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MAY 20 2011

Department of Water Resources
Eastern RegionSTATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

Ident. No.

17274

35-14139

Idaho Falls School District 91

1. Name of Applicant Attn. Dana Wood, Director of Operations Phone (208) 525-7500/525-7502 x 620
 Name connector (check one): ☐ and ☐ or ☐ and/or

Mailing address 690 John Adams Parkway City Idaho Falls
 State Idaho Zip 83401 Email wooddana@d91.k12.id.us
c/o Keith C. Wilson Rocky Mountain Environmental Associates, Inc. Email kwilson@rockymountainenvironmental.com
 482 Constitution Way, Ste 303, Idaho Falls ID 83402 (208) 524-2353 Fax (208) 524-1795

2. Source of water supply Ground Water which is a tributary of _____

3. Location of point of diversion:

Twp	Rge	Sec	Govt Lot	¼	¼	¼	County	Source	Local Name or tag #
2N	37E	23			SW	NE			

4. Water will be used for the following purposes:

Amount 1.34 cfs for Heating purposes from 01/01 to 12/31 (both dates inclusive)
 (cfs or acre-feet per year)

Amount 1.34 cfs for Cooling purposes from 01/01 to 12/31 (both dates inclusive)
 (cfs or acre-feet per year)

Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
 (cfs or acre-feet per year)

5. Total quantity to be appropriated is (a) 1.34 cubic feet per second (cfs) and/or (b) _____ Acre-feet per year (af)

6. Proposed diverting works:

a. Describe type and size of devices used to divert water from the source Production well pump mainline to Heat Exchanger to mainline to Injection well for a closed loop heat pump consisting of 64 heat pumps.

b. Height of storage dam _____ feet; active reservoir capacity _____ acre-feet; total reservoir capacity _____ acre-feet. If the reservoir will be filled more than once each year, describe the refill plan in item 11

For dams 10 feet or more in height OR reservoirs with a total storage capacity of 50 acre-feet or more, submit a separate Application for Construction or Enlargement of a New or Existing Dam. Application required? ☐ Yes ☐ No

c. Proposed well diameter is 10 inches; proposed depth of well is 285 feet.

d. Is ground water with a temperature of greater than 85°F being sought? ☐ Yes ☒ No

e. If well is already drilled, when? _____; drilling firm _____
 Well was drilled for (well owner) _____; Drilling Permit No. _____

7. Description of proposed uses (if irrigation only, go to item 8):

a. Hydropower; show total feet of head and proposed capacity in kW. _____

b. Stockwatering; list number and kind of livestock. _____

c. Municipal; show name of municipality or the applicant's qualifications as a municipal provider. _____

d. Domestic; show number of households. _____

e. Other; describe fully. Heating and Cooling for a Heat Exchanger on a closed loop system for 64 Heat Pumps on a separate closed loop system for Eagle Rock Junior High, 2020 Pancheri Dr., Idaho Falls, Id 83402

8. Description of place of use:

- a. If water is for irrigation, indicate acreage in each subdivision in the tabulation below.
b. If water is used for other purposes, place a symbol of the use (example: *D* for Domestic) in the corresponding place of use below. See instructions for standard symbols.

Twp	Rge	Sec	NE ¼				NW ¼				SW ¼				SE ¼				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
2N	37E	23			C/L														

Total Number of acres to be irrigated _____

9. Describe any other water rights used for the same purposes as described above. Include water delivered by a municipality, canal company, or irrigation district. If this application is for domestic purposes, do you intend to use this water, water from another source, or both, to irrigate your lawn, garden, and/or landscaping?

N/A

10. a. Who owns the property at the point of diversion? Applicant
b. Who owns the land to be irrigated or place of use? Applicant
c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing: _____

11. Describe your proposal in narrative form, and provide additional explanation for any of the items above. Attach additional pages if necessary. Proposed project is for a heat pump system consisting of 64 heat pumps on a heating and cooling closed-loop system to a heat exchanger. Water will be diverted through a closed loop System to the heat exchanger and then into an injection well. This permit application is for a non consumptive use.

12. Time required for completion of works and application of water to proposed beneficial use is 3 years (minimum 1 year).

13. **MAP OF PROPOSED PROJECT REQUIRED** - Attach an 8½"x11" map clearly identifying the proposed point of diversion, place of use, section #, township & range. A photocopy of a USGS 7.5 minute topographic quadrangle map is preferred.

The information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval.

