

**WATER PERMIT NO. 2491-2**

Name of Applicant: Alvin E Merchen

Address: HC 52 Box 16, Hot Springs SD 57747

Phone: 605 745-5659

Amount of Water Claimed: 0.042 cfs

Total Acres: NA

Source of Water Supply: groundwater (one well)

Water to be used for: mobile home park

County: Fall River

Type of Waste Disposal System:

Location: septic tank and drain field

PRIORITY Date Received: 8-7-2000

Application/License Fee: \$100

Corrected Application Received: 10-28-2002

Period of Annual Use: January 1 – December 31

Remarks: for use in Merchen's Mobile Home Acres

Diversion Point: SW ¼ SE ¼ Sec 27-T7S-R5E

Land to be Irrigated: NA

Depth of Well: 510 feet

Well Driller: : \_

Remarks:

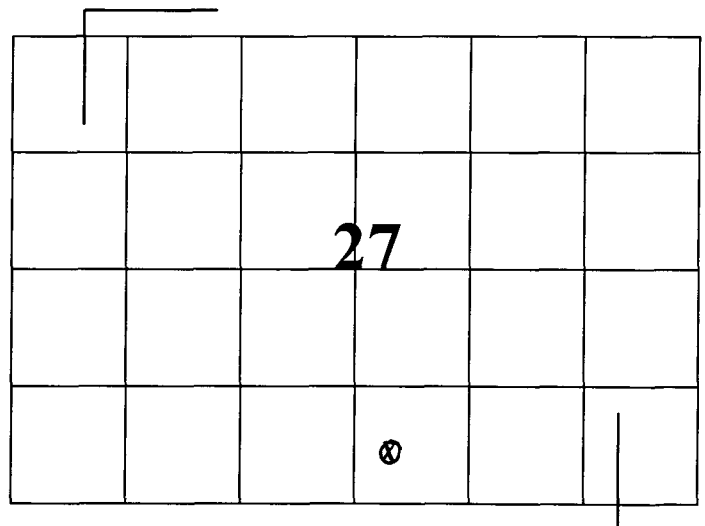
Type of Map: aerial

Prepared by: Eric Gronlund

Reviewed and the Number Assigned on: 10-28-02

By: **Karen Schlaak**

Notice of Hearing - date to intervene: \_\_\_\_\_



**SOUTH DAKOTA  
WATER PERMIT NO. 2491-2**

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Date of first receipt of application August 7, 2000.

Date of return to applicant for corrections, amendments or changes August 7, 2000.

Date of receipt of corrected application October 28, 2002.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2491-2 to Alvin E Merchen, HCR 52 Box 16, Hot Springs SD 57747 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 2491-2 appropriates 0.042 cubic feet of water per second (19 gallons per minute) from one well (Minnelusa Formation) 510 feet deep located in the SW 1/4 SE 1/4 Section 27-T7S-R5E.
2. The water appropriated shall be used for the purpose of supplying water to a mobile home park and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 2491-2 is January 27, 2003.
5. The date from which applicant may claim right is October 28, 2002.
6. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

**QUALIFICATION**

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

**WATER MANAGEMENT BOARD**

By: Garland Erbele

Garland Erbele, Chief Engineer  
Water Rights Program  
Department of Environment and Natural Resources

MAR 13 2003

date



(type or print)

Mail to:  
Water Rights Program  
Joe Foss Building  
523 E. Capitol  
Pierre, SD 57501-3181  
(605) 773-3352

No. 2491-2 (office use only)  
Hydrologic Unit 10120109  
Basin Upper Cheyenne  
Newspaper Hot Springs Star, Hot Springs



Submitted 10/28/02

## Application For Permit To Appropriate Water Within The State Of South Dakota

## Check use(s) of water:

☐ Municipal ☐ Suburban Housing ☐ Recreational ☐ Institutional  
☐ Rural Water System ☐ Commercial ☐ Fish & Wildlife ☐ Geothermal Heat  
☐ Domestic (over 18 gpm) ☐ Industrial ☐ Other MOBILE HOME PARK

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

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

NA

- Name of Applicant Alvin E. MERCHEN Phone 605-745-5659  
(check one) ☒ Owner ☐ Tenant/lessee  
Mailing Address HCR 53 BOX 16 Hot Springs State S.D. 57747  
(Street, RR. or Box) (Zip Code)
- Amount of water claimed 0.042 \*CFS or 19 \*\*GPM \*\*\*AF  
(\*Cubic Feet per Second) (\*\*Gallons per Minute) (\*\*\*)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply 510 ft deep well
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) (SW1/4 SE1/4) sec 27  
(NW1/4 NW1/4) of the (NE1/4 NW1/4 NW1/4) & the T7S-R5E  
(N1/2 SE1/4 NW1/4 NW1/4) all in Sec. 35 County FALL RIVER  
RANGE (5) E. of BLACK HILLS MERIDIAN FALL RIVER CO., S.D.
- County or counties where water will be used FALL RIVER
- Annual period during which water is to be used FULL TIME USE Jan 1-Dec 31
- Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)  
NA - Domestic WATER FOR MOBILE HOME PARK  
EXISTING

STATE OF SOUTH DAKOTA)

