

STURGIS 347. 52.56

1099-1

1. Considered 7-21, 1976
2. Name of Applicant IVAN T. & DOROTHY U. SHONKLEY
3. Post Office Address MITCHELL
4. Amount of water claimed .10
5. Source of water supply 560' DEEP WELL (MINNELUSA)
6. Water to be used for SUBURBAN HOUSING

Acres to be irrigated _____

7. Water to be diverted and used in LAWRENCE county
about IN SE miles _____ of DEADWOOD.

8. Proof of Publication

Received _____

Not received _____

9. Application

Approved _____

Subject to _____

Not Approved _____

Action deferred _____

SEE PROTEST


10. Remarks:

No. 1099-1Map No. 911-1 Water Division No. 1 BELLE FOURCHE 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)

1. Name of Applicant Ivan T. & Dorothy U. Shonley
Postoffice address 1120 North Foster St. Mitchell, So. Dak. State So. Dak. 57301
If a corporation show date and place of incorporation _____
2. Method of accomplishing work (contract, employment of others, or by direct labor) Contract to licenced S. Dak. Driller
3. Name of diversion work Well
4. Amount of water claimed (cubic feet per second) 1/10 C.F.S.
5. Source of water supply Existing well in Minnelusa
6. Location of point of diversion Well (See map)
N 63 05 W 672 ' from Section 14 / 15 Quarter Corner, Lawrence County, So. Dak.
County Lawrence
7. Annual period or periods during which water is to be used Year around
8. Use to be made of water, (irrigation, industrial, municipal, commercial, recreation, etc.) Domestic
9. For irrigation use, _____ Total number of acres to be irrigated _____

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

Land Description	No. Acres Irr.	Land Description	No. Acres Irr.

Attach sheet if more space is needed

10. Time required to complete construction of water supply system One years. Additional time required to complete application of water to the proposed beneficial use Two years.
11. Choice of newspaper for Notice of Intent to Appropriately Water publication Deadwood Pioneer Times
12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source. Well, Storage tank, Distribution System.

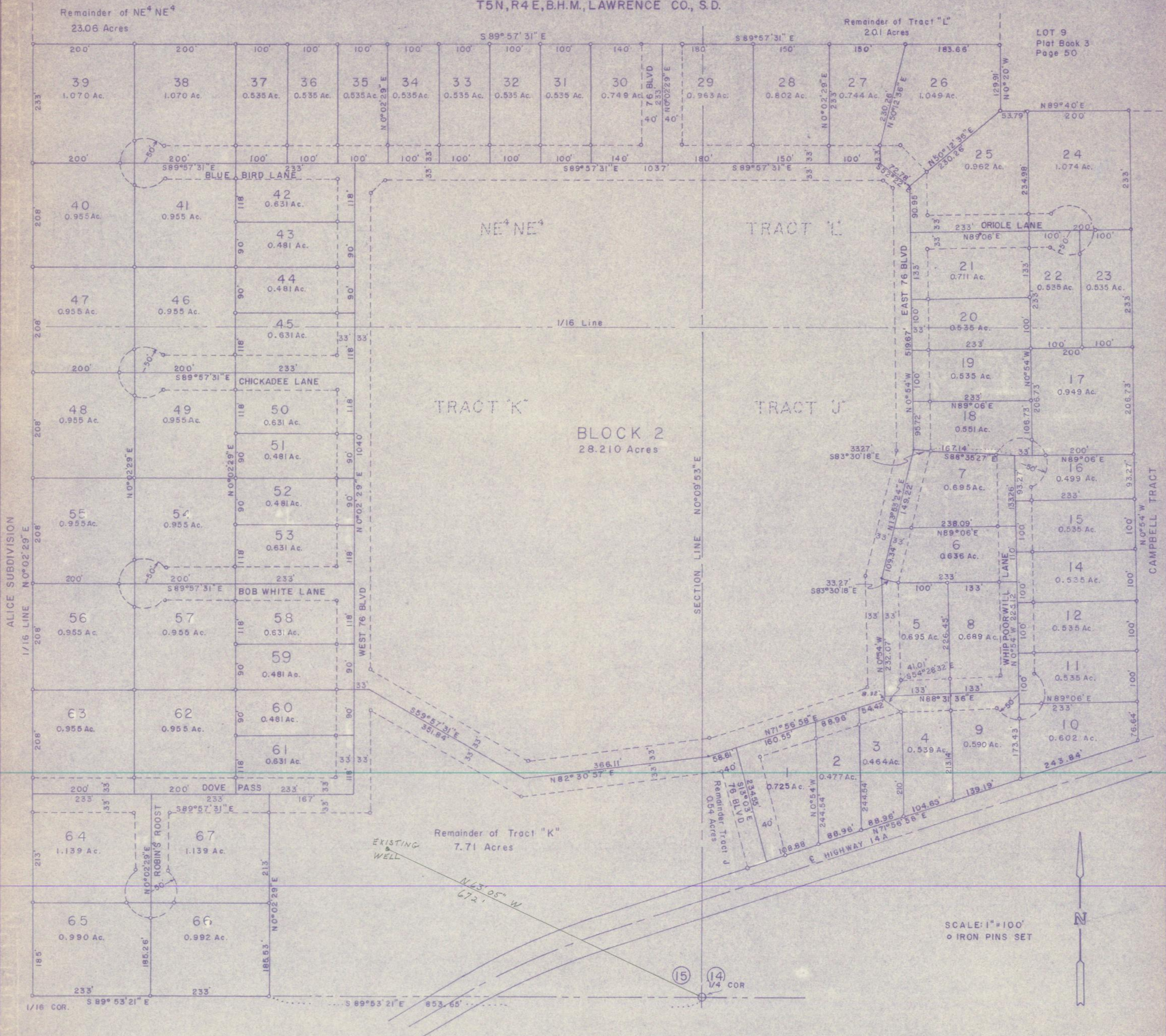
B. Works proposed to transport water to place of use.

C. Works proposed to apply water to beneficial use.

Estimated Total Cost \$ 50,000.00Attachments: 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)
County of Lawrence) ss.We, Ivan T. Shonley & Dorothy U. Shonley 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 Ivan T. ShonleySubscribed and sworn to before me this 21/76 day of May 19 76

Notary Public (or other qualified officer)

PLAT OF BOULDER PARK
LOTS 1 THROUGH 12 & LOTS 14 THROUGH 67 OF BLOCK 1, AND BLOCK 2
FORMERLY PORTIONS OF NE¹NE¹8 TRACT K, SEC.15 and TRACTS J&L, SEC.14
T5N,R4E,B.H.M.,LAWRENCE CO., S.D.



SURVEYOR'S CERTIFICATE

I, Marie D. Gieser, Registered Land Surveyor #1007, do hereby certify that this plat was made from notes taken during an actual field survey, and that, to the best of my knowledge and belief, it correctly represents the lands involved, their dimensions and the monuments thereon as requested by owner, and is true and correct as shown.

In witness whereof I have hereunto set my hand and official seal.

Marie D. Gieser
Registered Land Surveyor #1007

ACKNOWLEDGMENT OF SURVEYOR

He it remembered that on this 25th day of October, 1975, before me, the undersigned, a Notary Public, personally appeared Marie D. Gieser, known to me to be the person whose name is affixed to the foregoing certificate.

My commission expires August 10, 1981.

Arthur J. Gieser
Notary Public

OWNER'S CERTIFICATE

I (we) Ivan T. Shonley and Dorothy U. Shonley, owner (s) of the lands herein described as Boulder Park, Lots 1 through 12 and Lots 14 through 67, Block 1, and Block 2, formerly portions of the NE¹NE¹8 Tract K, Section 15 and Tracts J and L, T5N, R4E, B.H.M., Lawrence County, South Dakota, do hereby approve this included plat. We hereby dedicate a strip of land ten feet wide along and either side of all lot lines and the streets within this plat to be used for the construction and maintenance of utilities. All acreage indicated herein are 66' unless otherwise indicated and are hereby dedicated to public use for ingress and egress to the lands involved herein.

Ivan T. Shonley Dorothy U. Shonley
(owners)

ACKNOWLEDGMENT OF OWNER

He it remembered that on this 25th day of October, 1975, before me, the undersigned, a Notary Public, personally appeared Ivan T. Shonley and Dorothy U. Shonley, owner (s) of the lands herein described.

My Commission Expires Aug 10, 1981.

Arthur J. Gieser
Notary Public

CERTIFICATE OF THE COUNTY TREASURER

COUNTY OF LAWRENCE, STATE OF SOUTH DAKOTA

I, _____, the County Treasurer of Lawrence County, South Dakota, do hereby certify that all taxes which are liens upon the lands indicated herein, according to the records of my office, have been fully paid to date. DATE: _____

County Treasurer, Lawrence County.

OFFICE OF THE DIRECTOR OF EQUALIZATION

LAWRENCE COUNTY, SOUTH DAKOTA

I, _____, Director of Equalization of Lawrence County, South Dakota, do hereby certify that I have received a copy of this plat.

Director of Equalization, Lawrence County.

OFFICE OF THE LAWRENCE COUNTY PLANNING COMMISSION

LAWRENCE COUNTY, SOUTH DAKOTA

I, _____, Chairman of the Lawrence County Planning Commission, do hereby certify that the Planning Commission of Lawrence County, South Dakota, does approve the included plat. DATE: _____

Chairman, Planning Commission, Lawrence County.

OFFICE OF THE COUNTY COMMISSIONERS

LAWRENCE COUNTY, SOUTH DAKOTA

I, _____, Chairman of the Board of County Commissioners of Lawrence County, South Dakota, do hereby certify that the Board of County Commissioners does approve the included plat.

