

1. Considered: _____, 19____ Water Right No. 1288-1
2. Name of Applicant Wharf Resources (U.S.A.) Inc
3. Post Office Address P.O.B. 897, Lead, SD 57754
4. Amount of Water Claimed 0.25 maximum acre feet _____
5. Source of Water Supply one 76' well
6. Water to be used for IND acres to be irrigated _____
7. County Lawrence about 4 1/2 miles WEST of LEAD
8. PROOF OF PUBLICATION: Received 1st 8-30-83 Not Received _____
- APPLICATION: Approved 10-5-83 Subject to Well interference
- Not Approved _____ Action Deferred _____

PRIORITY
8/10/83

Dated Received 8/10/83 Application complete-yes x no _____ FEE 225.00

Remarks Heap leaching project - monitoring ground water quality

Corrected Application received 8/12/83 Period of Annual Use 01/01 - 12/31

WATER
QUALITY

Received yes _____ no _____ APPROVED/CONDITIONAL (Circle one)

WI-1 Description same as application-yes _____ no _____ Remarks _____

N/A

Disapproved _____ Returned _____

		33		34	
		x			

Diversion Point
SE 1/4 SW 1/4 Section 33-T5N-R2E

Land to be irrigated _____

WELL LOG

Driller Alexander Drilling Licensed - yes 324 no _____

Depth 76' deep well

Remarks _____

MAP Map No. 1288-1 Map located in Water Right x Map file _____
 Type of Map drawn Prepared by Prof Engineer
Randall Greenway

+++++

REVIEWED This Application was received within 30 days of the date received, accepted as complete, Number assigned and written up for advertisement before the Board on:

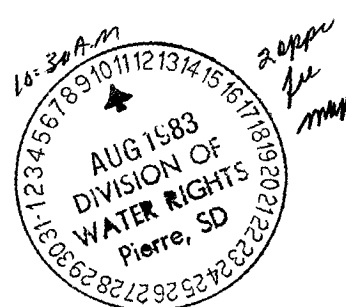
8/12/83

Barry Westlund
 (Signed)

+++++

PROTESTS Letters/Petitions in File - yes _____ no _____ Remarks _____

REMARKS Date
 F.F. & C. Final Decision, including F.F. & C. of Law were adopted _____
 OF LAW, Date
 FINAL Final Decision mailed to parties and/or parties notified that Final Decision was
 DECISIONS adopted _____
 ETC. Remarks _____

No. 1288-1Map No. 1288-1 Water Division No. 1 BELLE FOURCHE RIVER District
Above for Office Use 10120203

APPLICATION FOR PERMIT To Appropriate Water within the State of South Dakota

Check one of the following:

New XX Vested Right _____ Future Use _____

Change in Diversion _____ Additional Diversion _____

Change in Acreage _____ Additional Acreage _____

1. Name of Applicant Wharf Resources (U.S.A.), Inc. Phone No. 605-584-1441
 Post Office Address P. O. Box 897 Lead, SD 57754
 (Street, RR, or Box) (Town) (State) (Zip Code)
 If a corporation show date and place of incorporation 1978 Colorado
2. Method of accomplishing work (contract, employment of others, or by direct labor) Drilled By Others
3. Name of diversion work N/A WHARF RESOURCES WELL
4. Amount of water claimed (cubic feet per second) 0.25 ft³/sec.
5. Source of water supply Well
6. Location of point of diversion Well (see map) SE⁴SW⁴ SEC. 33-T5N-R2E bw

County Lawrence

7. Annual period or periods during which water is to be used Year Round
8. Use to be made of water, (irrigation, industrial, municipal, commercial, recreation, etc.) Water Quality Monitoring & Industrial
9. For irrigation use, Total number of acres to be irrigated N/A

List below each forty acre subdivision, or lot, or fraction thereof and show number of acres to be irrigated in each.

Land Description	No. Acres Irr.

Land Description	No. Acres Irr.

Attach sheet if more space is needed

10. Time required to complete construction of water supply system 2 ~~X~~ 5 years. Additional time required to complete application of water to the proposed beneficial use 2 ~~X~~ 4 years.

11. Choice of county newspaper for publication of Notice of Intent to Appropriate Water Lead Daily Call

12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source.

Monitoring Well (already in place)

B. Works proposed to transport water to place of use.

Submersible Pump And 3 Inch PVC Water Line

C. Works proposed to apply water to beneficial use.

Approximately 20% For Monitoring Tests (water quality and cyanide tests)Approximately 80% Makeup Water For Leaching Solution

Estimated Total Cost \$ _____

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

STATE OF SOUTH DAKOTA)
)ss.
County of _____)I, M. A. McKinnon the applicant, certify that I have read the foregoing application and have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.Signed M.A. McKinnonSubscribed and sworn to before me this 5th day of August, 19 83Carol A. Hansenbach
Notary Public (or other qualified officer)

WATER RIGHT APPLICATION APPROVAL

The Water Management Board hereby approves Water Right Application No. 1288-1

Wharf Resources Inc.

Box 897 Lead

South Dakota

(Applicant)

(Post Office Address)

(State)

With the following qualifications

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.

Date of first receipt of application August 10, 1983

Date of return to applicant for correction, amendments or changes required —, 19—

Date of receipt of corrected application —, 19—

Approved October 5, 1983, Recorded in Book — Page —

WATER RIGHT PERMIT NO. 1288-1

The Water Management Board hereby grants and issues this Water Right Permit No. 1288-1 authorizing the construction of the water use system and the putting of water to beneficial use as stated in the Application and as qualified in the Water Right Application approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is August 10, 1983

2. The equivalent of at least one-fifth of the work above specified is to be completed on or before January 5, 1988

3. The whole of said work is to be completed on or before October 5, 1988

4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is October 5, 1992

5. The water appropriated shall be used for the purpose of monitoring ground water quality and Industrial use

6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be injuriously affected by this appropriation.

7. The amount of the appropriation herein granted shall not exceed 0.25 cubic feet per second; neither shall it exceed the capacity of the above described water supply system, nor shall it exceed the amount of water needed for beneficial uses served, and ~~if for irrigation purposes said appropriation must be limited to not more than 2 acre feet per acre per year and be limited to not more than one-seventieth (1/70) of one cubic foot of water per second of time for each acre of land to which water is actually and beneficially applied~~

~~for irrigation~~ on or before October 5, 1992; said water to be used during the following described

annual period: January 1 thru December 31

Witness my hand this 24th day of October, 1983

THE WATER MANAGEMENT BOARD

By: John Hated
Chief Engineer, Water Rights

Certificate of Construction Issued —, 19—

Water License Issued —, 19—

D Well Information

- (1) Drill Hole, Diameter 7 7/8 inches, Depth 76 feet
- (2) Casing, Type Schedule 40 PVC, Diameter 4.5 I. D., Thickness + 0.173
(wood, concrete, steel, etc)
- (3) Screen, Type Perforated Pipe, Diameter Same, Length 38 feet
- (4) Gravel Pack, Thickness Approx. 3 3/8 in., Length of gravel pack 3 ft. gravel + 20 ft. Steel Casing

E Dugout Information or Estimates

- (1) Surface dimensions, _____, Depth _____

F Fill out for Either a Well or a Dugout.

