

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-16699
Exam Date: 07/22/2020

1. Current Owner:
TRAVIS AND BRENDA BULLOCK
PO BOX 1189
CHALLIS ID 83226
2. Accompanied by: Travis Bullock, permit Holder and Cindy Yenter, IDWR Staff.
Phone No: 208-879-1189
Address: PO BOX 1189, Challis, ID 83226

3. **SOURCE:**
GROUND WATER

Method of Determination: Aerial Photography and Site Visit and interview with Travis Bullock

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
Permit 72-16772	Ground Water	Irrigation, Domestic, Stockwater	Permit

Comments: Permit 72-16772 and 72-16699 list some of the same uses. (see narrative)

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
Permit 72-16772	Ground Water	Irrigation, Domestic, Stockwater	Permit

Comments: Permit 72-16772 and 72-16699 list both points of diversion on the permits, (see narrative).

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER SW¼ NE¼, Sec. 10, Twp 14N, Rge 19E, B.M. CUSTER County

Method of Determination: Aerial Photography and Site Visit and interview with Travis Bullock

PLACE OF USE: IRRIGATION

[illegible]

Total Acres: 3.0

PLACE OF USE: STOCKWATER

[illegible]

PLACE OF USE: DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
14N	19E	10			X														

Method of Determination: Aerial Photography and Site Visit and interview with Travis Bullock

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
D0020993	N/A	2.0	N/A	Submersible	N/A

D. FLOW MEASUREMENTS

None taken. : No measurement is required per IDAPA 37.03.02 Beneficial Use Examination rules as the recommended license flow rate of 0.09 cfs falls below the 0.24 cfs or greater flow rate amount requiring measurement

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Theoretical yield: $Q = \frac{8.8 \times (HP) \times (EFF)}{H}$

Where: HP = 1 HP (acquired from applicant)

EFF = Pump Efficiency = 70% (assumed)

H = Total Dynamic Head = (total lift) + (2.31 x operating pressure). Total lift was estimated at 65 ft based on water level from well driller's report. Operating pressure estimated at 30 psi based on pressure gauge on system.

$(8.8) \times (2.0 \text{ hp}) \times 70\% = 12.32 = 0.09 \text{ cfs}$

$65 + (30 \times 2.31) = 134.3$

Irrigation: 3 acres x 0.03 cfs/a = 0.092 cfs. **Recommend 0.09 cfs**

Stockwater: **Recommend permitted amount of 0.02 cfs**

Domestic: **Recommend permitted amount of 0.04 cfs**

Total recommended flow of 0.09 cfs (theoretical well capacity)

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3 \text{ A} \times 3.5 \text{ af Ir} = 10.5 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.04 \text{ cfs} \times 183 \text{ days} \times 1.9835 = 14.5$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 10.5 \text{ AF}$$

2. Volume Calculations for Other Uses:

Domestic use for dog kennel only, year round

$$\text{Diversion rate } 0.04 \text{ cfs (permitted rate)} \times 30 \text{ minutes} = (1800 \text{ seconds} \times 0.04 \text{ cfs}) = 72 \text{ ft}^3 \times 365 \text{ days} = 26,280 \text{ ft}^3$$

$$26,280 \text{ ft}^3 / \text{year} \div 43,560 \text{ ft}^3 = 0.6 \text{ AF}$$

Domestic culinary use volume of 0.6 AF department standard

$$\text{Stockwater use for 50 head of horses 4 pigs and 12 chicken, year round}$$

$$50 \text{ horses} \times 12 \text{ gpd/head} \times 365 \text{ days} = 219,000 \text{ g} \div 325,850 \text{ g/AF} = 0.67 \text{ AF}$$

$$4 \text{ pigs} \times 4 \text{ gpd/head} \times 365 = 5840 \div 325,850 \text{ g/AF} = 0.02 \text{ AF (rounded)*}$$

$$12 \text{ chickens} \times 0.06 \text{ gpd/head} = 0.72 \div 325,850 \text{ g/AF} = 0.01 \text{ AF (rounded) *}$$

$$0.67 + 0.02 + 0.01 = 0.70 \text{ AF}$$

G. NARRATIVE/REMARKS/COMMENTS

In 2006 Travis and Brenda Bullock filed an application for permit, 72-16699, to drill a new well for domestic, stockwater, and irrigation uses for a new home being built, for their livestock and to irrigate the property. The existing well served a mobile home on the property, but is not sufficient to cover the additional uses. When they drilled a new well they hit hot water. In order to use the hot water they filed a new permit, 72-16772, for various beneficial uses for the hot water. Both permits listed two wells (the original well and the hot well). Because of circumstances beyond their control, they filed a request for extension of time on both permits before the proof due dates of each permit. The statement of completion for permit 72-16699 was filed in 2017 and permit 72-16772 statement of completion was filed in 2019.