Dana R. Wood

Signature of Applicant

Signature of Applicant

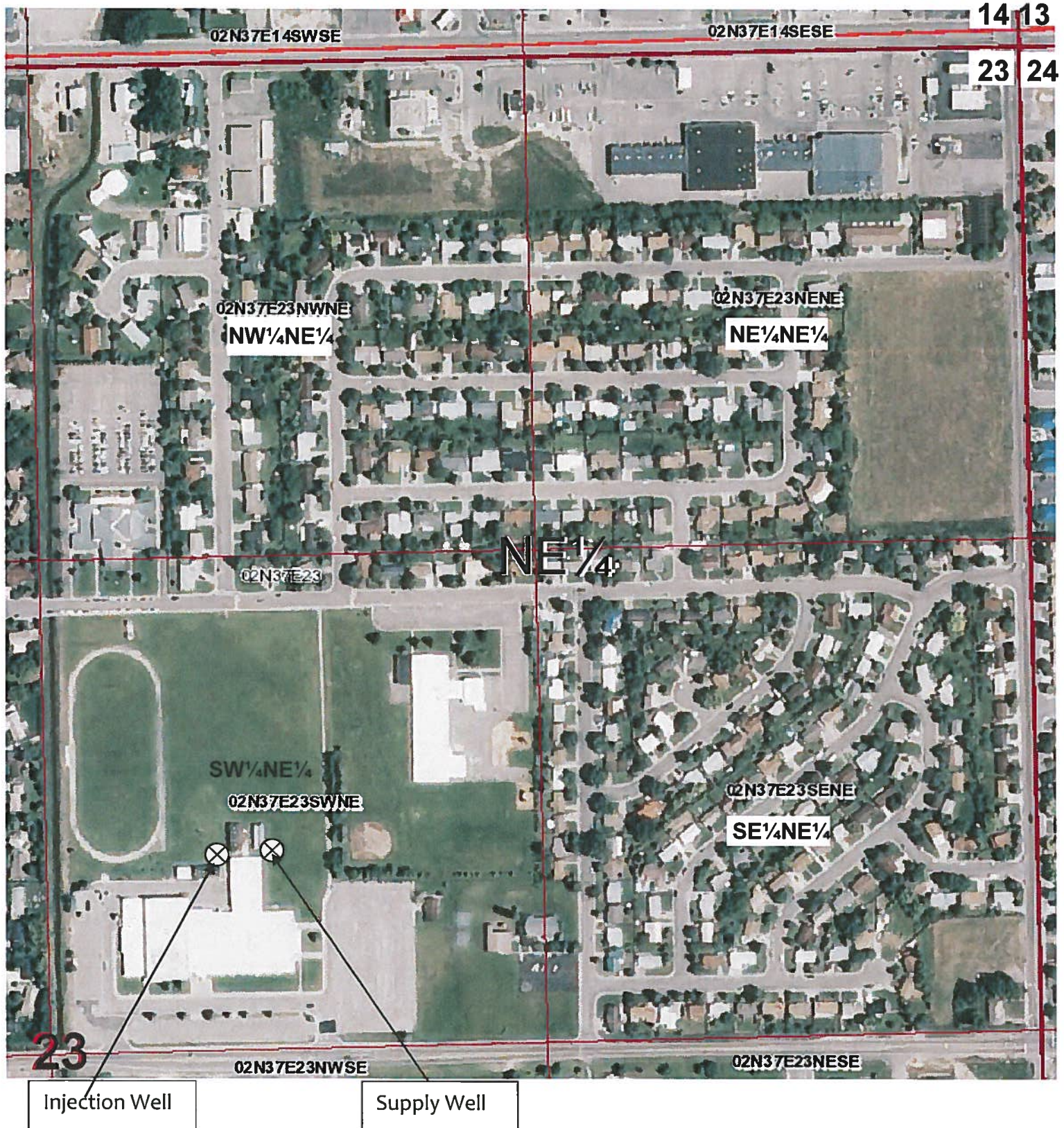
DANA R. WOOD Director of Operations

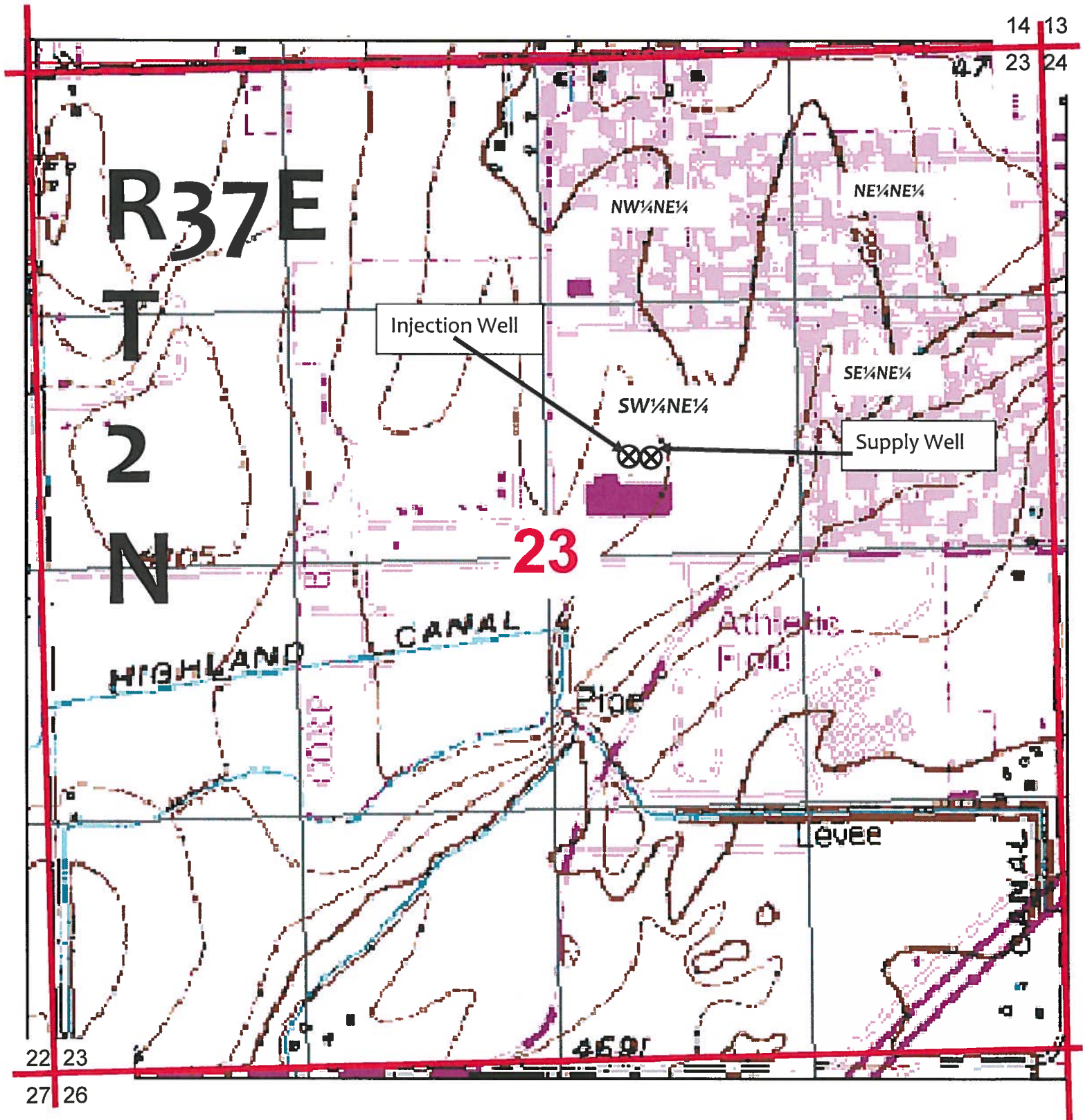
Print Name (and title, if applicable)