County of Fall River SS

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

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

Subscribed and sworn to before me this

4<sup>th</sup>

day of

Aug

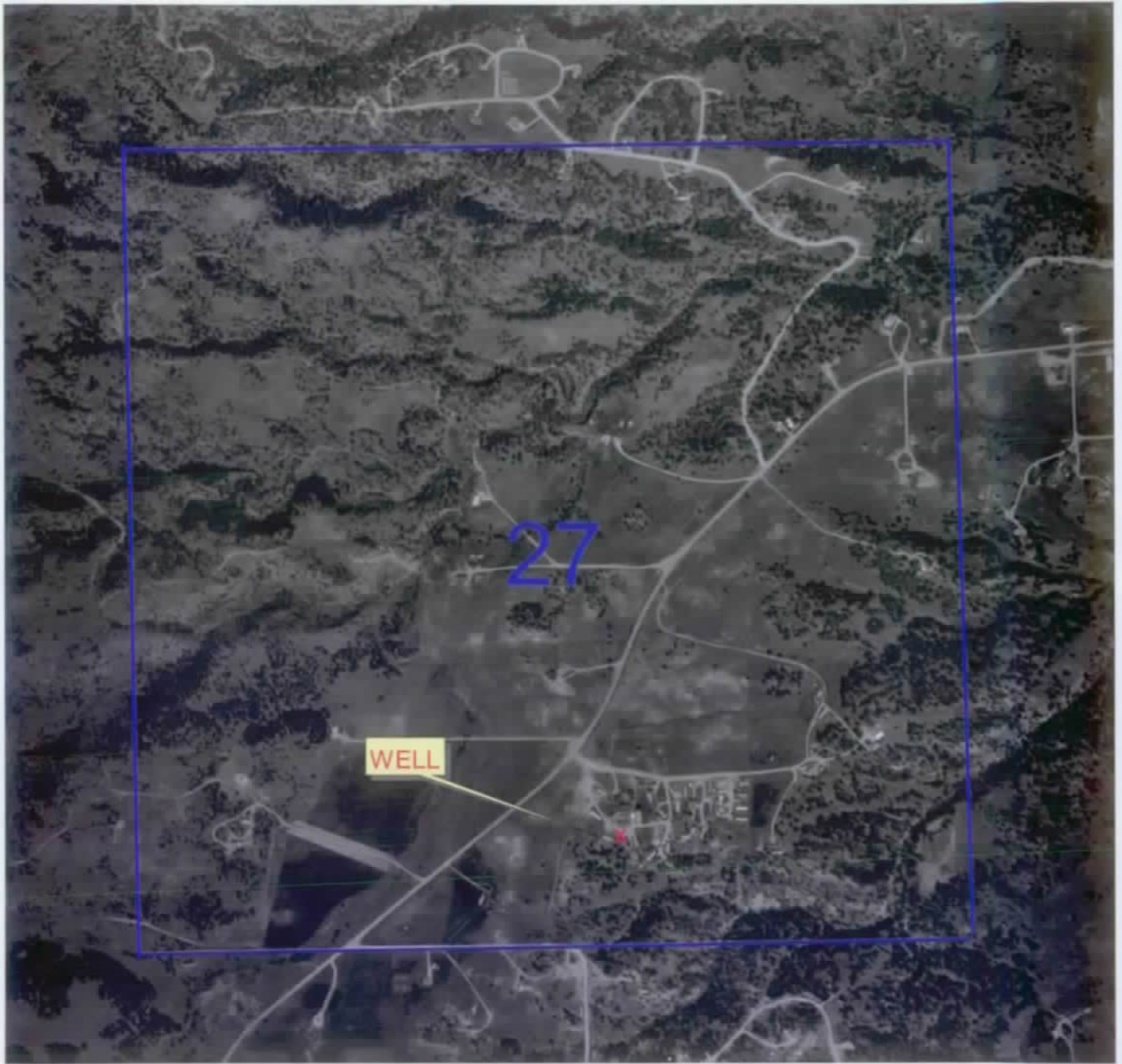
2002

Signed

Alvin E. MerchenGertud Shaler 11-7-2003

Notary Public

# WELL LOCATION FOR MERCHEN'S MOBILE HOME ACRES



1000 0 1000 2000 Feet

WELL LOCATED IN THE SW1/4 SE1/4 SECTION 27, T7S, R5E

(approx. 2,260 ft west & 750 ft north of SE corner)

LAT/LON 43.40665642 -103.5087931

based on GPS coordinates collected by Linda Harris of DENR on September 24, 2002



*Eric Gronlund*

Eric Gronlund  
Water Rights Program, DENR  
October 2, 2002

2401

43103

## 7.5 MINUTE QUADRANGLE NAMES

43103

|                           |                      |
|---------------------------|----------------------|
| A1 Heinne Creek           | E1 Fairburn SE       |
| A2 Oelrichs SW            | E2 Fairburn SW       |
| A3 Black Banks Creek East | E3 Boland Ridge      |
| A4 Black Banks Creek West | E4 Wind Cave         |
| A5 Ardmore SE             | E5 Pringle           |
| A6 Ardmore                | E6 Argyle            |
| A7 Crowe Dam              | E7 Jewel Cave SE     |
| A8 Wallace Ranch          | E8 Jewel Cave SW     |
| B1 Oelrichs NE            | F1 Fairburn NE       |
| B2 Oelrichs               | F2 Fairburn          |
| B3 Lone Well Creek East   | F3 Butcher Hill      |
| B4 Lone Well Creek West   | F4 Mt. Coolidge      |
| B5 Heppner                | F5 Cicero Peak       |
| B6 Rumford                | F6 Fourmile          |
| B7 Provo                  | F7 Jewel Cave        |
| B8 Phister Ranch          | F8 Jewel Cave NW     |
| C1 Hay Canyon Butte       | G1 Hermosa SE        |
| C2 Smithwick              | G2 Hermosa           |
| C3 Hot Springs SE         | G3 Hayward           |
| C4 Angostura Reservoir    | G4 Iron Mountain     |
| C5 Cascade Springs        | G5 Custer            |
| C6 Flint Hill             | G6 Berne             |
| C7 Edgemont               | G7 Signal Hill       |
| C8 Edgemont SW            | G8 Dead Horse Flats  |
| D1 Smithwick NE           | H1 Hermosa NE        |
| D2 Smithwick NW           | H2 Hermosa NW        |
| D3 Buffalo Gap            | H3 Rockerville       |
| D4 Hot Springs            | H4 Mount Rushmore    |
| D5 Minnekahta NE          | H5 Hill City         |
| D6 Minnekahta             | H6 Medicine Mountain |
| D7 Edgemont NE            | H7 Ditch Creek       |
| D8 Burdock                | H8 Preacher Spring   |

