

# MEMORANDUM

**Date:** January 17, 2012  
**To:** Water Right File 21-7567  
**From:** medl  
**Re:** license review

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## **Applicant**

Fall River Rural Electric Cooperative, Inc, is registered with IDSOS as C20174. The application for permit was filed in this name. However, the permit was issued to variation in the name which appears to be department error.

According to available Fremont County taxlot information both the POD and the POU are on property held by the applicant.

## **Place of Use**

The place of use is a warehouse and office complex with ~ 28 employees. The facility operates one shift per day, 5 days a week. IDWR Eastern Region personnel created the both the POU and POD shapes.

## **Source and POD**

A single, cool-water well provides source water for the heating/cooling and domestic uses. I located a copy of the Well Driller s Report to production well log and worked with groundwater protection to correlate that log to the POD.

I requested and received the Sanitary Survey records from District Seven Health Department for their inspection dated October 4, 1999 of this same well and system. This system has PWS # 7220131.

## **Point of Injection**

Spent water from the heating/cooling use is discharged to an injection well located on the property. The applicant has injection well permit # 21W009001. UIC records show that the injection well was formerly an irrigation well and was drilled November 19, 1979 by Independent Drilling, Blackfoot Idaho. The location of this well not been confirmed.

POU overlap analysis shows that the property is within the service territory of several irrigation companies, but no individual, irrigation water right covers the place-of-use. The injection well, formerly an irrigation well, does not appear to have been associated with a water right.

At the time of the exam, the examiner found several ponds and sketched their location in his report. The ponds were developed to collect spent cooling/heating system water which was overflowing from the injection well. That they existed in mid-August, when cooling/heating would have been minimal is an indication the injection well was not functioning satisfactorily.

Changes have been made to the system and the ponds no longer exist.

## **Water Use**

The examiner conducted his exam August 18, 1999. Available weather data for Ashton Idaho for that day shows: max temperature 88 deg F, min temperature 43 deg F and average temperature 65 deg F. It was unlikely that the examiner was able to confirm either heating or cooling uses that day. No measurements were taken. I believe that only the domestic use would have been evident at the time of the exam. The examiner recommends domestic, heating and cooling uses.

### Heating/Cooling use

The climate for Ashton is mild in summer with typically 14 Cooling Degree Days (CDD) per year. In contrast Ashton typically has 8662 Heating Degree Days (HDD) in the winter season. The same heat pump system provides both heating and cooling for this commercial facility.

When the permit application was reviewed for approval, an inventory of the expected heat pumps was provided by the applicant. 10 heat pumps, in 4 different operation capacities were anticipated and were installed. The examiner bases his heating/cooling recommendation on a theoretical pump calculation and the rate limit of the permit. He does not provide a schematic showing that all units were configured to operate simultaneously or other justification for his recommendation.

Contemporary spec sheets from Econar GeoSystems website do not match the design capacities which were provided by the applicant at permitting. I called Econar tech support on 1/13/2012 and confirmed the design flow rates for each unit and that all of the units could be operated simultaneously. It is unlikely that all of them would be operating at the same time, but they could be if the well and well pump were adequate.

The system provided more heating BTU/hr than cooling BTU/hr for the same flow rates. I recommend 0.19 cfs, the accumulated rate from all 10 heat pumps, as both the heating and cooling rate.

I calculated the volume based on an adaptation of ASHRAE heating degree day, (HDD) energy estimation method. I used the HDD from 1985, which I have found to be the year with the most HDD in recent 30-year normals. NOAA's National Climatic Data Center (NCDC) summary for 1985 at Ashton, Idaho (Co-op station #100470) shows 9323 as the HDD. I calculated the volume of water beneficially used for space heating using the following equation:

$$\text{Vol} = (\text{HL} \times \text{HDD} \times 24 \times \text{Cd}) / (\text{deltaT1} \times \text{k} \times \text{C} \times \text{deltaT2}), \text{ where}$$

HL = 700800 BTU (sum of unit capability provided by spec sheet)

HDD = 9323 (from 1985 data for Ashton, Idaho)

24 = 24 hr/day

Cd = 0.65 (factor to account for construction standard)

DeltaT1 = 72 deg F (design indoor temp minus design outdoor temp)

K = 0.9 (factor to account for losses)

C =  $2.72 \times 10^6$  BTU/AF-def F (constant to correct for units)

DeltaT2 = 10 deg F (temp of incoming water minus temp of outgoing)

My recommended heating volume = 57.83 AF rounded to 3 significant figures is 57.8 AF.

Because the typical number of CDDs is very small compared to the typical number of HDDs at this location, and because the hydronic portion of the system would not likely be used for cooling, the volume of water used for cooling is negligible. I recommend a combined volume for these two uses.

The 10-ton heat pumps serving the hydronic system were not designed to operate in an open loop groundwater system. The applicant's system was such a system. Without a heat exchanger between the groundwater and the floor heating loops, the hydronic loops plug and fail. Each of the 10-ton units would have been serving a separate hydronic loop embedded in the warehouse floor. The examiner does not mention any heat exchangers. I have assumed there were none.

In the contemporary system, all of the heat pumps which had served the warehouse have been replaced by a boiler. Therefore the current rate of water used in heating/cooling is considerably less than what could have been developed in 1999.

### Domestic use

This facility operates with 28 employees in one shift per day, 5 days per week. The rate recommended by the examiner appears excessive. This facility does not appear to have either showers or a cafeteria to justify the examiner's recommendation.

The examiner's recommendation does not consider other physical constraints that are on the system. The 1997 Region Seven sanitary survey of the effluent system shows a drainfield and lists the expected

the daily average discharge at 750 gpd. (0.001 cfs) The District Health inspector estimates the discharge at 20 gal per day per person in this commercial facility. Engineering design standards (Metcalf & Eddy, p18)<sup>i</sup> indicate that rates from 8 - 20 gal per person per day are reasonable for a light commercial-office use. I believe 20 gpd per capita is a more realistic rate than the rate recommended by the examiner. I recommend the minimum rate, 0.01 cfs for domestic use.

