

WATER PERMIT NO. 1761-1

Name of Applicant: Wharf Resources, Inc.

Address: 10928 Wharf Road, Lead SD 57754

Phone: 605 584-1441

Amount of Water Claimed: 0.67 cfs (an add'l 179.2 acre-feet)

Total Acres: NA

Source of Water Supply: groundwater

Water to be used for: industrial

County: Lawrence

Type of Waste Disposal System:

Location: about 2 miles east of Savoy

PRIORITY

Date Received: 12-24-01

Fee: \$225

Corrected Application Received:

Period of Annual Use: January 1 – December 31

Remarks: Increases the acre-feet amount authorized by Water Right No. 1493-1 from 97 AF to a total of 276.2 AF

Diversion Point: SW ¼ SE ¼ Sec 33-T5N-R2E

Land to be Irrigated: NA

Depth of Well: 520 feet deep

Well Driller: : Taylor Drilling Co.

Remarks:

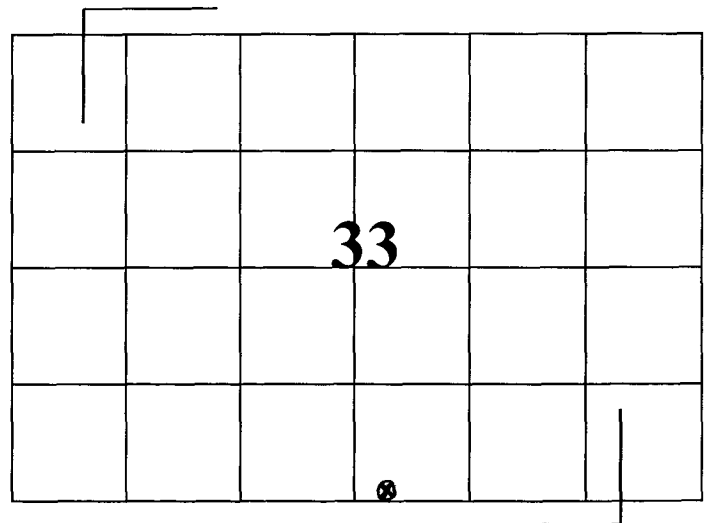
Type of Map: topo

Prepared by: Ken Buhler

Reviewed and the Number Assigned on: 1-02-02

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



SOUTH DAKOTA
WATER PERMIT NO. 1761-1

Date of first receipt of application December 24, 2001.

Date of return to applicant for corrections, amendments or changes December 27, 2001.

Date of receipt of corrected application December 31, 2001.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1761-1 to Wharf Resources (USA), Inc., 10928 Wharf Road, Lead SD 57754 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. 1761-1 appropriates an additional 0.314 cubic feet of water per second (cfs) by increasing the diversion rate and total annual volume of water authorized by Water Right No. 1493-1. Water Right No. 1493-1 authorizes 0.356 cfs (97 acre-feet annually) from one well located in the SW ¼ SE ¼ Section 33-T5N-R2E. This permit appropriates an additional 0.314 cfs (179.2 acre-feet annually) from the existing well for a total of 0.67 cfs (276.2 acre-feet annually).
2. The water appropriated shall be used for the purpose of supplying water for industrial purposes and groundwater quality monitoring 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. 1761-1 is March 25, 2002.
5. The date from which applicant may claim right is December 24, 2001.
6. One-fifth of the construction is to be completed on or before September 25, 2004.
7. All construction is to be completed on or before March 25, 2007.
8. Water is to be put to beneficial use on or before March 25, 2011.
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. 1761-1 is issued for a twenty year term. Pursuant to SDCL 46-2A-21, the twenty year term may be deleted at any time during the twenty year period or following its expiration. If the twenty 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. 1761-1 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.

(continued)

Water Permit No. 1761-1

Wharf Resources, Inc.

Page 2

3. Water Right No. 1493-1 and Permit No. 1761-1 authorize a total annual withdrawal of 276.2 acre feet of water.

WATER MANAGEMENT BOARD

By: Garland Erbele

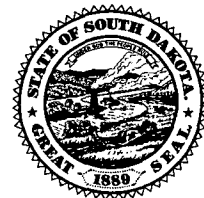
Garland Erbele, Chief Engineer

Water Rights Program

Department of Environment and Natural Resources

APR 16 2002

date





Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>1761-1</u> (office use only) Hydrologic Unit <u>10120203</u>
	Basin <u>Belle Fourche River</u>
	Newspaper <u>Lawrence G. Centennial, Deadwood</u>

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

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

Increased div. rate + A.F. authorized by Water Right No. 1493-1

1. Name of Applicant Wharf Resources (U.S.A.), Inc. Phone (605) 584-1441
(check one) ☒ Owner ☐ Tenant/lessee

Mailing Address 10928 Wharf Road, Lead State SD 57754
(Street, RR, or Box and City) (Zip Code)

2. Amount of water claimed 0.314 cfs add'l 140 add'l 179.2 AF add'l
0.67 *CFS or 300 **GPM 276.2 total ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply One 520 foot deep well in the Madison Formation

4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)
One well in SW1/4 SE1/4, Section 33, T.5N., R.2E., B.H.M.
County Lawrence

5. County or counties where water will be used Lawrence

6. Annual period during which water is to be used January 1 through December 31 (On demand)

7. 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)

Please reference attached letter of 12/14/01.

The drillers log, a signed map, and other pertinent information regarding the well has been submitted previously and is on file with the SD DENR with Water License No. 1493-1.

STATE OF SOUTH DAKOTA) SS
County of Lawrence

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 A. Begeman, 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 A. Begeman

Subscribed and sworn to before me this 14 day of December 2001

Ginda M. Dahl

Notary Public in and for the State of South Dakota
MY COMMISSION EXPIRES
MARCH 3, 2002

Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter 9-7/8" Depth 520 feet
- b) Casing Type Steel Diameter 7" ID Thickness Schedule 40
- c) Screen Type Slotted Pipe Diameter 7" ID Thickness Schedule 40
- d) Gravel Pack N/A Length of Gravel Pack N/A
- e) Depth to Top of Water Bearing Material 161 feet
- f) Depth to Water (ground surface to water level) 190 feet
- g) Distance to nearest existing domestic well:
- On applicants property 7000 feet On property owned by others Over 2 miles

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) _____
- b) System Capacity (gallons) _____ Year Constructed _____
- c) Connected to the City of _____ Sanitary System

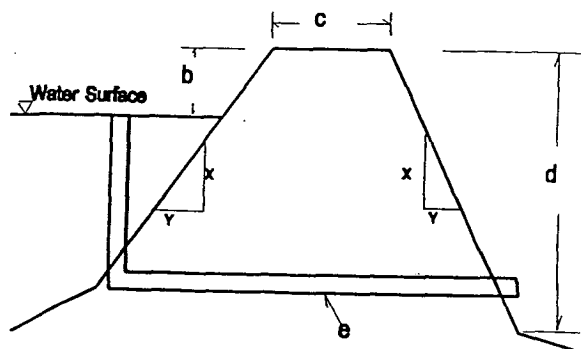
3. Dugout Information

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

4. Water Storage Dams

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

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



- b) Freeboard _____
- c) Crest Width _____
Crest Length _____
- d) Height _____
- e) Primary Outlet Capacity _____
If pipe, diameter _____
- f) Secondary Spillway Capacity _____
Spillway Width _____
- g) X & Y Slope _____
Upstream _____
Downstream _____
- h) Surface Area of Impoundment _____
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

N2 417032

Pierre, December 31, 20 01

RECEIVED OF Wharf Resources Inc., HC 37 Box 811, Lead, SD 57754-9710
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
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. _____