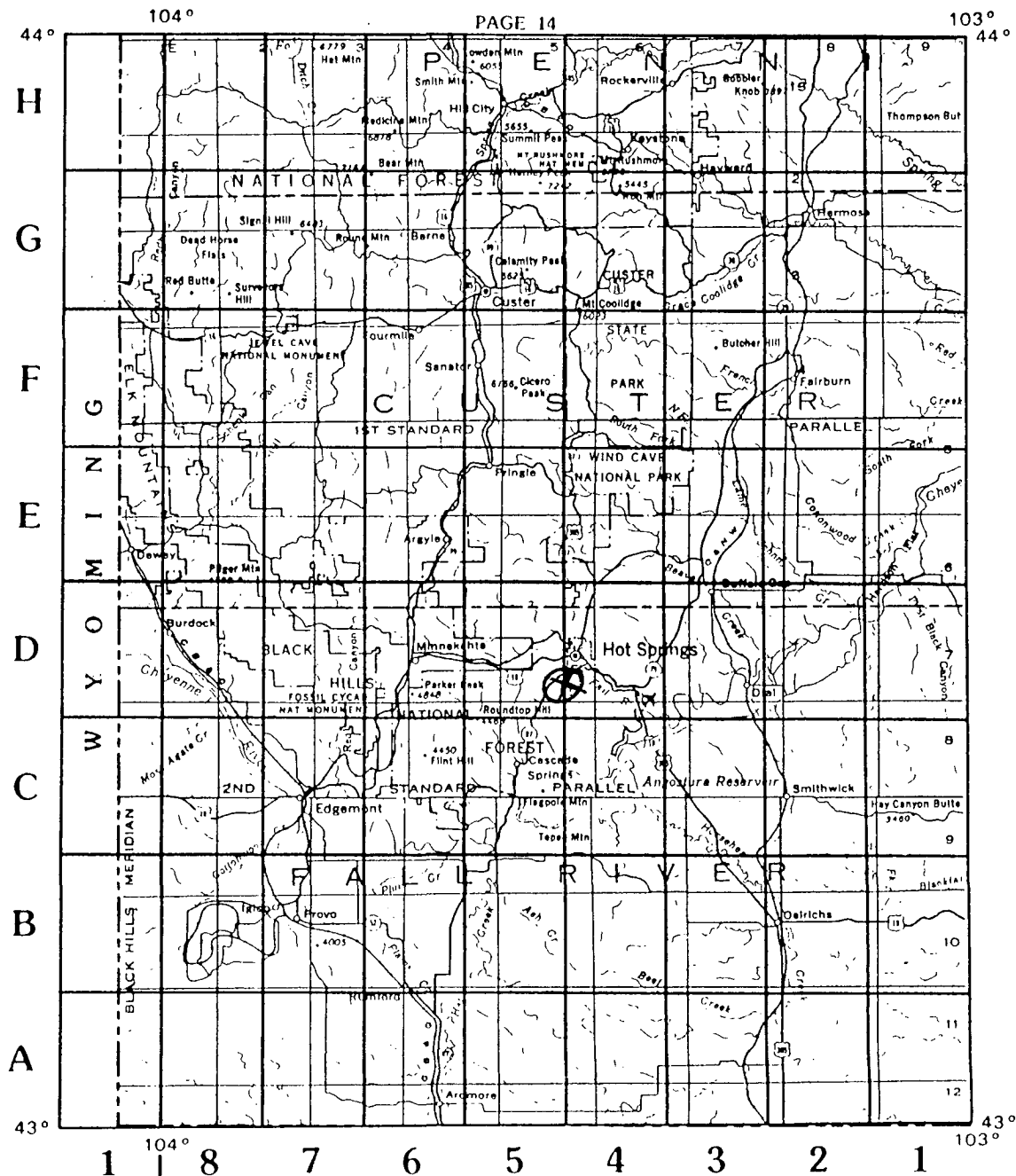
43104

|                     |               |
|---------------------|---------------|
| A1 Oak Creek        | E1 Dewey      |
| B1 Coffee Flats     | F1 Clifton    |
| C1 Mule Creek SE    | G1 Fanny Peak |
| D1 Twentyone Divide | H1 Moon       |

South Dakota is completely covered by 7.5-minute maps

Certain areas may be covered by 7.5 x 15- or 15-minute maps

See CATALOG OF PUBLISHED MAPS for available maps, dates, scales, prices, and Map Order Forms



43103

Located 2 miles south of Highway 18 on Highway 71 on

merchen's mobile Home Hores is

# RECEIPT

## WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date October 28, 20 02

RECEIVED OF Michelle Merchen, HC 52 Box 16, Hot Springs SD 57747

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

|                                                                                                                        |       |        |
|------------------------------------------------------------------------------------------------------------------------|-------|--------|
| Fee for Application for Permit No. <u>2491-2</u> 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. <u>2491-2</u>            | 50    | 00     |
| Fee for Filing Transfer Form _____                                                                                     |       |        |
| 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. _____                                                 |       |        |
| Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____                                              |       |        |
| (Any Other Work Provided by Law)                                                                                       | TOTAL | 100.00 |

No. **000328**

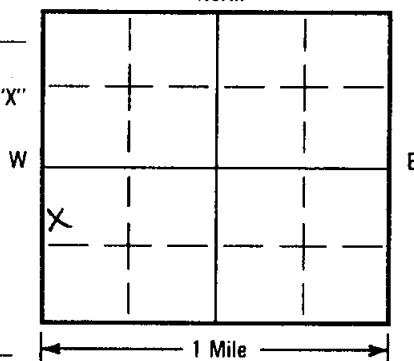
By Darland Erbele  
Chief Engineer gm

## SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW 1/4 SW 1/4 Sec 26 Twp 7S Rg 5ECounty Fall River North

Please mark well location with an "X"



