

WATER PERMIT NO. 2616-2

Name of Applicant: City of Box Elder

Address: 520 N Ellsworth Rd, Suite 9C, Box Elder SD 57719

Phone: 605 923-1404

Amount of Water Claimed: 0.333 cfs (147 AF)

Total Acres: NA

Source of Water Supply: groundwater (existing well)

Water to be used for: municipal

County: Pennington

Type of Waste Disposal System:

Location: west of Box Elder

PRIORITY

Date Received: 5-15-07

Application/License Fee: \$225

Corrected Application Received:

Period of Annual Use: January 1 – December 31

Remarks: Increasing diversion rate authorized by Water Permit No. 2578-2

Diversion Point: SE ¼ NW ¼ Sec 25-T2N-R8E

Land to be Irrigated: NA

Depth of Well: 4450 feet deep

Well Driller: :

Remarks:

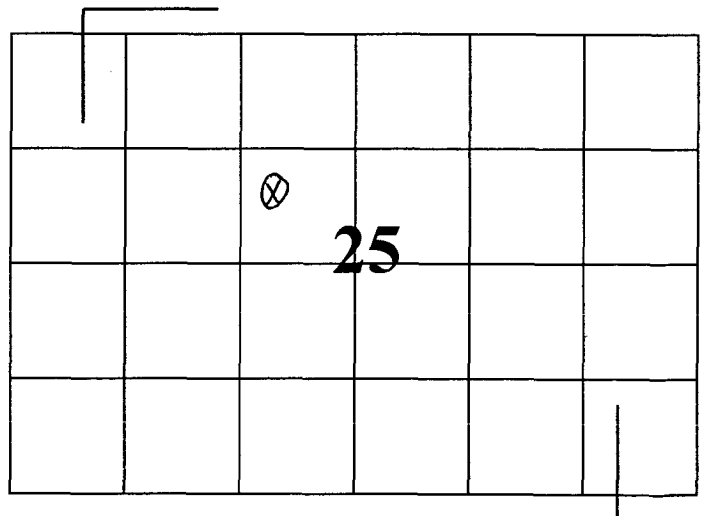
Type of Map: topo

Prepared by: Raymond T Bettmeno, PE

Reviewed and the Number Assigned on: 5-15-07

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>2616-2</u> (office use only) Hydrologic Unit <u>10/2011</u>
	Basin <u>Upper Cheyenne</u>
	Newspaper <u>Rapid City Journal P.O. Box 450</u> <u>605-394-8300</u> <u>57709</u>

RECEIVED
MAY 15 2007
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. _____
☒ Amendment/Correction to Permit No. 2578-2

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

INCREASE CAPACITY FROM 300 GPM TO 450 GPM

- Name of Applicant CITY OF BOX ELDER, SOUTH DAKOTA Phone 605 923 1408
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address 520 N. ELLSWORTH RD, STE 9C, BOX ELDER State SD 57719
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed 0.333 *CFS or 150 **GPM 147 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply MADISON AQUIFER
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County PENNINGTON
1 WELL IN NE 1/4 NW 1/4 SECTION 25-T.2N. - R.8E.
- 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)
ADDITIONAL CAPACITY FROM NEW 4450 FOOT DEEP WELL RECENTLY DRILLED - ORIGINALLY ESTIMATED AT 300 GPM APPLICATION INFORMATION FOR PERMIT #2578-2 ON FILE.

STATE OF SOUTH DAKOTA)

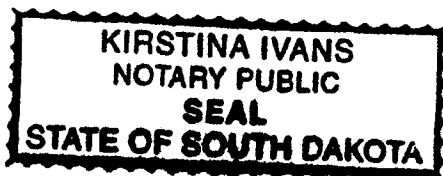
County of PENNINGTON SS

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, AL TODD, 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 Al Todd

Subscribed and sworn to before me this 10 day of May 20 07



Notary Public signature Kirstina Ivans 8-4-2011

SOUTH DAKOTA WATER PERMIT NO. 2616-2

Date of first receipt of application May 15, 2007.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2616-2 to the City of Box Elder, 520 N Ellsworth Rd, Suite 9C, Box Elder SD 57719 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. 2616-2 increases the diversion rate authorized by Water Permit No. 2578-2. Water Permit No. 2578-2 appropriates 290 acre-feet annually at a maximum diversion rate of 0.67 cubic feet of water per second (cfs) from one well completed into the Madison Aquifer (4450 feet deep) located in NE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 25-T2N-R8E. This permit authorizes increasing the water appropriation from the existing well by an additional 147 acre-feet annually and authorizes an additional diversion rate of 0.33 cfs. The combined appropriation from this well by Water Permit No. 2578-2 and this permit, will be 437 acre feet annually at a maximum diversion rate of 1.00 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. 2616-2 is August 20, 2007.
5. The date from which applicant may claim right is May 15, 2007 (additional 0.33 cfs and 147 acre-feet).
6. One-fifth of the construction is to be completed on or before February 20, 2010.
7. All construction is to be completed on or before May 8, 2011 (established by No. 2578-2).
8. Water is to be put to beneficial use on or before August 20, 2016.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

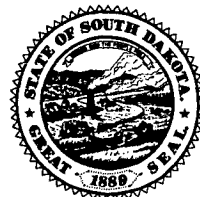
1. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2616-2 is issued for a 20-year term. Pursuant to SDCL 46-2A-21, the 20-year term may be deleted at any time during the 20-year period or following its expiration. If the 20-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2616-2 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. The city of Box Elder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison Aquifer.

WATER MANAGEMENT BOARD

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

OCT 17 2007

date



SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NE 1/4 NW 1/4 Sec 25 Twp 2N Rg 8E

County

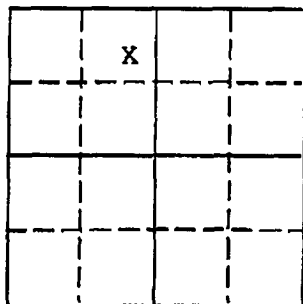
North

Pennington

Please mark well location with an "X"

W

E



Well Completion Date

1 Mile

Distance to nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)

? ft. from (identify source)

PROPOSED USE:

☐ Domestic/Stock Irrigation ☒ Municipal Industrial ☐ Business Institutional ☐ Test Holes Monitoring well

METHOD OF DRILLING:

Rotary Mud

CASING DATA: ☒ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
62.58 LB/FT	16 IN	40 FT	0 FT	20 IN
41.85 LB/FT	10 3/4 IN	1427 FT	0 FT	14 3/4 IN
23 LB/FT	7 IN	4065 FT	1382 FT	9 1/2 IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
On attached sheet	Lb/gal	Ft	Ft	Ft

Describe grouting procedure

Pressure grouted by Basic Energy

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 5 1/2 Inches Length 509 Feet

Material 15.5# steel

Slot Size 0.120 Set From 4511 Feet to 4002 Feet

Other information

WAS A PACKER OR SEAL USED? ☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? Calcium☐ No, Why Not? Hypochlorite

Lab sample sent to for water quality analysis

Mid-Continent

Well Owner: City of Box ElderBusiness Name: City of Box ElderAddress: 520 N Ellsworth Rd., Suite 9CCity, State, Zip: Box Elder, SD 57719

WELL LOG:

DEPTH

FORMATION

FROM

TO

STATIC WATER LEVEL 585 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate _____ GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe:☐ Bailed☐ Other

Pumping Level Below Land Surface

786 Ft. After 24 1/2 Hrs. pumped 375 GPM

Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

This well was drilled under license # 604

And this report is true and accurate.

