

WATER PERMIT NO. 2520-2

Name of Applicant: City of Rapid City

Address: 3006th St, Rapid City SD 57701

Phone: 605 394-4162

Amount of Water Claimed: 0.67 cfs (291 AF)

Total Acres: NA

Source of Water Supply: groundwater

Water to be used for: municipal

County: Pennington

Type of Waste Disposal System:

Location:

PRIORITY

Date Received: 2-18-04

Application/License Fee: \$300

Corrected Application Received:

Period of Annual Use: Jan 1 – Dec 31

Remarks: Increase diversion rate and volume of water authorized by Permit No. 2156-2. Water is reserved by Future Use Permit No. 2086-2

Diversion Point: SW ¼ SE ¼ Sec 16-T1N-R7E

Land to be Irrigated:

Depth of Well: 1130 feet deep

Well Driller:

Remarks:

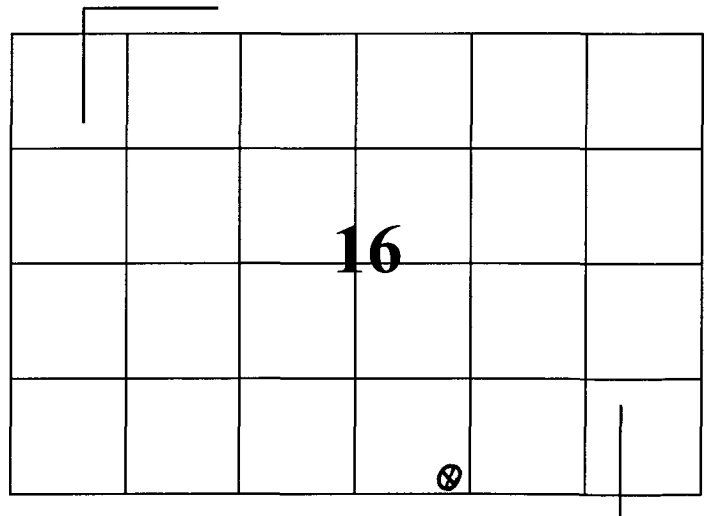
Type of Map: topo

Prepared by: Mark Rath, PE

Reviewed and the Number Assigned on: 2-24-04

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>2520-2</u> (office use only) Hydrologic Unit <u>10120110</u>
	Basin <u>Upper Cheyenne</u>
	Newspaper <u>Rapid City Journal</u>

RECEIVED
FEB 18 2004
WATER RIGHTS
PROGRAM

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

Check use(s) of water:

- | | | | |
|---|---|--|--|
| ☒ Municipal | ☐ Suburban Housing | ☐ Recreational | ☐ Institutional |
| ☐ Rural Water System | ☐ Commercial | ☐ Fish & Wildlife | ☐ Geothermal Heat |
| ☐ Domestic (over 18 gpm) | ☐ Industrial | ☐ Other _____ | |

Type of Application: (check one)

- ☒ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
☒ Place to Beneficial Use Water Reserved by Future Use Permit No. 2086-2
☐ Amendment/Correction to Permit No. _____

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

Increase diversion rate and volume of water authorized by Water Permit No. 2156-2 from 1.11 cfs to 1.78 cfs.

- Name of Applicant City of Rapid City Phone 394-4162
(check one) ☐ Owner ☐ Tenant/lessee
Mailing Address 300 Sixth St. Rapid City State SD 57701
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed 0.670 *CFS or 291.00 **GPM ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply Groundwater
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Pennington
SW 1/4 SE 1/4 Section 16, T1N, R7E
- County or counties where water will be used Pennington
- Annual period during which water is to be used January 1 through December 31
- Give a description of the 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 City plans to increase the diversion rate from the authorized 1.11 cfs to 1.78 cfs and the volume of water accordingly. The map showing the location of the well is on file as well as the well completion report.

STATE OF SOUTH DAKOTA)
County of Pennington) SS

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Attach map and any other technical information. (see instructions)

I, John Wagner, Water Supt., the applicant, certify that I have read 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.

Applicant's signature John Wagner

Subscribed and sworn to before me this 4th day of February 20 04

Gina Miller
Notary Public signature

My Commission Expires
June 12, 2004

**SOUTH DAKOTA
WATER PERMIT NO. 2520-2**

Date of first receipt of application February 18, 2004.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2520-2 to the 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. 2520-2 authorizes the City to construct and place to beneficial 0.67 cfs (291 acre-feet annually) reserved by Future Use Permit No. 2086-2 by increasing the diversion rate and annual volume diverted from the well authorized by Water Right No. 2156-2. Water Right No. 2156-2 appropriates 1.11 cfs (482 acre-feet annually) from one well (Madison Aquifer) 1,130 feet deep located in the SW ¼ SE ¼ Section 16-T1N-R7E. This permit increases the water appropriation from 1.11 cfs to a total of 1.78 cfs.
2. The water appropriated shall be used for the purpose of municipal use and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 2520-2 is May 17, 2004.
5. The date from which applicant may claim right is May 18, 1989 (established by No. 2086-2).
6. One-fifth of the construction is to be completed on or before November 17, 2006.
7. All construction is to be completed on or before May 17, 2009.
8. Water is to be put to beneficial use on or before May 17, 2013.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2520-2 is issued for a 20-year term. Pursuant to SDCL 46-2A-21, the 20-year term may be deleted at any time during the 20-year period or following its expiration. If the 20-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2520-2 may also be cancelled for nonconstruction, forfeiture, abandonment, or three permit violations pursuant to SDCL 46-1-12, 46-5-37, 46-5-37.1 and ARSD 74:02:01:37.
2. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
3. Permit No. 2520-2 authorizes a total annual diversion of 291 acre feet of water annually for municipal use.
4. The city of Rapid City shall report to the Chief Engineer annually the amount of water withdrawn each year from the Madison Formation for municipal use.