Well Completion Date

7-1-77

## LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.) 100 ft. from \_\_\_\_\_ (identify source).

## PROPOSED USE:

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

## METHOD OF DRILLING:

air rotaryCASING DATA: ☒ Steel   ☐ Plastic   ☐ Other

If other describe \_\_\_\_\_

| PIPEWEIGHT      | DIAMETER        | FROM        | TO            | HOLE DIAMETER   |
|-----------------|-----------------|-------------|---------------|-----------------|
| <u>15</u> LB/FT | <u>5 1/2</u> IN | <u>0</u> FT | <u>483</u> FT | <u>6 1/4</u> IN |
| _____ LB/FT     | _____ IN        | _____ FT    | _____ FT      | _____ IN        |
| _____ LB/FT     | _____ IN        | _____ FT    | _____ FT      | _____ IN        |

## GROUTING DATA

| Grout Type    | No. of Sacks | Grout Weight      | From           | To             |
|---------------|--------------|-------------------|----------------|----------------|
| <u>Cement</u> | _____        | <u>14</u> lb./gal | <u>400</u> ft. | <u>500</u> ft. |
| <u>16</u>     | _____        | <u>16</u> lb./gal | <u>0</u> ft.   | <u>200</u> ft. |

Describe grouting procedure Cement grouted through casingSCREEN: ☐ Perforated pipe   ☐ Manufactured

Diameter \_\_\_\_\_ IN Length \_\_\_\_\_ FEET

Material \_\_\_\_\_

Slot Size \_\_\_\_\_ Set From \_\_\_\_\_ Feet to \_\_\_\_\_ Feet

Other information \_\_\_\_\_

WAS A PACKER OR SEAL USED? ☐ YES   ☒ NO

If so, what material? \_\_\_\_\_

Describe packer(s) and location? \_\_\_\_\_

DISINFECTION: Was well disinfected upon completion?

X YES, How: chlorine solution

Laboratory sent to for water quality analysis \_\_\_\_\_ NO, Why Not? \_\_\_\_\_

Well Owner: Michelle Merchen  
 Business Name: Merchen's Mobile Home Acres  
 Address: HCR 52, Box 16  
Hot Springs, SD 57747

## WELL LOG:

| FORMATION                      | DEPTH      |            |
|--------------------------------|------------|------------|
|                                | FROM       | TO         |
| <u>red siltstone</u>           | <u>0</u>   | <u>200</u> |
| <u>limestone</u>               | <u>200</u> | <u>240</u> |
| <u>red shale</u>               | <u>240</u> | <u>335</u> |
| <u>sandstone mostly</u>        | <u>335</u> | <u>490</u> |
| <u>red some white</u>          |            |            |
| <u>very loose from 335-350</u> |            |            |
| <u>yellow sandstone</u>        | <u>490</u> | <u>500</u> |
|                                |            |            |
|                                |            |            |

STATIC WATER LEVEL 320 Feet

If flowing: closed in pressure \_\_\_\_\_ PSI

GPM flow \_\_\_\_\_ through \_\_\_\_\_ inch pipe

Controlled by ☐ Valve   ☐ Reducers   ☐ Other \_\_\_\_\_

Reduced Flowrate \_\_\_\_\_ GPM

Can well be completely shut in? \_\_\_\_\_

## WELL TEST DATA:

☐ Pumped Describe: \_\_\_\_\_☐ Bailed air developed☐ Other \_\_\_\_\_

Pumping Level Below Land Surface

500 ft. After 2 Hrs. pumped 50 GPM

\_\_\_\_\_ ft. After \_\_\_\_\_ Hrs. pumped \_\_\_\_\_ GPM

If pump installed, pump rate \_\_\_\_\_ GPM

REMARKS This well was drilled in 1977. The info placed on this form for convenience of owner. The cement grout is an estimate based on common practice at that time.

This well was drilled under license # 331

And this report is true and accurate.

Drilling firm Taylor Drilling Co.Signature of License Representative: Ralph T. Taylor

Signature of Well Owner or Equitable Property Holder: \_\_\_\_\_

Date: \_\_\_\_\_

RECEIVED  
NOV 20 2002

WATER RIGHTS  
PROGRAM



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3181  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

August 7, 2000

Alvin E Merchen  
HCR 52 Box 16  
Hot Springs SD 57747

Dear Mr. Merchen:

Thank you for submitting the *Application for a Permit to Appropriate Water* for a mobile home park. In order to complete the application the following is required.

Enclosed is the map submitted with your application. The required map needs to show the location of the well in relation to a government section corner or quarter corner by direction and distance is required. The map must be signed by one of the following: Registered Land Surveyor, Registered Professional Engineer or by any other government employee who normally prepares maps as a part of his assigned duties (i.e. local NRCS office).

I have reviewed our files and can not find a well log for your well. If you have a well log, please send us a copy.

The application filing and license fee will be \$100.00.

If you have any questions, please contact me.

Sincerely,

*Karen Schlaak*

Karen Schlaak  
Water Rights Program  
605 773-3352



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3181  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

October 25, 2000

Alvin E Merchen  
HCR 52, Box 16  
Hot Springs SD 57747

Dear Mr. Merchen:

On August 7, 2000, you submitted an Application for Permit to Appropriate Water Within the State of South Dakota for a mobile home park. You were notified what additional information was required to complete the application. A copy of that letter is enclosed. To date, we have not received the required information.

Obtaining a water permit that accurately reflect your water use ultimately benefits you by protecting your right to use water. Except for domestic use, any water user without a water right is not entitled to receive protection in the event of interference by a new or future user who has a water right.

Pursuant to South Dakota Codified Laws 46-1-15, 46-5-9, 46-5-10 and 46-2-18, you must have a water permit prior to using water.

If you have any questions, please contact me.

Sincerely,

*Karen Schlaak*

Karen Schlaak  
Water Rights Program  
Phone: (605) 773-3352

enclosures



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

January 3, 2001

Alvin E Merchen  
HCR 52, Box 16  
Hot Springs SD 57747

Dear Mr. Merchen:

In August, you submitted an Application for Permit to Appropriate Water Within the State of South Dakota for a mobile home park located in Fall River County. You were notified what additional information was required to complete the application. A copy of that letter is enclosed. To date, we have not received the required information.