Attest: _____
Lawrence County Auditor

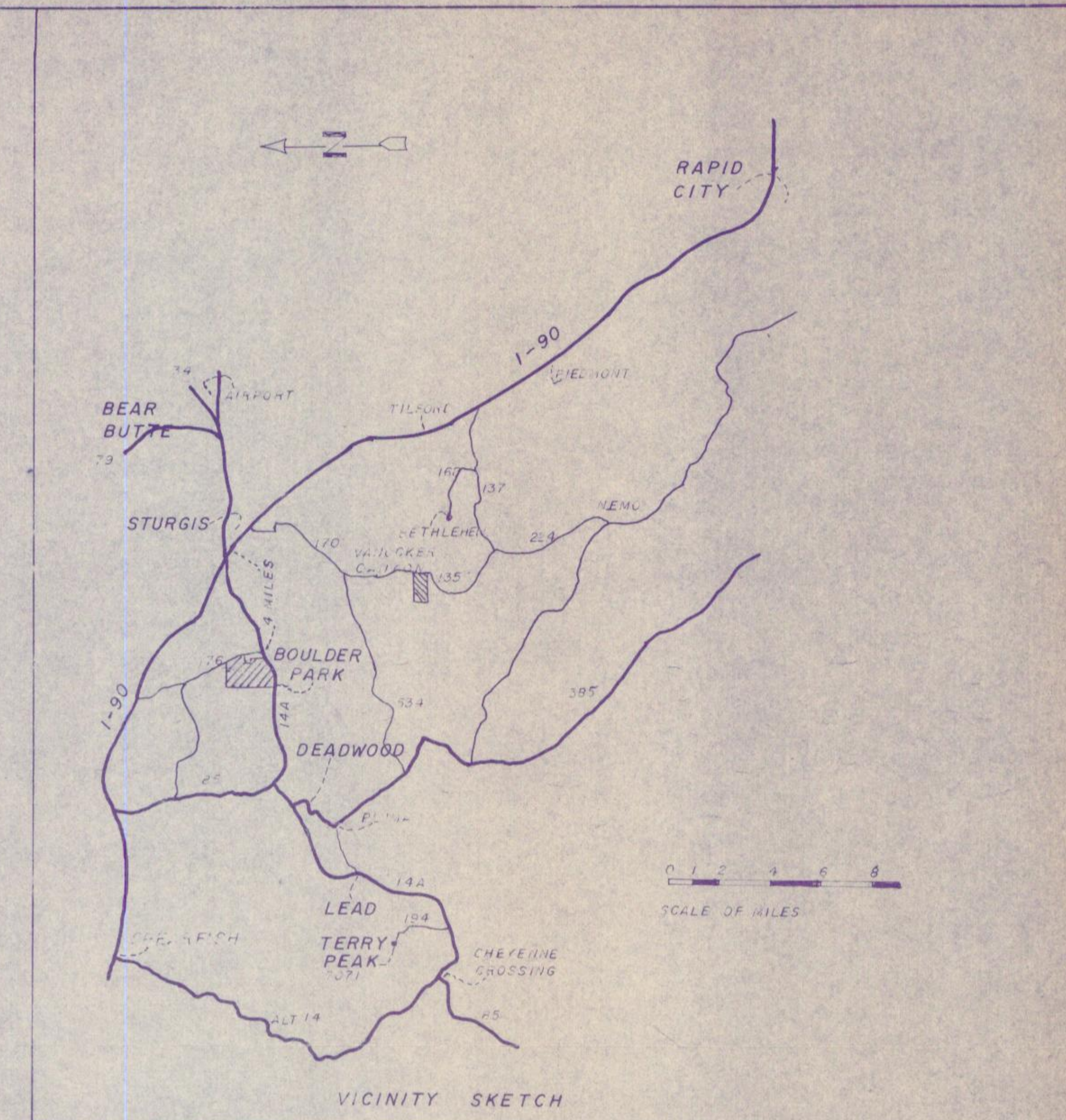
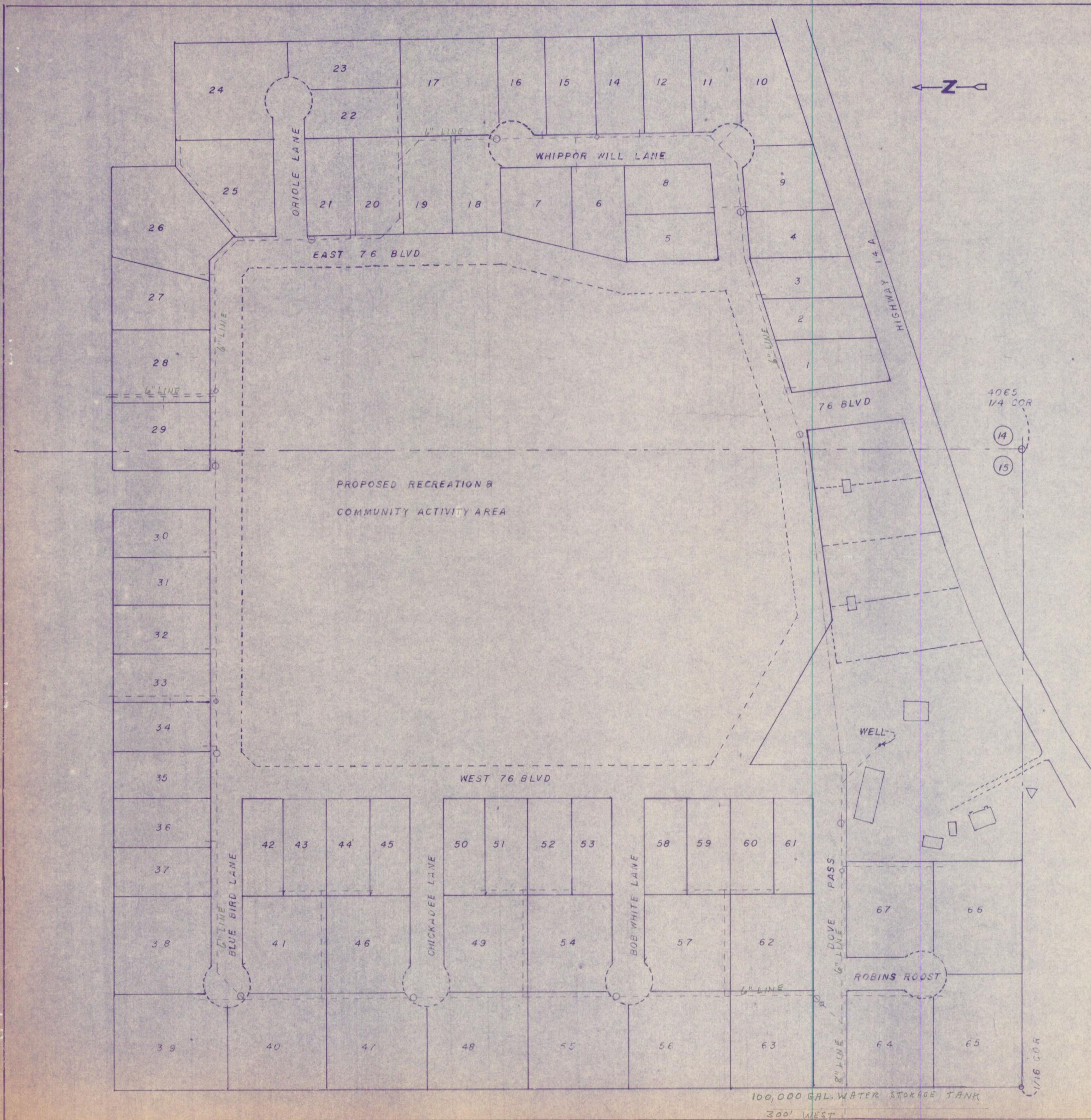
Chairman, Board of County Commissioners, Lawrence County.

OFFICE OF THE REGISTER OF DEEDS

LAWRENCE COUNTY, SOUTH DAKOTA

Filed for record this _____ day of _____, 1975, at _____ o'clock, _____ M., and recorded in Book _____ of plats on page _____ therein.

Register of Deeds, Lawrence County.



NAME - BOULDER PARK SCALE 1" = 100'
 LOCATION - SECTION 14 & 15 TOWNSHIP 5 NORTH RANGE 4
 OWNER & SUBDIVIDER - IVAN T. SHONLEY
 ENGINEER - MIDSTATE ENGINEERING
 SURVEYOR (for topographic map) FRED BRADY
 SURVEYOR (for lots) GIGEAR SURVEYING
 REVISED - DEC. 23 1975

WATER RIGHT APPLICATION APPROVAL

The Water Rights Commission hereby approves Water Right Application No. 1099-1

IVAN T & DOROTHY U. SHONLEY
(Applicant)

1120 N. FOSTER, MITCHELL
(Post Office Address)

SOUTH DAKOTA 5/30/01
(State)

With the following modifications:

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

Date of first receipt of application MAY 25, 1976
Date of return to applicant for correction, amendments or changes required 19
Date of receipt of corrected application 19
Approved SEPTEMBER 30, 1976 Recorded in Book 16 Page 282

WATER RIGHT PERMIT NO. 1099-1

The Water Rights Commission hereby grants and issues this Water Right Permit No. 1099-1 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 MAY 25, 1976
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before MARCH 30, 1977
3. The whole of said work is to be completed on or before SEPTEMBER 30, 1977
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is SEPTEMBER 30, 1977
5. The water appropriated shall be used for the purpose of SUBURBAN HOUSING
6. The price 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 .10 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~~ USED FOR SUBURBAN HOUSING DEVELOPMENT and if for the irrigation purposes and appropriation must be limited to not more than ~~3 acre feet per acre per year and be limited to not more than one twentieth (1/20) of one cubic foot of water per second of time for each acre of land to which water is~~ actually and beneficially applied for irrigation on or before SEPTEMBER 30, 1977 said water to be used during the following described annual period: CONTINUOUSLY

Witness my hand this 7TH day of FEBRUARY 19 77

WATER RIGHTS COMMISSION

By: John Hatch
Chief Engineer, Executive Officer

Certificate of Construction Issued 19

Water License Issued 19

Form 2A - Wells, Dugouts or Water Storage Dams (Supplement to form 2)

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

D. Well Information or Estimates

- (1) Drill Hole, Diameter 5 inches, Depth 560 ft.
(2) Casing, Type Steel Diameter 4 inches Thickness 1/2 inch
(wood, concrete, steel, etc)
(3) Perforated Screen.

Type None, Diameter _____, Length _____
(4) Gravel Pack, Thickness _____, Length of gravel pack Unknown

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 See copy of well construction

Depth to top of water bearing material 260 ft.
Depth to bottom of water bearing material 530 ft.
Thickness of water bearing material 270 ft.
Depth to water (ground surface to water level) 420 ft.

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

On same owner's property _____ rds. On property owned by others 180 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.

Ivan D. Shorley
Ivan D. Shorley
Signature of Applicant

Graf Drilling
Highway 34
Belle Fourche S.Dak.
76842 2314

Well Drilled at 76 Ranch
NOTICE OF WELL CONSTRUCTION

(1) WELL CONSTRUCTION

Location of well S.E. 1/4 NE 1/4 Section 15 Township 5 Range 4

Well owner Eddie Ryfkenia Deadwood, S.Dak.
(Name) (Address)

Date well drilling completed March 9, 1973 Purpose of well Domestic and Stock
(domestic, irrigation, municipal, industrial, other)

Layers, top to top in feet	Description of layer	Depth to top of water producing aquifer
0 - 3	Black topsoil	550 ft.
3 - 10	Red Bed	Depth to static water level 420'
10 - 42	Limestone	Name of producing aquifer (if known) Minilusa
42 - 140	Opasche (Red Bed)	Total depth of drill hole 560'
140 - 150	C2P rock	Depth to bottom of casing 527'
150 - 155	Fine sand with silt	Casing information: In the space below show kind, size, weight, lengths per diameter, etc., for production casing and surface casing, if used.
155 - 260	Sandstone (water)	(5" sand) Plus Pump Run 5" P/A 120# 100' 5 1/2" I.D. Pressure = 900' 210' 5 1/2" I.D.
260 - 530	Minilusa 155 - 560	527' 4" I.D. 1000 - 100' 5 1/2" I.D.
530 - 550	Shale and lime	(5" P/A 260' Pressure = 900' 210' 5 1/2" I.D.)
	and sandstone	Screen information: In the space below show length of screen below bottom of casing, diameter and kind of screen or casing perforations.
550 - 560	sandy clay	7/8 holes drilled in 4" then casing 427' 527' - 100'
		water 420' static water level
		If a flowing well, flow of completed well No Flow! G.P.M.

Attach sheet if more space is needed

Graf Drilling

Belle Fourche S.Dak 57917
Name of Drilling Contractor

(2) PUMP INSTALLATION

Company name and size of pump MYERS Mills Plumbing 2

Type of pump Submersible Capacity of installed pump 15 G.P.M.

Depth of pump placement 521 ft., Date of pump installation March 30 1973

(3) WATER SURFACE MEASURING TUBE

On some wells an air-tight water surface measuring tube is required: See Section 46.40B of Chapter 46.4, MINIMUM WELL CONSTRUCTION STANDARDS.

Show exact vertical length of water surface measuring tube, when installed _____ ft., tube diameter _____, tube material _____.

Graf Drilling for S.Dak.
Name of Pump Installation Contractor

Form 6. - Notice of Intent to Appropriate Water

No. 1099-1

Publish first publication, on or before

July 3, 1976

NOTICE OF INTENT TO APPROPRIATE WATER

Pierre, South Dakota 57501

June 24, 1976

Notice is hereby given that Ivan T. & Dorothy V. Shonley

whose post office address is Mitchell, 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 .10 cubic feet of water per

second of time from the ground water (existing Minnelusa Well) through the

Shonley Well #1, the point of diversion of which is to

be located in the _____

SE 1/4 NE 1/4

of Section 15, Twp. 5N, Range 4E. Said water to be used for the purpose of providing irrigation for the following described land:

supplies for suburban housing development

This application No. 1099-1 will be considered by the Water Rights

Commission at the Court House at Winner, S.D.

upon the 21st day of July, 1976 at 10:00 A.M. All interested persons may appear and be heard.