Print Name (and title, if applicable)

For Department Use:

Received by KM Date 5/23 Time 8:00am Preliminary check by Km
Fee \$ 290.00 Receipted by Km Receipt No. E036673 Date 5/23/2011





Methods for Determining Rates of Flow for Geothermal Heating Systems Application Processing #23

Data supplied by applicant's engineer

1. Engineering Estimate Maximum Required Flow Rate = 600 gpm = 1.34 cfs
2. Estimated Designed Floor Space = 97,000 ft²

IDWR Guideline for determining Design Heat Load:

$$E = (e)(\Delta T)(A)$$

$$E = \text{BTU/hr}$$

$$e = \text{efficiency factor BTU/hr-sq.ft.-}^{\circ}\text{F}$$

Assume = 0.67 *Eagle Rock Junior High School is an older building assumed Average Efficiency*

0.28 – Best Energy Efficiency
0.44 – Better Energy Efficiency
0.67 – Average Residential Efficiency
1.11 – Poor Energy Efficiency

$$A = \text{Floor space} = 97,000 \text{ ft}^2$$

$$\Delta T = \text{Design Temperature difference } (t_i - t_o) = [(70^{\circ}\text{F}) - (-11^{\circ}\text{F})] = 81^{\circ}\text{F}$$

$$t_i = \text{Inside Temp} = 70^{\circ}\text{F}$$

$$t_o = \text{Outside Temp} = [(70^{\circ}\text{F}) - (-11^{\circ}\text{F})] = 81^{\circ}\text{F}$$

Assume = (- 11° F)* *Design Outside Design Temperature for Idaho Falls area.

Boise	4° F
Lewiston	6° F
Pocatello	- 8° F

$$E = (0.67)(81^{\circ})(97,000 \text{ ft}^2) = 5,264,190 \text{ BTU/hr}$$

IDWR Guideline for estimating Rate of Flow for Geothermal Heating Systems:

Temperature Drop:

$$\Delta T_s = (0.3)(S - t)$$

$$S = \text{Geothermal Source Temp } ^{\circ}\text{F}$$

$$t = \text{Temperature required by system } ^{\circ}\text{F}$$

Note: Heat pump – source temperature becomes system temperature.

Assume 56.8 ° F (See attached page)

$$\Delta T_s = (.3)(56.8^{\circ}\text{F}) = 17.04^{\circ}\text{F}$$

Flow Rate Required:

$$W = O \div (500)(\Delta T_s)$$

$$O = \text{Space Heat Load in BTU/hr} = 5,264,190 \text{ BTU/hr}$$

$$W = (5,264,190 \text{ BTU/hr}) \div [(500)(17.04^{\circ}\text{F})] = 617.9 \text{ gpm} = 1.38 \text{ cfs}$$

The IDWR guidelines are not for the design of heating systems and do not provide for an outside temperature for the Idaho Falls area (Design Heat Load). With a difference of only 17.9 gpm (0.04 cfs) between the design flow of 600 gpm (1.34 cfs) and the calculated flow the engineering estimated required flow rate of 600 gpm (1.34 cfs) appears to be a reasonable designed flow rate

