

**WATER PERMIT NO. 2626-2**

Name of Applicant: **IRAM**

Address: **PO Box 932, Hot Springs SD 57747** Phone: **605 745-6339**

Amount of Water Claimed: **1.85** Total Acres: **130 acres**

Source of Water Supply: **groundwater (one well)**

Water to be used for: **irrigation** County: **Fall River**

Type of Waste Disposal System:

Location: **10 miles southwest of Hot Springs**

**PRIORITY** Date Received: **1-30-08**

Application/License Fee: **\$300**

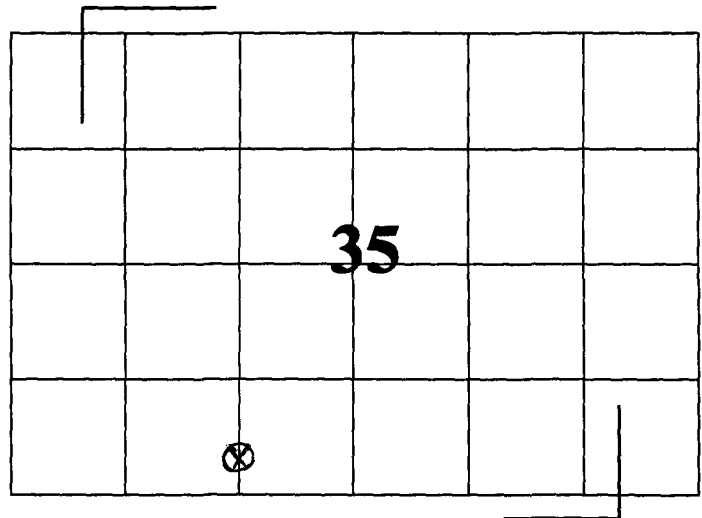
Corrected Application Received: **2-5-08**

Period of Annual Use: **April 1 – October 31**

Remarks:

Diversion Point: **S ½ SW ¼ Sec 35-T8S-R4E**

Land to be Irrigated: **S ½ Sec 35-T8S-R4E**



Depth of Well: **500+ feet**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by: **Kory with Fall River NRCS**

Reviewed and the Number Assigned on: **2-5-09**

By: **Karen Schlaak**

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

FORM 2: Application for irrigation in South Dakota

(type or print)

Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>2626-2</u> (office use only) Hydrologic Unit <u>10120106</u>
	Basin <u>Upper Cheyenne</u>
	Newspaper <u>Hot Springs Star PO Box 1000</u> <u>605-745-4170 Hot Springs 57747</u>

RECEIVED  
 JAN 30 2008  
 WATER RIGHTS PROGRAM

### Application For Permit To Appropriate Water For Irrigation

Type of Application:  New  Vested Right  Amendment/Correction to Permit No. \_\_\_\_\_

(Use predates Mar 2, 1955)

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

1. Name of Applicant IRAM Phone 605 745 6339  
 (check one)  Owner  Tenant/lessee

Mailing Address BOX 932 HOT SPRINGS State SD 57747  
 (Street, RR, or Box and City) (Zip Code)

2. Amount of water claimed 1.85\*CFS or 835\*\*GPM \*\*\*AF Total Acreage 139  
 (\*Cubic Feet per Second) (\*\*Gallons per Minute) (\*\*\*)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply WELL TO BE DRILLED BY WILLIS BENECAUD

4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County FALL RIVER

1 WELL IN 35-85-4E (S1/2 SW1/4)

5. County or counties where water will be used FALL RIVER

6. Annual period during which water is to be used APRIL TO OCT 31

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.  
 (Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
<u>S1/2 35-85-4e</u>	<u>139</u>		
<u>See breakdown on map</u>			

8. Give a description of the project. (Attach sheet if more space is needed)

INTEND TO IRRIGATE WITH PIVOTS.

STATE OF SOUTH DAKOTA) SS  
 County of Fall River

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, Dayton Hyde, 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.

Applicant's signature Dayton O. Hyde, President  
*Dayton O. Hyde, President*

Subscribed and sworn to before me this 29th day of January 2008

Cathy Olted  
 Notary Public signature



**SOUTH DAKOTA**  
**WATER PERMIT NO. 2626-2**

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Date of first receipt of application January 30, 2008.

Date of return to applicant for corrections, amendments or changes January 30, 2008.

