

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-32246

Exam Date: June 18, 2019

1. Current Owner:
MARY BLOUGH 8292 TUT LN MELBA ID 83641

2. Accompanied by: Owner
Phone No:
Address:
Relationship to permit Holder:

3. **SOURCE:**
GROUND WATER

Method of Determination: Site Visit

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Comments: _____

2. Other water rights with the same point-of-diversion: NO Overlap

Comments: _____

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

GROUND WATER NW¼ NE¼, Sec. 10, Twp 01S, Rge 02W, B.M. CANYON County

Method of Determination: GPS, digital PLS map

PLACE OF USE: DOMESTIC, HEATING, and COOLING

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01S	02W	10		X															

Method of Determination: Aerial imagery, digital PLS map, site visit

- 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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0042461	Grundfos	1.5	22 SQE10-190	Grundfos	

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements:

None required per IDAPA BU Exam Rule 35.01.r.iii

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method:

PUMPING CAPACITY:

50 psi pressure at well head

Pumping level at 95 ft BGS – estimated from well driller's report

TDH = (50 psi x 2.31 ft/psi) + 95 ft = 210.5 ft

Diversion rate = 21 gpm = **0.05 cfs****HEATING AND COOLING:****0.02 cfs** – see AHR! Data attachment showing a flow rate of 11.0 gpm for this model heat pump**DOMESTIC:****0.04 cfs** – per Admin AP Memo No 22 for single home domestic use**TOTAL = 0.05 cfs****F. VOLUME CALCULATIONS**

1. Volume Calculations for irrigation:

 $V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$ $V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$ $V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$

2. Volume Calculations for Other Uses:

DOMESTIC: 1.2 afa per Admin AP Memo No 22 for a single home domestic use plus up to ½ acre irrigation**HEATING AND COOLING:**

Rate: 0.02 cfs

Days: 246 days with average temp in Murphy less than 55 deg F or greater than 70 deg F (usclimatedata.com)

Hours per day: estimated 8 hrs run time for heat pump on each of the 246 days

$$\frac{0.02 \text{ ft}^3}{\text{sec}} \times \frac{60 \text{ sec}}{\text{min}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{8 \text{ hrs}}{\text{day}} \times \frac{246 \text{ days}}{\text{year}} \times \frac{1 \text{ acre-foot}}{43560 \text{ ft}^3} = \mathbf{3.2 \text{ afa}}$$

G. NARRATIVE/REMARKS/COMMENTS

This permit was approved on April 7, 2006 authorizing the diversion of 0.08 cfs from groundwater for heating, cooling, and domestic purposes. Proof of beneficial use was submitted on February 3, 2011. I completed this field exam on June 18, 2019.

The point of diversion is a six-inch well with metal tag no D0042461. The well is located at N43°21'17.6" by W116°33'26.2". A 1.5 hp Grundfos pump diverts water from the well at 50 psi to the home for domestic use (including the lawn irrigation) and to a heat exchanger in the basement of the house. From the heat exchanger, the water runs back outside to a separate injection well. From the well driller's report, it looks like a reasonable pumping level could be estimated at around 95 ft below ground surface. The pump curve for this model pump shows a diversion capacity of around 21 gpm, or 0.05 cfs.

The heat exchanger has a model ID of VXV042A100NMT1SSA. I found a spec sheet for that model online, which shows that the flow rate for this model is 11 gpm, or 0.02 cfs, which is the heating and cooling diversion rate I have recommended. Looking at data from usclimatedata.com, I determined that there are a total of 246 days in Murphy where the mean daily temperature was either below 55 degrees or above 70 degrees. I assumed that the heating/cooling system ran a total of 8 hrs on each of these days. The annual volume I calculated for heating and cooling is 3.2 afa. I recommended 3.2 afa for both heating *and* cooling, but these values are not additive. The recommended rate and volume for domestic use were taken from Admin AP Memo 22.