- (1) Water Bearing Materials. (Attach a copy of test well log)

Depth to top of water bearing material 38 feet

Depth to bottom of water bearing material Unknown

Depth to water (ground surface to water level) 8 feet

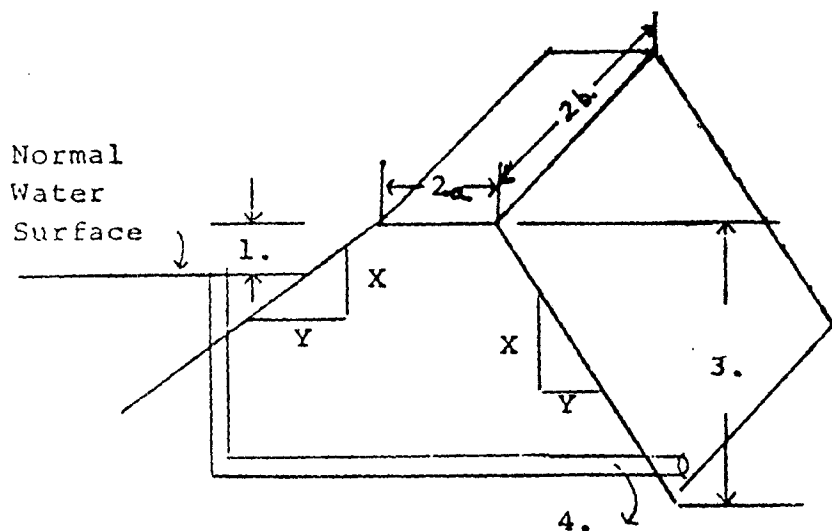
- (2) Distance to nearest existing household or livestock watering well.

On same owner's property 57 rds.

On property owned by others 214 rds.

G Water Storage Dams

If the proposed water use system contains one or more water storage dams, please show in the space below, the height, length, maximum water depth, surface area, drainage area, storage capacity, dam slope, dimensions, location and size of outlet works, of each storage dam. The location of each water storage dam should be shown on the water right map.

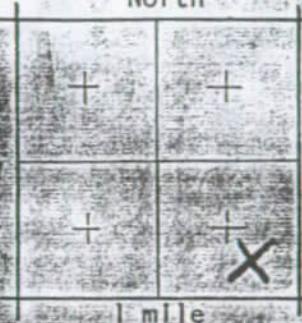


1. Freeboard _____
- 2a Crest width _____ b. length _____
3. Height of Dam _____
4. Outlet dimensions:
Pipe diameter _____
Spillway width _____
- X & Y slope:
Upstream _____
Downstream _____
Surface area of impoundment _____
Drainage area above dam _____

M. A. McHanna

Location SE 1/4 Sec 34 Twp 5N Rg 2E
 County Lawrence North

Please mark well location with an "X"
OBSERVATION Well
Below Dam



Well Completion Date 6-13-83

PROPOSED USE:

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

Method of Drilling: AIR Rotary -
Down Hole Hammer

WELL CONSTRUCTION:

Diameter of hole _____ inches Depth 80 feet

Casing: ☒ Steel ☒ Plastic ☐ Other
 Specify 2 1/2" - 280-6" Steel
30' - 4 1/2" P.V.C.

Pipe Weight Diameter _____ From _____ To _____
18 lb/ft - 6 inches - 0 feet - 21 feet
P.V.C. 4 1/2" inches - 80 feet - feet

Was a well screen used? ☐ Yes ☒ No

If Not Specify Perforated - 28' to 66'

Screen 4 1/2" P.V.C. Slot Size 1/16"

Length _____ Diameter _____

Was Casing left open end? ☐ Yes ☒ No

4 1/2" CAP on Bottom of Casing

Was a Packer or seal used? ☒ Yes ☐ No

If so what material? Bentonite & Cement

Was well gravel packed? ☒ Yes ☐ No

Was well grouted? ☒ Yes ☐ No

Describe grouting procedure Sealed Between
6" & 4 1/2" Casing

To what depth? 20' Feet to Surface

What was grouting material? Bentonite & Cement

If cement, how many sacks?

Location of packer(s) and screen or perforated pipe Packer

WAS WELL PLUGGED OR ABANDONED ☐ Yes ☒ No

If so how and with what material?

Well Owner:

Name Wharf Resources Inc.

Address Lead, So. DaK.

Well Log:

Depth

Formation	From	To
<u>DRIFT</u>	<u>0</u>	<u>40</u>
<u>Limestone, Broken,</u> <u>Buff color</u>	<u>40</u>	<u>60</u>
<u>Limestone Broken, Buff,</u>	<u>60</u>	<u>76</u>

STATIC WATER LEVEL 8.0+ - 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 off? _____

WELL TEST DATA:

☒ Pumped W/AIR 30-40 gpm.

☐ Bailed Describe: _____

☐ Other _____

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

Remarks: 6" Steel - 21.0' left in
top of hole for surface protect
to 4 1/2" P.V.C. During constructi
of Dam.
top water - 38' to 40'

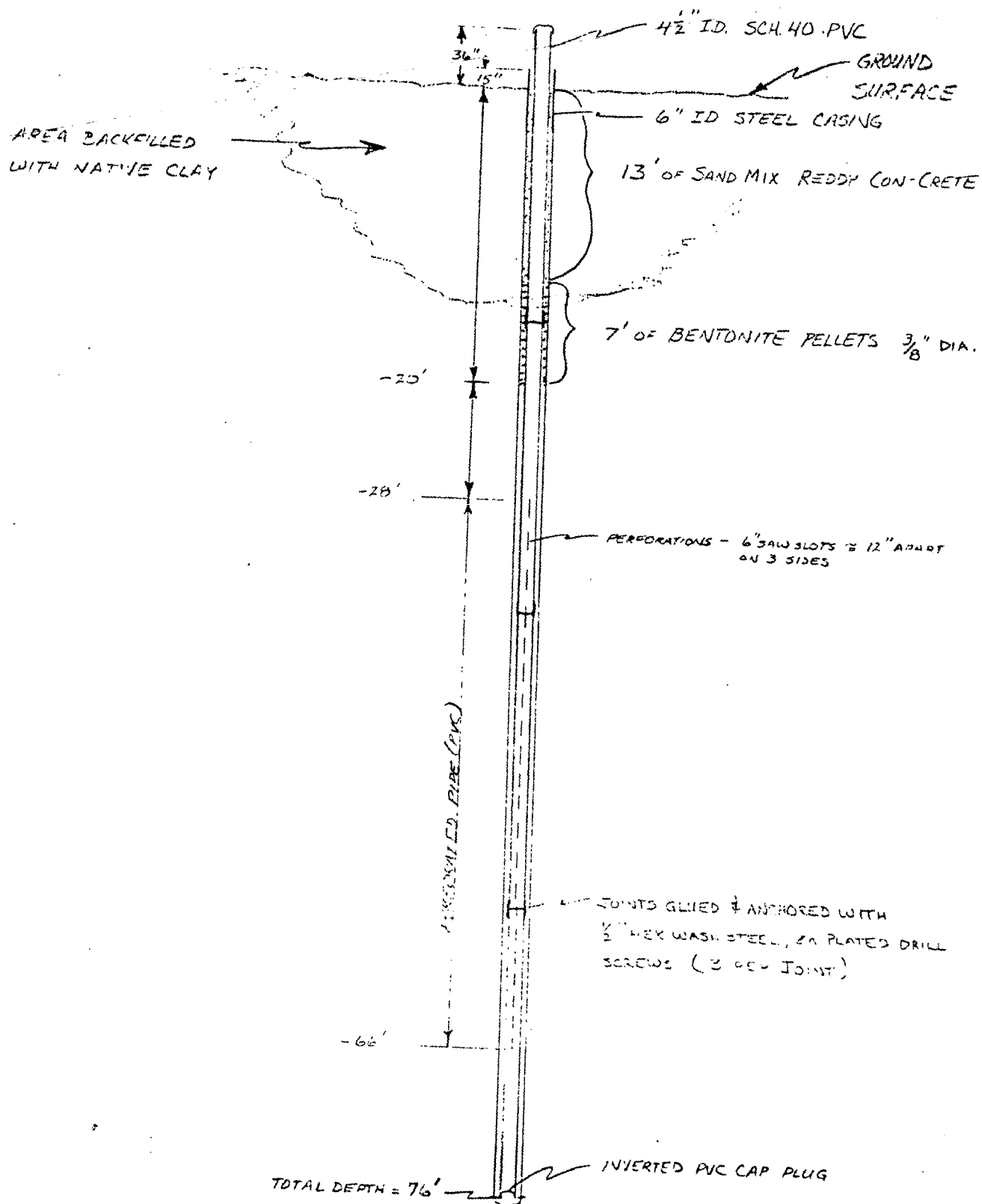
This well was drilled under license # 324

and this report is true and accurate.

