

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 37-22669

Exam Date: 8/15/2014

1. Current Owner: ROBERT G FRIEDMAN
215 DENSLOW AVE
LOS ANGELES CA 90049
(310)309-8484
2. Accompanied by: Field exam completed in office.

3. **SOURCE****TRIBUTARY**

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER

SE1/4SW1/4

Sec. 14, Twp 05N, Rge 17E, B.M.

BLAINE County

Method of Determination: POD recorded using GPS during field inspection and manually entered in ArcMap by Nathan Erickson.

2.

PLACE OF USE: HEATING

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	17E	14												X					

PLACE OF USE: COOLING

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	17E	14												X					

Method of Determination: Place of use determined utilizing 2013 imagery in ArcMap.

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☐ Photo of Diversion and System Attached

4.

<u>Well or Diversion</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
<u>ID No.*</u>					
D0062069 – production well		5 Hp			
D0034317 – injection Well					

D. FLOW MEASUREMENTS

1. Measurements: No measurements; permit meets the requirements exempting it from on-site examination and direct measurement specified in the Beneficial Use Examination Rules (IDAPA 37.03.02).

E. FLOW CALCULATIONS

Measured Method: Theoretical Yield:

☐ Additional Computation Sheets Attached

$$Q = \frac{8.8 \times (\text{Hp}) \times (\text{Eff})}{H}$$

Where Hp = 5 Hp (per Matt Thornton; heating & cooling specialist that designed and maintains system)

Eff = Efficiency = 70% assumed

H = total head = pumping level + (2.31 x system pressure)

$$H = 26 + (40 \times 2.31) = 118.4$$

$$Q = \frac{8.8 \times 5 \times .70}{118.4} = 0.26 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for Other Uses: Heating & Cooling; Matt Thornton, a heating and cooling specialist that designed and currently maintains the system for this 18,000 ft² home, stated that he measured peak flow through the system at 52 gpm (approximately 0.12 cfs); but the 3 heat pumps that provide heating/cooling, typically demand 49 gpm when the home is maintained at 80° F, which is usually 2 - 3 months a year; and during the rest of the year temperatures are maintained at 60° F which reduces flow through the system to approximately 30 gpm. I'm using a 40% run time, as that is an average that Matt was comfortable with and other owners of heat pump systems have indicated during licensing exams as a an average run time over the course of a year:

Heating season 10/1 – 4/30 or 212 days (approximate):

$$0.11 \text{ cfs} \times 90 \text{ days} \times 1.9835 \times 0.40 = 7.9 \text{ AF}$$

$$0.067 \text{ cfs} \times 122 \text{ days} \times 1.9835 \times 0.40 = 6.5 \text{ AF}$$

Cooling season 5/1 – 9/30 or 153 days (approximate):

$$0.067 \text{ cfs} \times 153 \times 1.9835 \times 0.40 = 8.1 \text{ AF}$$

Totals: Heating = 14.4 AF; Cooling = 8.1 AF; Combined = 22.5 AF

G. NARRATIVE/REMARKS/COMMENTS

Permit 37-22669 was permitted for 0.12 cfs heating and cooling.

Application for permit was submitted by Robert G. Friedman on 12/05/2011 and proof of beneficial use was submitted 01/22/2013.

The system utilizes a 5 Hp pump to provide water to 3 heat pumps used to heat and cool this approximately 18,000 ft² home with a closed loop system. The "used" water is passed back out to a injection well and returned to the local ground water system. Since there is no measuring device currently required for this heating /cooling system, determining volume used can only be estimated. As such, I based the estimate on a 40% average run time which should provide sufficient volume to account for extremely cold and/or hot years.

The point of diversion and place of use are located in Homestead Entry Survey (HES) No. 129, a location situated in unsurveyed Sections 14, 15 and 23 in Twp. 5N, Rge 17E. At the time the permit was filed, the GCDB layer in ArcMap indicated they were located in the NENW of Sec. 23, and I've included a copy of the permit map attachment from ArcMap indicating that location. At this time the GCDB layer in ArcMap indicates it is located in the SESW of Sec. 14, which is reflected on an included copy of the map attachment for the water right license and the system diagram. License was changed to describe the POD and POU location of the SESW of Sec. 14, as indicated by the GCDB layer in ArcMap at this time. I've also placed a condition on the license that describes the location in HES 129 and reflects the location of the SESW of Sec. 14, as currently described in the GCDB layer in ArcMap.