~~25~~ 00
50 00

Fee for Filing Transfer Form _____

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

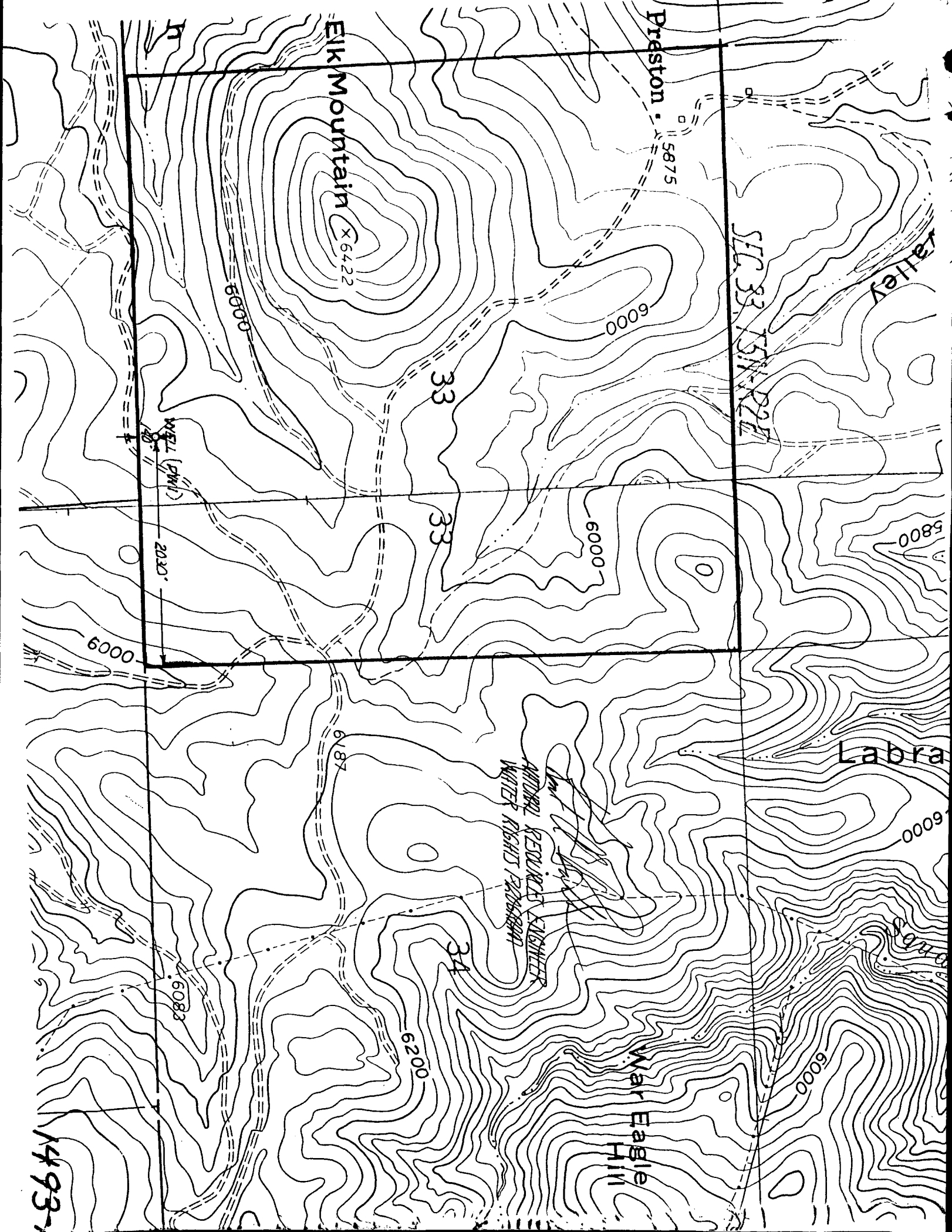
275 00

By

Darland Erbele

Chief Engineer

gm



Elk Mountain

6422

Preston

5875

SEC 33 T5N R22E

Labrey

Labra

War Eagle

LAND & WATER RIGHTS ENGINEER
WATER RIGHTS PROGRAM

WELL (PMI)

2030'

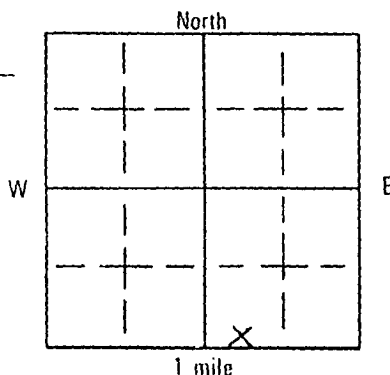
1493

SOUTH DAKOTA WATER WELL COMPLETION REPORT

10-85

Location SW 1/4 SE 1/4 Sec 33 Twp 5N Rg 2ECounty Lawrence

Please mark well location with an "X"

Well Completion Date April 13, 1990

PROPOSED USE:

☐ Domestic ☐ Municipal ☐ Test Holes
☐ Irrigation ☒ Industrial ☐ Stock

Method of Drilling.

Air Rotary

CASING DATA:

☒ Steel ☐ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>42</u> LB/FT	<u>10 3/4</u> IN	<u>0</u> FT	<u>150</u> FT	<u>14 3/4</u> IN
<u>23</u> LB/FT	<u>7</u> IN	<u>0</u> FT	<u>520</u> FT	<u>9 7/8</u> IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUT:

Was the well grouted? ☒ YES ☐ NOTo what depth? 245 FEETWhat is grouting material? cementIf cement, number of sacks? 158Describe grouting procedure 10 3/4" casing was pressure grouted to 150'. The 7" casing was grouted to 245' with a tremie lineWhat was grout weight? 15 LB/GALSCREEN: ☒ Perforated pipe ☐ ManufacturedDiameter 7 IN Length 244 FEETMaterial SteelSlot Size 1/2" x 1/2" Set From 268 Feet To 512 Feet

Slot Size _____ Set From _____ Feet To _____ Feet

Slot Size _____ Set From _____ Feet To _____ Feet

Other information _____

Was a packer or seal used? ☒ YES ☐ NOIf so, what material? rubberDescribe packer(s) and location? rubber shale cup placed at 245'Was well disinfected upon completion? ☒ YES ☐ NOExplain chlorine solution circulated in wellBacteriological analysis ☐ YES ☒ NO

Laboratory sent to _____

Well Owner:

Name WHARF RESOURCES c/o John LawsonAddress P.O. Box 446 Deadwood, SD 57732

Well Log:

Depth

Formation	From	To
Back Fill	0	11
tan to brown clay	11	25
buff limestone	25	95
no return	95	103
cream to white limestone	103	170
yellow weathered ^{Dolomite} limestone	170	198
tan limestone	198	210
yellow weathered ^{Dolomite} limestone	210	216
tan limestone	216	345
tan limestone w/ numerous voids	345	355
cream limestone	355	495
chart	495	510
tan limestone	510	520

STATIC WATER LEVEL 193 Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

If other: specify _____

Can well be completely shut in? _____

WELL TEST DATA:

☒ Pumped☐ Bailed

Describe: _____

☐ Other

Pumping Level Below Land Surface

365 ft. After 24 Hrs. pumped 165 GPM

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

REMARKS:

Perforations are vertical
torch-cut slots

100' of slots of 4 rows on 2' centers

144' of slots of 3 rows on 3' centers

(approx. 350 slots)

This well was drilled under license # 331

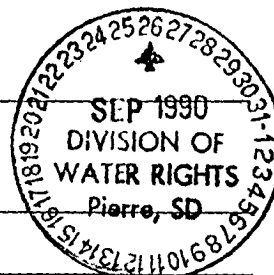
And this report is true and accurate.

Drilling firm TAYLOR DRILLING COMPANY

Signature of License Representative:

Robert Taylor

Signature of Well Owner:



Date _____

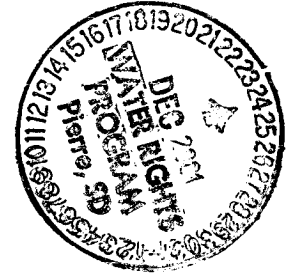
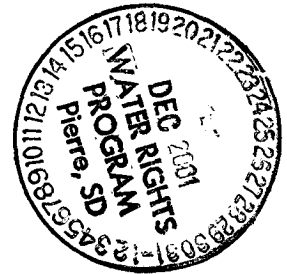


WHARF RESOURCES (U.S.A.), Inc.

A wholly owned subsidiary of Goldcorp Inc.

December 14, 2001

Mr. Eric Gronlund
Water Rights Program
SD DENR
Joe Foss Building
523 East Capitol
Pierre, SD 57501



RE: Wharf Resources' Water Rights Permit Application for Well PW-1

Dear Eric:

Please find enclosed Wharf's Application For Permit To Appropriate Water Within The State Of South Dakota: 2 copies of Form 2 - Application for uses other than irrigation and 2 copies of Form 2A - Supplemental Information. The drillers log, a signed map, and other pertinent information regarding the well have been submitted previously and are on file at the SD DENR with Water License No. 1493-1.

Water License No. 1493-1 is currently held by Wharf Resources to allow a diversion of 0.356 cfs (97 acre-feet annually) from ground water well PW-1. Wharf would like to increase the diversion to 0.67 cfs and 276.2 acre-feet annually. This water will be used in Wharf's gold processing system as make up water and in the neutralization circuit. Currently Wharf is utilizing both wells PW-1 (License No. 1493-1) and HDH-8A (License No. 1346-1) for this water. As the water in well HDH-8A contains high nitrate levels, it would benefit Wharf to keep this water out of the processing system. The water from well HDH-8A will still be utilized in other parts of the mine.

Please call me at (605) 584-4112 if you have any questions or if additional information is required.

Sincerely,

Terese Hruska
Environmental Coordinator

cc: John Begeman
Carol Koerner
Jeff Fuerstenau
File: 203-10-15



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

December 27, 2001

Terese Hruska
Wharf Resources, Inc.
HC 37 Box 811
Lead SD 57754-9710

Dear Ms. Hruska:

Thank you for submitting the *Application for a Permit to Appropriate Water* to increase the diversion rate and acre-feet authorized by Water Right No. 1493-1.

We have received the check for \$275. The application filing fee based on 276.2 acre-feet will be \$250. In addition to the application filing fee, the Water Rights Program collects the \$50 licensing fee at the time of filing (\$300 total). Please submit an additional \$25 to be applied towards the licensing of the water permit.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352

Water Rights Program - File Documentation

NAME: Terese Hruska, Wharf Resources

ADDRESS: Lead SD

DATE: 1-2-2002 **COUNTY:** LA **TELEPHONE:** 605 584-1441

RE: Pending application

COMMENTS:

Terese Hruska called regarding my December 27th letter requesting additional fee. Ms. Hruska stated they were requesting a total of 276.2 acre-feet. Water Right No. 1493-1 authorized 97 acre-feet. The new application was for an additional 179.2 acre-feet.

The original \$275 fee submitted would be correct for 179.2 acre-feet. I told Ms. Hruska to disregard my letter and we would continue the processing of the application.

Karen Schlaak

Karen Schlaak
Environmental Scientist

WATER PERMIT APPLICATION No. 1761-1
WHARF RESOURCES, INC.
JANUARY 10, 2002

Water Permit Application No. 1761-1 proposes to increase the diversion rate and annual withdrawals from an existing well authorized by Water Right No. 1493-1. Water Right No. 1493-1 authorizes 0.356 cubic feet per second (cfs), (97 acre-feet annually) from one well located in the SW¼ SE¼ Sec. 33, T5N-R2E. This application proposes to appropriate an additional 0.314 cfs (179.2 acre-feet annually) from the existing well for a total of 0.67 cfs (276.2 acre-feet annually). The water is used for industrial purposes and groundwater quality monitoring.