WATER RIGHTS COMMISSION

By:

BURTON F. JONES, Water Rights Specialist

BFFJ/bw

cc:

Ivan T. Shonley, 1120 N. Foster, Mitchell, S.D. 57301

Bellevue

Affidavit of Publication

STATE OF SOUTH DAKOTA,

COUNTY OF LAWRENCE, ss

James W. Keith, of said county and state, being duly sworn, on his oath, says:
That the Lead Daily Call is a legal newspaper of general circulation, printed and published in Lead, in said county and state, by the Seaton Publishing Company, and has been such a newspaper during the times hereinafter mentioned; and that I, James W. Keith, the undersigned, am the Business Manager of the said newspaper, in charge of the advertising department thereof, and have personal knowledge of all the facts in this affidavit, and that the advertisement headed

Notice of Intent to Appropriately Water

a printed copy of which is hereto attached, w
for 2 successive and consecutive
publications thereof being made on July
and on

NOTICE OF INTENT TO APPROPRIATE WATER
Notice is hereby given that Ivan T. & Dorothy U. Shonley whose post office address is Mitchell, South Dakota, has made an application in accordance with the provisions of the water laws of South Dakota for a permit to appropriate water for beneficial use, 10 cubic feet of water per second of time from ground water (Paharapa Well) through the Shonley Well No. 2; the point of diversion of which is to be located in the SW 1/4 SW 1/4 of Section 11, Twp. 3N, Range 24, East water to be used for the purpose of providing supplies for suburban housing development.
This application No. 1100-1 will be considered by the Water Rights Commission at the Court House at Winner, S.D. upon the 21st day of July, 1976, at 10:00 a.m. All interested persons may appear and be heard.

WATER RIGHTS COMMISSION
-s- Burton F. Jones
Water Rights Specialist

and the last publication thereof on July 11 1976
and that the full amount of fees charged for publishing the same, to-wit: the sum of \$ 10.69 , inures solely to the benefit of aforesaid publisher and that no arrangement or understanding for a division thereof has been made with any person other than the publisher, and that no part thereof has been agreed to be paid to any other person whatsoever.

James W. Keith

Subscribed and sworn to before me this 5

day of January 1977

Bruce E. Habu

Notary Public, Lawrence County, S. Dak.

My commission expires Nov. 24, 1980.



JOHN PAUL GRIES

Consulting Geologist

234 ST. CHARLES STREET
RAPID CITY, SOUTH DAKOTA

GROUNDWATER RESOURCES
BOULDER PARK, LAWRENCE COUNTY
SOUTH DAKOTA

Table of Contents

	page
Geology	1
Description of Rock Strata	1
Minnelusa formation	2
Madison (Pahasapa) formation	4
Conclusions	5
Historical note	6

Illustrations

- Fig. 1. Topograph map showing well locations.
- 2. Static levels, Boulder Park observation well
- 3. Annual precipitation, Deadwood, South Dakota
- 4. Driller's record of observation well
- Cross section 1. Potter well to observation well
- 2. Geologic section, southwest to northeast
- Plate I. Geologic map, Boulder Park - Rainbow Arch area.

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Geology: Boulder Park is a small triangular area where the surface rocks have been downfolded roughly 1,000 feet below their normal position, so that a remnant of Spearfish red shale is preserved over an area of about one square mile (see geologic map, and cross section). It is into this soft rock that erosion has carved the Park. The strata on the south and west sides dip gently into the park, and then rise abruptly just east of the golf course to form the "Rainbow Arch" (see cross-section).

Description of the rock strata: As much as 200 feet of Spearfish redbeds is preserved in the bottom of the trough. This is a relatively tight formation, with much less gypsum than is normal. One or more early wells were completed in this formation, but they were weak, and I believe all have been deepened. The only source of recharge is direct rainfall on the outcrop area. Beneath, and surrounding the Spearfish outcrop, lies the 40-foot hard Minnekahta limestone. This stratum can be seen along the south side of Highway 14, especially where recent trenching has been done. The limestone forms a long slope on the south and west sides, and a very sharp narrow ridge along the northeast side of the basin (see cross section). Because of the large outcrop area, usually without much soil, much recharge water enters the fractures of the limestone. Some wells are completed in this stratum.

Beneath the Minnekahta limestone is about 110 feet of hard red Opeche shale. There are isolated patches of gypsum near the middle of this formation, and where the gypsum has been broken or dissolved, the formation carries limited amounts of water. Several very satisfactory domestic wells are completed 35 to 50 feet into the Opeche formation. Static levels are as much as 350 feet higher than in the underlying Minnelusa, demonstrating that the lower part of the Opeche shale is an effective seal above the Minnelusa and that pumping of Minnelusa

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wells can in no way affect wells completed in the overlying strata. at the site of the former Big Boy Drive-in, the driller noted an actual flow from the Opeche formation, whereas the static level in the final Minnelusa well was 190 feet below the surface.

Minnelusa formation: The Minnelusa formation is 400 to 500 feet thick. The upper half is sandstone, the lower half is dolomite with thin sandstone members. The sandstone is the better aquifer, only limited yields may be expected from the dolomite beds. Many of the wells in the Park which start at an intermediate or low elevation, are completed in the upper sandstone. Along the west side of the Park, the upper sandstone member lies above the static level, and is consequently dry.

Static level in the Minnelusa is approximately 3550 feet above sealevel. It is essentially horizontal, or possibly a bit higher on the northeast side of the basin (see well cross-section). Static level in the State observation well has varied over a range of 15 feet during the 12-year observation period. Fluctuation is due to (a) seasonal variations in local rainfall, and (b) influence of the pumping at the golf course well less than 1000 feet away. Evidence that the Minnelusa water is trapped by the Rainbow Arch to the east is supported by the fact that the local static level is 450 feet higher than the Minnelusa water level in the Sturgis No. 3 well four miles to the east. The static level in the observation well stood 5 feet higher in the spring of 1976 than it did when the well was drilled in 1963.

Recharge is local, occurring over the large outcrop areas to the west, south, and northeast of the Park (Plate I). Rainfall east of the axis of the Rainbow Arch probably does not contribute to the Minnelusa sandstone aquifer

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Consulting Geologist

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in the Park as the rocks dip gently east away from the Park (see cross-section). The nearest official rainfall recording station is at Deadwood, 6 miles to the southwest, where the mean annual precipitation is 28.38 inches (more than 10 inches greater than at Rapid City). Annual rainfall figures since 1963 have ranged from 21.20 to 40.36 inches (Fig. 3)

In a large area to the west of the Park, the Minnelusa formation is overlain by a thick blanket of gravels. These gravels are dry, suggesting that water which enters them from rainfall and snow melt, moves promptly downward into the porous Minnelusa sandstone.

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Madison (Pahasapa) formation: The Madison consists of about 500 feet of limestone and dolomite, somewhat fractuous, and cavernous in the upper part. Where it lies beneath the water table, it makes an excellent aquifer throughout the northern great plains. Most of the formation lies above the water table in the limestone plateau of the western Black Hills, and in the narrower outcrop on the east side. Only two wells have entered the top of the Madison in the Boulder Park area, the Gay Herald (Potter) well at the extreme western side of the Park, and the Floyd Wornahl well in the northeast corner of sec. 23. The former secures its water from the Madison, but the Wornahl well did not penetrate deep enough to reach the water table.

The Pahasapa receives its recharge from rainfall on the outcrop, and from stream losses where the Black Hills creeks cut across the outcrop in the major canyons. Locally, the Pahasapa is recharged from outcrops west of Boulder Park, and from two areas along Bear Butte Creek. The elevation of the lowest nearby outcrop controls the static level. The "window" of Pahasapa in Boulder Canyon at Rainbow Arch lies at an elevation of about 2640 feet, so the static under Boulder Park cannot be at a much greater elevation, and may be as much as 100 feet lower.

A well to the Madison on the northeast corner of the Shonley property should enter the top of the limestone at a depth of between 550 and 600 feet. It should be continued into that formation for at least 150 feet to assure an adequate source of water. Static level is estimated at 550 feet below the surface. A Madison well on the Shonley property could affect only the Potter well in the entire Boulder Park area. On the basis of experience with other Madison wells, I believe interference between the two wells would be insignificant.

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RAPID CITY, SOUTH DAKOTA

Conclusions: Pumping of the existing Shonley (Rytkova) Minnelusa well can in no way affect the wells in Boulder Park which are completed in the overlying Spearfish, Minnackanta, or upper Ogeche formations. Most wells fall in this category.

Because the Shonley well is higher, both topographically and structurally, than any other existing Minnelusa well (cross-section #1) it is believed that the effect on all but three or four of the more westerly Minnelusa wells will be insignificant, and on those few nearby wells, the effects will be nominal.

Protracted pumping of the golf course well has had no noticeable effect on other wells in the Boulder Park area.

The recharge potential for the Minnelusa sandstone is excellent because the outcrops are very close, and the upper sandstones are particularly porous and permeable.

The State observation well on the golf course serves as a monitor for all Minnelusa wells in Boulder Park, and since it is read three times yearly, any changes in water static level can be noted early, and an explanation or solution can be obtained promptly.

A new well to the Pahasapa (or Madison) limestone could affect none of the existing wells with the exception of the Potter (Herald) well at the extreme west end of Boulder Park. On the basis of my experience with other Madison wells, I believe interference between the wells would be very slight, and that the water level in one well would not be changed more than a few inches during pumping of the other well.

JOHN PAUL GRIES

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RAPID CITY, SOUTH DAKOTA

Historical note: In 1961, when the Sturgis Golf Club drilled their irrigation well, property owners in Boulder Park became concerned that protracted pumping might decrease the yield and/or lower the water level in the numerous domestic wells in the surrounding Park. At that time, I was asked to make a study of groundwater conditions in the vicinity. Most of the property owners and the drillers were contacted, and good records secured on wells drilled prior to that date. These records are on public file at the School of Mines and Technology, along with records submitted by drillers since that date.

It was shown that four different aquifers were being drawn upon for the domestic wells in Boulder Park. These are:

- a. A few shallow wells into the Spearfish redbeds, basically surface water.
- b. Wells into Minnekahta limestone, at depths ranging to slightly over 100 feet.
- c. Several wells into an irregularly porous zone in the middle of the red Opeche shale below the base of the Minnekahta limestone.
- d. Wells into the upper sandstone aquifer of the Minnelusa formation

Only wells listed in (d) could be affected by the golf course well, and it was my conclusion then that the effect would be negligible. However, it was recommended by all parties that an observation well be drilled into the Minnelusa sand, fairly close to the golf course well, so that static levels in the Minnelusa formation could be monitored, and if serious drops in water level were observed, the necessary remedial action could be taken. The observation well was drilled by the Water Resources Board in 1963; the record is appended. Periodic monitoring has shown that the water level is now higher than at the time the well was drilled.

In 1959, Mr. Joe Munger drilled a cable tool hole for Mr. Guy Herald at

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what is now the Potter residence. Sample cuttings were brought to my office during the drilling operation. At that elevation, the entire Minnelusa formation was drilled and the well was subsequently deepened into the upper part of the underlying Madison limestone. This well is shown at the left end of the accompanying profile through pertinent wells in Boulder Park.

