

Water Right Number 2054-3

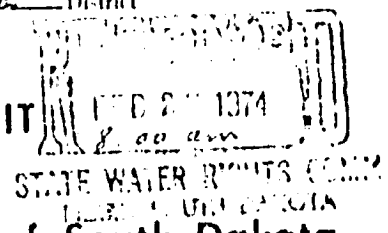
1. Considered MARCH 20, 19 74
2. Name of Applicant BIG SIOUX COMMUNITY WATER SYSTEM, INC.
3. Post Office Address COLMAN
4. Amount of Water claimed 2.62
5. Source of Water supply GROUND WATER (4 WELLS)
6. Water to be used for RURAL WATER SYSTEM
Acres to be irrigated _____
7. Water to be diverted and used in MOODY County
about 1/2 miles E of EGAN
8. Proof of Publication
Received 3-15-74
Not Received _____
9. Application
Approved _____
Subject to _____
Not Approved _____
Action Deferred _____
10. Remarks:

No. 2054-3

Map No. 1459-3 Water Division No. 3 BIG SIOUX RIVER District

(Blanks to be filled by the Engineer for the W. R. C.)

APPLICATION FOR PERMIT



To Appropriate Water within the State of South Dakota

(NOTE--Draw a line through items not applicable)

- Name of Applicant Big Sioux Community Water System, Inc. (Loren Paulsen, Chairman)
Postoffice address Colman, State South Dakota
If a corporation show date and place of incorporation June 6, 1972, South Dakota
- Method of accomplishing work (contract, employment of others, or by direct labor) Contract
- Name of diversion work Sioux River Pump Site
- Amount of water claimed (cubic feet per second) 2.6
- Source of water supply Big Sioux River Aquifer
- Location of point of diversion E₁ W₂, E₁ W₂, SE₄, Sec. 7, T106N, R48W (See attached plat)
Moody County

- Annual period or periods during which water is to be used 365 days per year
- Use to be made of water. (irrigation, industrial, municipal, commercial, recreation, etc.) Domestic (Rural Water System)

9. ~~XXXXXXXXXX~~ ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~

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

- Time required to complete construction of water supply system 3 years. Additional time required to complete application of water to the proposed beneficial use 0 years.

11. Choice of newspaper for Notice of Intent to Appropriate Water publication Moody County Enterprise

12. Principal Features of the Proposed Water Supply System.

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

Four well will be constructed as shown on the attached plat with a future well site as shown.

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

An underground pipeline will be constructed.

C. Work proposed to apply water to beneficial use.

Individual users will provide their own domestic distribution system.
Estimated Total Cost \$ 2,500,000

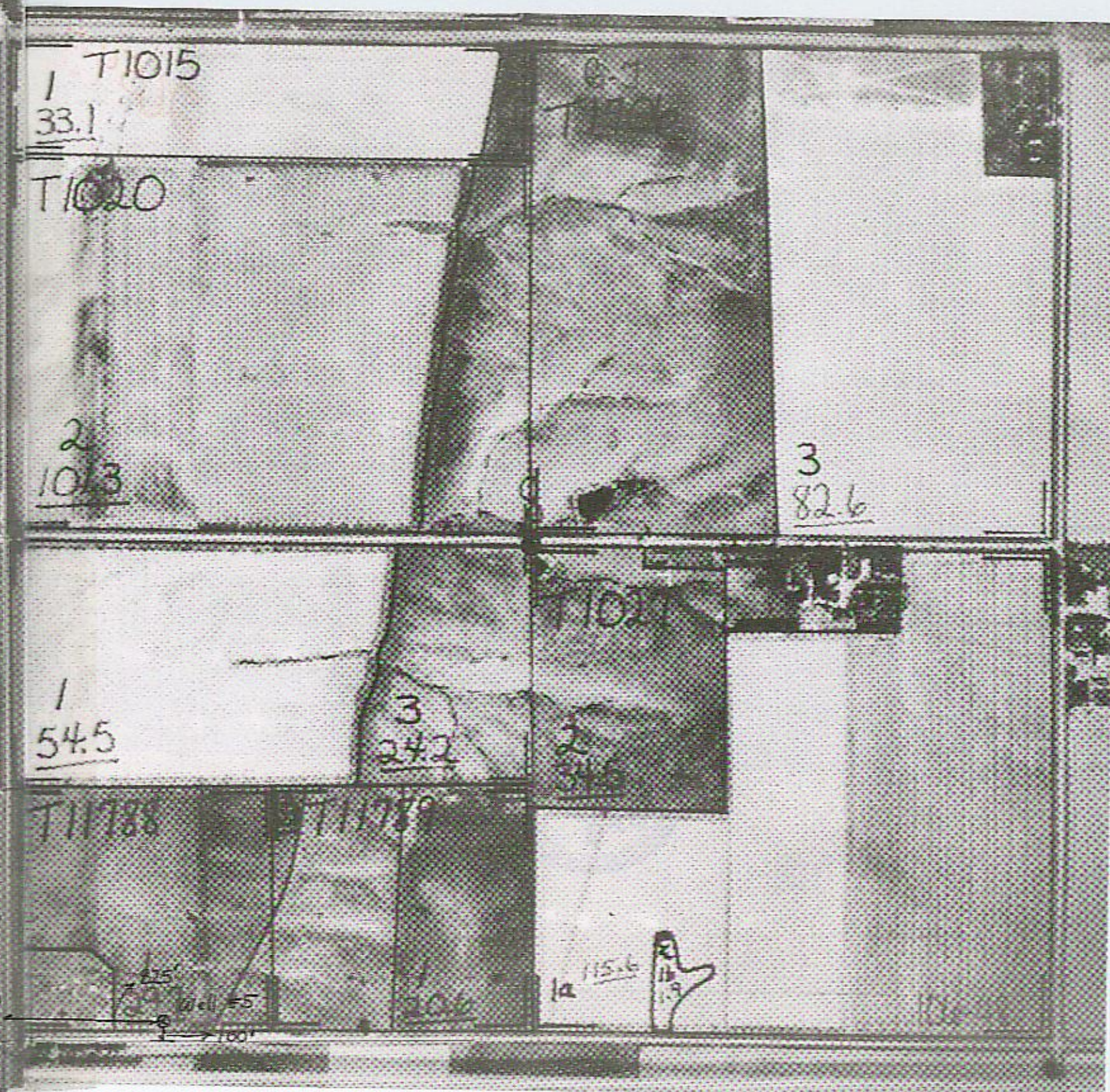
Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map.
(See instructions concerning preparation.)

STATE OF SOUTH DAKOTA)
) ss.
County of Moody)

i. Loren Paulsen 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 Loren Paulsen
Subscribed and sworn to before me this 25th day of February, 1972
Clarence L. Paulsen
Notary Public (or other qualified officer)

NOT TO SCALE



WATER RIGHT APPLICATION APPROVAL.

The Water Resources Commission hereby approves Water Right Application No. 2054-3

BIG SIOUX COMMUNITY WATER SYSTEM, INC. COLMAN
(Applicant) (Post Office Address)

SOUTH DAKOTA 57017 With the following modifications:
(State)

The ~~industrial~~ well approved under this Permit will be located near domestic wells and other ~~industrial~~ wells which may obtain water from the same aquifer. The ~~industrial~~ well owner, under this Permit, shall control his ~~industrial~~ withdrawals so there is not a reduction of needed water supplies in existing domestic wells or in ~~industrial~~ wells having prior water rights.

Date of first receipt of application _____ FEBRUARY 27, 1974 _____

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

Date of receipt of corrected application _____ 19____

Date of receipt of corrected application _____
Approved MARCH 20 19 74, Recorded in Book 12 Page 332

WATER RIGHT PERMIT NO. 2054.3

The Water Resources Commission hereby grants and issues this Water Right Permit No. 2054-3 authorizing the construction of the water use system and the putting of water to beneficial use as stated in the Application and as modified in the Water Right Application approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is FEBRUARY 27, 1974

2. The equivalent of at least one-fifth of the work above specified is to be completed on or before SEPTEMBER 20 1975

3. The whole of said work is to be completed on or before MARCH 20, 1977

4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is MARCH 20 1977

5. The water appropriated shall be used for the purpose of RURAL WATER SYSTEM

b. 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 2.6 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 use~~ ~~and if for the irrigation purpose, the appropriation must be limited to not more than 2 acre feet per year; or any other beneficial use; or the amount of 11/70 of one cubic foot of water per acre of land for each acre of land~~ which water is **USED FOR RURAL WATER SYSTEM** Adopted 30-77

USED FOR RURAL WATER SYSTEM
actually and beneficially ~~applied for irrigation~~ on or before MARCH 20 1977; said water to be used during the following described annual period: CONTINUOUSLY

Witness my hand this 25TH day of MARCH 19 74

WATER RESOURCES COMMISSION

138 :

Donald D. Quinn
Chief Engineer, Executive Officer

Certificate of Construction Issued _____, 19____

Water License Issued _____ 19____

12. Principal Features of the Proposed Water Supply System (continued.)

D. Well Information or Estimates

(1) Drill Hole, Diameter 24 inches, Depth 40 feet (4 req'd)

(2) Casing, Type Steel, Diameter 12 inches Thickness 0.322
(wood, concrete, steel, etc)

(3) Perforated Screen.

Type Slotted, Diameter 12 inches, Length 15 feet

(4) Gravel Pack. Thickness 6 inches, Length of gravel pack 30 feet

E. Dugout Information or Estimates.

(1) Surface dimensions _____, Depth _____

F. Fill out for Either a Well or a Dugout.

(1) Water Bearing Materials. (Please attach a copy to test well log if available.)

Character of Water bearing materials Medium sand and gravel

Depth to top of water bearing material 6 ft.

Depth to bottom of water bearing material 40 ft.

Thickness of water bearing material 34 ft.

Depth to water (ground surface to water level), 8 ft.

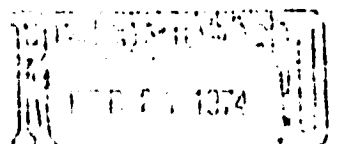
(2) Distance to nearest existing household or livestock watering wells.

On same owner's property _____ rds. On property owned by others 20 rods 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, maximum water depth, surface area and storage capacity of each storage dam. The location of each water storage dam should be shown on the water right map.


Signature of Applicant



Publish first publication, on or before March 7, 1974

NOTICE
INTENT TO APPROPRIATE WATER

Pierre, South Dakota 57501

February 28, 1974

Notice is hereby given that the Big Sioux Community Water System, Inc.
whose post office address is Colman, South Dakota, has made an application in accordance
with the provisions of the water laws of South Dakota for a permit to appropriate for beneficial use
1.6 cubic feet of water per second of time from ~~the~~ ground water through the
Sioux River Pump Sites, the point of diversion of which ~~is~~ are to be located in ~~the~~ the
at four points in the E $\frac{1}{2}$ E $\frac{1}{2}$ SE $\frac{1}{4}$
of Section 7, Twp. 106N, Range 48W. Said water is to be used for the purpose
of providing ~~irrigation on the following described lands~~
domestic supplies for water users in the Big Sioux Community Water
System.

This application No. 2054-3 will be considered by the Water ~~Resources~~ Rights Commission at their office at
Pierre upon the 10th day of March, 1974, at 2:30 P. M. All interested
persons may appear and be heard.