Date of receipt of corrected application February 5, 2008.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2626-2 to IRAM, PO Box 932, 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. 2626-2 appropriates 1.85 cubic feet of water per second from one well approximately 500 feet deep located in S 1/2 SW 1/4 Section 35 to irrigate 139 acres located in portions of the S 1/2 Section 35; all in T8S-R4E.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: April 1 – October 31.
3. The date from which applicant may claim right is January 30, 2008.
4. The date of approval of Permit No. 2626-2 is April 28, 2008.
5. One-fifth of the construction is to be completed on or before October 28, 2010.
6. All construction is to be completed on or before April 28, 2013.
7. Water is to be put to beneficial use on or before April 28, 2017.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

**QUALIFICATIONS**

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 2626-2 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

**WATER MANAGEMENT BOARD**

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

MAY 16 2008  
date



## Supplemental Information

(type or print in ink)

### 1. Well Information - Proposed Construction

- a) Drill Hole Diameter 8" 10" Depth 500 FT +
- b) Casing Type STEEL Diameter 4" 5" Thickness \_\_\_\_\_
- c) Screen Type \_\_\_\_\_ Diameter \_\_\_\_\_ Thickness \_\_\_\_\_
- d) Gravel Pack \_\_\_\_\_ Length of Gravel Pack \_\_\_\_\_
- e) Depth to Top of Water Bearing Material \_\_\_\_\_
- f) Depth to Water (ground surface to water level) \_\_\_\_\_
- g) Distance to nearest existing domestic well: 600' ft to our house well. Of proven agricultural QUALITY.  
 On applicants property YES On property owned by others \_\_\_\_\_

### 2. Wastewater Disposal System Information

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

### 3. Dugout Information

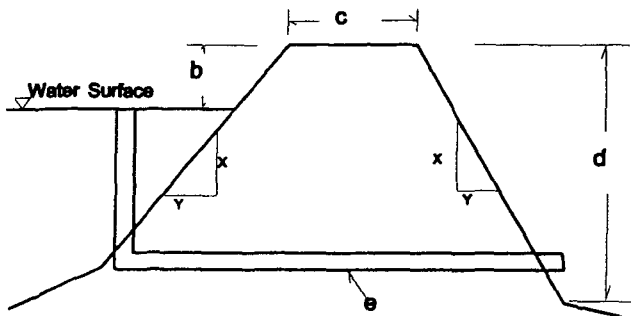
- a) Surface Dimensions \_\_\_\_\_ Depth \_\_\_\_\_
- b) Depth to water (ground surface to water level) \_\_\_\_\_

### 4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

\_\_\_\_\_  
 \_\_\_\_\_

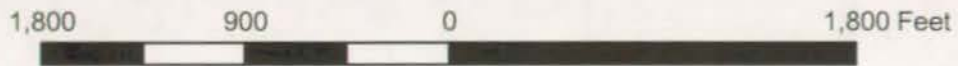


- b) Freeboard \_\_\_\_\_
- c) Crest Width \_\_\_\_\_  
Crest Length \_\_\_\_\_
- d) Height \_\_\_\_\_
- e) Primary Outlet Capacity \_\_\_\_\_  
If pipe, diameter \_\_\_\_\_
- f) Secondary Spillway Capacity \_\_\_\_\_  
Spillway Width \_\_\_\_\_
- g) X & Y Slope \_\_\_\_\_  
Upstream \_\_\_\_\_  
Downstream \_\_\_\_\_
- h) Surface Area of Impoundment \_\_\_\_\_
- i) Storage \_\_\_\_\_ Acre Feet
- j) Drainage Area Above Dam \_\_\_\_\_ Acres





Section 35, T8S, R4E



Approximate breakdown of acreage by quarter-quarter based on map (all in Section 35, T8S, R4E)

NW 1/4 SW 1/4	11	NW 1/4 SE 1/4	26
NE 1/4 SW 1/4	36	NE 1/4 SE 1/4	11
SW 1/4 SW 1/4	33	SW 1/4 NE 1/4	3
SE 1/4 SW 1/4	9	SE 1/4 NE 1/4	10

Total - 139 acres

*Eric Gronlund*  
 Eric Gronlund  
 Water Rights Program, DENR





United States Department of Agriculture  
Farm Service Agency

35-8S-4E

## Fall River County, SD

1:8,561

*proposal*

*--- irrigated area*  
*X proposed well location*



*Ky Bent*  
*NRES D.C.*  
*1/4/08*

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FEB - 5 2008

WATER RIGHTS PROGRAM

April 09, 2007



# RECEIPT

## WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 1/30, 20 08

RECEIVED OF Institute of Range & American Mustang PO Box 998 Hot Springs SD 57747

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

Fee for Application for Permit No. <u>2626-2</u> to Appropriate Water, to construct and to put water to beneficial use	250	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>2626-2</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	300 00

No.

