

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 43-7324

Exam Date: 5/17/2012

1. Current Owner: JAY R THORNTON
PO BOX 635
MALTA ID 83342
(208)645-2557

And

KIM THORNTON
PO BOX 635
MALTA ID 83342
(208)645-2557

2. Accompanied by: Jeff Cooper (IDWR) and Kim Thornton (permit holder)

3. SOURCE**TRIBUTARY**

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None for this system. Right 43-10622 for domestic and stockwater use is from an old well that served an old house and corrals all located within the SWSWSW of Section 28. Right 43-13344 is for instream stockwater use from One Mile Creek which also flows through this property, east of this system.

2. Other water rights with the same point of diversion: None for this system. Right 43-10622 for domestic and stockwater use is from an old well that served an old house and corrals all located within the SWSWSW of Section 28. Right 43-13344 is for instream stockwater use from One Mile Creek which also flows through this property, east of this system.

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER

NE1/4SW1/4SW1/4

Sec. 28, Twp 16S, Rge 26E, B.M.

CASSIA County

Method of Determination: Located by permit holder, then GPSed and verified with aerial photography

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	
16S	26E	28										X	X						

Method of Determination: Located by permit holder and verified with aerial photography

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

D. FLOW CALCULATIONS

Hazen-Williams Formula

$$V = 1.318 \times C_h \times R^{0.63} \times S^{0.54}$$

V = Velocity (ft/s)

C_h = Hazen-Williams Friction Coefficient = 130 (for old/plastic pipe)

R = Hydraulic Radius = Cross Sectional Area / Wetted Perimeter = D/4 (for round pipes)

for 4" dia pipe D = 4" = 0.333 ft

$$R = 0.3333/4 = 0.08333$$

S = h_f/L = Slope of Energy Grade Line = 0.006 (field observation of about 3 feet of fall for 500 feet of pipe)

$$V = 1.318 \times 130 \times (0.08333)^{0.63} \times (0.006)^{0.54}$$

$$V = 2.26 \text{ ft / sec}$$

$$Q = VA \text{ where } A = \pi r^2 = \pi (2/12)^2 = 0.0873 \text{ ft}^2 \text{ for 4 inch diameter pipe}$$

$$Q = (2.26 \text{ ft / sec})(0.0873 \text{ ft}^2) = 0.197 \text{ cfs}$$

Rate exceeds permitted amount of 0.02 cfs, therefore use permitted rate of 0.02 cfs

E. VOLUME CALCULATIONS

Not required for 42-111 type domestic uses (includes stockwater) per new Beneficial Use Examination Rules implemented 3/29/2012.

F. NARRATIVE/REMARKS/COMMENTS

Application for permit 43-7324 was filed for the development of 0.02 cfs of a spring &/or groundwater source for stockwater and stockwater storage use on June 4, 1997. The permit was approved on August 11, 1997 and proof of beneficial use was filed on July 18, 2001.

Earlier this year, Jeff Cooper and I met Kim Thornton at the property to conduct the licensing examination. The system consists of about 50 feet of buried perforated pipe which intercepts the relatively high groundwater table. This buried perforated pipe is connected to a 4 inch diameter buried pipeline, about 500 feet long, which leads to a stock trough (constructed from an old tractor tire) with an overflow pipe to a small pond (see attached system diagram). The pond is relatively small (approximately 750 ft² x 2 ft deep) with a total volume of 1500 ft³ (approximately 0.034 ac-ft). A theoretical estimate, and visual observation of the flow during the exam, indicates that the permitted diversion rate of 0.02 cfs can be recognized when licensing. A rate of 0.02 cfs will produce more than the volume of the trough and pond within a 24 hour period so there is no need to recognize stockwater storage as a use on the license. In addition, since there was no sign of a spring on the property and the buried perforated pipe intercepts the relatively high groundwater table it is recommended that the source be licensed as groundwater only (not a spring). The stockwater place of use is identified on the permit as being located within the SWSW of Section 28. However, the trough is actually located within the NWSW of Section 28 and the pond is located within the SWSW and the NWSW of Section 28. For this reason, a licensing amendment was solicited from the permit holder to correct the place of use. The signed licensing amendment and fee was recently received allowing for the licensing of 43-7324.