There are no overlapping uses of the well, nor are there any other water rights used for these purposes at this location.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
DOMESTIC	01/01 to 12/31	0.04 CFS	1.2 AF
HEATING	01/01 to 12/31	0.02 CFS	3.2 AF
COOLING	01/01 to 12/31	0.02 CFS	3.2 AF

Totals: 0.05 CFS 4.4 AF

2. Recommended Amendments

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

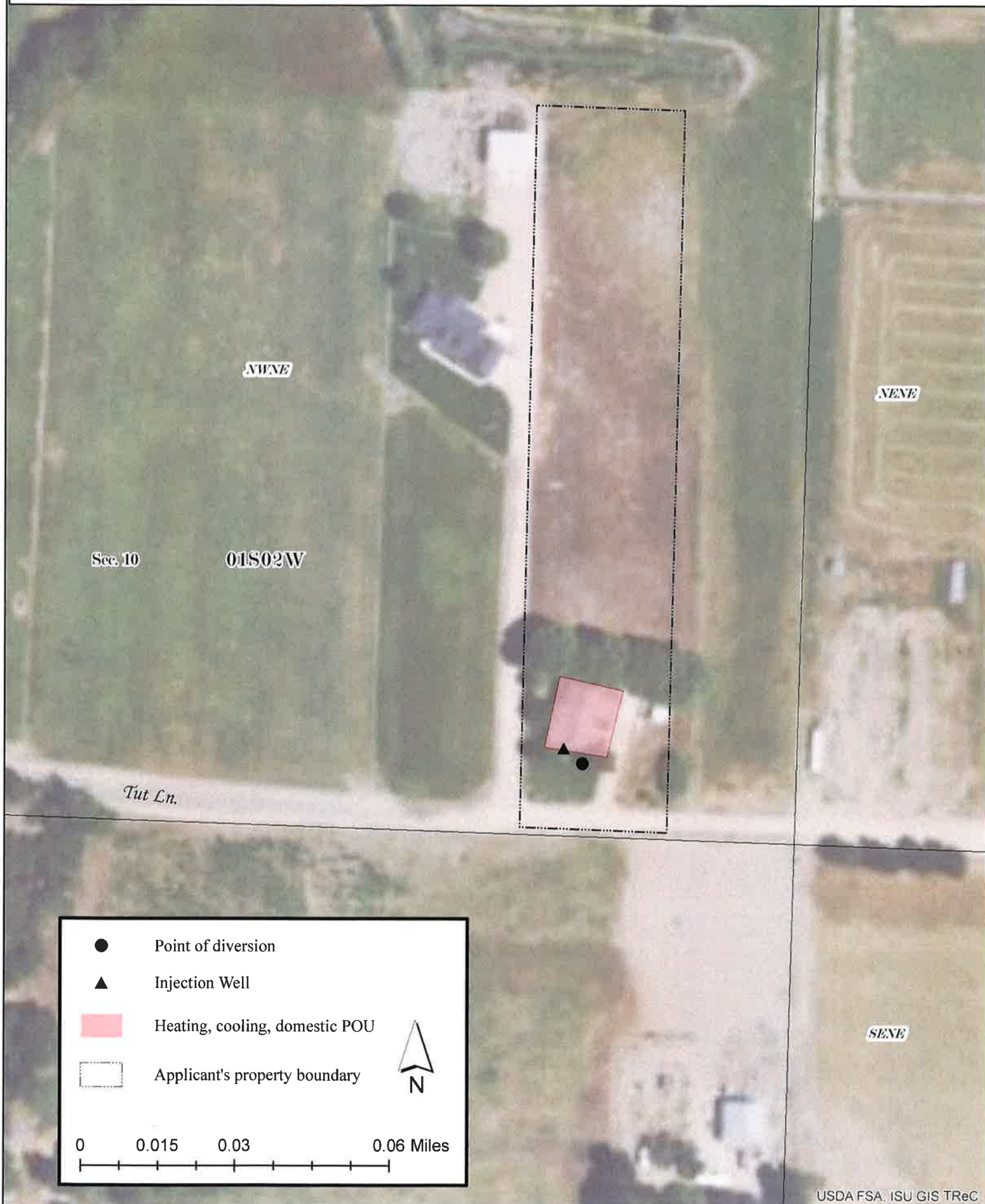
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