03441

By

Jalal Emile  
Chief Engineer

Chief Engineer



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

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WATER RIGHTS  
PROGRAM

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 30, 2008

IRAM  
c/o Dayton Hyde  
PO Box 932  
Hot Springs SD 57747

Dear Mr. Hyde:

Thank you for submitting the *Application for a Permit to Appropriate Water* for irrigation in Fall River County. In order to complete the application the following is required.

- Enclosed is the aerial photo map submitted with the application. Please mark the proposed location of the well with an "X" and outline the acres to be irrigated. *SEE MAP*
- Item No. 2 of the application indicates the total acreage as 200 acres. Item No. 7 indicates the acreage as 130 acres. Which amount is correct? An additional \$25.00 will be required if you are proposing to irrigate 200 acres. The area outlined on the map needs to correspond with the proposed number of acres to be irrigated.
- Regarding the amount of water claimed, State Statutes limit diversions to 1 cubic feet of water per second (cfs) for each 70 acres irrigated. This would mean that you are allowed approximately 1.85 cfs or 835 gpm to irrigate 130 acres. We understand that in order to accommodate certain irrigation methods, a greater diversion rate is required. Please justify in writing your request for a diversion rate greater than the statutory limit.  
*NEED 835 GPM FOR PIVOT IRRIGATION.*
- Enclosed is the Form 2A, Supplemental Information. Please complete Item No. 1 regarding the Well Information – Proposed Construction.
- If available, please submit a well log or test hole log signed by a licensed South Dakota well driller.

If you have any questions, please contact me.

Sincerely,

*Karen Schlaak*

Karen Schlaak  
Water Rights Program  
605 773-3352  
[karen.schlaak@state.sd.us](mailto:karen.schlaak@state.sd.us)

enclosure





**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)

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT  
APPLICATION NO. 2626-2, IRAM**

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. 2626-2, IRAM, c/o Dayton Hyde, PO Box 932, Hot Springs SD 57747.

The Chief Engineer is recommending APPROVAL of Application No. 2626-2 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:

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 2626-2 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Garland Erbele, Chief Engineer  
March 24, 2008

NOTE: Please carefully review the staff report prepared by Ken Buhler. The report indicates that based on the information provided the well could be completed into either the Inyan Kara Aquifer, Unkpapa Aquifer or the Sundance Aquifer. Water Rights are issued from a specific water source. Based on the proposed well information provided with the application the source of the water supply can not be clearly determined.

The report concludes that it is unlikely that a well supplied into either the Inyan Kara Aquifer, Unkpapa Aquifer or the Sundance Aquifer will supply the requested appropriation of water.

An important consideration in developing an irrigation project is assessing the compatibility of the soils with the quality of the water to be used for irrigation. The staff report on this application indicates that the aquifers are classified "high to very high salinity hazard" and "medium sodium hazard". This water may not be suitable for irrigation. I encourage you to have a soil scientist conduct a soil/water compatibility analysis to see if a successful irrigation project can be developed.

WATER PERMIT APPLICATION NO. 2626-2  
IRAM  
FEBRUARY 15, 2008

Water Permit Application No. 2626-2 proposes to appropriate 1.85 cubic feet of water per second from one well, approximately 500 feet deep, located in the S½ SW¼ Section 35, T8S-R4E, Fall River County. The water will be used to irrigate 139 acres located in portions of the S½ Section 35, T8S-R4E.

**AQUIFER:** Inyan Kara Group, Unkpapa Sandstone or Sundance Formation?

A log of a test well or a test hole was not submitted with this application as required by Water Management Board Rule 74:02:01:08.01. The applicant's estimated well depth of 500 feet could be a miscalculation for an intended target of either the Inyan Kara aquifer or the Unkpapa aquifer, or the well would be completed into the Sundance aquifer.

**GEOLOGY AND AQUIFER CHARACTERISTICS:**

**Inyan Kara aquifer:**

The Inyan Kara aquifer consists of the Fall River Formation and the underlying Lakota Formation. The two formations are probably hydraulically connected and therefore can be considered a single aquifer. In general, the Inyan Kara aquifer consists of interbedded sandstone (thin bedded to massive), siltstone, and shale. The aquifer is areally extensive, underling over 36,000 square miles of western South Dakota (Allen and others, 1985). The aquifer underlies 917,760 acres and contains an estimated 22,370,400 acre-feet of recoverable water in storage in Fall River County alone (Allen and others, 1985). Recharge to the aquifer occurs primarily through infiltration of precipitation at the outcrop. Average annual recharge to the Inyan Kara aquifer in the Black Hills area, from 1950 through 1998, was estimated to be 11,600 acre-feet annually (Driscoll and Carter, 2001).