Alexander Dilling Roy Alexander Jr.
 Drilling Firm Signed by

6-20-83

Date



July 6, 1983

Page 3

INSTALLATION PROCEDURE

HDH-12 was drilled with a 7 7/8" bit to a total depth of 76' (per Mike Alexander). Seventy-six feet of 6" I.D. steel casing (6 5/8" O.D.) was set to hold the hole until the PVC well casing was set. A total of 80' of "Twenty + plus F-480 well casing IC-0 5JS 8% 1272 GE 4-1/2" jet stream, SCH 40 PVC 1120" was used with 4' left standing above ground. Perforations start @ - 28' down to - 66'. Saw slots (6") were cut on three sides on 12" spacings. All slip joints were cleaned and glued and 1/2" hex wash steel zn plated drill screws were placed on three sides. After the PVC casing was installed the 6" steel was pulled up with 21 feet remaining in the hole. Fifty pounds of 3/8" bentonite pellets were placed in the annulus between the two pipes which filled up 7'. Then 13 feet of sand mix red clay concrete was poured to the surface.

RECEIPT

WATER RIGHTS COMMISSION

State of South Dakota

No 4 9309

PIERRE, August 10, 1983

RECEIVED OF Wharf Resources, Inc. PO Box 897, Lead SD 57754

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

Fee for Application for Permit to Appropriate Water No. (examination, processing, recording and filing)	225	00
Fee for inspecting Construction, and issuing Cert. of Construction No.		
Fee for inspecting Beneficial Use, and issuing Water License No.		
Fee for issuing Location Certificate-Dry Draw, No.		
Fee for filing		
Fee for certified copy of		
Fee for Print copy of map		
Fee for Certifying		
Fee for (any other work as provided by law)		
TOTAL	225	00

WATER RIGHTS COMMISSION

By *John Hatch*
Chief Engineer, Executive Officer
JOHN HATCH (ks)

43,000E

44,000E

45,000E

46,000E

47,000E

48,000E

49,000E

50,000E

HDH 12
NE 1/4 TOW
E 44.571
ELEV - 8969.2

S 82° 34' 49" E
5474.84 FT

S 82° 34' 49" E
5474.84 FT

50,000N
SE CORNER OF 64' 1/4
OF SEC 34 T5N, R2E.
RHPM

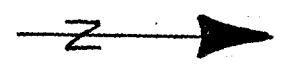
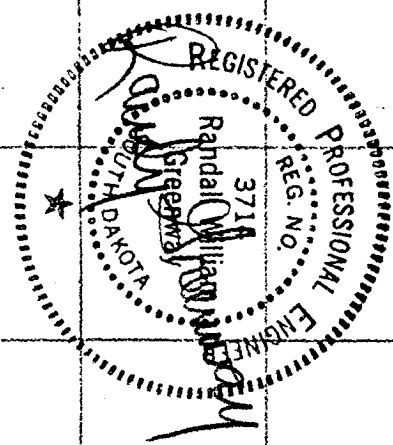
51,000N

52,000N

53,000N

54,000N

55,000N



MAP # 1288-1 1" = 1000'

500-002 Shallow Monitoring Well

Soil test hole TH-15 indicates that there may be a perched water table in this area. For this reason, a shallow monitoring well will be constructed below the contingency pond in McKinnley Gulch (see map). The monitoring well will be constructed to the specifications indicated on the diagram included on the map. A 1/3 horsepower submersible pump (or appropriate pump) will be installed in the monitoring well. An electrode will be set to turn the pump on when the water level is 12 feet above the pump and the low water electrode will be set to turn the pump off when the water level is two feet above the pump. Water from the monitoring well will be pumped into a cattle watering tank. A drillers log and geologists log on the drill hole is appended.

500-003 Sampling Procedures

Monthly water samples will be collected from the lysimeters and analyzed for conductivity, PH, temperature, and total CN. Also, the following parameters will be monitored for on a quarterly basis.

Total Organic Carbon	Ca
Chemical Oxygen Demand	K
Ammonia	Cl
Nitrate-Nitrite	Mg
SO ₄	Fe
CO ₃	cd
HCO ₃	As
Total Dissolved Solids	Zn
Na	Mn

Quarterly water samples will be collected from the test well and analyzed for the same parameters as the quarterly lysimeter samples.

A. Surface Preparation

1. The PVC liner subgrade will be brought to rough grade elevation and then scarified with a disc. If an area of silty or sandy clay is exposed, the upper 4" of the scarified surface will be removed. The surface will be scarified again, brought to proper moisture condition and compacted with a sheepsfoot roller or equivalent to the required density. After the proper moisture and compaction are achieved, a lift of the excavated silty or sandy clay with a minimum compacted thickness of 4 inches, will be placed, brought to the proper moisture condition, compacted using a sheepsfoot roller, and finished to a smooth condition using a smooth-steel face roller. If silty or sandy clay is not exposed in the area being worked, the unsuitable exposed materials will be removed and proper materials brought in such that the finished pad as described above is constructed.

2. The finished pad will consist of at least 8 inches of compacted silty or sandy clay. The pad shall have a permeability of less than 1.0×10^{-7} cm/s. The pad will be free of debris, roots, branches and organic material, sharp foreign objects, and cobbles or rocks with a maximum dimension larger than three inches. Sufficient laborers will be provided to follow the grading operations and manually remove all roots, rocks, and other undesirable materials during all phases of the heap pad preparation.

B. Moisture Content

1. The moisture content of the clay subgrade material shall be controlled within 0 to 6% above optimum. Moisture-Density relationship determined by Modified Proctor (AASHTO T-180 or ASTM D1557-78).

2. Adjustment of the moisture content (if needed) shall be provided by thorough mixing into the soil before compaction operations begin.

C. Compaction Criteria

1. The 8" thickness of clay subgrade shall be properly compacted to a minimum of 90% of the maximum dry density.

2. Compaction of the clay subgrade shall be performed by equipment that provide for a smooth finished surface.

3. The compaction operation shall be observed by a qualified geotechnical engineer or technician and sufficient tests performed to indicate the moisture level and degree of compaction attained.

4. Materials shall not be placed on frozen ground and compaction operations shall not be performed when temperatures are below 25 Degrees F.

3. As per our verbal request for modification to geotextile, the following will be submitted as the geotextile specification:

000-007 - GEOTEXTILE FABRIC

A. The geotextile fabric used in the construction of this project shall be Fibretex 200 or equal and will meet the following minimum specifications:

<u>Test Method</u>	<u>Physical Property</u>	<u>Value</u>
D-1777	Thickness	60 Mil
D-1682	Grab strength	140 lbs.
D-1682	Elongation	125%
D-2263	Trapezoid tear	60 lbs.
D-751	Burst strength	250 psi
	Water permeability (k)	0.30
	Equivalent opening size, U.S. Standard	70-100 m
	Resistant Range	1-13 (pH)

B. Fabric will be produced free of holes and undispersed raw materials. It will be constructed of virgin polypropylene, which has been spunfanded into non-woven layers, then needle punched to form the geotextile.

