

WATER PERMIT NO. 1652-1

Name of Applicant: Jeral
Gerald Shear

Address: HC 30 Box 151, Belle Fourche SD 57717

Phone: 605 892-2361

Amount of Water Claimed: 0.93 cfs - 6.4 AF storage

Total Acres: 65

Source of Water Supply: groundwater pumped into existing stock dam

Water to be used for: irrigation

County: Butte

Type of Waste Disposal System: NA

Location: 2 miles west of Belle Fourche

PRIORITY

Date Received: 6-18-97

Fee: \$225

Corrected Application Received: 6-30-97

Period of Annual Use: May 1 - October 31

8-21-97 source changed to Minnelusa, 2100 feet deep

Remarks:

Diversion Point: well - NE 1/4 NE 1/4 Sec 8;

stock dam - along section line between

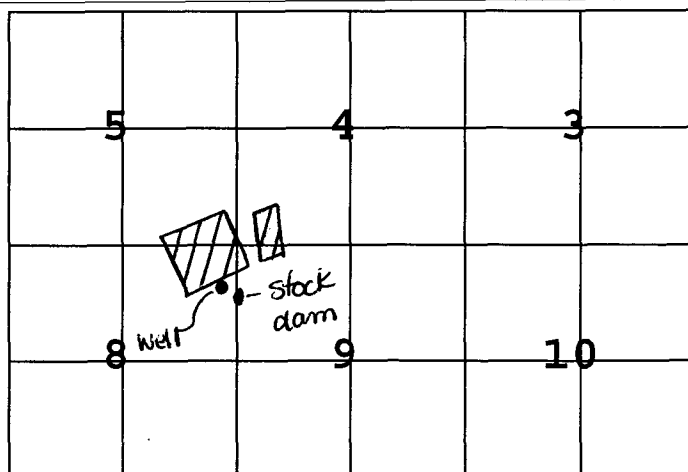
NW 1/4 NW 1/4 Sec 9 and the NE 1/4 NE 1/4

Sec 8; all in T8N-R2E

Land to be Irrigated: SW 1/4 SW 1/4 Sec 4;

NW 1/4 NW 1/4 Sec 9; N 1/2 NE 1/4 Sec 8;

S 1/2 SE 1/4 Sec 5; all in T8N-R2E



Depth of Well: approximately 2500 ft

Well Driller:

Remarks:

Type of Map: topo

Prepared by: Thomas D VerHelst

Reviewed and the Number Assigned on: 7-1-97

By: Karen Schlaak

Notice of Hearing - date to intervene: _____

SOUTH DAKOTA
WATER PERMIT NO. 1652-1

Date of first receipt of application June 18, 1997.

Date of return to applicant for corrections, amendments or changes June 18, 1997.

Date of receipt of corrected application August 21, 1997.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1652-1 to Jeral Shear, HC 30 Box 151, Belle Fourche SD 57717 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. 1652-1 appropriates 0.93 cubic feet of water per second from one well (Minnelusa Formation) approximately 2,100 feet deep located in the NE 1/4 NE 1/4 Section 8-T8N-R2E. Water will flow from the well into a stock dam (6.4 acre-feet storage capacity) located on the section line between the NW 1/4 NW 1/4 Section 9 and the NE 1/4 NE 1/4 Section 8 and then pumped to irrigate 65 acres located in the SW 1/4 SW 1/4 Section 4; NW 1/4 NW 1/4 Section 9; N 1/2 NE 1/4 Section 8 and the S 1/2 SE 1/4 Section 5; all in T8N-R2E.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 - October 31.
3. The date from which applicant may claim right is August 21, 1997.
4. The date of approval of Permit No. 1652-1 is October 6, 1997.
5. One-fifth of the construction is to be completed on or before April 6, 2000.
6. All construction is to be completed on or before October 6, 2002.
7. Water is to be put to beneficial use on or before October 6, 2006.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. 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.
2. The wells authorized by Permit No. 1652-1 shall be constructed by a licensed well driller and construction shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.

(continued)

Water Permit No. 1652-1

Jeral Shear

Page 2

3. The well approved under this Permit shall be valved and the flow reduced to the amount needed or to a minimum when not being used (directly or for storage purposes). The well shall also be equipped with a pressure gauge and a record kept of any pressure fluctuations. Such records shall be available to the Chief Engineer upon request. If this well is abandoned or the Permit cancelled, the well must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

By: 
John Hatch, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

NOV 12 1997

date



FORM 2: Application for irrigation in South Dakota
(type or print)



Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	(office use only)
	No. <u>1652-1</u> Hydrologic Unit <u>10/20203</u>
	Basin <u>Belle Fourche River</u>
	Newspaper <u>Belle Fourche Post, Belle Fourche, SD</u>

Application For Permit To Appropriate Water For Irrigation

Type of Application: X New Vested Right Amendment/Correction to Permit No.
 (check one) (Use predates Mar 2, 1955)