In order to proceed with the application, please submit the required map, well log and fees. If you have any questions, please contact me.

Sincerely,

*Karen Schlaak*

Karen Schlaak  
Water Rights Program  
Phone: (605) 773-3352

enclosures



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

November 19, 2001

Alvin E Merchen  
HCR 52 Box 16  
Hot Springs SD 57747

Dear Mr. Merchen:

A review of our files indicates that in August, 2000 you submitted an *Application for a Permit to Appropriate Water* for your mobile home park (copy enclosed). Several letters have been written, but the application still remains incomplete.

The following is required to complete the application:

- A map showing the location of the well in relation to a government section corner or quarter corner by direction and distance. The map must be signed by one of the following: Registered Land Surveyor, Registered Professional Engineer or by any other government employee who normally prepares maps as a part of his assigned duties (i.e. local NRCS office).
- A copy of the well log, if one is available.
- The application/license filing fee will be \$100.00.

Obtaining a water permit that accurately reflects your water use ultimately benefits you by protecting your right to use water. Except for domestic use, any water user without a water right is not entitled to receive protection in the event of interference by a new or future user who has a water right.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak  
Water Rights Program  
Phone: (605) 773-3352

enclosure



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

Alvin E Merchen  
Merchen's Mobile Home Acres  
HC 52 Box 16  
Hot Springs SD 57747

Dear Mr. Merchen:

On August 7, 2000, you submitted an *Application for a Permit to Appropriate Water* for your mobile home park (copy enclosed). One of the requirements to complete the application was the need for a map.

We have prepared a map based on the latitude/longitude coordinates obtained by Linda Harris during her recent drinking water on-site assessment. Enclosed is a map that you can keep for your records.

The application states the amount of water requested will be 19 gallons per minute. Please reconfirm this amount.

The application/license fee will be \$100.00.

Upon receipt of the fee and confirmation of the amount of water requested, further processing of the application will continue. You should be aware that you will be responsible for payment of the public notice that we will forward to a local newspaper.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak  
Water Rights Program  
605 773-3352

enclosure



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT  
APPLICATION NO. 2491-2, Alvin E. Merchen**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 2491-2, Alvin E. Merchen, HC 52, Box 16, Hot Springs SD 57747.

The Chief Engineer is recommending APPROVAL of Application No. 2491-2 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualification:

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

See report on application for additional information.

Garland Erbele, Chief Engineer  
December 12, 2002

WATER PERMIT APPLICATION NO. 2491-2  
ALVIN E. MERCHEN  
DECEMBER 9, 2002

Water Permit Application No. 2491-2 proposes to appropriate 0.042 cubic feet of water per second (cfs) ( 19 gallons per minute) from one well (Minnelusa Formation) 510 feet deep located in the SW¼ SE¼ Sec. 27, T7S-R5E, Fall River County. The water is used to supply an existing mobile home park.

**AQUIFER:** Minnelusa aquifer (MNLS)

**GENERAL:**

The Minnelusa Formation consists of alternating beds of sandstone and dolomitic limestone with lesser amounts of shale and chert, approximately 700 feet thick in this area (Carter and Redden, 1999a; Carter and Redden, 1999b). The Minnelusa Formation outcrops approximately one and one-half miles west of this site (Strobel and others, 1999) and the top of the formation is reported to be 335 feet below grade at this well. The porous portions of the formation form the Minnelusa aquifer. Well sorted sand lenses have porosity's approaching 25%, but generally the sands have porosity's of 10%. The average porosity of the Minnelusa is estimated to be 10% and the effective porosity is assumed to be 5% (Rahn, 1979). The Minnelusa formation underlies virtually all of western South Dakota and the Minnelusa aquifer contains over 755 million acre-feet of recoverable water in storage (Allen and others, 1984). The Minnelusa aquifer underlies approximately 1,115,520 acres of Fall River County and contains an estimated 52,987,200 acre-feet of recoverable water in storage in the county (Allen and others, 1984). Ground water movement in the aquifer is probably toward the south and east (Strobel and others, 2000). Although some interpretation of geochemical data suggests there is a northeast component of the regional flow path in this area (Naus and others, 2001). There is no aquifer-test data available for the Minnelusa aquifer at this site; therefore, the aquifer transmissivity and storage coefficient values are unknown. Estimates from regional studies of the aquifer indicate the aquifer transmissivity may range from 30 to 12,000 ft<sup>2</sup>/d, and the storage coefficient ranges from  $5.0 \times 10^{-9}$  to 0.003 (Driscoll and others, 2002). The water quality of the aquifer is generally good near the outcrop but deteriorates considerably with distance from the recharge area. The aquifer is under confined conditions at this well with a static water level reported at 320 feet below grade.

**WATER AVAILABILITY:**

The availability of unappropriated water from an aquifer can be evaluated by considering SDCL 46-6-3.1. This statute requires that an application to appropriate groundwater can not be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of average estimated annual recharge.

Recharge to the Minnelusa aquifer is primarily from infiltration of precipitation on the outcrop and stream flow losses. Average annual recharge from 1931-1998 is estimated to be approximately 112,000 acre-feet per year (Carter and others, 2001).

The Water Rights Program monitors 23 observation wells completed into the Minnelusa aquifer in the Black Hills area. Water Rights Observation Well FR-95B is located approximately two miles north-northeast of this well. The hydrograph for this well, figure 1, shows the aquifer responds to climatic conditions, and that for the period of record withdrawals have not exceeded recharge.