Recommend licensing 14.4 AF for heating from 01/01 to 12/31 and 8.1 AF for cooling from 01/01 to 12/31, with a combined volume of 22.5 AF.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
HEATING	01/01 to 12/31	0.120 CFS	14.4 AF
COOLING	01/01 to 12/31	0.120 CFS	8.1 AF
<u>Totals:</u>		0.120 CFS	22.5 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name

Date

Reviewer

Date

[Signature] 9-11-2014
[Signature] 9/12/14

System Diagram



**HOMESTEAD ENTRY SURVEY No. 129,
in the
SAWTOOTH NATIONAL FOREST**

in
Section 14, unsurveyed T.5 N., R.17 E.,
Section 15, unsurveyed T.5 N., R.17 E.,
Section 23, unsurveyed T.5 N., R.17 E.,

of the
Base Meridian
IDAHO.

ARTHUR J. WINSLOW
Claimant.

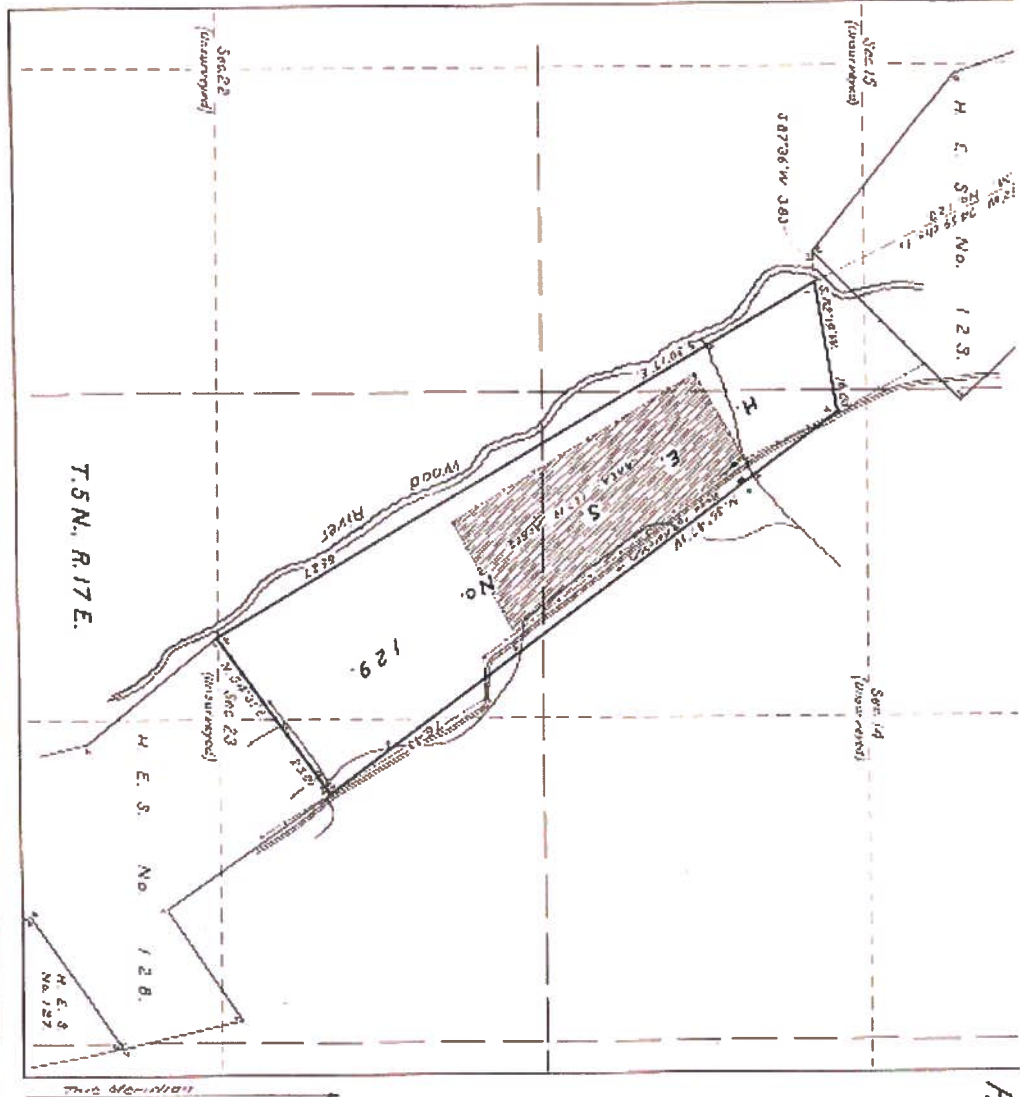
This plot of Homestead Entry Survey No. 129, situated in Section 14, unsurveyed in Township 5 North, of Range 17 East, and in Section 15 unsurveyed, in Township 5 North of Range 17 East, and in Section 23 unsurveyed in Township 5 North, of Range 17 East, and in Section 17 East, and in Section 17 East, unsurveyed, in Township 5 North of Range 17 East, is hereby confirmed to the field notes of the survey thereof on file in this office, which have been examined and approved.