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

- Name of Applicant Peral Shear ☒ Owner ☐ Tenant/Lessee Phone (605)892-2361
 Mailing Address HC 30, Box 151 Belle Fourche State SD 57717
(Street, RR, or Box) (Zip Code)
- Amount of water claimed .93 *CFS or 418 **GPM 6.4 ***AF Total Acreage 65
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout if applicable)
- Source of water supply Well
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) 1 well in NE1/4, NE1/4, Sec 8 T8N-R2E Existing storage reservoir - along section line between NW1/4 NW1/4 Sec. 9 and NE1/4 NE1/4 sec. 8; Q1 in T8N-R2E County Butte
- County or counties where water will be used Butte
- Annual period during which water is to be used May-October 31
- List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
SW1/4, SW1/4 SEC 4 T8N-R2E	15	NW1/4, NE1/4 SEC 8 T8N-R2E	2
NW1/4, NW1/4 SEC 9 T8N-R2E	5	SE1/4, SE1/4 SEC 5 T8N-R2E	18
NW1/4, NW1/4 SEC 9 T8N-R2E	2	SW1/4, SE1/4 SEC 5 T8N-R2E	3
NE1/4, NE1/4 SEC 8 T8N-R2E	20		

- Give a description of the project. (Attach sheet if more space is needed)
 The project involves drilling a new well to fill an existing stock dam to be used as an irrigation storage reservoir. Irrigation water will be pumped from the reservoir to a 1320' long side wheel roll to irrigate 65 acres of hayland.

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)

STATE OF SOUTH DAKOTA)

County of Butte SS

I, Peral V. Shear, the applicant, have read this application, examined the attached map, and certify that the matters stated are true. I intend and am able to complete the necessary construction.

Signed

Peral V. Shear

Subscribed and sworn to before me this 29th day of May 19 97

Pearl Shear

Notary Public

My Com Expires 4-24-98

Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction 2500(?) 7 7/8" Hole

- a) Drill Hole Diameter 12 1/4" 7 7/8" Depth 200 Surface Main hole
 b) Casing Type 8" IRON Diameter 8" 5 1/2" Thickness 8" (24 lb) 5 1/2 (15.5 lb)
 c) Screen Type Pressure Joint to Surface Diameter _____ Thickness _____
 d) Gravel Pack Thickness _____ Length of Gravel Pack _____
 e) Depth to Top of Water Bearing Material Minnelusa
 f) Depth to Water (ground surface to water level) ?
 g) Distance to nearest existing domestic well: 3/4 mi.
 On applicants property _____ On property owned by others X



2. Wastewater Disposal System Information

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

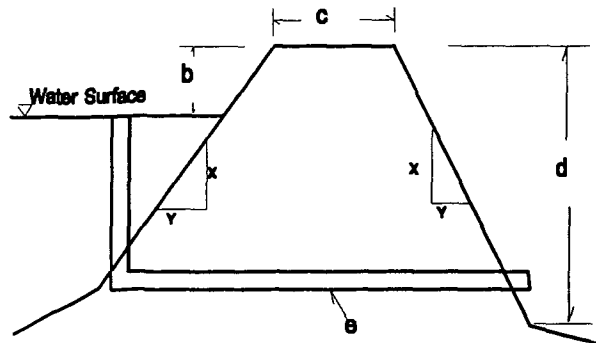
3. Dugout Information

- 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 3'
 c) Crest Width 12'
 Crest Length 200'
 d) Height 15'
 e) Primary Outlet Capacity N/A
 If pipe, diameter _____
 f) Secondary Spillway Capacity 400cfs
 Spillway Width 100'
 g) X & Y Slope
 Upstream 3:1
 Downstream 2:1
 h) Surface Area of Impoundment 1.6 Ac.
 i) Storage 6.4 Acre Feet
 j) Drainage Area Above Dam 133 Acres

