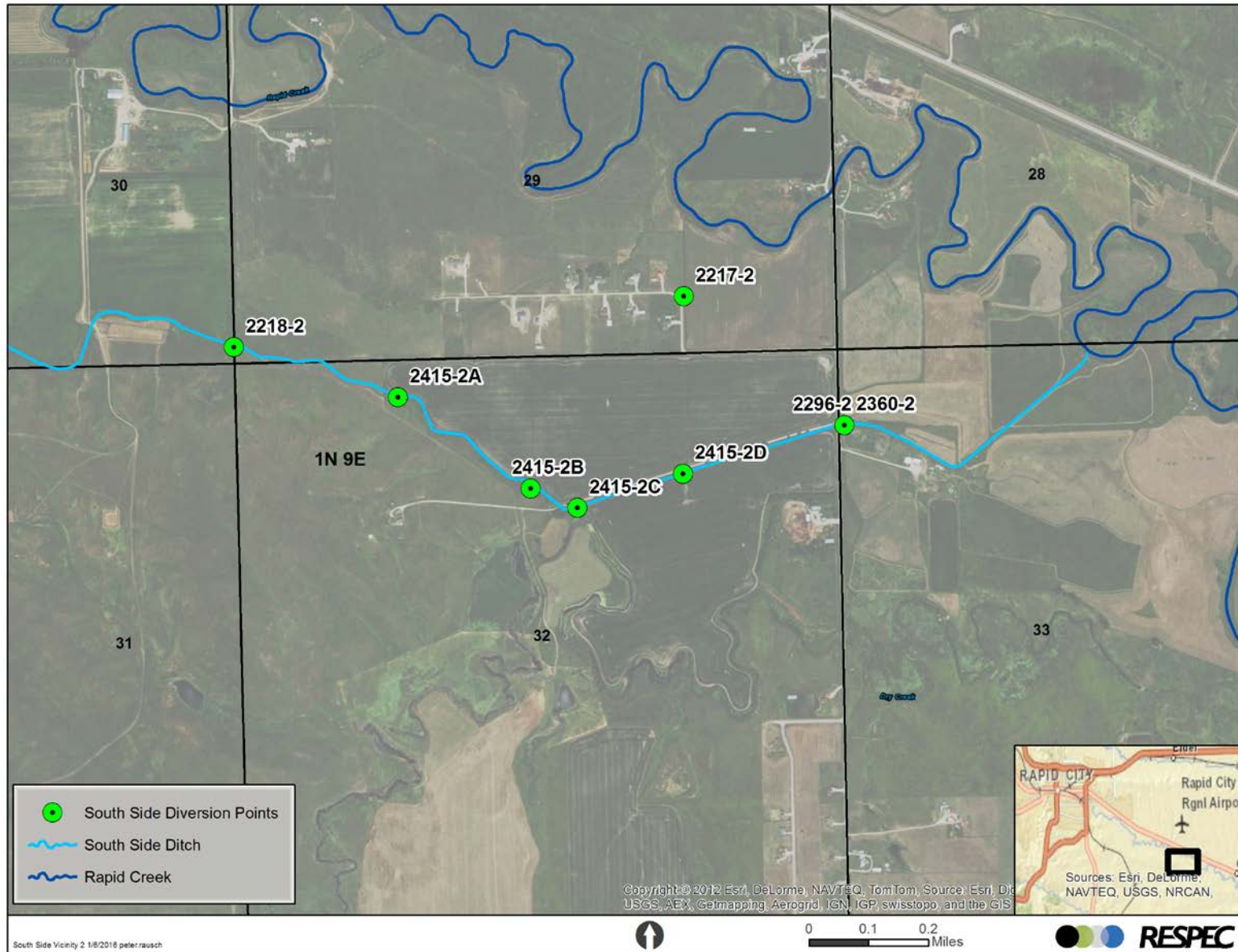


Figure A-6. South Side Ditch Turnout Vicinity Map (2 of 2)