C. The roll goods will be fabricated in 15-17.5 ft. wide rolls, in lengths up to 300 feet, in order to reduce losses of area due to seaming. All seams on pad will be overlapped 12-14".

A letter from Hoskin-Western Sondereggers Inc. (Rick Baker) indicating test results for Fibretex 200 is appended.

4. The following is proposed as an amendment to your qualification Heap Pad # 4 in your letter dated May 24, 1983.

The PVC and liner materials will be placed and seams glued in pad, ditches and pond area with a manufactures representative present. A manufactures representative will not need to be present when the plant area PVC is installed because this liner is a one-piece construction.

This installation and all other liner installations will be directly supervised by a Wharf foreman who has long term experience in liner installations.

The manufactures representative will ensure Wharf's foreman is thoroughly trained and familiar with the installation procedure of his product. When appropriate, the manufactures representative will certify in writing that Wharf's foreman is qualified to install liner material without a manufactures representative being present.

5. Please find enclosed an organization chart for the Annie Creek Mine. This was a verbal request from Rasool Ahadi of your department.
6. As per our verbal request for modification of the filter material, the following amendment is requested:

700-003 - SPECIFICATION F

700-003 Filter - The filter material shall be placed as shown in drawing. The manufactures recommendations will be followed in placement of the filter material. These are:

- A. The fabric will be placed as smooth and wrinkle free as possible.

- B. Overlap will be at least one foot between 12' wide strips of filter fabric.
- C. The "rock fill-filter fabric" interface will be cleared of rocks and soil lumps such that no voids behind the fabric occur which will cause the fabric to tear or puncture when the overlain clay is compacted.
- D. The filter fabric shall be Mirafi 700 X or equal, having the following minimum specifications:

Weight	6.5 oz/sq yd	ASTM D-3776-79
Thickness	19 mil	ASTM D-1777-64
Grab strength	520X310 lbs	ASTM D-1682-64
Trapezoid tear strength	75 lb	ASTM D-1777-80
Grab elongation	35%	ASTM D-1682-64
Mullen burst strength	560 psi	ASTM D-3786-80
Puncture strength	145 lbs	ASTM D-3787-80
Abrasion resistance	155 lbs	ASTM D-3884-80
Coef. of permeability, k	0.02 cm/sec	CFMS Get-2

This fabric is approved by the Corps of Engineers for this type of installation.

- 7. As per our verbal request the following modification to the cut-off trench specification (found on the note on sheet 7 of project plans) is requested:

A. The cut-off trench will extend to bedrock laterally along the dam except where the cut-off trench is below the water table. In this location, the cut-off trench will be dug at least 15 feet below the level of the dam bottom.

B. The foundation material will be scarified to a depth of 8" and compacted. Clay will be replaced in the trench and compacted to specification within the first 8" lift above the water table and to specification within the first three 8" lifts below the water table.

...lifts will be to specification.

8. As per verbal discussions between Rick Baker and Rasool Ahadi regarding specification 700-001 C 2, 700-003 B 2 and 700-003 C 3, we request modification of the plans and specifications to read:

700-001 C 2

700-001 C 2. Cobbles and rock fragments in excess of 12" nominal size shall not be placed in the pond embankments. Cobbles and rock in excess of 5" will be compacted such that no settlement into voids will occur by providing sufficient compaction and sufficient finer materials to prevent bridging. The fill materials shall not contain more than 50% of rock fragments greater than 3 inch nominal diameter.

700-001 B 2

700-001 B 2. The rock fill portion of the embankment shall consist of graded coarse fill having a maximum particle size of 12" nominal diameter and having less than 15% passing the #200 sieve.

700-003 C 2

700-003 C 2. Cobbles and rock in excess of 12" nominal diameter shall not be placed in upstream clay zone. The fill will be cleaned with a root rake which has tongs spaced 12" apart. The upstream face will have at least 12" of silty or sandy clay with cobbles or rock less than 3" in diameter.

9. As discussed with you verbally, there is a strong possibility that insufficient quality clay material is present to complete construction of the pads. Wharf is presently studying alternatives to supply material needed.

Including - Clearing second year pads.

- Using bentonite as an alternative pad material.
- Finding an alternate source of clay material.

10. Wharf concurs with the qualification outlined in your letter dated June 13, 1983 for leakage monitoring system for the first year pad. These further qualifications will be incorporated in the plans and specifications as follows:

DIVISION 500 LEAKAGE MONITORING

500-001 Lysimeter

1. Lysimeters (soil water samples), for detecting leakage of CN solution, will be installed under the leach pad and collection ponds at the Annie Creek project. The lysimeters will be located according to the location indicated on the accompanying map. Model 1920 lysimeters (see diagram) will be installed under the pregnant and barren ponds and under the leach pad at the locations indicated. Model 1940 lysimeters (see attachment) will be installed at appropriate locations where long access tubes are required.

Holes for installation of the lysimeter will be cored down to resistance (bedrock). A lysimeter is then inserted into the hole and a small amount of 200 mesh silica flour, sufficient to surround the lower portion of the lysimeter, is added (see diagram). A bentonite plug is then placed above the silica flour and the remaining hole is back filled with native soil to approximately two feet ($\pm$) below the clay liner. A trench is then constructed to the edge of the pad or pond. The polyethylene access tubes are installed in the trench and surrounded with sand packing for protection. The access tubes will run beyond the pad and exit the ground via a PVC access station.

2. A double lysimeter shall be emplaced upgradient of the first year pad for the purpose of obtaining background information (shown on plan map). These lysimeters shall be nested and emplaced such that one lysimeter is positioned at the bedrock/regolith interface and the other half way between bedrock and the surface.

3. A double lysimeter shall be nested in the area of the existing well HDH-11 (shown on plan map) such that one lysimeter is positioned at the bedrock/regolith interface and the other half way between bedrock and the surface.



DEPARTMENT OF WATER AND NATURAL RESOURCES
OFFICE OF WATER QUALITY - SURFACE MINING PROGRAM
JOE FOSS BUILDING - ROOM 413
PIERRE, SOUTH DAKOTA 57501
TELEPHONE: 605/773-4201