Drilling firm: Weston Engineering, Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

Attachment to City of Box Elder, South Dakota Water Well Completion Report

GROUTING DATA:

Casing Size	Grout Type	# of Sacks	Grout Weight	From	To
16"	Slurry.CMX	75	15.7#	40	surface
10 3/4"	Extreme Lite	300	12.2#	1430	surface
10 3/4"	Type III	290	14.8#	1430	surface
7"	Lite	550	12.7#	4065	1382
7"	G	200	15.8#	4065	1382

**BOXELDER WELL NO. 6
LITHOLOGIC DESCRIPTIONS
(10-FOOT SAMPLE INTERVALS)**

Depth (Feet)	Principal Lithology	Description	Comments
0-81	Shale, Chert, and Siltstone	Dark green-gray, calcareous shale with orange-pink chert and dark yellow- brown siltstone (surface contamination)	Pierre Shale
81-166	Shale	Dark green-gray calcareous shale	
166-197	Shale and Calcite	Gray-black, soft, calcareous shale with calcite partings	
197-258	Shale and Chert	Olive-gray, fissile, calcareous shale with orange-pink and dark yellow- orange chert (surface contamination)	
258-382	Shale and Chert	Dark green-gray calcareous shale and gray-orange chert (surface contamination)	
382-413	Siltstone and Shale	Pale yellow-brown and dark red-brown, variegated siltstone, dusky yellow, calcareous shale, pink chert	
413-538	Shale	Dark gray, calcareous shale	
538-631	Shale	Gray-black, fissile, calcareous shale	
631-881	Shale and Calcite	Dark gray shale with yellow-orange and white calcite partings	Niobrara Formation
881-1,008	Shale and Calcite	Gray-black shale with very pale orange calcite partings	
1,008-1,039	Shale and Limestone	Dark olive-gray shale, pale yellow- orange crystalline limestone	Carlile Formation
1,039-1,102	Shale and Calcite	Gray-black, silty shale with white calcite partings	Greenhorn Formation
1,102-1,165	Shale	Gray-black, silty shale	
1,165-1,227	Shale and Calcite	Gray-black, silty shale with partings and veinlets of pale yellow-orange calcite	
1,227-1,352	Shale and Calcite	Gray-black, silty shale with partings of white calcite	
1,352-1,383	Shale and Calcite	Dark gray, silty shale with partings of white calcite	
1,383-1,429	Shale	Dark gray, fissile, slightly calcareous shale	Belle Fourche Shale

Depth (Feet)	Principal Lithology	Description	Comments
1,429-1,459	Shale, Bentonite, and Volcanic Ash	Dark gray, fissile, calcareous shale with dark yellow-orange bentonite and white volcanic ash	
1,459-1,522	Shale	Dark gray, fissile, calcareous shale	
1,522-1,553	Shale and Calcite	Dark gray to medium dark gray, calcareous shale with gray-orange calcite partings	
1,553-1,709	Shale	Dark brown-gray, fissile, noncalcareous shale	
1,709-1,742	Shale, Calcite, and Volcanic Ash	Gray-black shale with moderate orange-pink calcite partings and pink- gray volcanic ash.	
1,742-1,773	Shale	Gray-black, fissile shale	
1,773-1,804	Shale and Siltstone	Gray-black, fissile shale, pink-gray soft siltstone	Newcastle Sandstone
1,804-1,835	Shale and Claystone	Gray-black shale and pink-gray claystone	
1,835-1,867	Shale	Brown-black, fissile shale	Skull Creek Shale
1,867-1,928	Shale and Calcite	Dark gray, fissile shale with white calcite partings	
1,928-1,959	Shale, Calcite, Sandstone	Gray-black, fissile shale with yellow- gray calcite veins, medium dark gray, fine grain, sandstone	
1,959-1,980	Shale and Siltstone	Gray-black, soft, silty shale and very light gray, soft siltstone	
1,980-1,990	Shale and Sandstone	Dark gray, calcareous shale and light- gray, very fine grain, weakly cemented sandstone	Fall River Formation
1,990-2,010	Shale and Siltstone	Gray-black, fissile, calcareous shale and pink-gray soft siltstone	
2,010-2,130	Siltstone and Bentonite	Dark gray, fissile shale, pink-gray soft siltstone, minor amounts of light grey bentonite, minor light brown siltstone	
2,130-2,140	Shale and Siltstone	Dark gray, fissile shale and gray, soft siltstone	
2,140-2,160	Shale and Siltstone	Dark gray, fissile shale and gray to moderate red-orange, slightly calcareous siltstone	Lakota Formation
2,160-2,210	Shale and Siltstone	Gray-black, fissile shale and pale red to moderate red-orange, soft siltstone	

Depth (Feet)	Principal Lithology	Description	Comments
2,210-2,220	Siltstone and Shale	Medium gray, bedded siltstone and gray-black, fissile shale	
2,220-2,230	Siltstone and Shale	Yellow-gray, soft, calcareous siltstone and gray-black shale	
2,230-2,280	Shale and Siltstone	Gray-black, fissile shale and yellow-gray calcareous siltstone	
2,280-2,300	Siltstone and Sandstone	Gray-black, fissile shale, gray calcareous siltstone, gray, weakly cemented, very fine grain, calcareous sandstone	
2,300-2,410	Siltstone and Shale	Gray to white, calcareous siltstone and dark gray, fissile shale	
2,410-2,420	Siltstone and Shale	Light gray to pink-gray, soft siltstone and gray-black, fissile shale	Morrison Formation
2,420-2,430	Siltstone	Gray-pink, soft siltstone	
2,430-2,450	Shale and Siltstone	Dark gray, fissile shale and white, soft, calcareous siltstone	Sundance Formation
2,450-2,460	Siltstone	Gray-red, slightly calcareous, soft siltstone	
2,460-2,494	Siltstone and Calcite	Gray-red, calcareous siltstone, gray shale, white calcite	
2,494-2,525	Shale and Siltstone	Dark gray, fissile shale and light red, calcareous, soft siltstone	
2,525-2,545	Shale and Siltstone	Gray-black, fissile shale and white to medium gray and olive-gray, calcareous siltstone	
2,545-2,555	Shale, Limestone, and Siltstone	Gray-black, fissile shale, pale yellow brown to gray pink, finely granular limestone, and medium gray, calcareous siltstone	
2,555-2,575	Shale, Siltstone, and Calcite	Gray-black, fissile shale and medium gray, calcareous siltstone with white calcite partings	
2,575-2,650	Shale	Medium dark gray, silty, calcareous shale	
2,650-2,660	Limestone and Siltstone	Pale red and yellow-gray, variegated, finely crystalline limestone and medium dark gray, calcareous siltstone	
2,660-2,730	Siltstone and Shale	Medium gray, soft, calcareous siltstone and dark gray, fissile shale	