Office of U.S. Survey General,
Ogden, Idaho April 27th 1904.

William H. Titterton
U.S. Surveyor General

Surveyed for A.M. 3rd Sec. 14, T.5 N., R.17 E.

List No. 4-20 Date December 21, 1904
Act of June 11, 1895, Act of March 4, 1911.



Scale: 10 Chains equal 1 inch
Survey Description: 20 Acres Surveyed to 20 Acres
Location: 1000 ft. from R. 17 E.

Area: 20 Acres
Character: 1000 ft. from R. 17 E.



JavaScript Viewer

Plugin Viewer

Basic Viewer



Generating JP2... Please wait



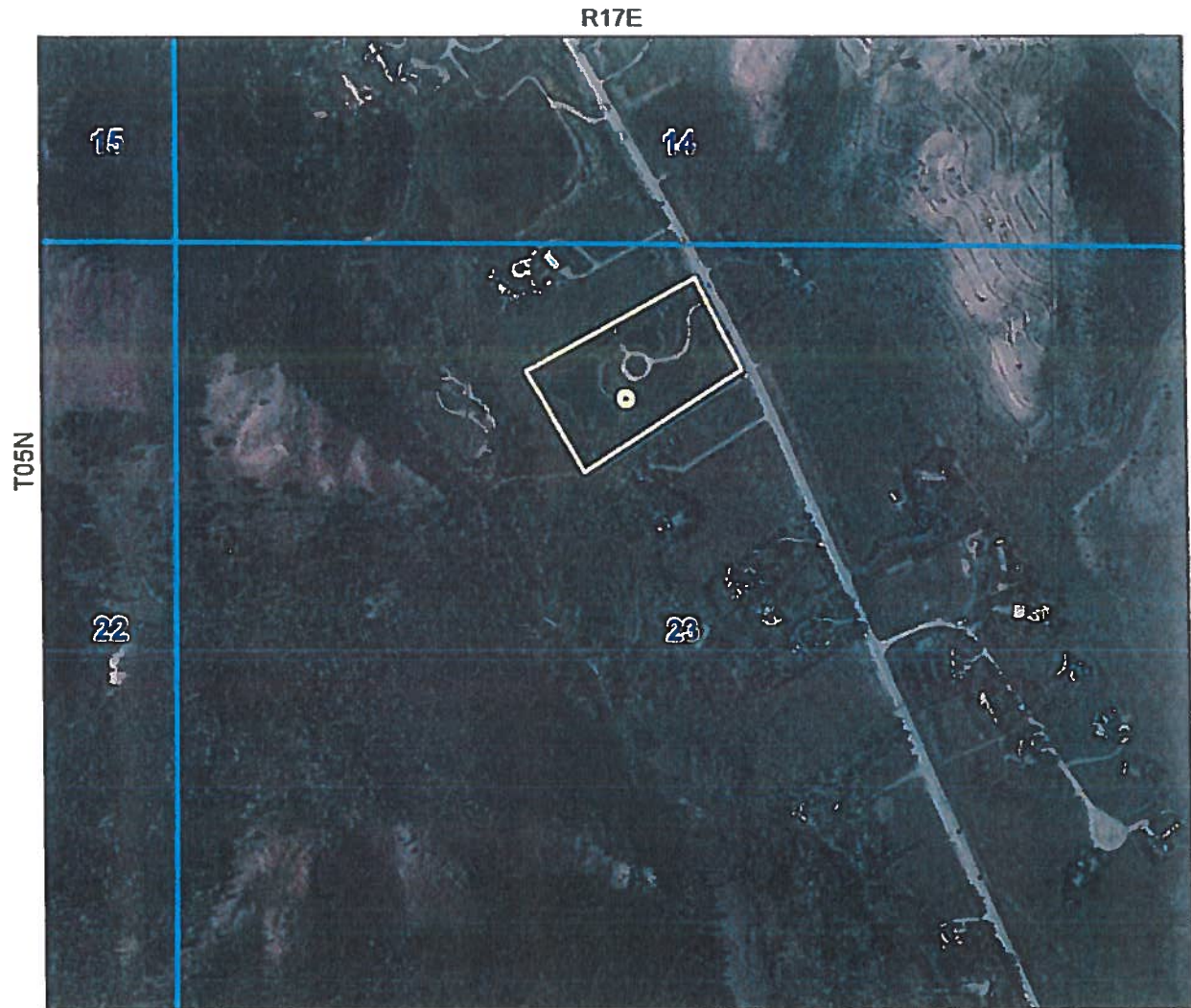
Zoom view

State of Idaho
Department of Water Resources

Attachment To Permit to Appropriate Water

37-22669

This map depicts the HEATING and COOLING place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