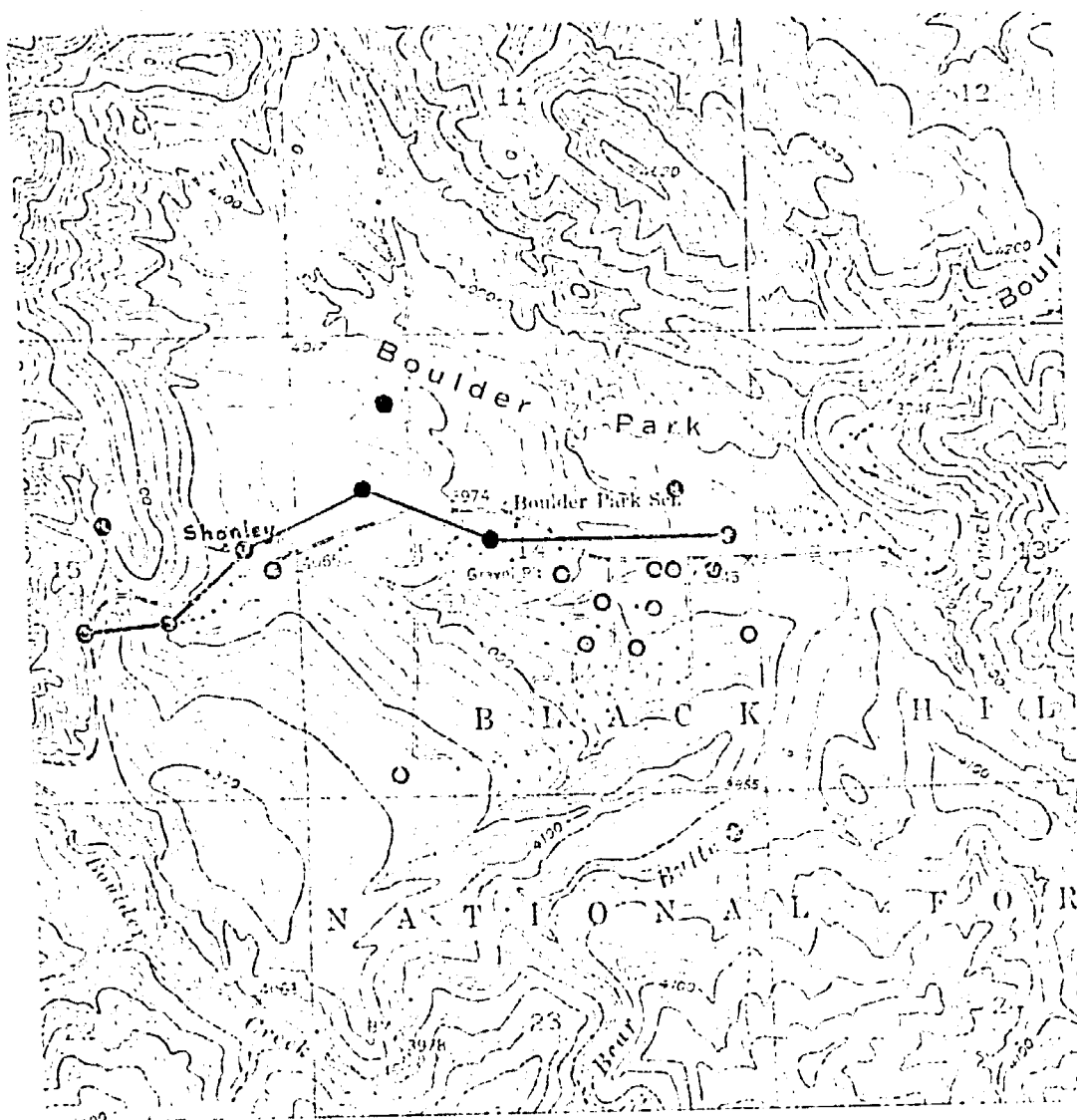


Fig. 1. Location of wells used in the present investigation. Solid dots represent wells entering the Minnelusa; circles are shallower wells above the Minnelusa aquifer. Wells connected by solid line are those used in the cross-section, No. 2.

Depth of
water
200 ft.

201
202
203
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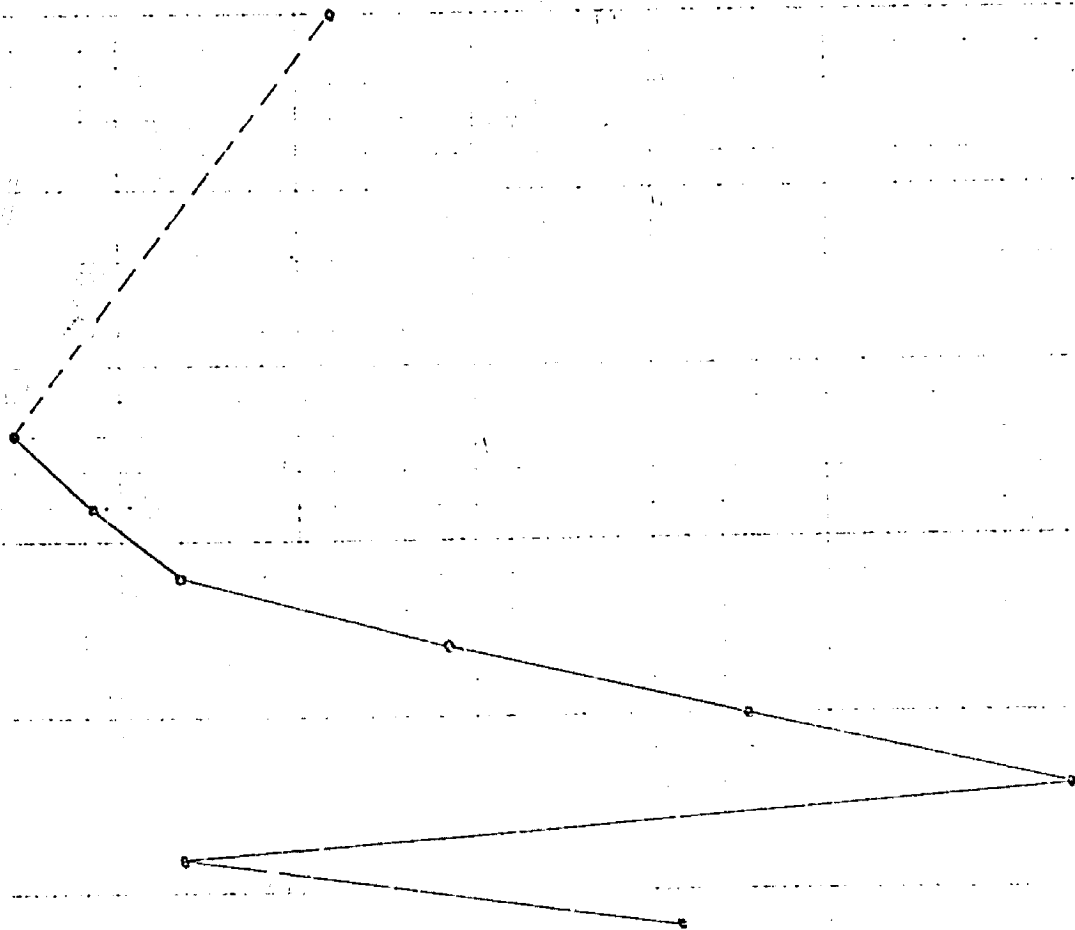


FIG. 2. STATE OF SOUTH DAKOTA BOULDER PARK OBSERVATION WELL
(Spring readings, by years)

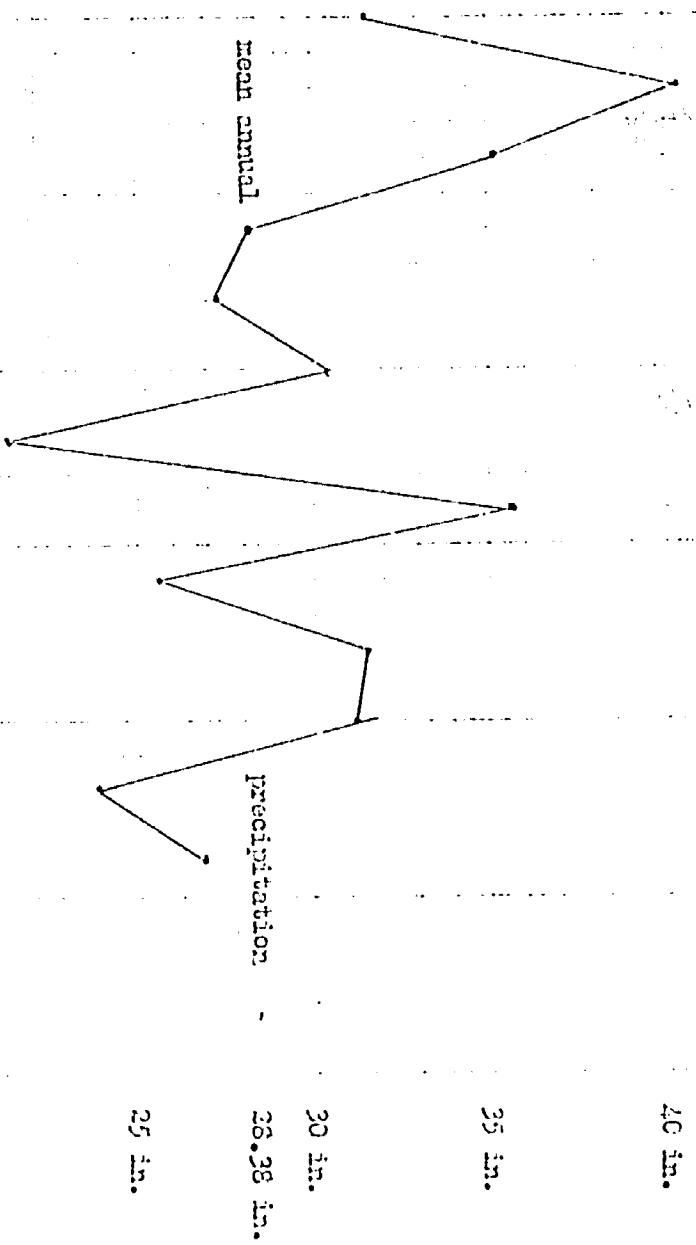


FIG. 3. ANNUAL PRECIPITATION AT DEADWOOD, S. D.
(From U. S. Weather Bureau, South Dakota annual summary)

PAGE 1 OF 1		Start 4-30-63 DATE: Completed 5-14-63	NO. OF D.H.P. C.O. (W. 47)
PROJECT: (1) Water Resources		LOCATION: S14 T5N E3E	
FACILITY: Boulder Canyon Observation		CONTRACTOR: H.F. Draine	
TOTAL DEPTH OF OVERBURDEN: 10"		TOTAL DEPTH DRILLED IN ROCK: 506'	
NO. OF OVERBURDEN SAMPLES: None		NO. OF BEDROCK SAMPLES: 17	
TYPE OF DRILL RIG: Failing Rotary		NAME OF DRILL RIG: Failing 150CH	
DRILLER: Leroy Draine		INSPECTOR: W.H. Miller W.R.C. Eng. Geol.	
DEPTH	DESCRIPTION	SAMPL. NO.	REMARKS
2.8	<u>SPEARFISH</u> (Shale) Red sandy shale, soft red sandstone in part. Some siltstone and gypsum layers. Massive.		REMARKS: First 10" was weathered Spearfish.
50			
100	109.6'		
	<u>MINNEKAHTA</u> (Limestone) MASSIVE GRAY Laminated		Drilling was slow in Minnekahta L.S.
150	147.8'		
	<u>OPECHE</u> (Shale) Red shale and sandstone		Opeche had a tendency to slough and cave, especially from 200' - 221' depth.
200			
250			
300	304.9'		
	<u>MINNELUSA</u> (Sandstone) Red sandstone (Brownish) From 305' to 331' broken L.S. w/ sh. and gypsum mixed. From 333' to 507', more sand w/ prevalent 40-60% sand approx. Evidence of faulting in upper 28' of formation.		Very slow drilling from 305' to 333'. Ruined 6 5/8" bit.
350			
400			
450			See attached report.
500	T.D. - 507'		387.6' of 4" o.c. casing cemented in place.

Fig. 4. Observation well.

