

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-34138
Exam Date: 02/08/2021

1. Current Owner:
JUSTIN CHRISTENSEN 8571 BENNETT RD NAMPA ID 83686-9247 AND
SUNNY CHRISTENSEN 8571 BENNETT RD NAMPA ID 83686-9247
2. Accompanied by: Same
Phone No:
Address:
Relationship to permit Holder:

3. **SOURCE:**
GROUND WATER

Method of Determination: Site visit, Well log

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis

Comments: No overlap present

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

Water Right No.	Source	Purpose of Use	Basis

Comments: No overlap present

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE¼ NW¼, Sec. 34, Twp 02N, Rge 02W, B.M. CANYON County

Method of Determination: Well GPS'd at 43° 28' 20" N, 116° 33' 53" W

PLACE OF USE: HEATING

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	02W	34					X												

Method of Determination: Site visit, digital PLSS system, aerial imagery.

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
299985	n/a	n/a	n/a	n/a	n/a

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
n/a	n/a	n/a	n/a	n/a	n/a	n/a

2. Measurements: No measurements were taken.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: See attached heating spreadsheet

Permit	0.04 cfs
B.U. Fee Paid	\$50 → 0 to 0.20 cfs
B.U. Standard	0.04 cfs for domestic
Well Test	0.04 cfs
Heating Rate Spreadsheet	0.02 cfs

License Recommendation **0.02 cfs**

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: n/a

2. Volume Calculations for Other Uses: See attached heating spreadsheet

Heating – 9.4 AF (heating spreadsheet)

Domestic – 0.6 AF (Dept. standard for 1 domestic in-home only use)

G. NARRATIVE/REMARKS/COMMENTS

This permit authorizes 0.04 cfs of low temperature geothermal groundwater for heating and domestic uses in Canyon County. Proof of beneficial use was submitted on January 14, 2021 and a field exam was conducted by WRA Tyler Smith on February 8, 2021, who was accompanied by the permit holders.

The point of diversion is an 8" well ID #299985 (43° 28' 20" N, 116° 33' 53" W) drilled by Robinson Well Drilling in 1994. The water temperature and bottom hole temperature for the well are both 124°F and therefore it is a low temperature geothermal well. A new submersible pump was installed by Treasure Valley Pump a number of years ago. The permit holders did not have any information regarding the pump, and Treasure Valley Pump could not provide any information regarding the pump installed either. According to the well log, the well test yielded 18 gpm or 0.04 cfs.

Warm water is diverted from the well via 1 ¼ polyline to both the shed and the home. The heat value of the water is used to heat the shed and is then transferred to two cooling tanks between 500-800 gal (permit holder unsure exact volume) before it is used for domestic purposes. The shed is typically kept between 50° - 65° F when outside temperatures drop below 65°F. The thermostat is turned up during calving season when calves are brought into the barn part of the shed or when livestock are sick or injured. Otherwise, the temperature is kept closer to 50°F. Due to the variability of seasonal temperatures and early fall/ late spring cold spells, the season of use suggested for this heating use is from 9/1 to 5/1. The season of use from 9/1 to 5/1 is 243 days which is reflected in the attached heating use spreadsheet.

When the application was filed, there was infrastructure in place to utilize the heat value of the water to heat the house, driveway and patios. However, the pipes for this system in the driveway burst and were not replaced and the house heating system was switched to natural gas, thus, no heating use is utilized for the house. Per the permit, low temperature geothermal water for domestic use must first be used for heating purposes and therefore the domestic use is not being recommended for licensing.

According to the attached heating use spreadsheet, the recommended rate for heating is 0.02 cfs and an annual volume of 9.4 AF, both of which are recommended for licensing.