There are 174 Water Rights/Permits appropriating water from the Inyan Kara aquifer in South Dakota. The average annual withdrawals from the aquifer from the Black Hills area, where the majority of water rights are located, for the period from 1950-1998 was estimated to be 1,400 acre-feet/year (Driscoll and Carter, 2001). Viewed from a simple water balance perspective, it is clear that the average annual withdrawal from the aquifer is less than the average annual recharge to the aquifer. A water budget is not intended to suggest that all of the water that is in storage in the Inyan Kara or that all of the recharge is available for this appropriation, merely to demonstrate that in general the Inyan Kara aquifer is an immense resource that is relatively untapped.

The well site proposed by this application is located within the Cheyenne River floodplain where Quaternary aged alluvium shrouds the bedrock. However, it appears that geologically, the well site is located on the outcrop of the Chilson Member of the Lakota Formation (Post, 1967). The Chilson is the lowest unit of the Lakota Formation; consequently it is at the bottom of the Inyan Kara. The Chilson consists of three distinct lithologies- sandstone, interbedded sandstone and mudstone, and mudstone (Post, 1967). Generally in this area, the total thickness of the Chilson ranges from 209-410 feet thick, with an average thickness estimated to be 325 feet in this area (Post, 1967). At the well site proposed by this application, the upper portion of the Chilson has been removed by erosion



and the total Inyan Kara thickness is expected to be less than 250 feet. The potentiometric surface of the Inyan Kara is expected to be near ground surface at this proposed well site (Strobel and others, 2000), so a well in the Inyan Kara aquifer may flow.

Aquifer characteristics for the Inyan Kara have not been delineated at this site. Regional estimates of the transmissivity of the Inyan Kara aquifer range from 0.86-6000 ft<sup>2</sup>/d (6 to 44,876 gallons per day per foot), and estimates of storage coefficient range from 2.5x10<sup>-5</sup>- 1.0x10<sup>-4</sup> (Driscoll and others, 2002). An aquifer test conducted in the Chilson Member of the Lakota, about 20 miles west-northwest of this proposed well site identified a transmissivity of 1,400 gallons per day per foot and a storage coefficient of 1.8x10<sup>-4</sup> (Boggs and Jenkins, 1980).

Assuming a thickness of 250 feet and applying a transmissivity of 1,400 gallons per day per foot, it would be optimistic to assume a well yield in excess of 250 gallons per minute. It is unlikely that a well completed into the Inyan Kara aquifer at this site would yield the 1.85 cfs (830 gpm) proposed by this application.

**Observation Well Data:**

The Water Rights Program monitors seven observation wells completed into the Inyan Kara aquifer in the Black Hills area. Water Rights' Observation Well FR-95C is located about seven miles east of this proposed well site. The hydrograph for the well is shown below in figure 1.