<http://www.wrcc.dri.edu/summary/Climsmsid.html>

IDAHO FALLS FAA ARPT, IDAHO

Period of Record General Climate Summary - Temperature

Station:(104457) IDAHO FALLS FAA ARPT

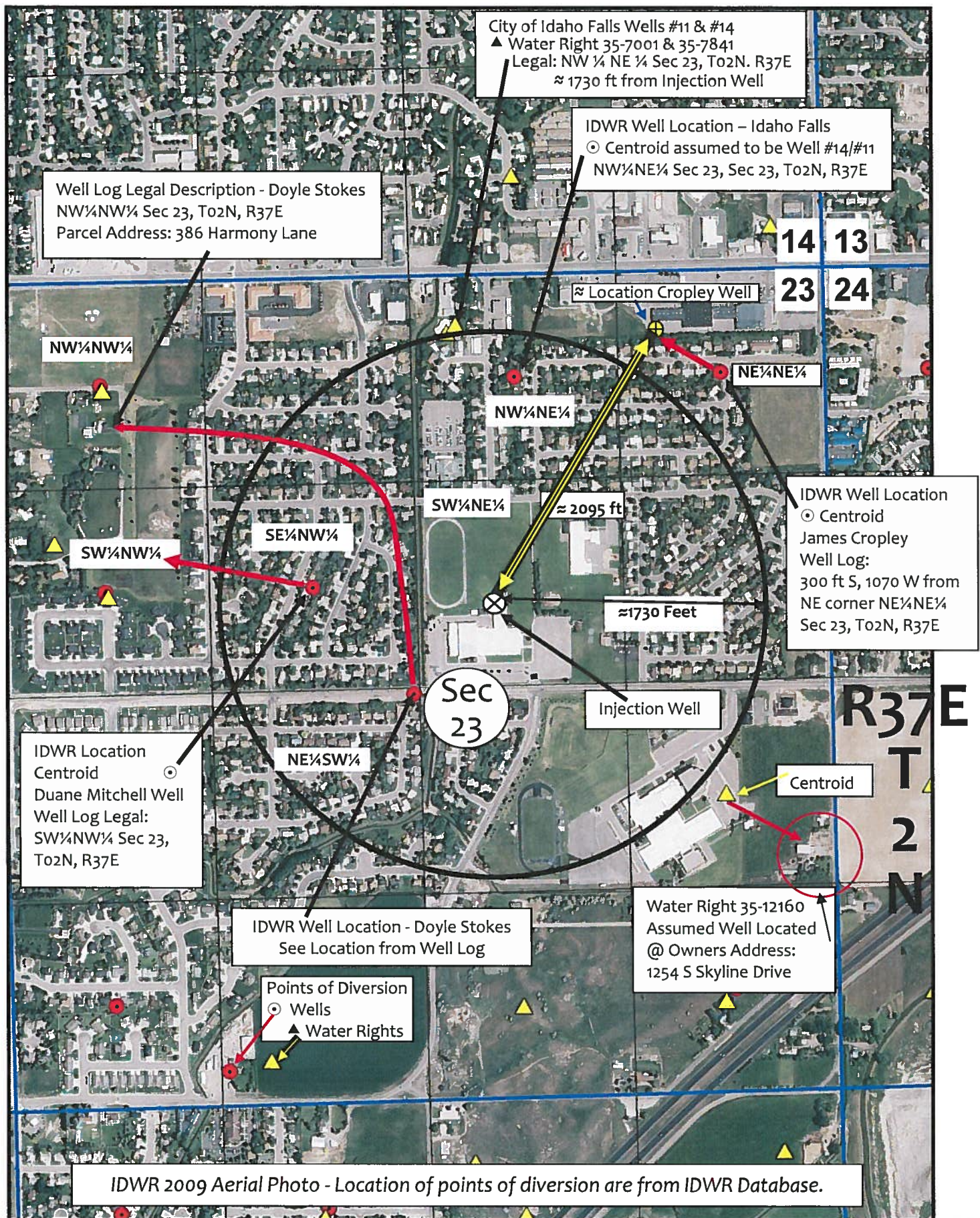
From Year=1948 To Year=2001

Table updated on Mar 24, 2011

	Monthly Averages		
	Max.	Min.	Mean
	°F	°F	°F
January	27.0	10.0	18.5
February	33.7	15.3	24.5
March	44.0	23.5	33.8
April	56.8	31.2	44.0
May	67.0	39.0	53.0
June	76.2	45.5	60.9
July	85.8	50.8	68.3
August	84.4	49.1	66.7
September	73.6	40.6	57.1
October	60.3	31.1	45.7
November	42.4	22.1	32.2
December	30.0	12.6	21.3
Annual	56.8	30.9	43.8

Data Provided by
Bill O'Donnell, P.E.
Quantum Group Engineering, PC
543 W. 19th
PO Box 51353
Idaho Falls, ID 83402
(208) 523-8068 Fax (208) 524-8235

- 1) Well pump will need to pump a maximum of 600gpm during morning warm up during cold wintertime conditions (late November, December, January, and mid February), or from about 6am to 8am and then run much of the occupied day at 300gpm, Monday through Friday. Once class is over for the day and over the weekend and holidays, the well pump will be off and will start and run a number of times throughout the night and weekend, at 300gpm.
- 2) Early and late winter, well pump will be on and off throughout the day and be off at night.
- 3) Spring and fall the well pump will cycle a few times during the occupied day and not at night. Once class is over for the day and over the weekend the well pump will be off and may start and run a few times throughout the night.
- 4) Summer the well pump will be off and would only run if there is special a school activity and the school is occupied.
- 5) Well pump is controlled by a variable speed drive that speeds the pump up and down depending on the heating or cooling demand. When running it will spend the majority of its run time at minimum speed or about 300gpm. It will be off for a majority of the year (winter/summer).
- 6) This is non-consumptive use and well water may be cooled to about 42F in winter (at 600 gpm) and heated to about 60F in summer when the pump is running at 300gpm (building will be heating dominant).



In using the General Mapping Tool version 2.0 on the Idaho Department of Water Resources Interactive Map Page it appears that there may be some incorrect information on the location of wells. It is realized that Centroids are often used to indicate that a Point of Diversion is location within the Quarter-Quarter ($\frac{1}{4} - \frac{1}{4}$) and even the Quarter-Quarter-Quarter ($\frac{1}{4} - \frac{1}{4} - \frac{1}{4}$) of a section. To determine the closest well and the closest Domestic Well required using the IDWR Irrigation District & Water Rights Finder and entering the parcel or water right address from the water right, and well logs. Based on information obtained using this method the closest well(s) to the proposed injection well are the City of Idaho Falls Municipal Wells # 11, and #14 (Rights 35-7001, 35-7841), and are ≈ 1730 feet from the proposed well site.