Depth (Feet)	Principal Lithology	Description	Comments
2,730-2,790	Siltstone and Shale	Moderate red-brown, soft, calcareous siltstone and dark gray, fissile shale	
2,790-2,800	Siltstone	Dark gray, clayey siltstone and light gray, calcareous siltstone	
2,800-2,810	Siltstone and Limestone	Very dark gray, clayey siltstone and light brown-gray, finely crystalline limestone	
2,810-2,820	Siltstone	Medium dark gray, bedded, clayey siltstone, gray-black shale and light gray, calcareous, soft siltstone	
2,820-2,840	Shale and Siltstone	Dark gray, silty shale and pale red-brown, calcareous, soft siltstone	
2,840-2,860	Shale and Siltstone	Gray-black to dark gray shale and moderate red-brown, calcareous siltstone	
2,860-2,900	Siltstone and Calcite	Moderate red-brown, soft, clayey siltstone and dark gray shale with white calcite	Spearfish Formation
2,900-2,910	Limestone and Shale	Dusky red, cryptocrystalline limestone, very dark gray shale	
2,910-2,920	Siltstone and Shale	Moderate red-brown siltstone, very dark gray shale	
2,920-2,960	Siltstone and Shale	Moderate red-brown siltstone, medium gray silty shale	
2,960-2,970	Siltstone and Calcite	Dark gray shale, moderate red-brown siltstone with white calcite veins	
2,970-2,980	Shale, Silt, and Calcite	Medium gray, silty shale, dark gray shale, moderate red-brown silt, yellow-gray calcite partings	
2,980-2,990	Siltstone, Calcite, and Shale	Moderate red-brown siltstone with white calcite veinlets and partings, medium gray silty shale	
2,990-3,020	Shale, Silt, and Calcite	Medium gray, silty shale, moderate red-brown silt, white calcite partings	
3,020-3,030	Shale and Limestone	Medium gray, silty shale, dark yellow-orange, bedded, granular limestone	
3,030-3,050	Shale, Siltstone, and Calcite	Medium gray, silty shale, moderate red-brown, clayey siltstone, white calcite	
3,050-3,090	Shale, Silt, and Calcite	Dark olive-gray, bedded, silty, calcareous shale, moderate red-brown silt, moderate orange-pink calcite	

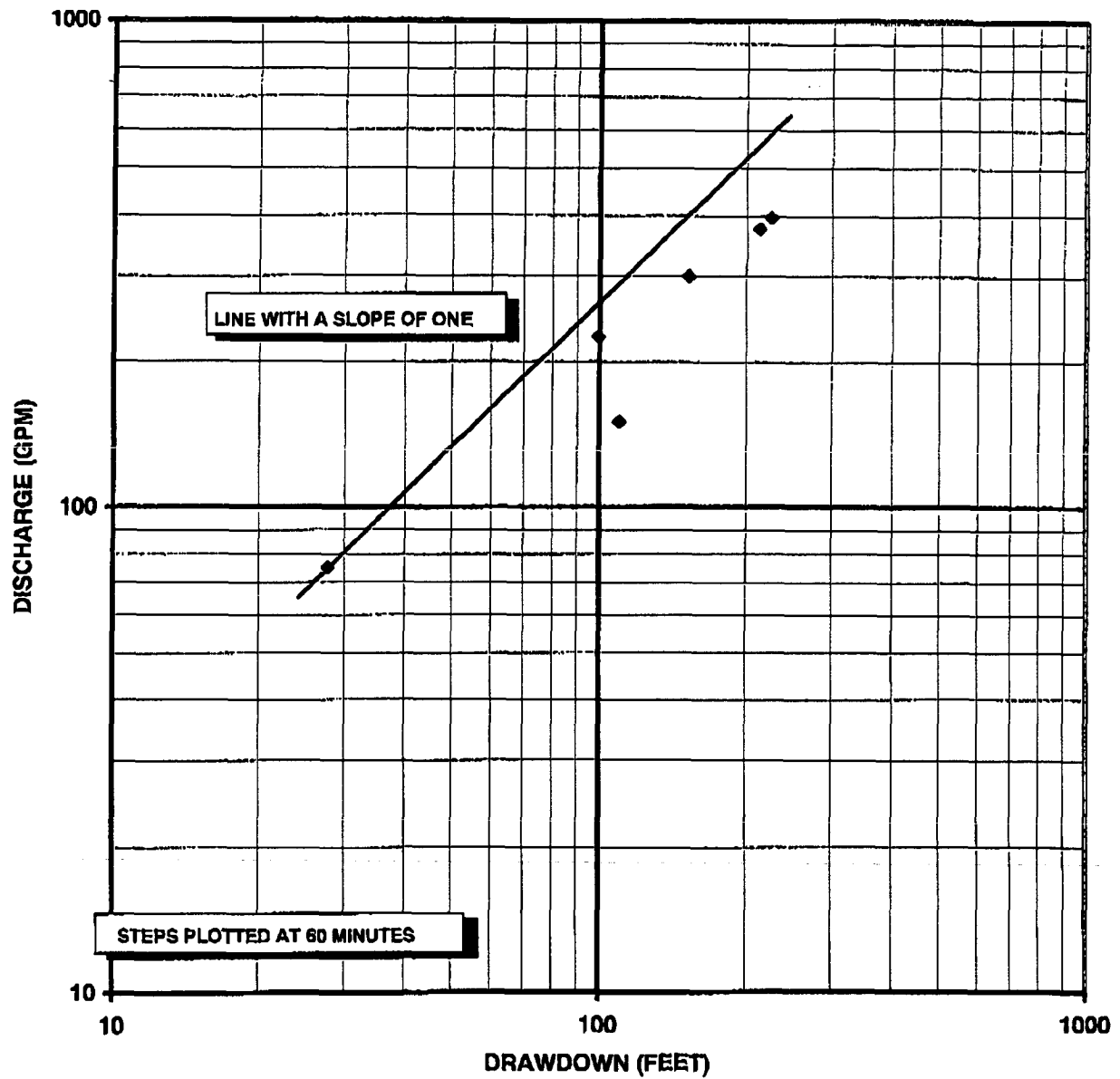
Depth (Feet)	Principal Lithology	Description	Comments
3,090-3,200	Shale, Sandstone, and Calcite	Dark olive-gray, bedded, silty, calcareous shale, moderate red-brown silty sandstone; minor amounts of light gray, fine grained sandstone; moderate orange-pink calcite	Minnekahta Formation
3,200-3,220	Shale and Limestone	Very dark green-gray, silty, calcareous shale, gray-orange to pale orange, cryptocrystalline, finely bedded limestone	
3,220-3,230	Shale and Siltstone	Dark gray, silty, calcareous shale, moderate red-brown siltstone	
3,230-3,290	Shale, Siltstone, and Calcite	Dark gray, silty, calcareous shale, moderate red-brown siltstone, pink- gray to white calcite partings	Opeche Formation
3,290-3,300	Shale, Siltstone, and Calcite	Olive-gray and dark gray, silty, calcareous shale, moderate red-brown clayey siltstone, white calcite partings	
3,300-3,340	Clay and Shale	Moderate red-brown clay and silt, olive- gray and dark gray, silty, calcareous shale	
3,340-3,400	Shale and Limestone	Olive-gray and dark gray, silty, calcareous shale, gray-orange, finely granular, bedded limestone, gray marl	Minnelusa Formation
3,400-3,490	Limestone and Shale	Very pale orange to gray-pink to moderate red-orange, finely granular, bedded, dolomitic limestone, dark green gray and gray-black, fissile shale	
3,490-3,500	Dolomite	Gray-black, fissile shale, yellow-brown, very finely crystalline, finely bedded dolomite, white to gray-pink marl	
3,500-3,520	Shale, Limestone, and Siltstone	Gray-black and olive-gray, fissile shale, gray-orange-pink, finely bedded, finely crystalline limestone, moderate red- brown, bedded, soft siltstone	
3,520-3,540	Shale, Sandstone, and Siltstone	Gray-black and olive-gray, fissile shale, yellow-gray, fine grain, rounded, bedded, weakly cemented sandstone, moderate red-brown soft siltstone	
3,540-3,550	Shale and Limestone	Gray-black and olive-gray, fissile shale, light red to yellow-brown, very finely bedded, finely crystalline dolomitic limestone	
3,550-3,560	Shale, Dolomite, and Sandstone	Gray-black, fissile shale, light red finely bedded dolomite, dark yellow-orange to pale brown, very fine grain, friable calcareous sandstone	