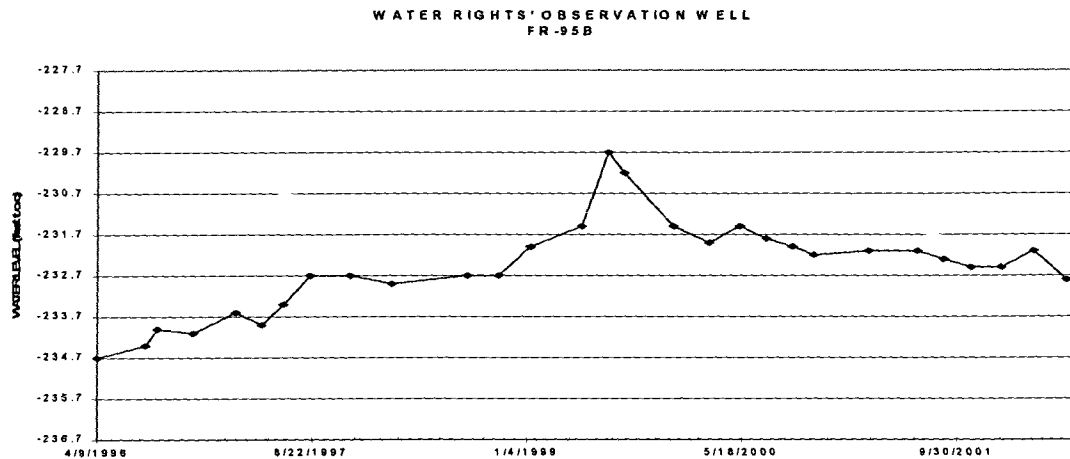


Figure 1. Hydrograph of a Water Rights' observation well completed into the Minnelusa aquifer approximately two miles north-northeast of 2491-2

The hydrograph also shows the magnitude of fluctuation in the water levels in the area ( $\cong 5'$ ) with the lowest water level on record occurring in 1996 and the highest occurring in 1999.

It is obvious from the hydrographs of Minnelusa observation wells, that withdrawals have not exceeded recharge for the period of record. The observation well data suggests that the aquifer is capable of sustaining additional withdrawals.

#### EXISTING WATER RIGHTS/PERMITS

There are 177 Water Rights/Permits that appropriate water from the aquifer in South Dakota. There are 4 permits/rights appropriating water from the Minnelusa aquifer in Fall River County (Water Rights, 2002c), where the aquifer is used for suburban housing development, domestic and irrigation use.

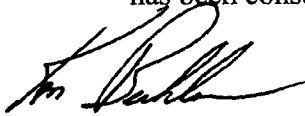
There are 11 Water Rights/Permits appropriating groundwater within approximately three miles of the well that is to be used for this application. Groundwater permits in the area are supplied by Alluvium(5), Minnekahta(2), Madison(1) and the Minnelusa(3). The appropriations from the Minnelusa include:

| Water Right No. | Name                      | Use | Diversio<br>n Rate<br>(cfs) | Acres<br>Irrigatio<br>n | Distance<br>from 2491-2 |
|-----------------|---------------------------|-----|-----------------------------|-------------------------|-------------------------|
| 1704-2          | Country Club Estates Corp | SHD | 0.20                        | NA                      | One mile                |
| 1721-2          | Kenyon Hartigan           | IRR | 0.02                        | 1.7                     | Two miles               |
| 498-2           | State Veterans Home       | IRR | 1.10                        | 21.0                    | Two miles               |

Interference between this proposed appropriation and existing users is not expected to be adverse due to the distance between wells, and the relatively low diversion rate requested by this application.

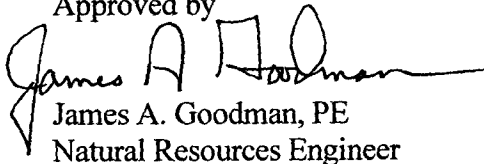
## CONCLUSIONS

1. The Minnelusa Aquifer is a viable aquifer in this area, and water is available for this appropriation.
2. The Minnelusa is under artesian conditions and drawdown due to this diversion can be expected. This drawdown is not expected to adversely affect adequate wells in the area.
3. The Completion Report submitted with this application indicates the existing well has been constructed in compliance with the SD Well Construction Standards.



Ken Buhler  
Natural Resources Engineer

Approved by



James A. Goodman, PE  
Natural Resources Engineer

## REFERENCES:

- Allen, J.C., Iles, D.L., and Petres, A.K., 1984, Analysis of Groundwater and Streamflow Data Western Dakotas Region of South Dakota, Task 3 and 4: Groundwater Resource Inventory, Department of Water and Natural Resources,
- Carter, J.M., and Redden, J.A., 1999a, Altitude to the top of the Minnelusa Formation in the Black Hills area, South Dakota: U.S. Geological Survey Hydrologic Investigation Atlas HA-744-C, 2 sheets, scale 1:100,000
- Carter, J.M., and Redden, J.A., 1999b, Altitude to the top of the Madison Limestone in the Black Hills area, South Dakota: U.S. Geological Survey Hydrologic Investigation Atlas HA-744-D, 2 sheets, scale 1:100,000
- Carter, J.M., Driscoll, D.G., and Hamade, G.R., 2001, Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and

- Wyoming, Water Years 1931-98: U.S. Geological Survey Water-Resources Investigations Report 00-4278, 66 p.
- Carter, J.M., Driscoll, D.G., Hamade, G.R., and Jarrell, G.J., 2001, Hydrologic Budgets for the Madison and Minnelusa Aquifers, Black Hills of South Dakota and Wyoming, Water Years 1987-96: U.S. Geological Survey Water Resources Investigations Report 01-4119, 53 p.
- Driscoll, D.G., Carter, J.M., Williamson, J.E., and Putnam, L.D., 2002, Hydrology of the Black Hills Area, South Dakota: U.S. Geological Survey Water Resources Investigations Report 02-4094, 150 p.
- Naus, C.A., Driscoll, D.G., and Carter, J.M., 2001, Geochemistry of the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota: U.S. Geological Survey Water Resources Investigations Report 01-4129, 118 p.
- Strobel, M.L., Galloway, J.M., Hamade, G.R., and Jarrell, G.J., 2000, Potentiometric Surface of the Minnelusa Aquifer in the Black Hills Area, South Dakota: U.S. Geological Survey, Hydrologic investigations Atlas HA-745-C, 2 sheets, scale 1:100,000
- Water Rights Program, 2002a, "Domestic Well Log Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD
- Water Rights Program, 2002b, "Observation Well Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD
- Water Rights Program, 2002c, "Water Permit Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD

JAN 17 2003

WATER RIGHTS  
PROGRAM

## PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA )  
 ) SS  
 County of FALL RIVER )

I, BRETT NACHTIGALL

certify that the attached printed Notice was  
 taken

from the Hot Springs Star

printed and published in Hot Springs

County of Fall River and

state of South Dakota. The notice was published

in the newspaper on the following two dates:

January 7, 2003

January 14, 2003

Cost of Printing \$38.50

Brett Nachtigall  
 (Signature)

Publisher  
 (Title)

1-15-03  
 (Date Signed)

353

**NOTICE OF APPLICATION NO.  
 2491-2 to Appropriate Water**

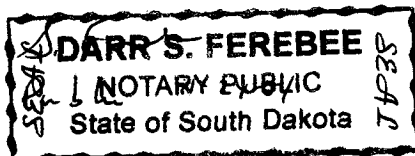
Notice is given that Alvin E Merchen, HC 52 Box 16, Hot Springs SD 57747 has filed an application for a water permit to appropriate 0.042 cubic feet of water per second (19 gallons per minute) from one well (Minnelusa Formation) 510 feet deep located in the SW 1/4 SE 1/4 Section 27-T7S-R5E. The water is to supply an existing mobile home park.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2491-2 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition. Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E. Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by January 27, 2003.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Jan. 7, 14

Da  
 Not





**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

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

December 13, 2002

Alvin Merchen  
HC 52 Box 16  
Hot Springs SD 57747

Dear Mr. Merchen:

Water Permit Application No. 2491-2 for mobile home park use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Hot Springs Star printed at Hot Springs, SD (Ph # 605-745-4170). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and a report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund  
Natural Resources Engineer  
(605) 773-3352

enclosures

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



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

December 13, 2002

Hot Springs Star  
PO Box 1000  
Hot Springs, SD 57747-1000

ATTENTION: Legal Public Notice

Enclosed is a Notice of Hearing on Application No. 2491-2 to Appropriate Water to be published twice. Please publish the first notice on January 8, 2003 with the second publication 7 days later.

The applicant must verify to you that the notice is to be published, before you make the first publication **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Alvin E Merchen, HC 52 Box 16, Hot Springs, SD 57747 (Ph # 605-745-5659).

**Please send the Water Rights Program the first publication immediately.** The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund  
Natural Resources Engineer  
605 773-3352

enclosures

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

No. 2491-2

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

Date \_\_\_\_\_

We are in receipt of your letter of December 13, 2002 enclosing Notice of Hearing to Appropriate Water by Application No. 2491-2 which was first published in our issue of \_\_\_\_\_. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

\_\_\_\_\_  
Name

\_\_\_\_\_  
Newspaper

Instruction to Newspaper - Publish first Notice on January 8, 2003 with the second publication 7 days later. The applicant is responsible for payment.

---

### NOTICE OF APPLICATION NO. 2491-2 to Appropriate Water

Notice is given that Alvin E Merchen, HC 52 Box 16, Hot Springs SD 57747 has filed an application for a water permit to appropriate 0.042 cubic feet of water per second (19 gallons per minute) from one well (Minnelusa Formation) 510 feet deep located in the SW ¼ SE ¼ Section 27-T7S-R5E. The water is to supply an existing mobile home park.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2491-2 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by January 27, 2003.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
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PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

MAR 13 2003

Alvin E Merchen  
HCR 52 Box 16  
Hot Springs SD 57747

Dear Mr. Merchen:

Enclosed is Water Permit No. 2491-2 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

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

enclosures

## NOTICE OF TRANSFER OF OWNERSHIP

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

Water Right/Permit No. 2491-2

Date: 12/30/03

I/We request that Water Right/Permit No. 2491-2 formerly owned by:

Alvin E. Merchen

be transferred to:

New Owner Name: Daren or Michelle Merchen

Address: HC 52 Box 69

City, State, Zip Hot Springs, SD 57747 Telephone No. 605-745-7757

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

SW 1/4 SE 1/4 section 27-T7S-R5E

☒ I understand that the validity of Water Right/Permit No. 2491-2 has not been determined by this transfer action. If I have any questions on validity, I understand that only the Water Management Board has the authority to determine if a water right/permit is valid (see note below.)

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 Two Dollars and Fifty Cents (\$2.50) is included to cover the filing fee as required by SDCL 46-2-13.**

I, Michelle Merchen, the new owner, certify that the above information is true and correct.

Michelle Merchen  
(Signed by new owner)

**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.

RECEIVED  
DEC 31 2003  
WATER RIGHTS  
PROGRAM

# RECEIPT

## WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date December 31, 20 03

RECEIVED OF Daren Merchen, HC 52 Box 69, Hot Springs SD 57747

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 | 2     | 50   |
| 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>2491-2</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. _____                                         |       |      |
| Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____                                      |       |      |
| (Any Other Work Provided by Law)                                                                               | TOTAL | 2.50 |

No.

**001024**

By

Darland Erbe  
Chief Engineer



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

PMB 2020  
JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

January 8, 2004

2491-2

Daren or Michelle Merchen  
HC 52 Box 69  
Hot Springs SD 57747

Dear Mr. & Mrs. Merchen:

Thank you for following up on the ownership change for Water Permit No. 2491-2. The transfer has been completed. The water permit formerly listed in the name of Alvin E Merchen is now listed in your names.

Enclosed is your Receipt No. 001024 in the amount of \$2.50. In the event you do not have one, I am including a copy of the water permit for your records. If I can answer any questions for you, please contact me.