WATER MANAGEMENT BOARD

By: Garland Erbele
Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JUN 30 2004

date



RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date February 18, 2004

RECEIVED OF City of Rapid City, 300 Sixth St., Rapid City SD 57701

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	250	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. _____	50	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	300.00

No.

0001139

By

Darlene Ebel
Chief Engineer gm

Purchase Order

Rapid City, SD 57701

Phone (605) 394-4142

PO Number 516125



Year 2004

V 0 91050

Vendor Number

Computer Entry Date

Vendor SUDENK Water Rights Program
Remittance
Address 523 E CAPITOL
PIERRE, SD 57501-3182

[illegible]

370.00

This order is regularly issued only when countersigned by Purchasing Agent and approved by the Mayor, if over \$500.00

☐ Formal Bid - Date Approved _____
☐ Informal bid, see supporting data attached
☐ No bid required
☐ Will be reimbursed by _____

REMARKS

I declare and affirm under the penalties of perjury that this claim has been examined by me, and to the best of my knowledge and belief, is in all things true and correct.

Dept. Head John Wagner Date 2/4/2004
Mayor _____ Date _____
Purchasing Agent _____ Date _____

WHITE: FINANCE COPY • CANARY: DEPARTMENT COPY
PINK: VENDOR COPY • GREEN: RECEIVING COPY

915175

WATER PERMIT APPLICATION NO. 2520-2
CITY OF RAPID CITY
MARCH 24, 2004

Water Permit No. 2520-2 proposes to construct and place to beneficial use 0.67 cubic feet of water per second (291 acre-feet annually) appropriated and reserved by Future Use Permit No. 2086-2, by increasing the diversion rate and annual volume diverted from the well authorized by Water Permit No. 2156-2. Water Permit No. 2156-2 appropriates 1.11 cfs (482 acre-feet annually) from one well (Madison aquifer) 1,130 feet deep located in the SW¼ SE¼ Sec.16, T1N-R7E, in Pennington County. This application proposes to increase the water appropriation from 1.11 cfs to total of 1.78 cfs. This water will be used for municipal use by the City.

AQUIFER: Madison aquifer (MDSN)

Aquifer Characteristics:

The Madison Limestone, locally known as the Pahasapa Limestone, is a fine to medium crystalline, cavernous limestone and dolomite approximately 550 feet thick in this area (Carter and Redden, 1999a) (Carter and Redden, 1999b). The Madison underlies approximately 1,489,920 acres of Pennington County and contains an estimated 29,798,400 acre-feet of recoverable water in storage in the county (Allen and others, 1985). The Madison extends into the counties adjacent to Pennington County, and in fact underlies much of the Western United States. The top portion of the Madison Limestone is karstic therefore contains randomly distributed zones of secondary porosity and permeability formed by weathering of exposed surfaces, groundwater solution and fracturing, and is considered the Madison aquifer. The Madison is generally considered an excellent aquifer both in terms of quality and quantity, especially near the outcrop (recharge area). The average porosity of the Madison is estimated to be 11% and the effective porosity from which recoverable water can be obtained by wells is assumed to be 5% (Rahn, 1979). The Madison is recharged through infiltration of precipitation falling directly on the outcrop area, upward leakage from the Deadwood aquifer, and from streamflow losses. In the Rapid City area, the majority of recharge to the Madison is from streamflow losses (Long and Putnam, 2002). The estimated average annual recharge for the Madison aquifer in South Dakota ranges from 140,000 to 400,000 acre-feet annually (Woodward Clyde, 1981). Average annual recharge from 1931-1998 is estimated to be approximately 137,000 ac-ft/yr (Carter and others, 2001).

Two aquifer tests were conducted in the Rapid City area during 1990 to determine the aquifer characteristics of the Madison aquifer. The hydraulic properties of the Madison were calculated to be $T=10,000 \text{ ft}^2/\text{d}$ and $S=2 \times 10^{-3}$ based on the first test. The second test showed that transmissivity in the Madison aquifer is anisotropic, ranging from $56,000 \text{ ft}^2/\text{d}$ along the major axis to $1,300 \text{ ft}^2/\text{d}$ in the direction of the minor axis. The average value of S from the second test was 3.5×10^{-4} (Greene, 1993).

This application proposes to increase the diversion rate and the annual volume of water authorized to be diverted annually from Rapid City Well #11. The well site is located

approximately two miles east of the Madison outcrop (recharge area). The top of the Madison Limestone is reported to be 837 feet below grade on the SD Water Well Completion Report submitted for the well. The static water level of the well was reported to be 63 feet below grade at the time of completion (January 1991).

Observation Well Data:

The Water Rights Program monitors 26 observation wells completed into the Madison aquifer in the Black Hills area. Rapid City Well No.11 is located within approximately four miles of four Water Rights' Observation wells that are completed into the Madison aquifer, (PE-65A, PE-86A, PE-96A and PE-89A). Hydrographs for the wells show the aquifer's response to climatic conditions and clearly demonstrate the system is recharged, (see figures 1-4). The hydrograph for PE-65A also shows over 40 feet of water level fluctuation (drawdown) in response to pumping from Rapid City Well No. 5, which is, located approximately 1700 feet from the observation well. The pump rate for Rapid City Well No. 5 is reported to be 1,600 gpm (John Wagner, City of Rapid City, oral commun. 2002).