Have conditions of permit approval been met? X 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>
HEATING	01/01 to 12/31	0.02 CFS	9.4 AF

Totals: 0.02 CFS 9.4 AF

2. Recommended Amendments

Change P.D. as reflected above Add P.D. as reflected above X None

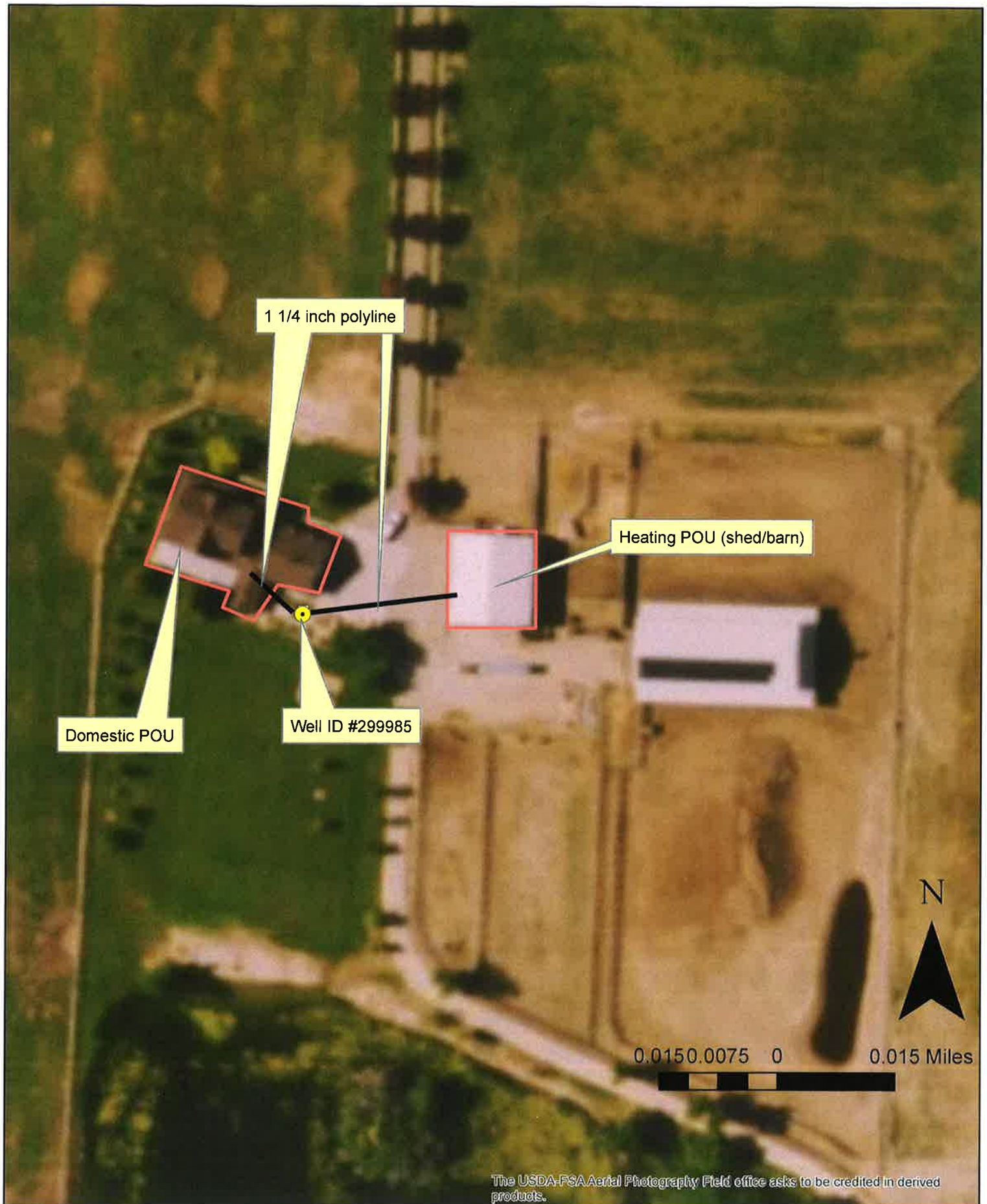
Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION Tyler Smith - Water Resource Agent

Field Examiner's Name [Signature] Date 3/18/21

Reviewer Patrick Kelly Date 3-18-2021

63-34138 Delivery System Diagram



RESIDENTIAL SPACE HEATING/COOLING REQUIREMENTS FOR COLD OR GEOTHERMAL SOURCES

Worksheet created by Cindy Hodges, 11/93.