MINING
INSPECTION REPORT

PERMIT NUMBER _____ DATE OF LAST INSPECTION _____ INITIAL ☒ ANNUAL

1. OPERATOR'S NAME Taiga Gold, Inc
ADDRESS P.O. Box 4446; Helena, MT. P.O. Box 716, Lead, SD
TELEPHONE 406/443-1680 605/584-1441
2. LEGAL DESCRIPTION Annie Creek Claims; Sections 2, 3 & 4; T4N-2E and Sections
MATERIAL MINED Gold & Silver 33, 33 & 34; T5N-2E Lawrence County
3. STATUS: NEW MINE ☒ OLD MINE ☒ EXEMPT _____ ABANDONED _____
4. BOND AMOUNT _____ INCREASE TO _____ DECREASE TO _____ RELEASE _____
5. BOND JUSTIFICATION _____
6. DEPTH OF PIT 20 ft lift. AREA SLOPES Steep - Moderate PIT SLOPES Steep to Moderate
DEPTH OF TOPSOIL ~ 4-10 inches DEPTH OF OVERBURDEN 4 inches to 2 ft
7. AMOUNT OF OVERBURDEN STOCKPILED Some near test AMOUNT OF TOPSOIL STOCKPILED Some near leach site
Overburden is weathered limestone. sites & test sites
8. ACRES MINED PRIOR TO 6/71 ? ACRES MINED AFTER 6/71 ~ 20 (old & new)
ACRES MINED PAST YEAR ~ 5 - Exploration ACRES RECLAIMED PAST YEAR None
TOTAL ACRES RECLAIMED None TOTAL ACRES UNRECLAIMED ~ 20
R. B. Barnes & ~ 150 Acres to be affected
9. OPERATOR CONTACTED Taiga Field Staff TOTAL ACRES INVOLVED 350 - 360
10. EQUIPMENT ON SITE Loaders - Dozers - Test equipment - Office Building
11. TYPE OF EXISTING VEGETATION Pine trees, Aspen - Oak; Native Bushes - Native Grasses
12. HAZARDS/PROBLEMS Potential Problem when leach ^{pile} is neutralized for abandonment.
13. ACTION REQUIRED BY INSPECTOR OR OPERATOR Control erosion of mine area, waste piles - leach
pile. Protect area leading to Spearfish Creek against migration of silt & leachant & pits
14. COMMENTS/RECOMMENDATIONS Mining to be done by open pit methods - Benching
levels - Waste will be moved to south area - Ore to be transported to leaching
area, crushed & placed on leach pad in 10 foot lifts - Leaching to be
done w/ cyanide solution sprayed over leach pile, and allowed to leach through
ore and pregnant liquid collected in ponds down dip from pad. The leach area
up slope from McKinley Gulch. Waste dump to be contoured & revegetated as built
Mining areas to be benched & contoured & revegetated. Leach pile to change
topography levels by 50 to 70 feet - Roads to site and on site graded & some are
waterbarred. The mining to be done on hillside - benching up grade.
Old mill buildings in poor condition.

I HEREBY CERTIFY THAT I HAVE INSPECTED THE SURFACE MINING
OPERATION SHOWN ABOVE, AND THAT THE SAME IS TRUE AND ACCURATE.

REPORT SUBMITTED BY W. A. Harris
WNR-526-9/81

DATE OF INSPECTION 5/27/82

July 5, 1983

Hoskins • Western • Sonderegger, Inc.
formerly Francis-Meador-Gellhaus, Inc.
1823 Main Street
Rapid City, South Dakota 57701
605/342-4105

Wharf Resources (USA) Inc.
P.O. Box 897
Lead, South Dakota 57754

ATTN: Mr. Bob Barnes

RE: LOAD TESTING ON GEOTEXTILE/30 MIL PVC LINER INTERFACE
ANNIE CREEK MINE LEACH PAD

Dear Bob:

As requested, we have completed the load testing on the geotextile fabric (Fibretex Grade 200) and 30 mil PVC liner that is proposed for use in the heap leach pad construction. In general, the pad will be constructed with an 8 to 12 inch layer of 3/4-inch drain rock underlain by the geotextile, 30 mil PVC, and compacted native clay in the respective order. The detail is shown as Detail A on Sheet 3 of the project plans (materials specifications are included in the project specifications).

To simulate the construction and load conditions that the geotextile and PVC liner will be subject to, a laboratory sample was prepared in the following manner: A 10-inch diameter steel mold, 11 inches in height, was filled with 6 inches of native clay at the optimum moisture content and compacted to 88% of the maximum dry density. The 30 mil PVC, geotextile, and 5-inch layer of 3/4-inch cleaned, crushed limestone was then placed in respective order. The apparatus was then placed at axial load compression to simulate ore heights of 100, 200 and 300 feet, or roughly 15,000 psf, 30,000 psf and 45,000 psf. Each load increment was applied for approximately 12 hours with intermittent load adjustments for stress relief due to strain. After each load increment, the apparatus was dismantled for visual inspection of the geotextile and the 30 mil PVC. Photographs of the fabrics after the final load increment (approximately 45,000 psf) were taken as a matter of record.

Visual inspections indicated that no punctures or tears occurred in the PVC liner, although the liner did exhibit a fair degree of distortion resulting in a dimpled effect. Closer inspection of the point load areas did not reveal any tears or punctures.

The testing performed is not an ASTM or other standard procedure, but nevertheless, represents an approximate simulation of the load conditions. In this respect, and based upon our lab results, it does appear that a reasonable degree of safety exists from puncture or tear of the liner material.

Wharf Resources (USA), Inc.
Re: Annie Creek Mine Leach Pad

July 5, 1983
Page 2

We trust this information is sufficient. If you have any questions or desire any additional information, please contact us at your convenience.

Sincerely,

HOSKINS-WESTERN-SONDEREGGER, INC.

R. RICK BAKER

R. Rick Baker, P.E.

RRB/ser

cc: File 83/5075

TO: R.B. Barnes

FROM: K.R. Kochel *KRK*

DATE: July 6, 1983

Re: HDH-12

CONTRACTOR - Alexander Drilling
Hill City, S.D. (605) 574-2594
Driller - Mike Alexander

Date started - 6-6-83

Date completed - 6-13-83

Drill type - Truck mounted Schramm rotadrill with Mission
hammer.

BIT SIZES

First pass - with 7 7/8" hole to - 76 feet to set 6" ID
steel casing.

Second pass - used 6" bit to clean out casing to 76'.

GEOLOGY LOG

0' - 40' - Alluvial fill; Clay, Quartz Monzonite, Porphyry,
Phonolite, Limestone.

40' - 60' - Buff L.S. broken.

60' - 76' - Sugary textured, buff to pale yellow L.S.

HYDROLOGY - Static level @ $\approx$ -7'

Hit H₂O @ 38' - 40'

Flow estimate 35 GPM (30-40 GPM)

COST

No bill received yet.

REPORT ON WATER PERMIT APPLICATION

NO. 1278-1, Wharf Resources (USA) Inc.

June 1, 1983

Application No. 1278-1 is for 0.25 cfs from one 480 foot deep Madison Formation well. The water will be used for domestic use and make up water for the leach plant. This make up water is to replace water lost by evaporation from leach heap. The applicant expects to pump the well up to 75% of the time. Wharf Resources presently has a mining permit from the State of South Dakota. The DWNR, Office of Water Quality is currently maintaining a series of water quality monitoring wells at the site.

Aquifer

Madison Limestone

Geology and Aquifer Characteristics

Although this well will be completed in the Madison Limestone (see driller's log and Gries geologist's log). This is not a typical section of the Madison. The nearby intrusive rocks have altered the Madison both structurally and internally and thus affected the ground water flow system. There is very little data available to support these assertions other than some personal experience looking at these rocks, studying the geologic maps (Darton, 1925) the permit application as submitted and existing water permits.

The groundwater system probably flows from the north (higher ground) to the south and west towards Anne Creek and East Spearfish Creek. Both these creeks are perennial streams indicating a baseflow from groundwater. The reported static water level from a test well is 100 feet below land surface which is above the creek levels and produced 30 gpm using air lift. A properly constructed well should yield the amount of water requested by this application. Water Rights does not have any observation wells in this area and no historical data is available (water levels).

Review of Existing Water Rights

1173-1	Warbonnett Inc.	Springs from Madison Limestone	0.20 cfs
1247-1	Warbonnett Inc.	950' Madison well	1.20 cfs

Water Permit No. 1173-1 is a recognized vested right for springflow and is located approximately 1/2 to 3/4 mile southeast of the well requested by this (1278-1) application. Water Permit No. 1247-1 is located about 3/4 mile northeast of this (1278-1) application and may not yet be constructed.