Sincerely,

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

enclosure

**Permit No. 2491-2**  
**Fall 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, 11/24/2009, made a thorough examination of the water use system constructed by <sup>Daren</sup>~~Daryen~~ and **Michelle Merchen** of **HC 52 Box 69, Hot Springs, SD 57747** holders of Permit No. **2491-2**, bearing the priority of **10/28/2002** authorizing the diversion of **0.042**cu. ft. per second of the waters of the **Minnelusa Aquifer** for **suburban housing development** purposes, in **Fall River** County.

Inspection contact & relationship     **Darren Merchen—permit holder**  
to permit holder, if applicable:

**A. Works used to divert the water:**

**Well Information:**

- 1) Well Drilling Firm: **Taylor Drilling**
- 2) No. of Wells   1
- 3) Depth(s)   500   feet
- 4) Well log is available **Yes**
- 5) Comment: **Well drilled in 1977—well log received in 2002**

**Casing:**

- 1) Diameter   5 ½   inches
- 2) Length   483   feet
- 3) Type **Steel**

**Screen:**

- 1) Type **unknown**
- 2) Length        feet
- 3) Static water level   320   feet

**Pump:**

- 1) Make **Flint - Walling**
- 2) Model **4F19530 135874**
- 3) Size **3 hp**
- 4) Capacity   19   GPM

**Report of Examination of Works**

Permit No. 2491-2

**Motor:**

- 1) Make Franklin
- 2) Model No. 2823028310
- 3) Horsepower rating 3 hp

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

- 1) Type PVC
- 2) Size 2 1/2 inches
- 3) Length ~5,000 feet

**C. Works used to apply water to beneficial use:** Distribution system (same as B. above)

**D. Compliance with Permit Requirements:**

- 1) Permit qualifications being abided by Yes
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period N/A
- 3) Exceptions to compliance are: N/A

The system is in good condition with the point of diversion located as follows: 750 feet north and 2,180 feet west of the southeast corner of section 27, Township 7 South, Range 5 East with lat/long coordinates of 43.40665642/-103.5087931. The works are capable of diverting and conveying to the place of use 0.042 cu. ft. per second of water which is to be used for suburban housing development use. Water has been put to beneficial use to the maximum extent as follows:

**The water is used to supply water to a mobile home park and the license should be issued for 0.042 cfs.**

All structures, wells and lands on map Yes

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

--None



Hayes Haas  
Natural Resources Engineer  
DENR, Water Rights Program

Date report completed: 5/3/2010

Permit 2491-2  
Darren & Michelle Merchen



0 0.25 0.5 Miles

*Hayes Haas*

Hayes Haas  
Natural Resources Engineer  
DENR Water Rights Program  
November 2009



*South Dakota*



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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JUL 28 2010

2491-2

Daren & Michelle Merchen  
835 Happy Hollow St  
Hot Springs SD 57747

Dear Mr. & Mrs. Merchen:

Enclosed is Water License No. 2491-2. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right No. 2491-2, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

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

Sincerely,

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

enclosures

# STATE OF SOUTH DAKOTA

## WATER LICENSE NO. 2491-2

(1) Alvin E Merchen made Application No. 2491-2, August 7, 2000 for a water permit to divert 0.042 cubic feet of water per second (19 gallons per minute) from ground water – one well, Minnelusa Formation, Fall River County, South Dakota for use in supplying water to a mobile home park. Permit No. 2491-2, with a priority date of October 28, 2002 was approved January 27, 2003 and issued to the applicant for diversion of water with construction of the described water supply system and application to beneficial use of water completed.

On December 31, 2003, Water Permit No. 2491-2 was transferred to Daren or Michelle Merchen.

(2) It is certified that the permit holders have complied with the provisions of South Dakota State Law relating to completion of the water supply system and are entitled to divert 0.042 cubic feet of water per second (19 gallons per minute) for beneficial use.

The location of the diversion point is 750 feet north and 2,180 feet west of the SE corner of Section 27, T7S, R5E (SW ¼ SE ¼)

(3) The permit holders have complied with the provisions of South Dakota State Law relating to the application of water to beneficial.

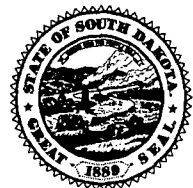
(4) Pursuant to South Dakota Water Law 46-5-30.1 Daren or Michelle Merchen, 835 Happy Hollow St, Hot Springs SD 57747 the holders and/or owners of Water Right No. 2491-2 are issued a license to appropriate water, the right to use 0.042 cubic feet of water per second from ground water – one well, Minnelusa Formation with a priority date of October 28, 2002 from the location specified in (2) of this license for supplying water to a mobile home park.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 2491-2 and subject to the following qualification:

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

Garland Erbele  
Garland Erbele, Chief Engineer  
Water Rights Program  
Department of Environment and Natural Resources

JUL 28 2011  
date



**DEPARTMENT OF GAME, FISH, AND PARKS**

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

**RECEIVED**

JUL 22 2010

RAPID CITY  
PUBLIC WORKS

July 20, 2010

Dan Coon, P.E.  
Rapid City Public Works Dept.  
Engineering Services Division  
300 Sixth Street  
Rapid City, SD 57701

Dear Mr. Coon:

Thank you for taking the time to consult with the South Dakota Department of Game, Fish and Parks (SDGFP) about proposed designs for the surface water intake structure of the Jackson Springs Water Treatment Plant. Ron Koth, our Senior Fisheries Biologist in Rapid City, reviewed materials provided by you in early June and submitted comments on the in-bank intake structure for your consideration. Ron has a lot of experience in the area of stream hydrology and we were glad to be able to use his experience to contribute to the design review process.

After reviewing the reply to Mr. Koth's comments supplied by your contract Engineers at Burns and McDonnell, SDGFP is satisfied that no negative impacts to the fisheries resources of Rapid Creek will occur and that the type of intake and location within the stream/riparian corridor are justified.

Thanks again for including SDGFP in the review process and for keeping us informed of progress on the Jackson Springs Water Treatment Plant project.

Sincerely,

John Lott  
Aquatic Resources Chief  
(605) 773-4508