Cody Parker - Water Resource Agent, Senior

Field Examiner's Name Cody Parker Date 6-20-19

Reviewer _____ Date _____

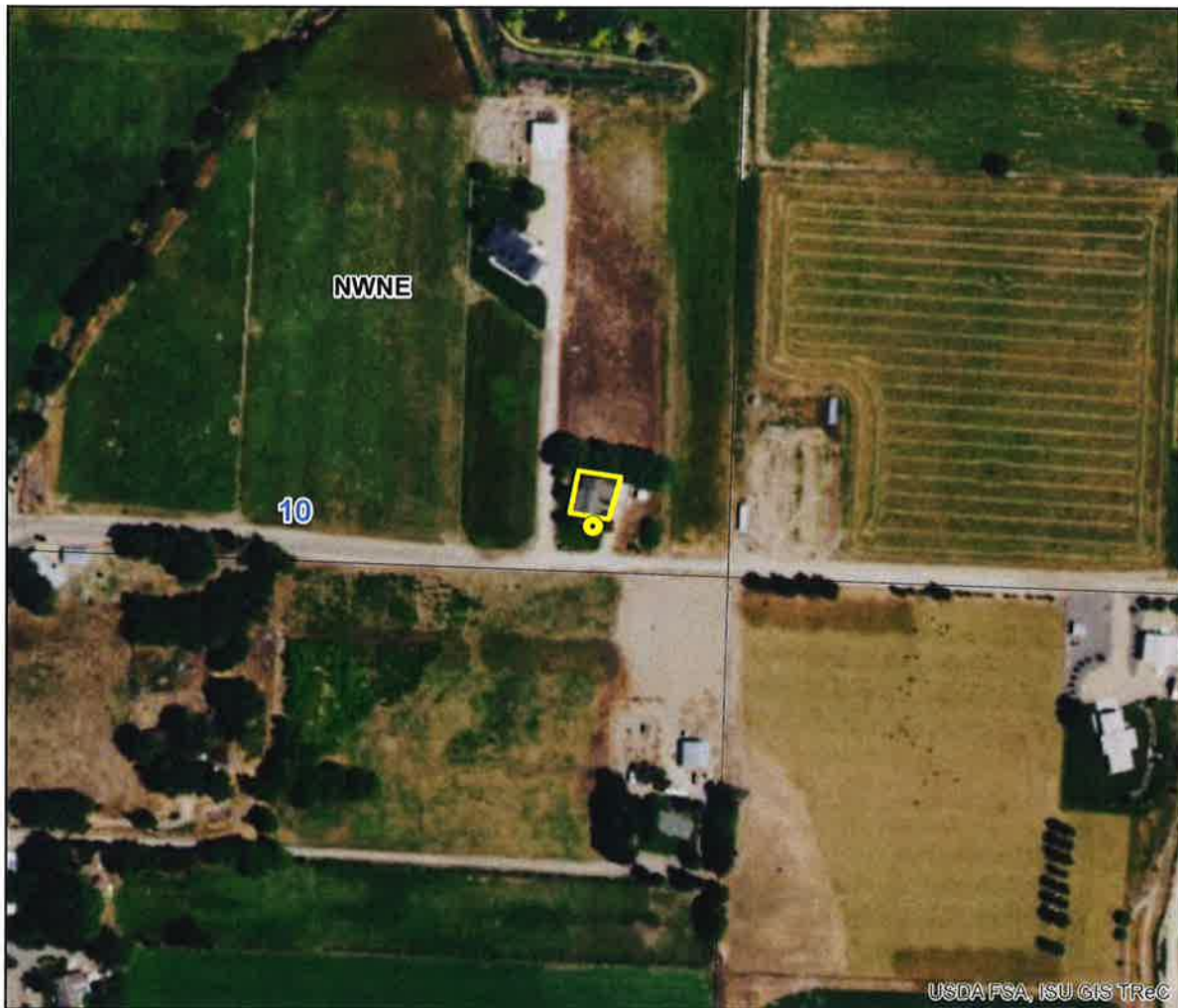


State of Idaho
Department of Water Resources
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DOMESTIC, HEATING, and COOLING

02W

01S



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

0 0.035 0.07 0.14 Miles



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The production well is a six-inch domestic well with a metal tag no. D0042461.