~~WATER RESOURCES COMMISSION~~
WATER RIGHTS COMMISSION

By:

BURTON F. JONES
Water Rights Specialist

BFJbw:

cc: Loren Paulsen, Chairman, Big Sioux Community Water System, Inc.
Box H., Colman, S.D. 57017

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Moody) ss.

I, Dorothy M. Lyford, bookkeeper hereby

certify that the annexed printed copy of Notice of Intent to Appropriate

Water was taken from the Moody County Enterprise

A newspaper which during the whole time of publication of said notice
herein after stated, has been and is printed and published in the

City of Elandreau

County of Moody and State of South Dakota;
two that the said notice was published in said newspaper on the following
~~next~~ dates:

March 6, 1974

March 13, 1974

Dorothy M. Lyford
(Signature)

Bookkeeper
(Title)

March 13, 1974
(Date Signed)

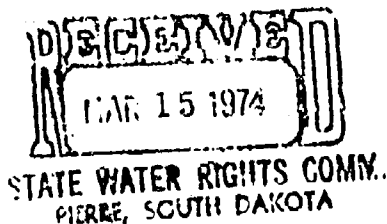
No. 2054-3
**NOTICE
INTENT TO APPROPRIATE WATER**

Pierre, South Dakota 57501

February 28, 1974

Notice is hereby given that the Big Sioux Community Water System, Inc. whose post office address is Colman, South Dakota, has made an application in accordance with the provisions of the water laws of South Dakota for a permit to appropriate for beneficial use 2.6 cubic feet of water per second of time from ground water through the Sioux River Pump Sites, the point of diversion of which are to be located at four points in the E $\frac{1}{2}$ E $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 7, Twp. 106 N, Range 48 W. Said water to be used for the purpose of providing domestic supplies for water users in the Big Sioux Community Water System. This application No. 2054-3 will be considered by the Water Rights Commission at their office at Pierre upon the 20th day of March, 1974, at 2:30 P.M. All interested persons may appear and be heard.

Water Rights Commission
By: Burton F. Jones
Water Rights Specialist
(March 6-13)



2054-3

Department of Natural Resource Development

WATER RIGHTS COMMISSION

Joe Boss Building, Pierre, South Dakota 57501

Phone 605/224-3151

October 6, 1976

John A. Shaeffer, Attorney
308 North Wind Street
Flandreau, South Dakota 57028

Dear Mr. Shaeffer:

This will acknowledge your letter and petition signed by Mr. Mark Powers, received in this office October 5, 1976, requesting that the Water Rights Commission reduce the output of all large capacity wells in your area including the Big Sioux Community Water System wells. You have also requested that an informal hearing be scheduled on this matter.

The Water Rights Commission has several observation wells near Mr. Powers who we understand lives in Section 32-T108N-R48W and the Big Sioux Community Water System (BSCWS) wells located in the SE $\frac{1}{4}$, Section 7-T106N-R48W. The distance between Mr. Powers and the BSCWS wells is more than eight miles. There are other large capacity well water rights including the City of Flandreau wells in between Mr. Powers and the BSCWS wells. The observation wells are as follows:

<u>Well Number</u>	<u>Location</u>
S-18	NW $\frac{1}{4}$, Section 22-T106N-R49W
GS-4	SW $\frac{1}{4}$, Section 19-T108N-R48W
GS-5	SE $\frac{1}{4}$, Section 5-T107N-R48W
GS-6	NE $\frac{1}{4}$, Section 16-T107N-R48W
GS-7	SE $\frac{1}{4}$, Section 14-T107N-R48W
GS-8	NW $\frac{1}{4}$, Section 32-T107N-R48W
S-19	SW $\frac{1}{4}$, Section 5-T106N-R48W

Enclosed are copies of water level measurements for S-18, GS-5 (located one mile south of Powers property in Section 32) and S-19 (located about 3/4 miles north of the BSCWS wells). As you will note, the water levels in S-19 during 1976 are no lower than several years of record since 1957 which were prior to construction and pumping of the BSCWS wells. The measurements for GS-5 which only date back to

October 6, 1976

1968 are one foot lower than any previous measurements and 2.0 feet below the average. In a dry year such as 1976, 2.0 feet below the average water level of a water table aquifer is not considered to be depletion of the ground water, but rather that there has been very little rainfall to recharge the underground aquifer. The other observation well measurements in the area also reflect the lack of rainfall conditions for 1976.

Past experience has shown that a high capacity well in a water table aquifer such as the Sioux River Aquifer will have little if any influence on another well more than 1/4 mile away. With eight miles distance between Mr. Powers' property and the BSCWS wells, the BSCWS pumping will not have any effect upon Mr. Powers' wells. The observation wells indicate no influence from the Big Sioux System, City of Flandreau or irrigation well pumping.

Although we have not made a field investigation of Mr. Powers' wells the information we have indicated that if his wells do not yield the water he needs the problem is with his wells, not because the ground water is being depleted.

The BSCWS water right is for up to 2.6 cubic feet per second (c.f.s.) or 1167 gallons per minute (g.p.m.), the City of Flandreau's water right is for up to 3.42 c.f.s. or 1535 g.p.m. and a water right to irrigate a quarter of land is usually for about 2.2 c.f.s. or 1000 g.p.m.

The City of Flandreau's water rights date from 1923 (1.42 c.f.s.), 1939 (1.00 c.f.s.) and 1955 (1.00 c.f.s.). Their wells are located about four miles away from Mr. Powers. We do not have any information that indicates pumping by the City of Flandreau or area irrigation from ground water has had any effect upon domestic wells including those owned by Mr. Powers. With the BSCWS wells located eight miles South of Mr. Powers, there is no chance of any interference from BSCWS wells.

Based upon observation well measurements, available geologic information, lack of valid complaints from the area and past experience, it is the Commission Staff's opinion that although this is a dry year a ground water shortage does not exist in the Sioux River Aquifer in Moody County, that pumping of the Big Sioux Community Water System wells has not depleted the Sioux River Aquifer, and that there is no justification to reduce pumping of large capacity wells from the Sioux River Aquifer in Moody County.

Mr. John A. Shaeffer, Attorney

Page 3.

October 6, 1976

After reviewing the information presented, if you still wish to meet with the Commission at their regular meeting scheduled for November 17-18, 1976 in Huron, please let us know. We would also be glad to visit with you to answer any questions you may have.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Commission
Dept. of Natural Resource Development

JH/bw

cc: Loren Paulson, Chairman, Big Sioux Community Water System, Inc.,
Box H, Colman, S.D. 57017.

OBSERVATION WELL

S-19 (located SW 1/4 Sec. 5 - T106N - R45W)

Year	Spring	Summer	Fall	Year	Spring	Summer	Fall
1957		9.9	10.9				
1958	11.9	12.0	12.9				
1959	13.0	13.3	13.3				
1960	11.4	11.2	11.7				
1961	11.4	11.3	11.7				
1962	9.6	7.2	9.8				
1963	11.3	11.0	11.5				
1964	11.9	11.7	8.9				
1965	10.2	7.1	7.3				
1966	10.3	11.2	11.6				
1967	---	11.6	12.0				
1968	12.3	12.7	12.3				
1969	4.4	4.3	10.1				
1970	10.6	10.1	10.1				
1971	10.6	11.6	12.0				
1972	11.6	9.2	10.2				
1973	10.0	10.6	11.5				
1974	11.6	11.5	12.3				
1975	11.3	11.3	11.9				
1976	11.4	11.9					
Average level	10.2	10.5	11.1				

All measurements are of ground water levels. Numbers are depth in feet to ground water level below the ground surface.

Observation Well

G-5-5 (located SE 1/4 Sec. 5 - T07N - R42W)

Year	Spring	Summer	Fall
1968	12.6	10.7	9.8
1969	3.7	9.9	10.8
1970	9.4	8.7	10.6
1971	9.6	9.7	11.4
1972	8.9	7.2	7.3
1973	7.9	9.8	9.5
1974	10.0	10.4	11.0
1975	9.3	10.7	no reading
1976	9.6	11.9	
Average level	9.0	9.9	10.0

Above measurements are of ground water levels.
Numbers are depth in feet to ground water level
below the ground surface.

MONITORING WELL

W-15 (located NW 1/4 sec. 22 - 102 - R49D)

Year	Spring	Summer	Fall	Year	Spring	Summer	Fall
1937		6.1	6.0				
1938	6.2	6.4	6.8				
1939	6.3	6.2	7.2				
1940	4.7	5.9	6.3				
1941	5.4	4.6	6.4				
1942	3.2	3.4	5.1				
1943	5.8	5.3	4.9				
1944	5.3	4.9	3.8				
1945	3.4	1.4	3.0				
1946	3.7	5.3	5.8				
1947	6.0	3.6	6.1				
1948	6.2	4.0	3.3				
1949	2.4	5.1	4.9				
1950	3.9	4.6	4.5				
1951	4.3	5.6	5.0				
1952	3.6	3.8	3.4				
1953	2.1	3.4	5.2				
1954	3.3	5.5	5.9				
1955	4.2	5.7	6.1				
1956	5.4	6.5					
Average level	4.5	5.0	5.2				

Above measurements are of ground water levels. Numbers are depth in feet to ground water level below the ground surface.

RECEIVED

OCT 5 1976

DEPT. OF NATURAL

TELEPHONE 997-3721
AREA CODE 605

MILLER AND SHAEFFER
ATTORNEYS & COUNSELORS AT LAW
308 NORTH WIND STREET
FLANDREAU, SOUTH DAKOTA 57028

CARL W. MILLER
JOHN A. SHAEFFER

September 27, 1976

Mr. Vern Butler
Water Resources Commission
State Capitol Building
Pierre, South Dakota

Re: Petition for Determination by Water Resources Commission

Dear Mr. Butler:

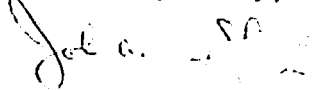
Enclosed herewith please find a Petition which has today been signed by Mr. Mark Powers of Flandreau, South Dakota.

I would also request at this time that an informal hearing be scheduled in order to possibly have the effect of encouraging a settlement on this matter.

I am today sending a copy of this letter and a copy of the petition to Mr. Andy Groos, Secretary of the Big Sioux Community Water System, Incorporated and to Mr. Loren Paulson, President of said Big Sioux Community Water System, Incorporated.

Please advise if you have any questions concerning this matter. I assume that you will give this matter your utmost attention.

Yours very truly,


John A. Shaeffer

JAS/slo

PETITION

TO: WATER RESOURCES COMMISSION

I.

V.

Comes now Mark/Powers, of Flandreau, Moody County, South Dakota, and does hereby present this petition to the Water Resources Commission for a determination that a water shortage exists in Moody County, South Dakota, and requests that the Water Resources Commission make such a determination under SIXL 1967 46-6-6.2, and further requests that the Water Resources Commission reduce equally and, without regard to appropriation priority, the output of all large capacity wells in the area.

II.

That your petitioner is a farmer in Moody County, South Dakota, residing on and the owner of 340 acres of farm land in Spring Creek Township, Moody County, South Dakota.

III.

That your petitioner has wells that have become depleted due in part to the excessive use of the wells used by the Big Sioux Community Water System, Incorporated, and requests that a determination be made as above provided.

IV.

That your petitioner further requests the Water Resources Commission to declare a water shortage in the described area of Moody County, South Dakota, and that the water Resources Commission further issue a reduction order for the large capacity wells in the area of Moody County generally and also specifically reduce further the large capacity wells directly contributing to the domestic water shortage.

