

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 45-13492

Exam Date: 5/12/2011

1. Current Owner: UNITED STATES OF AMERICA ACTING THROUGH
USDI BUREAU OF LAND MANAGEMENT
IDAHO STATE OFFICE
1387 S VINNELL WAY
BOISE ID 83709-1657
(208)373-4000
2. Accompanied by: Jeff Cooper (IDWR)

3. SOURCE

SPRING

TRIBUTARY

BUCKHORN CREEK

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:

SPRING

NW1/4NW1/4NW1/4

Sec. 35, Twp 12S, Rge 20E, B.M.

CASSIA County

Method of Determination: : Waypoints were collected with a Garmin GPS map 76S receiver and downloaded into an ArcMap shapefile that corresponds with 2009 aerial photography and verified the points of diversion to be in Twp 12S Rge 20E S 35 NWNWNW¼. See attached map.

2.

PLACE OF USE: STOCKWATER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12S	20E	26											X						

PLACE OF USE: WILDLIFE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12S	20E	26											X						

Method of Determination: Waypoints were collected with a Garmin GPS map 76S receiver and downloaded into an ArcMap shapefile that corresponds with 2009 aerial photography and verified the points of diversion to be in Twp 12S Rge 20E S 26 SWSW¼. See attached map.

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>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
N/A	N/A		N/A	N/A	N/A

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
Theoretical	Manning Formula Uniform Pipe Flow at Given Slope and Depth					

2. Measurements: Theoretical

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: Theoretical:

Manning Formula Uniform Pipe Flow at Given Slope and Depth:

		Results:	
		Flow, q	0.0355 cfs
Pipe diameter, d ₀	4.25 inches	Velocity, v	2.1956 ft/sec
		Velocity head, h _v	0.0749 ft
Manning roughness, n ?	.010	Flow area	0.0162 ft ²
Pressure slope (possibly ? equal to pipe slope), S ₀	.013 rise/run	Wetted perimeter	0.3467 ft
		Hydraulic radius	0.0467 ft
Flow depth fullness (1 or 100% for full pipe)	22.1 %	Top width, T	0.2939 ft
		Froude number, F	1.65
		Shear stress (tractive force), tau	0.0635 psf

Mannings Equation as computed by HAWScdc Free Online Engineering Calculators *

*Tom Haws, P.E. - Arizona Residential Civil Engineering Services (Last Modified 04/26/2011 14:46:29). Manning Formula Uniform Pipe Flow at Given Slope and Depth

<http://www.hawsedc.com/engcalcs/index.php>

F. VOLUME CALCULATIONS

1. Volume Calculations for Other Uses: Stockwater/Wildlife:

426 Range Cattle at 12 gpd/head:

12 gpd/head x 426 head x 275 days / 325850 gallons/AF = 4.3 AFA

30 ungulates (wildlife) at 12 gpd/ungulate:

12 gpd/head x 30 head x 365 days / 325580 gallons/AF = 0.40 AFA

Total Recommended = 3.3 AFA (Stock) + 0.40 AFA (Wildlife) = 4.7 AFA

G. NARRATIVE/REMARKS/COMMENTS

Permit 45-13486 is for 0.02 cfs stockwater/ 0.01 cfs wildlife, supplied water from Spring tributary to Buckhorn Creek.

Application for permit 45-13492 submitted by US Dept of Interior/ Bureau of Land Management was filed on July 3, 2002, and proof of Beneficial Use was submitted January 20, 2004.

Existing system consists of a 4.25 inch inside diameter perforated pipe that channels spring water into a collection gallery (image 4) where water is potentially delivered to two separate pipelines. There is a 4 inch diameter pipe that runs 303 feet to a trough northeast of the collection gallery and it was capped with a threaded plug. All flow at the collection gallery was diverted into a 3 inch polyethylene pipeline that was taking the water downhill (to the east) away from the trough system. The "U" shaped trough measured 24 feet long x 4 feet wide by x 1.5 feet maximum depth. The trough had little evidence of use (a few cow chips) and the water that was present appeared to be collected rainwater. Jeff Cooper and I attempted a flow measurement at the collection gallery but were unsuccessful, so data was collected in order to estimate flow using the Manning's equation.

According to Joe Tugaw, the 3 inch polyethylene line supplies stockwater and domestic water for three domiciles on his ranch and that it was licensed. I researched his claim and only found a closed water application (45-2321) for this point of diversion. Mr. Tugaw indicated the trough hadn't been used yet this year, but the system was indeed in working condition and would be utilized this summer.

Per, Steve Davis, BLM hydrologist, the BLM utilizes a flexible season of use based on range and weather conditions. Based on this policy, the BLM requests a period of use is from 01/01 to 12/31. Volume calculations for range cattle are based on a potential nine month season where cattle may be present any time range and weather conditions permit.

Recommend permitting the requested amount of 0.02 cfs Stockwater, 0.01 Wildlife and 4.7 AFA.