The controller for the Grundfos pump. The tag shows that the pump is the 1.5 hp 22 SQE10-190 model pump. The pump curve is included in the exam.

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The specifications for the heating/cooling system. The model number shown here was used to determine the flow rate required by the system from the equipment documentation.



The injection well located just west of the production well. This well has a metal tag on the backside, which is not visible due to the structure behind.

AHRI Data

PSC Motor

AHRI/ASHRAE/ISO 13256-1

English (IP) Units

Model	Flow Rate		Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
			Cooling EWT 86°F		Heating EWT 68°F		Cooling EWT 59°F		Heating EWT 50°F		Cooling EWT 77°F		Heating EWT 32°F	
	gpm	cfm	Capacity Btu/h	EER Btu/h/W	Capacity Btu/h	COP	Capacity Btu/h	EER Btu/h/W	Capacity Btu/h	COP	Capacity Btu/h	EER Btu/h/W	Capacity Btu/h	COP
006	2.0	250	7,100	13.4	8,000	4.3	8,400	21.3	6,800	3.8	7,400	15.5	5,400	3.2
009	3.0	350	8,100	12.2	11,400	4.6	9,900	19.2	9,600	4.0	8,900	14.5	7,600	3.4
012	3.0	400	10,200	12.2	15,200	4.4	12,200	18.2	12,600	3.9	11,200	14.2	10,200	3.5
015	4.0	500	13,200	12.5	15,400	4.5	16,000	20.0	13,000	4.0	14,000	15.3	10,400	3.2
018	5.0	600	17,300	13.4	19,000	4.3	19,800	20.5	16,000	3.7	18,000	15.4	12,600	3.2
024	6.0	800	22,900	13.0	26,000	4.5	27,000	19.8	22,600	4.0	24,500	14.8	17,000	3.3
030	8.0	1000	28,400	13.8	34,000	4.5	33,500	21.0	28,000	4.0	30,000	16.0	21,000	3.3
036	9.0	1150	34,500	14.0	43,800	4.7	40,000	22.0	35,600	4.2	36,000	16.3	26,000	3.3
042	11.0	1400	39,200	13.2	51,000	4.7	47,000	20.4	41,400	4.3	42,000	15.2	30,500	3.3
048	12.0	1600	47,200	13.0	59,000	4.6	57,000	19.8	48,000	4.0	49,500	15.0	36,500	3.3
060	15.0	1900	57,000	13.5	66,000	4.3	67,000	21.0	55,000	4.0	58,000	15.2	43,000	3.3
070	18.0	2100	66,000	14.0	80,000	4.5	75,000	20.5	64,000	4.0	68,000	15.6	49,000	3.3

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature

Heating capacities based upon 68°F DB, 59°F WB entering air temperature

All ratings based upon 208V operation

09/26/12

Variable Speed ECM, 5-Speed ECM Motor

AHRI/ASHRAE/ISO 13256-1

English (IP) Units

Model	Flow Rate		Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
			Cooling EWT 86°F		Heating EWT 68°F		Cooling EWT 59°F		Heating EWT 50°F		Cooling EWT 77°F		Heating EWT 32°F	
	gpm	cfm	Capacity Btu/h	EER Btu/h/W	Capacity Btu/h	COP	Capacity Btu/h	EER Btu/h/W	Capacity Btu/h	COP	Capacity Btu/h	EER Btu/h/W	Capacity Btu/h	COP
015	4.0	500	13,800	13.2	16,100	4.6	16,000	21.0	13,400	4.1	14,200	15.7	11,000	3.3
018	5.0	600	17,300	14.2	19,000	4.5	19,800	22.0	16,000	3.9	18,000	16.2	12,600	3.3
024	6.0	800	22,900	13.6	26,000	4.7	27,000	20.8	22,600	4.2	24,500	15.6	17,000	3.5
030	8.0	900	28,400	14.7	34,000	4.7	33,500	22.5	28,000	4.2	30,000	17.0	21,000	3.5
036	9.0	1150	34,500	14.5	43,800	4.9	40,000	23.0	35,600	4.4	36,000	17.0	26,000	3.5
042	11.0	1400	39,200	14.2	51,000	4.9	47,000	22.0	41,400	4.5	42,000	16.6	30,500	3.5
048	12.0	1600	47,200	14.0	59,000	4.8	57,000	21.0	48,000	4.2	49,500	16.0	36,500	3.5
060	15.0	1900	57,000	14.0	66,000	4.6	67,000	22.0	55,000	4.2	58,000	16.0	43,000	3.5
070	18.0	2100	66,000	14.6	80,000	4.7	75,000	22.0	64,000	4.2	68,000	16.6	49,000	3.5