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

G. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>
STOCKWATER	01/01 to 12/31	0.020 CFS
<u>Totals:</u>		0.020 CFS

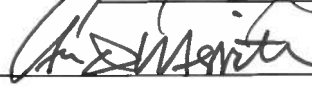
2. Recommended Amendments

☐ 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

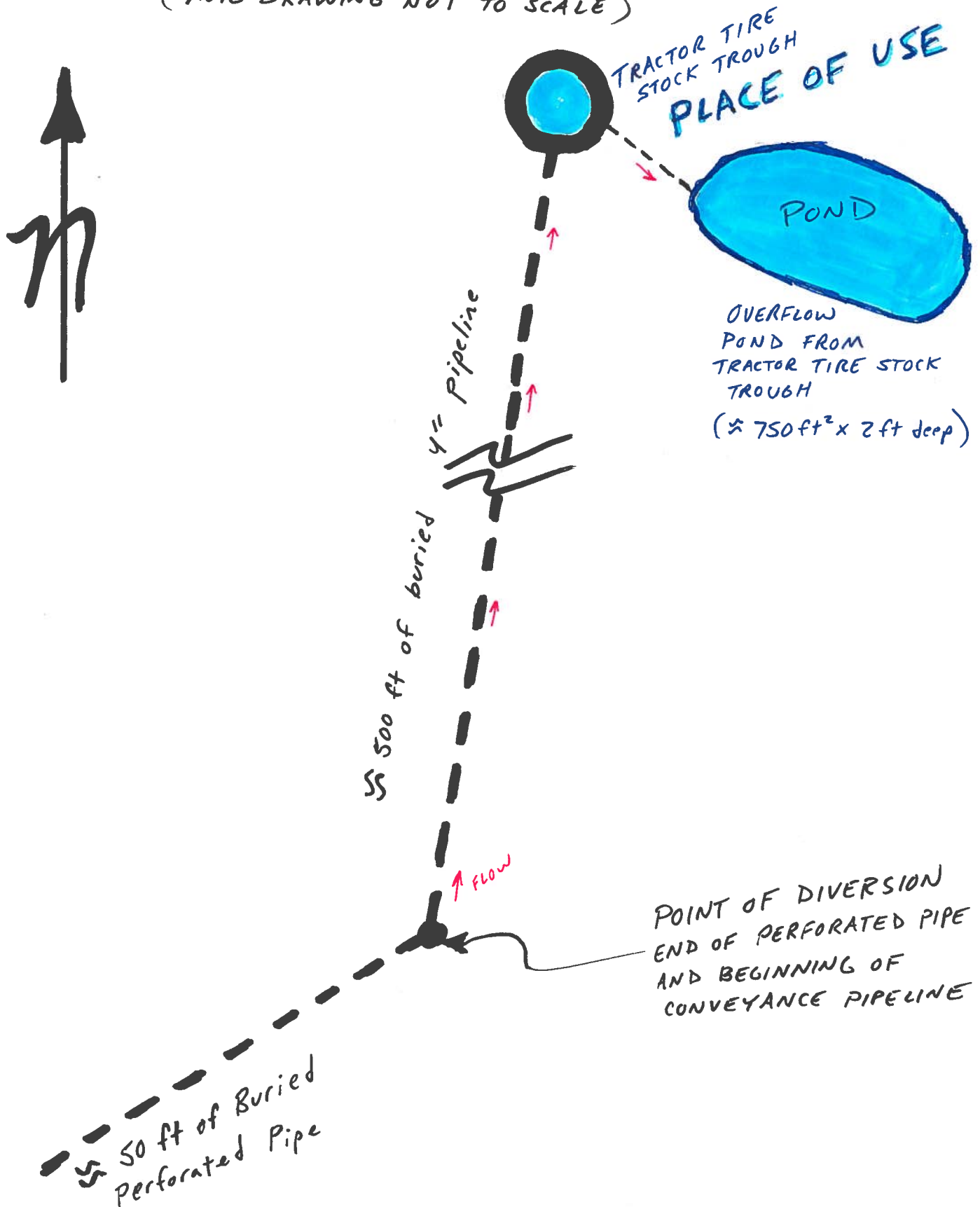
H. AUTHENTICATION