I recommend a volume based on 261 business days per year (261 = 365 - 104 weekend days.) The calculation is: 560 gal/day ( = 20 gal per employee x 28 employees) for 261 days per year = 146160 gal per year or 0.448 acre-ft per year.

**Status and Combined Use**

Heating and cooling uses are limited to 57.8 AFA

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<sup>i</sup> Metcalf & Eddy, Inc, Wastewater Engineering Treatment, Disposal, and Reuse, 3<sup>rd</sup> ed. New York: McGraw-Hill, Inc., 1991

|                                                                                                      |       |                     |                                     |                      |                       |                      |                       |
|------------------------------------------------------------------------------------------------------|-------|---------------------|-------------------------------------|----------------------|-----------------------|----------------------|-----------------------|
| <b>21-7567 (Fall River Rural Electric Cooperative, Inc.)</b>                                         |       |                     |                                     |                      |                       |                      |                       |
|                                                                                                      |       |                     | Summary of Heat Pump Specifications |                      |                       |                      |                       |
| unit                                                                                                 | count | unit flow rate(gpm) | total flow rate (gpm)               | unit heating(BTU/hr) | total heating(BTU/hr) | unit cooling(BTU/hr) | total cooling(BTU/hr) |
| 10 ton**                                                                                             | 3     | 16                  | 48                                  | 125000               | 375000                | 126000               |                       |
| 5 ton                                                                                                | 2     | 8                   | 16                                  | 62100                | 124200                | 49500                | 99000                 |
| 4 ton                                                                                                | 3     | 6                   | 18                                  | 55000                | 165000                | 52500                | 157500                |
| 1.5 ton                                                                                              | 2     | 2                   | 4                                   | 18300                | 36600                 | 18700                | 37400                 |
|                                                                                                      | 10    |                     | 86                                  |                      | 700800                |                      | 293900                |
|                                                                                                      |       |                     | ~0.19 cfs                           |                      |                       |                      |                       |
| ** These units are no longer in service                                                              |       |                     |                                     |                      |                       |                      |                       |
| I do not believe that the hydronic loops under the warehouse floor would have been used for cooling. |       |                     |                                     |                      |                       |                      |                       |



# IDAHO SECRETARY OF STATE

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Ben Ysursa, Secretary of State

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### FALL RIVER RURAL ELECTRIC COOPERATIVE, INC.

1150 N 3400 E  
 ASHTON, ID 83420

**Type of Business:** CORPORATION, COOPERATIVE MARKETING ASSOC.

**Status:** GOODSTANDING, ANREPT SENT 03 Oct 2011

**State of Origin:** IDAHO

**Date of Origination/Authorization:** 14 Dec 1938

**Current Registered Agent:** BRYAN CASE  
 1150 N 3400 E  
 ASHTON, ID 83420

**Organizational ID / Filing Number:** C20174

**Number of Authorized Stock Shares:**

**Date of Last Annual Report:** 07 Oct 2011

#### Original Filing:

**Filed 14 Dec 1938** INCORPORATION

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#### Amendments:

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**Amendment Filed 02 Jul 1979** OTHER - R/A

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**Amendment Filed 12 Jan 1989** OTHER - ARTICLES OF AMENDMENT

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**Amendment Filed 12 Jan 1989** ARTICLES RESTATEMENT

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**Amendment Filed 09 Dec 1996** REINSTATEMENT

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**Amendment Filed 13 Sep 1999** ARTICLES RESTATEMENT

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Comments, questions or suggestions can be emailed to: [sosinfo@sos.idaho.gov](mailto:sosinfo@sos.idaho.gov)

# ASHTON, IDAHO

## Period of Record General Climate Summary - Heating Degree Days

| Station:(100470) ASHTON                               |      |      |      |      |     |      |      |      |      |      |      |      |        |
|-------------------------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|--------|
| From Year=1897 To Year=2011                           |      |      |      |      |     |      |      |      |      |      |      |      |        |
| Heating Degree Days for Selected Base Temperature (F) |      |      |      |      |     |      |      |      |      |      |      |      |        |
| Base                                                  | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| 65                                                    | 1441 | 1201 | 1108 | 723  | 448 | 232  | 65   | 94   | 315  | 646  | 1019 | 1371 | 8662   |
| 60                                                    | 1286 | 1060 | 953  | 574  | 301 | 120  | 17   | 29   | 183  | 491  | 869  | 1216 | 7099   |
| 57                                                    | 1193 | 975  | 860  | 485  | 221 | 72   | 7    | 14   | 122  | 400  | 779  | 1123 | 6249   |
| 55                                                    | 1131 | 918  | 798  | 426  | 174 | 48   | 3    | 8    | 89   | 340  | 719  | 1061 | 5716   |
| 50                                                    | 976  | 777  | 643  | 288  | 82  | 14   | 0    | 1    | 35   | 206  | 569  | 906  | 4499   |

Heating Degree Day units are computed as the difference between the base temperature and the daily average temperature. (Base Temp. - Daily Ave. Temp.) One unit is accumulated for each degree Fahrenheit the average temperature is below the base temperature. Negative numbers are discarded. Example: If the days high temperature was 65 and the low temperature was 31, the base 50 heating degree day units is  $50 - ((65 + 31) / 2) = 2$ . This is done for each day of the month and summed.

Table updated on Dec 22, 2011

Months with 5 or more missing days are not considered

Years with 1 or more missing months are not considered

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Western Regional Climate Center, [wrcc@dri.edu](mailto:wrcc@dri.edu)

# ASHTON, IDAHO

## Period of Record General Climate Summary - Cooling Degree Days

| Station:(100470) ASHTON                               |      |      |      |      |     |      |      |      |      |      |      |      |        |
|-------------------------------------------------------|------|------|------|------|-----|------|------|------|------|------|------|------|--------|
| From Year=1897 To Year=2011                           |      |      |      |      |     |      |      |      |      |      |      |      |        |
| Cooling Degree Days for Selected Base Temperature (F) |      |      |      |      |     |      |      |      |      |      |      |      |        |
| Base                                                  | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| 55                                                    | 0    | 0    | 0    | 3    | 37  | 128  | 304  | 260  | 76   | 4    | 0    | 0    | 813    |
| 57                                                    | 0    | 0    | 0    | 1    | 22  | 92   | 246  | 204  | 49   | 2    | 0    | 0    | 616    |
| 60                                                    | 0    | 0    | 0    | 0    | 9   | 49   | 163  | 126  | 21   | 0    | 0    | 0    | 370    |
| 65                                                    | 0    | 0    | 0    | 0    | 1   | 12   | 55   | 36   | 2    | 0    | 0    | 0    | 106    |
| 70                                                    | 0    | 0    | 0    | 0    | 0   | 1    | 9    | 4    | 0    | 0    | 0    | 0    | 14     |