Dated at Flandreau, South Dakota this 27th day of September, 1976.

Mark H. Powers

STATE OF SOUTH DAKOTA)
 :SS
COUNTY OF MOODY)

On this the 27th day of September, 1976, before me, John A. Shaeffer, the undersigned officer, personally appeared Mark/Powers, known to me or satisfactorily proven to be the person whose name is

subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

Robert R. R. R.

Subscribed and sworn to before me this 27th day of September, 1976.

John A. Shyne
Notary Public, South Dakota

My commission expires: 8/13/1981

(SEAL)

REPORT OF WATER EXPLORATION
AND
AQUIFER TESTING

BIG SIOUX COMMUNITY WATER SYSTEM, INC.
Job No. 2229

I hereby certify that this report was prepared by me, or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

By *John H. Madden*
John H. Madden, P. E.

Date *April 2, 1974* Reg. No. *1787*

DEWILD GRANT RECKERT & ASSOCIATES CO.
ENGINEERS & ARCHITECTS
ROCK RAPIDS, IOWA
SIOUX CITY, IOWA
SIOUX FALLS, SOUTH DAKOTA

—DEWILD GRANT RECKERT & ASSOCIATES CO.—

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During Pumping, Table 3
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at End of Pumping Test
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SECTION I

DEWILD GRANT RECKERT & ASSOCIATES CO.
ENGINEERS & ARCHITECTS
ROCK RAPIDS, IOWA

BIG SIOUX COMMUNITY WATER SYSTEM, INC.

Purpose:

The purpose of this report is two-fold. First, to provide a permanent record of data obtained in the ground water exploration and aquifer testing performed in order to evaluate potential water sources for the Big Sioux Community Water System, Inc. Secondly, the report is to provide supplementary information to the South Dakota Water Rights Commission for their use in processing the water rights application for the Big Sioux Community Water System.

General Project Description:

The project consists of a community water system serving approximately 675 users in Flandreau-Egan-Colman-Madison area of Moody and Lake Counties. In general the project area includes all of Moody County and that portion of Lake County that is east of U. S. Highway 81. The project area includes Lake Madison, Brant Lake and the Town of Wentworth. The system also intends to serve some members in southern Brookings County.

The system will draw its water from up to five wells located east of the Big Sioux River near Egan. Other features of the system include seven water towers, three pumping stations, and approximately 333 miles of underground pipeline.

It is anticipated that construction will start in the fall of 1974.

Water Use Data:

A well field will be located along the east line of Section 7, T106N, R48W, approximately one-half mile east of the Big Sioux River near Egan. Four wells are to be located in the southeast quarter of the section and future well site is being provided in the southeast corner of the northeast quarter of the section.

Water from the well field will be delivered to seven water towers through three booster pump stations. Total storage capacity of the seven towers is 550,000 gallons. Total ultimate design usage is 1,000,000 gallons per day.

Project Objective:

The objective of this community water system is to provide a dependable and sanitary water supply for the livestock and other domestic needs of approximately 675 individual member-users and the Town of Wentworth.

General Aquifer Test Procedure:

The aquifer pump test was conducted on a 300 ft. by 300 ft. tract in the Southeast Corner of the NE $\frac{1}{4}$, Section 7, T106N, R48W. The test well was constructed by drilling a 12" well using a direct rotary drilling machine. The driller then set 15 ft. of 6"-80 slot screen and 30 ft. of 8" steel casing and filled the hole with selected washed gravel. The well was developed until clean water was obtained and allowed to recover overnight. Test Hole No. 2, located 51.4 ft. east of the test well had previously been cased with 2" plastic pipe and was used as the observation well for the test.

Initial pumping was started on December 11, 1973. Thirty-six hours into the test the driller had engine trouble and the test was discontinued. No recovery readings were obtained. Figures 7 and 8 show the respective time vs drawdown data obtained for the production well and observation well.

A second test was started on December 18, 1974. The well was pumped for twenty hours and recovery readings were made for an additional eight hours. Data obtained in the second test is shown in Figures 9 through 12.

Analytical results of water samples taken during pumping are provided in Table 3. Two additional water samples were collected near the end of the second pumping period and submitted to laboratories for analysis. These test results are included after Table 3.

Table 1. SUMMARY OF WELL INVENTORY DATA
(Samples Collected November 8 and 15, 1973)*

Sample No.	Name	Location	Hardness GPG	Iron Fe ppm	Manganese Mn ppm	Nitrate N ppm
ES-1	Marion J. Meyer	SW $\frac{1}{4}$, 5,106,48	30.1	0.15	0	11
ES-2	Paul Muldoon	NE $\frac{1}{4}$, 7,106,48	21.7	0.05	0	10
ES-3	Harold Boever	SE $\frac{1}{4}$, 32,107,48	32.2	0.05	0	24
ES-4	Jackson Farm	NW $\frac{1}{4}$, 7,106,48	79.5	0.8	0	110
ES-5	Albert Paulson	NE $\frac{1}{4}$, 5,106,48	95.3	0	0	55
ES-6	Henry Pulscher	NW $\frac{1}{4}$, 17,106,48	20.2	0.03	0	12
ES-7	Foos Farm (flowing well)	SW $\frac{1}{4}$, 8,106,48		2.1	2.7	0.2
ES-8	Ehrichs Well (windmill)	SE $\frac{1}{4}$, 6,106,48	99.4	0.68	3.5	0.2
ES-9	O. D. Edwards		31.0	0.03	0.4	22
ES-10	Mary Gregg	NE $\frac{1}{4}$, 18,106,48	15.8	0.02	0	2.5
ES-11	WRC Well #S-19	SE $\frac{1}{4}$, 8,106,48	23**	0.01		8.3

* Analysis of samples ES-1 thru ES-10 were made with a field test kit and should be verified by laboratory analysis for further use.