Conclusions

1. Very little hydrologic data is available. Certainly the Madison is a viable source of water in this area, but well capacity and storage in the aquifer are unknown.
2. The source of water for the wells both in this application and application No. 1247-1 is the same as the spring under No. 1173-1.
3. Recharge to the Madison has been estimated at 6.8 in/yr (Rahn and Gries, 1973) in the Northern Black Hills.

Conclusions (cont.)

4. The existing test well penetrates porous zones in the Madison and the static water level is 100 feet below land surface. The well was tested using airlift at 30 gpm.
5. Because of the distance between the existing water permit and the relatively low pumping rates, interference should not be a problem.
6. It is recommended that testing and permanent monitoring (water levels) be done in order to prevent possible controversy.


JAMES A GOODMAN
Hydrologist

Darton, N.H. and Sidney Paige, 1925, Central Black Hills Folio, USGS, No. 219.

Rahn, P.H. and J.P. Gries, 1973, Large Springs in the Black Hills, South Dakota and Wyoming, SDGS Report of Investigations No. 107, Vermillion SD.

REPORT ON WATER PERMIT APPLICATION
#1288-1, Wharf Resources (USA), Inc.

August 16, 1983

Application 1288-1 is for .25 cfs from one 76' deep Madison limestone well. The water will be used for monitoring water quality and for makeup water in the leaching process. Essentially, this application is the same as 1278-1 with the only differences being the depth and location of the wells.

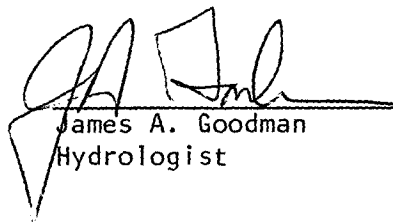
Aquifer - Madison Limestone

Geology and Aquifer Characteristics - see 1278-1

Review of existing water rights - see 1278-1

Conclusions

1. Basically are the same as for 1278-1.
2. This application is for an existing monitoring well. The well reportedly produces 30-40 GPM. There are no specific capacity or drawdown data given. (See well log)
3. The way this application is written up, I suspect, Wharf will use this well and never construct the one for 1278-1 but this is not clear.



James A. Goodman
Hydrologist

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT

APPLICATION NO. 1288-1, Wharf Resources, (USA), Inc.

Pursuant to 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Water and Natural Resources concerning Water Permit Application No. 1288-1, Wharf Resources (USA) Inc., PO Box 897, Lead SD.

The Chief Engineer is recommending APPROVAL of Application No. 1288-1 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) that the proposed diversion can be developed without unlawful impairment of existing rights, 3) that the proposed use is a beneficial use and 4) in the public interest with the following qualification:

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 attached report is a part of this recommendation.



JOHN HATCH, Chief Engineer
August 16, 1983

WP ~~or~~ ~~WRT~~ No. 1288-1

Instruction to Newspaper - Publish first publication of the following Notice on or before August 22, 1983 with 2nd publication 1 week later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 1288-1 to Appropriate Water
and/or to Amend Water Permit or Water Rights No. _____

Notice is hereby given that Wharf Resources (U.S.A.), Inc. whose mailing address is POB 897, Lead, South Dakota has made an application for a permit

to appropriate 0.25 cubic feet per second from groundwater - one 76' well (Madison Formation), the point of diversion to be located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 33, Twp. 5N Range 2E. Said water to be used for the purpose of providing water supplies for industrial use and groundwater quality monitoring purposes.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends Approval of Application No. 1288-1 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) is beneficial use of water and 4) is in the public interest.

This application will be considered by the Water Management Board at Civil Defense Room
Basement, State Capitol, Pierre, SD on October 5 19 83 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to make a determination on this application after it reaches a conclusion based upon facts presented at the public hearing. Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the Applicant and the Chief Engineer by September 23, 1983. The petition may be informal, but it must include a statement describing the petitioner's interest in the application, the reason for the petitioner's opposition to or support of the application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17, 46-5-1 thru 46-5-16, 46-5-24, 46-5-25, 46-5-30.2, 46-5-31; 46-2A-1 thru 46-2A-10, 46-2A-12; ~~(ground) 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14; (future use) 46-5-38 thru 46-5-40; (transfer lands) 46-5-38.1, 46-5-33 thru 46-5-35; (10,000 AFA) 46-5-20.1, 46-5-8.1; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15; (future use) 74:02:01:24 thru 74:02:01:25; (10,000 AFA) 74:02:01:15:02 thru 74:02:01:15:05.~~

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

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, DWRN, Joe Foss Bldg, Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or any person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by September 23, 1983.

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Lawrence) ss.

I, Berniece R Sexton

certify that the annexed printed copy of No.

Water was taken from the Lead Daily

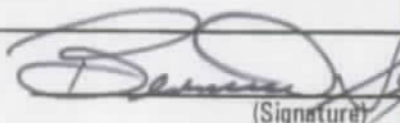
A newspaper which during the whole time of
herein after stated, has been and is printed at

Lead of Lead,

County of Lawrence and
that the said notice was published in said new
two dates:

Aug 22, 1983

Aug 29, 1983



(Signature)

Office Mana
(Title)

Aug 29, 1983

(Date Signed)

NOTICE OF HEARING
on Application No. 1288-1
to Appropriate Water

Notice is hereby given that Wharf Resources (U.S.A.) Inc., whose mailing address is POB 897, Lead, South Dakota has made an application for a permit to appropriate 0.25 cubic feet per second from groundwater - one 76 well (Madison Formation), the point of diversion to be located in the SE 1/4 SW 1/4 of Section 33, Twp. 5N Range 2E. Said water to be used for the purpose of providing water supplies for industrial use and groundwater quality monitoring purposes.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends Approval of Application No. 1288-1 because 1) unappropriated water is available, 2) will be no lawful impairment of existing rights 3) is beneficial use of water and 4) is in the public interest.

This application will be considered by the Water Management Board at Civil Defense Room Basement, State Capitol, Pierre, SD on October 5, 1983 at 10:00 a.m.

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

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, DWRN, Joe Foss Bldg., Pierre, SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or any person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by September 23, 1983.

Aug 22, 29

Cost of Printing:

84 lines x .2305 = 19.36

84 lines x .1845 = 15.50

Total \$ 34.86





Department of Water & Natural Resources

Joe Foss Building
623 East Capitol
Pierre, South Dakota 57501

October 25, 1983

Wharf Resources, Incorporated
Box 897
Lead, South Dakota 57754

Dear Sir:

Enclosed herewith is your Water Permit No. 1288-1 as approved by the Water Management Board authorizing you to construct your water diversion system and the water to beneficial use, not exceeding the limits as specified in said Water Permit No. 1288-1.

Also enclosed is Form 10, Notice of Completion of Works and Application of Water to Beneficial Use, which you are to complete and submit to the Chief Engineer when you have completed the system and/or have put the water to beneficial use. An inspection can then be scheduled so that your Water License may be issued to you, thus completing your acquisition of a Water Right.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Division

JH:ms

enclosure

PLEASE NOTE: Certain changes can be made in your permit within the five year construction period, usually without affecting the priority date provided an application to amend your permit is made within the five year period-i.e. changes in location or number of diversion points (wells) or location of land to be irrigated. Well locations for wells into the same aquifer can be moved up to 660 feet without application.

Applications to amend a permit after the five year construction period will be assigned a new priority date. Applications to change water sources, to add lands or increase original diversion rates, if approved will usually receive the date of the new application as a priority date regardless of the five year construction period.