Data entered by: Tyler Smith
Exam Date: 02/08/21
File No: 63-34138
Computations for: Heating of 1 shop/barn

REQUIRED DATA:

Area of livable floor space, ft2 (A) 2000
2 story? (N=1, Y=2) 1
House efficiency factor (e) * 1.11
Inside design temperature (Ti) 65
Average outside temperature (To) ** 30
Source temperature, degrees F (S) 124
Heating/cooling days per season (D) 243
Hours/day system operates (H) 24

* e values are as follows:

- 0.28 Best energy efficiency - extra insulation, caulked and weatherstripped, with storm windows and doors
- 0.44 Better energy efficiency - standard insulation, caulked and weatherstripped, with storm windows and/or doors
- 0.67 Average residence - standard insulation, no weatherproofing but with storm windows or double panes
- 1.11 Poor energy efficiency - minimal insulation, no weatherproofing or storm windows (older homes, shops or greenhouses)

** Suggested average outside temperatures:

WINTER	SUMMER
30 deg F Boise	75 deg F Boise
20 deg F Cascade	63 deg F Cascade

CALCULATED DATA:

DESIGN HEAT LOAD (BTU/hr required)
Formula: $E = [e \times (Ti - To)] \times A$
Applies factor of 0.8 for two-story dwelling

E = 77,700 BTU/hour

TEMPERATURE DROP ACROSS SYSTEM
Formula: $T_s = 0.3 \times [S - Ti]$

Ts = 17.7 degrees F

FLOW RATE REQUIRED (at given source temperature)
Formula: $Q = E / (500 \times Ts) \times 448.8$

Q = 0.01956 cfs

DIVERTED VOLUME OVER SEASON
Formula: $V_{div} = Q \times D \times H / 24 \times 1.9835$

Vdiv = 9.4 AFA

AVERAGE TEMPERATURE CALCULATION:

4 DEG MIN + 80 DEG HIGH / 2 =
42 DEG AVERAGE YEAR ROUND TEMP.

FORWARD WHITE COPY TO WATER RESOURCES

2N 2W 34 NE NW
Ralph Robinson

55501

63-94. W-0661000

Number	Depth in Feet	Ohms Res Aug11/94	Temp. oC	Temp. oF
0	0	72.08	30.045	86.08
1	16.25	76.29	28.51	83.32
2	32.65	82.25	26.47	79.65
3	49.05	83.71	25.987	78.78
4	65.45	83.86	25.94	78.69
5	81.85	82.85	26.27	79.29
6	98.25	79.89	27.26	81.07
7	114.65	72.85	29.76	85.57
8	131.05	66.95	32.03	89.65
9	147.45	60.46	34.763	94.57
10	163.85	45.59	42.3	108.14
11	180.25	43.55	43.52	110.336
12	196.65	40.58	45.415	113.75
13	213.05	37.77	47.335	117.2
14	229.45	34.84	49.51	121.12
15	245.85	32.93	51.03	123.8
16	262.25	0	0	0
17				