RECEIPT

415406

Division of Water Rights

South Dakota Department of Environment and Natural Resources

Pierre, June 30, 19 97

RECEIVED OF Jeral or Dianne Shear, HCR 30, Box 151, Belle Fourche, SD 57717

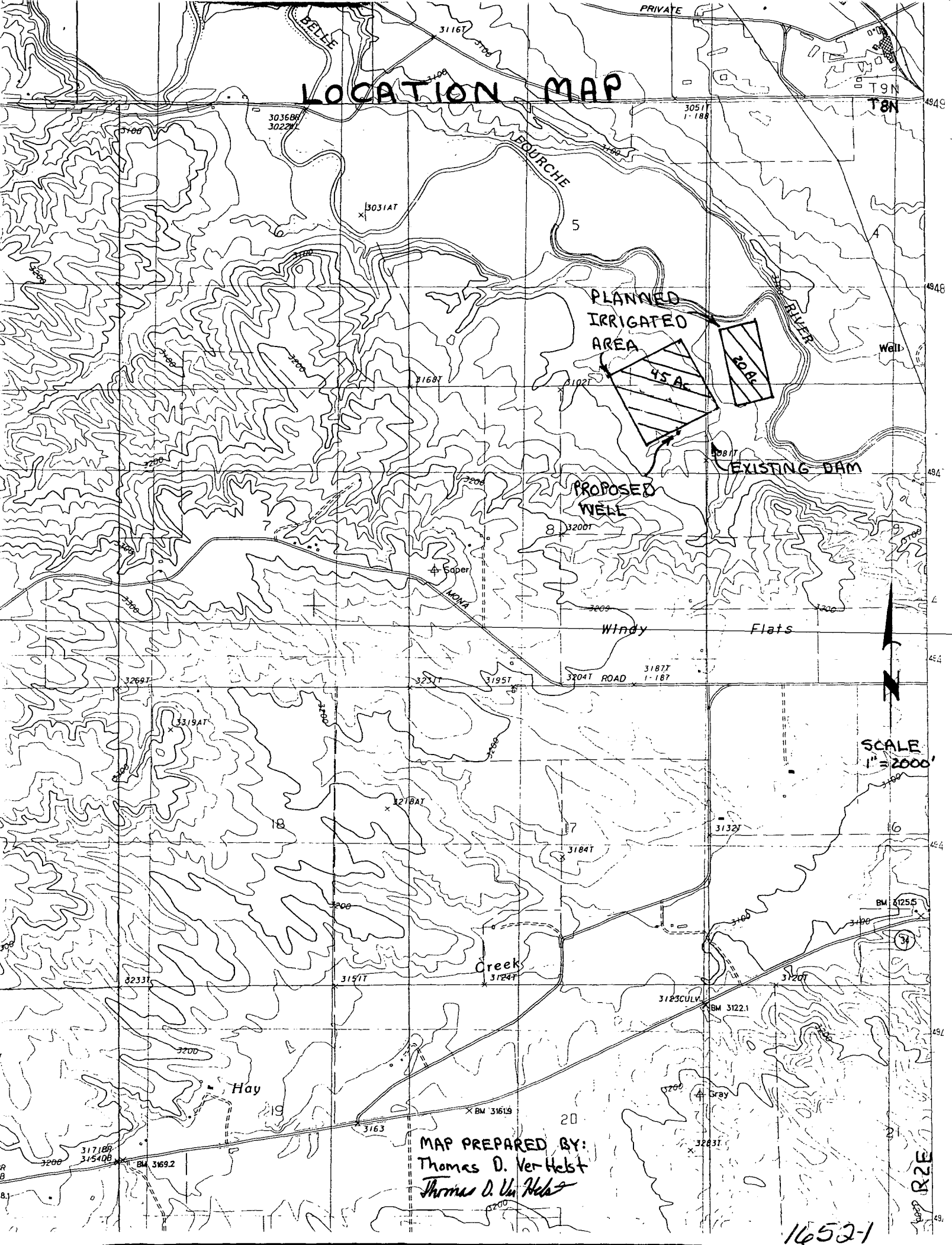
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>1652-1</u> to Appropriate Water, to construct and to put water to beneficial use _____	225	00
Fee for Application for Permit No. _____ to Appropriate Water, for Future Use _____		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for _____		

(Any Other Work Provided by Law)	Total	225 00

By John Hatch
Chief Engineer

LOCATION MAP



MAP PREPARED BY:
Thomas D. Ver-Hebt
Thomas D. Ver-Hebt

1652-1

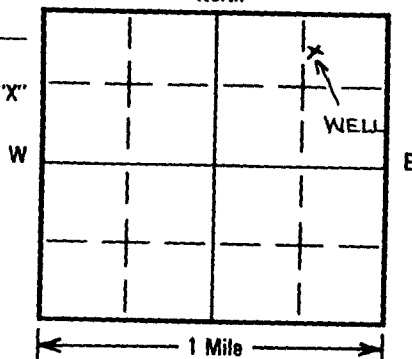
R2E

1652-1

Location NE ¼ NE ¼ Sec 8 Twp 8N Rg 2E

North

Please mark well location with an "X"



Well Completion Date 11, 30, 97

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 600 ft. from corrals (identify source).

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

☒ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
15.50 LB/FT	5.2 IN	0 FT	1870 FT	7 3/8 IN
— LB/FT	8 3/8 IN	0 FT	205 FT	12 1/4 IN
— LB/FT	— IN	— FT	— FT	— IN

Grout Type	No. of Sacks	Grout Weight	From	To
CEMENT	320	lb./gal	0	ft. 1870
"	55	lb./gal	0	ft. 205

Describe grouting procedure PRESSURE GROUT

Diameter _____ IN Length _____ FEET

Material _____

Slot Size _____ Set From _____ Feet to _____ Feet

Other information

If so, what material?

Describe packer(s) and location?

Was well disinfected upon completion? X YES. How:

NO, Why Not? CHLORINE
LAST LOAD OF
WATER. FLUSHED
ROUGH CASING

Address: Belle Fourche 577.7

DEPTH

FORMATION	FROM	TO
SHALE	0	380
SHALE WHITE CLAY-SAND	380	450
SAND COAL	450	480
FUSION	480	600
LAKOTA	600	625
SUNDANCE	625	1340
RED BEDS	1340	1770
LIME-	1770	1790
ORPEACHE-LIME-	1790	2045
MIRILUSA	2045	2057

COARSE MARBLED SAND.	
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If flowing: closed in pressure 165

If flowing: closed in pressure 165 PSI

GPM flow _____ through 5" inch pipe

Controlled by ☒ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate 1400 GPM

Can well be completely shut in? YES

☐ Pumped

Describe: _____

☐ Bailed☐ Other

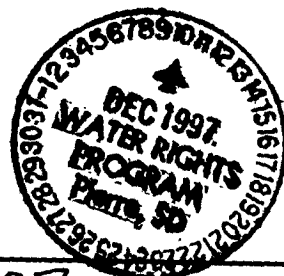
Pumping Level Below Land Surface

ft. After Hrs. pumped GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS



This well was drilled under license # 327

And this report is true and accurate

Drilling firm GPA F DRILLING

Signature of License Representative:

Robert Brown

Signature of Well Owner or Equitable Property Holder:

General Shear

Date: 12/8/97

Laboratory sent to for water quality analysis

SOILS INFORMATION

Arvada-Slickspots complex, 0 to 3 percent slopes (AsA).—This mapping unit is about 60 percent Arvada soils and 20 to 40 percent Slickspots. It is on terraces along some of the major creeks and drainageways. Relief is uneven because many mounds rise 4 to 8 inches above small depressions. The Arvada soil is on the mounds. It has the profile described as representative of the Arvada series. Areas of Slickspots are in small depressions 10 to 100 feet wide.

Included with these soils in mapping are areas of Stetter soils along drainageways, claypan soils that have a thicker surface layer than Arvada soil, and saline soils that have salts at or near the surface.

These soils take in water slowly and release it slowly to plants. They have very poor tilth and are not suitable for cultivation. Runoff is slow and commonly ponds in the depressions until it evaporates.

Areas of this mapping unit are used for range. Sagebrush and greasewood are a prominent part of the vegetation in many areas. Most areas of Slickspots are nearly barren of vegetation. Arvada soil in Thin Claypan range site, capability unit VIc-3, and windbreak group 10; Slickspots in capability unit VIIc-3 and not assigned to a range site or windbreak group.

Caputa loam, 0 to 2 percent slopes (CmA).—This soil is on upland divides and high terraces. Areas are irregular in shape and range from 20 to 1,000 acres in size. This soil has the profile described as representative of the series, but in some cultivated areas the surface layer is clay loam. Included in mapping are some areas of Satanta soils on slight rises.

This soil has medium fertility. The available water capacity is moderate or high. Runoff is slow.

Areas of this soil are used for range and dry-farmed crops. Winter wheat, oats, and alfalfa are the main crops. Conservation of moisture is the main concern in management. Clayey range site; capability unit IIc-1; windbreak group 3.

Glenberg fine sandy loam, 0 to 2 percent slopes (GgA).—This soil is on low terraces along the Belle Fourche River. It has the profile described as representative of the series. Areas are irregular in shape and range from 5 to 300 acres in size.

Included with this soil in mapping are areas of Haverson, Lohmiller, and Mawer soils. Haverson and Lohmiller soils are in small areas where the alluvium is more clayey. Mawer soils are in areas less than 2 acres in size where pockets of gravel are within a depth of 40 inches.

This Glenberg soil takes in water readily and has moderate available water capacity. Fertility is low. Soil blowing is a hazard in cultivated areas.

Many areas are irrigated. Corn, alfalfa, barley, and edible beans are the main crops. Controlling soil blowing is the main concern in management. Sandy range site; capability units He-3 irrigated and IVe-6 dryland; windbreak group 2.

Haverson loam, 0 to 2 percent slopes (HeA).—This soil is on bottom land and low terraces mainly along the Belle Fourche River. Areas are irregular in shape and range from 5 to 200 acres in size.

Included with this soil in mapping are areas of Glenberg and Lohmiller soils. Also included are small areas of Dix and Mawer soils that have gravel at a depth of less than 40 inches.

This Haverson soil has low fertility. It takes in water readily and has high available water capacity. Runoff is slow. Most areas are seldom flooded.

Many areas are cultivated and are irrigated. The soil is well suited to all crops commonly grown under irrigation in the county. Water management is the main concern in irrigated areas. Conservation of moisture is the main concern in dryland areas. Silty range site; capability units I-3 irrigated and IIc-2 dryland; windbreak group 1.