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature

Heating capacities based upon 68°F DB, 59°F WB entering air temperature

All ratings based upon 208V operation

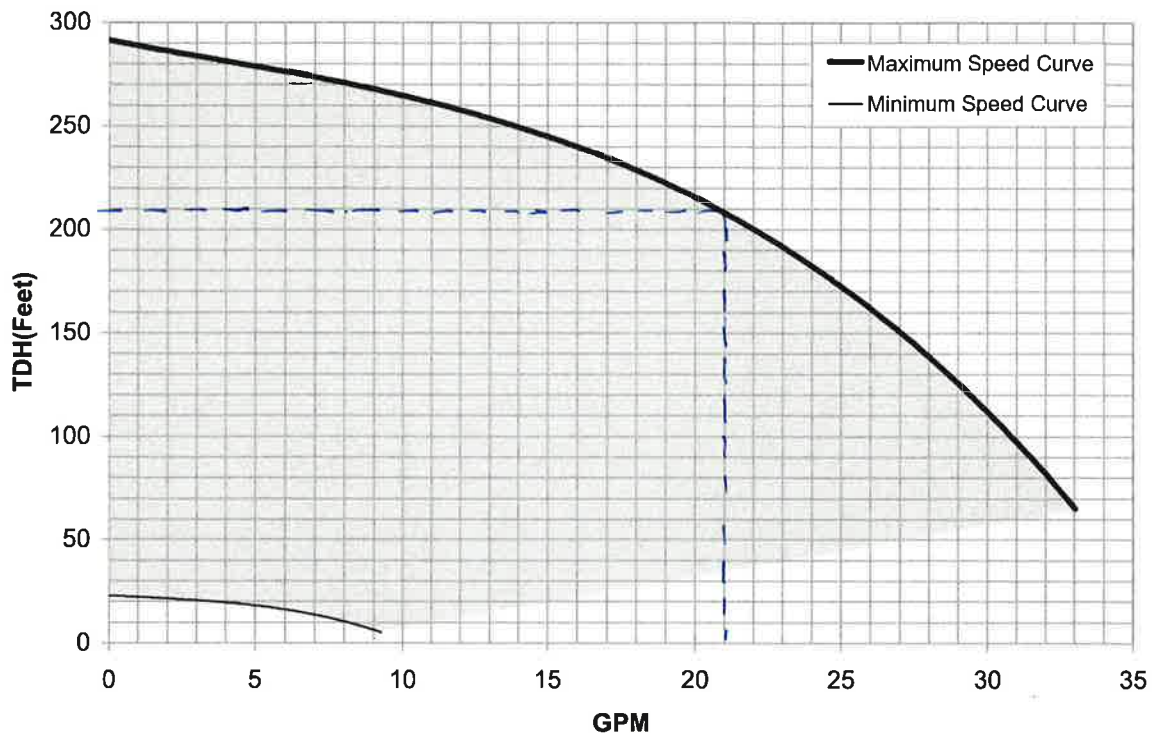
09/26/12

PERFORMANCE CURVES

Pumping Level = 95 ft
Pressure = 50 psi
 $TDH = (50 \times 2.31) + 95 = 210.5 \text{ ft}$