0 0.1 0.2 0.4 Miles

- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters



State of Idaho
Department of Water Resources
Attachment To Water Right License
37-22669

This map depicts the HEATING place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

17E



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.005 0.01 0.02 Miles



IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

AD

432837

1. WELL TAG NO. D 0062029

Drilling Permit No. 863736

Water right or injection well # 37-22669

2. OWNER:

Name Friedman, Robert

Address 215 Denslow

City Los Angeles State CA Zip 90049

3. WELL LOCATION:

Twp. 5 North ☒ or South ☐ Rge. 17 East ☒ or West ☐

Sec. 23 NE 1/4 NW 1/4 180 acres 1/4

Gov't Lot County Blaine

Lat 43° 45.489' (Deg and Decimal minutes)

Long. 114° 23.969' (Deg and Decimal minutes)

Address of Well Site 13416 State Highway 75

City Ketchum

Towns of road name of road + Distance to Road or Landmark:

Lot. Blk. Sub. Name

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☒ Other Heat Pump Supply

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
Bentonite	0	20	1300 lbs	Dry Pour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Linear	Threaded	Welded
8	+1	70	.250	Steel	☒	☐	☐	☒

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s)

9. PERFORATIONS/SCREENS:

Perforations ☒ Y ☐ N MethodManufactured screen ☐ Y ☐ N Type

Method of installation Torch

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
60	70	1/8x3	4			

Length of Headpipe Length of Tailpipe

Packer ☐ Y ☐ N Type

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG)

Describe control device

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 26 Static water level (ft) 19

Water temp. (°F) 48° Bottom hole temp (°F)

Describe access port

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
N/A		

Test method:

Pump	Bailer	Air	Flowing artes an
☐	☐	☐	☐

Water quality test or comments:

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
12	0	3	surface		
	3	15	boulders & gravel		
	15	21	clay & gravel		
8	21	26	clay & gravel		
	26	33	gravel & sand	x	
	33	46	clay & gravel		
	46	52	gravel & clay	x	
	52	65	clay & gravel		
	65	70	gravel	x	

RECEIVED

JUL 30 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGION

Completed Depth (Measurable): 70'

Date Started: 7/3/12

Date Completed: 7/9/12

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name WALKER WATER SYSTEMS Co. No. 15

Principal Driller Date 7/20/12

Driller Date 7/20/12

Operator II Date 7/20/12

Operator I Date

* Signature of Principal Driller and rig operator are required

863734

Office Use Only
 Inspected by _____
 Twp _____ Rge _____ Sec _____
 _____ 1/4 _____ 1/4 _____ 1/4
 Lat. : : Long: : :

Other IDWR No. 37-20742

City Beverly Hills State CA Zip 90210

Sketch map location must agree with written location.

		N			
W		•		E	
		S			

Twp. 5 North ☒ or South ☐
 Rge. 17 East ☒ or West ☐
 Sec. 23
 Gov't Lot _____
 Lat: _____ Long: _____
 County Blaine
 Address of Well Site 450 ft west of hwy 75
 City Ketchum
 (Give at least name of road + Distance to Road or Landmark)
 Lt. _____ Blk. _____ Sub. Name _____

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other **aesthetic**

☒ New Well ☐ Modify ☐ Abandonment ☐ Other

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

Seal/Filter Pack			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
bentonite	0	18	600 lbs.	dry pour

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 98'

Was drive shoe seal tested? ☐ Y ☒ N How?

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16"	+2	98	.250	steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 2' Length of Tailpipe

☒ Perforations Method air
☐ Screens Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	liner
18	97	3/8	640	3"	steel	☒	☐
						☐	☐
						☐	☐

16 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control
devices: 2" access port welded into casing

☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
650-850	4'-6'	20'-22'	2hr
1300	9'	25'	2hr
1700	15'	31'	1/2hr

Water Temp. <85 Bottom hole temp. <85

Water Quality test or comments

Depth first Water Encounter

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]Completed Depth **98'** (Measurable)

Date: Started 9/8/2004 Completed 9/15/2004

15. DRILLER'S CERTIFICATION:
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name **Eaton Drilling & pump
Service Inc.**

Firm No. 26

Firm Official

Date 9/27/2004

and

Driller or Operator

Date 9/27/2004

(Sign once if Firm Official & Operator)