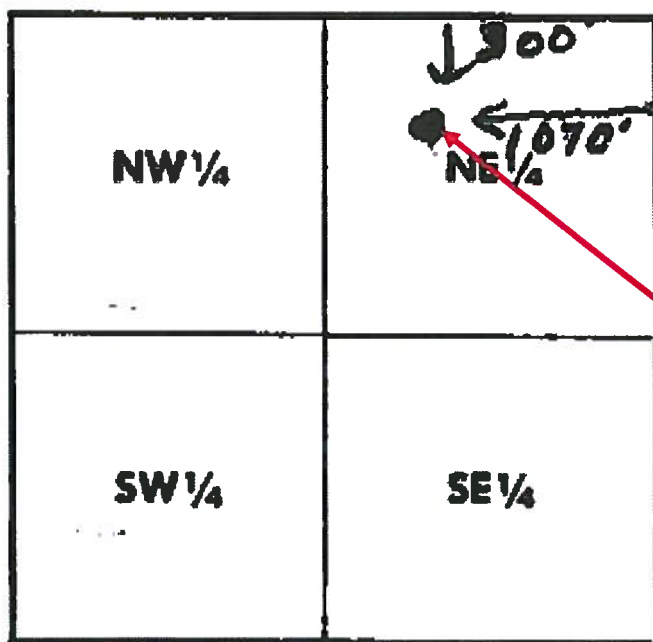
However, the closest Domestic Well and the location from the Well Log (See below and on Pgs 3 & 4) it appears that the James Cropley Well is the closest Domestic well located 2,095 feet from the proposed well site located 300 ft S, 1070 W, NE corner NE $\frac{1}{4}$ NE $\frac{1}{4}$, Sec 23, T02N, R37E.

From the aerial photo data from the Idaho Department of Water Resources a well appears to be located in the extreme NE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 23, T02N, R37E. A review of information from the well log (See Pg 5) and using the IDWR Irrigation District & Water Rights Finder, the apparent place of use is the NW $\frac{1}{4}$ NW $\frac{1}{4}$, Sec 23, T02N, R37E, placing the well further from the proposed well site than the James Cropley well in the NE $\frac{1}{4}$ NE $\frac{1}{4}$, Sec 23, T02N, R37E.

Location from James Cropley Well Log

(See complete well log Pgs 3 & 4)

Locate well in section



$\approx$ Well Log Location: James Cropley Well
300 ft S, 1070 W, from the NE corner of the
NE $\frac{1}{4}$ NE $\frac{1}{4}$, Sec 23, T02N, R37E.

Places well 2,095 ft from injection well.

026629

WELL LOG AND REPORT OF THE
STATE RECLAMATION ENGINEER OF IDAHO

Department

Permit No. _____ Well No. _____ County Bonne.Owner James CropleyAddress West Hwy Idaho FallsDriller Irving Hendle Well DrillingAddress C-17 Anderson St. Idaho FallsWell location NE 1/4 NE 1/4 Sec. 23, T. 2 N, R. 37 ESize of drilled hole 8Total depth of well 266'Give depth to standing water from the ground 160' Water temp. _____ °Fahr.

On "Pumping Test" delivery was _____ g.p.m. or _____ c.f.s. Drawdown was _____ feet.

Size of pump and motor used to make test _____

Length of time of test _____ hours _____ minutes.

If flowing well, give flow _____ c.f.s. or _____ g.p.m. and of shut off pressure _____

If flowing well, described control works _____

(TYPE AND SIZE OF VALVE, ETC.)

Water will be used for MotelWeight of casing per lineal foot 15 lb. 6" 24 lb. 8"Thickness of casing 2 1/2"

Casing material

Steel

(STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing 40' 6"28" 8"(CASING 12" IN DIAMETER OR LESS, GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER, GIVE OUTSIDE DIAMETER)

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.
8"	0	28'	28'	Seal
6"	180'	220'	40'	Seal

Number and size of perforations _____ located _____ feet to _____ feet from ground

Date of commencement of well July 15, 62Date of completion of well July 23, 62

used

25

2N-37E ——— 23 NENE

026630

WELL LOG

From Feet	To Feet	Type of Material	Water-bearing Formation Ans. Yes or No	Casing Perforated Ans. Yes or No
0	26	top soil		
26	30	loose rock		
30	70	hard gray basalt		
70	90	brown lava		
90	105	black lava		
105	120	gray basalt		
120	130	black lava		
130	144	red clay + cinders		
144	165	black lava	yes	
165	185	black cinders + sand		
185	200	clay + sand		
200	205	gray basalt		
205	215	crevice clay + cinders		
215	250	gray basalt		
250	255	crevice + loose rock		
255	266	black lava		
If more space is required use Sheet No. 2				

WELL DRILLER'S STATEMENT

This well was drilled under my supervision and the above information is true and correct to the best of my knowledge and belief.

Signed

By

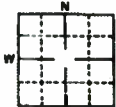
Kenzie Hill Drilling
Mrs. Irving Hill

License No. 116

Dated

Oct 15, 1962

Form 238-7
11/91STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORTUSE TYPEWRITER OR
BALLPOINT PENState law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.