The field exam for permit 72-16699 was conducted on July 22, 2020 with permit holder Travis Bullock and Cindy Yenter, IDWR watermaster for District 170 present. Cindy and I met with Mr. Bullock to discuss the development of his permit. We reviewed the proposed uses listed on his permit and Mr. Bullock confirmed he had developed irrigation, stockwater and domestic use. Mr. Bullock showed us around his property to verify what was developed and the points of diversion. Mr. Bullock explained that the recent earthquakes had damaged his system under ground and production from the well has decreased. Mr. Bullock also stated that because of the earthquakes he had to install a new system in the house and pressure tank to supply his home with water.

Permit 72-16699 list two ground water wells as points of diversion, a cold and hot water well. During the exam it was determined that each well is its own separate system, therefore this permit is for the cold water well and the beneficial uses developed from the cold water well. The hot water well will be dropped as a point of diversion from this permit at licensing. The hot water well and its developed uses will be covered under permit 72-16772.

The following beneficial uses were developed under this permit. Irrigation for 3 acres, Stockwater for 50 head of horses, four pigs and 12 chickens. Domestic use is for the home's culinary use and dog kennels. The recommended flow and volume for each of the uses are as follows:

Irrigation of 3 acres, rate: 0.09 cfs, volume: 10.5 af, (see calculations).

Stockwater rate: 0.02 cfs, volume: 0.7 af, (see calculations).

Domestic rate: 0.04 cfs, volume: 0.6 af for culinary plus 0.6 af for Kennel, totaling 1.2 af (see calculations).

Green house, is covered as irrigation

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>Volume</u>
IRRIGATION	04/01 to 10/31	0.09 CFS	10.5
STOCKWATER	01/01 to 12/31	0.02 CFS	0.7
DOMESTIC	01/01 to 12/31	0.04 CFS	1.2

Totals: 0.09 CFS 12.4 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 Benny Walker - Water Resource Agent, Senior

Field Examiner's Name Benny Walker Date 9/30/20
Reviewer _____ Date _____

Permit 72-16699

Cold water: well for domestic, irrigation and stockwater uses



Permit 72-16699



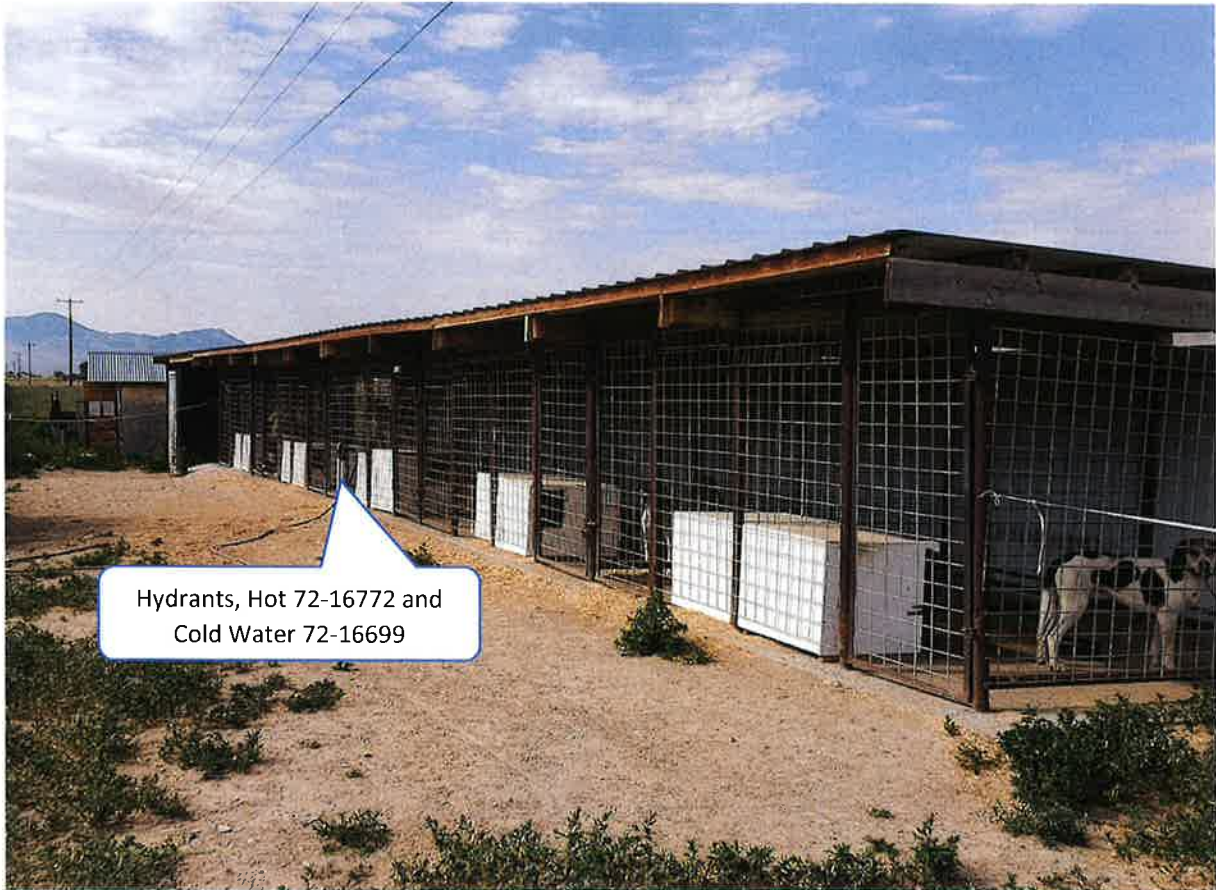
Domestic use for 6480 ft² home and garage from cold water well