Cooling Degree Day units are computed as the difference between the daily average temperature and the base temperature. (Daily Ave. Temp. - Base Temp.) One unit is accumulated for each degree Fahrenheit the average temperature is above the base temperature. Negative numbers are discarded. Example: If the days high temperature was 95 and the low temperature was 51, the base 60 heating degree day units is  $((95 + 51) / 2) - 60 = 13$ . This is done for each day of the month and summed.

Table updated on Dec 22, 2011

Months with 5 or more missing days are not considered

Years with 1 or more missing months are not considered

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Western Regional Climate Center, [wrcc@dri.edu](mailto:wrcc@dri.edu)

U.S. Department of Commerce  
National Oceanic & Atmospheric Administration

# ANNUAL CLIMATOLOGICAL SUMMARY (1985)

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801

Station: 100470/99999, ASHTON, Idaho

Elev. 5258 ft. above sea level

Lat. 44°04'N, Lon. 111°27'W

| Date          | Temperature (° F) |              |       |                           |                           |                           |         |              |        |             |                |             |             |            | Precipitation (inches) |                           |                   |      |               |              |             |                |      |      |  |  |
|---------------|-------------------|--------------|-------|---------------------------|---------------------------|---------------------------|---------|--------------|--------|-------------|----------------|-------------|-------------|------------|------------------------|---------------------------|-------------------|------|---------------|--------------|-------------|----------------|------|------|--|--|
| Elem->        | MMXT              | MMNT         | MNTM  | DPNT                      | HTDD                      | CLDD                      | EMXT    |              | EMNP   |             | DT90           | DX32        | DT32        | DT00       | TPCP                   | DPNP                      | EMXP              |      | TSNW          | MXSD         |             | DP01           | DP05 | DP10 |  |  |
| 1985<br>Month | Mean<br>Max.      | Mean<br>Min. | Mean  | Depart.<br>from<br>Normal | Heating<br>Degree<br>Days | Cooling<br>Degree<br>Days | Highest | High<br>Date | Lowest | Low<br>Date | Number of Days |             |             |            | Total                  | Depart.<br>from<br>Normal | Greatest Observed |      | Snow, Sleet   |              |             | Number of Days |      |      |  |  |
|               |                   |              |       |                           |                           |                           |         |              |        |             | Max<br>≥90°    | Max<br>≤32° | Min<br>≤32° | Min<br>≤0° |                        |                           | Day               | Date | Total<br>Fall | Max<br>Depth | Max<br>Date | ≥.10           | ≥.50 | ≥1.0 |  |  |
| 1             | 24.2              | 5.1X         | 14.7X | -3.7                      | 1556B                     | 0B                        | 36      | 20           | -26    | 31          | 0              | 27          | 30          | 11         | 0.72                   | -1.50                     | 0.20              | 28   | 11.7          | 29           | 31          | 3              | 0    | 0    |  |  |
| 2             | 25.6              | 4.9          | 15.3  | -7.7                      | 1387                      | 0                         | 39      | 20           | -28    | 1           | 0              | 21          | 28          | 10         | 1.49                   | -0.36                     | 0.30              | 8    | 19.1          | 35           | 26          | 5              | 0    | 0    |  |  |
| 3             | 36.7              | 15.8         | 26.3  | -1.6                      | 1192                      | 0                         | 49      | 24           | 0      | 7           | 0              | 7           | 31          | 1          | 1.87                   | 0.40                      | 0.43              | 2    | 21.0          | 41           | 6           | 9              | 0    | 0    |  |  |
| 4             | 55.7              | 29.9         | 42.8  | 2.7                       | 658                       | 0                         | 73      | 30           | 18     | 24          | 0              | 0           | 19          | 0          | 1.29                   | -0.13                     | 0.37              | 22   | 13.5          | 21           | 1           | 5              | 0    | 0    |  |  |
| 5             | 67.9              | 39.6         | 53.8  | 3.2                       | 343                       | 0                         | 79      | 23           | 26     | 5           | 0              | 0           | 8           | 0          | 2.74                   | 0.83                      | 1.02              | 11   | 0.5           | 0            |             | 8              | 1    | 1    |  |  |
| 6             | 75.3              | 44.1         | 59.7  | 1.9                       | 164                       | 12                        | 87      | 30           | 33     | 2           | 0              | 0           | 0           | 0          | 0.36                   | -1.54                     | 0.17              | 1    | 0.0           | 0            |             | 2              | 0    | 0    |  |  |
| 7             | 85.5              | 50.2         | 67.9  | 3.7                       | 12                        | 107                       | 93      | 15           | 39     | 22          | 9              | 0           | 0           | 0          | 1.39                   | 0.60                      | 0.59              | 31   | 0.0           | 0            |             | 5              | 1    | 0    |  |  |
| 8             | 79.3              | 44.9         | 62.1  | 0.2                       | 112                       | 31                        | 90      | 26           | 35     | 9           | 1              | 0           | 0           | 0          | 0.18                   | -1.04                     | 0.07              | 31   | 0.0           | 0            |             | 0              | 0    | 0    |  |  |
| 9             | 63.9              | 36.5         | 50.2  | -3.8                      | 436                       | 0                         | 77      | 4            | 13     | 29          | 0              | 0           | 10          | 0          | 2.55                   | 1.41                      | 1.13              | 12   | 0.0           | 0            |             | 5              | 2    | 1    |  |  |
| 10            | 56.8              | 27.8         | 42.3  | -1.8                      | 698                       | 0                         | 69      | 28           | 16     | 8           | 0              | 1           | 24          | 0          | 0.65                   | -0.66                     | 0.17              | 22   | 0.9           | 0T           | 31          | 4              | 0    | 0    |  |  |
| 11            | 31.7              | 14.7         | 23.2  | -7.2                      | 1247                      | 0                         | 59      | 4            | -9     | 23          | 0              | 20          | 29          | 4          | 3.35                   | 1.62                      | 0.70              | 25   | 54.5          | 30           | 30          | 8              | 2    | 0    |  |  |
| 12            | 24.2              | 7.4          | 15.8  | -5.1                      | 1518                      | 0                         | 35      | 7            | -8     | 11          | 0              | 29          | 31          | 8          | 1.48                   | -0.67                     | 0.50              | 3    | 20.0          | 31           | 16          | 4              | 1    | 0    |  |  |
| Annual        | 52.2              | 26.7X        | 39.5X | -1.6                      | 9323                      | 150                       | 93      | Jul          | -28    | Feb         | 10             | 105         | 210         | 34         | 18.07                  | -1.04                     | 1.13              | Sep  | 141.2         | 41           | Mar         | 58             | 7    | 2    |  |  |