**Calculated from analytical results.

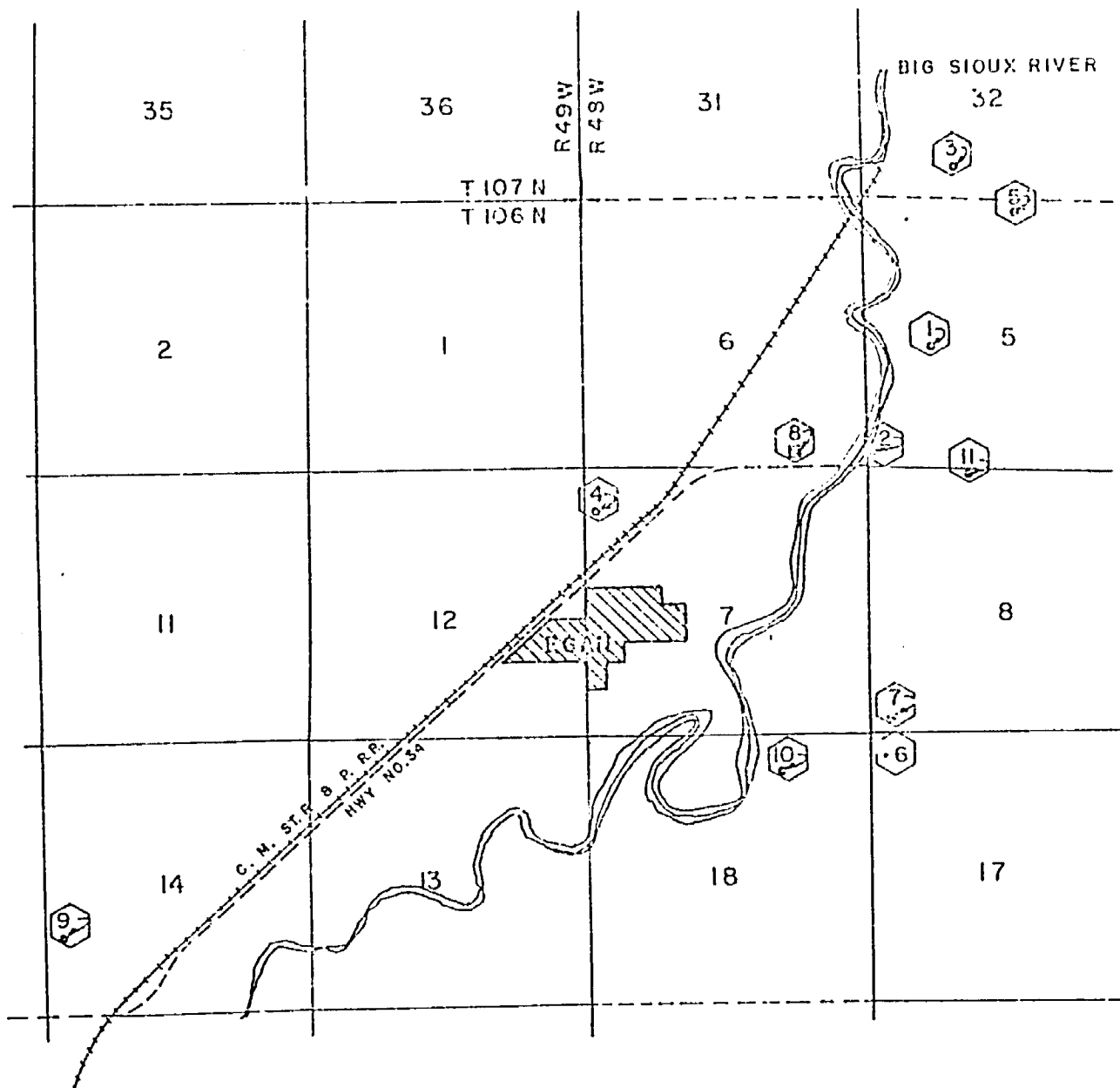


FIGURE 1 SUMMARY OF WELL INVENTORY DATA
LOCATION MAP

DE WILD, GRANT, RECKERT & ASSOCIATES CO. - ENGR'S. & ARCH'S.
ROCK RAPIDS, IOWA

SIoux CITY, IOWA

Date 2/20/74
File No. 2229

SECTION II

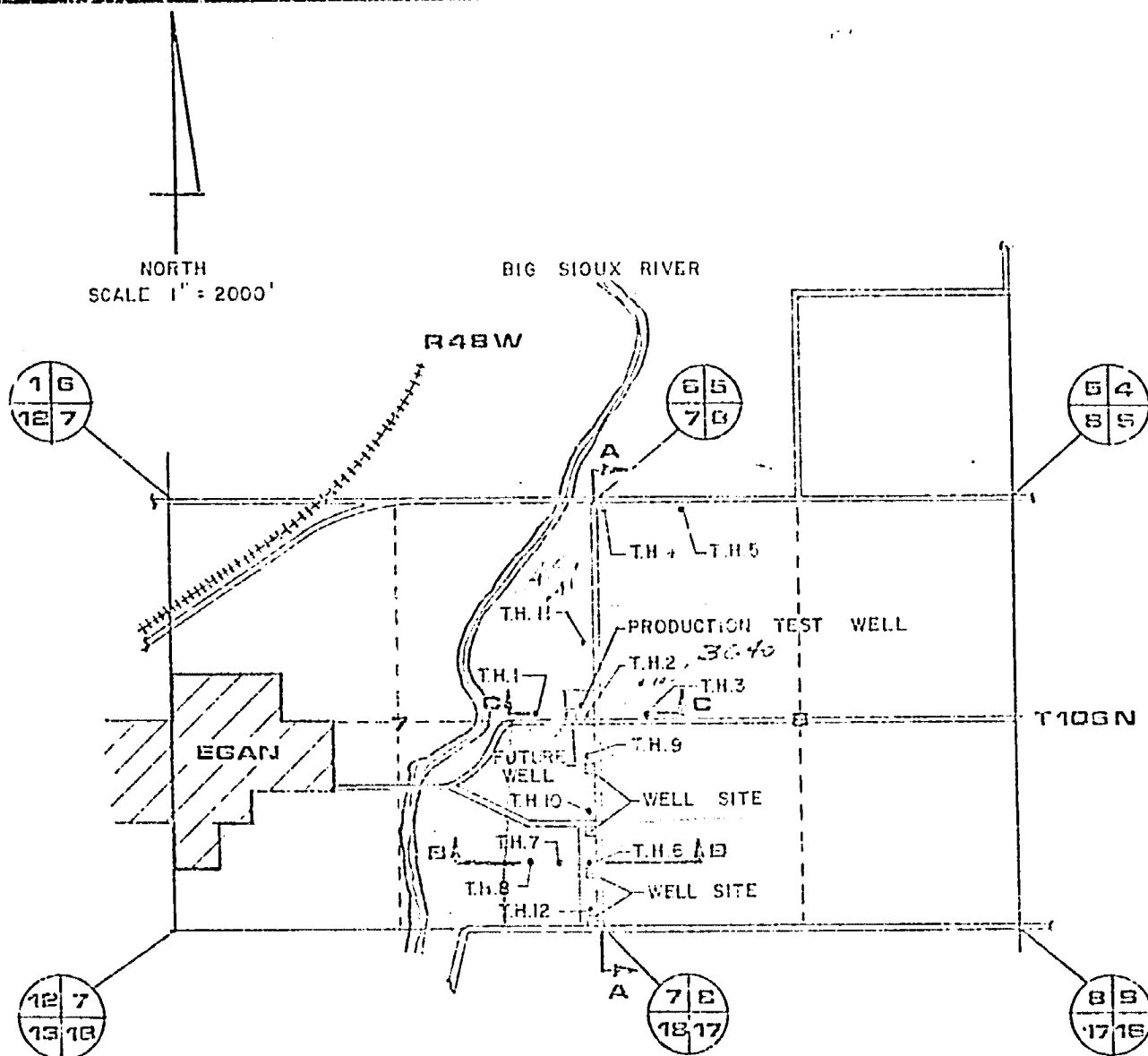


FIGURE 2 GENERAL LOCATION MAP OF TEST HOLES AND PROPOSED WELLS AT THE SIOUX RIVER PUMP SITE

FIGURE 3 ESTIMATED PROFILE THRU TEST HOLES 4, 11, 2, 9, 10, 6 & 12

SIOUX RIVER PUMP SITE
BIG SIOUX COMMUNITY WATER SYSTEM, INC.
DECEMBER, 1973 JOB NO. 2229

SECTION A-A

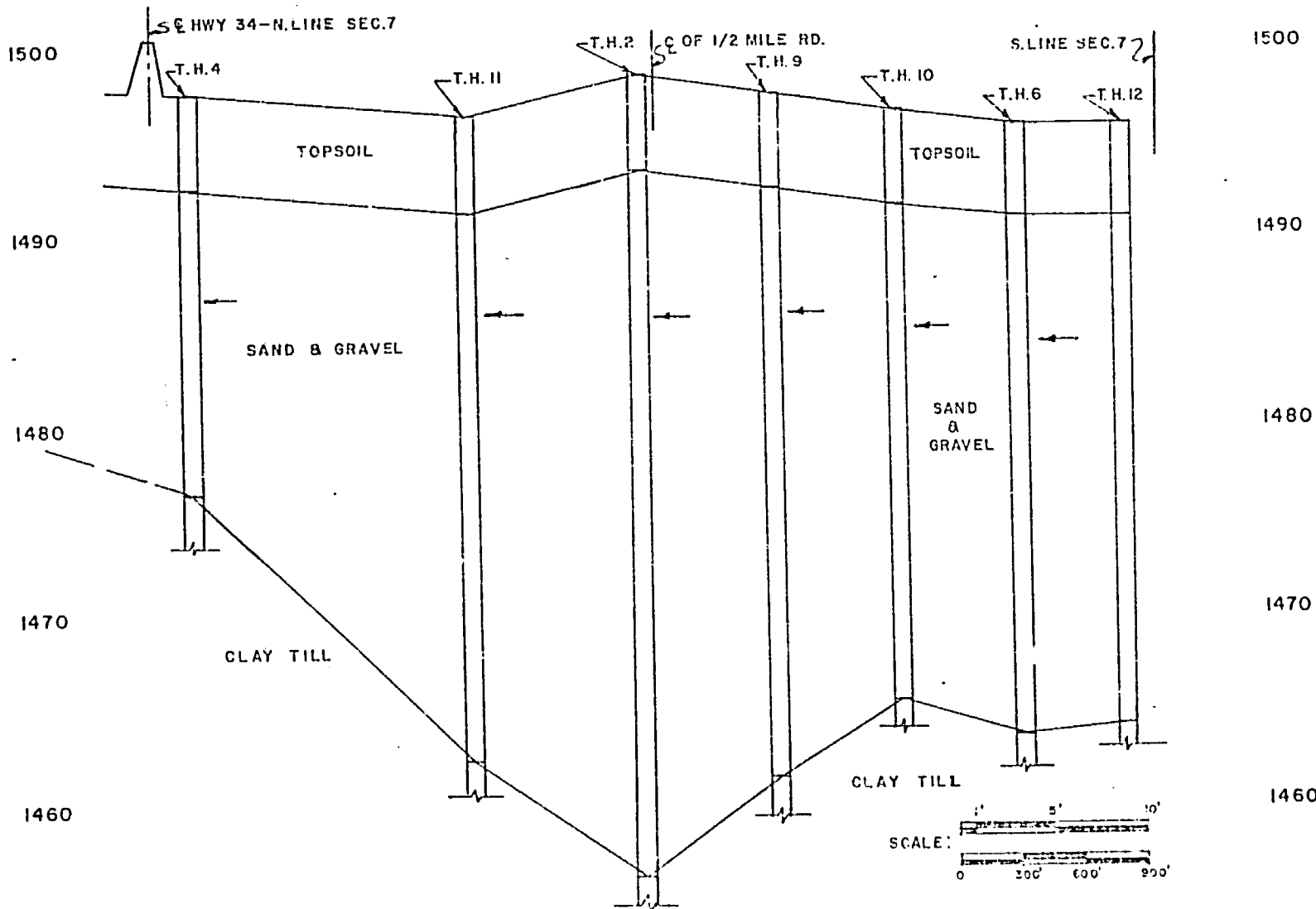


FIGURE 4 ESTIMATED PROFILE THRU TEST HOLES 8, 7, & 6
SIOUX RIVER PUMP SITE
BIG SIOUX COMMUNITY WATER SYSTEM, INC.
DECEMBER, 1973 JOB NO. 2229

SECTION B-B

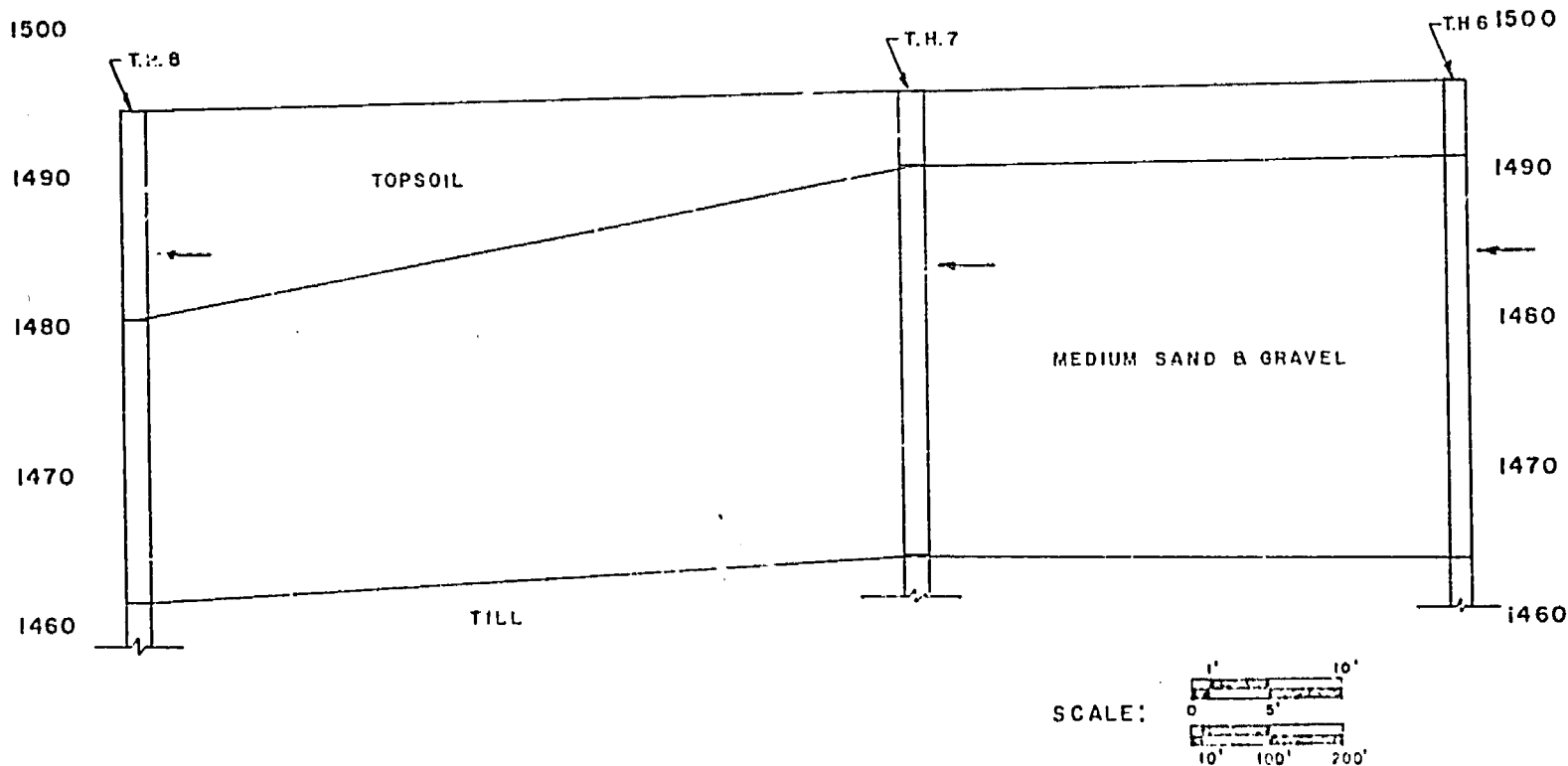


FIGURE 5 ESTIMATED PROFILE THRU TEST HOLES 1,2,& 3
SIOUX RIVER PUMP SITE
BIG SIOUX COMMUNITY WATER SYSTEM, INC.
DECEMBER, 1973 JOB NO.2229