1. WELL OWNER Name <u>Doyle Stokes</u> Address <u>3542 E 052</u> Drilling Permit No. <u>2858 Palico Idaho Falls State</u> Water Right Permit No. _____	7. WATER LEVEL Static water level <u>170</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality _____ Describe artesian or temperature zones below.																																		
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Well diameter increase ☐ Modification ☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)	8. WELL TEST DATA ☐ Pump ☐ Bailor ☐ Air ☐ Other _____ <table border="1"> <thead> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped																															
Discharge G.P.M.	Pumping Level	Hours Pumped																																	
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Monitor ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)	9. LITHOLOGIC LOG <u>082546</u> <table border="1"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>0</td> <td>16</td> <td>Overburden</td> <td> </td> <td> </td> </tr> <tr> <td>16</td> <td>16</td> <td>165</td> <td>Basalt</td> <td> </td> <td> </td> </tr> <tr> <td>16</td> <td>165</td> <td>195</td> <td>Silt</td> <td> </td> <td> </td> </tr> <tr> <td>16</td> <td>195</td> <td>240</td> <td>Basalt</td> <td> </td> <td> </td> </tr> </tbody> </table>	Bore Diam.	Depth		Material	Water		From	To	Yes	No	8	0	16	Overburden			16	16	165	Basalt			16	165	195	Silt			16	195	240	Basalt		
Bore Diam.	Depth		Material	Water																															
	From	To		Yes	No																														
8	0	16	Overburden																																
16	16	165	Basalt																																
16	165	195	Silt																																
16	195	240	Basalt																																
4. METHOD DRILLED ☒ Rotary ☒ Air ☐ Auger ☐ Reverse rotary ☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)	(Continuation of Lithologic Log)																																		
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ <table border="1"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>250</td> <td>8</td> <td>0</td> <td>18</td> </tr> <tr> <td>16</td> <td>6</td> <td>16</td> <td>216</td> </tr> </tbody> </table> Was casing drive shoes used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun Size of perforation? _____ inches by _____ inches <table border="1"> <thead> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Well screen installed? ☐ Yes ☒ No Manufacturer _____ Type _____ Top Packer or Headpipe _____ Bottom of Tailpipe _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>15</u> Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ _____ Sealing procedure used: ☐ Slurry pit ☒ Overbore to seal depth ☐ Temp. surface casing ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port _____	Thickness	Diameter	From	To	250	8	0	18	16	6	16	216	Number	From	To										(Continuation of Lithologic Log)										
Thickness	Diameter	From	To																																
250	8	0	18																																
16	6	16	216																																
Number	From	To																																	
6. LOCATION OF WELL Sketch map location must agree with written location.  Subdivision Name <u>Eldorado Estates</u> Well site - <u>3816 Harmony Lane</u> Lot No. <u>2</u> Block No. <u>1</u> County <u>Bonneville</u> <u>NW 1/4 Sec. 23, T. 2, S. 37, W. 3</u>	11. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Denning's</u> Firm No. <u>10</u> Address <u>Box 460 Arbon</u> Date <u>7/8/92</u> Signed by Drilling Supervisor <u>Ken Denning</u> and <u>Ken Denning</u> (Operator) <u>Ken Denning</u> (if different than the Drilling Supervisor)																																		

See Aerial
Photo Above
Aerial has Well
indicated in the
NENESW

RECEIVED

RECEIVED

AUG 05 1992

JUL 27 1992

 DEPT. OF WATER RESOURCES
 DEPARTMENT OF WATER RESOURCES
 Eastern District Office

03/1992

10.

Work started 7/7/92 finished 7/8/92

USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE DEPARTMENT

Permit No. _____



**APPLICATION FOR PERMIT TO CONSTRUCT, MODIFY
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

COPY

I. INFORMATION REQUIRED FOR ALL INJECTION WELLS

A. Application Type:

- ☒ New Injection Well Operating Permit (A Drilling Permit is also required prior to construction)
☐ Permit to Modify an Existing Injection Well
☐ Renew Operating Permit of an Existing Injection Well

Prepared by Keith C. Wilson Rocky Mountain Environmental Associated Inc.
482 Constitution Way, Suite 303
Idaho Falls, ID 83402 (208) 524-2353 / 524-1795 Fax

B. Legal Owner:

Name Idaho Falls School District 91, Attn. Dana Wood, Director of Operations
Organization Name Eagle Rock Junior High School
Mailing Address 690 John Adams Parkway
City Idaho Falls State Idaho Zip Code 83401
Phone No. 1 (208) 525-7500 Phone No. 2 (208) 525-7700

**If the property will change ownership soon, provide contact information for future owner:
N/A

C. Well Location:

Facility Name Eagle Rock Junior High School
Address 2020 Pancheri Drive
City Idaho Falls State Idaho Zip Code 83402
County Bonneville Facility Phone No. (208) 525-7700

Provide one of the following two options:

1) GPS Location (Datum = WGS84):

Latitude _____ Longitude _____

(You can check the accuracy of your GPS data with the "Well Diller's Locator Tool" here:
"http://maps.idwr.idaho.gov/locator/default.aspx")

2) A USGS Topographic Map or aerial photo with the well location marked and Township,
Range, Section information.

Township	Range	Section	¼, ¼, ¼ Section	¼, ¼ Section	¼ Section
2N	37E	23		SW	NE

(Get free maps using this tool: <http://maps.idwr.idaho.gov/IrrigationRightsFinder>)

D. Well Operation:

Frequency of Injection: ☐ Continuous (24 hr/day, 7 day/wk) ☒ Intermittent

Maximum Average Weekly Rate 0.42 ☒ cfs ☐ gpm
(guidance attached)

E. Injection Well Classification: (Circle the proper code. In PDF version use: Tools → Comments & Markup → Oval Tool)

Code:	Injection Activity Associated With:	Code:	Injection Activity Associated With:
5A5	Electric Power Generation	5W10	Cesspools
5A6	Geothermal Heat (Source H ₂ O Temp > 85° F)	5W11	Septic Systems (General)
5A7	Closed-Loop Heat Pump Return (Source H ₂ O Temp < 85° F)	5W12	Water Treatment Plant Effluent
5A8	Aquaculture Return Flow	5W20	Industrial Process Water
5A19	Cooling Water Return (Industrial Cooling)	5W31	Septic Systems (Well Disposal)
5B22	Saline Water Intrusion Barrier	5W32	Septic Systems (w/ Drainfield)
5D2	Storm Water Runoff (Roadway/Pavement Drainage)	5X13	Mine Tailing Backfill
5D3	Improved Sinkholes	5X14	Solution Mining
5D4	Industrial Storm Runoff (Building/Pavement Drainage)	5X15	In-Situ Fossil Fuel Recovery
5F1	Agricultural Runoff Waste (Agricultural Drainage)	5X16	Spent Brine Return Flow
5G30	Special Drainage Water (Rarely Used)	5X25	Experimental Technology
5N24	Low-Level Radioactive Waste	5X26	Aquifer Remediation
5R21	Aquifer Storage & Recharge	5X27	Other Wells (Rarely Used)
5S23	Subsidence Control	5X28	Service Station Wells (Motor Vehicle Waste Disposal)
5W9	Untreated Sewage	5X29	Abandoned Drinking Wells (Converted from Domestic)