## Notes

(blank) Not reported.

+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence. Used through December 1983 only.

A Accumulated amount. This value is a total that may include data from a previous month or months or year (for annual value).

B Adjusted Total. Monthly value totals based on proportional available data across the entire month.

E An estimated monthly or annual total.

X Monthly means or totals based on incomplete time series. 1 to 9 days are missing. Annual means or totals include one or more months which had 1 to 9 days that were missing.

M Used to indicate data element missing.

T Trace of precipitation, snowfall, or snowdepth. The precipitation data value will = zero.

Elem- Element Types are included to provide cross-reference for users of the > NCDC CDO System.

Station Station is identified by: CoopID/WBAN, Station Name, State.

S Precipitation amount is continuing to be accumulated. Total will be included in a subsequent monthly or yearly value. Example: Days 1-20 had 1.35 inches of precipitation, then a period of accumulation began. The element TPCP would then be 00135S and the total accumulated amount value appears in a subsequent monthly value. If TPCP = "M" there was no precipitation measured during the month. Flag is set to "S" and the total accumulated amount appears in a subsequent monthly value.

Dynamically generated Wed Jan 11 15:52:28 EST 2012 via <http://cdo.ncdc.noaa.gov/ancsum/ACS>

Data provided from the NCDC CDO System

Additional documentation can be found at <http://cdo.ncdc.noaa.gov/cdo/3220doc.txt>



RECEIVED

MAR 17 2005

DEPARTMENT OF  
WATER RESOURCES

Permit Approval Date: 6/5/06 Initials JS  
Permit Expiration Date: 7/31/2015 Initials \_\_\_\_\_

Permit No. 21W009001

APPLICATION FOR PERMIT TO CONSTRUCT OR MAINTAIN AN INJECTION WELL



IDAHO DEPARTMENT OF WATER RESOURCES  
322 East Front St., PO Box 83720, Boise, ID 83720-0098  
Under the Provisions of Title 42, Chapter 39 of the Idaho Code

**Note To Applicant: Fill in ALL Information Requested. Incomplete Applications will be Returned.**

I. GENERAL INFORMATION

A. Application Type: (check appropriate box)

- ☐ Permit to Construct and Operate a New Injection Well (Drilling Permit also required)  
☒ Permit to Maintain (Renew the operation of) an Existing Injection Well

B. Name and Address of Legal Contact:

- ☒ Legal Owner ☐ Operator or Representative ☐ Contractor \*(See note)

Contact Name Dee M. Reynolds

Business Name Fall River Rural Electric Cooperative, Inc.

Mailing Address 1150 N 3400 E

City Ashton

State Idaho

Zip Code 83420

Phone No. 1 208 652-7431

Phone No. 2 \_\_\_\_\_

\*Contractor Note: Give Future Owner Name & Contact Information (If known) \_\_\_\_\_

C. Well Location: (Give location address of well if different from above, otherwise write "same")

Facility Name Same

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip Code \_\_\_\_\_

County Fremont

Facility Phone No. 208 652-7431

D. Well Location Legal Description:

(\*Incorrect Location Information Will Invalidate Permit\* Attach map if available)

Township 8N Range 42E Section 2 (1/4, 1/4, 1/4) SW (1/4, 1/4) SW (1/4 Section) NW

County Fremont

Indicate  
Location of  
Well on Map  
by placing an  
"X" through  
Appropriate  
1/4, 1/4 Section

(NW 1/4)

|               |    |    |    |
|---------------|----|----|----|
| NW            | NE | NW | NE |
| NW            | NW | NE | NE |
| SW            | SE | SW | SE |
| NW            | NW | NE | NE |
| <del>NW</del> | NE | NW | NE |
| <del>SW</del> | SW | SE | SE |
| SW            | SE | SW | SE |
| SW            | SW | SE | SE |

(SW 1/4)

(NE 1/4)

(SE 1/4)

Refer to Your  
Property Tax  
Statements for  
Correct Legal  
Description  
Information

Section Map (1/4, 1/4 Sections)

E. Is the Well/Facility Located on Indian Lands? ☐ Yes ☒ No

F. Injection Well Classification: 5 A 7 (obtain proper code from list on instruction sheet)

APPROVED  
EXPIRATION DATE: 7/31/2015

## II. TECHNICAL DATA

### A. Well Construction Information:

☐ As Built (attach well log, if available)  
IDWR Drilling Permit No. \_\_\_\_\_ Well Tag No. \_\_\_\_\_  
☐ Expected Construction

Drill Bore: Diameter 8 (in) Depth 88 (ft)  
Surface Casing: Diameter 8 (in) Depth \_\_\_\_\_ (ft)  
Height above Ground Surface 9" (ft) Casing Type \_\_\_\_\_  
Perforation: From 16 (ft) To 27 (ft)  
Surface Seal: Depth \_\_\_\_\_ (ft) Seal Type CAP

Secondary Casing (if applicable): N/A  
Diameter \_\_\_\_\_ (in) Initial Depth \_\_\_\_\_ (ft) Terminal Depth \_\_\_\_\_ (ft)  
Casing Type \_\_\_\_\_ Seal Type \_\_\_\_\_ Packer Depth \_\_\_\_\_ (ft)