AQUIFER: Madison (MDSN)

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Madison aquifer is typically contained within the upper portion of the Madison (Pahasapa) Limestone where solution caverns and other Karst features are prevalent. Although the Madison aquifer is a regional aquifer covering much of the Western United States, this well site is located on a 4,400 acre erosional remnant of the Madison surrounded by outcrops of older geologic formations and/or Tertiary aged intrusives (Strobel and others, 1999). The geologic setting of this portion of the Madison aquifer is such that it is isolated from, and not hydraulically connected to, the regional aquifer. The completion report for this well indicates the Madison is at least 520 feet thick at this site. Locally, the entire section of the Madison (approximately 600 feet thick) is present (Jim Lessard, Wharf Resources, oral commun., 2002). The Madison aquifer is generally under water table conditions in this area and the static water level of this well was reported to be 193 feet below grade when the well was constructed in 1990.

Assuming an average saturated thickness of the Madison aquifer in this area of 400 feet, an area of 4,400 acres and the estimated effective porosity for the Madison, 5% (Rahn, 1979), there would be approximately 88,000 acre-feet of recoverable water in storage in this aquifer.

Recharge to the aquifer occurs through precipitation falling directly on the outcrop. Average annual precipitation in this area (Squaw Creek and Annie Creek Drainage's) was approximately 26.73 inches per year between 1950-98, of which 16.4-21.5% contributes to recharge (Carter and others, 2001). Therefore, average annual recharge for this area from 1950-98 is estimated to range from 1,600 to 2,100 ac-ft per year.

Precipitation recharge to isolated outcrops like this one ultimately is discharged as base flow to streams. There are several springs documented in this area (Driscoll and others, 1996), which may be supplied by this isolated portion of Madison.

REVIEW OF EXISTING WATER RIGHTS

There are two existing groundwater appropriations from this aquifer; Water Right No. 1346-1 and Water Right No. 1493-1, both belong to Wharf Resources. In addition Water Right

No. 1173-1 appropriates water from a spring that may be supplied by the Madison. Assuming diversion at the maximum rate authorized, 60% of the time, the total withdrawals from this aquifer from these appropriations would be less than 300 ac-ft/yr. Water use from domestic users is expected to be negligible. Springs that may be supplied from the Madison discharge and contribute baseflow to area streams. Water is not always available to meet appropriators needs from these streams. However, well withdrawals from this aquifer are not expected to have a measurable impact on spring discharge.

Term Limitation:

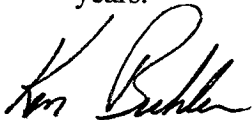
SDCL 46-2A-20 requires that "... no water permit for construction of works to withdraw water from the Madison formation in Butte, Fall River, Custer, Lawrence, Meade and Pennington counties may be issued for a term of more than twenty years, unless the water management board determines, based upon the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

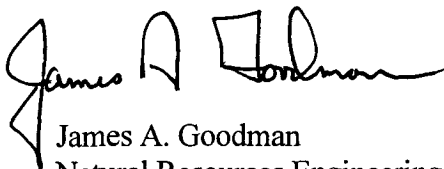
1. The Madison aquifer is a viable aquifer in this area.
2. This aquifer is not part of the regional Madison aquifer.
3. Water is available for this appropriation.
4. Interference with existing users is not expected to be a problem.
5. Information is not available to justify issuing this permit without a term limitation of 20 years.



Ken Buhler

Natural Resources Engineering Specialist

Approved by



James A. Goodman

Natural Resources Engineering Director

- Carter, J.M., Driscoll, D.G., and Hamade, G.R., 2001, Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota, and Wyoming, Water Years 1931-98, U.S. Geological Survey Water Resources Investigations Report 00-4278.
- Driscoll, D.G., Bradford, W.L., Neitzert, K.M., 1996, Selected Hydrologic Data Through Water Year 1994, Black Hills Hydrology Study, South Dakota, U.S. Geological Survey Open-File Report 96-399
- Rahn, P.H., 1979, Ground Water Resources of Western South Dakota, South Dakota School of Mines and Technology Project #2533,
- Strobel, M.L., Jarrell, G.J., Sawyer, J.F., Schleicher, J.R., Fahrenbach, M.D., 1999, Distribution of Hydrogeologic Units in the Black Hills Area, South Dakota, U.S. Geological Survey Hydrologic Investigations Atlas HA-743



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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. 1761-1, Wharf Resources, Inc.

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. 1761-1, Wharf Resources, Inc., c/o John A. Begeman, 10928 Wharf Road, Lead SD 57754.

The Chief Engineer is recommending APPROVAL of Application No. 1761-1 for a 20 year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use, and 4) it is in the public interest with the following qualifications:

1. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 1761-1 is issued for a twenty year term. Pursuant to SDCL 46-2A-21, the twenty year term may be deleted at any time during the twenty year period or following its expiration. If the twenty 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. 1761-1 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. Water Right No. 1493-1 and Permit No. 1761-1 authorizes a total annual withdrawal of 276.2 acre feet of water.

See report on application for additional information.

Garland Erbele
February 22, 2002



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

February 25, 2002

Lawrence Co. Centennial
376 Main Suite A
Deadwood, SD 57732-0512

ATTENTION: Legal Public Notice

Enclosed is a Notice of Hearing on Application No. 1761-1 to Appropriate Water to be published twice. Please publish the first notice on March 7, 2002 with the second publication 7 days later.

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 Wharf Resources, Inc., %Terese Hruska, HC 37 Box 811, Lead, SD 57754-9710 (Ph # 605-584-1441).

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. 1761-1

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

Date _____

We are in receipt of your letter of February 25, 2002 enclosing Notice of Hearing to Appropriate Water by Application No. 1761-1 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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.**

February 25, 2002

Wharf Resources, Inc.
Terese Hruska
HC 37 Box 811
Lead, SD 57754-9710

Dear Ms. Hruska:

Water Permit Application No. 1761-1 for industrial 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 Lawrence Co. Centennial printed at Deadwood, SD (Ph # 605-584-3305). 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 a report on the application 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 application.

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 March 7, 2002 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1761-1 to Appropriate Water

Notice is given that Wharf Resources, Inc., 10928 Wharf Road, Lead SD 57754 has filed an application for a water permit to appropriate an additional 0.314 cubic feet of water per second (cfs) by increasing the diversion rate and total annual volume of water authorized by Water Right No. 1493-1. Water Right No. 1493-1 authorizes 0.356 cfs (97 acre-feet annually) from one well located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33-T5N-R2E. This application proposes to appropriate an additional 0.314 cfs (179.2 acre-feet annually) from the existing well for a total of 0.67 cfs (276.2 acre-feet annually). Water is used for industrial purposes and groundwater quality monitoring

Pursuant to SDCL 46-1-14 and 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1761-1 for a 20 year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the 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 recommendation 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 March 25, 2002.

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.

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA
COUNTY LAWRENCE

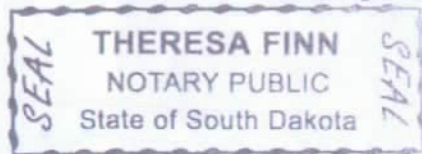
Sharon Allison, Being duly sworn, says: That the Lawrence County Centennial is and, during all times hereinafter mentioned, is a legal newspaper as defined in SDDCL 17-2-2, as amended, published in Deadwood, Lawrence County, South Dakota, by Country Media, Inc.; that affiant is and, during all of said times, was employed as an accounting clerk by the publisher of such newspaper and has personal knowledge of the facts stated in the affidavit; that the notice, order or advertisement, a copy of which is attached, was published in said newspaper for the issues (s) bearing the following dates:

MAR 7 200 2
MAR 14 200 2
____ 200 ____
____ 200 ____
____ 200 ____

That the full amount of the fee charged for publishing the same, to-wit, the sum of \$ 45.83, insures solely to the benefit of the publisher of said newspaper; that no agreement or understanding for the division of the fees has been made with any person, and that no part of the fee has been agreed to be paid to any other person.

Sharon Allison

Accounting Clerk



RECEIVED

MAR 22 2002

WATER RIGHTS
PROGRAM

Subscribed and sworn before me this

21st day of March 200 2

Theresa Finn

Notary Public, South Dakota

My commission expires 11/19/07

Water appropriation is sought

NOTICE OF APPLICATION NO. 1761-1 TO APPROPRIATE WATER

Notice is given that Wharf Resources, Inc., 10928 Wharf Road, Lead, SD 57754 has filed an application for a water permit to appropriate an additional 0.314 cubic feet of water per second (cfs) by increasing the diversion rate and total annual volume of water authorized by Water Right No. 1493-1. Water Right No. 1493-1 authorizes 0.356 cfs (97 acre-feet annually) from one well located in the SW1/4 SE1/4 Section 33-T5N-R2E. This application proposes to appropriate an additional 0.314 cfs (179.2 acre-feet annually) from the existing well for a total of 0.67 cfs (276.2 acre-feet annually). Water is used for industrial purposes and groundwater quality monitoring.

Pursuant to SDCL 46-1-14 and 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1761-1 for a 20 year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the 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 applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommending 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 March 25, 2002.

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. Pinner, Secretary, Department of Environment and Natural Resources.