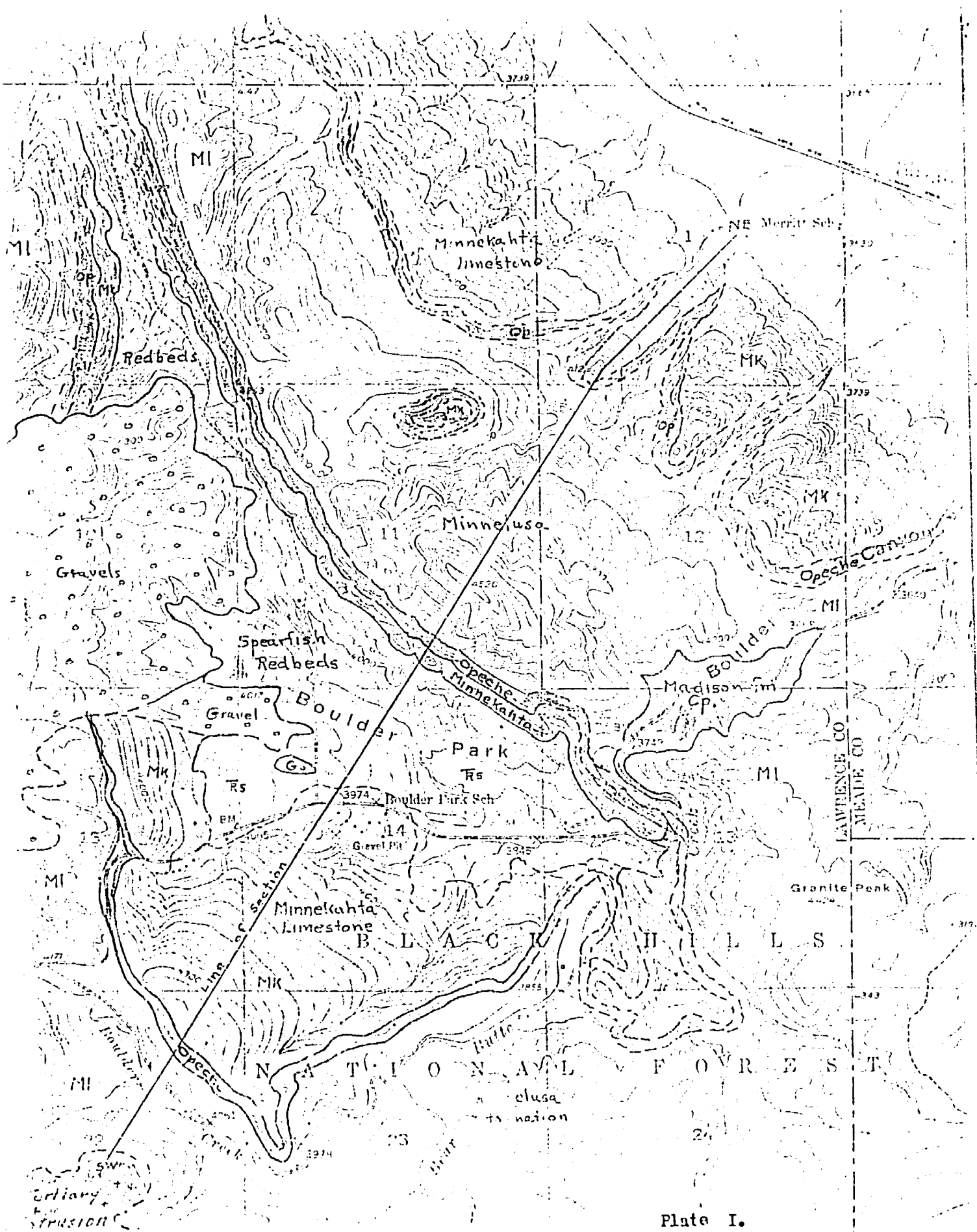
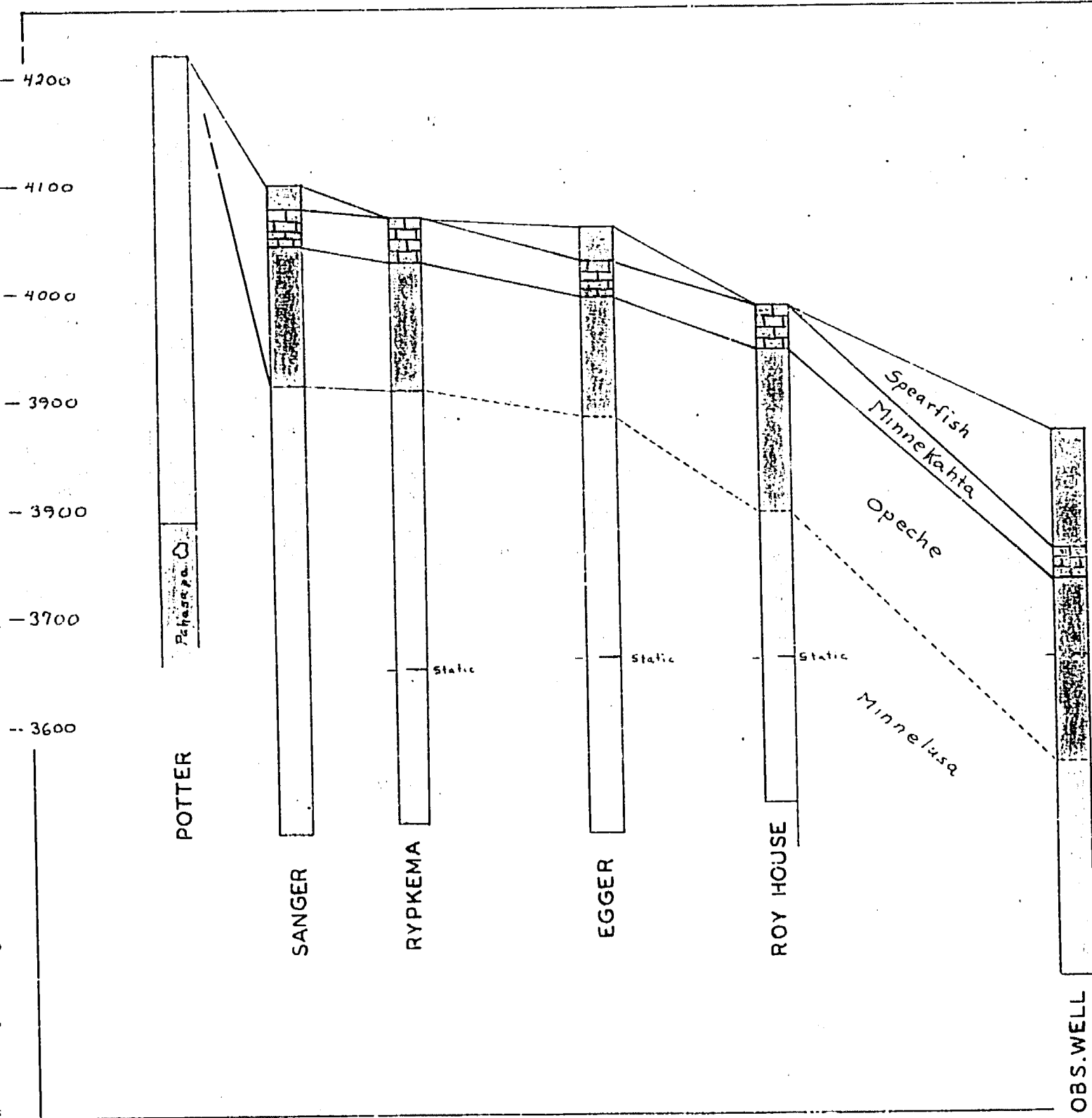


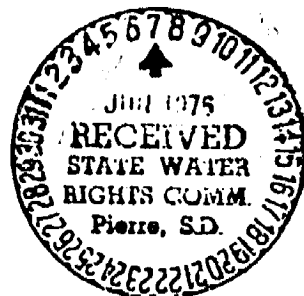
Plate I.

**OVERSIZE
DOCUMENT IS
SUPPLEMENTARY
TO MICROFILM FILE**



1" = 1000' HORIZ. & 100' VERT.

May 26, 1976



Mr. Bert Jones
State Natural Resources Commission
Pierre, S. Dak. 57501

Dear Mr. Jones;

We the Boulder Canyon Association, a group of local home owners object to granting a commercial water right permit from a farmstead water supply, to Boulder Park Subdivision, Lawrence County, State of South Dakota. We object to this right based on surface rock formation, caverns in the subsurface rock formations, and subsurface fissured rock formations, which affect a 4 inch deep well water supply in the Minnelusa aquifer. A field hearing is requested to determine the affects of a 100,000 gallon water storage tank to store and supply water on the Boulder Park Subdivision (formerly the 76 Ranch) which water supply affects many local home owners in the community with shallow ground and deep water supplies by depleting these same ground water supplies. We petition the commission to dye and test ground water sources in the community to ascertain the correlation of deep water wells by testing the local test well at Boulder Canyon Country Club and the farmstead well proposed to supply the new subdivision. We are concerned with the depletion of ground water sources for domestic use by local residents.

Please forward any information to:

Mrs. Gail Hamman, Sec.
Boulder Canyon Assn.
Boulder Canyon Rt., Box 9A
Sturgis, S. Dak. 57785

cc: Governor Knapp
Lawrence County Commissioners
Lawrence County Zoning
Commissioners

All interested persons please sign the following page.

<u>Name</u>	<u>County</u>	<u>Address</u>
Thomas J. Brown	Lawrence	Boulder Canyon
Lucy Kinkaid	Lawrence	Boulder Canyon
Joe Soto	Lawrence	Boulder Canyon
Boyd R. Jensen	Lawrence	Boulder Canyon
James E. Potter	Lawrence	Boulder Canyon
Mavis J. Potter	Lawrence	Boulder Canyon
Virginia Brenstener	Lawrence	Boulder Canyon
Edgar J. Ennis	Lawrence	Boulder Canyon
John E. Kuylen	Lawrence	Boulder Canyon
Alton Brenstener	Lawrence	Boulder Canyon
Tom Roffitz	Lawrence	Boulder Canyon
Irma Stephenson	Lawrence	Boulder Canyon Rd.
Lis Stokes	Lawrence	Boulder Canyon
Mrs. Jack Hoffmeyer	Lawrence	Boulder Canyon
Harvey J. Hamman	Lawrence	Boulder Canyon
Christine Braun	Lawrence	Boulder Canyon

NAME	ADDRESS	COUNTY
George Goodard	Boulder Canyon	Sturgis Lawrence
Marie Shepha	Sturgis	Meads
Laura Wildberger	B. Sturgis	Lawrence
Henry Sturgis	Sturgis	Lawrence
John W. Sturgis	Boulder Canyon	Lawrence
Paul E. Nordstrom	Boulder Canyon	Lawrence
Marie A. Nordstrom	Boulder Canyon	Lawrence
Allen L. Oedekoven	Boulder Canyon	Lawrence
Hannah A. Oedekoven	Boulder Canyon	Lawrence
Herman Bierle	Boulder Canyon	Lawrence
Charlotte Bierle	Boulder Canyon	Lawrence
Sandy Boomyarden	Boulder Canyon Rt.	Lawrence
Lyle M. W. W. W.	Boulder Canyon	Lawrence
Randy W. W.	Boulder Canyon	Lawrence
Kathy Braaflet	Boulder Canyon	Lawrence
W. J. W. W.	Boulder Canyon	Lawrence
Hermie E. W.	Boulder Canyon	Lawrence
Edgar J. W.	Boulder Canyon	Lawrence
John J. W.	Boulder Canyon	Lawrence
Edna J. W.	Boulder Canyon	Lawrence

NAME	ADDRESS	COUNTY
James E. Kutzler	Boulder Canyon	Lawrence
James E. Kutzler	Also Subdivided 13 acres S. 13th. S. 13th. S. 13th.	Lawrence
Edward W. Kutzler	Boulder Canyon	Lawrence
Edgar W. Kutzler	Boulder Canyon	Lawrence
Thomas S. Kutzler	Boulder Canyon	Lawrence
George S. Kutzler	Boulder Canyon	Lawrence
Abraham Kutzler	Boulder Canyon	Lawrence



STATE OF SOUTH DAKOTA

RICHARD F. KNEIP
GOVERNOR
June 9, 1976

EXECUTIVE OFFICE
PIERRE
57501

RECEIVED
JUN 11 1976
DEPT. OF NATURAL
RESOURCE DEVELOPMENT

**Mrs. Gail Hamman, Secretary
Boulder Canyon Association
Boulder Canyon Route, Box 9A
Sturgis, South Dakota 57785**

Dear Mrs. Hamman:

Thank you for sending me a copy of your May 26th letter from the Boulder Canyon Association to the personnel of the South Dakota Natural Resources Commission concerning the granting of a commercial water right permit.

I am taking the liberty of forwarding a copy of your letter and enclosure to Mr. Vern Butler, Secretary of the Department of Natural Resource Development, and asking that he or personnel of his department communicate with you concerning this matter. I am sure that the appropriate means will be provided you and the members of the Boulder Canyon Association to make your views known on this matter.