Construction Date (indicate Actual, Approximate or Anticipated): November 19, 1979  
Driller's Name/Address: Independent Drilling - Route 2, Box 119  
Blackfoot, ID 83221

### B. Site Description:

Depth to Groundwater 16' 2" (ft) ☒ Estimate ☐ Measured Date Measured \_\_\_\_\_  
Distance to Nearest Domestic Well 167 (ft) Direction East

### C. Description of Well Operation:

Frequency of Injection: ☐ Continuous ☐ Seasonal ☒ Intermittent  
Maximum Average Weekly Rate 80 ☐ cfs ☒ gpm  
Maximum Injection Capacity 100 ☐ cfs ☒ gpm  
Injection Pressure (for pressurized systems, at well head) \_\_\_\_\_ (psi)

Is the injection well part of an approved contamination remediation system? ☐ Yes ☐ No  
If yes, please attach a copy of the signed regulatory approval for the remediation action, description of the remediation system, and intended use of the injection well.

### D. Description of Waste Stream:

Activity Type: ☐ Agricultural/Farming ☐ Agricultural Processing ☐ Mining  
☒ Building Heating/Cooling ☐ Industrial/Manufacturing  
☐ Automotive Repair ☐ Aquifer Storage/Recharge ☐ Other

Describe Injection from a ground source heat pump system.

List constituents and concentrations in waste stream (list agricultural, automotive or industrial chemicals, tracers, anti-bacterial, anti-corrosive, anti-freeze, or other treatment agents):

None

**If the injection well is used for agricultural fluid disposal, complete the following:**

Method of irrigation: ☐ Gravity ☐ Sprinkler  
Water Source: ☐ Groundwater ☐ Surface water or canal system

Are pesticides used? ☐ Yes ☐ No Describe \_\_\_\_\_

Are herbicides used? ☐ Yes ☐ No Describe \_\_\_\_\_

**E. Description of Land Use:** (For all, except Class 5A7 Closed-Loop Heat Pump Return)

Drainage area discharging to injection well none (Acres)

Describe land uses occurring in drainage area \_\_\_\_\_

Commercial business office

Electric Distribution Cooperative

**F. Active Waste Disposal Activities within Injection Well Drainage Area:** (For all, except Class 5A7 Closed-Loop Heat Pump Return)

☐ Wastewater Land Application Operations

Description \_\_\_\_\_

☐ CAFO/Feed Lot Operations

Description \_\_\_\_\_

☐ Dairy Operations

Description \_\_\_\_\_

☐ Other(s)

Description \_\_\_\_\_

**G. Treatment Methods Prior to Injection:** (For all, except Class 5A7 Closed-Loop Heat Pump Return wells)

☐ Retention Pond Length \_\_\_\_\_ (ft) Width \_\_\_\_\_ (ft) Depth \_\_\_\_\_ (ft)  
Description \_\_\_\_\_

☐ Well Screen

Description \_\_\_\_\_

☐ Filtration

Description \_\_\_\_\_

☐ Chemical Treatment

Description \_\_\_\_\_

☐ Other

Description \_\_\_\_\_

**H. Alternative Methods to Injection Well Use:**

Describe alternatives to the use of an injection well for waste disposal \_\_\_\_\_  
A "Closed Loop" Geothermal source heat pump was considered. System  
would have been self contained with no disposal.

Why were the above alternative methods rejected? Concentration and Depth of lava  
work in area.

**I. For all, except Class 5A7 Closed-Loop Heat Pump Return wells, attach a topographic map or aerial photo showing the area within a one-mile radius to show the following:**

- a. Location of the described injection well, domestic supply wells, and any other wells
- b. Outline of area draining to the injection well
- c. Property boundaries of injection well owner

**III. Applicant Signature**

Any request to treat any document or portion thereof as a trade secret as defined under Chapter 8, Title 48, Idaho Code shall be made at the time said document is submitted to the Department. The person making the request shall stamp or otherwise mark each page or items on a page, to which the request applies, with the word "confidential".

Be it known that the undersigned hereby makes Application for Permit to Construct or Maintain an Injection Well. The above information is true and correct to the best of my knowledge.

March 15, 2005  
Date

Dee M. Reynolds  
Signature

General Manager/CEO  
Title

Dee M. Reynolds  
Print Name

**For Department Use Only**

I have examined Application No. 21W009001 and said application is hereby Approved subject to the attached conditions.

Witnessed by my hand this 5<sup>th</sup> day of June, 2006  
John Shankey UIC Coordinator  
Official, Idaho Department of Water Resources Title

Received by M  
Fees 100

Date 6/9/05  
Receipted by M

Reviewed By JS  
Receipt No. C078204

**Injection Well # 21W009001**

Fall River Rural Electric Cooperative, Inc.

**IDAHO DEPARTMENT OF WATER RESOURCES**

**ATTACHMENT II**

**SPECIAL CONDITIONS REGARDING THE OPERATION OF  
INJECTION WELL # 21W009001**

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6/05

- 1) Injected fluids shall be limited to heat pump return flow water.
- 2) A closed system shall be maintained to prevent contamination of the discharge fluids. A sampling port is required. A protected air vent may be installed if needed.
- 3) Any system additives must have prior approval from IDWR.
- 4) This permit shall expire on July 31, 2015. If use of the well is desired beyond this date, a new application must be filed.

*Sent Attach I Also.  
6/8/06 JS*

|                                   |                               |
|-----------------------------------|-------------------------------|
| Post-It® Fax Note 7671            |                               |
| To <u>D. Reynolds</u>             | Date <u>3/15/05</u>           |
| Co./Dept. <u>FALL RIVER ELEC.</u> | From <u>SHARLE</u>            |
| Phone # <u>(208) 652-7431</u>     | Co. <u>IDWR</u>               |
| Fax # <u>(208) 652-7433</u>       | Phone # <u>(208) 287-4932</u> |
|                                   | Fax # <u>(208) 287-6800</u>   |
| # of pages <u>9</u>               |                               |

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
APPLICATION FOR PERMIT TO  
CONSTRUCT ☒  
MAINTAIN ☐  
AN INJECTION WELL

Under the Provisions of Title 42, Chapter 39 of the Idaho

GENERAL INFORMATION

A. Name and Address of Legal Contact (X) Owner ( ) Operator

Name FALL RIVER RURAL ELECTRIC COOPERATIVE INC.