Publish March 7 & 14, 2002
Lawrence County Centennial



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

APR 16 2002

Wharf Resources, Inc.
Terese Hruska
HC 37 Box 811
Lead, SD 57754-9710

Dear Ms. Hruska:

Enclosed is Water Permit No. 1761-1 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

1346-1 + 1761-1



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

July 6, 2010

Ron Waterland
Wharf Resources
10928 Wharf Road
Lead SD 57754-9710

Dear Mr. Waterland:

I am writing in regard for an additional well for industrial use authorized by Water Right Nos. 1346-1 & 1493-1 and Water Permit No. 1761-1.

Water Right No. 1346-1 appropriates 0.22 cubic feet of water per second from one Madison Formation well located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 3, T4N, R2E. Wharf designates this well as HDH-8A.

Water Right No. 1493-1 appropriates 97 acre feet annually at a maximum diversion rate of 0.356 cfs from a well located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33, T5N, R2E. Wharf designates this well as PW-1.

Water Permit No. 1761-1 appropriates an additional 179.2 acre feet of water annually and an additional diversion rate authority of 0.314 cfs from well PW-1 authorized by Water Rights no. 1493-1. Combined, Nos. 1493-1 and 1761-1 appropriate 276.2 acre feet of water annually at a maximum diversion rate of 0.67 cfs.

Upon review of the request and pursuant to SDCL 46-5-13.1, an additional well to be completed into the Madison is authorized without application or publication of a notice of hearing. The additional well is to be located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33, T5N, R2E.

No additional appropriation above the amounts authorized by Water Right Nos. 1346-1 & 1493-1 and Water Permit No. 1761-1 is authorized. If the diversion rate or volume is increased, a new water permit must be obtained.

If you have any questions, please contact Eric Gronlund at (605) 773-3352.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program

Request for Additional Diversion Point

NAME: Wharf Resources - c/o Ron Waterland**ADDRESS:** 10928 Wharf Road, Lead SD 57754-9710**DATE:** July 1, 2010 **COUNTY:** Lawrence**TELEPHONE:**

Wharf Resources Inc. has made a request to authorize an additional Madison well to the two existing Madison wells authorized by Water Right Nos. 1346-1 and 1493-1 and Water Permit No. 1761-1. The new well is to be located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33, T5N, R2E. The request states that they will not increase the amount of water authorized by their existing water rights. The request for the additional well is to enable Wharf to have a well that has not been impacted by nitrates. The company also wants continue to pump the nitrate impacted water from the existing wells to manage the nitrate remediation. The additional well will be used at the facilities and used for flush water in the nitrate impacted zones to aid in ground water restoration. Diversion among the wells will be managed to stay within the permitted limits.

NOTE: In the cover letter accompanying the request, the second paragraph refers to the three existing wells. Mr. Waterland verbally confirmed by phone on July 1, 2010 that there are only two existing wells and that the statement referencing three existing wells was in error.

Water Right No. 1346-1 appropriates 0.22 cubic feet of water per second from one Madison Formation well located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 3, T4N, R2E. Wharf designates this well as HDH-8A. The well completion report on file has the well depth being 320 feet deep.

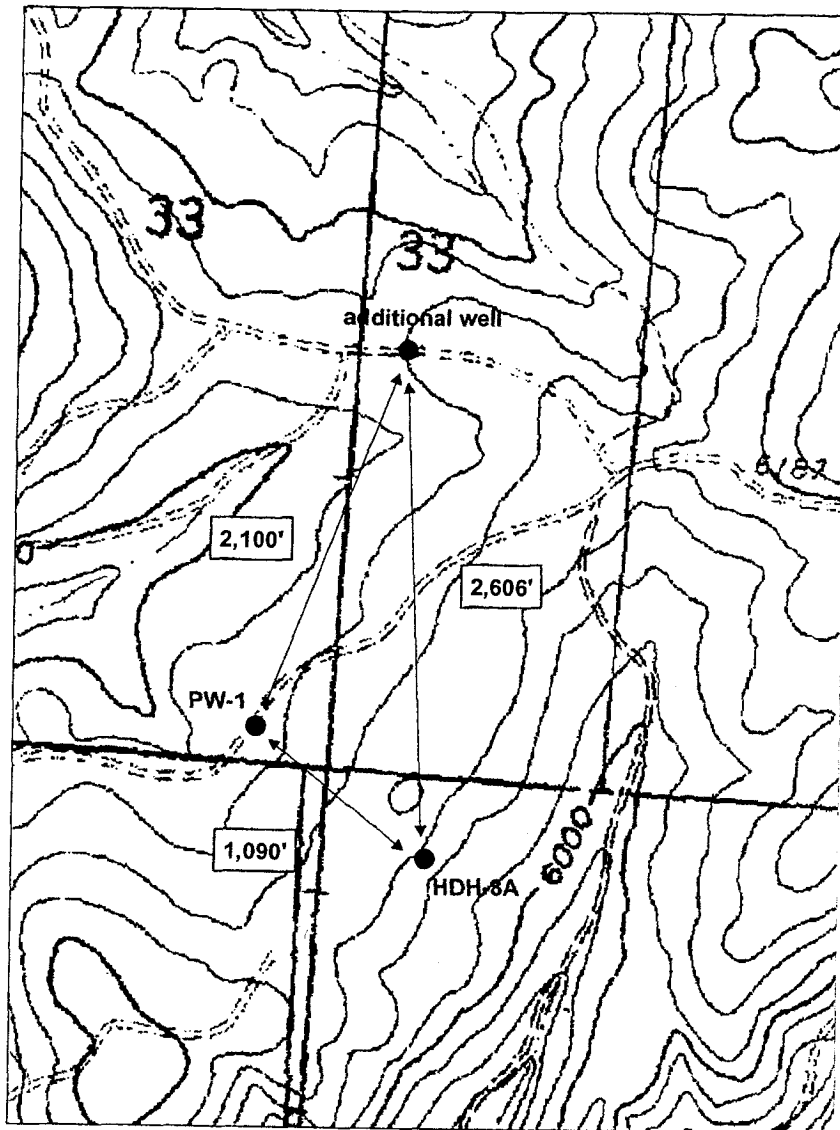
Water Right No. 1493-1 appropriates 97 acre feet annually at a maximum diversion rate of 0.356 cfs from a well located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33, T5N, R2E. Wharf designates this well as PW-1. This water right involves the incorporation of Water Right Nos. 1278-1 and 1288-1 into No. 1493-1 for industrial use. The well completion report on file has the well depth being 512 feet deep

Water Permit No. 1761-1 appropriates an additional 179.2 acre feet of water annually and an additional diversion rate authority of 0.314 cfs from well PW-1 authorized by Water Rights no. 1493-1. Combined, Nos. 1493-1 and 1761-1 appropriate 276.2 acre feet of water annually at a maximum diversion rate of 0.67 cfs.

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional diversion points may be licensed provided the following conditions are met and the potential for interference with other existing diversions is not increased:

Location of existing wells and additional well in respect to each other



- Developed water source same as permitted source and no additional water appropriated**

The water source remains the Madison Aquifer. No additional water is to be appropriated by this request. The well authorized by Water Right No. 1346-1 is licensed for 0.22 cfs and the well authorized by Water Right No. 1493-1 and Permit No. 1761-1 is authorized 0.67 cfs. These diversion rates will not be exceeded. In addition, the total volume of 276.2 acre feet annually is permitted by Nos. 1493-1 and 1761-1. Water Right No. 1346-1 is limited only by its diversion rate of 0.22 cfs which equates to 159 acre feet annually. The well is likely not pumped continuously.

- Review of Existing Diversions**

The Water Rights Program's database of well completion reports was also reviewed. Driller reports for domestic wells located in the neighboring sections is as follows:

Location	Drilled for	Depth (feet)	Use
NW ¼ NE ¼ Section 3, T4N, R2E	Wells	105	Domestic
SW ¼ SW ¼ Section 4, T4N, R2E	Brink	290	Domestic
SW ¼ SW ¼ Section 4, T4N, R2E	Fischer	204	Domestic

NW ¼ NW ¼ Section 9, T4N, R2E	Polyakov	23	Domestic
NW ¼ SE ¼ Section 9, T4N, R2E	Wheeler	85	Domestic
NW ¼ Section 9, T4N, R2E	Schirber	100	Domestic
SE ¼ Section 9, T4N, R2E	Perron	58	Domestic
SE ¼ SW 1/4 Section 9, T4N, R2E	Paradis	35	Domestic
NW ¼ NW ¼ Section 9, T4N, R2E	Wagehaupt	26	Domestic
SW ¼ SW 1/4 Section 9, T4N, R2E	Scott	100	Domestic
SW ¼ Section 9, T4N, R2E	Welker	165	Domestic
SW ¼ NW ¼ Section 9, T4N, R2E	Schmidt	62	Domestic
NW ¼ SW ¼ Section 9, T4N, R2E	Brueckner	180	Domestic
SE ¼ SW 1/4 Section 9, T4N, R2E	McKean	147	Domestic
NW ¼ SW ¼ Section 2, T4N, R2E	Wagner	210	GHP
SE ¼ SE ¼ Section 3, T4N, R2E	Bosma	197	GHP
SE ¼ SW ¼ Section 26, T5N, R2E	Robbins	260	Domestic
SE ¼ SW ¼ Section 26, T5N, R2E	Robbins	260	Domestic
SW ¼ NW ¼ Section 26, T5N, R2E	Conroy	400	Domestic
NE ¼ SE ¼ Section 34, T5N, R2E	Perkins	186	Domestic
NE ¼ Section 34, T5N, R2E	Dunning	205	Domestic
NW ¼ NE ¼ Section 35, T5N, R2E	Muth	260	Domestic
NW ¼ SE ¼ Section 35, T5N, R2E	Muth	300	Domestic

Of the domestic wells in the area many are shallow wells likely in the alluvium along Spearfish Creek in Sections 4 and 9 of T4N, R2E. There are domestic wells completed into the Madison Aquifer in the area. In all instances, the wells appear to be at least a mile from the Wharf's wells.