F. Well Construction Information: (Attach well log, if available)

☐ As Built ☒ Expected Construction ☐ Well Modification

Total Well Depth: 285 (ft)

Well Casing: Diameter 10" (in) Depth 200 (ft)

Ht. above Ground Surface 1 (ft) Casing Type Steel

Perforation: From NONE (ft) To (ft)

Surface Seal: Depth 140 (ft) Seal Type Bentonite Clay Chip Seal

Construction Date (Indicate Actual, Approximate or Anticipated): July 2011

Driller's Name: Denning Well Drilling

For well modifications describe purpose and intended changes:

G. Adjacent Features:

Depth to Groundwater Static 170 (ft) ☐ Estimate ☒ Measured Date Measured 07/92

Distance to Nearest Domestic Well 2095 (ft) Direction North NE

See Attached Cropley Well Log (NENW Sec 23)

II. INFORMATION REQUIRED ONLY FOR HEAT EXCHANGE (CLASS 5A7) INJECTION WELLS

Please check all of your domestic uses served by your groundwater well:

- ☐ Household ☐ Irrigation ($\leq \frac{1}{2}$ acre) ☐ Livestock
☒ Heat Pump ☒ Other Heat Exchanger

Water Flows through a Closed Loop system to the Heat Exchanger used by Heat Pumps.

What is your total domestic groundwater usage? 272,462.4 Gallons Per Day
(Guidance on page 6)

Are you connected to a city or community drinking water system? ☒ Yes ☐ No

Do you have a water right for the heat pump? ☐ Yes ☒ No Water Right # _____

Have you applied for a water right for the heat pump? ☒ Yes ☐ No Water Right Application # _____

See Attached Permit Application

* Attach documentation from your heat pump manufacturer that indicates how many gallons per day your heat pump will use during peak heating and cooling days.

** Applicants seeking permits for a Heat Exchange Injection Well can skip Section III.

III. INFORMATION REQUIRED FOR ALL INJECTION WELLS, EXCEPT HEAT EXCHANGE (CLASS 5A7) INJECTION WELLS

A. Alternative Methods to Injection Well Use:

Describe alternatives to the use of an injection well for waste disposal _____

Why were the above alternative methods rejected? _____

B. Water Treatment Prior to Injection:

☐ None ☐ Chemical Treatment ☐ Ultra-Violet Treatment

☐ Settling Pond ☐ Filtration

☐ Other _____

C. Is this injection well part of a 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. Constituents in Waste Stream:

☐ None ☐ Hazardous wastes ☐ Automotive fluids ☐ Pesticides

☐ Herbicides ☐ Other additives or chemicals _____

E. Attach a topographic map or aerial photo showing a one-mile radius of the injection well. Identify the following on the map/photo:

1. Location of the injection well.
2. Location of domestic wells.

(Get free maps using this tool: <http://maps.idwr.idaho.gov/IrrigationRightFinder>)

IV. SIGNATURE OF LEGAL OWNER

I hereby submit this Application for Permit to Construct or Maintain an Injection Well. The information herein is true and correct to the best of my knowledge.

5/18/11
Date

Dana R. Wood
Signature

Director of Operations
Title

DANA R. WOOD
Print Name

V. PROCESSING FEE

A \$100.00 processing fee must be submitted for each permit application. A separate permit application and processing fee must be submitted for each injection well. Make checks payable to: Idaho Department of Water Resources.

All sections of this form must be complete and accurate. Incomplete forms will be returned to applicant. The information submitted is subject to verification by IDWR or its agents. Applications and fees can be submitted your nearest IDWR office:

IDWR Northern Region
7600 N Mineral Dr., Suite 100
Coeur d'Alene, ID 83815
Ph: (208) 762-2800

IDWR Southern Region
1341 Fillmore St., Suite 200
Twin Falls, ID 83301
Ph: (208) 736-3033

IDWR Eastern Region
900 North Skyline
Idaho Falls, ID 83402
Ph: (208) 525-7161

IDWR Western Region
2735 Airport Way
Boise, ID 83705
Ph: (208) 334-2190

IDWR State Office
322 East Front St., PO Box 83720
Boise, ID 83720-0098
Ph: (208) 287-4800.

UIC Program Guidance For Calculating the Average Weekly Injection Rate



The UIC Program does not dictate what method you use to calculate the Average Weekly Injection Rate for your injection well. The following are options you can use to make your calculation or for guidance to develop your own method. Document your calculation by using one of the options below or attaching your calculation. This information is required in Section I.D.

Example 1 – Heat Pump (Injection well class 5A7)

Pumping rate of heat pump in gallons per minute (gpm)		Hours per day heat pump will run on coldest day of year		Number of days per week heat pump will run during week coldest day occurs		Constant to convert to gallons per minute (gpm)		Average Weekly Injection Rate (gpm)
8 gal/min	x	18 hours/day	x	7 days/wk	x	0.00595 wks/hour	=	6.0 gpm
600	x	5	x	5	x	0.00595	=	89.25
300	x	8	x	7	x	0.00595	=	99.96

(189.21 gpm = 0.42 cfs)

Example 2 – Sprinkler Irrigation Return Flow (Injection well class 5F1)

Number of acres drained		Volume of water applied		% waste water		Constant to convert to gallons per minute (gpm)		Average Weekly Injection Rate
40 acres	x	9 gal/min/acre X 10080 min/wk	x	0.05	x	0.000099 wk/min	=	18 gpm
	x		x		x		=	
40 acres	x	0.02 ft ³ /sec/acre x 604800 min/wk	x	0.05	x	0.0000017 wk/min	=	0.04 cfs
	x		x		x		=	
	x		x		x		=	

Example 3 – Theoretical Calculation of Flow Through a Pipe

The calculation used to generate this table assumes unrestricted flow through a well casing of the designated size. The calculation represents the maximum injection rate that is theoretically possible, which may be significantly larger than the subsurface will actually allow. Using this calculation will result in a relatively large radius of influence, which may cause your permit to include a monitoring requirement.