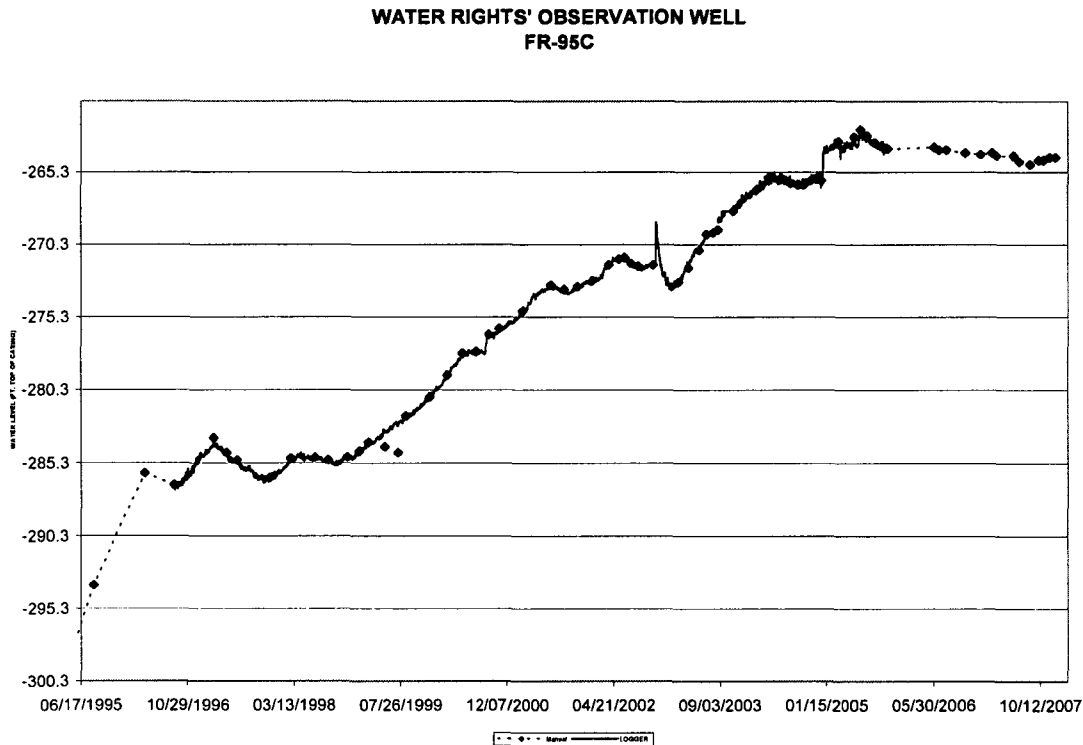


Figure 1. Hydrograph of an observation well completed into the Inyan Kara aquifer approximately seven miles east of the well site proposed by Application No. 2626-2

The hydrograph documents that the water level of the aquifer has fluctuated, and in general, has risen about 36 feet over the period of record. It is clear from the data that the aquifer recharges readily (Water Rights, 2008a). The hydrograph indicates water is available for this appropriation.

### **Unkpapa Sandstone:**

In this area, the Unkpapa Sandstone either directly underlies the Inyan Kara Group, or is separated from it by less than 20 feet of the Morrison Formation (Post, 1967). Although the Unkpapa is not typically considered to be a major aquifer it “may be capable of supplying modest amounts of water in western South Dakota” (Rahn, 1979). Locally, the Unkpapa may be hydraulically connected to the Inyan Kara aquifer. There are only four Water Rights/Permits appropriating water from the Unkpapa Sandstone in South Dakota. In general, the Unkpapa Sandstone can be described as is a massive fine grained sandstone with a clayey matrix (Rahn, 1979). The Unkpapa Sandstone consists of three lithologic units- a fine grained, well sorted, argillaceous sandstone lower half; a very fine grained sandstone or siltstone; and an argillaceous siltstone and claystone at the top (Post, 1967). The average porosity of the Unkpapa is estimated to be 12% and the effective porosity is estimated to be 3% (Rahn, 1979). In this area, the Unkpapa attains a maximum thickness of about 250 feet, a minimum thickness of 50 feet and an average thickness of 150 feet (Post, 1967). The Unkpapa Sandstone is expected to occur from approximately 250-400 feet below grade in this area. The Unkpapa is recharged through infiltration of precipitation at the outcrop and possibly through streamflow losses. The average annual recharge has not been estimated for the Unkpapa. The amount of recoverable water in storage if the Unkpapa Sandstone has not been quantified for this area.

The Water Rights Program does not monitor any observation wells completed into the Unkpapa aquifer. Historic water level data is not available to determine water level trends for the aquifer, if any.

### **Sundance Formation:**

The Sundance Formation underlies the Unkpapa Sandstone in this area so the top of the formation should be about 400 feet below grade at this well site. In general the Sundance can be described as a shale interbedded with glauconitic, fine-grained sandstone and limestone (Rahn, 1979). The Sundance Formation underlies 1,068,800 acres of Fall River County and contains an estimated 11,222,400 acre-feet of recoverable water in storage in the county (Allen and others, 1985). The Sundance Formation is expected to be around 370 feet thick in this area (Post, 1967). The Sundance consists of five major lithologic subdivisions, from top to bottom-Redwater Shale Member, Lak Member, Hulett Sandstone Member, Stockade Beaver Shale Member and the Canyon Springs Sandstone Member (Post, 1967). A 500 feet deep well at the location proposed by this application would probably be completed into the Redwater Shale member of the Sundance formation. The Redwater Shale is a shale and argillaceous siltstone with thin beds of limestone and glauconitic sandstone. The Redwater Shale member is not likely to supply more than “modest” yields to wells. There are only five water rights/permits appropriating water from the Sundance Formation in South Dakota.