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>
STOCKWATER	01/01 to 12/31	0.020 CFS	4.7
WILDLIFE	01/01 to 12/31	0.010 CFS	4.7
<u>Totals:</u>		0.020 CFS	4.7

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

Bill Miller

Date

6/22/2011

Reviewer

[Signature]

Date

6/30/2011



Image 1: Trough



Image 2: Shot of trough looking east



Image 3: Headbox/collection gallery

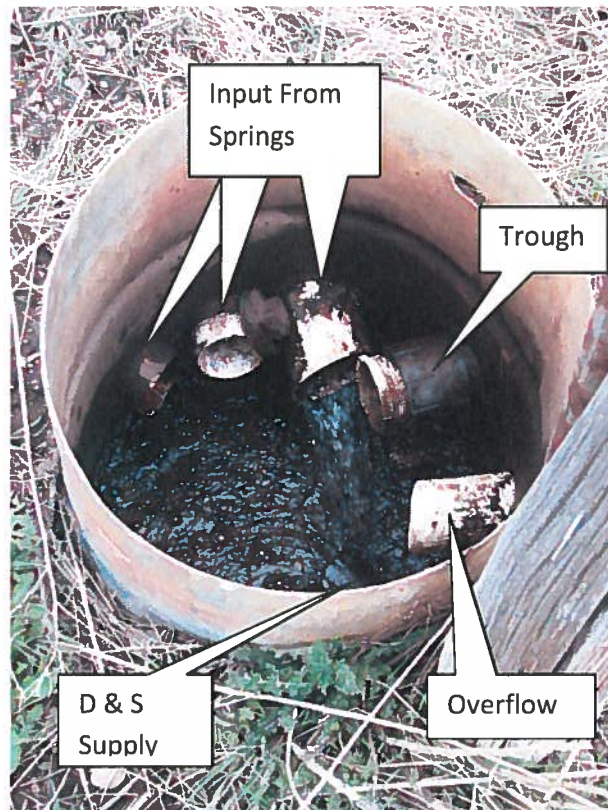
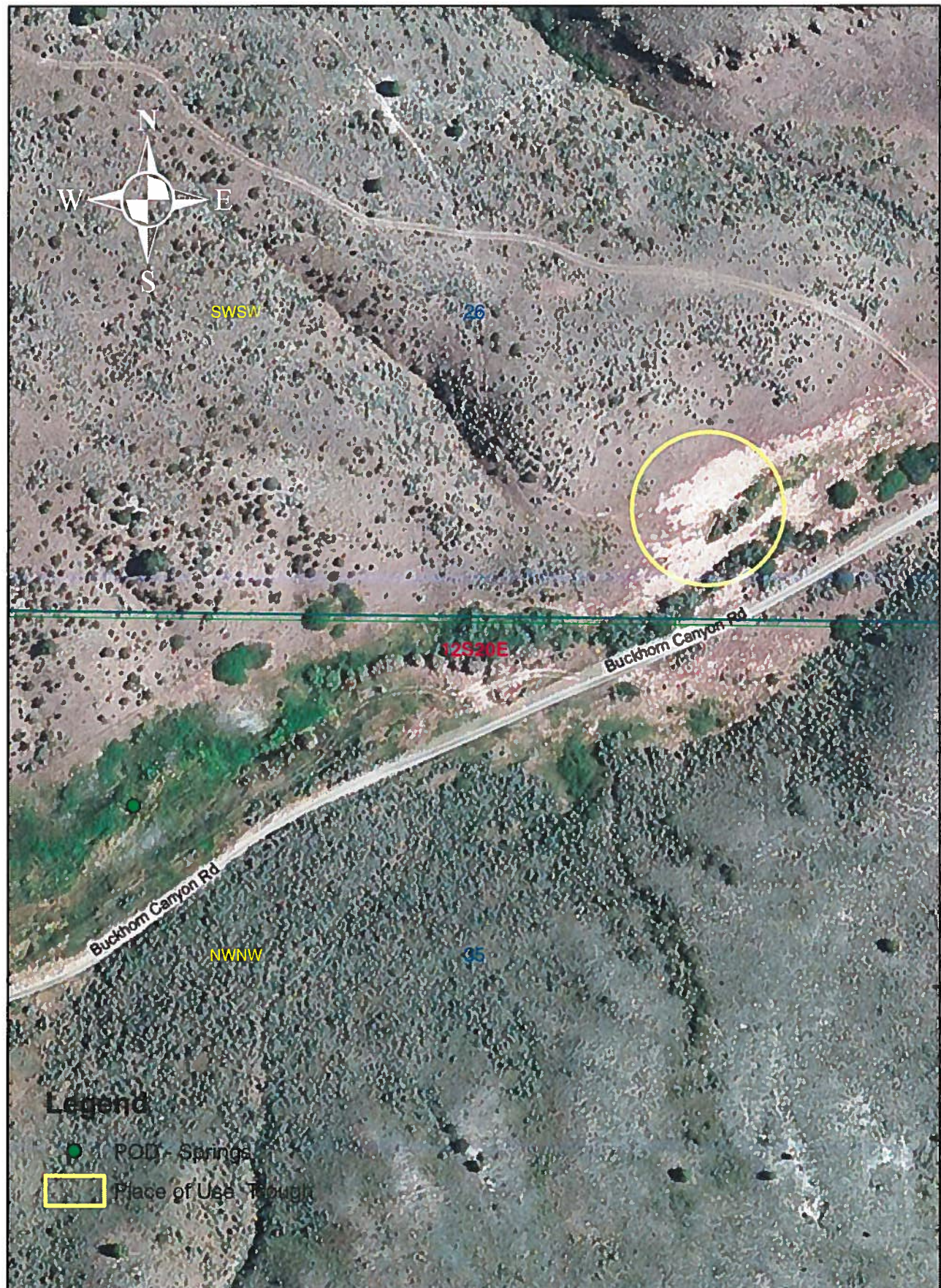


