State of Idaho
Department of Water Resources

Injection Well Permit No. 37-W-088-001

Permit Holder: Ronald Conklin
1230 Old Malad River Hwy
Tuttle, ID 83314

Facility: 1230 Old Malad River Hwy
Tuttle, ID 83314

Expiration Date: 12/31/2012

Injection Well Classification: 5X25

Injection Well Location:

PLSS	Latitude/Longitude	County
T6S-R14E-S31-NWNENW	42.86388972 N 114.84583889 W	Gooding

Well Construction Information:

Well Casing Diameter	Well Depth
6 inches	200 feet

Injectate: Potable water mixed with Rhodamine WT dye.

Pretreatment Method: n/a

Injection Activity:

Frequency	Maximum Average Weekly Injection Rate
Instantaneous Dosing	0.0

Land Use in Drainage Area: n/a

Conditions of Approval:

1. This use of this injection well is administered under IDAPA 37.03.03, Rules and Regulations for the Construction and Use of Injection Wells, and IDAPA 37.03.09, Well Construction Standards & Rules.

2. For the term of this permit, injection of substances other than those listed above requires prior approval from the IDWR UIC Program.

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3. This permit is contingent on complete adherence to the "Proposal to Implement a Dye Tracer Test near Malad Gorge" submitted on January 13, 2011 as supporting documentation for the injection well application.

4. The surface casing and any intake pipes for this injection well must be secured at all times in a manner that protects humans and animals from accidental entrance into the well and other injury.

5. If use of this injection well is desired after the expiration date of this permit, a new permit is required.

6. This permit includes Attachment I – Permit Application.

This permit shall be administered in accordance with Idaho law and applicable rules of the Idaho Department of Water Resources.

Date this 21st day of March, 2011

Chief, Resource Protection Bureau

State of Idaho
Department of Water Resources

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ATTACHMENT II

PERMIT APPLICATION

42-39-1
8/2009

Permit No. 37-W-088-001

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

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

B. Legal Owner:

Name Ronald Conklin
Organization Name NA
Mailing Address 1230 Old Malad River Highway
City Tuttle State Idaho Zip Code 83314
Phone No. 1 unknown Phone No. 2

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

C. Well Location:

Facility Name domestic supply well
Address same as above
City Tuttle State Idaho Zip Code 83314
County Gooding Facility Phone No. na

Provide one of the following two options:

1) GPS Location (Datum = WGS84):
Latitude 42 51 50.003 N Longitude 114 50 45.02 W

(You can check the accuracy of your GPS data with the "Well Diller's Locator Tool" here: "www.idwr.idaho.gov/gisdata/mapserver.htm")

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
6s	14e	31		NW	NW

(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 8 gal. instantaneous ☐ cfs ☑ gpm
(Guidance on page 5)

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_2O Temp > 85° F)	5W11	Septic Systems (General)
5A7	Closed-Loop Heat Pump Return (Source H_2O 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: 200 (ft)

Well Casing: Diameter 6 (in) Depth 21 (ft)

Ht. above Ground Surface 2 (ft) Casing Type steel

Perforation: From na (ft) To na (ft)

Surface Seal: Depth 19 (ft) Seal Type bentonite

Construction Date (Indicate Actual, Approximate or Anticipated): 9-13-2006
Driller's Name: Elsing

For well modifications describe purpose and intended changes:
na

G. Adjacent Features:

Depth to Groundwater 118 (ft) ☐ Estimate ☑ Measured Date Measured 1/7/11

Distance to Nearest Domestic Well 1,800 (ft) Direction east & up GW gradient

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 (≤ ½ acre) ☐ Livestock
☐ Heat Pump ☐ Other _____

What is your total domestic groundwater usage? _____ 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 # _____

* 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 Rhodamine WT dye

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/IrrigationRightsFinder)

IV. APPLICANT SIGNATURE

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.

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.

1-13-11 — Date

Signature

Spec. Proj. Coord. — Title

Neal Farmer — 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.

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.

For Department Use Only

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

Witnessed by my hand this _____ day of _____, 20_____

_____ Official, Idaho Department of Water Resources

_____ Title

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
	x		x		x		=	
	x		x		x		=	

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		x	1440	=	
Other Uses	**Gallons Per Day**				
				Total Gallons Per Day Used	

1 mile radius
Conklin dye release well
Previous tracer tests (green, red & white lined areas) document GW flow is northwest
Tuttle