gwc

MICROFILMED

MAY 08 1995

TRS	Basin/Sequence	Owner	Source	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SESW	NESE	NWSE	SWSE	SESE
02N02W34	63-12064	CHRISTENSEN, JUSTIN; CHRISTENSEN, SUNNY; WHEATON, LARRY	GROUND WATER					X							
02N02W34	63-20736	HUTTASH, CHRISTINA M; HUTTASH, MICHAEL E	GROUND WATER						X						
02N02W34	63-21034	CHRISTENSEN, LUCY; CHRISTENSEN, VIRGIL	GROUND WATER	X											
02N02W34	63-21036	CHRISTENSEN, LARRY D; CHRISTENSEN, TAWANA A	GROUND WATER									X			
02N02W34	63-23996B	CHRISTENSEN, JULIANNE E; CHRISTENSEN, ROGER M; NEIDER, JAY C	GROUND WATER												X
02N02W34	63-23996C	CHRISTENSEN, JULIANNE; CHRISTENSEN, LARRY D; CHRISTENSEN, ROGER; CHRISTENSEN, TAWANA A	GROUND WATER							X					
02N02W34	63-27920	GIRVEN, CHARLOTTE; GIRVEN, DONALD R	GROUND WATER						X						
02N02W34	63-3039	DE JONG, DEBRA; DE JONG, SIMON; MOORE, VERLEN B	GROUND WATER	X											
02N02W34	63-3046	CASPER, LOIS L; HOPPINS, B F	GROUND WATER												X
02N02W34	63-3157	BLICKENSTAFF, RONALD I; NAMPA HIGHWAY DISTRICT	GROUND WATER				X								
02N02W34	63-3181	BOWMAN, COLLEEN; BOWMAN, ERLI; CHRISTENSEN, JUSTIN; CHRISTENSEN, SUNNY; SCH	GROUND WATER					X							
02N02W34	63-32489	CASPER, KENNETH D; SUNSET HILLS HOMEOWNERS ASSN	GROUND WATER								X				
02N02W34	63-32502	CASPER, KENNETH D; JOHNSON, GREGORY B; SUNSET HILLS HOMEOWNERS ASSN	GROUND WATER								X				
02N02W34	63-32504	JOHNSON, GREGORY B; JOHNSON, HEIDI M; NEIDER, JAY C; SUNSET HILLS HOMEOWNERS	GROUND WATER								X				
02N02W34	63-33539	NEIDER, JAY C; STAFFORD, JOE F	GROUND WATER								X				X
02N02W34	63-33550	CASPER, KENNETH D; JOHNSON, GREGORY B; MASCO INC	GROUND WATER								X				
02N02W34	63-33551	CASPER, KENNETH D; JOHNSON, GREGORY B; MASCO INC; NAMPA HIGHWAY DISTRICT #1	GROUND WATER								X				
02N02W34	63-33552	JOHNSON, GREGORY B; JOHNSON, HEIDI M; MASCO INC; NEIDER, JAY C	GROUND WATER								X				
02N02W34	63-33553	JOHNSON, GREGORY B; JOHNSON, HEIDI M; MASCO INC; NAMPA HIGHWAY DISTRICT #1	GROUND WATER								X				
02N02W34	63-33608	CASPER, KENNETH D; MASCO INC	GROUND WATER								X				
02N02W34	63-33609	CASPER, KENNETH D; MASCO INC; NAMPA HIGHWAY DISTRICT #1	GROUND WATER								X				
02N02W34	63-34138	CHRISTENSEN, JUSTIN; CHRISTENSEN, SUNNY; SPF WATER ENGINEERING LLC	GROUND WATER					X							