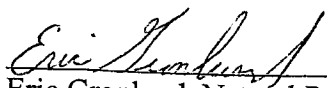
The nearest water rights from the Madison Aquifer are located 8 miles or greater from Wharf's Madison wells. In addition, no water rights from the Madison Aquifer will be affected by this additional well because this well site is located on a 4,400 acre erosional remnant of the Madison surround by outcrop of older geologic formations and/or Tertiary aged intrusives (source: Strobel and others, 1999 based on Buhler report for Application No. 1761-1). The geologic setting of this portion of the Madison Aquifer is such that it is isolated from and not hydraulically connected to the regional Madison Aquifer.

CONCLUSION

- The additional well does not appropriate additional water.
- The purpose of the additional well is to complete a well not impacted by nitrates to supply the facility and to flush water in nitrate impacted zones. The two wells impacted by nitrates will still be used in the remediation efforts.
- The wells will be managed in a manner that existing diversion rate and volume authority will not be increased.
- The additional well is to be completed into the Madison Aquifer.
- Interference is not expected to be a concern.
- Existing domestic wells will not be adversely impacted by authorizing this change in well location.

RECOMMENDED ACTION

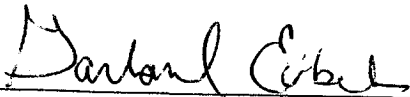
Based on the above criteria, it is recommended that the additional diversion point be authorized pursuant to SDCL 46-5-13.1.



Eric Gronlund, Natural Resources Engineer
Water Rights Program

The Chief Engineer makes a finding pursuant SDCL 46-5-13.1 and ARSD 74:02:01:14.01 that:

This additional diversion point does not increase the potential for adverse effects to existing diversions.



Garland Erbele, Chief Engineer
Water Rights Program



WHARF RESOURCES (USA) INC.

RECEIVED

JUN 17 2010

WATER RIGHTS
PROGRAM

June 16, 2010

Mr. Garland Erbele, Chief Engineer
Water Rights Program
Joe Foss Building
532 East Capitol
Pierre, SD 57501

Re: Add a diversion and combine Madison Aquifer Rights 1346-1, 1493-1, and 1761-1.

Dear Mr. Erbele:

I am writing you to request an additional diversion well for Wharf Resources into the Madison Aquifer. We do not need or want to increase the amount of water claimed but have a need to drill an additional well into the Madison Aquifer for use at the mine site. We would also like to combine the three Madison Aquifer Permits (1346-1, 1493-1, and 1761-1) so that we can pump water from multiple wells at our site at various times and quantities. The additional diversion well would be added to the combined Permit.

The two wells associated with Permits 1346-1, 1493-1 and 1761-1 have been impacted with nitrates from our processing plant. We are developing a plan to stop the source of the nitrate and remediate the ground water impacted by nitrates. The reason for this request is so that we have a new source of water that has not been impacted by nitrates and also continue to pump the nitrate impacted water from the aquifer from the three existing wells in order to manage the nitrate remediation. Our monitoring has identified the extent of the nitrate impacts and the direction of ground water flow. We propose to drill a new well into the Madison Aquifer up-gradient from the nitrate zone. This water would be used at our facilities and used for flush water in the nitrate impacted zones to aid in ground water restoration. We would propose to not exceed 0.89 CFS from all three wells allowed by combining the three Permits.

We have not drilled the well yet but propose to drill it in the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 33 T5N R2E in Lawrence County. We will survey the well and supply the drillers log when drilling is completed. I have attached the completed Form 2 Application for Permit to Appropriate Water within the State of South Dakota along with the Form 2A Supplemental Information relative to the proposed well construction. I have also attached a map showing the location of the proposed wells and the location of the existing permitted wells.

Sincerely,

Ron Waterland
Environmental Manager

Encl.

Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	(office use only) No. _____ Hydrologic Unit _____
	Basin _____
	Newspaper _____

RECEIVED

JUN 17 2010

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. <u>134614931761</u>		

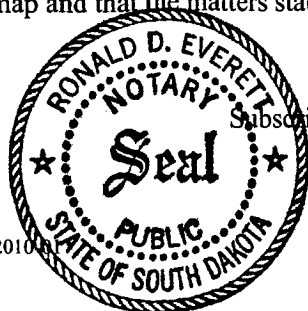
Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

Combine Water rights from all three Permits 1346-1, 1493-1, and 1761-1 and add a third diversion.

- Name of Applicant Wharf Resources (USA) Inc. Phone 605-584-1441
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address 10928 Wharf Road (Address) Lead (City) SD (State) 57754 (Zip Code)
- Amount of water claimed No additional *CFS or **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 Madison Aquifer
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Lawrence
Exist Wells: HDH-8A in NW1/4 NW1/4 Section 3 T4N R2E and PW-1 in SW1/4 SE1/4 Section 33 T5N R2E
Proposed Well: NE1/4 SE 1/4 Section 33 T5N R2E
- County or counties where water will be used Lawrence
- Annual period during which water is to be used All Year
- 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)
See Attached Letter

STATE OF SOUTH DAKOTA)
County of Lawrence) SS

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

I, Bill Shand, 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 Bill ShandSubscribed and sworn to before me this 16 day of June 20 10
Ronald D. Everett
Notary Public signature

Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter 12 1/4 " or 7" Depth 300 '
- b) Casing Type Steel or PVC Diameter 8 5/8 " or 5" Thickness Unknown
- c) Screen Type Steel or PVC Diameter 8 5/8 " or 5" Thickness Unknown
- d) Gravel Pack Pea Length of Gravel Pack 100 '
- e) Depth to Top of Water Bearing Material Unknown
- f) Depth to Water (ground surface to water level) Unknown
- g) Distance to nearest existing domestic well:

On applicant's property 2200 '

On property owned by others 9900 '

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field)
- b) System Capacity (gallons) 3,000.00 Year Constructed 19882009
- c) Connected to the City of 3 septic tanks w drain f Sanitary System

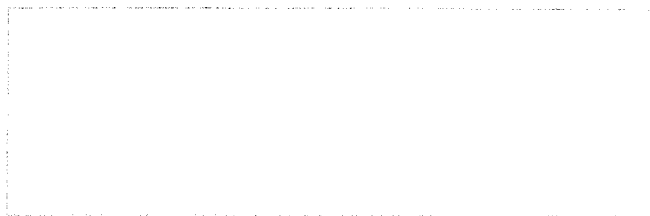
3. Dugout Information

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

4. Water Storage Dams

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

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



- b) Freeboard NA
- c) Crest Width NA
Crest Length _____
- d) Height NA
- e) Primary Outlet Capacity NA
If pipe, diameter NA
- f) Secondary Spillway Capacity NA
Spillway Width NA
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream NA
Downstream NA
- h) Surface Area of Impoundment NA
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres

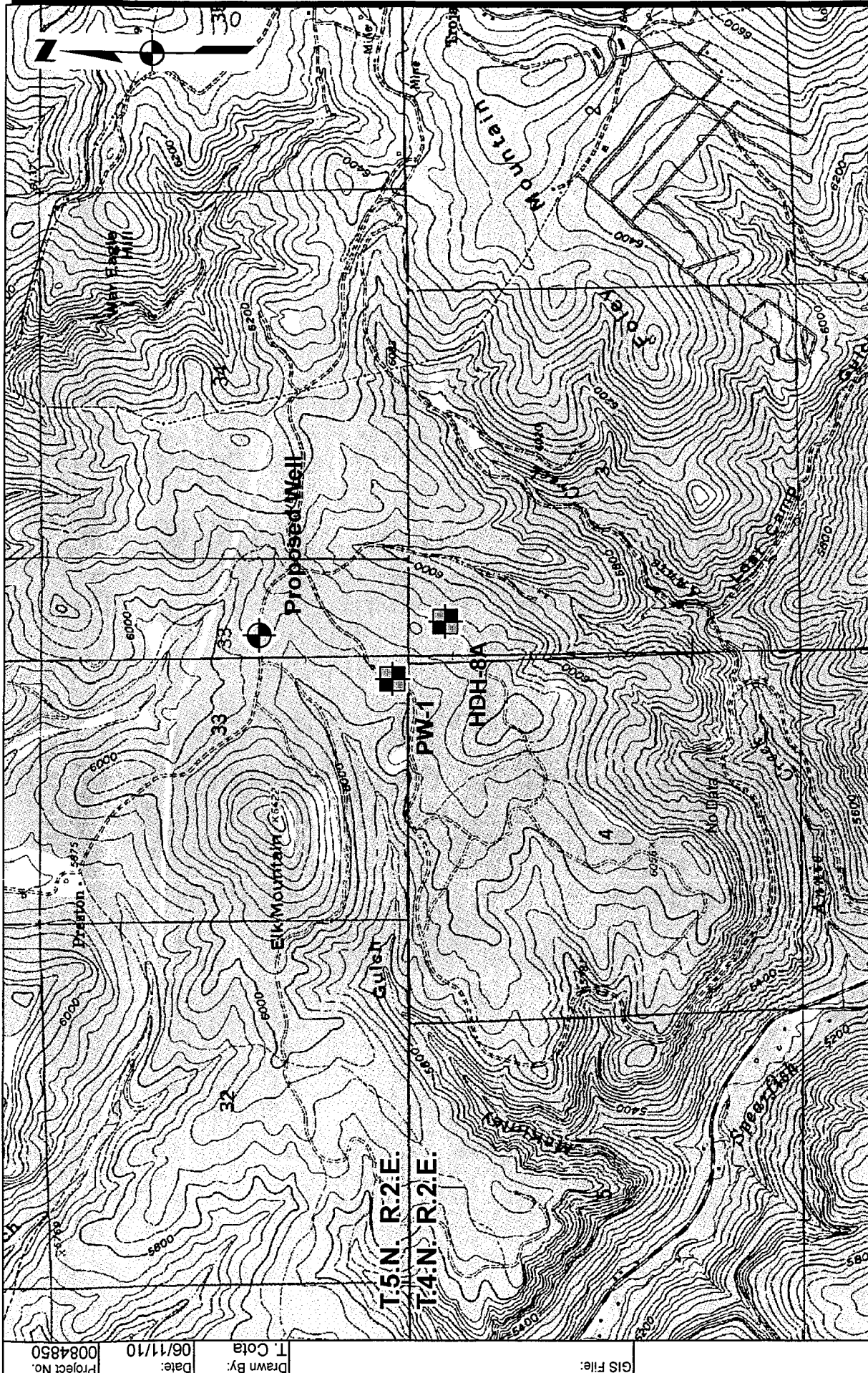


Figure 1
Location of Proposed Water Well
Wharf Resources
10928 Wharf Road
Lead, South Dakota