View of the back of the home looking east

Field Exam 72-16699

Permit 72-16699



Hydrants, Hot 72-16772 and
Cold Water 72-16699

Above: Dog kennels with two hydrants, hot and cold water

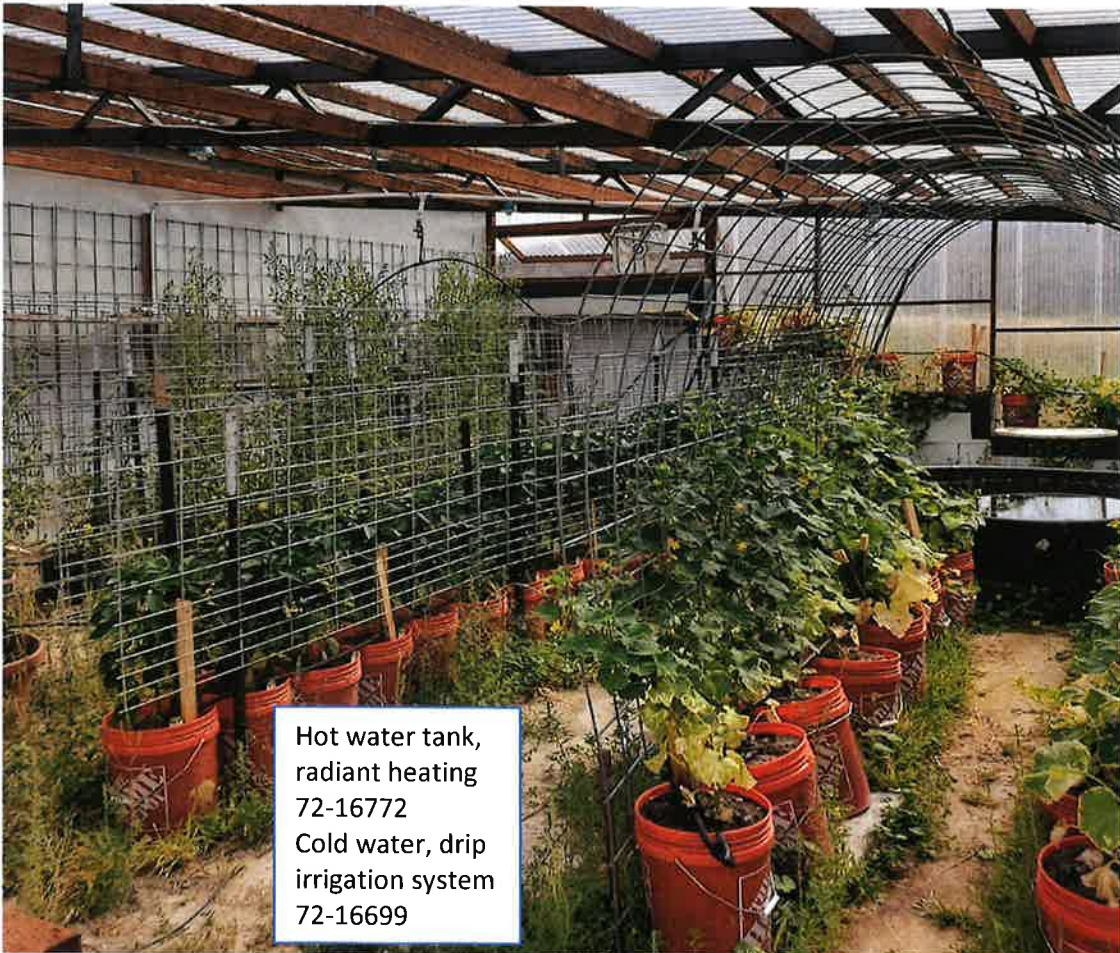
Below: Stockwater tank with two hydrants, hot 72-16772 and cold water 72-16699