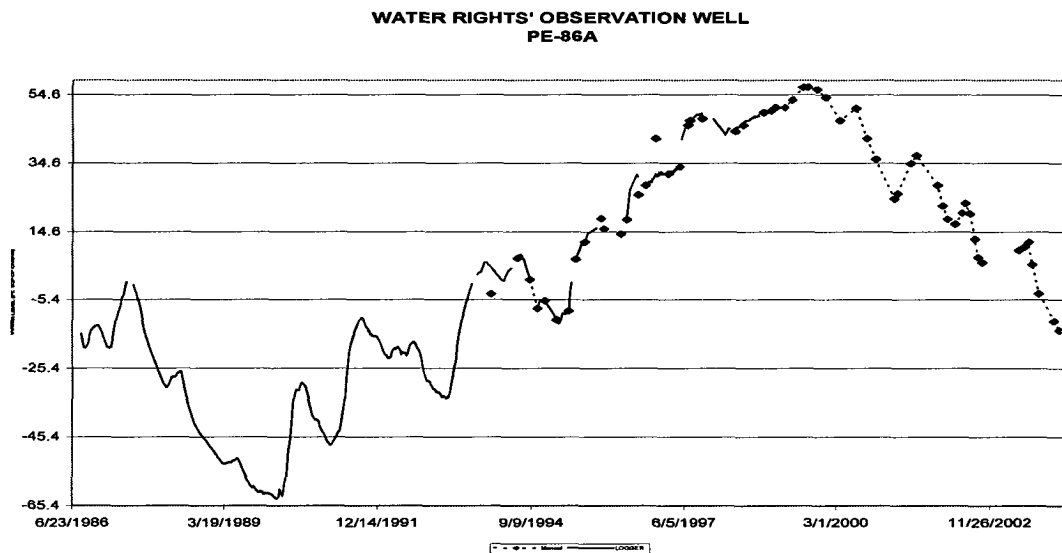


Figure 1. Hydrograph of Water Rights' Observation Well PE-86A, located approximately three miles south of Rapid City Well No. 12.

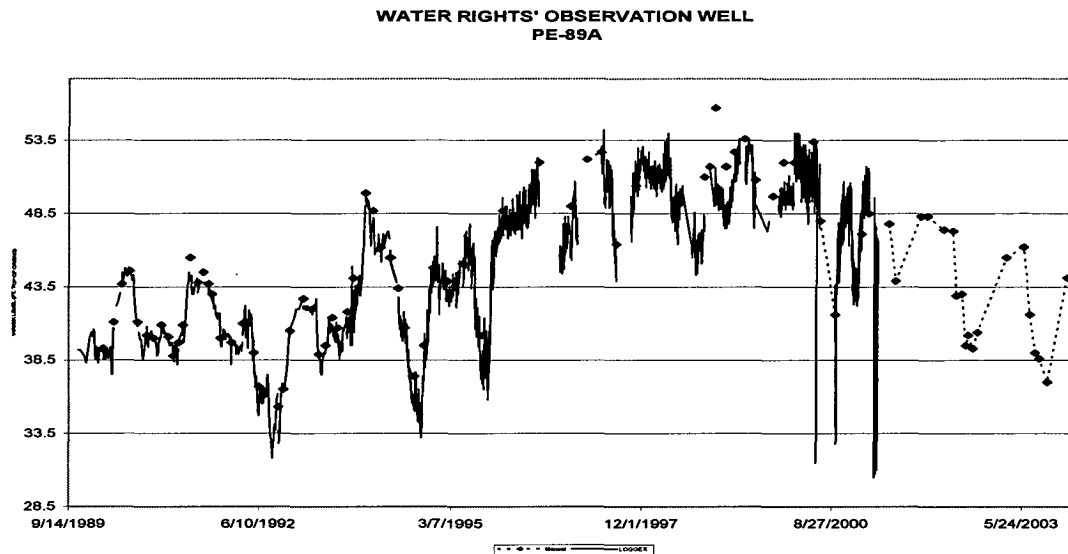


Figure 2. Hydrograph of Water Rights' Observation Well PE-89A, located approximately two and one-half miles northwest of Rapid City Well No. 12.

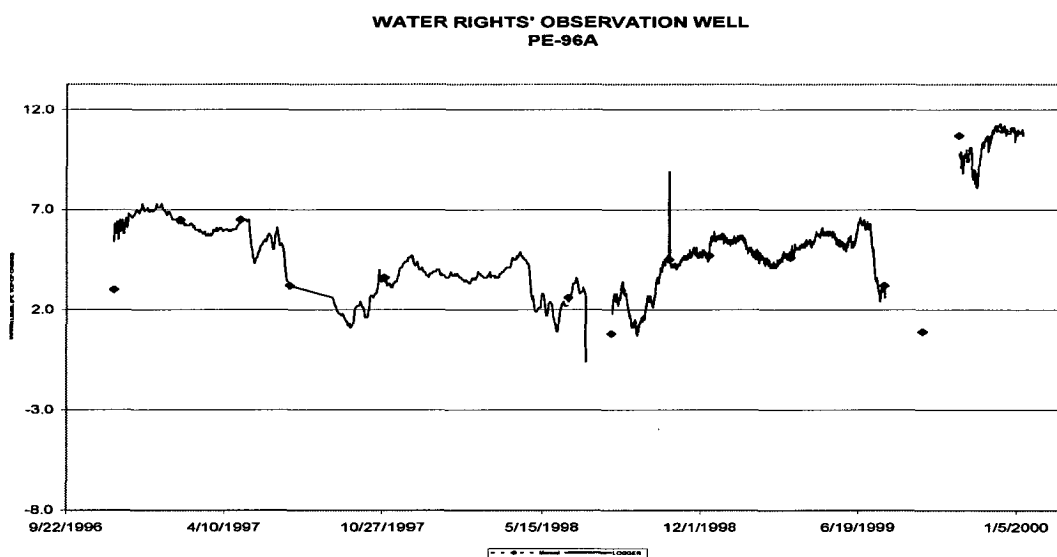


Figure 3. Hydrograph of Water Rights' Observation Well PE-96A, located approximately two and one-half miles northwest of Rapid City Well No. 12.