0 1,000 2,000 4,000
Feet
RECEIVED
JUN 17 2010
WATER RIGHTS
PROGRAM

Michael F. Kraeski 6-14-10
Date
Michael F. Kraeski, P.E.
Colorado P.E. No. 28360

PW-2

1761-1

SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

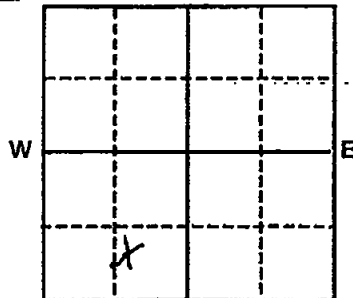
11-02

Location 8E 1/4 5W 1/4 Sec 27 Twp 5N Rg 2E

County Lawrence

North

Please mark well location with an "X"



Well Completion Date

August 9, 2010

1 Mile

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

500.0 ft. from Septic (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Rotary Downhole Hammer

CASING DATA:

☒ Steel ☐ Plastic ☐ Other

If other describe 402' of 7" OD Steel

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	400.0 FT	0.0 FT	8.75 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Portland II</u>	<u>40</u>	<u>Lb/gal</u>	<u>150.0 Ft</u>	<u>0.0 Ft</u>
		<u>Lb/gal</u>	<u>Ft</u>	<u>Ft</u>

Describe grouting procedure through trimline pipe

SCREEN:

☒ Perforated pipe ☐ Manufactured

Diameter 7.00 Inches Length 0.0 Feet

Material

Slot Size Set From Feet to Feet

Other information staggered from the bottom

WAS A PACKER OR SEAL USED?

☒ Yes ☐ No

If so, what material? Neoprene

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? w/chlorine solution

Lab to which water quality sample sent for analysis ☐ No, Why Not?

Well Owner: Wharf Resources

Business Name:

Address: 10928 Wharf Road

City, State, Zip: Lead SD 57754

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Drift	0	10
Madison	10	190
Fracture Madison 100 gpm	190	210
Fracture Madison	210	380
Fracture Madison	380	381
Top of Deadwood	381	400

STATIC WATER LEVEL 150.0 FEET

If flowing: closed in pressure PSI

GPM flow 100.0 through Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe: w/alr

☐ Bailed

☐ Other

Pumping Level Below Land Surface

 Ft. After Hrs. pumped GPM

 Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

This well was drilled under license # 324 and this report is true and accurate.

Drilling firm: Alexander Drilling Inc.

Signature of License Representative:

[Signature]

Signature of Well Owner or Equitable Property Holder:

[Signature]

COMPANY

Anderson Drilling

PROPERTY

Section No.

HOLE No.

W-2

Started		Bearing	Lat. (Northing)		Overburden =	Logged by, Jacob Thaler		Date 7/22/10	
Completed		Angle	Dep. (Easting)		Casing Depth =	Remarks			
Driller		Length 400'	Collar Elev.		Diff. to Orig. Ground =				

Depth		Rock Type	WATER	DESCRIPTION	EPIDOTE, etc.	CHLORITE	CLAY	SERICITE	QUARTZ VEINS	SILICIFICATION	BIOTITE	ORTHOCASE	HEMATITE	GOETHITE	JAROSITE	MnO ₂	CuO ₂	CALCITE	PYRITE	SULFIDE Voids			Sample No.	Footage		ASSAYS				Graph.		
From	To																							From	To	Au	Ag			rx	ore	
0	20			Madison Fm. - Pahasapa Limestone / Dolomitic Limestone - Mn dendrites along Fx - Chert nodules throughout - 20-40 Sandstone inclusions - Possible Karst infill ↳ Brown/Orange																				72201	0	20						
20	40																							72202	20	40						
40	60																							72203	40	60						
60	80																							72204	60	80						
80	100																							72205	80	100						
100	120																							72206	100	120						
120	140																							72207	120	140						
140	160																							72208	140	160						
160	180																							72209	160	180						
180	200																							72210	180	200						
200	220																							72211	200	220						
220	240																							72212	220	240						
240	260																							72213	240	260						
260	280																							72214	260	280						
280	300																							72215	280	300						
300	320																							72216	300	320						
320	340																							72217	320	340						
340	360																							72218	340	360						
360	380																							72219	360	380						
380	400																							72220	380	400						

RECLAMATION STATUS:		DISTRIBUTION COMMENTS	MINERAL CODE:		WATER CODE:	
			1) Trace 4) 4-8% 7) 25-40% 2) Tr-1% 5) 8-15% 8) 40-60% 3) 1-3% 6) 15-25% 9) +60%		D= Dry M= Moist W= Wet X= Drilled w/H ₂ O	

PW-2 Page 1

Time	Meter Reading	Air Gauge	static water level	GPM	Total Gallons Pul
11:25	101243	89	177 158'	0	0
11:26	101415	79	178'	172	172
11:27	101587	79	178'	172	344
11:28	101760	78	180'	173	517
11:29	101930	77	182'	170	687
11:30	102100	74	189'	170	857
11:31	102268	72	194'	168	1025
11:32	102436	70	198'	168	1193
11:33	102670	69	201'	234?	1427
11:34	102840	69	201'	170	1597
11:35	103005	68	203'	165	1762
11:40	103770 ¹⁶⁵	67	205'	153	1915
11:45	104555 ⁷⁴⁵	66	208'	157	3312
11:50	105370 ⁸¹⁵	63	215'	163	4127
11:55	106123 ⁷⁶³	60	221'	150.6	4880
12:00	106995 ⁸⁷²	59	224'	174.4	5752
12:05	107649 ⁶⁵⁴	57	228'	130.8	6406
12:10	108376 ⁷²⁷	54	235'	145.4	7133
12:15	109192 ⁸¹⁶	53	238'	163.2	7949
12:20	109799 ⁸⁰⁷	53	238'	121.4	8556
12:25	110507 ⁷⁰⁸	53	238'	141.6	9264
12:30	111180 ⁶⁷³	53	238'	134.6	9937
12:35	111864 ⁶⁸⁴	53	238'	136.8	10621
12:40	112559 ⁶⁹⁵	52	240'	139.9	11316
12:45	113253 ⁶⁶⁴	51	243'	138.8	12016
12:50	113940 ⁶⁸⁷	51	243'	137.4	12697

Time PW-2 ^{page 2} Meter Reading Air Gauge static water level GPM Total Gallons Pump

12:55	114622 ³⁴⁷⁷	51	243'	136.4	13379
1:25	118599 ³⁴²¹	51	243'	132.5	17356
1:55	122520 ³⁷⁸⁹	51	243'	131.7	21277
2:25	126309 ³⁷³⁵	51	243'	126.3	25066
2:55	130048 ³⁷⁰³	50	243'	124.6	28805
3:25	133781 ³⁶⁸⁸	50	244'	124.4	32538
3:55	137484 ³⁷²⁷	49	247'	123.4	36241
4:25	141172	49	247'	122.9	39929
4:55	144899	48	249'	124.2	43656
5:25	⁴⁵⁰⁰	46	254'	2 sec in 5 gal buk. (150)	
5:55		45	256	2 sec in 5 gal buk. (150)	
6:25		45	256	2 sec in 5 gal buk. (150)	
6:55		44	258	2 sec in 5 gal buk. (150)	
7:25		45	256	2 sec in 5 gal buk. (150)	

During this Pump Test the
totalizer meter quit working @ 5:25
Measurements were taken with
a bucket and watch resulting
in 150 gpm for each reading.

Temporary pump set at 360'

PW-2 Pump Test					
Time	Meter Reading	Air Gauge	static water level	GPM	Total Gallons Pump
11:25	101243	89	158' 158'	0	0
11:26	101415	79	178'	172	172
11:27	101587	79	178'	172	344
11:28	101760	78	180'	173	517
11:29	101930	77	182'	170	687
11:30	102100	74	189'	170	857
11:31	102268	72	194'	168	1025
11:32	102436	70	198'	168	1193
11:33	102670	69	201'	234?	1427
11:34	102840	69	201'	170	1597
11:35	103005	68	203'	165	1762
11:40	103770 ⁷⁶⁵	67	205'	153	2527
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12:35	111864 ⁶⁸⁴	53	238'	136.8	10621
12:40	112559 ⁶⁹⁵	52	240'	139.9	11316
12:45	113253 ⁶⁴⁴	51	243'	138.8	12010
12:50	113940 ⁶⁸⁷	51	243'	137.4	12695

[illegible]

PW-2

Northing 52141.942sft

Easting 46222.004sft

Elevation 6082.030sft

Lat 44°21'02.11068"N

Long. 103°52'27.47855"W

Installed by Alexander Drilling

PW-1

6/22/11

Pump – 2305500-19

50 hp 230gpm/250 gpm

PW-1

Pump – 1505300-15

30hp 150 gpm

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 1761-1

I have this day, Aug 24, 2017 made a thorough examination of the water use system constructed by Wharf Resources, 10928 Wharf Road, Lead, SD 57754 of Permit No. 1761-1, bearing the priority of 12/24/2001 authorizing 0.314 cu. ft. per second additional water from one well for industrial purposes, in Lawrence County.