Field Exam 72-16699



Greenhouse



Hot water tank,
radiant heating
72-16772
Cold water, drip
irrigation system
72-16699

Permit 72-16699



Above: Stockwater, horses and irrigation

Below: Stockwater, pig pen and irrigation



Field Exam 72-16699

Permit 72-16699



Hydrant from cold water well, irrigation of trees



Field Exam 72-16699



Field Exam 72-16699

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

State of Idaho
Department of Water Resources

Attachment to Water Right License

72-16699

This map depicts the IRRIGATION 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.

19E



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

0 0.035 0.07 0.14 Miles



State of Idaho
Department of Water Resources
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72-16699

This map depicts the STOCKWATER 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.

19E



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

0 0.035 0.07 0.14 Miles



State of Idaho
Department of Water Resources

Attachment to Water Right License

72-16699

This map depicts the DOMESTIC 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.

19E



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

0 0.035 0.07 0.14 Miles



IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

Office Use Only			
Well ID No. _____			
Inspected by _____			
Twp _____	Rge _____	Sec _____	
Lat: _____	Long: _____	1/4	1/4

1. WELL TAG NO. D D0020993
DRILLING PERMIT NO. 847472
Water Right or Injection Well No
2. OWNER: Appl. 900607

Name Travis Bullock
Address PO Box 1189
City State Zip Challis, ID 83226

3. LOCATION OF WELL by legal description

Township 14N
Range 19E
Section 10 1/4 SW 1/4 NE 1/4
Gov't Lot _____ County CUSTER
Latitude 443337 Longitude -1141205
Address of Well Site PO Box 1189 Challis, ID 83226
1014 Stevens Lane / Challis Creek
Lot _____ Block _____ Subdivision n/a

4. USE

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

5. TYPE OF WORK Check all that apply

☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURE

Seal Material	From	To	Weight/Volume	Seal placement method
Bentonite dry granular	0	19	350 Pounds	Overbore

Was drive Shoe used ☒ Y ☐ N Shoe Depth(s) 56
Was drive shoe tested ☐ Y ☒ N How?

8. CASING/LINER

Diameter	From	To	Gauge	Material	Casing Liner	Welded Threaded
6	0	56	0.25	Steel	☒	☒
4.5	25	125		PVC	☐	☒

Length of headpipe _____ Length of tailpipe _____
Packer ☐ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation method Circular Saw

Screen Type & Method of Installation

From	To	Slot Size	Number	Diam	Material	Casing Liner
45	125	0.125	200		PVC	☐

10. FILTER PACK

Filter Material	From	To	Weight/Vol	Placement Method

11. STATIC WATER LEVEL

45 ft. below land surface. Artesian pressure lb.
Depth flow encountered _____ Ft. Describe access port or control devices:
sanitary well seal

12. WELL TESTS:

☐ Pump	☐ Bailor	☒ Air	☐ Flowing Artesian
Yield gal/min	Drawdown	Pumping Level	Time
30		125	2

Water temp cold Bottom hole temp cold
Water Quality test or comments clear

Depth First Water Encountered 76

13. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Water
12	0	2	Topsoil	☐ Y ☒ N
12	2	15	Boulders	☐ Y ☒ N
12	15	19	Clay Gray	☐ Y ☒ N
6	19	36	Conglomerate W/Boulders	☐ Y ☒ N
6	36	46	Sand W/Gravel	☐ Y ☒ N
6	46	52	Boulders	☐ Y ☒ N
6	52	58	Rock Hard Gray	☐ Y ☒ N
6	58	76	Rock Hard Black	☐ Y ☒ N
6	76	96	Rock Hard Brown	☐ Y ☒ N
6	96	112	Rock Hard Gray	☐ Y ☒ N
6	112	125	Rock Hard Brown	☐ Y ☒ N

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DEPT. OF WATER RESOURCES
SOUTHERN REGION

Completed Depth 125

Date started 6/25/2007 Completed 6/26/2007

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 Harter Drilling, Inc Firm No. 0430

Principal Driller *Ray Harter* Date 7/6/2007

and Driller or Operator II *Robert Harter* Date 7/6/07

Operator I _____ Date _____

Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator

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