Depth (Feet)	Principal Lithology	Description	Comments
3,560-3,580	Shale, Dolomite, and Siltstone	Gray-black, fissile shale, pale red and very pale brown, finely bedded, finely granular dolomite, moderate red-brown siltstone, white marl	
3,580-3,590	Shale, Dolomite, and Siltstone	Dark gray, fissile shale, light brown-gray, finely bedded, finely crystalline dolomite, minor moderate red-brown siltstone	
3,590-3,610	Shale, Dolomite, Siltstone, and Sandstone	Dark gray, fissile shale, light brown-gray, finely bedded, finely crystalline dolomite, minor moderate red-brown siltstone, minor gray-pink, poorly cemented, fine grain, rounded, quartz sandstone	
3,610-3,680	Shale, Sandstone, and Siltstone	Dark gray, fissile shale; gray-pink, poorly cemented, fine grained, round, quartz sandstone; minor amounts of moderate red-brown siltstone	
3,680-3,690	Dolomite and Shale	Pink-gray, finely crystalline dolomite; minor amounts of dark gray, fissile shale	
3,690-3,710	Shale	Gray-black fissile shale	
3,710-3,780	Shale, Siltstone, and Dolomite	Dark gray to olive-gray fissile shale, moderate red-brown siltstone, pink-gray, granular, finely bedded dolomite, pale red bedded siltstone	
3,780-3,810	Shale, Siltstone, and Limestone	Gray-black, dark gray, brown-gray fissile shale, moderate red-brown bedded siltstone, minor yellow-gray finely bedded limestone	
3,820-3,840	Shale, Siltstone, and Limestone	Gray-black, dark gray, brown-gray fissile shale, moderate red-brown bedded siltstone, minor yellow-gray finely bedded limestone	
3,840-3,860	Shale	Gray-black and medium gray shale	
3,860-3,890	Shale, Siltstone, and Limestone	Gray-black, dark gray, brown-gray fissile shale, moderate red-brown bedded siltstone, minor yellow-gray finely bedded limestone, pale red bedded siltstone	
3,890-4,042	Shale, Siltstone, Sandstone, and Limestone	Gray-black and dark brown-gray shale, moderate red-brown bedded siltstone, pale red siltstone, very pale orange, fine grain, poorly cemented sandstone, yellow-gray fissile limestone	

Depth (Feet)	Principal Lithology	Description	Comments
4,042-4,110	Limestone	Very pale orange, fissile, finely granular limestone	Madison Limestone
4,110-4,120	Siltstone	Gray-red, fissile siltstone	
4,130-4,150	LCM	Lost circulation material (LCM)	
4,150-4,170	Limestone	Very pale orange, fissile, finely granular limestone	
4,170-4,190	Limestone	Very pale orange, fissile, finely granular limestone, LCM	
4,200-4,230	Limestone	Pale yellow-brown, fissile, finely granular limestone, LCM	
4,230-4,290	Limestone and Siltstone	Pale yellow-brown to moderate orange-pink, finely granular, fissile limestone, rare light green siltstone	
4,290-4,300	Limestone and Shale	Very pale orange, fissile, finely granular limestone, dark gray shale	
4,310-4,380	Limestone	Very pale orange, fissile, finely granular limestone	
4,380-4,390	Limestone	Very light gray, light green-gray, very light brown-gray, and moderate red-brown, fissile, finely granular limestone	
4,390-4,410	Limestone	Moderate red-brown, shaley limestone	
4,420-4,440	Limestone	Gray-orange-pink, fissile, finely granular limestone	
4,440-4,450	Limestone and Siltstone	Gray-orange-pink, fissile, finely granular limestone, light green bedded siltstone	
4,450-4,460	Limestone and Siltstone	Olive-gray and very pale orange, fissile, finely granular limestone, light green finely bedded siltstone	
4,460-4,480	Limestone and Siltstone	Olive-gray, white, and very pale orange, fissile, finely granular limestone, light green, finely bedded siltstone	
4,480-4,510	Limestone	Medium gray and white, fissile limestone	
T.D. = 4,510 feet			

Note: For all logs, reported colors were determined using the GSA Rock Color Chart on wet samples.