SECTION C-C

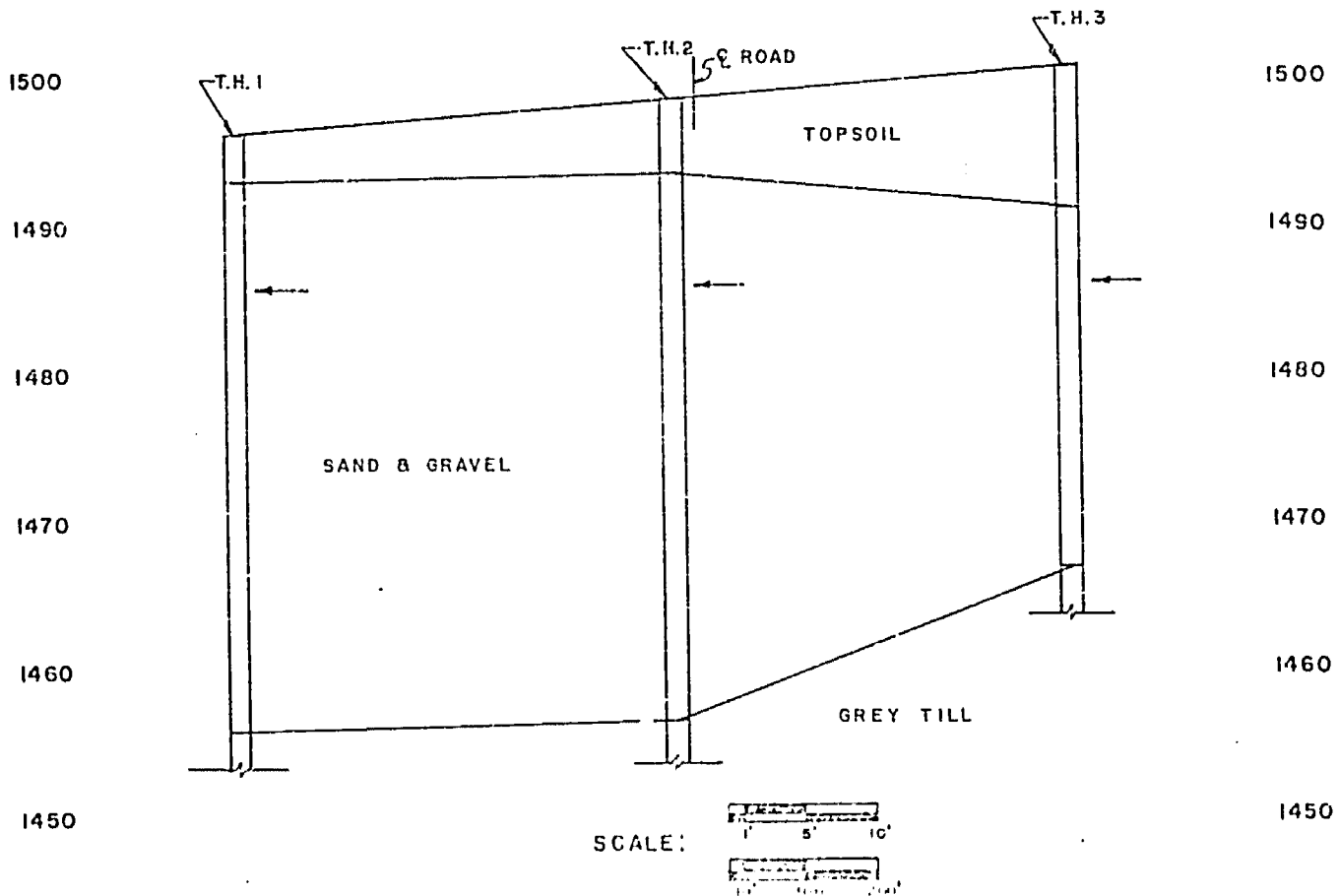
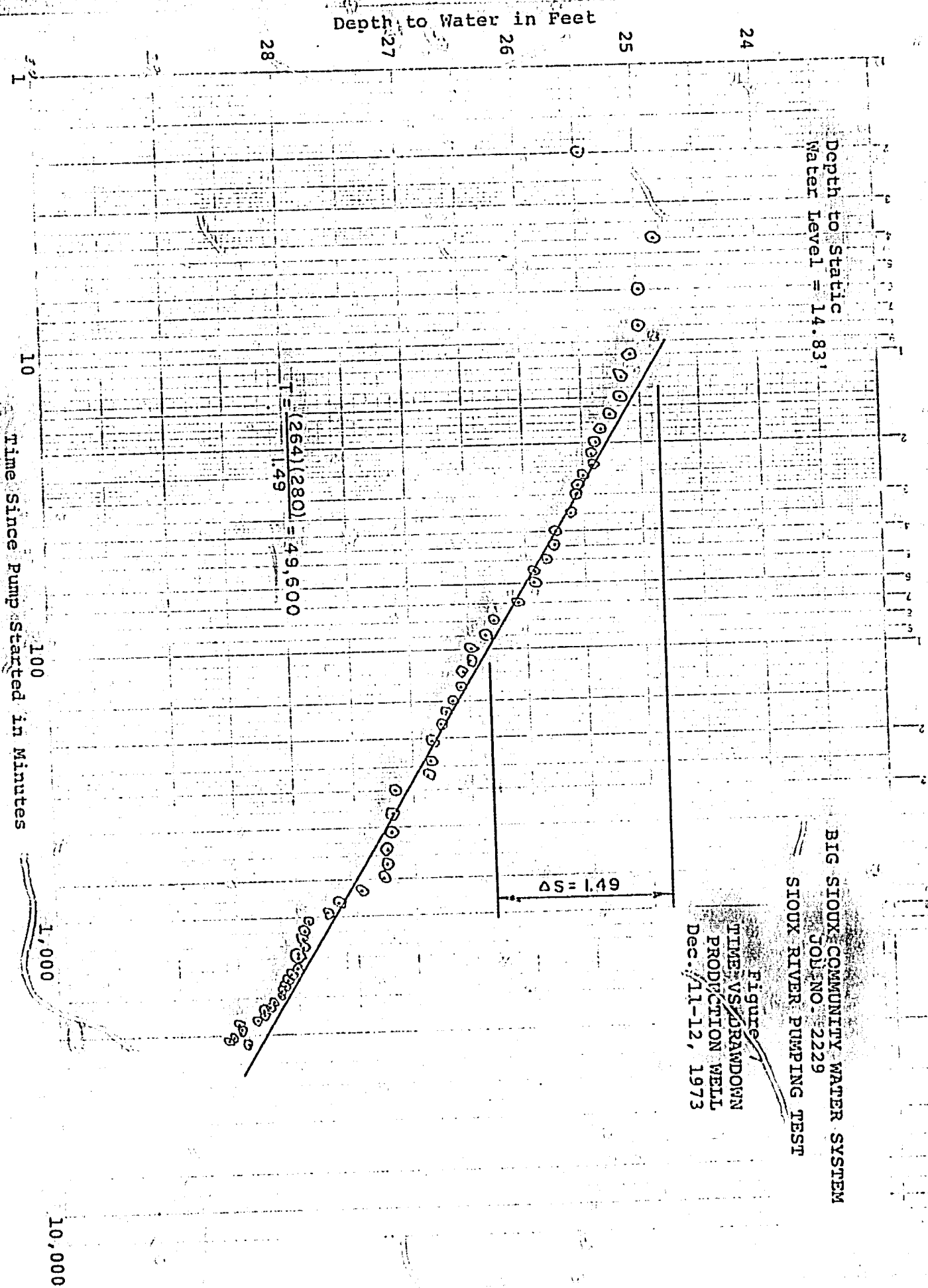


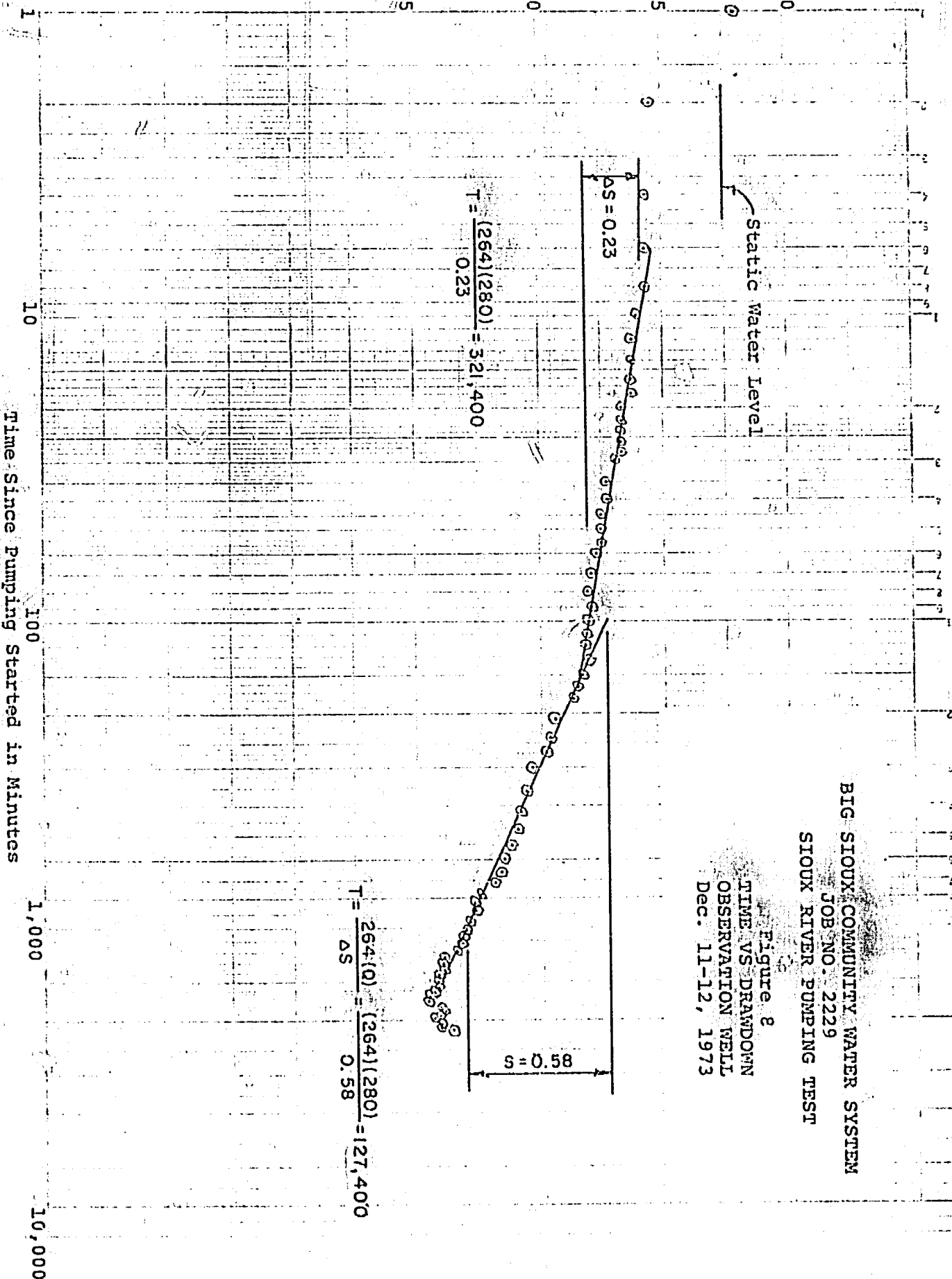
Table 2

SUMMARY OF WATER ANALYSIS OF SAMPLES COLLECTED
FROM TEST HOLES, DECEMBER 7-12, 1973

<u>Test Hole No.</u>	<u>Hardness GPG</u>	<u>Iron Fe, ppm</u>	<u>Manganese Mn, ppm</u>	<u>Nitrate N, ppm</u>
2	24.3	0	0	7
7	24.8	0	0	2.3
10	26.9	0	0	3.2
11	15.8	0	0	14