### **EXISTING WATER RIGHTS:**

The nearest groundwater appropriation, Water Permit No. 2429-2, Sheps Canyon Cove, LLP, is an appropriation from the Inyan Kara aquifer located approximately 8.25 miles east of the well site

proposed by this application (Water Rights, 2008b). It is unlikely that interference between this proposed well and the well that supplies Water Permit No. 2429-2 would be adverse, regardless of the water source, due to the distance between the wells. There are two future use permits reserving water from the Madison aquifer within approximately five miles of this proposed well site: Future Use Permit No 2580-2, Southern Black Hills Water System; and Future Use permit No. 2560-2, Fall River Water User District. Approval of Application No. 2626-2 should not limit development from the future use permits since they do not have common water sources.

The Water Rights Program has record of a number of domestic wells completed in this area (Water Rights, 2008c). The area domestic wells appear to primarily be completed into the Inyan Kara aquifer. The potential affect of this appropriation on these domestic wells must be considered. An "Adversely impacted domestic well" is defined by ARSD 74:02:04:20(7), as a well that was constructed to allow the pump intake to be set at least 20 feet below the top of the aquifer, in which the water level of the aquifer has declined to a level that the pump will no longer deliver sufficient water for the well owner's needs. It is likely that regardless of the aquifer this appropriation is from or the aquifer the domestic well is completed into, it would still be capable of delivering sufficient water with a pump inlet placed near the top of the aquifer. Therefore adverse impact to domestic wells is not probable.

#### Cascade Springs

The well site proposed by this application is located approximately three and one-half miles southwest of Cascade Springs which is a large artesian spring. The potential water sources for this appropriation (i.e. Inyan Kara, Unkpapa, and Sundance) are not typically considered potential sources of Cascade Springs. Therefore, discharge of Cascade Springs is not likely to be impacted by this appropriation.

#### IRRIGATION SUITABILITY

The source of the water this application proposes to use for irrigation is unknown. Water from the Lakota Formation is classified "High to Very High Salinity Hazard" and "Medium Sodium Hazard". Water quality information and the water's suitability for irrigation is unknown for the Unkpapa Sandstone. Water from the Sundance Formation is classified "Very High Salinity Hazard" and "Medium Sodium Hazard" to "High Sodium Hazard" (Keene, 1973).

Very high salinity water is not suitable for irrigation under ordinary conditions. Medium sodium water could present a sodium problem in certain fine textured soils, and High sodium water may present problems in most soils (Keene, 1973).

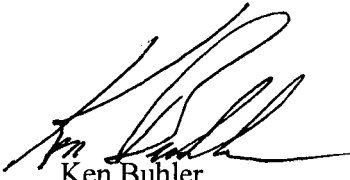
#### CONCLUSIONS:

1. A log of a test well or a test hole was not submitted with this application as required by Water Management Board Rule 74:02:01:08.01. The information provided with the application is insufficient to determine which of three aquifers is the intended water source for this appropriation.
2. The Inyan Kara aquifer is a viable aquifer in this area, and water is available for this appropriation. Comparison of the estimated annual recharge to the aquifer with the water



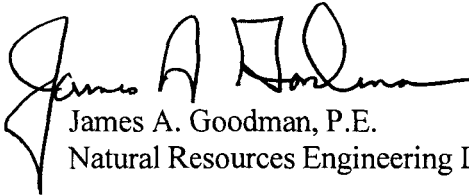
use estimated from the aquifer, and the observation well data indicate unappropriated water is available from the Inyan Kara aquifer.

3. The Unkpapa aquifer is a viable aquifer in this area, and there is a reasonable probability that unappropriated water is available for this appropriation.
4. The Sundance aquifer is a viable aquifer in this area, and there is a reasonable probability that unappropriated water is available for this appropriation.
5. Well interference should not be a problem at the proposed well site because of the distance from existing wells.
6. It is unlikely that a well completed into either the Inyan Kara aquifer, the Unkpapa aquifer or the Sundance aquifer would supply 1.85 cfs.
7. Limited information is available regarding the water quality of this source and suitability for irrigation use.