With every best wish, I remain

Sincerely,

RICHARD F. KNEIP
GOVERNOR

RFK/mdg

cc: Mr. Vern Butler ✓

May 26, 1976

Mr. Bert Jones
State Natural Resources Commission
Pierre, S. Dak. 57501

Dear Mr. Jones;

We the Boulder Canyon Association, a group of local home owners object to granting a commercial water right permit from a farmstead water supply, to Boulder Park Subdivision, Lawrence County, State of South Dakota. We object to this right based on surface rock formation, caverns in the subsurface rock formations, and subsurface fissured rock formations, which affect a 4 inch deep well water supply in the Minnelusa aquifer. A field hearing is requested to determine the affects of a 100,000 gallon water storage tank to store and supply water on the Boulder Park Subdivision (formerly the 76 Ranch) which water supply affects many local home owners in the community with shallow ground and deep water supplies by depleting these same ground water supplies. We petition the commission to dye and test ground water sources in the community to ascertain the correlation of deep water wells by testing the local test well at Boulder Canyon Country Club and the farmstead well proposed to supply the new subdivision. We are concerned with the depletion of ground water sources for domestic use by local residents.

Please forward any information to:

Mrs. Gail Harman, Sec.

Boulder Canyon Assn.
Boulder Canyon Rd., box 9A
Sturgis, S. Dak. 57785

cc: Governor Philip
Lawrence County Commissioners
Lawrence County Board
Commissioners

All interested persons please sign the following p. 2.

Name	County	Address
James J. Brown	Cherokee	Boulder Canyon
Lee Binkley	Lawrence	Boulder Canyon
Tom Binkley	Lawrence	Boulder Canyon
Roger D. Jensen	Lawrence	Boulder Canyon
James C. Peltier	Lawrence	Boulder Canyon
Maude J. Potter	Lawrence	Boulder Canyon
Virginia Prentiss	Lawrence	Boulder Canyon
Edgar J. Smith	Lawrence	Boulder Canyon
Lucas E. Kessler	Lawrence	Boulder Canyon
Arthur Prentiss	Lawrence	Boulder Canyon
Tom Rafferty	Lawrence	Boulder Canyon
Irma Stephenson	Lawrence	Boulder Canyon Rd.
Lea Stokes	Lawrence	Boulder Canyon
M. & Mrs. Jack Hoffinger	Lawrence	Boulder Canyon
Harvey J. Hamman	Lawrence	Boulder Canyon
Christine Braun	Lawrence	Boulder Canyon

Lucas E. Kessler	Boulder Canyon	Lawrence
James E. Eggleston	Boulder Canyon	Lawrence
Angus W. Jensen	Boulder Canyon	Lawrence
Edgar J. Smith	Boulder Canyon	Lawrence
James C. Peltier	Boulder Canyon	Lawrence
Harvey J. Hamman	Boulder Canyon	Lawrence
Maude J. Potter	Boulder Canyon	Lawrence

NAME	ADDRESS	COUNTY
George Goddard	Boulder Canyon, Sturgis	Lawrence
Marie Shepko	Sturgis	Lawrence
Lucia Wildberger	B. Steepes, S.D.	Lawrence
Henry S. Wildberger	Sturgis, S.D.	Lawrence
John W. Wildberger	Boulder Canyon	Lawrence
Paul E. Nordstrom	Boulder Canyon	Lawrence
Marie A. Nordstrom	Boulder Canyon	Lawrence
Allen L. Oedekoven	Boulder Canyon	Lawrence
Hannah A. Oedekoven	Boulder Canyon	Lawrence
Herman Bierle	Boulder Canyon	Lawrence
Charlotte Bierle	Boulder Canyon	Lawrence
Sandy Doornyaarden	Boulder Canyon, R.	Lawrence
Lynette M. Walsh	Boulder Canyon, R.	Lawrence
Kathy Brasfield	Boulder Canyon	Lawrence
Kathy Brasfield	Boulder Canyon	Lawrence
W. J. Goddard	Boulder Canyon	Sturgis
Edith Ennis	Boulder Canyon	Lawrence
Edith Ennis	Boulder Canyon	Lawrence
Edith Ennis	Boulder Canyon	Lawrence
Edith Ennis	Boulder Canyon	Lawrence

JOHN PAUL GRIFFIN
Consulting Geologist
Rapid City, South Dakota

ATTN Mr. B. Jones
Re: Nordstrom-Stokes
Well

November 7, 1962

Mr. Lynn Milne
Boulder Park Country Club
Sturgis, South Dakota

Dear Mr. Milne:

I have summarized below my observations on groundwater conditions in Boulder Park, based upon the field data we collected on November 6th, and upon well logs and water records in the files of the Department of Geological Engineering at the School of Mines and Technology.

Water supplies are withdrawn from five general zones, listed from the top down:

- a. water in the alluvium, tapped by dug wells only
- b. water in the bottom of the Spearfish redbeds, usually just above the Minnekahta limestone
- c. water from crevices within the Minnekahta limestone
- d. water from crevices, broken zones and solution openings within the Opeche redbeds. This is the most commonly used source.
- e. water from the sandstones of the Minnelusa formation.

Most of the drilled wells in the area range between 75 and 135 feet in depth. They draw water from sources b, c and d. above. The water enters these formations nearby, and moves rapidly through them. It is to be expected that the water level in these wells will reflect seasonal and annual variations in rainfall.

I have found only four wells, within a 3/4th mile radius of the Country Club well which penetrate the Minnelusa sandstone. These are the Country Club well itself, the well at the Big Bear Drive-in, the old Willey well at the Trailer Court and the uncompleted well at the Nordstrom-Stokes property. These range from 235 to 560 feet deep, and penetrate from 51 to 351 feet of the Minnelusa formation.

Static level in the three functional wells lies between 3655 and 3685 feet elevation. It has apparently remained nearly stable since the first of the three was drilled roughly 20 years ago. Movement of water through the sandstone is probably so slow that seasonal and even annual fluctuations are pretty well ironed out. This level is far below the static level in any of the nearby wells in the 100-foot category. This offers confirming proof that there is no natural connection between the Minnelusa sandstone and the upper aquifers.

It is to be noted that the uncompleted well on the Nordstrom and Stokes property has a surface elevation of 4030 feet, and a reported depth of 235 feet. The bottom of the well, then lies at elevation 3795 feet or a minimum of 110 feet above the static water level in the Minnelusa formation. The water which is reported to have originally stood about 100 feet below the surface was obviously water from a higher source. Either the source has dried up, or the water has found a way to seep down into the upper dry part of the

over.

Minnelusa sandstone above elevation 3685 feet. This could be turned into a productive Minnelusa well by deepening it an additional 150 to 200 feet.

The low static level in each of the three functional Minnelusa wells not only shows that the Minnelusa water is not in communication with the upper waters, but also proves that the upper waters are effectively sealed out of these three wells. In the case of the Country Club well, 303'8" of 8-inch casing was set and cemented into the cap rock at the top of the Minnelusa formation. Even protracted pumping of any of these three wells can in no way affect the many local wells which draw only from the upper aquifers.

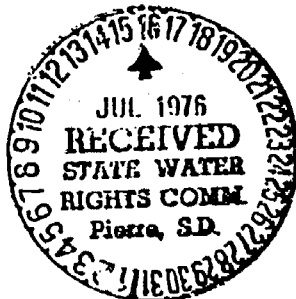
The Minnelusa formation in this area is 490 feet thick. The upper 180 feet is almost all sandstone; an additional 100 feet of sand occurs as beds 5 to 35 feet thick in the lower 300 feet of the formation. This is a tremendous reservoir, and I cannot believe that the seasonal pumping at the Golf Course will seriously affect either of the other two wells which now depend upon the same source of supply.

In summary, I believe the fears of the surrounding property owners are largely unfounded. For your own information and protection, I would suggest the static level in your well be measured once a year, in the non-pumping season, and that the record be filed with the Water Resources Commission at Pierre, and at the School of Mines.

Yours very truly,

J. P. Gries

JPG/me



Box 743
Sturgis, South Dakota
July 15, 1976

Mr. Burton F. Jones
Water Rights Specialist
Water Resources Commission
Pierre, South Dakota

Dear Mr. Jones:

We wish to object to granting commercial water rights to Boulder Park Subdivision (formerly 76 Angus Ranch).

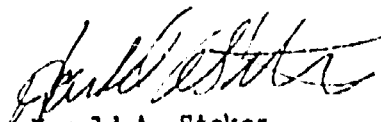
We are concerned that extensive pumping of water by 67 + families from the Minnelusa Formation will lower the water level to a point where it will no longer be available to us.

From the enclosed letter from Dr. Gries it is obvious we do not know precisely where our water comes from. Our well was in the Minnelusa at 235 feet and was deepened to 310 feet in 1963. We may be getting water from levels above the Minnelusa and if this is so there must be a break somewhere in the Minnelusa cap-rock.

To the ignorant, in these matters at least, this means increasing usage will draw the Minnelusa water level down, increase the downflow into that formation and thereby threaten (and all our neighbors who draw from above the Minnelusa) source of water.

It would seem that in all fairness to us, and those who draw from above the Minnelusa, very extensive tests should be conducted to determine exactly the flow lines of water in the Boulder Park area and the amount of water available before the sources are overextended.

Thank you for your attention to this matter.


Harold A. Stokes

Encl: 1

We, the members of the Boulder Canyon Association, hereby do submit the enclosed letters and statements to the Water Rights Commission for consideration. We feel strongly about the water supply problems in the area and believe that a water permit granted to Mr. Ivan Shonley (Boulder Park Subdivision), without reservations, is detrimental to the continued performance of existing wells.

The attached letters state the personal concerns of some landowners in the Boulder Canyon area who have wells in the Minnelusa water formation. Such concerns should be heard and carefully considered before the 67+ households presently proposed for the Boulder Park development begin drawing water from the Minnelusa formation.

We feel that it should be stated here that our attempts to seek substantiated aid for our cause have met with little or no satisfaction. Dr. Perry Rahn of the South Dakota School of Mines & Technology was contacted. However, Dr. Rahn felt he could not give us substantiated assistance due to a conflict of interests. He did recommend Mr. Joe Gerlach, a graduate student, to us but all attempts to contact this individual were futile. The Geology Department at Homestake Mining Company also declined assistance since its interests lie elsewhere.

Mr. Shonley has stated publicly in the past that he is sure his well would in no way have any effect on the water level in existing wells. Therefore, the Association requested, by certified mail, a statement to the effect that he would assume burden of proof should existing wells go dry and take steps to rectify the situation. No reply was received.

We understand that it is the general opinion of individuals knowledgeable in these matters, that there should be adequate water in the Minnelusa formation. However, due to past experiences with water problems, many residents in the area remain skeptical and feel there are too many unknowns and unpredictables.

The Boulder Park Subdivision as planned is only a portion of the land owned by Mr. Shonley, so we must also point out the developmental potential of the remaining acreage. We also see an upsurge of other developments all around the Boulder Canyon area. The future of home owners in this area rests on the decision made now.

Therefore, as per our letter to Mr. Burton Jones of May 26, 1976, we do request further investigation of water supplies in the Boulder Canyon area before granting the commercial water right permit.

Thank you for your consideration.

Respectfully,

The Boulder Canyon Association

July 12, 1976

Mr. Burton Jones
Water Rights Specialist
Water Resources Commission
Pierre, South Dakota 57501

Dear Mr. Jones:

I am protesting commercial water rights for Ivan Shonley for his Boulder Park Sub-Division, which was formally the "76" Angus Ranch. I am vitally concerned about our source of water and if Mr. Shonley is granted water rights in his large housing project, there may be the possibility it could in some way tap our present water supply.

Your interest in this matter would be appreciated.

Sincerely,

Paul E. Nordstrom
PAUL E. NORDSTROM

Box 154

Ft. Meade, South Dakota

57741



HR. HENRY J. COMES
BOULDER CANYON
STURGIS, S.D.
57785

July 13 - 1976

South Dakota St. Water Bd.
Pierre, S.D.