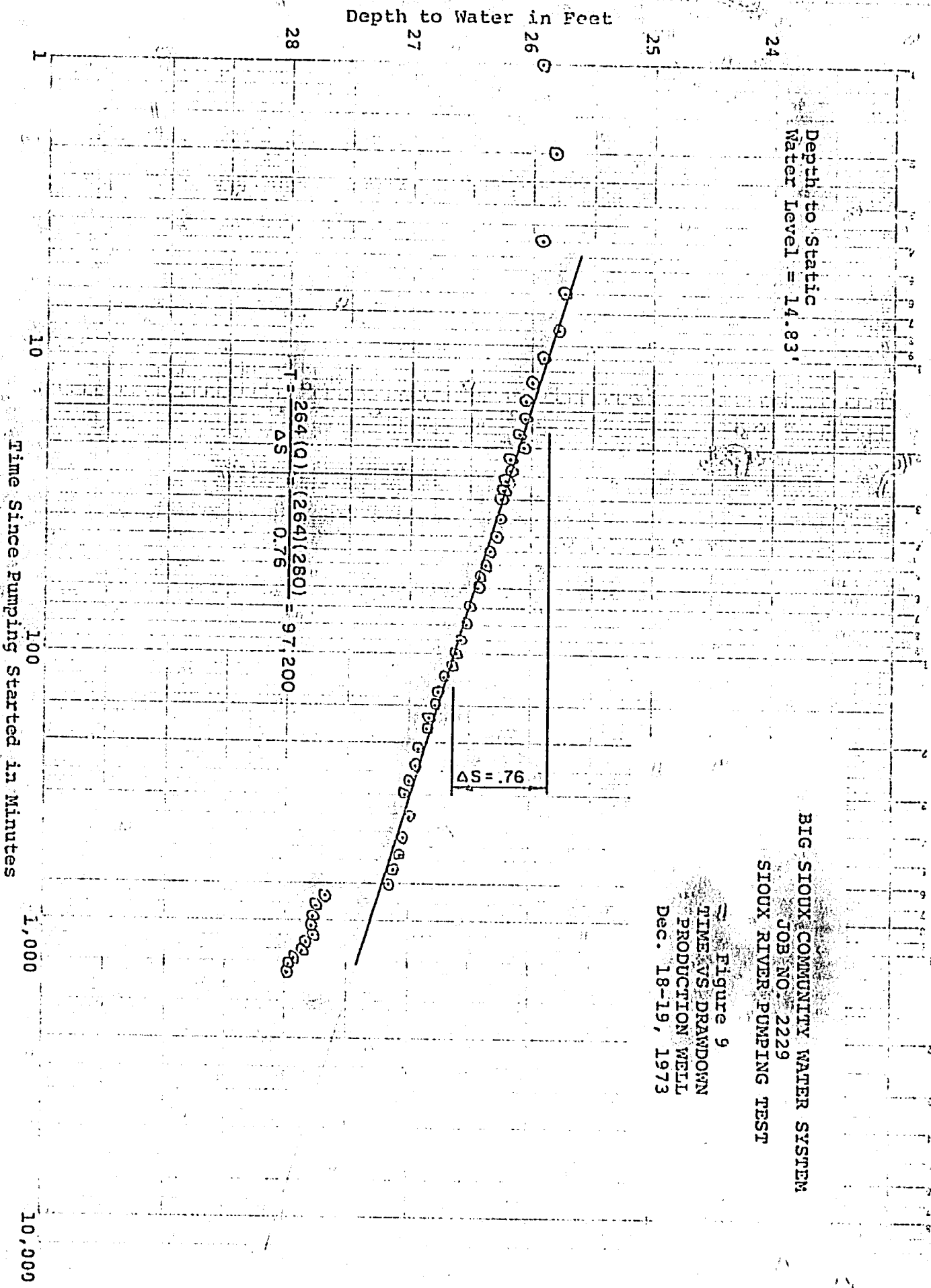
Depth to Water in Feet



$$T = \frac{(264)(280)}{0.23} = 321,400$$

$$T = \frac{264(0)}{0.58} = \frac{(264)(280)}{0.58} = 127,400$$

BIG SIOUX COMMUNITY WATER SYSTEM
 JOB NO. 2229
 SIOUX RIVER PUMPING TEST
 Figure 2
 TIME VS DRAWDOWN
 OBSERVATION WELL
 Dec. 11-12, 1973



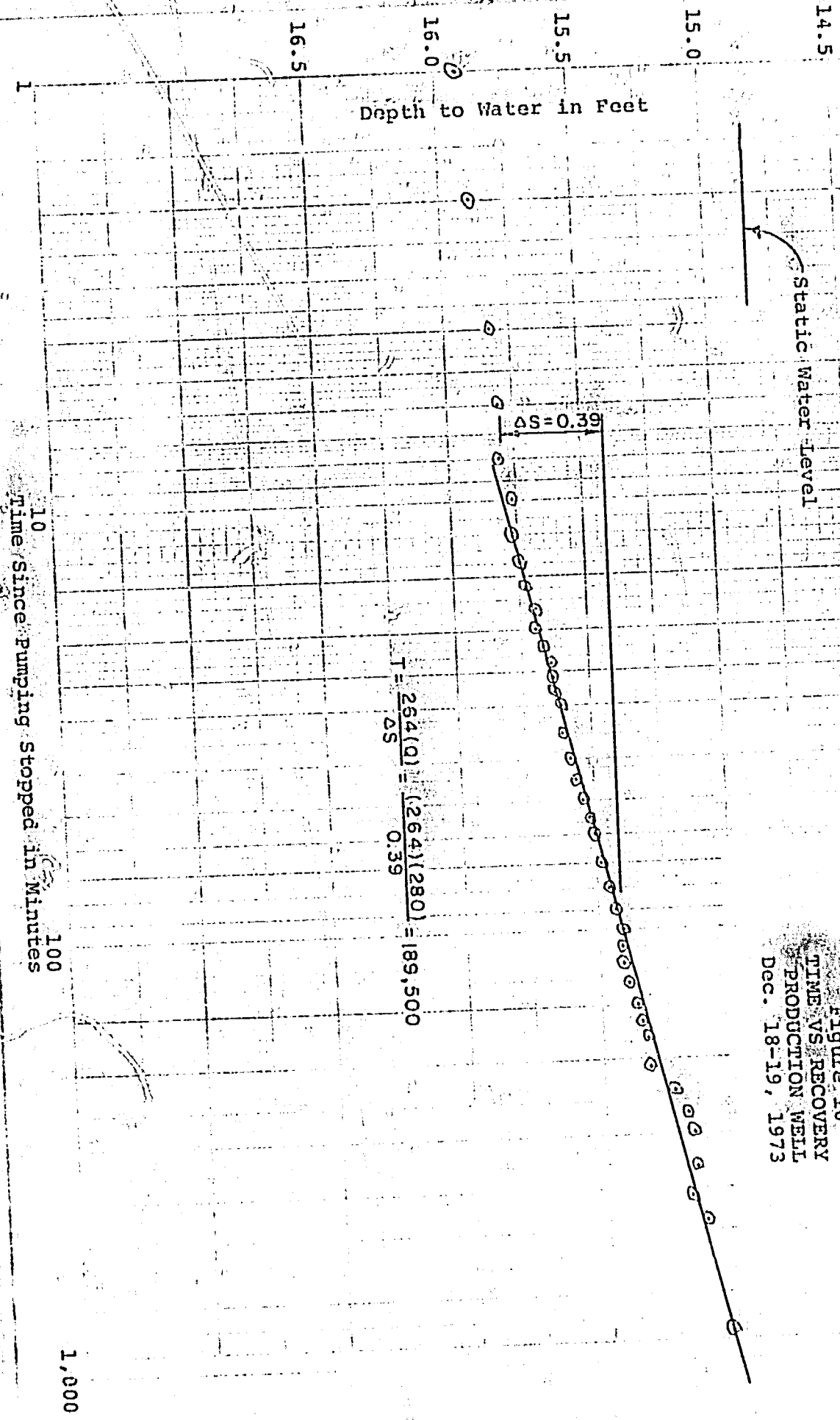
BIG SIOUX COMMUNITY WATER SYSTEM
 JOB NO. 2229
 SIOUX RIVER PUMPING TEST

Figure 9
 TIME VS DRAWDOWN
 PRODUCTION WELL
 Dec. 18-19, 1973

SLUIC LOGGING INC. 45 SAND
 511 N. 17th St. S. P.O. Box 200
 MINNEAPOLIS, MINN. 55401

BIG SIOUX COMMUNITY WATER SYSTEM
 JOB NO. 2229
 SIOUX RIVER PUMPING TEST

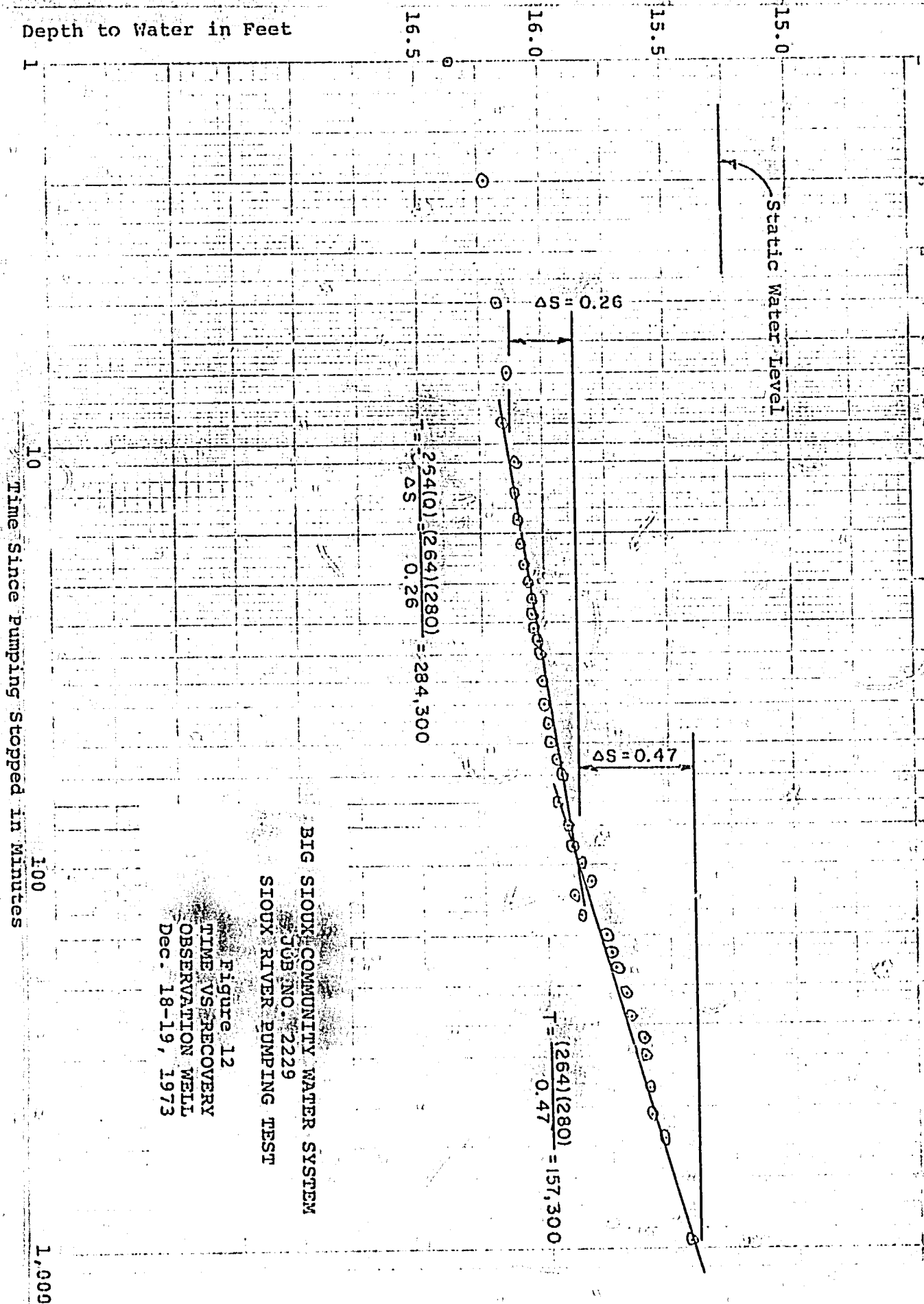
Figure 10
 TIME VS RECOVERY
 PRODUCTION WELL
 Dec. 18-19, 1973