SQE

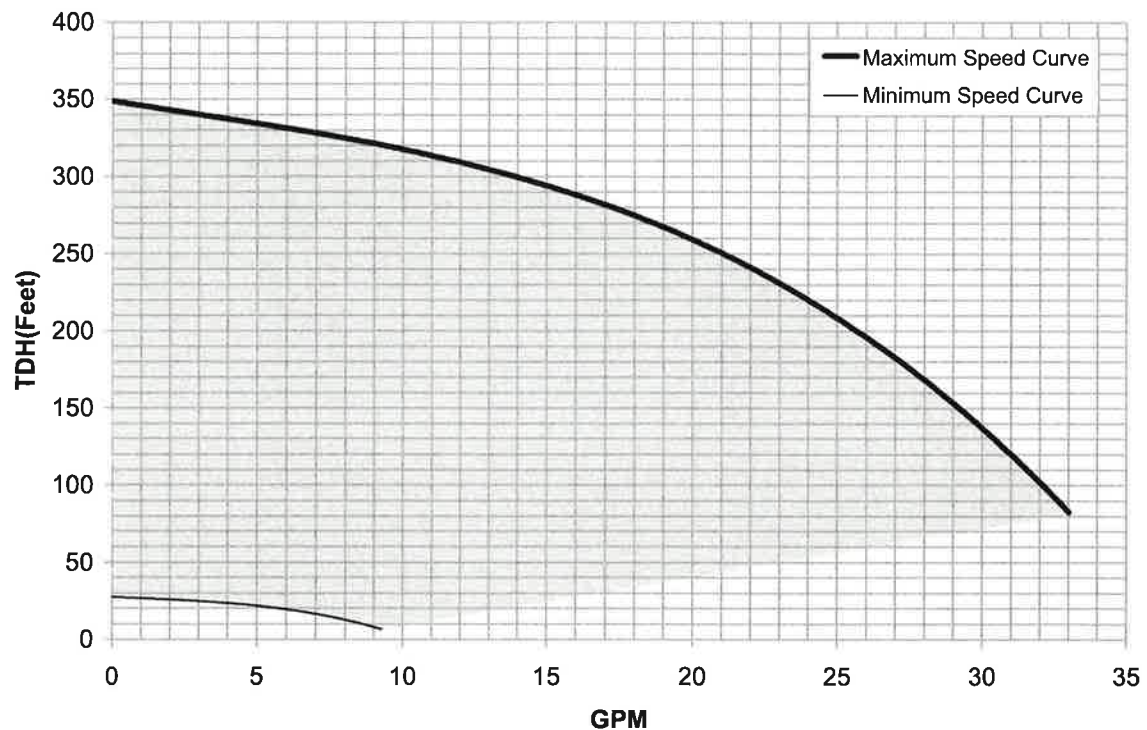
22 GPM • MODEL 22SQE10-190



OUTLET SIZE: 1 1/2" NPT

NOMINAL DIA. 3"

22 GPM • MODEL 22SQE15-220



OUTLET SIZE: 1 1/2" NPT

NOMINAL DIA. 3"