Image 4: Interior of collection gallery

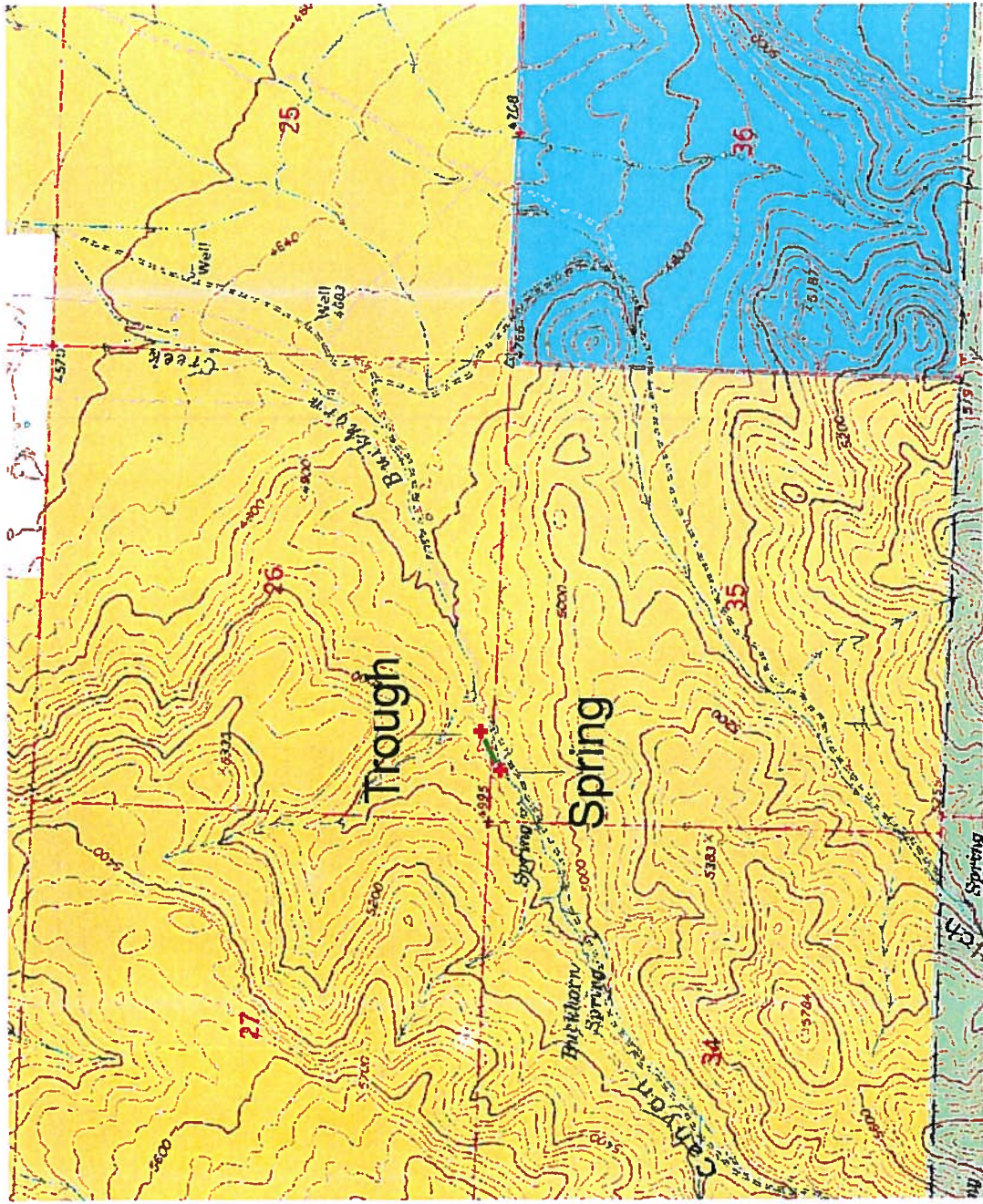
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Point Determined by GPS
Digitized Pipeline
Surface Ownership

- BLM
- BIA
- LU_DOI
- LU_USDA
- MIL
- NPS
- USFWS
- PRIVATE
- STATE
- US Forest Service



T. 12 S

R. 20 E



No warranty is made by the Bureau of Land Management for use of the data for purposes not intended by BLM.

DRAFT



Quad Map Name: Buckhorn Canyon



1:24000