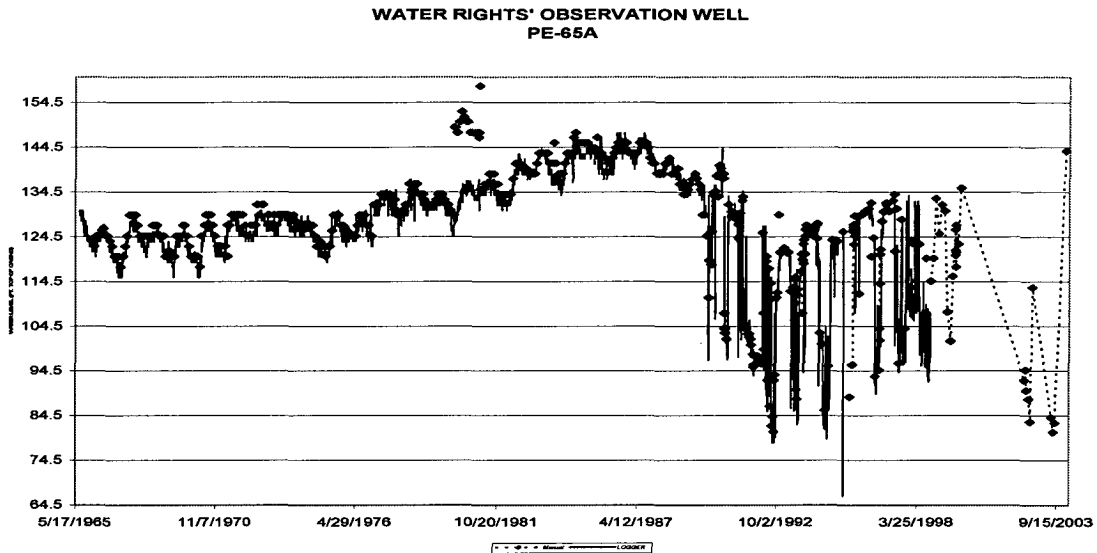


Figure 4. Hydrograph of Water Rights' Observation Well PE-65A, located approximately three miles north of Rapid City Well No. 12.

Records from the observation wells indicated the potentiometric surface of the Madison aquifer fluctuates 30-40 feet per year near the recharge area in response to seasonal and climatic variations. Long-term water level declines are not apparent from any of the hydrographs. Observation well data suggest that at the existing level of development, natural influences dominate the water levels of the aquifer and the effects of pumping as yet are not obvious.

The high cost of Madison wells, except very near the outcrop, and the availability of groundwater from shallower aquifers, has limited domestic development and generally restricted usage from the Madison to those uses which require water rights. There are a total of 127 permits/rights which appropriate water from the Madison aquifer in South Dakota. The majority of the water rights/permits from the aquifer are from Butte(17), Lawrence(25), Meade(27), Pennington(35) and Fall River(11) Counties. The Madison supplies water for irrigation, geothermal, industrial, and commercial use. However, by far the major use of the aquifer is for common distribution systems (suburban housing development and municipal use). The cities of Spearfish, Belle Fourche, Sturgis, Rapid City, Box Elder, and Edgemont all depend on water from the Madison Aquifer.

If the worst case assumptions are made that (1) permits/rights with an annual withdrawal limitation (ac-ft/yr) will use the maximum allowable; and (2) permits/rights that are limited by a diversion rate only, will use 60% of the maximum allowable (considered reasonable for water distribution systems); the total water use from the Madison would be less than 50,000 acre-feet per year. The actual amount of water used from the Madison is considerably less than this estimate. Withdrawals from wells completed into the Madison aquifer were estimated to be 10,990.2 acre-feet annually from 1987-1996 (Carter and others, 2001b).

Comparison of the estimated annual recharge to the Madison with the water use estimated from the aquifer indicates unappropriated water is available from the Madison aquifer.

This application, if approved, does not appropriate any additional water from the Madison aquifer. This is an application to place to beneficial use 291 acre-feet of water per year that has been reserved by Future Use Permit No. 2086-2 from the Madison aquifer. The future use permit originally appropriated 9,991 ac-ft/yr. Six¹ Water Permits/Rights have been approved to put water to beneficial use from this reservation, they include:

Permit No	Appropriation	Water Remaining in 2086-2
2125-2	800 ac-ft	9,191 ac-ft
2155-2	1,160 ac-ft	8,031 ac-ft
2156-2	482 ac-ft	7,549 ac-ft
2273-2	756 ac-ft	6,793 ac-ft
2275-2	491 ac-ft	6,302 ac-ft
2475-2	1,160 ac-ft	5,142 ac-ft
2519-2 ¹	773 ac-ft	4,369 ac-ft

If this application is approved there will be a total of 4,078 ac-ft/yr remaining in Future Use Permit No. 2086-2.

Affects on Existing Rights:

There are 59 Water Rights/Permits appropriating groundwater from within approximately four miles of this well site (Water Rights, 2004c). These groundwater appropriations are from any of the eight aquifers in the area. Wells supplied from aquifers other than the Madison are not expected to be affected by withdrawals from this well because the Madison is isolated from shallower aquifers by the lower Minnelusa formation and isolated from deeper aquifers by the Englewood and Whitewood Formations.

There are 18 Water Rights/Permits appropriating groundwater from the Madison aquifer within approximately three and one-half miles of this well, they include:

PERMIT NO	NAME	STATUS	USE	CFS
1726-2	COLONIAL PINE HILLS	LC	SHD	0.38
1838-2	CANYON SHADOWS WATER CO	PE	SHD	0.03
1925-2	PONDEROSA PARK DEV ASSOC	LC	SHD	0.03
1965-2	HIGHLAND HILLS WATER ASS.	LC	SHD	0.06
2053-2	SPRING CANYON WATER CO	LC	SHD	0.05
2090-2	CHAPEL LANE WATER CO	PE	SHD	1.17
2106-2	STUART & PAMELA RICE	LC	IRR	0.09
2108-2	COLONIAL PINE HILLS	LC	SHD	0.04