Inspection contact & relationship to permit holder, if applicable:

Lynn Blackman, Environmental Coordinator
605-584-4190

correspondence:

% Matt Zietlow, Environmental Coordinator
605-584-4155

A. Works used to divert the water:

Water Permit 1761-1 authorized an additional 0.314 cfs from the existing well authorized by Water Right No. 1493-1 increasing the total diversion rate to 0.67 cfs (276.2 acre-feet annually). Wharf was notified 7/6/2010 an additional well was authorized in the NE ¼ SE ¼ Section 33 T5N R2E with no increase in the diversion rate or volume.

Well Information:

	<u>Well PW-1</u> (WR #1493-1, Permit #1761-1)	<u>Well PW-2</u> (additional well authorized)
1) Well Drilling Firm	<u>Taylor Drilling</u>	<u>Alexander Drilling</u>
2) Date drilled	<u>4/13/1990</u>	<u>8/9/2010</u>
3) Depth	<u>520</u> ft.	<u>400</u> ft.
4) Well log	<u>Yes</u>	<u>Yes</u>
Casing:		
1) Diameter	<u>10 ¾" 0 to 150 ft.</u> <u>7" 0 to 520 ft.</u>	<u>7" -2 to 400 ft.</u>
2) Length	<u>520</u> ft.	<u>402</u> ft.
3) Type	<u>Steel</u>	<u>Steel</u>
Screen:		
1) Type	<u>vertical slots 268' to 512'</u>	<u>perforated steel</u>
2) Length	<u>244</u> ft.	<u>-----</u> ft.
3) Static water level	<u>193</u> ft.	<u>150</u> ft.
Pump:		
1) Make	<u>Grundfos</u>	<u>Grundfos</u>
2) Model	<u>230S500-16</u>	<u>150S300-15</u>
3) Size	<u>6"</u>	<u>6"</u>
4) Capacity	<u>220</u> GPM	<u>80</u> GPM
5) Horsepower rating	<u>50</u> hp	<u>30</u> hp
6) Annual Volume	<u>135 ac-ft.</u> (2015)	<u>62.5 ac-ft.</u> (2015)
7) Air test @ completion:	<u>165 GPM @ 265'</u>	<u>120 GPM @ 256'</u>

B. Works used to transport and apply water to beneficial use:

Well PW-1 was originally used as a make-up source for the leach pads. The well is currently used primarily for the biological treatment system of injection wells. Well PW-2 is the main well supplying the operations at the mine. Water is pumped to twin 5,000 gallon steel tanks located at approximate elevation 6320 and gravity feeds to points of use.

C. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes
list any extended period of nonuse: none

- 2) Exceptions to compliance are: none

D. Condition and Location:

1. The system is in good condition. Diversion points are located as follows:

PW-1

158' N and 1,931' W of SE corner Section 33 T5N R2E (44.345159, -103.877454).

PW-2

2,161' N and 1,154' W of SE corner Section 33 T5N R2E (44.350626, -103.874332).

2. The works are capable of diverting and conveying to the place of use **0.67** cu. ft. per second (**300 gpm**) of water which is used for **industrial** use and the license should be issued for **0.67 cfs** (276.2 ac-ft annually).
3. All structures, wells and lands on map Yes

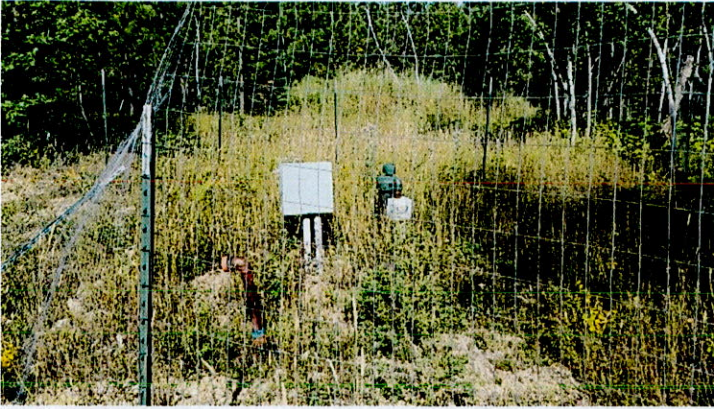
F. Comments or other permit(s) associated with the project:

Water Right No. 1493-1 authorized 0.356 cfs (97 ac-ft annually) from one well located in the SW ¼ SE ¼ Section 33 T5N R2E (PW-1). Water Permit No. 1761-1 authorized an additional 0.314 cfs (179.2 ac-ft.) from the existing well for a total of 0.67 cfs and 276.2 ac. ft. A request and subsequent authorization dated 7/6/2010 authorized an additional well to be completed into the Madison in the NE ¼ SE ¼ Section 33 T5N R2E (PW-2) No additional appropriation above amounts authorized by Water Right Nos. 1346-1, 1493-1 and 1761-1 was authorized. Water use for PW-1 and PW-2 totaled 197.5 acre-feet in 2015 which was the highest yearly total for the period from 2013 thru 2015.



Steven Quissell
Water Rights Inspector
DENR Water Rights Program

Date Report Completed: September 12, 2017



Well PW-2

Water Right Nos. 1437-1, 1667-1 and 1761-1
Wharf Resources Inc.
August 24, 2017

Sec 33
T005N
R02E

Well PW-2, Lat: 44.350626 Lon: -103.874332
Additional diversion point authorized under
Water Right Nos. 1346-1, 1493-1 and 1761-1

Sec 34
T005N
R02E

License # 1365-1
(Joseph well)

Sec 35
T005N
R02E

Sec 36
T005N
R02E

processing ponds

water treatment plant

Pad 4

water treatment plant

holding/treatment ponds

twin 5,000 gal. storage

Pad 1

Well PW-1 Permit # 1761-1
License # 1493-1
Lat: 44.345159 Lon: -103.877454

Pad 2

Well HDH-8A License #1346-1
Lat: 44.34312 Lon: -103.874241

Pad 3

Topsoil
Stockpile

Ross Valley
Spent Ore

Reliance
waste rock

Permit #1437-1
Sedimentation Pond
Lat: 44.34076 Lon: -103.870419

Sec 4
T004N
R02E

Permit 1667-1 Collection Pond
Lat: 44.339098 Lon: -103.86688

Sec 3
T004N
R02E

Sec 2
T004N
R02E

Sec 1
T004N
R02E

Steven Quissell

Steven Quissell
Water Rights Inspector
DENR Water Rights Program

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

1761-1



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

OCT 19 2017

1493-1
1761-1

Matt Zietlow, Environmental Coordinator
Wharf Resources (USA) Inc
10928 Wharf Rd
Lead SD 57754

Dear Mr. Zietlow:

Enclosed is Water License No. 1761-1. This is the final water right document completing your 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 in the future, the owner of an existing well, 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.

Upon licensing, the applicable portions of Water Right No. 1493-1 were incorporated into Water License No. 1761-1. 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,

A handwritten signature in black ink that reads "Jeanne Goodman". The signature is written in a cursive, flowing style.

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 1761-1**

(1) Wharf Resources (USA), Inc., 10928 Wharf Rd, Lead SD 57754 made Application No. 1761-1, December 24, 2001 for a water permit to divert an additional 0.314 cubic feet of water per second (cfs) from groundwater, an existing well drilled into the Madison Formation, Lawrence County, South Dakota for industrial and groundwater quality monitoring purposes. Permit No. 1761-1, with a priority date of December 24, 2001 was approved March 25, 2002 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before March 25, 2007 and for the application to beneficial use of said water on or before March 25, 2011.

Water Right No. 1493-1 authorizes 0.356 cfs (97 acre feet annually) from a well located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33, T5N R2E. Water Permit No. 1761-1 authorizes an additional 0.314 cfs (179.2 acre feet annually) from the existing well for a total of 0.67 cfs and 276.2 ac. ft.

On July 6, 2010, pursuant to SDCL 46-5-13.1, the Chief Engineer authorized an additional well located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33, T5N, R2E. The authorization did not allow for an increase in the diversion rate or volume of water appropriated.