**BOXELDER WELL NO. 6
STEP-RATE TEST SUMMARY
APRIL 4, 2007**



BOXELDER NO. 6

INITIAL AIRLINE READING

279

SWL=586.5

AIRLINE SETTING

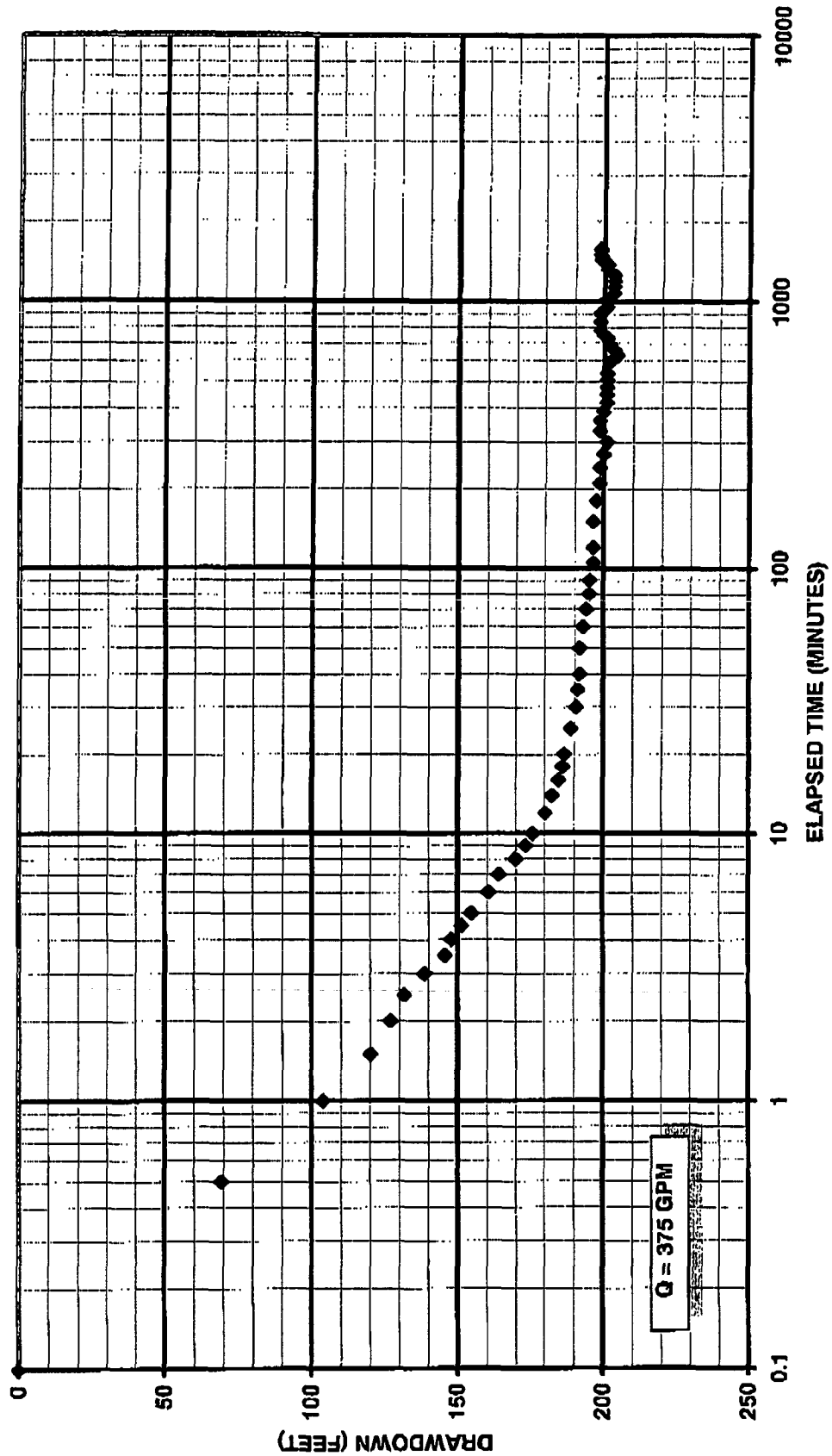
1231

STEP DURATION

60 minutes

s	Q	Q/s	
27.72	75	2.7	267
109.7	150	1.4	231.5
99.33	225	2.3	236
152.46	300	2.0	213
212.52	375	1.8	187 approx
225	395	1.8	

BOXELDER WELL NO. 6
CONSTANT-RATE TEST
APRIL 5-6, 2007



BOXELDER NO. 6

INITIAL AIRLINE READING

279

SWL=586.5

AIRLINE SETTING

1231

STEP DURATION

60 minutes

s	Q	Q/s	
27.72	75	2.7	267
110.88	150	1.4	231
99.33	225	2.3	236
152.46	300	2.0	213
212.52	375	1.8	187 approx

CONSTANT RATE TEST

Q	375 GPM	
		278
0.1	0	278
0.5	69.3	248
1	104.0	233
1.5	120.1	226
2	127.1	223
2.5	131.7	221
3	138.6	218
3.5	145.5	215
4	147.8	214
4.5	151.3	212.5
5	154.8	211
6	160.5	208.5
7	164.0	207
8	169.8	204.5
9	173.3	203
10	175.6	202
12	180.2	200
14	182.5	199
16	184.8	198
18	186.0	197.5
20	186.5	197.25
25	188.8	196.25
30	190.6	195.5
35	191.2	195.25
40	191.7	195
50	191.7	195
60	192.9	194.5
70	194.0	194
80	195.2	193.5
90	195.2	193.5
105	196.4	193
120	196.4	193
150	196.4	193
180	197.5	192.5
210	198.7	192
240	198.7	192
270	199.8	191.5
300	201.0	191
330	198.7	192
360	198.7	192
390	199.8	191.5
420	201.0	191
450	201.0	191
480	201.0	191
510	201.0	191
540	201.0	191
600	202.1	190.5
630	204.4	189.5
660	203.3	190
690	202.1	190.5

14:30:00
15:00:00
15:30:00
16:00:00
16:30:00
17:00:00
17:30:00
18:00:00
19:00:00
19:30:00
20:00:00
20:30:00

731	201.0	191	21:11:00
750	199.8	191.5	21:30:00
780	198.7	192	22:00:00
840	198.7	192	23:00:00
900	198.7	192	0:00:00
960	201.0	191	1:00:00
1020	201.0	191	2:00:00
1080	203.3	190	3:00:00
1140	203.3	190	4:00:00
1200	203.3	190	5:00:00
1260	203.3	190	6:00:00
1320	201.0	191	7:00:00
1380	201.0	191	8:00:00
1440	198.7	192	9:00:00
1500	198.7	192	10:00:00
1560	198.7	192	11:00:00
1575	198.7	192	11:15:00
	110.9	230	11:16:00
	39.3	261	11:17:00
	16.2	271	11:18:00
	12.7	272.5	11:19:00
	16.2	271	11:20:00
	10.4	273.5	11:22:00
	6.9	275	11:24:00
	4.6	276	11:26:00
	2.3	277	11:28:00
	0.0	278	11:30:00
	-0.6	278.25	11:32:00
	-1.2	278.5	11:34:00
	-2.3	279	11:36:00
	-2.9	279.25	11:38:00
	-4.6	280	11:40:00
	-4.6	280	11:45:00
	-4.6	280	11:50:00
	-6.9	281	12:00:00

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date MAY 15, 20 07

RECEIVED OF City of Box Elder 520 N Ellsworth RD # 9C Box Elder SD 57719

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

Fee for Application for Permit No. <u>2616-2</u> to Appropriate Water, to construct and to put water to beneficial use	225	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 _____		
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	225 00

No.

03049

By

Garland Eschelle

Chief Engineer

Buhler, Ken

From: Ray Bettmeng [rbettmeng@envisiondesigninc.com]
Sent: Tuesday, July 17, 2007 10:54 AM
To: Buhler, Ken
Cc: Julie@westonengineering.com; lynn@boxelder.us
Subject: Legal Description for Box Elder Well Lot #6, Prairie Oak Subdivision

Ken;

We have looked at the legal description and our plat appears to be correct. The lot is located on the north side of Sunnydale Road. See below for the RapidMap and MicroStation mapping information.

We locate to the 16th and have it listed as:

Located in the NE 1/4 of the NW 1/4 Section 25, Township 2 North, Range 8 East, B.H.M.
City of Box Elder, Pennington County, SD

If we would have broken it town to the 64th, the site would be - Located in the SE 1/4 of the NE 1/4 of the NW 1/4 Section 25, etc., however, we locate to the 16th and have this correct.

Please call or email if you have any further questions.

Thank you

Ray Bettmeng
342-9470

1222-002PLAT01.dgn, 3D Design (3D - V8 DGN) - MicroStation V8 2004 Edition

File Edit Element Settings Tools Utilities Workspace Window Help

Zoom In

Zoom Ratio: 2.00
Mo

EASEMENT-LIN

6

RCE

1

View 1 - 3D Design - Top

PLAT OF LOT WELL NO. 6, PRAIRIE O

LOCATED IN THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 2 NOR
CITY OF BOX ELDER, PENNINGTON COUNTY, SOUTH D

SHEET 1 OF 1

UNPLATTED

UNPLATTED

S 89°57'59" E
100.00'

20' ACCESS AND
UTILITY EASEMENT
BOOK 161
PAGES 3486-3488

UNPLATTED

LOT
WELL NO. 6
.34± ACRES
(±15,000 SQ FT)
10'

N 0°2'01" E 150.00'

S 0°2'01" W 150.00'

Distance: 0.000000

Angle: N 90°0'0.000000" E

17.3

Zoom In > Enter zoom center point

PLOTDLG unloaded.