¹ Water Permit Application 2519-2 is pending at this time. If approved there will be seven other Water Permits/Rights applying water to beneficial use that had been reserved by Future Use Permit No. 2086-2

2156-2	CITY OF RAPID CITY	LC	MUN	1.11
2273-2	CITY OF RAPID CITY	LC	MUN	12.4 2
2287-2	RIMROCK RIDGE WATER ASSO.	PE	SHD	0.05
2458-2	RED ROCK DEVELOPMENT CO	PE	IRR	1.33
2461-2	COLONIAL PINE HILLS	PE	SHD	0.33
2473-2	CREGUT, INC.	LC	COM	0.04
2475-2	CITY OF RAPID CITY	PE	MUN	2.67
2496-2	SPRING CANYON WATER CO	PE	SHD	0.17
433-2	RAPID CITY	LC	MUN	0.84
454-2	BLACK HILLS POWER & LIGHT	LC	IND	1.00

With the exception of Rapid City Well No. 12, (covered under Water Right No. 2475-2), which is located approximately 0.8 miles southeast of Rapid City Well No. 11, the nearest Water Permit/Rights appropriating water from the Madison aquifer are Water Right No. 2106-2, Stuart & Pamela Rice; and Water Permit No. 2458-2 Red Rock Development Company. The Rice and Red Rock wells are both located approximately 1.3 miles from Rapid City well No. 11.

At this time it is not practical to attempt to quantify the specific affect pumping this well will have on area wells since aquifer characteristics have not been determined for this area, and the variability of the hydraulic characteristics has been well documented (Greene, 1993). In addition, Greene concluded that the transmissivity of the Madison is not equal in all directions (anisotropic), therefore the drawdown cone will extend farther in one direction than another.

Although the impact of this appropriation cannot be quantified precisely, it is still possible to address whether this appropriation can be made without adversely affecting water rights, including domestic wells. In the first place, the distance from other Madison wells should be sufficient to minimize interference. Secondly, Water Management Board rules 74:02:04 and 74:02:05, which were promulgated pursuant to SDCL 46-6-6.1, provide protection to prior appropriators only to the degree necessary to maintain an adequate depth of water in wells that have the ability to produce water independent of artesian pressure. Simply put, the pump placement in a prior appropriator's well is not necessarily protected. In fact, in past action, the Water Management Board has concluded that if increased cost or decreased production is considered an adverse impact, it could be in conflict with SDCL 46-1-4, which requires South Dakota's water resources to be put to beneficial use to the fullest extent of which they are capable.

A major concern for some, relates to if, or how increased development from the Madison aquifer may affect springs believed to originate from the Madison aquifer that occur in several locations in Rapid City. In theory, a lowering of the potentiometric surface of the Madison aquifer in the vicinity of a spring could reduce the spring's discharge. Discharge from springs is a major water source for the City of Rapid City and provides base flow for

Rapid Creek and downstream uses. Rapid City well No. 11 is located far enough from the springs to minimize any well interference, and drawdown from this appropriation should not be measurable at the springs.

Although there are a limited number of domestic wells completed into the Madison aquifer in this area (Water Rights, 2004a) the potential affect of this appropriation to domestic wells must be considered. It is likely that even if a domestic well completed into the Madison aquifer in this area experienced interference, it would still be capable of delivering sufficient water with a pump inlet placed near the top of the aquifer. Therefore adverse impact to domestic wells is not probable.

Term Limitation:

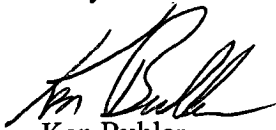
SDCL 46-2A-20 requires that "... no water permit for construction of works to withdraw water from the Madison formation in Butte, Fall River, Custer, Lawrence, Meade and Pennington counties may be issued for a term of more than twenty years, unless the water management board determines, based upon the evidence presented at the hearing that:

- (1) Sufficient information is available to determine whether any significant adverse hydrologic effects on the supply of water in the Madison formation would result if the proposed withdrawal were approved; and
- (2) The information, whether provided by the applicant or by other means, show that there is a reasonable probability that issuance of the proposed permit would not have a significant adverse effect on nearby Madison formation wells and springs."

Evidence is not available to justify issuing this permit without a term limitation of 20 years.

Conclusions:

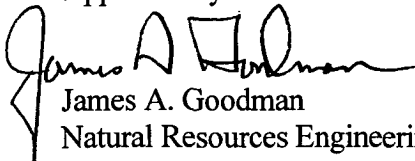
1. The Madison aquifer is a viable aquifer in this area.
2. This application proposes to put to beneficial use water that has been appropriated by Future Use Permit No. 2086-2.
3. Approval of this permit will reduce the amount of water reserved by Future Use Permit No. 2086-2 by 291 ac-ft/yr, leaving 4,078 ac-ft/yr reserved.
4. This diversion will not adversely impair existing water rights.
5. Information is not available to justify issuing this permit without a term limitation of 20 years.



Ken Buhler

Natural Resources Engineering Specialist

Approved by



James A. Goodman

Natural Resources Engineering Director

References:

- Allen, J.C., Iles, D.L., and Petres, A.K., 1985, Analysis of Groundwater and Streamflow Data Western Dakotas Region of South Dakota, Tasks 3A.B.C. and 4A.B.: Groundwater Resource Inventory: South Dakota Department of Water and Natural Resources,
- Carter, J.M., Driscoll, D.G., Hamade, G.R., 2001, Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and Wyoming, Water Years 191-98, Water-Resources Investigations Report 00-4278, 66 p.
- Carter, J.M., Redden, J.A., 1999a, Altitude of the Top of the Madison Limestone in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-744-D, 2 sheets, scale 1:100,000
- Carter, J.M., Redden, J.A., 1999b, Altitude of the Top of the Deadwood Formation in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-744-E, 2 sheets, scale 1:100,000
- Carter, J.M., Driscoll, D.G., Hamade, G.R., 2001a, Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and Wyoming, Water Years 191-98, Water-Resources Investigations Report 00-4278, U.S. Department of the Interior, U.S. Geological Survey, Rapid City, SD
- Carter, J.M., Driscoll, D.G., Hamade, G.R., and Jarrell, G.J., 2001b, Hydrologic Budgets for the Madison and Minnelusa Aquifers, Black Hills of South Dakota and Wyoming, Water Years 1987-1996, Water-Resources Investigations Report 01-4119, U.S. Department of the Interior, U.S. Geological Survey, Rapid City, SD
- Greene, E.A., 1993, Hydraulic Properties of the Madison Aquifer System in the Western Rapid City Area, South Dakota: U.S. Geological Survey Water-Resources Investigations Report 93-4008, 56 p.
- Long, A.J., Putnam, L.D., 2002, Flow-System Analysis of the Madison and Minnelusa Aquifers in the Rapid City Area, South Dakota-Conceptual Model: U.S. Geological Survey Water-Resources Investigations Report 02-4185, 100 p.
- Rahn, P.H., 1979, Ground Water Resources of Western South Dakota: U.S. Army Corps of Engineers, SDSM&T Project #2533
- Water Rights Program, 2004a, "Domestic Well Log Files", South Dakota DENR-Water Rights Program, Joe Foss Building, Pierre, SD

Water Rights Program, 2004b, "Unpublished Observation Well Records", South Dakota DENR-Water Rights Program, Joe Foss Building, Pierre, SD

Water Rights Program, 2004c, "Water Permit/Right Files", South Dakota DENR-Water Rights Program, Joe Foss Building, Pierre, SD

Woodward Clyde Consultants, 1981, Well Field Hydrology Technical Report, for the ETSI Coal Slurry Pipeline Project, U.S. Dept. of the Interior, Bureau of Land Management



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2520-2, City of Rapid City**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 2520-2, City of Rapid City, c/o John Wagner, 300 6th Street, Rapid City SD 57701.

The Chief Engineer is recommending APPROVAL of Application No. 2520-2 because 1) the proposed diversion can be developed without unlawful impairment of existing rights, 2) the proposed use is a beneficial use and 3) it is in the public interest with the following qualifications:

1. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2520-2 is issued for a 20-year term. Pursuant to SDCL 46-2A-21, the 20-year term may be deleted at any time during the 20-year period or following its expiration. If the 20-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2520-2 may also be cancelled for nonconstruction, forfeiture, abandonment, or three permit violations pursuant to SDCL 46-1-12, 46-5-37, 46-5-37.1 and ARSD 74:02:01:37.
2. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
3. Permit No. 2520-2 authorizes a total annual diversion of 291 acre feet of water annually for municipal use.
4. The city of Rapid City shall report to the Chief Engineer annually the amount of water withdrawn each year from the Madison Formation for municipal use.

See report on application for additional information.

Garland Erbele, Chief Engineer

April 19, 2004

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
) SS
 County of Pennington)

I, Patricia K. Van Patten

certify that the attached printed Notice was
 taken

from the Rapid City Journal

printed and published in Rapid City

County of Pennington and

state of South Dakota. The notice was published

in the newspaper on the following two dates:

April 28, 2004

May 5, 2004

Cost of Printing One hundred twenty-four
dollars and twenty cents (\$124.20)

Patricia K. Van Patten
 (Signature)

Legal Advertising Representative
 (Title)

4/5/04
 (Date Signed)

April 28, May 5 L1637570

NOTICE OF
 APPLICATION NO.
 2519-2 AND 2520-2

TO APPROPRIATE WATER
 Notice is given that the City
 of Rapid City, 300 6th Street,
 Rapid City, SD 57701, has filed
 the following applications for a
 water permit.

Application No. 2519-2 pro-
 poses to construct and place to
 beneficial use 1.78 cubic feet of
 water per second (cfs) (776
 acre-feet annually) reserved
 by Future Use Permit No. 2086-
 2 by increasing the diversion
 rate and annual volume
 diverted from the well autho-
 rized by Water Permit No.
 2475-2. Water Permit No. 2475-
 2 appropriates 2.67 cfs (1,160
 acre-feet annually) from one
 well (Madison Aquifer) 1,600
 feet deep located in the
 NW1/4 Section 22-T1N-R7E.
 This application proposes to
 increase the water appropria-
 tion from 2.67 cfs to a total of
 4.45 cfs. This water is for
 municipal use.

Application No. 2520-2 pro-
 poses to construct and place to
 beneficial use 0.67 cfs (291 acre-
 feet annually) reserved by
 Future Use Permit No. 2086-2
 by increasing the diversion
 rate and annual volume
 diverted from the well autho-
 rized by Water Right No.
 2156-2. Water Right No. 2156-2
 appropriates 1.11 cfs (482 acre-
 feet annually) from one well
 (Madison Aquifer) 1,130 feet
 deep located in the SW1/4
 Section 16-T1N-R7E. This ap-
 plication proposes to increase
 the water appropriation from
 1.11 cfs to a total of 1.78 cfs.
 This water is for municipal use.

Pursuant to SDCL 46-2A-2,
 the Chief Engineer recom-
 mends APPROVAL of Applica-
 tion Nos. 2519-2 and 2520-2 for
 a 20-year term pursuant to
 SDCL 46-14 and 46-2A-20 be-
 cause 1) existing rights will
 not be unlawfully impaired, 2)
 it is a beneficial use of water,
 and 3) it is in the public inter-
 est. In accordance with SDCL
 46-2A-23, the Chief Engineer
 will act on the applications as
 recommended, unless a peti-
 tion is filed opposing the ap-
 plications or the applicant files a
 petition contesting the Chief
 Engineer's recommendations.
 If a petition opposing the ap-
 plications or contesting the
 recommendations is filed, then
 a hearing will be scheduled
 and the Water Management
 Board will consider the appli-
 cations. Notice of the hearing
 will be given to the applicant
 and any person filing a petition.