$$T = \frac{264(Q)}{\Delta S} = \frac{(264)(280)}{0.39} = 189,500$$

1,000

$\Delta S = 0.32$



BIG SIOUX COMMUNITY WATER SYSTEM
 JOB NO. 2229
 SIOUX RIVER PUMPING TEST

Figure 12
 TIME VS. RECOVERY
 OBSERVATION WELL
 Dec. 18-19, 1973

Table 3

SUMMARY OF WATER ANALYSIS OF SAMPLES COLLECTED FROM
 PRODUCTION TEST PUMPING
 December 11 and 12, 1973 &
 December 18 and 19, 1973 *

Sample No.	Hardness GPG	Iron Fe, ppm	Manganese Mn, ppm	Nitrate N, ppm	Time After Start Hours
E-1	18.1	0.05	0.3	9.0	6 - Dec.11&12
E-2	18.1	0.03	0.3	10.5	16 - Dec.11&12
E-3	17.5	0.01	0.1	11.0	24 - Dec.11&12
E-4	17.5	0.07	0.3	10.3	32 - Dec.11&12
E-5	18.1	0.08	0.2	11.0	2 - Dec.18&19
E-6	18.1	0.02	0.2	10.5	6 - Dec.18&19
E-7	18.1	0.02	0.0	10.9	20 - Dec.18&19

Two hours after start on 12/18/73:

Water temp. = 8°C

Alkalinity = 0

CO₂ = 35 ppm

pH = 7.7

Twenty hours after start on 12/18/73:

CO₂ = 16 ppm

pH = 7.9

* Analysis of samples was made with a field test kit and should be verified by laboratory analysis for further use.

SOUTH DAKOTA STATE DEPARTMENT OF HEALTH
Division of Sanitary Engineering
Pierre, South Dakota

E-2.19E/4M/10-65

CHEMICAL WATER ANALYSIS REPORT

City or TownMoody and Lake Counties..... Date Received.....12/26/73.....
Sample Collector's Name..... Lab. Number.....732019.....
Date Collected..... Date Reported.....1/18/74.....
Results Reported To: Copies To:

Dewild, Grant, Reckert & Associates Co.
315 First Avenue
Rock Rapids, Iowa 51245

FIELD DATA

Name of Public Water Supply.....Big Sioux Community Water System.....
Well Source Sampled: Name..... Depth..... Diameter..... Date Built.....
Other Source Sampled: Name Date Built.....
Legal Description of Source Site.....
Raw or Treated Sample Treatment Processes
Additional Information, Remarks
Source (pumped26..... hours) (flows) at..... gallons per minute
Field Tests: Temperature 'C..... Iron..... pH.....
Turbidity Alkalinity, P..... M..... Hardness.....

LABORATORY ANALYSIS RESULTS

(Results in parts per million unless otherwise stated)

Specific Conductance at21.5..... 'C.....74.0..... micromhos per centimeter
Total Solids Dissolved Solids430..... Iron as Fe.....<0.02.....
Alkalinity as CaCO_3 P.....0..... T or M210..... pH.....7.60.....
Potassium as K2.1..... Nitrate as N10.30.....
Sodium as Na10.0..... Fluoride as F0.25.....
Calcium as Ca88.00..... Chloride as Cl9.8.....
Magnesium as Mg28.0..... Sulfate as SO_4 83.....
Manganese as Mn.....0.29..... Bicarbonate as HCO_3 256.....
Calculated Hardness as CaCO_3 335.....ppm19.6.....gpg

Analyst Reported by

REPORT OF ANALYSIS
Water Quality Laboratory
Water Resources Research Institute
South Dakota State University
Brookings, South Dakota 57006

Submitted by: John Madden Date Rec'd December 26, 1975
 Address: DeWald Grant Beckert & Assoc Sample No. 72-765
Rock Rapids, Iowa Identification Well-40
51246 NE, Sec. 7, T. 106N, R. 48E

WATER ANALYSIS

Calcium (Ca)	125	ppm*	6.24	me/l**
Magnesium (Mg)	2	ppm	0.16	me/l
Sodium (Na)	10	ppm	0.46	me/l
Potassium (K)	3	ppm	0.07	me/l
Sulfate (SO ₄)	108	ppm	2.25	me/l
Nitrate (as N)	9.20	ppm	0.66	me/l
Chloride (Cl)	5	ppm	0.14	me/l
Bicarbonate (HCO ₃)	251	ppm	4.12	me/l
Carbonate (CO ₃)		ppm		me/l
Iron (Fe)	0.03	ppm		me/l
Fluoride (F)		ppm		me/l
Hardness (EDTA as CaCO ₃)	320	ppm	19	g.p.g.***
Alkalinity (Methyl Orange)	206	ppm (as CaCO ₃)		
Alkalinity (Phenolphthalein)	0	ppm (as CaCO ₃)		
Electrical Conductivity	630	micromhos per cm at 25° C.		
Sodium Adsorption Ratio	0.26			
Sodium	6.63	% of cations		
Residual sodium carbonate	0.00	me/l		
pH	7.62			
Others: Manganese (Mn)	0.12	ppm		

*ppm=parts per million

***g.p.g.=grains per gallon

**me/l=milliequivalents per liter

COMMENTS: Total solids 452 ppm
 Total cations 6.93 me/l
 Total anions 7.17 me/l

By: Shirley Litten

Service Performed	Amount Due
Determinations shown above	\$13.00

Make checks payable to: Water Quality Laboratory

Cut along dotted line and return the lower portion with payment

Sample No. 72-765

Amount Enclosed \$

Signed

LOG OF BORINGS

<u>Test Hole No.</u>	<u>Depth</u>	<u>Material</u>
1	0-3	Topsoil
	3-37	Medium sand and gravel
	37-40	Grey till
	W.L. = 10.4 ft.	
2	0-5	Topsoil
	5-42	Medium sand and gravel
	42	Grey till
	W.L. = 12.6 ft.	
3	0-10	Topsoil
	10-15	Fine sand
	15-34	Medium sand and gravel
	34	Grey till
	W.L. = 15.0 ft.	
4	0-5	Topsoil
	5-21	Medium sand and gravel
	21	Grey till
	W.L. = 10.9 ft.	
5	0-10	Topsoil
	10-27	Medium sand and gravel
	27	Till
	W.L. = 10.5 ft.	
6	0-5	Topsoil
	5-32	Medium sand and gravel
	32	Till
	W.L. = 11.4 ft.	
7	0-5	Topsoil
	5-31	Medium sand and gravel
	31	Till
	W.L. = 11.75 ft.	

LOG OF BORINGS (cont'd)

<u>Test Hole No.</u>	<u>Depth</u>	<u>Material</u>
8	0-14	Topsoil
	14-20	Sand
	20-34	Medium sand and gravel
	34	Till
	W.L. = 10.8 ft.	
9	0-5	Topsoil
	5-36	Medium sand and gravel
	36	Till
	W.L. = 11.7 ft.	
10	0-10	Topsoil
	10-31	Medium sand and gravel
	31	Till
	W.L. = 11.6 ft.	
11	0-5	Topsoil
	5-34	Medium sand and gravel
	34	Till
	W.L. = 10.2 ft.	
12	0-5	Topsoil
	5-29	Medium sand and gravel
	29	Till
Production Test Well	0-5	Topsoil
	5-40	Medium sand and gravel
	40-45	Till
	W.L. = 14.8 ft.	



07057-3

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

August 26, 1997

2054-3

4943-3

5720A-3

5962-3

5963-3

Big Sioux Community Water Corp.
Martin Jarrett, Manager
P.O. Box 158
Egan, SD 57024

Dear Mr. Jarrett:

The investigation of your water use system, including the extent of application of water to beneficial use, as developed under Water Permit Nos. 2054-3, 4943-3, 5720A-3, 5962-3 and 5963-3, have been completed. Your final water right documents, the Water Licenses, can now be issued. Upon licensing, the applicable portions of Water Permit No. 5720-3 will be incorporated into 5720A-3.

Statutes require that we charge a \$50.00 fee per license for the investigation and issuance of the Water License. Upon receipt of the \$50.00 fee per license (\$250.00 total) from you, we will begin processing your Water Licenses.

Please remit fee to:
Department of Environment & Natural Resources
Water Rights Program
523 E. Capitol
Pierre, SD 57501-3181

Sincerely,

Cheryl F. Frost
Secretary
Water Rights Program
(605) 773-3352

NOTE: On check or money order, please specify your permit numbers. This will insure proper handling of the fee



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

September 11, 1997

Martin Jarrett, Manager
Big Sioux Community Water Corp.
PO Box 158
Egan SD 57024

Dear Martin:

I am writing in response to our conversation on September 10, 1997, concerning the amount of the fees for licensing your water permits.

Two or more permits may, under certain conditions, be combined into one water license. This occurs when the permits involve diversion works that are included on each of the permits. For example, the rural water system holds Permit Nos. 5720-3 and 5720A-3 which both concern well No. 5. These two permits will be incorporated into one license and subsequently only one license fee of \$50.00 is needed. Your other permits all involve separate wells which is the reason for issuing separate licenses for the following permits.

- Permit No. 2054-3 covers well Nos. 1 and 2 (Nos. 3 and 4 were developed after the construction period)
- Permit No. 5962-3 covers well No. 3
- Permit No. 5963-3 covers well No. 4
- Permit No. 4943-3 covers the well located in Lake county.

Well Nos. 3 and 4 were not included on the same permit because one well places water to use reserved under a future use permit while the other well is located outside of the future use area.

Therefore, the total fee for the five licenses is \$250.00. However, based on our conversation about moving well No. 5, you may want to wait with licensing Nos. 5720-3 and 5720A-3. Permit No. 5720-3 was approved for use of 1.10 cfs (495 gpm) with an annual volume of 478 acre-feet. If licensed now, the diversion rate will be reduced to the current pump capacity of 0.31 cfs (140 gpm) with an annual volume limit of 150 acre-feet. Therefore, if a well relocation is approved and the relocated well produces more than 0.31 cfs (150 acre-feet annually), it would be advantageous to wait and license the permit for the greater diversion rate and volume. The time period to place water to beneficial use under No. 5720-3 does not expire until March 3, 2002.