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Basin/Sequ	Owner	Source	Use	NENE	NWNE	SWNE	SENE	NENW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
01 S02W10																			
63-11093	CLIFFORD SPRING	STOCKWATER		X															
63-12443	T & S FAF UNNAME	AESTHETIC							X										
63-12443	T & S FAF UNNAME	STORAGE							X										
63-12443	T & S FAF UNNAME	RECREATION							X										
63-12443	T & S FAF UNNAME	RECREATION STORAGE							X										
63-12443	T & S FAF UNNAME	WILDLIFE STORAGE							X										
63-136	BARKER BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-137B	BARKER BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-19846	CLIFFORD SPRING	STOCKWATER																	
63-19847	CLIFFORD GROUND	DOMESTIC																	
63-200A	BARKER BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-2106	UNITED'S FIVEMILLI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-23223	BAIRD, C GROUND	DOMESTIC																	
63-23223	BAIRD, C GROUND	STOCKWATER																	
63-23225	BAIRD, A GROUND	DOMESTIC																	
63-233K	AMERICA/BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-23672	NEBEKER GROUND	DOMESTIC							X										
63-23672	NEBEKER GROUND	STOCKWATER							X										
63-2388A	UNITED'S BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-2392F	BOISE PR WASTE W	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-251A	UNITED'S BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-26671	BARKER BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-2699	NICHOLS GROUND	IRRIGATION						24											24
63-27390	LOOTEN'S GROUND	DOMESTIC																	
63-301A	UNITED'S BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-302A	UNITED'S BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-3121	NICHOLS GROUND	DOMESTIC																	
63-3121	NICHOLS GROUND	STOCKWATER																	
63-31819	EVANS, R GROUND	IRRIGATION					9.5												9.5
63-31873	ROWE, C GROUND	IRRIGATION					6.5												6.5
63-32246	BLOUGH GROUND	COOLING		X															
63-32246	BLOUGH GROUND	DOMESTIC		X															
63-32246	BLOUGH GROUND	HEATING		X															
63-32248	CHESNUT GROUND	IRRIGATION																	8
63-32249	BLOUGH GROUND	IRRIGATION																	2.6
63-32271	RUPPERT GROUND	DOMESTIC		X															
63-32271	RUPPERT GROUND	FISH PROPAGATION		X															
63-32272	HABER, E GROUND	IRRIGATION																	2.3
63-32290	RUPPERT GROUND	FISH PROPAGATION		X															
63-32290	RUPPERT GROUND	IRRIGATION		21.8															21.8
63-32291	RUPPERT GROUND	IRRIGATION		2.6															2.6
63-32525	THLTD F GROUND	STOCKWATER							X										6
63-32528	ENGLE, F WARM SF	IRRIGATION							6										34
63-32529	ENGLE, F WARM SF	IRRIGATION							34										6
63-32530	BARGER, WARM SF	IRRIGATION							34										34
63-32531	BARGER, WARM SF	IRRIGATION																	
63-33251	BOISE PR INDIAN C	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-33253	BOISE PR TENMILE	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-34302	EVANS, R GROUND	IRRIGATION		9.6															9.6
63-34302	EVANS, R GROUND	STOCKWATER																	
63-356	NICHOLS GROUCH	DOMESTIC		X															
63-356	NICHOLS GROUCH	STOCKWATER																	
63-356	NICHOLS GROUND	DOMESTIC																	
63-356	NICHOLS GROUND	STOCKWATER																	
63-3578	ELDORAI GROUND	IRRIGATION																	41
63-372	BARKER BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-373A	UNITED'S BOISE RI	IRRIGATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
63-5411	BALL, LL GROUND	DOMESTIC														X			
63-8188	RUPPERT GROUND	FISH PROPAGATION		X															
63-9041	BAIRD, C GROUND	IRRIGATION						25			25								50

Different use, same QQ, no overlap
Same QQ, no overlap

01S02W10

Basin/Sequ	Owner	Source	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE
63-11093	CLIFFORD SPRING		X															
63-12443	T & S FAI UNNAMED STREAM																	
63-19846	CLIFFORD SPRING		X				X											
63-19847	CLIFFORD GROUND WATER		X															
63-21608	NICHOLS WARM SPRINGS CREEK						X											
63-23223	BAIRD, C GROUND WATER										X							
63-23225	BAIRD, A GROUND WATER																	
63-23672	NEBEKEF GROUND WATER								X								X	
63-2420	REYNOLD WARM SPRINGS CREEK						X											
63-2699	NICHOLS GROUND WATER		X															
63-27390	LOOTENS GROUND WATER				X													
63-306	REYNOLD WARM SPRINGS CREEK						X											
63-3121	NICHOLS GROUND WATER						X											
63-31819	EVANS, R GROUND WATER		X															
63-31873	ROWE, C. GROUND WATER		X															
63-32246	BLOUGH GROUND WATER		X															
63-32248	CHESNU GROUND WATER		X															
63-32249	BLOUGH GROUND WATER		X															
63-32271	RUPPERT GROUND WATER		X															
63-32272	HABER, F GROUND WATER		X															
63-32290	RUPPERT GROUND WATER		X															
63-32291	RUPPERT GROUND WATER		X															
63-32525	TFLTD F GROUND WATER							X										
63-32530	BARGER, WARM SPRINGS CREEK							X										
63-32531	BARGER, WARM SPRINGS CREEK							X										
63-34302	EVANS, R GROUND WATER		X															
63-353A	ALLEN, E WARM SPRINGS CREEK							X										
63-356	NICHOLS GROUCH DRAIN		X			X												
63-356	NICHOLS GROUND WATER		X			X												
63-357	NICHOLS GROUCH DRAIN		X			X												
63-357	NICHOLS GROUND WATER		X			X												
63-3578	ELDORAI GROUND WATER													X				
63-358	NICHOLS GROUCH DRAIN		X			X												
63-358	NICHOLS GROUND WATER		X			X												
63-359	REYNOLD DRAINS																	
63-5411	BALL, LL GROUND WATER						X											
63-7911	ALLEN, E WARM SPRINGS CREEK							X								X		
63-8188	RUPPERT GROUND WATER		X															
63-9041	BAIRD, C GROUND WATER										X							
63-9909	REYNOLD WARM SPRINGS CREEK							X										