Address 714 MAIN STREET/P.O. BOX 830

City ASHTON State ID Zip Code 83420

Phone No. 208-652-7431

Facility Name and Location (if different than above)

Name FALL RIVER RURAL ELECTRIC COOPERATIVE, INC.

Address 1150 N 3400 E

City ASHTON State ID Zip Code 83420

B. Location of Well (attach map see item II L)

Township 8N Range 42E Section 2 SW 1/4 SW 1/4 NW 1/4 Lot

Subdivision Name  Block  Lot

County FREMONT

C. Is facility located on Indian Lands? Yes ( ) No (X)

D. Injection Well Classification

1. Depth of well: X Less than or equal to 18 feet below land surface

X Greater than 18 feet below land surface

2. Classification: 5A6 (see list below)

5A7

- |                                           |                                     |
|-------------------------------------------|-------------------------------------|
| 5A5 Electric Power Generation             | 5W10 Cesspools                      |
| 5A6 Geothermal Heat                       | 5W11 Septic Systems (General)       |
| 5A7 Closed-Loop Heat Pump Return          | 5W12 Water Treatment Plant Effluent |
| 5A8 Aquaculture Return Flow               | 5W20 Industrial Process Water       |
| 5A19 Cooling Water Return                 | 5W31 Septic Systems (Well Disposal) |
| 5B22 Saline Water Intrusion Barrier       | 5W32 Septic Systems (Drainfield)    |
| 5D2 Storm Runoff                          | 5X13 Mine Tailings Backfill         |
| 5D3 Improved Sinkholes                    | 5X14 Solution Mining                |
| 5D4 Industrial Storm Runoff               | 5X15 In-Situ Fossil Fuel Recovery   |
| 5F1 Agricultural Runoff Waste             | 5X16 Spent Brine Return Flow        |
| 5G30 Special Drainage Water               | 5X25 Experimental Technology        |
| 5N24 Low-level Radioactive Waste Disposal | 5X26 Aquifer Remediation            |
| 5R21 Aquifer Recharge                     | 5X27 Other Wells                    |
| 5S23 Subsidence Control                   | 5X28 Service Station Waste          |
| 5W9 Untreated Sewage                      | 5X29 Abandoned Drinking Water Wells |

II.

## TECHNICAL DATA

- A. Description of Injection well, if bored, drilled or driven  
If well has not been constructed:

Well Bore: Diameter \_\_\_\_\_ inches Depth \_\_\_\_\_ feet

- B. Description of injection well, if bored, drilled or driven  
If well is constructed:

Well Bore: Diameter 8 inches Depth 83 feet

Surface Casing: diameter 8 inches Depth \_\_\_\_\_ feet

Perforation depth: from 16 feet to 27 feet

Surface seal: (☒) No (☐) Yes, Type \_\_\_\_\_ Depth \_\_\_\_\_ feet

Secondary casing, if applicable:

Diameter \_\_\_\_\_ inches

Initial depth \_\_\_\_\_ feet Terminal depth \_\_\_\_\_

Seal type \_\_\_\_\_ Packer depth \_\_\_\_\_

Well Log available (☒) No (☐) Yes (if yes, attach a copy)

Driller's Name/Address INDEPENDENT DRILLING  
ROUTE 2, BOX 119, BLACKFOOT, ID 83221

Month, Day, Year, Drilled NOV 19, 1979

- C. Description of injection well, if dug

Surface dimensions \_\_\_\_\_ feet, by \_\_\_\_\_ feet, or Diameter \_\_\_\_\_ inches

Depth \_\_\_\_\_ feet Filler material, if any \_\_\_\_\_

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

Name/address of contractor \_\_\_\_\_

- D. Distance to nearest domestic well MORE THAN 30 FEET miles

Direction to nearest domestic well NORTH EAST

Depth to ground water 16' 2"

- E. Frequency of Injection \_\_\_\_\_ Continuous \_\_\_\_\_ Seasonal ☒ Intermittent

Maximum Average Weekly Rate of Injection \_\_\_\_\_ 80 gpm

Maximum Capacity \_\_\_\_\_ 100 gpm

- F. Are hazardous wastes, as defined in 40 CFR, Part 261, present in the injected fluids? (excluding 5F1) ☐ Yes ☒ No

If yes, attach RCRA numbers for constituents identified as hazardous (see 40 CFR, Part 261 of the Federal Register):

- G. If well is class 5F1, (Agricultural Runoff Waste) or class 5F2, (Surface runoff):  
Method of irrigation for (for class 5F1): gravity sprinkler  
Use of lands in drainage area:

Pesticides/fertilizers/chemicals used (type and quantity) \_\_\_\_\_

Approximate Drainage area: \_\_\_\_\_ acres

Settling pond at injection site? ( ) No ( ) Yes, size \_\_\_\_\_

Screening structure at well? ( ) No ( ) Yes, Size and mesh \_\_\_\_\_

- H. If well is class 5W20, (Industrial Process Waste) or other industrial waste:

Type of Waste \_\_\_\_\_

Describe Treatment prior to injection: \_\_\_\_\_

(Attach statement describing the complete physical, chemical and microbiological quality of the fluids.)

- I. Description of the type of business and the principal products \_\_\_\_\_

ELECTRICAL DISTRIBUTION COOPERATIVE

- J. Alternate methods of disposal that have been considered A "CLOSED LOOP"

GEO SOURCE HEAT PUMP WAS CONSIDERED. SYSTEM WOULD HAVE BEEN SELF  
CONTAINED WITH NO DISPOSAL NECESSARY.