RECEIPT

Division of Water Rights

No 4 9540

South Dakota Department of Water and Natural Resources

Pierre, February 7, 1984, 19

RECEIVED OF Paul E. Dirksen, 2005 Ironwood Parkway, Room 105, Coeur d'Alene, ID
the following amount in fees for services rendered as provided for by law: 83814

Fee for Application for Permit No. _____ to Appropriate Water, to construct works and to put water to beneficial use _____		
Fee for Application for Permit No. _____ to Appropriate Water for Future Use _____		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for xeroxing _____	1	00
(Any Other Work Provided by Law)	Total	1 00

By John Hatch
Chief Engineer JOHN HATCH/ms

NOTICE OF COMPLETION OF WORKS AND/OR
APPLICATION OF WATER TO BENEFICIAL USE

Post Office Lead, South Dakota

Date October 7, 1985

TO: Water Rights
Joe Foss Building
Pierre, South Dakota 57501

Dear Sirs:

This is to inform you that I have completed the construction of the water diversion system and/or that I have put the water to beneficial use to maximum extent it is going to be used, not exceeding the amounts as specified in Water Right No. 1288-1.

Water Right Permit No. 1288-1 states that the diversion system is to be constructed by October 5, 1988, and that the water is put to beneficial use by October 5, 1992.

The diversion system was completed on July, 1984. Applying the water to beneficial use was completed on July, 1984.

You may schedule an inspection so that ~~the Certificate of Construction and/or~~ the Water License may be issued, thus completing my acquisition of a water right.

Steve Stampfli
(Signature)

Steve Stampfli
Environmental Coordinator
Wharf Resources
PO Box 897
Lead, SD 57754



SOUTH Dakota Department of
Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

WATER RIGHTS DIVISION
(605) 773-3352

1278-1
1288-1
1346-1

June 6, 1988

Wharf Resources
PO Box 446
Deadwood, South Dakota 57732

Dear Sir:

The inspection of your water use systems and inspection of the extent of the application of water to beneficial use, as developed under your Water Right Nos. 1278-1, 1288-1 and 1346-1 has been completed. Your final water right documents, the Water Licenses, can now be issued.

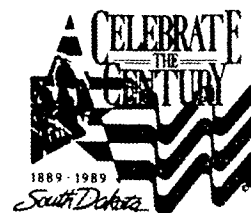
Statutes require that we charge a \$50.00 fee for the inspection and issuing of the Water License. Upon receipt of the \$50.00 fee from you for each permit, total of \$150.00 for the three, your Water Licenses will be sent to you.

South Dakota Water Law 46-5-30.1 requires that a permit holder may not divert water until this \$50.00 license fee for each permit has been paid. Please contact us if you have any questions.

Sincerely,

Maxine Stirling
Secretary

NOTE: On check or money order, please indicate the number of the water permit. This insures proper handling of the fees.



RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

411282

Pierre, June 15, 1988

RECEIVED OF Wharf Resources, P.O. Box 446, Deadwood, SD 57732

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct works and to put water to beneficial use _____		
Fee for Application for Permit No. _____ to Appropriate Water for Future Use _____		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>1288-1</u>	50	00
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for _____		
(Any Other Work Provided by Law)	Total	50 00

By John Hatch
Chief Engineer JOHN HATCH (MS)

LICENSE FOR PERMIT NUMBER 1288-1

1. Legal location of wells: SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 33, T5N-R2E

dams & structures: _____

2. Well Information: Well Drilling Firm Alexander Drilling

No. of wells 1 Depth 76 feet

Casing a) diameter 4 $\frac{1}{2}$ inches Screen a) type Polyvinyl Chloride (PVC)
b) length 76 feet b) length 38 feet
c) type Polyvinyl Chloride (PVC) Static Water Level 25 feet

Pump a) make submersible Motor a) make submersible
b) model _____ b) model no. _____
c) size _____ c) horsepower rating 2
d) capacity 30 GPM d) motor efficiency rating _____
e) turbine pump
no. of stages _____

3. Distribution lines:

- a) size of lines 1 inch and 3 inch lines.
- b) type Polyvinyl Chloride (PVC)
- c) length 300 feet totally

4. Dam information:

- a) height to crest _____
- b) height to spillway _____
- c) crest width _____
- d) crest length _____
- e) spillway length _____
- f) spillway width _____
- g) approx. storage _____
- h) Distribution lines or canals:
 - 1) size _____
 - 2) type _____
 - 3) length _____
- i) Outlet tubes:
 - 1) diameter _____
 - 2) type _____
 - 3) valued (Y/N) _____
 - 4) valve type _____
 - 5) location on structure _____

5. System Type: a) sideroll:

- 1) length _____ feet
- 2) diameter of pipe _____
- 3) make, model & number of sprinklers _____
- 4) spacing of sprinklers _____
- 5) nozzle size _____

b) towline:

- 1) length _____ feet
- 2) make, model & number of sprinklers _____
- 3) spacing of sprinklers _____
- 4) nozzle size _____

5. System Type: c) center pivot

- 1) make _____
- 2) number of towers _____
- 3) distance between towers _____
- 4) overall length _____
- 5) End gun (Y/N) _____
- 6) high or low pressure _____
- 7) make & size of nozzles _____
- 8) PSI reading while system is running _____
- 9) GPM _____

g) Gun

- 1) make _____
- 2) serial number _____
- 3) nozzle size _____
- 4) capacity (GPM) _____
- 5) PSI _____
- 6) hose size _____
- 7) hose length _____

d) Gate Pipe

- 1) length _____
- 2) diameter _____
- 3) spacing of gates _____

e) Siphons

- 1) number _____
- 2) size _____

f) Portable boom

- 1) make _____
- 2) serial number _____
- 3) nozzle size _____
- 4) capacity (GPM) _____
- 5) PSI _____

h) Hydromatic

- 1) make _____
- 2) model _____
- 3) serial number _____
- 4) length _____
- 5) nozzle size _____
- 6) spacing _____
- 7) PSI _____
- 8) capacity (GPM) _____

YES NO Check Items

- | | | | |
|-------|----|-------|---|
| _____ | NA | _____ | 1. Soil and water permit lands agree with lands being irrigated and lands listed on permit. |
| _____ | X | _____ | 2. Special Qualifications to permit being abided by. |
| _____ | X | _____ | 3. All Structures, wells and lands on map. |

REMARKS:

Report Of Examination Of Works And/Or Application Of Water To Beneficial Use

TO: Chief Engineer, Division of Water Rights, DWRN, Foss Bldg., Pierre, SD 57501

I have this day made a thorough examination of the water use system constructed by Wharf Resources
-(USA) Inc. of P.O. Box 446, Deadwood, S.D. 57732 holder of
Permit No. 1288-1, bearing the priority of August 10 1983 authorizing
the diversion of 0.25 cu. ft. per second of the waters of groundwater- Madison well
for WQ monitoring-industrial purposes, in Lawrence County.

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

A. Works used to divert the water:

A submersible pump, 30 gallons per minute capacity.

A submersible motor, 2 horse power.

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

3 inch Polyvinyl Chloride (PVC) pipe,

1 inch Polyvinyl Chloride (PVC) pipe, totally 300 feet long.

C. Works used to apply water to beneficial use:

The water is used for water quality monitoring and also as makeup water for heap
leaching process.