Well Diameter	Average Weekly Injection Rate
6"	2.5 cfs
8"	4.4 cfs
10"	6.8 cfs
12"	9.8 cfs
14"	13.4 cfs

UIC Program Guidance For Calculating Total Domestic Water Use For Permitting a Ground-Source Heat Pump



Idaho Code (42-111 & 42-227) defines domestic water use and states that a water right is not required for domestic use, provided that the volume of water does not exceed 13,000 gallons per day. When permitting an injection well for a ground-source heat pump, the UIC Program must determine if the use of a heat pump will cause a homeowner to exceed the 13,000 gallon per day limit for a domestic water right exemption. If domestic water use is anticipated to exceed 13,000 gallons per day, the applicant must obtain a water right before the injection well permit can be issued by IDWR.

The following table should be completed to document your calculation of total domestic water use for Section II of your injection well application.

Use	Gallons Per Day Per Person		Number of People		Total Gallons Used Per Day
Single Family Residence	75	x		=	
Luxury Residence	150	x		=	
Use	Gallons Per Day Per Animal		Number of Animals		
Cattle	12	x		=	
Dairy Cattle	35	x		=	
Horses	12	x		=	
Mules	12	x		=	
Hogs	4	x		=	
Goats	2	x		=	
Sheep	2	x		=	
Other Livestock		x		=	
Use	Gallons Per Day Per 100 Animals		Number of Animals		
Chickens	10	x		=	
Turkeys	18	x		=	
Other Poultry		x		=	
Use	Gallons Per Day Per 1 Acre at 9 gpm		Number of Acres		
Irrigation	12,960	x		=	
Use	Average Weekly Injection Rate (gpm) See Page 5 Guidance – Example 1		Minutes Per Day		
Heat Pump	189.21	x	1440	=	272,462.4
Other Uses	Gallons Per Day				
Total Gallons Per Day Used					272462.4



State of Idaho

DEPARTMENT OF WATER RESOURCES

Eastern Region, 900 North Skyline Drive, Suite A • Idaho Falls, Idaho 83402-1718

Phone: (208) 525-7161 • Fax: (208) 525-7177 • Web Site: www.idwr.idaho.gov

May 25, 2011

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

IDAHO FALLS SCHOOL DISTRICT 91
690 JOHN ADAMS PARKWAY
IDAHO FALLS ID 83401

Application For Permit No. 35-14139

Dear Applicant(s):

The Department of Water Resources has received your water right application. Please refer to the number referenced above in all future correspondence regarding this application.

A legal notice of the application has been prepared and is scheduled for publication in the Post Register on June 2 and 9, 2011. Protests to this application may be submitted for a period ending ten (10) days after the second publication.

If the application is protested, you will be sent a copy of each protest. All protests must be resolved before the application can be considered for approval. If the protest(s) cannot be resolved voluntarily, the Department will conduct a conference and/or hearing on the matter.

Please contact this office if you have any questions regarding the application.

Sincerely,

Sharla Cox
Administrative Assistant



State of Idaho

DEPARTMENT OF WATER RESOURCES

Eastern Region, 900 North Skyline Drive, Suite A • Idaho Falls, Idaho 83402-1718

Phone: (208) 525-7161 • Fax: (208) 525-7177 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

May 25, 2011

STATE OF IDAHO
DEPT OF ENVIRONMENTAL QUALITY
900 N SKYLINE DR STE B
IDAHO FALLS, ID 83402

Application to Permit No. 35-14139

STATE OF IDAHO :

The Department of Water Resources is seeking written comment and/or recommendations from your agency regarding the above referenced water right application. A copy of the application is enclosed for your reference.

This office can publish notice of the application as soon as the initial review is completed; therefore, your prompt response to this request is appreciated. If your agency desires to formally protest the approval of this application, you may do so after the notice is published by filing a written protest along with a \$25.00 filing fee within 10 days after final publication.

Please contact this office if you have any questions regarding the application.

Sincerely,

Sharla Cox
Administrative Assistant

Enclosure(s)

Cox, Sharla

From: Cox, Sharla
Sent: Wednesday, May 25, 2011 9:56 AM
To: 'Post Register (legalnotices@postregister.com)'
Subject: Legal ad for your paper
Attachments: Post Register E-Mail.doc

Contacts: Post Register

Sharla

Sharla Cox
Administrative Assistant
Idaho Department of Water Resources
900 N. Skyline Dr. Ste. A
Idaho Falls ID 83402
208-525-7161 - telephone
208-525-7177 - fax
sharla.cox@idwr.idaho.gov

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

35-14139

IDAHO FALLS SCHOOL DISTRICT 91

690 JOHN ADAMS PARKWAY

IDAHO FALLS ID 83401

Point of Diversion: SWNE S23 T2N R37E BONNEVILLE County

Source GROUND WATER

Use: HEATING	01/01 to 12/31	1.34 cfs
COOLING	01/01 to 12/31	1.34 cfs
Total Diversion		1.34 cfs

Date Filed: 5/20/2011

Place of Use: HEATING / COOLING

T2N R37E S23 SWNE

Permits will be subject to all prior water rights. Protests may be submitted based on the criteria of Idaho Code § 42-203A. Any protest against the approval of this application must be filed with the Director, Dept of Water Resources, Eastern Region, 900 N Skyline Dr. Ste A, Idaho Falls ID 83402 together with a protest fee of \$25.00 for each application on or before June 20, 2011. The protestant must also send a copy of the protest to the applicant

GARY SPACKMAN

Published June 2 and 9, 2011