To whom it may concern,

Please let us know in this
Boulder Canyon area if our
water level will remain
good and not lower with
this new building project.
Mr. Shankley's project of 66 houses
water & sewer, building project
going on out here.

We all want to know if we
will have enough water, at least
as much as we have now and also
if the sewer system will affect
our wells.

Thank you.

Sincerely, Henry J. Comes
& Friedred Comes



July 29, 1976

Mr. Barton F. Jones

Water Rights Specialist

Water Resource Commission

Pine, So. Dak.

Since we will be unable to attend your water commission meeting in Pierre, So. Dak., we are writing a letter in regard to the consideration of a commercial water permit for the Double Lake Subdivision, Stings, So. Dak. Our place is on the south side from Mr. Ivan Shorby place.

One well off our is 105 feet deep and another well is 140 feet deep.

He did some blasting to lay his water line, and our water came a little low and it was not for use, three days before it clear up.

We never had any trouble with

our wells till he start to blast.

~~We~~ we are worried about our wells and the around our area.

Yours sincerely
B. Jack Hoppinger

Natural Resources Div.
Pierre South Dakota

July 12

Dear Mr. Jones:

Since we will be unable to attend your water commission meeting in Winner, South Dakota, we are writing a letter in regards to the consideration of a commercial water permit for the Boulder Park Subdivision, Sturgis, South Dakota (owned by Ivan Shonley of Mitchell) As you know the commercial water permit being applied for will involve sixty-eight homes in this subdivision. There is strong concern in this area as to the detrimental effects that this kind of water usage will have on the existing water supply.

The water supply in this area has long been a problem for all residents. Our particular situation since our house was constructed in the middle fifties, has been two dry holes. (one at 400 feet and one at 700 feet) Since that time a third well has been dug to 700 feet which lies in the Minnekahta sand formation, and which supplies our household water. Since being dug this well has not been without problems. But as of yet does supply our household needs but that is all.

Our well is located about a quarter of a mile south west of the well being considered for the commercial permit. Our location is quite a bit higher than the well in consideration so it is a fairly safe assumption that they are both in the same vein of water. (Boulder Park Subdivision is about 600 feet ours is 700 feet.)

Mr. Ivan Shonley has assured us that our wells will not go dry even with sixty-eight more houses using the water supply. But yet he can not provide us with any facts to back up this statement. In the same breath he has stated that "If" our wells so go dry he will provide us with a

means for water. We assume that this means that we can put in cisterns and have water to our place being that is the only possible way it could be done.

If after your thorough consideration a permit is issued we feel that some provisions should be made protecting the water rights of the Boulder Canyon landowners who have existing wells. We cannot emphasize enough the water problems in this area. We feel that this permit will have a definite effect on the water supply of the wells in this area. We therefore request that a very careful and thorough investigation be done before you issue such a permit. We feel that a field hearing is needed here in Boulder Canyon for you to see for yourself the full impact that this commercial water permit will have on the residents of Boulder Canyon.

Thank you,

Jim and Mavis Potter
Jim - Mavis Potter
Boulder Canyon Rt

Sturgis, South Dak
57785

Please take this to the meeting in Winner.

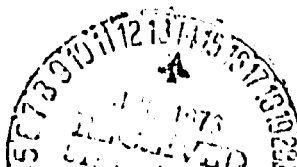
AND ON FILE WITH THE RECORDS DIVISION OF THE SOUTH DAKOTA DEPARTMENT OF AGRICULTURE

REPRODUCTION: REDUCTION 25%

ROLL NO 9

3-15-82
DATE MICROFILMED

Jim Potter
OWNER



Sturgis, S. Dakota
Jul 2 1976



Mr. Burton F. Jones,
Water Rights Specialist
Water Resource Commission
Pierre, S. Dakota.

Dear Sir:

We are writing to voice our objection to granting commercial water rights to the newly developing Boulder Park Subdivision (formerly the 76 Angus Ranch) which is within one mile of our property. We are very much concerned that our deep well will be affected by extensive pumping of water, for these 66 (or more) homes, from the Minnelusa Formation, and that, in fact, water may no longer be available to us.

We own and operate the Boulder Park Campground here from June throughout September and are very much dependent on this water supply of which we do not have enough at times now during the summer months. We have to haul extra water from Sturgis once in a while to supplement our needs.

We bought this property in October of 1966,

at which time it was an established
campground and trailer court. The well, I'm
sure, has been in existence for at least 30 yrs.
and probably more. It is approximately 470
ft deep.

We would request that in fairness to
us and many other property and homeowners
in this area, who may be endangered by this
excessive drain on the water level, that more
extensive testing be done to better determine
the availability of water for everyone concerned.

We thank you in advance for your consider-
ation of this concern, which, in our opinion
could very easily become a grave problem
for the many people involved.

Sincerely,
Mr & Mrs Allen Oedekoven
Boulder Park Campground
Box 43, Boulder Canyon
Sturgis, S. Dakota 57785

REPORT ON
IVAN AND DOROTHY SHONLEY WATER RIGHT APPLICATIONS NO. 1099-1 AND 1100-1
SEPTEMBER 20, 1976

The Water Rights Commission deferred action at the July 21-22 meeting on the Ivan and Dorothy Shonley water right applications No. 1099-1 and 1100-1 pending investigation by the Commission Staff. An investigation was conducted on the 14 and 15 of September.

Proposed Project

The applications call for .1 cfs from each of two wells, one an existing well 560 feet deep into the Minnelusa formation and the other an approximately 1000 ft. deep well into the Madison formation. One well is to serve the housing development and the other well to serve as a back up.

Objections

The Commission deferred action upon receiving objections from Thomas Braun, Gale Hamman, Irma Stephens and Christine Braun representing the Boulder Canyon Association. The objectors were concerned that groundwater withdrawals from the proposed project would affect their domestic water supplies.

Persons Contacted

Seventeen members of the Boulder Canyon Association were present at an informal meeting held Tuesday night September 14. The next morning I met with Ivan Schonley the applicant and also talked to a few other neighbors.

Discussion

The report entitled GROUNDWATER RESOURCES BOULDER PARK, LAWRENCE COUNTY, SOUTH DAKOTA by J. P. Gries illustrates the situation quite well. Some of the important ideas to consider from the report are:

- 1). There seems to be little leakage between the Opeche and Minnelusa formations because of the significant differences in the static water levels of each formation indicating an effective barrier between the two formations. This means pumping water from the Minnelusa should have no effect upon all the overlying formations. Most of the domestic wells in Boulder Canyon are in these overlying formations.
- 2). Only one well into the Madison formation exists at this time (Potter's). The Madison is virtually an untapped source. Also there are only a few wells into the Minnelusa with the Egger well the nearest to the Shonley well.
- 3). The fact that the Water Rights Commission observation well located on the golf course has fluctuated little since 1963

even though the golf course is watering from the Minnelusa. In fact the observation well is almost as high as it ever has been (201.6).

Recommendations and Conclusions

Based upon the report by J. P. Gries and the field investigation confirming the report, there is unappropriated water available. The Commission staff recommends that the Ivan and Dorothy Shonley Water Right Applications No. 1099-1 and 1100-1 each be approved for 0.1 cfs with the following qualification:

"The wells 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 existing domestic wells or in wells having prior water rights."

James A. Goodman
Water Resources Engineer

RECEIPT

WATER RIGHTS COMMISSION

State of South Dakota

No 4 6514

August 23, 1979

PIERRE,

RECEIVED OF Ivan & Dottie Shondy, Boulder Canyon Rt. Box 77A, Sturgis, SD
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit to Appropriate Water No. _____ (examination, processing, recording and filing) _____		
Fee for Inspecting Construction, and issuing Cert. of Construction No. _____		
Fee for Inspecting Beneficial Use, and issuing Water License No. _____		
Fee for Issuing Location Certificate-Dry Draw, No. _____		
Fee for filing extension of time for Water Permit No. 1099-1 _____		2 50
Fee for certified copy of _____		
Fee for Print copy of map _____		
Fee for Certifying _____		
Fee for _____ (any other work as provided by law)		
TOTAL		2 50

WATER RIGHTS COMMISSION

By _____
Chief Engineer, Executive Officer
JOHN HATCH 99

Form 18.

No. 1099-1

APPLICATION FOR EXTENSION OF TIME

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

Date August 21, 1978

Dear Sirs:

In Water Right Permit No. 1099-1 it is specified that the water diversion system is to be completed by Sept. 30, 1977 and that the water is to be put to the limit of beneficial use by Sept. 30, 1979.

I hereby request that the date for completing the diversion system be extended to no extension and that the date for putting the water to the limit of beneficial use be extended to Sept. 30, 1984.

The extension of time for the completion of these works is requested for the following reasons: There will not be enough of the platted lots with residents
to use the amount of water appropriated by Sept. 30, 1979

Enclosed herewith is a fee of Two Dollars and Fifty Cents (\$2.50) to pay the cost of filing this request for extension of time.

Dorothy U. Shonley
(Signed)
Mrs (Ivan) Dorothy U. Shonley

1099-1

Permit Number

APPROVED: 9-13-78

WATER RIGHTS COMMISSION

BY: [Signature]

Report On
Ivan and Dottie Shonley Well Construction Investigation

January 16, 1979

This report is the result of a letter from Ivan & Dottie Shonley, Boulder Canyon Route, Boulder Park Sub-Division, Sturgis, South Dakota and their request for an investigation to determine whether or not their well was properly constructed.

December 21, 1978, Mr. Ralph Taylor of Bice and Taylor Drilling Company, and his attorney, David J. Stanton, Rapid City were contacted concerning the construction of the well which Bice & Taylor Company had drilled for Ivan & Dottie Shonley. The finished well was drilled 560 feet deep with 268 feet of 7 inch casing and 305 feet of 5½ inch O.D. casing installed. The static water level was reported at 410 feet below the ground surface. Mr. Taylor reported that the drilling method used was air and water. The well was drilled within 10 feet of an existing well. Mr. Taylor advised that he had recommended that the well be at least 30 feet away from the old well.

The well was constructed with a 7 7/8 inch drill hole for the first 420-435 feet. The driller installed 268 feet of 7 inch casing which hung up in the hole and could not be lowered or raised. Below the 420 - 435 foot level, a 6½ inch drill hole was drilled. The 5½ inch O.D. casing which was installed in the well below the 7 inch casing (with 13' of overlap) was perforated at 480 to 500 feet to serve as a screen. The casing was not perforated to the bottom. Mr. Taylor reported that the sandstone was "cemented" and thus other types of screens usually were not used. A burlap packer was installed at the top of the 6½ inch hole and a 5 by 6 inch packer was installed at the 268 foot level between the 7 inch and the 5½ inch casing.

During the drilling operation, after the 7 inch casing was installed, the driller had no indication that any water was leaking down from above. When the Shonley's reported their problems, Ralph Taylor and Warren Anderson who had installed the pump, went up to the well site and using Anderson's service rig, they placed cement grout in the annular space between the 7 7/8 inch drill hole and the 5.5 inch O.D. pipe down to a depth of about 420 to 435 feet.

The cement grout was installed using a 2 inch existing pipe that originally was connected to the pump. They had drilled holes in the bottom portion of the pipe, plugged the end and connected the 2 inch pipe into the lead packer fitting (the packer had not been swaged). Based upon a Bill dated May 10, 1978, that was presented to the Shonley's, 35 bags of cement were mixed and poured into the 2 inch pipe to run out of the holes past the unswaged lead packer to fill the annular space between the drill hole and the 5.5 inch O.D. pipe. Based upon calculations, the volume involved was about 31 cubic feet, the 35 bags of cement should have more than filled the annular space that was involved. Mr. Taylor reported that they measured (measured when pipe taken out) the cement level as being about 8 feet above the packer. The lead packer was then swaged and the well cleaned out. With the cement grout and the swaged packer, there should be no leakage from above and the well should be sealed so that contamination or other formation water can not enter the water being pumped from the well.

Both Ivan & Dottie Shonley were contacted December 21, 1978. They reported that 1 3/4 yards of ready mix concrete plus two or three bags of cement mixed with sand and gravel at the site were used to fill the older 4" 560 foot deep well that was drilled in March 1973 by Graf drilling, Belle Fourche. A 15 gpm pump was installed at that time. The calculations indicate that 1.81 yards of cement would fill a 4 inch casing.