Any person interested in
 opposing or supporting these
 applications or recommenda-
 tions must file a written
 petition with BOTH the appli-
 cant and Chief Engineer. The
 applicant must also file a
 petition if contesting the Chief
 Engineer's recommendations.
 The Chief Engineer's address
 is "Water Rights Program,
 Foss Building, 523 E. Capitol,
 Pierre, SD 57501 (605-773-
 3552), and the applicant's
 mailing address is given
 above. A petition filed by
 either an interested person or
 the applicant must be filed by
 May 17, 2004.

The petition may be infor-
 mal, but must include a state-
 ment describing the petiti-
 oner's interest in the applica-
 tions, 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. Contact Eric
 Gronlund at the above Water
 Rights Program address to
 request copies of information
 pertaining to these applications.

Steven M. Pirner, Secretary
 Department of Environment
 and Natural Resources

RECEIVED

MAY 10 2004

WATER RIGHTS
 PROGRAM



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

www.state.sd.us/denr

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

April 20, 2004

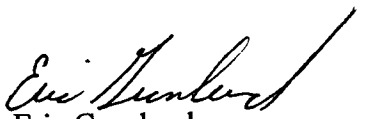
City of Rapid City
% John Wagner, Water Supt
300 Sixth St
Rapid City SD 57701

Dear Mr. Wagner:

Water Permit Application Nos. 2519-2 & 2520-2 for municipal use has 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 Cit Journal printed at Rapid City, SD (Ph # 605-394-8300). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notices, the recommendations of the Chief Engineer and the reports on the applications are enclosed. 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. Upon receiving authorization, 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 also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the applications.

Sincerely,


Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendations, 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 applications.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

April 20, 2004

Rapid City Journal
PO Box 450
Rapid City SD 57709-0450

ATTENTION: Legal Public Notice

Enclosed is a Notice of Hearing on Application No. 2519-2 & 2520-2 to Appropriate Water to be published twice. Please publish the first notice on April 28, 2004 with the second publication 7 days later. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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 City of Rapid City, %John Wagner, Water Supt., 300 6th St., Rapid City SD (Ph # 605-394-4162).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

CUT HERE

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

No. 2519-2 & 2520-2

Date _____

We are in receipt of your letter of April 19, 2004 enclosing Notice of Hearing to Appropriate Water by Application Nos. 2519-2 & 2520-2 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 April 28, 2004 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 2519-2 and 2520-2 to Appropriate Water

Notice is given that the City of Rapid City, 300 6th St, Rapid City SD 57701 has filed the following applications for a water permit.

Application No. 2519-2 proposes to construct and place to beneficial use 1.78 cubic feet of water per second (cfs) (776-acre-feet annually) reserved by Future Use Permit No. 2086-2 by increasing the diversion rate and annual volume diverted from the well authorized by Water Permit No. 2475-2. Water Permit No. 2475-2 appropriates 2.67 cfs (1,160 acre-feet annually) from one well (Madison Aquifer) 1,600 feet deep located in the NW ¼ SW ¼ Section 22-T1N-R7E. This application proposes to increase the water appropriation from 2.67 cfs to a total of 4.45 cfs. This water is for municipal use.

Application No. 2520-2 proposes to construct and place to beneficial 0.67 cfs (291 acre-feet annually) reserved by Future Use Permit No. 2086-2 by increasing the diversion rate and annual volume diverted from the well authorized by Water Right No. 2156-2. Water Right No. 2156-2 appropriates 1.11 cfs (482 acre-feet annually) from one well (Madison Aquifer) 1,130 feet deep located in the SW ¼ SE ¼ Section 16-T1N-R7E. This application proposes to increase the water appropriation from 1.11 cfs to a total of 1.78 cfs. This water is for municipal use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application Nos. 2519-2 and 2520-2 for a 20 year term pursuant to SDCL 46-1-14 and 46-2A-20 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the applications, as recommended, unless a petition is filed opposing the applications or the applicant files a petition contesting the Chief Engineer's recommendations. If a petition opposing the applications or contesting the recommendations is filed, then a hearing will be scheduled and the Water Management Board will consider the applications. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting these applications or recommendations must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendations. The Chief Engineer's address is "Water Rights Program, 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 May 17, 2004.

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. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to these applications. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

JUN 30 2004

City of Rapid City
% John Wagner Water Supt
300 6th St
Rapid City SD 57701

Dear Mr. Wagner:

Enclosed is Water Permit No. 2520-2 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

Permit No. 2520-2
Upper Cheyenne River - Water District

Report of Examination of Works and/or Application of Water to Beneficial Use

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

I have on this day, **11/30/2009**, made a thorough examination of the water use system constructed by **City of Rapid City, 300 6th Street, Rapid City SD 57701** holder of Permit No. **2520-2**, bearing the priority date of **May 18, 1989 (established by Future Use Permit No. 2086-2)**. Permit No. **2520-2** proposes to increase the diversion rate and annual volume diverted from the well authorized by Water Right No. 2156-2. Water Right No. 2156-2 appropriates 1.11 cfs (482 acre-feet annually). This permit increases the water appropriation from 1.11 cfs to a total of **1.78 cfs (773 acre-feet annually)** from the same well (**Madison Aquifer**) for **municipal purposes**, in **Pennington County**.

Inspection contact and relationship to
permit holder, if applicable:

**John Wagner, Water Superintendent,
City of Rapid City**

A. Works used to divert the water:

A Goulds submersible pump - 800 gallons per minute capacity

B. Works used to transport water to place of use:

Rapid City municipal distribution system.

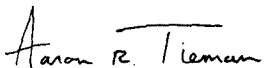
The system is in the following condition **good**. The point of diversion (well) is located specifically at **Lat/Lon - N44.038744 W-103.277653 which is the approximately 1,450 feet west and 90 feet north of the SE¼ corner of Section 16, T1N, R7E.** The works are capable of diverting **1.89 cfs** which is to be used for **municipal purposes**.