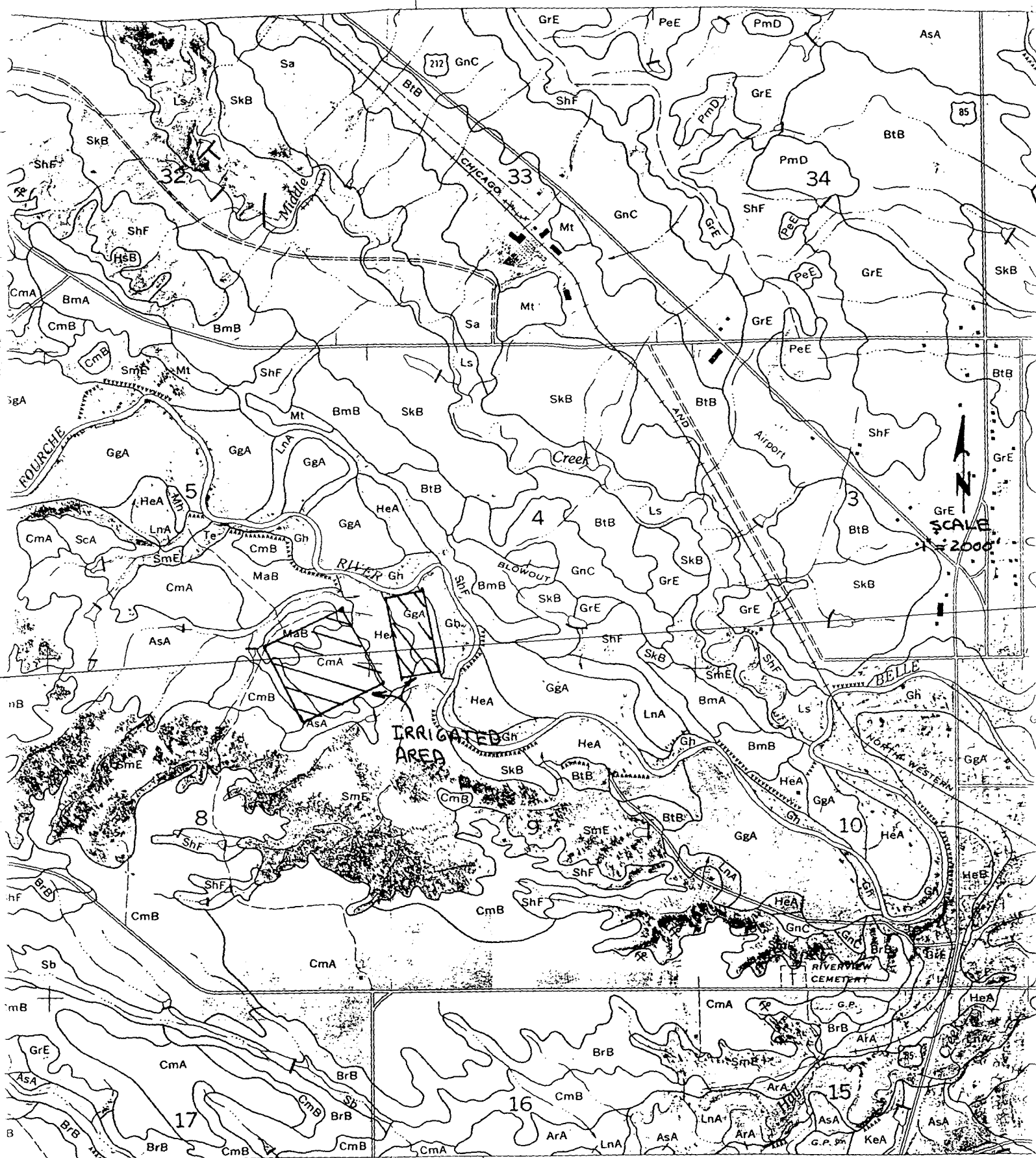
Manter fine sandy loam, 2 to 6 percent slopes (MaB).—This soil is on stream terraces. Areas are irregular in shape and range from 10 to 80 acres in size.

Included with this soil in mapping are areas of Alice and Mawer soils, mostly in the higher parts of the landscape.

This soil takes in water readily and has moderate or high available water capacity. Runoff is slow. Erosion and soil blowing are hazards.

Many areas are cultivated and irrigated. Alfalfa and corn are the main irrigated crops. Small grain is the main dryland crop. Controlling soil blowing and erosion is the main concern in management. Sandy range site; capability units IIc-4 irrigated and IVe-7 dryland; windbreak group 5.







**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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



June 18, 1997

Gerald Shear
HC 30 Box 151
Belle Fourche SD 57717

Dear Mr. Shear:

Thank you for submitting your *Application for a Permit to Appropriate Water for Irrigation*.

The map is being returned because it must be signed by one of the following: Registered Land Surveyor, Registered Professional Engineer or by any other government employee who normally prepares maps as a part of his assigned duties (i.e. local NRCS office).

The fee for this application will be \$225.00.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352

enclosure

Water Rights Program - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: Water Permit Application No. 1652-1, Jeral Shear

ADDRESS: COUNTY: Butte

DATE: 8/21/97 TELEPHONE: 892-2361

RE: Call regarding water source

COMMENTS:

Mr. Shear called regarding the water source listed on the report and publication notice for Water Permit Application No. 1652-1. He stated that he intends to construct a well into the Minnelusa Formation and not into the Madison Formation. I stated that the application stated the proposed well construction states a well depth of 2,500 feet. At this depth, the staff engineer determined the water source will be the Madison Formation. Mr. Shear stated that the well will likely be only 2,100 feet. Mr. Shear indicated he definitely intends to construct the well into the Minnelusa Formation.

I consulted with Ken Buhler who stated that if the well depth is 2,100 feet the water source will be the Minnelusa Formation.

I told Mr. Shear we will prepare a report and notice of hearing on the application for a Minnelusa Formation well.

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

NAME: Eric Hendland

WATER PERMIT APPLICATION NO. 1652-1

JERAL SHEAR

AUGUST 12, 1997

Water Permit Application No. 1652-1 proposes to appropriate 0.93 cubic feet of water per second from one well (Minnelusa Formation) approximately 2,100 feet deep located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 8, T8N-R2E. Water will be pumped from the well into a stock dam (6.4 acre-feet storage capacity) located on the section line between the NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 9 and the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 8 to irrigate 65 acres located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 4; NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 9; N $\frac{1}{2}$ NE $\frac{1}{4}$ Section 8 and the S $\frac{1}{2}$ SE $\frac{1}{4}$ Section 5; all in T8N-R2E.