Ken Buhler  
Natural Resources Engineering Specialist

approved by



James A. Goodman, P.E.  
Natural Resources Engineering Director

## REFERENCES:

- Allen, J.C., Iles, D.L., and Petres, A.K., 1984, Analysis of Groundwater and Streamflow Data Western Dakotas Region of South Dakota, Tasks 3A.B.C. and 4A.B.: Groundwater Resource Inventory: South Dakota Department of Water and Natural Resources,
- Boggs, J.M., and Jenkins, A.M., 1980, Analysis of aquifer tests conducted at the proposed Burdock Uranium Mine Site, Burdock, South Dakota: Norris, Tenn., Tennessee Valley Authority, Office of Natural Resources, Division of Natural Resources, Water System Development Branch, report No. WR28-1-520-109, 73 p.
- Driscoll, D.G., and Carter, J.M., 2001, Hydrologic Conditions and Budgets for the Black Hills of South Dakota, Through Water Year 1998: U.S. Geological Survey Water-Resources Investigations Report 01-4226, 143 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.
- Keene, J.R., 1973, Ground-water Resources of the Western Half of Fall River County, South Dakota: South Dakota Geological Survey Report of Investigations 109, 90 p.
- Rahn, P.H., 1979, Ground Water Resources of Western South Dakota: U.S. Army Corps of Engineers, SDSM&T Project #2533
- Strobel, M.L., Galloway, J.M., Hamade, G.R., and Jarrell, G.J., 2000, Potentiometric Surface of the Inyan Kara Aquifer in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-745, 3 sheets, scale 1:100,000
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- Water Rights, 2008a, "Observation Well Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501
- Water Rights, 2008b, "Water Right/Permit Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501
- Water Rights, 2008c "Well Completion Report Files" DENR-Water Rights Program, Joe Foss Building, Pierre, SD 57501



COPY

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)

February 6, 2008

Daayton Hyde  
IRAM  
PO Box 932  
Hot Springs SD 57747

Dear Mr. Hyde:

The Water Rights Program has received IRAM's water right permit application for irrigation in Fall River County. Based on the area outlined on the map submitted with the application, I approximated the number of acres to be irrigated in each quarter-quarter section. The enclosed map provides a breakdown of the acres. Please note that I arrived at a total number of acres of 139 instead of the 130 acres listed on the application.

I intend to amend IRAM's application to reflect 139 acres with the breakdown of acres represented on the map. Please let me know if this is not acceptable to you.

Sincerely,

Eric Gronlund  
Water Rights Program, DENR  
605 773-3352  
[eric.gronlund@state.sd.us](mailto:eric.gronlund@state.sd.us)

enclosure



Form 8

203

NOTICE OF APPLICATION NO. 2626-2 TO APPROPRIATE WATER

Notice is given that IRAM, c/o Dayton Hyde, PO Box 932, Hot Springs SD 57747 has filed an application for a water permit to appropriate 1.85 cubic feet of water per second from one well approximately 500 feet deep located in S1/2 SW1/4 Section 35 to irrigate 139 acres located in portions of the S1/2 Section 35; all in T8S-R4E.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2626-2 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 this applications, 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 this 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 recommendations 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 April 25, 2008.

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.

/s/Steven M. Pimer  
Steven M. Pimer, Secretary,  
Department of Environment and natural Resources.

April 08, 15

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA )  
County of Fall River ) SS  
I, BREH NACHTGALL, Publisher

certify that the attached printed Notice was taken

from the Hot Springs Star

printed and published in Hot Springs, S.D.

County of Fall River and

state of South Dakota. The notice was published

in the newspaper on the following two dates:

Tuesday, April 8<sup>th</sup> - and -

Tuesday, April 15<sup>th</sup>

Cost of Printing \$42.<sup>37</sup>

B. Nachtgall  
(Signature)

Publisher  
(Title)

4-15-08  
(Date Signed)



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

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

March 25, 2008

Hot Springs Star  
PO Box 1000  
Hot Springs SD 57747

ATTENTION: Legal Public Notice

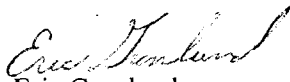
Enclosed is a Notice on Application No. 2626-2 to Appropriate Water to be published twice. Please publish the first notice on April 1, 2008 with the second publication 7 days later. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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 IRAM, c/o Dayton Hyde, PO Box 932, Hot Springs SD 57747 (Ph # 605-745-6339).

**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. 2626-2

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

Date \_\_\_\_\_

We are in receipt of your letter of March 25, 2008 enclosing Notice to Appropriate Water by Application No. 2626-2 which was first published in our issue of \_\_\_\_\_. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

\_\_\_\_\_  
Name

\_\_\_\_\_  
Newspaper



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)

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

March 25, 2008

IRAM  
Dayton Hyde  
PO Box 932  
Hot Springs SD 57747

Dear Mr. Hyde:

Water Permit Application No. 2626-2 for irrigation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice 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 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 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. 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.