The system is in the following condition good

The point of diversion is located approximately 946 feet north, 2128 feet east from the Southwest
Corner of Section 33, T5N-R2E- SE $\frac{1}{4}$ SW $\frac{1}{4}$

The works are capable of diverting and conveying to the place of use 0.07
cu. ft. per second of water which is to be used for WQ monitoring- industrial use

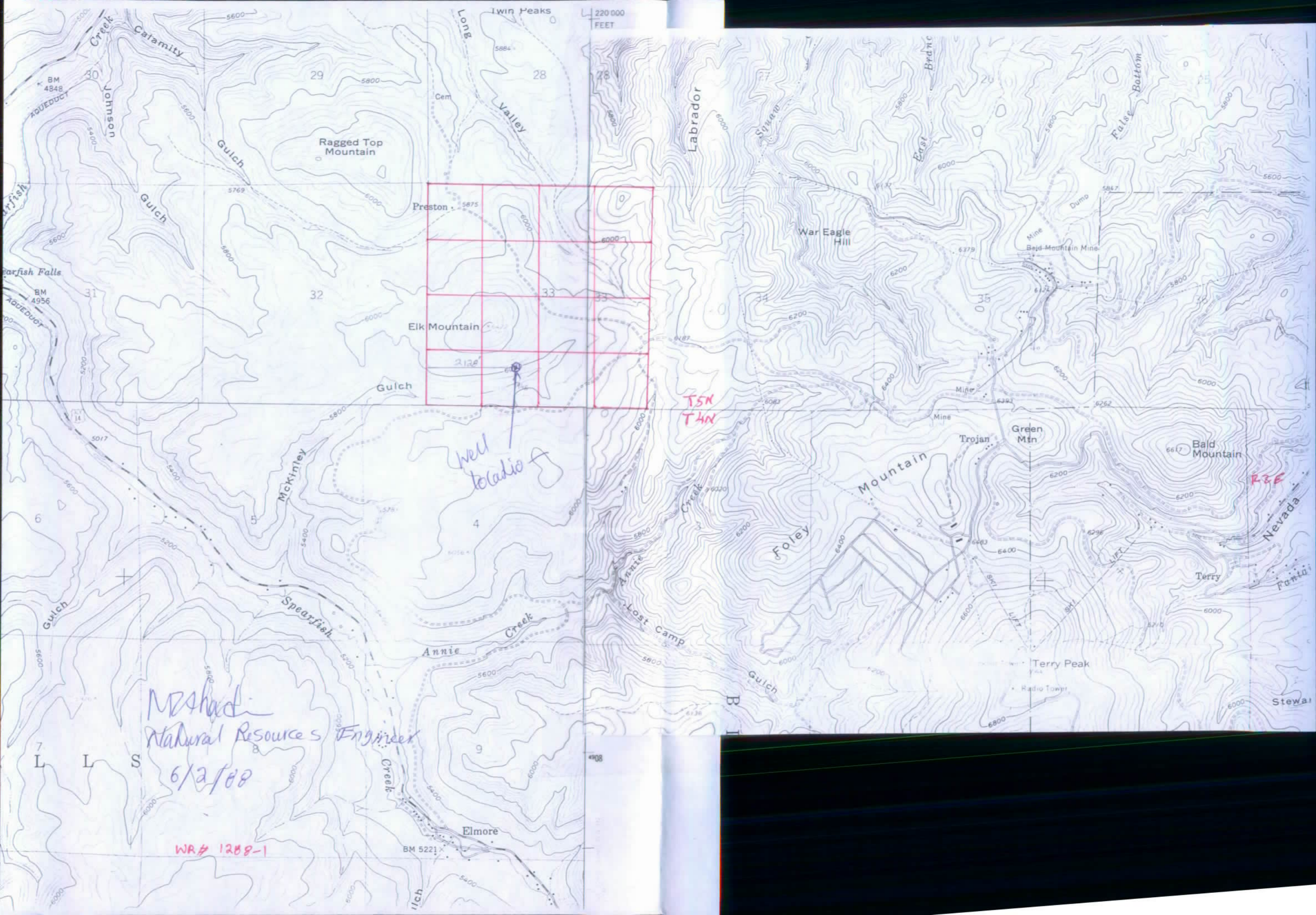
Water has been put to beneficial use to the maximum extent as follows:

The water is used as makeup water for heap leaching process to extract gold. It is
also used for water quality monitoring.

comprising a total of NA acres of land and the license should be issued for 0.07 cfsApplicable permit qualifications have been complied with X Yes NoExceptions to compliance are: Date 5/25/88

(signature)

MSHadi



220 000
FEET

Creek
Calamity
Gulch
BM 4848
AQUEDUCT

BM 4956
AQUEDUCT

5017

Gulch

7 L L S

MR Shad
Natural Resources Engineer
6/2/88

WR# 1208-1

Ragged Top Mountain

Preston

Elk Mountain

Gulch

McKinley

Spearfish

Creek

Elmore

BM 5221

Annie

Creek

Annie

Lost Camp

Creek

Annie

Lost Camp

Gulch

B I

T5N
T4N

Labrador

War Eagle Hill

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6083

6020

6200

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6136

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State of South Dakota

Water License No. 1288-1

(1) Wharf Resources (USA) Inc.
of PO Box 446, Deadwood, South Dakota 57732
made Application No. 1288-1, August 10, 1983 for a water permit to appropriate
0.25 cubic feet per second of water from groundwater (one well),
Lawrence County, South Dakota for industrial and water quality monitoring purposes.
Permit No. 1288-1, with a priority date of August 10, 1983
was approved October 5, 1983 and issued to applicant(s) for diversion of water with construction of the described
water supply system to be completed on or before October 5, 1988 and for the application to beneficial use of said
water on or before October 5, 1992.

and

(2) It is certified that the applicant 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 0.067 cubic feet per second of water
for beneficial use. The location of the diversion point(s) is 946 feet North, 2128 feet East from the
SW Corner of Section 33, T5N, R2E (SE $\frac{1}{4}$ SW $\frac{1}{4}$)

(3) The applicant has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use, ~~to the following extent,~~ _____

the holder(s) and/or owner(s) of Water Permit No. 1288-1 is issued a license to appropriate water, the right to use 0.067 cubic feet per second of water from groundwater (one well) with a priority date of August 10, 1983 from the location specified in (2) of this license. The water to be ~~conducted to and upon lands specified in (3) of this license~~ diverted of the purpose of ~~water quality monitoring~~ and industrial use

This license is subject to any limitations or qualifications listed in Water Permit No. 1288-1 and subject to South Dakota State Law.

Chief Engineer, Water Rights Division
Department of Water and Natural Resources

MAR 10 1989

JOHN HATCH

SOUTH DAKOTA
Department of
Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

MAR 10 1989

1278-1
1288-1
1346-1

Wharf Resources, Inc.
PO Box 446
Deadwood, South Dakota 57732

Dear Sir:

Enclosed is Water License Nos. 1278-1, 1288-1 and 1346-1. This is the final water right document completing your process of obtaining a Water Right.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right Nos. 1278-1, 1288-1 and 1346-1, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

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

Very truly yours,

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

enclosures





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

APR 23 1998

1406A-1
1493-1

Wharf Resources
Terese Hruska and Jeff Dirkson
HC 37, Box 811
Lead, SD 57754

Dear Ms. Hruska and Mr. Dirkson:

Enclosed are Water License Nos. 1406A-1 and 1493-1. These are the final water right documents completing your process of obtaining a Water Right. Enclosed are Receipt Nos. 415678 and 415679 in the amount of \$50.00 each which you paid for the investigation and issuance of the Water Licenses.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the wells authorized by Water Right Nos. 1406A-1 and 1493-1, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

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

Very truly yours,

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

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enclosures

NOTE: The applicable portions of No. 1406-1 have been incorporated into 1406A-1, and the applicable portions of Water Right Nos. 1278-1 and 1288-1 are incorporated into License No. 1493-1.