AQUIFER: Minnelusa Aquifer (MNLS)

GENERAL:

The Minnelusa Aquifer is an assemblage of alternating beds of sandstone and dolomitic limestone with lesser amounts of red and black shale and chert. Because the lithology of the Minnelusa is so variable, the porosity of the formation is also variable and difficult to determine. Well sorted sand lenses have porosities approaching 25%, but generally the sands have porosities of 10%. The average porosity of the Minnelusa is estimated to be 10% and the effective porosity is assumed to be 5% (Rahn, 1979). The Minnelusa formation underlies approximately 1,440,000 acres of Butte County and contains an estimated 43,200,000 acre-feet of recoverable water in storage (Allen, 1984). The aquifer is areally extensive around the Black Hills and is hydraulically connected into the counties surrounding Butte County. Ground water movement is probably toward the north and east (Kyllonen, 1987). There is no aquifer-test data available for the Minnelusa Aquifer in this area; therefore, the aquifer transmissivity and storage coefficient are unknown. Estimates from regional studies of the aquifer indicate the aquifer transmissivity may range from 30 to 1000 ft²/d, and the storage coefficient ranges from 6.6×10^{-5} to 2×10^{-4} (Kyllonen, 1987). The top of the Minnelusa is estimated to be 1,980 feet below ground surface at this well site (Peter, 1987). The potentiometric surface of the Minnelusa Aquifer is expected to be approximately 3,350 msl (Kyllonen, 1987), or approximately 350 feet above grade at this well site. A Minnelusa well at this site will flow and the shut in pressure of the well should be approximately 150 psi.

WATER AVAILABILITY:

The Water Rights Program monitors 21 observation wells completed into the Minnelusa aquifer in the Black Hills. This well site is approximately 6.5 miles from the nearest Water Rights' Observation Well (LA-62A). The potentiometric surface of the Minnelusa aquifer has reportedly declined as much as 99 feet in the Spearfish area (Kyllonen, 1987). This decline in head is blamed on reduced recharge to the Minnelusa in the early 20th century due to the diversion of most of the flow of Spearfish Creek around the outcrop of the Minnelusa Formation. Measurements of the water level at the Water Rights' Observation well suggest the system has established local equilibrium, as indicated by relatively constant water levels since 1963 (Water Rights, 1997). Records from the observation wells indicate the potentiometric surface of the Minnelusa Aquifer fluctuates, in response to seasonal and climatic variations. Long term water-level declines are not apparent from hydrographs of any of these observation wells. The observation well data suggests that at the existing level of development, natural influences dominate the water level of the aquifer and the effects of pumping as yet are not obvious. In general, the water level record indicates that the aquifer is capable of sustaining additional withdrawals.

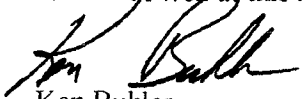
AFFECTS ON EXISTING RIGHTS:

The Minnelusa Aquifer is extensively used for domestic purposes and there are 155 Water Rights/Permits which appropriate water from the aquifer in South Dakota. At this distance from the outcrop (approximately 15 miles), (DeWitt, 1989), the high cost of a Minnelusa well and the availability of shallower aquifers has limited domestic development and generally restricted usage from the Minnelusa aquifer in Butte County to those uses which require water rights. There are 9 permits/rights appropriating water from the Minnelusa aquifer in Butte County (Water Rights, 1997). Domestic wells on file with the Water Rights Program (Water Rights, 1997) are completed into

shallower aquifers. The nearest groundwater appropriation to this well (Water Right No. 1195-1, American Colloid Company) is approximately 1.5 miles away and appropriates water from the Inyan Kara Aquifer. The nearest Minnelusa appropriation (Water Right No. 826-1, Belle Fourche Country Club), is approximately 2 miles away. Any well interference this proposed use would have on these or other water rights/permits is not expected to be adverse due to the distance between wells, and the apparent hydraulic separation between the Minnelusa and other aquifers in this area.

CONCLUSIONS:

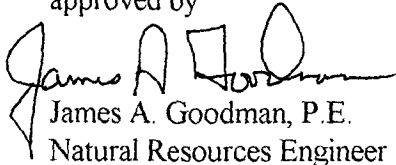
1. The Minnelusa Aquifer is a viable aquifer in this area, and water is available for this appropriation.
2. The Minnelusa is under artesian conditions and drawdown due to this diversion can be expected. This drawdown is not expected to adversely affect adequate wells in the area.
3. A well at this location is expected to flow. The well must be valved and controlled to prevent waste of water.



Ken Buhler

Natural Resources Engineer

approved by



James A. Goodman, P.E.