Instruction to Newspaper - Publish first Notice on April 1, 2008 with the second publication 7 days later. The applicant is responsible for payment.

---

NOTICE OF APPLICATION NO. 2626-2 to Appropriate Water

Notice is given that IRAM, c/o Dayton Hyde, PO Box 932, Hot Springs SD 57747 has filed an application for a water permit to appropriate 1.85 cubic feet of water per second from one well approximately 500 feet deep located in S ½ SW ¼ Section 35 to irrigate 139 acres located in portions of the S ½ Section 35; all in T8S-R4E.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2626-2 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 this 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 this 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 recommendations 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 April 18, 2008.

25

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.

**Schlaak, Karen**

---

**From:** Schlaak, Karen  
**Sent:** Tuesday, April 01, 2008 2:07 PM  
**To:** 'Hot Springs Star (hsstar@gwtc.net)'  
**Subject:** Notice for Application No. 2626-2

Cheryl,

Attached is the notice for Application No. 2626-2, IRAM.

Please publish now on April 8 and 15th.

Thanks,  
Karen Schlaak  
Water Rights Program  
605 773-3352



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)

MAY 1 6 2003

IRAM  
Dayton Hyde  
PO Box 932  
Hot Springs SD 57747

Dear Mr. Hyde:

Enclosed is Water Permit No. 2626-2 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,

A handwritten signature in cursive script that reads "Garland Erbele".

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

enclosures





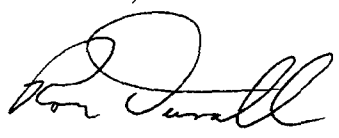
DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES

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

January 23, 2009

NOTICE

TO: IRAM, DAYTON HYDE, BOX 932, HOT SPRINGS, SD 57747 0932
FROM: Ron Duvall, Natural Resources Engineer
for Garland Erbele, Chief Engineer
Water Rights Program



SUBJECT: Reporting Requirement for 2008 Irrigation Questionnaire(s)

Our records indicate that the 2008 Irrigation Questionnaire(s) has not been submitted for Permit No(s) 2626-2. The request for the Questionnaire was dated October 24, 2008. The Water Management Board has directed that owners of water permits who have not submitted the 2008 Irrigation Questionnaire(s) be given notice of permit violation and a hearing to be held by the Board. The hearing is to determine what action is to be taken for violation of Water Permit No(s) 2626-2 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

The hearing will be held at 10:00 am, March 11, 2009 in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Avenue, Pierre, SD and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to Chapter 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation, or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

- 1 Suspend or cancel Permit No(s) 2626-2 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. Take no action.

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

If the questionnaire(s) is (are) received in this office on/or before March 6, 2009, you will no longer be in violation of your permit and your name will be deleted from the Board agenda. Enclosed are additional questionnaire(s) for your use. If you have questions or need assistance, please contact Genny McMath at (605) 773-3352. If you prefer, you can complete the questionnaire on-line at the following link:
https://www.state.sd.us/eforms/secure/eforms/E0455V7-IQ.pdf

NOTE: Please contact the Water Rights Program, Joe Foss Building, 523 E Capitol, Pierre, SD (605-773-3352) to assure access to the meeting room for the handicapped or to obtain an interpreter for the hearing impaired.

2626-2



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# Track & Confirm

## Search Results

Label/Receipt Number: **2303 2160 0000 0802 6883**  
Status: **Delivered**

Your item was delivered at 4:09 PM on January 29, 2009 in HOT SPRINGS, SD 57747. The item was signed for by S WATT.

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SIGNATURE CONFIRMATION NUMBER:  
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IRAM  
DAYTON HYDE  
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HOT SPRINGS SD 57747 0932

Waiver of Signature    YES    NO

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**DEPARTMENT of ENVIRONMENT  
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[www.state.sd.us/denr](http://www.state.sd.us/denr)

February 17, 2009

2626-2

Dayton Hyde  
IRAM  
Box 932  
Hot Springs SD 57747-0932

Dear Mr. Hyde:

I am writing to acknowledge receipt of your 2008 irrigation questionnaire. You may disregard the January 23, 2009, "Notice" concerning reporting requirements for Water Permit No. 2626-2.

The information was received in our office prior to the Water Management Board meeting and your name has been deleted from the agenda.

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](mailto:genny.mcmath@state.sd.us)