- K. Why were they rejected? CONCENTRATION & DEPTH OF LAVA ROCK IN THE AREA

L. Attach a topographic map or aerial photo showing area within one mile radius, to include:

- a. Location of injection well described herein and associated facilities (drain ditches, settling pond, etc.), YELLOW HIGHLIGHTED AREA
- b. Other injection wells and associated facilities,
- c. Approximate drainage area (if applicable),
- d. Intake and discharge or injection structures (if applicable),
- e. Hazardous waste facilities, NONE
- f. All drinking water wells, MARKED WITH BLUE X
- g. All other wells, springs and surface waters. HIGHLIGHTED IN BLUE

- III. A. Any request to treat any document or portion thereof as a trade secret as defined under Chapter 8, Title 48, Idaho Code shall be made at the time said document is submitted to the Department. The person making the request shall stamp or otherwise mark each page or item on a page, to which the request applies, with the word "confidential."

Be it know that the undersigned (owner/operator) hereby makes Application for Permit to Construct or Maintain a Waste Disposal and Injection Well. The above information is true and correct to the best of my knowledge.

8-6-97

Date

Suzette Y. Bollinger

ENERGY ANALYST

Signature and Title

- B. Action of the Department of Water Resources

I have examined Application No. 21-62-9 and said application is hereby Approved subject to the attached conditions.

Witness my hand this 15<sup>th</sup> day of December 19 97

Samuel W. Dunn

Official, Idaho Department of Water Resources

Senior Water Resource Agent

Title

For Department Use Only

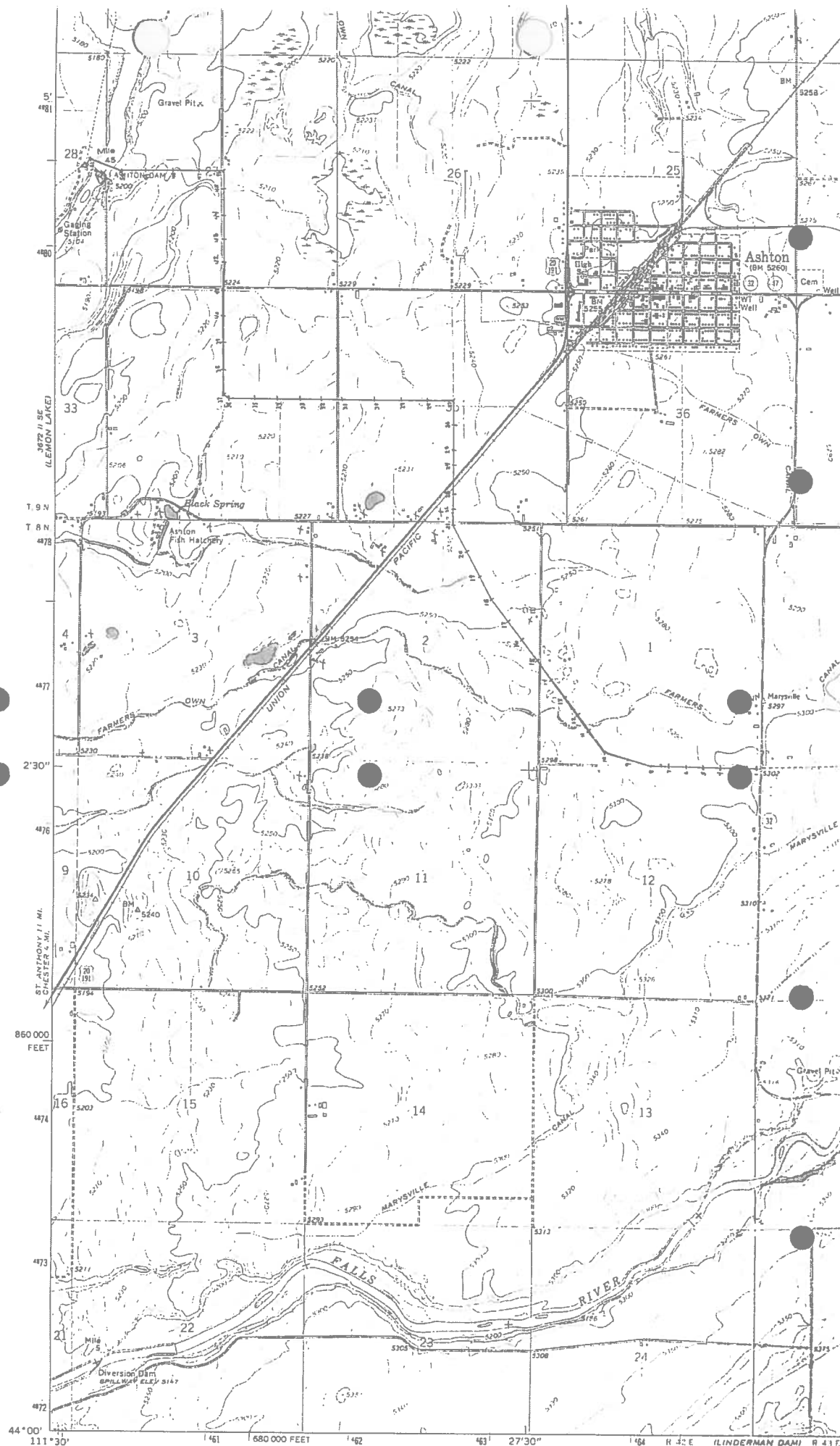
Received by HWT Date 9-2-97 Reviewed by \_\_\_\_\_

Fees \$100 75.00 Received by HWT Receipt No. E023597

Forwarded to S. O. \_\_\_\_\_

Notice of completion received \_\_\_\_\_

Field Inspection \_\_\_\_\_





STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES

ATTACHMENT I  
STANDARD CONDITIONS AND REQUIREMENTS PERTAINING TO  
CONSTRUCTING, MODIFYING, OPERATING AND/OR ABANDONING  
AN INJECTION WELL

Standard Conditions and Requirements pertaining to all injection wells

A. Construction Requirements

1. The injection well shall be constructed by an Idaho licensed driller and shall conform with the current Minimum Well Construction Standards of the State and the Conditions of this Permit, except that a licensed driller is not required for the construction of a mine shaft, a hole without mechanically-powered equipment or a shallow injection well.
2. The injection well shall be constructed to prevent the entrance of any fluids other than that specified in the permit.
3. The injection well shall be constructed to prevent waste of artesian fluids and pressure or movement of fluids from one aquifer to another.
4. When construction or modification of an injection well has been completed, the owner shall inform the Director of completion on a form provided by the Department.
5. A sampling port shall be provided at the well head if the injection well system is enclosed. If the well is located within a pond or other catchment basin, an elevated walkway to the wellhead for sampling access must be constructed and maintained in safe operating condition by the operator of the injection well.