Natural Resources Engineer

REFERENCES:

- Allen, J.C., D. Iles, A. Petres, 1984, Analysis of Groundwater and Streamflow Data, Western Dakotas Region of South Dakota, Task 3 & 4: Groundwater Resources Inventory, US Army Corps of Engineers Contract DAWC 45-82-C-015, SD DENR-Division of Geological Survey, Vermillion SD
- DeWitt, E., J. Redden, D. Buscher, A. Burback Wilson, 1989, Geologic Map of the Black Hills Area, South Dakota and Wyoming, U.S. Geological Survey, Map I-1910,
- Kyllonen, D.P., K. Peter, 1987, GeoHydrology and Water Quality of the Inyan Kara, Minnelusa, and Madison Aquifers of the Northern Black Hills, South Dakota and Wyoming, and Bear Lodge Mountains, Wyoming, U.S. Geological Survey, Water Resources Investigations Report 86-4158, Rapid City, SD
- Peter, K.D., D. Kyllonen, K. Mills, 1987, Geologic Structure and Altitude of the Top of the Minnelusa Formation, Northern Black Hills, South Dakota and Wyoming, and Bear Lodge Mountains, Wyoming, U.S. Geological Survey, Water Resources Investigations report 85-4053, Rapid City, SD
- Rahn, P.H., 1979, Ground Water Resources of Western South Dakota, US Army Corps of Engineers, Draft Report-Final
- Water Rights Program, 1997, "Domestic Well Log Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD
- Water Rights Program, 1997, "Observation Well Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD
- Water Rights Program, 1997, "Water Permit Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1652-1, Jeral Shear

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. 1652-1, Jeral Shear, HC 30, Box 151, Belle Fourche, SD 57717.

The Chief Engineer is recommending APPROVAL of Application No. 1652-1 because 1) 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. 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.
2. The well authorized by Permit No. 1652-1 shall be constructed by a licensed well driller and construction shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) from the producing formation to the surface pursuant to Section 74:02:04:28.
3. The well approved under this Permit shall be valved and the flow reduced to the amount needed or to a minimum when not being used. The well shall also be equipped with a pressure gauge and a record kept of any pressure fluctuations. Such records shall be available to the Chief Engineer upon request. If this well is abandoned or the Permit cancelled, the well must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.
4. This permit is approved subject to the irrigation water use questionnaire being submitted each year.

~~See report on application for additional information.~~


for JOHN HATCH, Chief Engineer
September 5, 1997



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

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

August 19, 1997

Gerald Shear
HC 30, Box 151
Belle Fourche, SD 57717

Dear Mr. Shear:

Water Permit Application No. 1652-1 for irrigation 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 Belle Fourche Post printed at Belle Fourche, SD (Ph # (605) 892-2528). 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. The publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. The newspaper has been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

August 19, 1997

Belle Fourche Post
Box 400
Belle Fourche, SD 57117-0400

ATTENTION: Legal Department

Enclosed is a Notice of Hearing on Application No. 1652-1 to be published twice. Please publish the first notice on August 27, 1997, 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 Gerald Shear, HC 30, Box 151, Belle Fourche, SD 57717 (Ph # (605) 892-2361).

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

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

Sincerely,


Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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

FIRST TRANSMITTAL NOTICE

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

No. _____

Date _____

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

Name

Newspaper

Instruction to Newspaper - Publish first Notice on August 27, 1997, with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1652-1 to Appropriate Water

Notice is given that Gerald Shear, HC 30, Box 151, Belle Fourche SD 57717 has filed an application for a water permit to appropriate 0.93 cubic feet of water per second from one well (Madison Formation) approximately 2,500 feet deep located in the NE 1/4 NE 1/4 Section 8-T8N-R2E. Water will flow from the well into a stock dam (6.4 acre-feet storage capacity) located on the section line between the NW 1/4 NW 1/4 Section 9 and the NE 1/4 NE 1/4 Section 8 and then pumped to irrigate 65 acres located in the SW 1/4 SW 1/4 Section 4; NW 1/4 NW 1/4 Section 9; N 1/2 NE 1/4 Section 8 and the S 1/2 SE 1/4 Section 5; all in T8N-R2E.

The Chief Engineer is recommending APPROVAL of Application No. 1652-1 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 September 15, 1997.

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. Nettie H. Myers, Secretary, Department of Environment and Natural Resources.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

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

September 11, 1997

Jeral Shear
HC 30, Box 151
Belle Fourche, SD 57717

Dear Mr. Shear:

Water Permit Application No. 1652-1 for irrigation 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 Belle Fourche Post printed at Belle Fourche, SD (Ph # (605) 892-2528). 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. The publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. The newspaper has been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

September 11, 1997

Belle Fourche Post
Box 400
Belle Fourche, SD 57117-0400

ATTENTION: Legal Department

Enclosed is a Notice of Hearing on Application No. 1652-1 to be published twice. Please publish the first notice on September 17, 1997, 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 Jeral Shear, HC 30, Box 151, Belle Fourche, SD 57717 (Ph # (605) 892-2361).

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

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

Sincerely,

Eric Gronlund
Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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

FIRST TRANSMITTAL NOTICE

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

No. _____

Date _____

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

Name Newspaper

Instruction to Newspaper - Publish first Notice on September 17, 1997, with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1652-1 to Appropriate Water

Notice is given that Jeral Shear, HC 30, Box 151; Belle Fourche SD 57717 has filed an application for a water permit to appropriate 0.93 cubic feet of water per second from one well (Minnelusa Formation) approximately 2,100 feet deep located in the NE 1/4 NE 1/4 Section 8-T8N-R2E. Water will flow from the well into a stock dam (6.4 acre-feet storage capacity) located on the section line between the NW 1/4 NW 1/4 Section 9 and the NE 1/4 NE 1/4 Section 8 and then pumped to irrigate 65 acres located in the SW 1/4 SW 1/4 Section 4; NW 1/4 NW 1/4 Section 9; N 1/2 NE 1/4 Section 8 and the S 1/2 SE 1/4 Section 5; all in T8N-R2E.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1652-1 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, 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 October 6, 1997.