Please let me know how you want to proceed. If you have any questions concerning this letter or any other issues, I can be reached at 605 773-3352. I will try to assist in any way possible.

Sincerely,

Ron Duvall
Natural Resources Engineer
Water Rights Program



October 1, 1996

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

Martin Jarrett, Manager
Big Sioux Community Water Corporation
Box 158
Egan SD 57024

Dear Martin:

I am writing in response to your letter received September 6, 1996. Thank you for completing the information I requested in my August 27 letter.

In accordance with your letter, I have partially-completed two permit applications for your review. The draft applications are enclosed along with blank forms in the event you need to make changes. I have also enclosed a copy of the maps I prepared for your review. The following items (denoted by red checks on the applications) need to be completed on the enclosed applications:

- Since water is being placed to beneficial use reserved by your future use permit, the maximum annual volume of water (acre-feet) diverted from well No. 3 needs to be completed for question No. 2. This number of acre-feet will then be deducted from the amount of water reserved by Future Use Permit No. 3984-3.
- If you wish, you may also identify a maximum annual number of acre-feet to be used from well No. 4. This will reduce the application fee somewhat since the fee is based on how much water is being appropriated.
- To the best of your knowledge, please specify the distance to the nearest domestic well owned by someone other than the rural water system (question No. 1g on Form 2A.)

After completing the questions on applications and signing the applications in the presence of a notary, return the applications with the maps and application fees. The fee structure is outlined on the enclosed instruction sheet.

Please contact me at (605) 773-3352 if you have any questions.

Sincerely,

Ron Duvall
Natural Resources Engineer
Water Rights Program

enclosures

Permit No. 2054-3
Big Sioux River - Water District

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

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

I have this day, June 12, 1996, made a thorough examination of the water use system constructed by the Big Sioux Community Water Corporation of Box 158, Egan SD 57024 holder of Permit No. 2054-3, bearing the priority of February 27, 1974 authorizing the diversion of 2.60 cu. ft. per second of the waters of the Big Sioux Moody aquifer for rural water purposes, in Moody, Lake, Brookings, and Minnehaha Counties.

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

A. Works used to divert the water:

Pump: Both wells

1) Make Aurora-Vertiline

2) Capacity 195 (Well No. 1); 325 (Well No. 2) GPM

Motor: Both wells

1) Make General Electric

2) Horsepower rating 10 hp

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

Water is treated at the treatment plant in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ section 7-T106N-R48W and then distributed to customers via the rural water pipeline.

The system is in the following condition good. The point of diversion is located Well No. 1: 2,000 feet N and 80 feet W (NE $\frac{1}{4}$ SE $\frac{1}{4}$); Well No. 2: 660 feet N and 80 feet W (SE $\frac{1}{4}$ SE $\frac{1}{4}$); both from the SE corner of section 7-T106N-R48W. The works are capable of diverting and conveying to the place of use 1.16 cu. ft. per second of water which is to be used for rural water purposes.

Applicable permit qualifications have been complied with: Yes ☒ No

Exceptions to compliance are: none Date report completed: October 2, 1996



Ron Duvall
Natural Resources Engineer
DENR, Water Rights Program

FIELD INVESTIGATION REPORT FOR PERMIT NO. 2054-3

DATE OF INVESTIGATION:	June 12, 1996
NAME & ADDRESS OF INVESTIGATION CONTACT/ RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE	Martin Jarrett, Manager
NAME & ADDRESS OF PERMIT HOLDER	Big Sioux Community Water Corp. Box 158 Egan SD 57024
DIVERSION POINT LEGAL LOCATION	Well No. 1: 2,000 feet N and 80 feet W (NE $\frac{1}{4}$ SE $\frac{1}{4}$); Well No. 2: 660 feet N and 80 feet W (SE $\frac{1}{4}$ SE $\frac{1}{4}$); both from the SE corner of section 7-T106N-R48W

Other permit(s) associated with the project: 5962-3, 5963-3, 5720-3 & 5720A-3

WELL INFORMATION: (Information is same for both wells unless specified otherwise)

- 1) Well Drilling Firm: Lacey Well Drilling
- 2) No. of Wells 2
- 3) Depth(s) both 33 feet
- 4) Well log is available N

Casing:

- 1) Diameter 12 inches
- 2) Length 23 feet
- 3) Type steel

Screen:

- 1) Type stainless steel
- 2) Length 10 feet

Pump:

- 1) Make Aurora-Vertiline
- 2) Capacity 195 (Well No. 1); 325 (Well No. 2)
GPM

Motor:

- 1) Make General Electric
- 2) Horsepower rating 10 hp

DISTRIBUTION LINES OR CANALS:

Water is treated at the treatment plant in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ section 7-T106N-R48W and then distributed to customers via the rural water pipeline.

PERMIT QUALIFICATIONS:

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

RECEIPT

415492

Division of Water Rights South Dakota Department of Environment and Natural Resources

Pierre, _____
October 17, 19 97

RECEIVED OF Big Sioux Community Water, Inc., P.O. Box 158, Spear, SD 57024-0058
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct
and to put water to beneficial use - _____

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. 2054-3

Fee for Filing Transfer Form _____

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

50 00

50 00

By

John Hatch
Chief Engineer



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

NOV 12 1997

2054-3
4943-3
5962-3
5963-3

Big Sioux Community Water system, Inc.
%Martin Jarrett, Manager
P.O. Box 158
Egan, SD 57024-0158

Dear Mr. Jarrett:

Enclosed are Water License Nos. 2054-3, 4943-3, 5962-3 and 5963-3. These are the final water right documents completing your process of obtaining a Water Right. Enclosed are Receipt Nos. 415492, 415493, 415494 and 415495 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. 2054-3, 4943-3, 5962-3 and 5963-3, 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

gm
enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2054-3

(1) The Big Sioux Community Water System, Inc. PO Box 158, Egan, SD 57024-0158 made Application No. 2054-3, February 27, 1974 for a water permit to divert 2.60 cubic feet of water per second from ground water (four wells), Moody County, South Dakota for rural water system purposes. Permit No. 2054-3, with a priority date of February 27, 1974 was approved March 20, 1974 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before March 20, 1977 and for the application to beneficial use of said water on or before March 20, 1977.

(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 1.16 cubic feet of water per second for beneficial use. The location of the diversion points are Well #1 - 2,000'N and 80'W of the SE corner of Section 7 (NE 1/4 SE 1/4) and Well #2 - 660'N and 80'W of the SE corner of Section 7 (SE 1/4 SE 1/4), both in T106N, R48W.

(3) The applicant has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use. Water is treated at the treatment plant in the SE 1/4 SE 1/4 NE 1/4 Section 7, T106N, R48W and then distributed via a pipeline to customers in Moody, Lake, Brookings and Mirnehaha Counties.

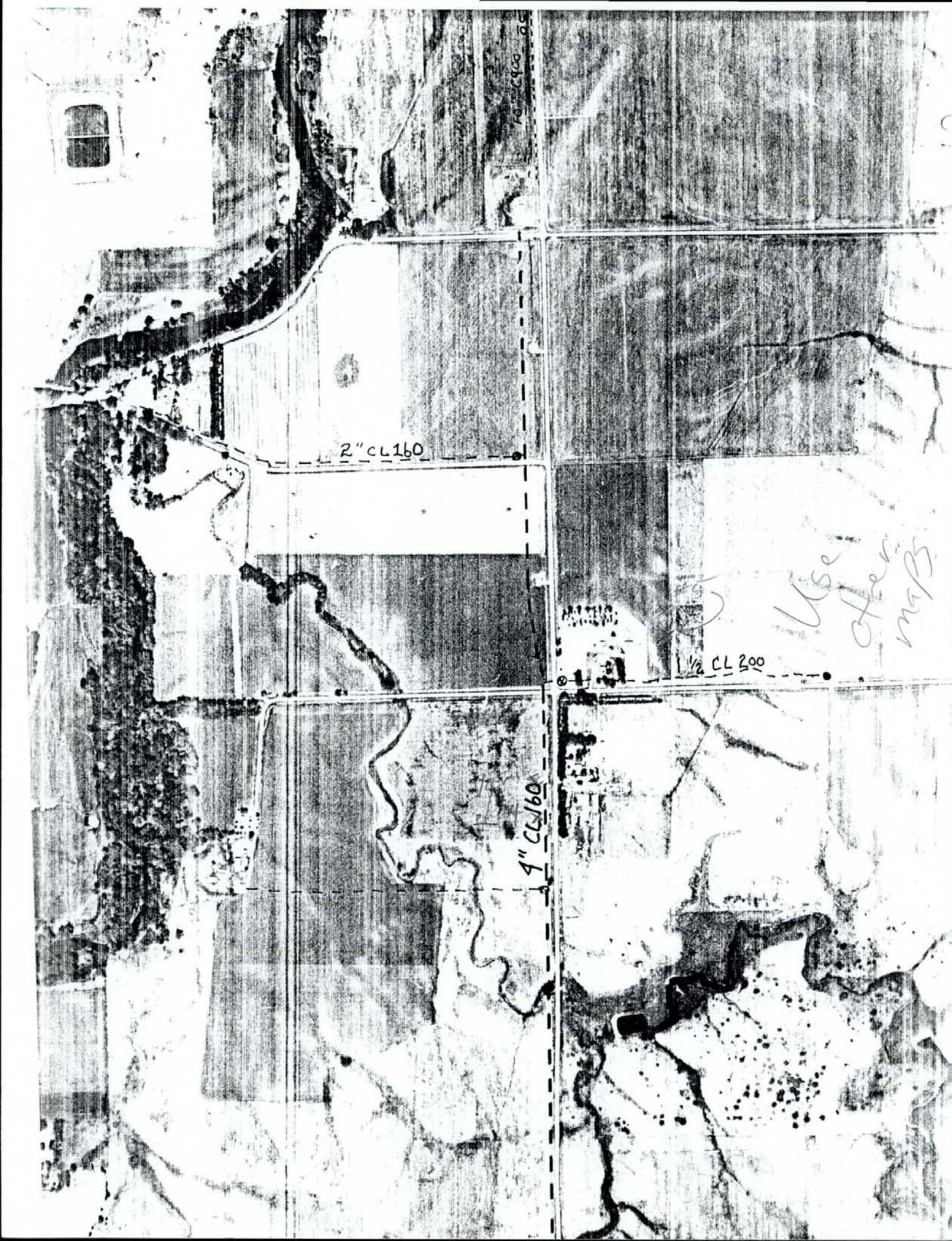
(4) Pursuant to South Dakota Water Law 46-5-30.1 the Big Sioux Community Water System, Inc., PO Box 158, Egan, SD 57024-0158 the holder and/or owner of Water Permit No. 2054-3 is issued a license to appropriate water, the right to use 1.16 cubic feet of water per second from ground water (two wells) with a priority date of February 27, 1974 from the locations specified in (2) of this license, for rural water system purposes. This license is subject to any limitations or qualifications listed in Water Permit No. 2054-3 and subject to South Dakota State Law.


JOHN HATCH, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

NOV 12 1997

date





2" CL 160

4" CL 160

1 1/2 CL 200

Use other maps