Water has been put to beneficial use to the maximum extent and the license should be issued for **1.78 cfs (773 acre feet annually)**.

All structures, wells and lands on map **Y**

Exceptions to compliance are: **none**.

Comments: The applicable portions of Water Permit No. 2156-2 will be incorporated into No. 2520-2. The volume of water not developed will revert back to Future Use Permit No. 2086-2.



Aaron Tieman
Natural Resources Project Engineer
DENR, Water Rights Program

Date report completed: **April 26, 2010**

FIELD INVESTIGATION REPORT FOR PERMIT NO. 2520-2

DATE OF INVESTIGATION:	November 30, 2009
NAME & ADDRESS OF PERMIT HOLDER	City of Rapid City 300 6th Street Rapid City, SD 57701
NAME & ADDRESS OF INVESTIGATION CONTACT/ RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE	John Wagner (Water Superintendent)
DIVERSION POINT LEGAL LOCATION	SW¼ SE¼ Section 16, T1N-R7E
WATER SUPPLY SOURCE	Ground water, Madison Aquifer

Other permit(s) associated with the project: **This permit increases the diversion rate and annual volume diverted from the well authorized by Water Right No. 2156-2.**

WELL INFORMATION:

- 1) Well Drilling Firm: **Taylor Drilling**
- 2) No. of Wells **One**
- 3) Depth(s) **1283** feet
- 4) Well log is available **yes**
- 5) Comment:

Casing:

- 1) Diameter: **20** inches Diameter **13³/₈** inches
- 2) Length: **20** feet Length: **883** feet
- 3) Type: **Steel** Type: **Steel**

Screen:

- 1) Type: **Open Hole**
- 2) Length: **N/A** feet
- 3) Static water level: **65** feet

Pump:

- 1) Make: **Goulds**
- 2) Model: **9RCHC**
- 3) Capacity: **800** GPM

Motor:

- 1) Make: **Hitachi, LTD**
- 2) Model No.: **VTI**
- 3) Horsepower rating: **200** hp

DISTRIBUTION LINES OR CANALS:

- 1) Type: **Municipal distribution system**

PERMIT QUALIFICATIONS:

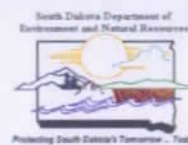
- 1) Special qualifications to permit being abided by **Yes**
- 2) All structures, wells and lands on map **Yes**

COMMENTS: The water for this permit came out of future use, the balance of the water not licensed from this permit should be returned to future use.



Aaron R. Tieman

Aaron Tieman
Natural Resources Project Engineer
DENR Water Rights Program





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

JUL 15 2010

2156-2
2520-2

John Wagner, Water Supt
City of Rapid City
300 6th Street
Rapid City SD 57701

Dear Mr. Wagner:

Enclosed is Water License No. 2520-2. This is the final water right document completing the process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right No. 2520-2, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

As long as you use the water beneficially, as stated in the Water License, the State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

Note: The applicable portions of Water Right No. 2156-2 were incorporated into Water License No. 2520-2.

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 2520-2**

(1) The City of Rapid City, 300 6th St, Rapid City SD 57701 made Application No. 2520-2, February 18, 2004 for a water permit to construct and place to beneficial use 0.67 cubic feet of water per second (291 acre-feet annually) reserved by Future Use Permit No. 2086-2 by increasing the diversion rate and annual volume of water diverted from the well authorized by Water Right No. 2156-2. The Madison Formation well authorized by Water Right No. 2156-2 and Water Permit No. 2520-2 is located in Pennington County, South Dakota and used for municipal purposes. Permit No. 2520-2, with a priority date of May 18, 1989 (established by Future Use Permit No. 2086-2) was approved May 17, 2004 and issued to the city for diversion of water with construction of the described water supply system to be completed on or before May 17, 2009 and for the application to beneficial use of said water on or before May 17, 2013.

Water Right No. 2156-2 appropriates 1.11 cubic feet of water with an annual volume limitation of 482 acre feet. Water Permit No. 2520-2 increased the diversion rate up to 1.78 cfs and authorized an additional volume of water bringing the total appropriation from the existing well to 773 acre feet annually. The applicable portions of Water Right No. 2156-2 have been incorporated into this license.

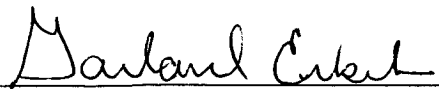
(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 1.78 cubic feet of water per second for beneficial use. The location of the diversion point is approximately 1,450 feet west and 90 feet north of the SE corner of Section 16, T1N, R7E (SW ¼ SE ¼)

(3) The permit holder 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 Incorporated Water Right No. 2520-2 is issued a license to appropriate water, the right to use 1.78 cubic feet of water per second (773 acre feet annually) from ground water (one well, Madison Formation) with a priority date of May 18, 1989 (established by Future Use Permit No. 2086-2) from the location specified in (2) of this license for municipal use purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Incorporated Water Right No. 2520-2 and subject to the following qualifications:

- In accordance with SDCL 46-1-14 and 46-2A-20, No. 2520-2 is issued for a 20 year term. Pursuant to SDCL 46-2A-21, the 20 year term may be deleted at any time during the 20-year period or following its expiration. If the 20 year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. No. 2520-2 may also be cancelled for non-construction, forfeiture, abandonment, or three permit violations pursuant to SDCL 46-1-12, 46-5-37, 46-5-37.1 and ARSD 74:02:01:37.
- The well approved under No. 2520-2 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- No. 2520-2 authorizes a total annual diversion of 773 acre feet of water annually for municipal use (*reflects total from No. 2156-2 and No. 2520-2*).
- The City of Rapid City shall report to the chief Engineer annually the amount of water withdrawn each year from the Madison Formation for municipal use.


Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JUL 15 2010
date