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. Nettie H. Myers, Secretary, Department of Environment and Natural Resources.



AFFIDAVIT OF PUBLICAT

STATE OF SOUTH DAKOTA
COUNTY OF BUTTE

Faye D. Pate, being duly sworn, says: That the is and, during all the times hereinafter men newspaper as defined in SDCL 17-2-2, as amende Fourche, Butte County, South Dakota, by Allison. affiant is and, during all of said times, was emj tant by the publisher of such newspaper and has of the facts stated in this affidavit; that the notic ment, a printed copy of which is attached, w newspaper for successive issues, bearing the fo

September 17 199 7

September 24 199 7

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that the full amount of the fee charged for publish the sum of \$ 37.03, inures solely to publisher of said newspaper; that no agreement the division of the fee has been made with any pe of the fee has been agreed to be paid to any of

Faye

Subscribed and sworn to before me this

24 day of September

Notary Public, South Dakota

NOTICE OF APPLICATION

NO. 1652-1 to Appropriate Water

Notice is given that Jeral Shear, HC 30, Box 151, Belle Fourche SD 57717 has filed an application for a water permit to appropriate 0.93 cubic feet of water per second from one well (Minnelusa Formation) approximately 2,100 feet deep located in the NE 1/4 NE 1/4 Section 8-T8N-R2E. Water will flow from the well into a stock dam (6.4 acre-feet storage capacity) located on the section line between the NW 1/4 NW 1/4 Section 9 and the NE 1/4 NE 1/4 Section 8 and then pumped to irrigate 65 acres located in the SW 1/4 SW 1/4 Section 4; NW 1/4 NW 1/4 Section 9; N 1/2 NE 1/4 Section 8 and the S 1/2 SE 1/4 Section 5; all in T8N-R2E.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1652-1 because of 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, 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 October 6, 1997.

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.

Nettie H. Myers,
Secretary
Department of
Environment and
Natural Resources

P219/17-24



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

NOV 12 1997

Jeral Shear
HC 30, Box 151
Belle Fourche, SD 57717

Dear Mr. Shear:

Enclosed is Water Permit No. 1652-1 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

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 the Water License may be issued, thus completing your acquisition of a Water Right.

Very truly yours,

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

enclosures

PLEASE NOTE: Certain changes may be made to your water permit usually without affecting the priority date. The location of a point of diversion may be changed or additional points of diversion may be approved if the water source remains unchanged; no additional water is appropriated; and, if irrigating, no additional land is irrigated. The change may be allowed without application or publication, if the Water Rights Program is contacted and the chief engineer makes a finding that the change does not increase the potential for interference with existing diversions.

A new water permit application is required to change water sources, increase the permitted diversion rate, or increase the irrigated acreage. If the application is approved, the water permit will receive a new priority date.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

November 6, 2001

1652-1

Jeral Shear
HC 30 Box 151
Belle Fourche, SD 57717

Dear Mr. Shear:

Enclosed is your "2001 Irrigation Questionnaire" for Water Permit No. 1652-1. In order for us to calculate how much water was used during this past crop season, the back side of the form needs to be completed.

Please write in the information for each month on the crop type, number of acres irrigated, pump rate in gallons per minute, days per month and average hour per day. Once we have that information, we can calculate the acre feet of water used.

I am enclosing a postage paid envelope for your reply. Thank you in advance for your help.

Sincerely,

A handwritten signature in cursive script that reads "Genny McMath".

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352

enclosures

1652-1

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

Date 1/2/04

TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

FROM: Jeral & Dianne Shear 19261 Shear road
(name) (address)
Belle Fourche S.D. 57717 605 892 2361
(city) (state) (zip) (phone)

I have completed the construction of the water diversion system and I have put the water to beneficial use to the maximum extent it is going to be used. I have not exceeded the amounts specified in Water Permit No. 1652-1.

Water Permit No. 1652-1 states that the diversion system is to be constructed by October 6, 2002, and that the water is put to beneficial use by
(date)

October 6, 2006.
(date)

The diversion system was completed on 5/1/02.
(date)

Applying the water to beneficial use was completed on 5/5/02.
(date)

You may schedule an investigation so that the Water License may be issued.

Jeral V. Shear
(signature)

RECEIVED
JAN 05 2004
WATER RIGHTS
PROGRAM



MAR 25 2005

1652-1

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

1658-1
1520-1

Jeral & Dianne Shear
19261 Shear Rd
Belle Fourche SD 57717

Dear Mr. & Ms. Shear:

Enclosed are Water License Nos. 1520-1 & 1658-1. This is the final water right document completing your process of obtaining a Water Right. Enclosed are Receipt Nos. 001543 & 001607 in the amount of \$50.00 each which you paid for the investigation and issuance of the Water License.

As long as you use the water beneficially, as stated in the Water License, State Water Laws provide that you have a continuing right to use the water.

Sincerely,

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

NOTE: The applicable portions of No. 1652-1 are incorporated into Water License No. 1658-1

enclosures