Separate source, no overlap

Separate well, no overlap

Parker, Cody

From: Fischer, Nate
Sent: Tuesday, June 25, 2019 1:42 PM
To: Parker, Cody
Subject: RE: Injection well permit

Cody,

Yes, Injection Well # 63W211001. Heat pump return well. I don't know if they use it, but they do have a permit to inject.

Nate Fischer

From: Parker, Cody
Sent: Tuesday, June 25, 2019 1:11 PM
To: Fischer, Nate <Nate.Fischer@idwr.idaho.gov>
Subject: Injection well permit

Hey Nate,

Is there an injection well permit associated with metal tag no. D0042462? It is for heating and cooling use. I am trying to determine if the owner ever actually injected any water or if the heating system is closed-loop.

Thanks,

Cody Parker

Idaho Dept. of Water Resources
Water Resource Agent
208.334.2190
cody.parker@idwr.idaho.gov



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region • 2735 W Airport Way • Boise ID 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348

Website: idwr.idaho.gov • Email: westerninfo@idwr.idaho.gov

BRAD LITTLE
Governor

GARY SPACKMAN
Director

April 29, 2019

MARY BLOUGH
8292 TUT LN
MELBA ID 83641

RE: Scheduling Field Exam for Water Permit No. 63-32246

Dear Permit Holder:

The Idaho Department of Water Resources (IDWR) is planning to conduct water right examinations in the vicinity of the above-referenced permit. An examination is needed to verify water use(s) developed under the permit in order to issue a water right license.

Your permit authorizes the diversion of 0.08 cfs from groundwater for heating, cooling, and domestic use. If you developed a beneficial use of water and still own the place of use property identified in the permit, please contact me at your earliest convenience to schedule an examination.

If you developed a beneficial use of water under the permit but no longer own the place of use property, please use the enclosed Assignment of Permit form (\$25 fee). This will allow IDWR to work with the new permit owner for the license process.

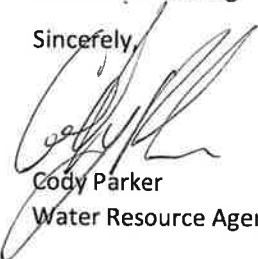
A license cannot be issued if beneficial use of water was not developed or if use was developed but abandoned.

In either of those cases, please relinquish the permit by using the enclosed Relinquishment of Permit form (no fee required). The permit will be voided if a relinquishment form is not submitted for either of those cases.

Please contact me within the next thirty (30) days to schedule an examination or submit a relinquishment or complete an assignment form. If you still own the property in question but do not make a timely response in this regard, the permit will be voided. If you no longer own that property and do not assign or relinquish the permit, IDWR will work with the current property owner to issue a license or void the permit.

Please call me at 208-334-2190 if you have any questions. I appreciate your attention to this matter and look forward to hearing from you.

Sincerely,



Cody Parker
Water Resource Agent, Sr.

Enclosure: Relinquishment of Permit Form
Assignment of Permit Form
Proof Report and Map