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= overlap

TRS	BasinSequence	Owner	Source	Use	NENE	NWNE	SWNE	SENE	NENW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	TotalAcres
02N02W34	63-12064	CHRISTENSEN, JUSTIN; CHRISTENSEN, SUN	GROUND WATER	HEATING																
02N02W34	63-136	BARKER ROSHOLT & SIMPSON LLP; BOISE	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-137B	BARKER ROSHOLT & SIMPSON LLP; BOISE	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-200A	BARKER ROSHOLT & SIMPSON LLP; BOISE	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-20736	HUTTASH, CHRISTINA M; HUTTASH, MICHAEL	GROUND WATER	DOMESTIC																
02N02W34	63-21034	CHRISTENSEN, LUCY; CHRISTENSEN, VIRGINIA	GROUND WATER	DOMESTIC	X															
02N02W34	63-21034	CHRISTENSEN, LUCY; CHRISTENSEN, VIRGINIA	GROUND WATER	STOCKWATER	X															
02N02W34	63-21036	CHRISTENSEN, LARRY D; CHRISTENSEN, TARA	GROUND WATER	DOMESTIC																
02N02W34	63-21036	CHRISTENSEN, LARRY D; CHRISTENSEN, TARA	GROUND WATER	STOCKWATER																
02N02W34	63-2106	UNITED STATES OF AMERICA ACTING THROUGH	FIVEMILE CREEK	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-233K	AMERICAN DITCH CO; BARKER ROSHOLT & SIMPSON LLP	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-2388A	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-2392F	BOISE PROJECT BOARD OF CONTROL	WASTE WATER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-23996B	CHRISTENSEN, JULIANNE E; CHRISTENSEN, JULIANNE	GROUND WATER	IRRIGATION																
02N02W34	63-23996C	CHRISTENSEN, JULIANNE; CHRISTENSEN, JULIANNE	GROUND WATER	IRRIGATION																
02N02W34	63-251A	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	40
02N02W34	63-26671	BARKER ROSHOLT & SIMPSON LLP; BOISE	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	95
02N02W34	63-27920	GIRVEN, CHARLOTTE; GIRVEN, DONALD R	GROUND WATER	DOMESTIC																
02N02W34	63-301A	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-302A	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-3039	DE JONG, DEBRA; DE JONG, SIMON; MOORE	GROUND WATER	IRRIGATION	39.2															39.2
02N02W34	63-3046	CASPER, LOIS L; HOPPINS, B F	GROUND WATER	IRRIGATION																80
02N02W34	63-3157	BUICKENSTAFF, RONALD I; NAMPA HIGHWAY	GROUND WATER	IRRIGATION		40		40												80
02N02W34	63-3181	BOWMAN, COLLEEN; BOWMAN, ERLIC; CH	GROUND WATER	IRRIGATION		40			40											119
02N02W34	63-32489	CASPER, KENNETH D; SUNSET HILLS HOME	GROUND WATER	IRRIGATION							39									60
02N02W34	63-32502	CASPER, KENNETH D; JOHNSON, GREGORY	GROUND WATER	IRRIGATION																60
02N02W34	63-32504	JOHNSON, GREGORY B; JOHNSON, HEIDI M	GROUND WATER	IRRIGATION																60
02N02W34	63-33251	BOISE PROJECT BOARD OF CONTROL	INDIAN CREEK	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-33253	BOISE PROJECT BOARD OF CONTROL	TENMILE CREEK	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-33550	CASPER, KENNETH D; JOHNSON, GREGORY	GROUND WATER	IRRIGATION										36						36
02N02W34	63-33551	CASPER, KENNETH D; JOHNSON, GREGORY	GROUND WATER	IRRIGATION									30	2						32
02N02W34	63-33552	JOHNSON, GREGORY B; JOHNSON, HEIDI M	GROUND WATER	IRRIGATION										36						36
02N02W34	63-33553	JOHNSON, GREGORY B; JOHNSON, HEIDI M	GROUND WATER	IRRIGATION									30	2						32
02N02W34	63-33608	CASPER, KENNETH D; MASCO INC	GROUND WATER	IRRIGATION										34						34
02N02W34	63-33609	CASPER, KENNETH D; MASCO INC; NAMPA	GROUND WATER	IRRIGATION									26	6						32
02N02W34	63-34138	CHRISTENSEN, JUSTIN; CHRISTENSEN, SUN	GROUND WATER	DOMESTIC					X											
02N02W34	63-34138	CHRISTENSEN, JUSTIN; CHRISTENSEN, SUN	GROUND WATER	HEATING					X											
02N02W34	63-372	BARKER ROSHOLT & SIMPSON LLP; BOISE	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N02W34	63-373A	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

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 = overlap



Fig. 1 – Well ID #299985

Pump info: unknown

Water temperature: 124°F

GPS: 43° 38' 20" N

116° 33' 53" W



Fig. 2 – Inside of shed where heating/domestic is used. Barn, also heated, is accessed through blue door on right side of picture.



Fig. 3 – Thermostat in the shed/barn using geothermal heat is kept between 50° - 65° F during colder months.



Fig. 4 – Heater in the main room of the shed.



Fig. 5 – Second heater in closet area of shed used for heating.