Field Examiner's Name  Date 8/15/2012

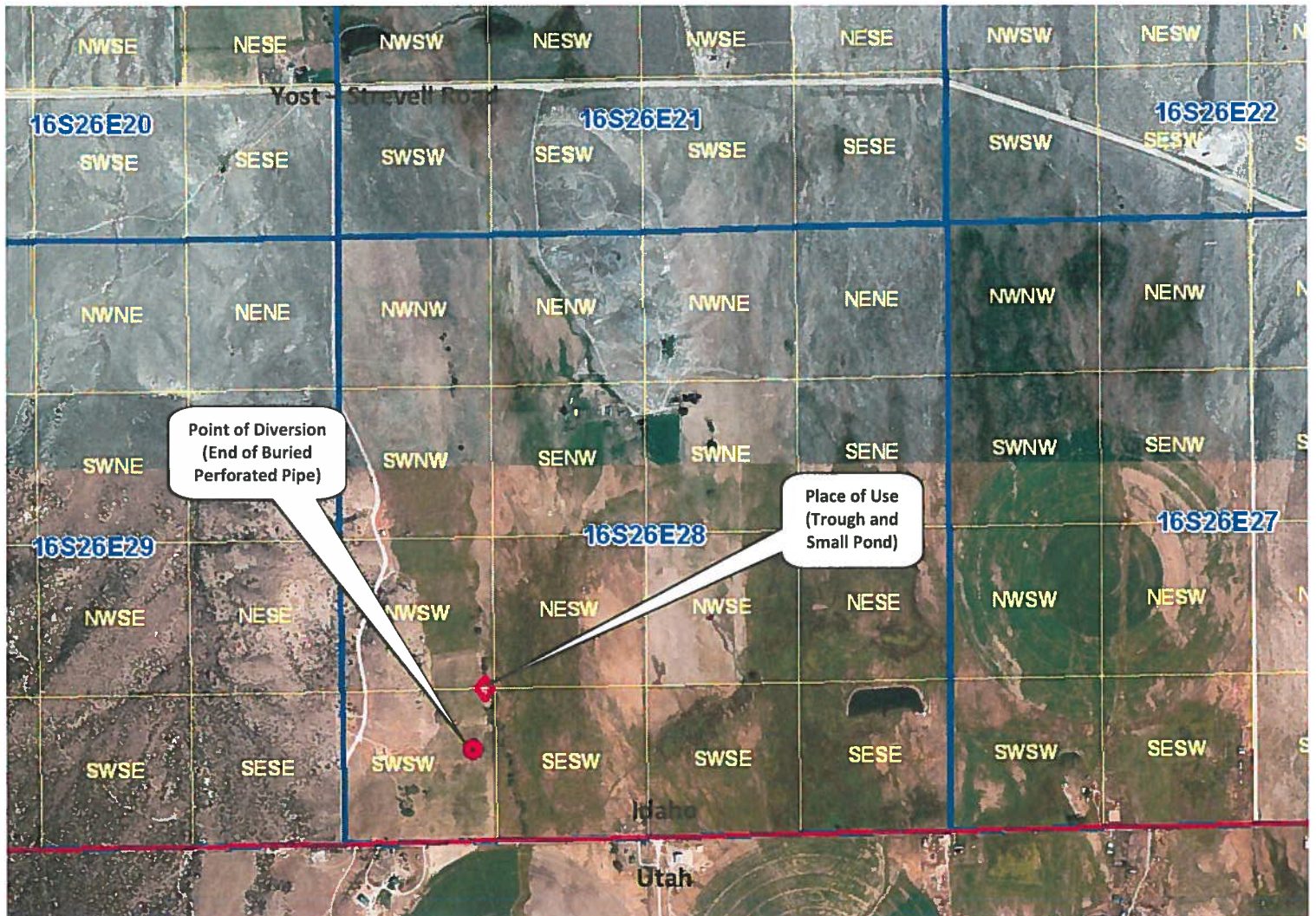
Reviewer  Date 8/16/12

43-7324 System Diagram

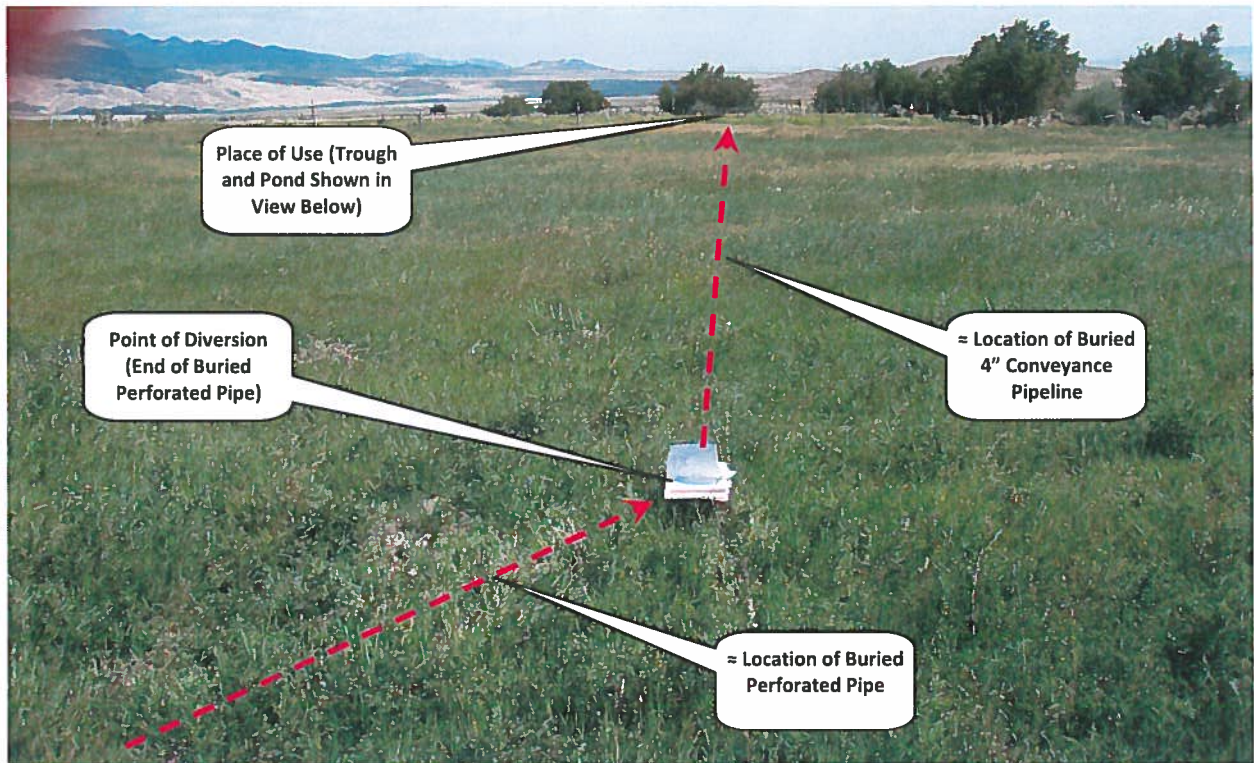
(NOTE DRAWING NOT TO SCALE)



43-7324 Point of Diversion and Place of Use Map Bing Maps Aerial Photography

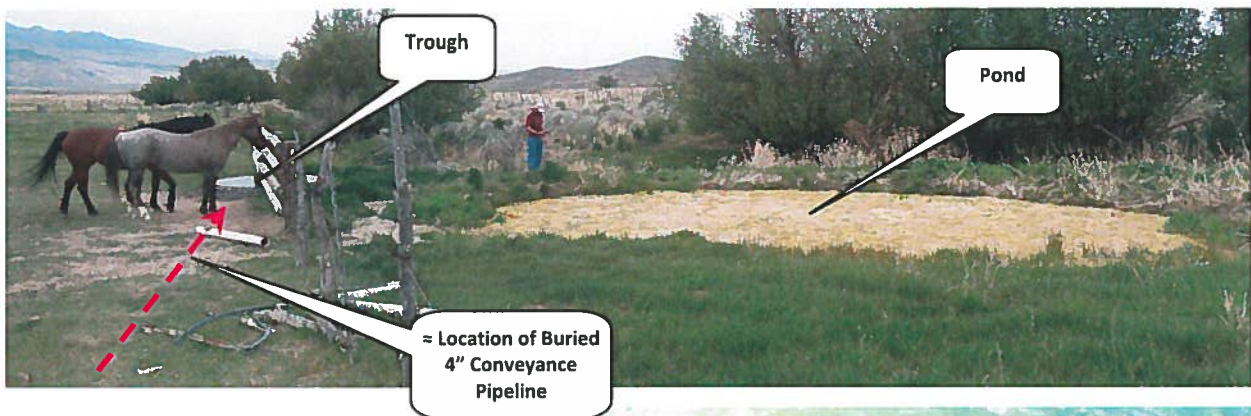


43-7324 Point of Diversion and Place of Use Photos



ABOVE: View of point of diversion (end of buried perforated pipe) with place of use in distance.

BELOW: View of place of use (tractor tire stock trough and small pond)



RIGHT: View of end of buried pipeline that discharges into tractor tire stock trough and overflow pipe that empties into the small stock pond shown in view above.