EASEMENT-L

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1222-002PLAT01.dgn, 3D Design (3D - V8 DGN) - MicroStation V8 2004 Edition

File Edit Element Settings Tools Utilities Workspace Window Help

Zoom In

Zoom Ratio: 2.00
Mo

EASEMENT-LIN

6

RCE

1

View 1 - 3D Design - Top

SHEET 1 OF 1

UNPLATTED

S 89°57'59" E
100.00'

UNPLATTED

20' ACCESS AND
UTILITY EASEMENT
BOOK 161
PAGES 3486-3488

N 0°2'01" E 150.00'

LOT
WELL NO. 6.34± ACRES
(±15,000 SQ FT)

10'

N 89°57'59" W
100.00'

S 0°2'01" W 150.00'

UNPLATTED

S 89°57'59" E
177.14'

SUNNYDALE ROAD

Distance: 0.000000

Angle: N 90°0'0.000000" E

N 90°0'0.000000" E

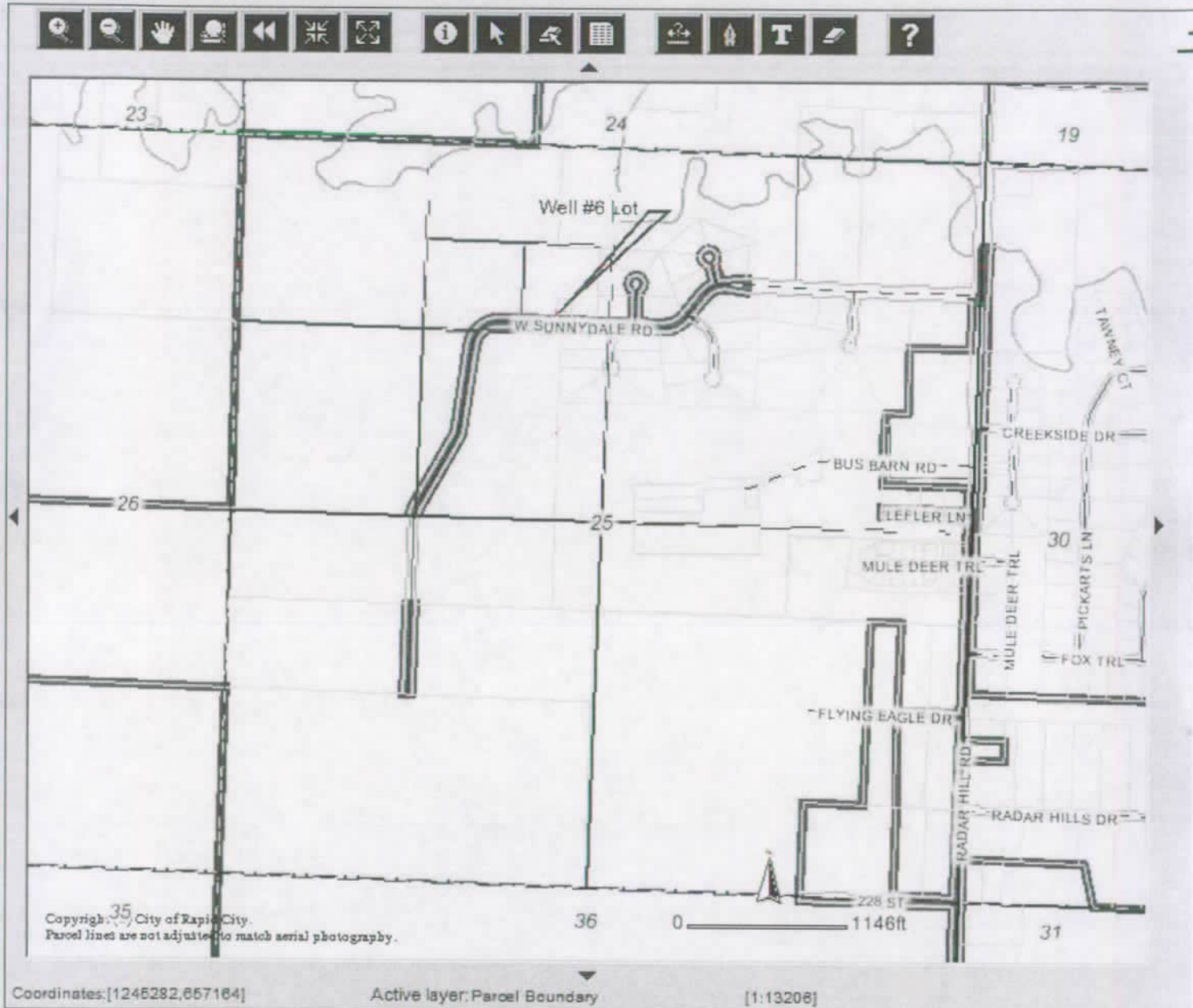
Zoom In > Enter zoom center point

PLOTDLG unloaded.

EASEMENT-L

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RapidMap - Windows Internet Explorer

<http://www.rcgov-gis.org/rapidmap/main.do>

Done

Start Timekeeper 80.6°:Rapi... Inbox - Mic... 1222.002_... 1222-002P... 2 Intern... Type t

Ray Bettmeng
enVision Design, Inc.
706 West Boulevard
Rapid City, SD 57701
Phone: (605) 342-9470
Fax: (605) 342-2377

07/17/2007



**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. 2616-2, City of Box Elder**

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. 2616-2, City of Box Elder, c/o Al Todd, 520 N. Ellsworth Road, Suite 9C, Box Elder SD 57719.

The Chief Engineer is recommending APPROVAL of Application No. 2616-2 for a 20 year term 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. 2616-2 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. 2616-2 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. The city of Box Elder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison Aquifer.

See report on application for additional information.

Garland Erbele, Chief Engineer
July 26, 2007

REPORT FOR WATER PERMIT APPLICATION NO. 2616-2
CITY OF BOX ELDER
JULY 13, 2007

Water Permit No. 2578-2 appropriates 290 acre-feet annually with a maximum diversion rate of 0.67 cubic feet of water per second from one well completed into the Madison aquifer, 4,511 feet deep, located in the NE¼ NW¼ Sec. 25, T2N-R8E. Water Permit Application No. 2616-2 proposes to increase the appropriation from the well authorized by Water Permit No. 2578-2 an additional 147 acre-feet annually, and to authorize an additional diversion rate of 0.33 cfs. The combined appropriation from this well by Water Permit No. 2578-2 and this application, if approved, would be 437 ac-ft/yr with a maximum diversion rate of 1.00 cfs. The water will be used for municipal use.

Water Source: Madison aquifer (MDSN)

Geology and Aquifer Characteristics:

A description of the Madison aquifer in this area is included in the report for Water Permit No. 2578-2 (Water Rights, 2006). The completion report received for the well that will be used to supply water for proposed appropriation identifies the top of the Madison aquifer at 4,024 feet below grade. The static water level of the well was reported to be 585 feet below grade in April 2007. The report identifies that test pumping the well for 24 ½ hours at a rate of 375 gallons per minute resulted in 201 feet of drawdown in the production well.

Water Availability:

The additional volume of water requested by this application (147 ac-ft/yr) will basically have an insignificant impact on a water balance for the Madison aquifer. For all practical purposes, the availability of unappropriated water from the Madison aquifer will not be impacted if this application is approved; consequently unappropriated water is available for this appropriation.