The old well was apparently abandoned when a second pump could not be installed in the well. The Shonleys reported that Mr. Taylor's driller had drilled the 7 7/8 inch hole one day and the second day, without checking to see if the hole was open, tried to install a 7 inch casing which hung up at 268 feet.

The Shonleys reported that the pump that was installed in the new well was a 5 horsepower 34 gpm pump. At the time of the investigation, when they started pumping the well, the water was wasted. The water was rust colored, indicating iron was in the water. The well was pumped for several minutes, and the Shonleys reported that it takes at least 15 minutes for the water to clear whenever they start the well pumping. The well is operated on a manual basis until the water clears up and then they pump into a ground level reservoir and repump to a reservoir located on a hill. Since the water use is low, the well is not operated every day.

The Shonleys reported that the well was chlorinated twice. Mr. Taylor reported that they had used chlorine tablets which were broke into powder and pieces, poured into the well and the chlorine allowed to remain in the well over night before being pumped out.

The Shonleys are concerned about their well due to the bacteriological sampling record and the fact that each time the well was pumped, there seemed to be a rust build up in the water.

Bacteriological Record*

<u>date</u>	<u>results</u>
1-11-78	5/5** unsafe
1-24-78	5/5 unsafe
NO ₃ 0.3, Fe .08, Mn .02	
2-6-78	0.5 safe
2-28-78	3/5 unsafe
2-28-78	3/5 unsafe
3-30-78	0/5 safe
3-30-78	0/5 safe
4-24-78	3/5 unsafe
5-1-78	0/5 safe
7-3-78	1/5 unsafe
9-22-78	0/5 safe
10-26-78	0.5 safe
10-26-78	0.5 safe
12-26-78	0.5 safe
NO ₃ 0.1 Fe 0.04 Mn 0.02	

* Analyses by State Department of Health Laboratory and reported by Department of Environmental Protection

**Number of tubes out of 5 tubes positive(sample is divided into 5 test tubes when received in laboratory)

CONCLUSIONS

Based upon the information reported by Mr. Taylor and by Mr. & Mrs. Shonley, calculations made by the writer to confirm quantities of cement necessary to seal the well casing, a review of the bacteriological sampling record which shows the last four bacteriological records to be safe, and a review of the chemical analyses; it is my opinion that the well as finally completed, is a properly constructed well. The latest safe bacteriological samples indicate that the well should continue to provide a bacteriologically safe supply of water.

The rust problem in the water each time the well is pumped seems to be due primarily to the fact that the well is not pumped on a regular basis. This condition has been observed in municipal wells which have been left out of service from a few days to several months. Until such time as water use increases to the point that the pump is pumped several times each day, the rust condition may continue. In the meantime, it will probably be necessary to pump the well to waste prior to pumping the water into the primary reservoir. The chemical analysis of the water shows only trace amounts of iron and manganese. After a review of the information that was provided, I am quite certain that the well casing has been grouted and sealed. Although subsequent safe bacteriological samples should confirm this, I believe the possibility of contamination entering the well from upper ground formations or the surface is extremely remote.

Respectively submitted,


JOHN HATCH, Chief Engineer
Water Rights Commission

RECEIPT

WATER RIGHTS COMMISSION
State of South Dakota

No 4 8675

PIERRE, January 26, 1982

RECEIVED OF Ivan R. & Dorothy Shonley, Boulder Canyon Ste., Box 77 A, Sturgis, SD 57785
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit to Appropriate Water No. (examination, processing, recording and filing)		
Fee for inspecting Construction, and issuing Cert. of Construction No. 1099-1		
Fee for inspecting Beneficial Use, and issuing Water License No. 1099-1	50	00
Fee for issuing Location Certificate-Dry Draw, No.		
Fee for filing		
Fee for certified copy of		
Fee for Print copy of map		
Fee for Certifying		
Fee for		
(any other work as provided by law)		
TOTAL	50	00

WATER RIGHTS COMMISSION
By *John Hatchings*
Chief Engineer, Executive Officer
JOHN HATCHINGS

Permit No. 1099-1Water Division 1 - Bell: Founke River Water District

**REPORT OF EXAMINATION OF WORKS
AND/OR APPLICATION OF WATER TO BENEFICIAL USE**

TO: WATER RIGHTS, WATER MANAGEMENT BOARD / FCSS BLDG., PIERRE, SOUTH DAKOTA 57501

I have this day made a thorough examination of the water use system constructed by Evan T. & Dorothy W. Shenley of Besider Park Subdivision Sturgis, S.D.A. 57785 holder of Permit No. 1099-1, bearing date of priority of May 25, 1976, authorizing the diversion of 0.1 cu. ft. per second of the waters of Existing Well for Suburban Housing Development purposes, in Lawrence County.

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

The Water Use System consists of,

A. Works used to divert the water:

5 HP Meyers Submersible Pump
pumping 30 gpm

15 HP Submersible pump used as booster from storage tank
under Pump House

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

Water Distribution System for Sub division
7000 gal storage under Pump house
100,000 gal Reservoir

C. Works used to apply water to beneficial use.

House holds

The system is in the following condition, Good.

The point of diversion is located N 63° 05' W 672 ft from E 1/4 Cor. of
Section 15, T 54 N R 4 E

The works are capable of diverting and conveying to the place of use .07 (30 gpm)

cu. ft. per second of water which is to be used for Suburban Housing Development

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

comprising a total of _____ acres of land

Well data

Depth 560 ft.
Static 420 ft.
Pump at 541 ft.
Pumping 30 gpm

licens. for .07 cfs.

Date June 15, 1981
Leifur S. Hjernaug
(Signature)

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 1099-1

(1) WHEREAS, On the 25th day of May A. D. 1976
Ivan T and Dorothy U Shonley

made Water Right Application No. 1099-1 for a permit to use 0.10 cubic feet per second of the waters of groundwater (one well existing)
 County of Lawrence, State of South Dakota, for suburban housing development
 purposes; and

(2) WHEREAS, On the 30th day of September A. D. 1976
 Permit No. 1099-1, with a date of priority of May 25, 1976

was issued to said applicant B for the diversion of said water, and provided for the completion of construction of the water supply system therein described on or before the 30th day of September A. D. 1977 and for the application to beneficial use of said water on or before the 2 30th day of September A. D. 1984

and.

(3) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota relating to completion of the construction of the water supply system and is entitled to divert 0.07 cubic feet per second of water for beneficial use and.

(4) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota relating to the application of water to beneficial use of the following extent,

water to be used in place for suburban housing development purposes

(Boulder Park SubDivision)

(5) NOW, THEREFORE, By the virtue of the authority vested in us by the laws of the State of South Dakota, We hereby grant and confirm to Ivan T and Dorothy U Shonley

_____ of Sturgis, South Dakota

the holder _____ and owner _____ of said permit No. 1099-1 a water right, dating from May 25, 1976

_____ to use of 0.07 cubic feet per second of the waters of groundwater (one well- existing)

in the County of Lawrence and State of South Dakota, or so much thereof as may be necessary for the purposes hereinbelow mentioned, to be diverted at a point N 63°05'W 672 feet from E 1/4 corner of Section 15, T5N, R4E

and conducted ~~through the Sub division's distribution system~~ through the Sub division's distribution system

for the purpose of suburban housing development

Subject to any limitations listed in Water Right Permit No. 1099-1 and subject to the laws of the State of South Dakota.

WITNESS, My hand and seal of our office at Pierre, South Dakota
this 3rd day of May A. D.
Nineteen Hundred and Eighty-two

WATER MANAGEMENT BOARD

By:

John Hatch
Chief Engineer, Executive Officer
JOHN HATCH

Permit No. 1099-1

Water Diversion No. 1 Belle Fourche River Water District
10120702

CERTIFICATE OF CONSTRUCTION

This is to Certify, That Ivan T and Dorothy U Shonel

_____ the holder of
Permit No. 1099-1, issued upon Application No. 1099-1, bearing date of priority of May 25, 1976

_____ authorizing the diversion of 0.10 cu. ft. per second of the waters of _____
groundwater (1 well) existing County of Lawrence, State of South Dakota at _____
a point N 63°05'W 672 feet from E 1/4 corner of Section 15, T5N, R4E

_____, for suburban housing development

_____ purposes, has ve complied with the provisions of the laws of the State of South Dakota relating to proof of
completion of the works of diversion set out and described in said Permit; that said works are found in satisfactory
condition for diverting and conveying to the place of intended use 0.17 cu. ft. per second of water.

Date May 3, 1982


JOHN H. CHI, Chief Engineer
Water Rights Division



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

July 13, 2011

1099-1
1100-1
1680-1

Judy Louis
20722 76 Loop
Sturgis SD 57785

Dear Ms. Louis:

Thank you for taking the time to visit with me about the ownership changes needed for Water Right Nos. 1099-1 and 1100-1 and Water Permit No. 1680-1.

Enclosed as we discussed are partially completed "Notice of Transfer of Ownership" forms for filing the ownership changes. Upon completion, please sign the forms (on behalf of the association) and return them to our office with a required filing fee of \$50.00 each (total of \$150.00). The check or money order for the fee can be made payable to the Water Rights Program.

If you have any questions, please contact me.

Sincerely,

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

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

enclosures

RECEIVED

AUG - 9 2011

WATER RIGHTS
PROGRAM

NOTICE OF TRANSFER OF OWNERSHIP

To: Chief Engineer
Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

No. 1099-1

Date: 7/28/11

I/We request that Water Right No. 1099-1

formerly owned by: Ivan T & Dorothy U Shonley

be transferred to: (name & address) Boulder Park Water User's Association, Inc.
12204 US Hwy 14A
Sturgis SD 57785 Telephone No. 605-347-3588

Title to the following described land(s)/property has been transferred as described above:

Minnelusa well located: SE ¼ NE ¼ Section 15, T5N, R4E

I/We understand that the validity of Water Right No. 1099-1 has not been determined by this transfer action. If I/We have any questions on validity, I/We understand that only the Water Management Board has the authority to determine if a water permit/right is valid (see note).

You are requested to file this "Notice of Transfer" in the appropriate file with the Water Rights Program, as evidence of the change of ownership.

A fee of Fifty Dollars (\$50.00) is required to cover the filing fees as required under SDCL 46-2-13. This form must be signed by the new owner.

I/We BPWUA, Inc., the new owner, certify that the above information is true and correct.

James L Lewis Sec 1 Treas
(Signed by new owner) Board of Directors

NOTE: Water permits may be cancelled for nonconstruction after the five year construction period has expired. Once a water permit is developed and the water used, the permit becomes a right. A water right may be lost for three reasons:

1. Abandonment - no intent to use water and use is abandoned.
2. Forfeiture - no use of water for three year period without legal excuse.
3. For a third violation of a condition of a water permit/right.

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 8/9, 20 11

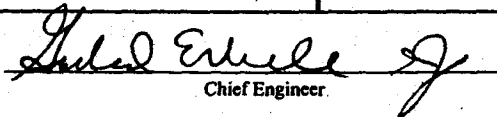
RECEIVED OF Boulder Park Water Users Assn 12204 US Hwy 14A Sturgis SD 57785

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	50 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 <u>1099-1</u>		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____	50 00	
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	50 00

No. **05012**

By


Chief Engineer



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

August 9, 2011

1099-1
1100-1
1680-1

Judy L Lewis, Sec/Treasurer
Boulder Park Water Users Association
12204 US Hwy 14A
Sturgis SD 57785

Dear Ms. Lewis:

I am writing to acknowledge receipt of the transfer forms and filing fees you submitted for changing ownership on Water Right Nos. 1099-1 and 1100-1 and Water Permit No. 1680-1. The ownership changes have been completed.

Water Right Nos. 1099-1 and 1100-1 and Water Permit No. 1680-1 formerly listed in Ivan and Dorothy Shonley's names are now listed in the name of "Boulder Park Water User's Association". Enclosed, for your records, are Receipt Nos. 05012, 05013 and 05014.

If you have any questions, please contact me.

Sincerely,

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

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

enclosures