The applicable portions of Water Right No. 1493-1 are incorporated into this Water License No. 1761-1. Priority dates retained are May 20, 1983 (0.067 cfs); August 10, 1983 (0.067 cfs), May 21, 1990 (0.222 cfs) and December 24, 2001 (0.314 cfs). ***The May 20, 1983 priority date was established under Water Right No. 1278-1 and the August 10, 1983 priority date was established under Water right No. 1288-1. These water rights were previously incorporated into Water Right No. 1493-1.***

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the water supply system and is entitled to divert 0.67 cubic feet of water per second (276.2 acre feet annually) for beneficial use. The location of the diversion points are:

- PW#1 - SW $\frac{1}{4}$ SE $\frac{1}{4}$, approximately 158'N and 1,931'W of the SE corner of Section 33, T5N, R2E 44.345159, -103.877454);
- PW #2 - NE $\frac{1}{4}$ SE $\frac{1}{4}$, approximately 2,161'N and 1,154'W of the SE corner Section 33, T5N, R2E (44.350626, -103.874332);

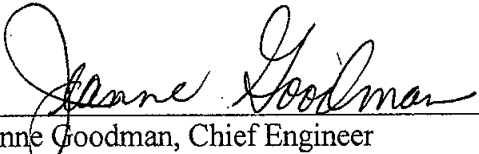
(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use. Well PW-1 was originally used as a make-up source for the leach pads. The well is primarily used for the biological treatment system of injection wells. Well PW-2 is the main well supplying the operations at the mine.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Wharf Resources (USA), Inc., 10928 Wharf Rd, Lead SD 57754 the holder and/or owner of Incorporated Water Right No. 1761-1 is issued a license to appropriate water, the right to use 0.67 cubic feet of water per second (276.2 acre feet annually) from ground water, two wells (Madison Formation) with priority dates of May 20, 1983 (0.067 cfs); August 10, 1983 (0.067 cfs), May 21, 1990 (0.222 cfs) and December 24, 2001 (0.314 cfs) from the locations specified in (2) of this license for industrial purposes.

continued

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 1761-1 and subject to the following qualifications:

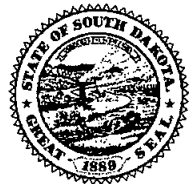
- In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 1761-1 is issued for a twenty year term. Pursuant to SDCL 46-2A-21, the twenty year term may be deleted at any time during the twenty year period or following its expiration. If the twenty year term is not deleted at the end of the term, the Permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 1761-1 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 Board Rule 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.
- Water Right No. 1493-1 and Water Permit No. 1761-1 authorize a total annual withdrawal of 276.2 acre feet of water.



Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

OCT 19 2017

date



WATER RIGHTS PROGRAM -- FILE DOCUMENTATION

NAME: Wharf Resources (U.S.A.) Inc.

ADDRESS: 10928 Wharf Road, Lead SD 57754

DATE: June 24, 2021

RE: Proposed Well

COMMENTS:

On April 29, 2021, Wharf Resources submitted an application for an additional well (named PW-3) with no increase in the amount of water appropriated under existing Water Right No. 1761-1. PW-3 was constructed in September 2020 and a copy of the well completion report was submitted with the application. The application also sought to "combine" No. 1365-1 into No. 1761-1 since Wharf Resources believed the aquifer identified on No. 1365-1 (Crystalline Rock aquifer) was actually completed into the Madison aquifer which is the source identified on No. 1761-1. On May 7, 2021, the application and license fees were received.

Matt Zietlow, Environmental Manager with Wharf Resources, was contacted via email on May 12, 2021, to determine whether the application was needed since no additional water was being appropriated. After discussion, it was decided to not pursue approval of the submitted application since no additional water is being appropriated in the near term. Mr. Zietlow did indicate that Wharf may pursue an application to increase the amount of water appropriated at some date in the future. In lieu of processing the application, Mr. Zietlow requested that the department undertake a review to add PW-3 as an additional diversion point with no increase in the amount of water appropriated under Water Right No. 1761-1. We also discussed that the Madison aquifer is not present at the location of the Crystalline Rock aquifer well covered by No. 1365-1 so there is no basis for seeking to change the aquifer designation.

RECOMMENDED ACTION:

It is recommended that a staff review be completed to determine whether the addition of another diversion point (well PW-3) can be completed without increasing the potential for interference with existing diversions as required by South Dakota Codified Law (SDCL) 46-5-13.1. To qualify under SDCL 46-5-13.1, PW-3 also needs to be in the same water source with no additional water appropriated being appropriated. If the Chief Engineer finds the well can be added to No. 1761-1 pursuant to SDCL 46-5-13.1, then the pending application does not need to be processed and the \$300.00 paid in fees by the applicant can be refunded to the applicant.



Ron Duvall
Water Rights Permitting Administrator
Water Rights Program



No. 1761-1

**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

July 02, 2021

Mr. Matt Zietlow
Wharf Resources (U.S.A.) Inc.
10928 Wharf Road
Lead, SD 57754

Dear Mr. Zietlow,

I am writing in regard to the request submitted by Wharf Resources (U.S.A.) Inc. for an additional well to what is currently authorized by Water Right No. 1761-1, and to combine Water Right No. 1365-1 with No. 1761-1 by identifying the water source on No. 1365-1 as the Madison aquifer rather than the current designation, which is Crystalline Rock. A determination has been made that Water Right No. 1365-1 can not be combined with No. 1761-1 since they are different water sources. Therefore, this request is processed only as a request for an additional Madison aquifer well under Water Right No. 1761-1.

Water Right No. 1761-1 appropriates 0.67 cubic feet of water per second (cfs) from two wells (PW-1 and PW-2) completed into the Madison aquifer for industrial and groundwater quality monitoring purposes. PW-1 is in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 33, and PW-2 is in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 33; all in T5N-R2E.

Upon review of the request and pursuant to SDCL 46-5-13.1, the additional well (PW-3) located in the N $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 33-T5N-R2E and completed into the Madison aquifer, is authorized without application or publication of a notice of hearing pursuant to SDCL 46-2A-4. No increase in the authorized diversion rate of 0.67 cfs (276.2 acre-feet) from the three wells is authorized. If the total diversion rate or annual volume increases, a new water right permit will need to be obtained.

If you have any questions, please contact me at (605) 773-3352.

Sincerely,

Eric Gronlund, Chief Engineer
Water Rights Program

Approval of Additional Diversion Point

NAME: Wharf Resources (U.S.A.) Inc. c/o Matt Zietlow

ADDRESS: 10928 Wharf Road, Lead, SD 57754

DATE: July 1, 2021 **COUNTY:** Lawrence **TELEPHONE:** 605-584-4155

BACKGROUND:

Water Right No. 1761-1 appropriates 0.67 cubic feet of water per second (cfs) from two wells (PW-1 and PW-2) completed into the Madison aquifer for industrial and groundwater quality monitoring purposes. PW-1 is in the SW ¼ SE ¼ of Section 33, and PW-2 is in the NE ¼ SE ¼ of Section 33; all in T5N-R2E.

Wharf Resources (U.S.A.) Inc. submitted a water permit application which, in part, was to add an additional diversion point (PW-3) (approximately 420 feet deep) to wells (PW-1 and PW-2) authorized by Water Right No. 1761-1. The other purpose was to combine Water Right No. 1365-1 with No. 1761-1 by identifying the water source on No. 1365-1 as the Madison aquifer rather than the current designation, which is Crystalline Rock. As noted in the file documentation completed by Ron Duvall, dated June 24, 2021, the water source covered by No. 1365-1 cannot be changed to match No. 1761-1 since the Madison aquifer is not present at the location specified on No. 1365-1.

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional diversion points may be licensed provided the following conditions are met and the potential for interference with other existing diversions is not increased:

- **Developed water source same as permitted source and no additional water appropriated**

The water source remains the Madison aquifer. Wharf Resources (U.S.A.) Inc. indicated on their application the intent was to add a well (PW-3) with no increase in the diversion rate or volume. Water Right No. 1761-1 appropriates 0.67 cfs (276.2 acre-feet) annually. The application also noted an application may be submitted in the future to increase the amount of water appropriated for the five wells (including PW-3) covered by Nos. 1761-1, 1346-1, and 1365-1. No additional water is to be appropriated by adding well PW-3.

- **If irrigation, no new land is irrigated**

The authorized use types are not for irrigation. Therefore, no new land is irrigated.

- **Review of Existing Diversions**

Wharf Resources (U.S.A.) Inc. indicated the new well is to be in the N ½ SE ¼ of Section 33-T5N-R2E. A review of domestic wells and existing water rights/permits found numerous records in the surrounding area of the proposed diversion point. However, few are completed into the same geologic formation or drilled to a similar depth. The closest water right (not held by Wharf Resources (U.S.A.) Inc.) with a diversion point completed into the Madison aquifer is Water Right No. 1956-1, held by Shirt Tail Gulch Homeowners Association, for suburban housing development use, which is located approximately 9.3 miles northeast of the proposed and existing diversion points. Given there is no history of well interference complaints, and no additional water is to be appropriated, there is a reasonable probability the additional well will not increase the potential for unlawful impairment of existing water rights/permits, or domestic users with adequate wells within the Madison aquifer.

CONCLUSIONS:

1. The maximum instantaneous diversion rate for wells PW-1 and PW-2, plus the additional well PW-3, is not to exceed 0.67 cfs (276.2 acre-feet), so no additional water is appropriated from the Madison aquifer.
2. The new well is completed into the same aquifer as the two permitted wells.
3. There is a reasonable probability the additional well will not increase the potential for unlawful impairment of existing water rights/permits, or domestic users.

RECOMMENDED ACTION

Based on the above criteria, it is recommended that the additional diversion point location be authorized under Water Right No. 1761-1.



Nakaila Steen
Natural Resources Engineer I
Water Rights Program

The Chief Engineer makes a finding pursuant SDCL 46-5-13.1 and ARSD 74:02:01:14.01 that:

This additional diversion point does not increase the potential for adverse effects to existing diversions.



Eric Gronlund, Chief Engineer
Water Rights Program



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

July 7, 2021

Wharf Resources (USA) Inc
Matt Zietlow, Environmental Manager
10928 Wharf Rd
Lead SD 57754-9710

Dear Mr. Zietlow:

On April 29, 2021 an *Application for a Permit to Appropriate Water* was submitted for an additional diversion point along with a check for \$300.00. It was later determined the application was not required at this time. Therefore, the application/license fee will be refunded. You will receive the refund check within two weeks.

If you have any questions, please contact this office.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us