Effect on Existing Water Rights:

Wells, including domestic wells, completed into aquifers shallower than the Madison aquifer (i.e. Inyan Kara aquifer, Sundance aquifer, Minnekahta aquifer and Minnelusa aquifer) are not expected to be affected by this proposed appropriation since the lower Minnelusa aquifer is a confining bed that isolates the Madison hydraulically from shallower aquifers.

There are no water rights/permits appropriating water from the Madison aquifer within two and one-half miles of the well that is to be used to supply this application. The Madison aquifer well used by Water Permit Nos. 1807-1 and 1875-1 for the 28th Bomb Wing is located about 2.65 miles northeast of the well to be used to supply this appropriation. A future use area designated by Rapid City's Future Use Permit No. 2086-2, is located about five miles west of the well to be used to supply this application.

Since the Madison is under artesian conditions in this area, drawdown from pumping a well may extend over a fairly large area. The specific capacity of the well that is to be used to supply this appropriation equates to 1.87 gallons per minute per foot of drawdown at 375 gallons per minute. If a linear relationship is assumed, drawdown in the production well at 1.67 cfs would be

approximately 404 feet. Projecting the data obtained from a step drawdown test conducted on this well predicts a drawdown of around 280 feet at 1.67 cfs.

The distance between the well to be used to supply this appropriation and existing appropriations is great enough to minimize well interference that may result from these appropriations. At this time, it is not practical to attempt to quantify the specific affect this well may have on existing wells since aquifer characteristics have not been determined for this area, and the aquifer characteristics of the Madison can vary considerably within a short distance.

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 existing water rights, including domestic wells.

Water Management Board rules 74:02:04 and 74:02:05, which were promulgated pursuant to SDCL 46-6-6.1, provide for the regulation of large capacity wells to the degree necessary to maintain an adequate depth of water for a prior appropriator in wells that have the ability to produce water **independent of artesian head pressure**. Simply put, the pump placement in a prior appropriator's well is not necessarily protected.

If the water levels in the Madison aquifer were to decline, owners of existing wells bear the responsibility of lowering the pump inlet in the well to the top of the aquifer, if necessary. In this area, the top of the aquifer is around 3,400 feet below the potentiometric surface, (i.e. there is approximately 3,400 feet of artesian head pressure). Increased lift would decrease the pump discharge; or require a larger pump or a different type of a pump to maintain the same output.

An increase in operating expenses that may result from interference between wells is not necessarily an adverse impact. The Water Management Board considered this situation in the matter of Water Permit Application 2313-2, Coca-Cola Bottling Company of the Black Hills (Water Rights, 1995). The Board adopted findings of fact and conclusions of law that basically state that if the 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.

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:

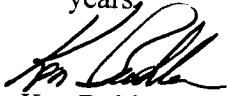
(1) Sufficient information is available to determine whether any significant adverse hydrologic effects on the supply of water in the Madison formation would result if the proposed withdrawal were approved; and

(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 these permits without a term limitation of 20 years.

Conclusions:

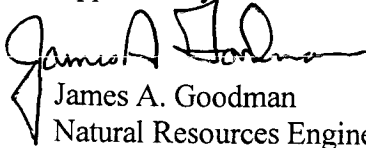
1. The Madison aquifer is a viable aquifer in this area.
2. This diversion proposed by this application will not adversely impair existing water rights.
3. Information is not available to justify issuing these permits without a term limitation of 20 years.



Ken Buhler

Natural Resources Engineering Specialist

Approved by



James A. Goodman

Natural Resources Engineering Director

References:

Water Rights Program, 2006, "Water Permit File No. 2578-2", South Dakota DENR-Water Rights Program Joe Foss Building, Pierre,

RECEIVED

AUG 10 2007

WATER RIGHTS
PROGRAM

Form 8

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:

August 2, 2007

August 9, 2007

Cost of Printing One hundred thirteen

dollars and sixty-eight cents (\$113.68)

Patricia K. Van Patten
(Signature)

Legal Advertising Rep.
(Title)

08/09/07
(Date Signed)

Aug. 2, 9

L2667508

**NOTICE OF
APPLICATION NO. 2616-2
TO APPROPRIATE WATER**

Notice is given that the City of Box Elder, 520 N. Ellsworth Rd., Suite 9C, Box Elder, SD 57719, has filed an application for a water permit to increase the diversion rate authorized by Water Permit No. 2578-2. Water Permit No. 2578-2 appropriates 290 acre-feet annually at a maximum diversion rate of 0.67 cubic feet of water per second (cfs) from one well completed into the Madison Aquifer (4450 feet deep) located in NE1/4NW1/4 Section 25, T2N-R8E. This application proposes to increase the water appropriation from the existing well by an additional 147 acre-feet annually and to authorize an additional diversion rate of 0.33 cfs. The combined appropriation from this well by Water Permit No. 2578-2 and this application, if approved, will be 437 acre feet annually at a maximum diversion rate of 1.00 cfs. The water is for municipal use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2616-2 for a 20-year term 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application 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 recommendation. 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 August 20, 2007.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, 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 this application.

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



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

July 26, 2007

Rapid City Journal
PO Box 450
Rapid City SD 57709

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 2616-2 to Appropriate Water to be published twice. Please publish the first notice on August 2, 2007 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 Box Elder, 520 N Ellsworth Rd # 9C, Box Elder SD 57717 (Ph # 605-923-1408).

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-----

No. 2616-2

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

Date _____

We are in receipt of your letter of July 26, 2007 enclosing Notice to Appropriate Water by Application No. 2616-2 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper



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.

July 26, 2007

City of Box Elder
520 N Ellsworth Rd Suite 9c
Box Elder SD 57719

Dear Mr. Todd:

Water Permit Application No. 2616-2 for municipal use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Publisher of the Rapid City 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 notice, the recommendation of the Chief Engineer and report on the application is 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 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. 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 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.

Instruction to Newspaper - Publish first Notice on August 2, 2007 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 2616-2 to Appropriate Water

Notice is given that the City of Box Elder, 520 N Ellsworth Rd, Suite 9C, Box Elder SD 57719 has filed an application for a water permit to increase the diversion rate authorized by Water Permit No. 2578-2. Water Permit No. 2578-3 appropriate 290 acre-feet annually at a maximum diversion rate of 0.67 cubic feet of water per second (cfs) from one well completed into the Madison Aquifer (4450 feet deep) located in NE ¼ NW ¼ Section 25-T2N-R8E. This application proposes to increase the water appropriation from the existing well by an additional 147 acre-feet annually and to authorize an additional diversion rate of 0.33 cfs. The combined appropriation from this well by Water Permit No. 2578-2 and this application, if approved, will be 437 acre feet annually at a maximum diversion rate of 1.00 cfs. The water is for municipal use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2616-2 for a 20-year term because 1) the proposed diversion can be developed with out unlawful impairment of existing rights, 2) the proposed use is a beneficial use and 3) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on these applications, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application 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 recommendation. 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 August 20, 2007.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, 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 this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

OCT 17 2007

Al Todd
City of Box Elder
520 N Ellsworth RD #9C
Box Elder SD 57719

Dear Mr. Todd:

Enclosed is Water Permit No. 2616-2 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

RECEIVED

JAN 22 2008

WATER RIGHTS
PROGRAMNOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USEDate Jan 17, 2008TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181FROM: CITY OF BOX ELDER
(name)
520 N. ELLSWORTH RD, STE 9C
(address)
BOX ELDER SD 57719 605 923-1408
(city, state, zip) (phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

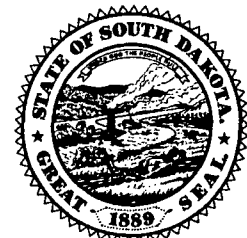
Water Permit No. 2578-2 2616-2 states that the water use system is to be constructed by Dec 12, 2007, and water is to be put to beneficial use by Jan 5, 2007.
(date) (date)

The water use system was completed on Dec 12, 2007.
(date)

Applying the water to beneficial use was completed on Jan 5, 2007.
(date)

You may schedule an investigation so that the water license may be issued.