B. Operational Conditions

1. The injection well will not be used until the construction, operation and maintenance requirements of the permit are met and provisions are made for any required inspection, monitoring and record keeping.
2. Injection of any contaminant as defined in Rule 37.03.010.09 of the Rules into a present or future drinking or other ground water source that may cause a health hazard or adversely affect a designated and protected use is prohibited.
3. The injection well owner or operator shall develop approved procedures to detect constructional or operational failure of the well in a timely fashion and shall have contingency plans to cope with the failure of the well.
4. Authorized officials of the Department shall be allowed to enter, inspect and/or sample:
  - a. the injection well and related facilities;
  - b. the owner or operator's records of the injection operation;
  - c. monitoring instrumentation associated with the injection operation; and
  - d. the injected fluids.
5. The injection facilities shall be operated and maintained to achieve compliance with all terms and conditions of this permit.
  - a. Proper operation and maintenance includes effective performance, adequate funding, operator staffing and training, and adequate laboratory and process control, including appropriate quality assurance procedures.
  - b. If compliance cannot be met, the owner shall take corrective action or terminate injection.
6. The owner shall mitigate any adverse impacts resulting from noncompliance with the terms and conditions of the permit.
7. If an injection well was constructed prior to issuance of this permit, it shall be brought into compliance with the terms and conditions of this permit in accordance with the schedule of compliance issued by the Director.

C. Requirements for Abandonment

1. Notice of abandonment shall be submitted on a form provided by the Director not less than ten

working day prior to commencement of abandonment activities except as provided for under Attachment II.

2. Methods of abandonment for all injection wells shall be approved by the Director prior to commencement of the activity.
3. Notice of completion of abandonment shall be submitted to the Director within 30 days of completion.
4. All deep injection wells shall be plugged with cement grout or other impervious material in such a manner as to prevent movement of fluids into or between drinking water sources.
5. Following permanent cessation of use, or where an injection well is not completed, the Director shall be notified. Abandonment or other action, as prescribed by the Director shall be completed.
6. The injection well owner or operator shall maintain the financial responsibility to insure that the injection operation is abandoned as prescribed.
7. Temporary abandonment, including use of a welded steel plate to cover the well opening, or a packer to occlude the well bore does not exempt the owner or operator from the requirement to obtain a permit. A well that is permitted as temporarily abandoned must receive a new permit in order to inject fluids.

D. Monitoring, Record Keeping and Reporting Requirements

1. Monitoring
  - a. All monitoring tests and analyses are to be performed by a state-certified laboratory or other laboratory, as approved by the Director, using recommended methods as defined in Idaho's Injection Well Rules and Regulations.
  - b. All required field instruments shall be periodically tested and maintained to ensure accuracy of results.
  - c. All samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity and fluids injected.
2. Record Keeping
  - a. The permittee shall maintain records of all monitoring activities, to include:
    - 1) date, time and exact place of sampling;
    - 2) person or firm performing the analysis;
    - 3) date of analysis, analytical methods used and results of analysis;
    - 4) calibration and maintenance of all monitoring instruments; and
    - 5) all original tapes, strip charts or other data from continuous or automated monitoring instruments.
  - b. The permittee shall retain for a period of five (5) years all records of monitoring, construction and application information.
    - 1) The period of retention for records shall be extended during the course of any litigation regarding the discharge of contaminants by the permittee or when requested by the Director.
    - 2) This requirement shall continue in effect during the five (5) year period following abandonment of the injection well.
3. Reporting
  - a. All monitoring results shall be reported to the Director as prescribed by the permit.
  - b. The Director shall be notified in writing by the permittee within five (5) days after the discovery of a violation of the terms and conditions of the permit. If an injection activity endangers human health or the environment, use of the injection well shall be immediately discontinued and the owner or operator shall immediately notify the Director. The notification shall contain the following information:
    - 1) a description of the violation and its cause;
    - 2) the duration of the violation, including dates and times; if not corrected or use of the well discontinued, the anticipated time of correction;
    - 3) steps being taken to reduce, eliminate and prevent recurrence of the discharge.
  - c. Where the permittee becomes aware that it failed to submit any relevant facts in any permit application or reports to the Director, that person shall promptly submit such facts or information.

- d. permittee shall furnish the Director, within a reasonable time, any information which the Director may request to determine compliance with this permit.
- e. All permits, notices and reports submitted to the Director shall be signed and certified.
- f. The Director shall be notified in writing of planned physical alterations or additions to any facility related to the permitted injection well operation.
- g. Additional information to be reported to the Director in writing:
  - 1) transfers of ownership;
  - 2) any change in operational status not previously reported;
  - 3) any anticipated noncompliance;
  - 4) reports of progress toward meeting the requirements of any compliance schedule attached or assigned to this permit.

E. Additional conditions and requirements pertaining to this permit are shown on Attachment II.



STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES

ATTACHMENT II  
SPECIAL CONDITIONS AND REQUIREMENTS  
PERTAINING TO  
CONSTRUCTION, MODIFYING, OPERATING AND/OR ABANDONING  
AN INJECTION WELL (HEAT PUMP WELLS)  
SUBCLASS 5A7

- 
1. Rules and Regulations for Construction and Use of Injection Wells shall be followed. Violation of the effluent quality standards stated in rule 37.03.03.050.04 is adequate cause for cancellation of the permit.
  2. Discharge into the well shall be restricted to the heat pump water.
  3. A closed loop system shall be maintained to prevent contamination of the discharge. A protected air vent may be installed if needed, and a sampling port is required.
  4. Additives shall be used in the water only if approved by the Department of Water Resources.
  5. Should the use of the well lead to degradation of the quality of the ground water, this permit may be canceled.
  6. A well log shall be submitted to the Department within 30 days of the completion of this well.
  7. This permit shall expire on 12/31/2002. If use of the well is desired beyond this date, a new application must be filed.