Al Dardel
(signature)



Permit No. 2616-2 & 2578-2
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, 6/9/2010, made a thorough examination of the water use system constructed by City of Box Elder, 520 N Ellsworth Rd, Suite 9C, Box Elder SD 57719 holder of Permit No. 2616-2, bearing the priority date of May 15, 2007. Permit No. 2616-2 proposes to increase the diversion rate and annual volume diverted from the well authorized by Water Right No. 2578-2. Water Right No. 2578-2, with a priority date of February 3, 2006, appropriates 0.67 cfs (290 acre-feet annually). This permit increases the water appropriation from 0.67 cfs to a total of 1.0 cfs (437 acre-feet annually) from the same well (Madison Aquifer) for municipal purposes, in Pennington County.

Inspection contact and relationship to
permit holder, if applicable:

Al Todd,
City of Box Elder

A. Works used to divert the water:

A Centri-lift submersible pump - 448 gallons per minute capacity (1.0 cfs).

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

Box Elder municipal distribution system.

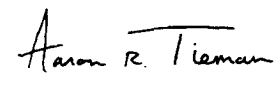
The system is in the following condition good. The point of diversion (well) is located specifically at Lat/Lon - N44.108183/W-103.102153 which is the approximately 1,000 feet south and 2300 feet east of the NW corner of Section 25, T2N, R8E. The works are capable of diverting 1.0 cfs which is to be used for municipal purposes.

Water has been put to beneficial use to the maximum extent and the license should be issued for 1.0 cfs (437 acre feet annually).

All structures, wells and lands on map Y
Exceptions to compliance are: none.

Comments: **The applicable portions of Water Permit No. 2578-2 will be incorporated into No. 2616-2.**
Priority dates:

- **February 3, 2006 for 0.67 cfs (290 acre feet annually) as established under No. 2578-2**
- **May 15, 2007 for 0.33 cfs (147 acre feet annually) as established under No. 2616-2**



Aaron Tieman
Natural Resources Project Engineer
DENR, Water Rights Program

Date report completed: June 24, 2010

FIELD INVESTIGATION REPORT FOR PERMIT NO. 2616-2 & 2578-2

DATE OF INVESTIGATION:	June 9, 2010
NAME & ADDRESS OF PERMIT HOLDER	City of Box Elder 520 N Ellsworth Rd, Suite 9C Box Elder, SD 57719
NAME & ADDRESS OF INVESTIGATION CONTACT/ RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE	Al Todd
DIVERSION POINT LEGAL LOCATION	NE¼ NW¼ Section 25, T2N-R8E
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 Permit No. 2578-2.**

WELL INFORMATION:

- 1) Well Drilling Firm: **Weston Engineering**
- 2) No. of Wells **One**
- 3) Depth(s) **4450** feet
- 4) Well log is available **yes**
- 5) Comment:

Casing:

- | | | |
|--------------------------------------|------------------------------------|----------------------------------|
| 1) Diameter: <u>16</u> inches | Diameter: <u>10¾</u> inches | Diameter: <u>7</u> inches |
| 2) Length: <u>40</u> feet | Length: <u>1427</u> feet | Length: <u>2683</u> feet |
| 3) Type: <u>Steel</u> | Type: <u>Steel</u> | Type: <u>Steel</u> |

Screen:

- 1) Type: **Manufactured**
- 2) Length: **509** feet
- 3) Static water level: **585** feet

Pump:

- 1) Make: **Centri-Lift**
- 2) Model: **GCS III**
- 3) Capacity: **450** 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**

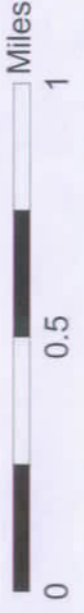
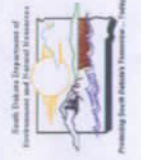
COMMENTS: Additional capacity for well originally estimated at 300 gpm, application information for Permit No. 2578-2 on file.

Water Right 2616-2 & 2578-2
City of Box Elder
June 24, 2010



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 14 2010

2578-2
2616-2

Al Todd
City of Box Elder
520 N Ellsworth Rd Suite 9C
Box Elder SD 57719

Dear Mr. Todd:

Enclosed is Water License No. 2616-2. 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. 2616-2, 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.

The applicable portions of Water Permit No. 2578-2 were incorporated into Water License No. 2616-2. 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

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 2616-2

(1) The City of Box Elder, 520 N Ellsworth Rd, Suite 9C, Box Elder SD 57719 made Application No. 2616-2, May 15, 2007 for a water permit to increase the diversion rate authorized by Water Permit No. 2578-2 by a rate of 0.33 cubic feet of water per second (cfs) with an increase in the annual volume of 147 acre feet. The existing Madison Formation well is located in Pennington County, South Dakota and used for municipal purposes. Water Permit No. 2616-2, with a priority date of May 15, 2007 was approved August 20, 2007 and issued to the city for diversion of water with construction of the described water supply system to be completed on or before May 8, 2011 (established by No. 2578-2) and for the application to beneficial use of said water on or before August 20, 2016.

Water Permit No. 2578-2, with a priority date of February 3, 2006 authorizes appropriation of 290 acre feet of water annually at a rate of 0.67 cfs. The increase in volume and diversion rate authorized by Water Permit No. 2616-2 allowed a combined appropriation of 437 acre feet annually and a maximum diversion rate of 1.00 cfs. The applicable portions of Water Permit No. 2578-2 are incorporated into Water License No. 2616-2.

(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 1.00 cubic feet of water per second for beneficial use. The location of the diversion point is:

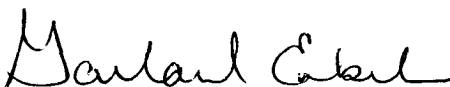
- 1,000 feet south and 2,300 feet east of the NW corner of Section 25, T2N, R8E (NE ¼ NW ¼).

(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 Box Elder, 520 N Ellsworth Rd, Suite 9C, Box Elder SD 57719 the holder and/or owner of Incorporated Water Right No. 2616-2 is issued a license to appropriate water, the right to use 1.00 cubic feet of water per second with an annual volume of 437 acre feet from ground water (one well into the Madison Formation) with priority dates of February 3, 2006 (0.67 cfs – 290 acre feet) and May 15, 2007 (0.33 cfs – 147 acre feet) from the location specified in (2) of this license for municipal use.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 2616-2 and subject to the following qualifications:

- In accordance with SDCL 46-1-14 and 46-2A-20, Permit Nos. 2578-2 and 2616-2 were 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. *Incorporated Water Right* No. 2616-2 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 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.
- The city of Box Elder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison Aquifer.



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

JUL 14 2010

date

