

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 57-7570
Exam Date: ~~04/25/2024~~

1. Current Owner:
THOMAS LOGAN 18243 SHORT CUT RD OREANA ID 83650-5091

4/25/2025
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2. Accompanied by: Requested= Logan Thomas-unescorted.
Phone No: 208-249-7852
Address: above address was noted as mailing address only.
Relationship to permit Holder: Permit Holder

3. SOURCE:

PIXLEY CREEK

Tributary

CASTLE CREEK

Method of Determination: GPS and GIS Imagery.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
57-11868, 11869, 11870, & 11871	CASTLE CREEK	IRRIGATION & STOCKWATER	DECREED 2002
57-11526	PIXLEY CREEK	STOCKWATER	DECREED 2002

Comments: The irrigation rights listed above are owned by the permitholder and provide water to the west side of Castle Creek. This permit is for the east side of the creek diverting flow from Pixley Creek.

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

Water Right No.	Source	Purpose of Use	Basis
57-11526	PIXLEY CREEK	STOCKWATER	DECREED 2002

Comments: The permitted point of diversion (POD) is shared with 57-11526 for stock water use.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION: Northwest of the Old Cemetery. Measuring weir is not POD)**

PIXLEY CREEK SW¼ NW¼ SW¼, Sec. 10, Twp 07S, Rge 01W, B.M. OWYHEE County

GPS COORDS: **N42° 49.5547'** **W116° 27.0516'** (Weir location on Pixley Creek)

Method of Determination: GARMIN GPS, GIS Imagery.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07S	01W	10							0.9			5.5							6.4

Total Acres: 6.4

Method of Determination: GIS Imagery and Owyhee County Tax Parcel Data.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X 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.

X

X Aerial Photo Attached (required for irrigation of 10+ acres).

X

X Photo of Diversion and System Attached

X

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Ditch(es) Gravity Fed	NA	NA	NA	NA	NA

D. FLOW MEASUREMENTS

1.

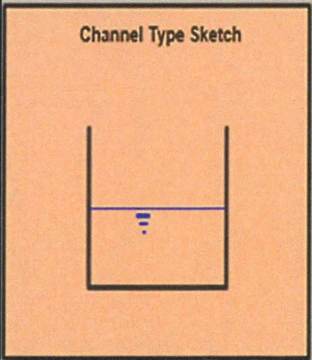
Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Staff Gauge & Tape Measure	Rect. Weir	Unknown	Unknown	Unknown	2 ft wide	NA

2. Measurements: The MHW mark was measured to determine the historical flow in Pixley Creek through the now defunct rectangular weir using a staff gauge and standard tape measure.

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method: **Staff Gauge measurements recording the MHW mark at 8" to 9" (0.75 ft) within the 2' rectangular weir.**

Flow Rate in a Circular, Rectangular, V-Notch, or Trapezoidal Open Channel		Manning's Equation Calculator for Flow Rate in Any Open Channel	
Select Channel Type from Pull Down Menu Rectangular		Clear Input Parameters	
Input Parameters Depth = 0.75 feet (depth of the flow of water) Bottom Width = 2.00 feet (width of rectangular channel) Input Parameter 3 = Not Used Input Parameter 4 = Not Used		S = 0.0400 ft/ft n = 0.060 manning's coefficient A = 1.50 area (ft ²) WP = 3.50 wetted perimeter (ft) R = 0.43 hydraulic radius (ft)	
Cross Sectional Area of Flow A = 1.50 square feet		Q = 4.22 flow rate (CFS)	
Wetted Perimeter WP = 3.50 feet		Channel Slope	
Channel Type Sketch 		Slope Options ☐ Manual Entry ☒ Slope Calculator	
Export WP & A Values		Slope Calculator Rise = 4 feet Run = 100 feet Slope, S = 0.0400 ft/ft	
		Channel Material, (n), 1 natural channel, very poor condition	

Permitted Rate: 0.40 cfs

Theoretical Calculation: 4.22 cfs

BU Limited Rate: 0.13 cfs

Recommended Rate: 0.13 cfs

Comments: Theoretical calculations for the MHW mark within the rectangular weir at the approximated channel slope support that historical flows in Pixley Creek have been capable of exceeding the full permitted rate. However, the license is limited to the beneficial use developed historically measuring approximately 6.4 acres of irrigation. I am recommending the license is issued for 0.13 cfs for the irrigation of 6.4 acres (the standard 0.02cfs per acre).

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 6.4 \text{ acres} \times 3.5 \text{ AF annually} = 22.4 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.13\text{cfs} \times 214 \text{ days} \times 1.9835 = 55.2 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 22.4 \text{ AF}$$

Comments: According to the IDAPA Beneficial Use Examination Rules 37.03.02.35. 01j.viii a diversion volume is not required for irrigation if water is diverted from a natural flowing stream/river or spring.

2. Volume Calculations for Other Uses: NA

G. NARRATIVE/REMARKS/COMMENTS

The Department received Proof of Beneficial Use for permit 57-7570 on May 2, 1995. The use developed in the proof statement is described as 20 acres of irrigation diverted from Pixley Creek. In section #7 of the proof statement the permit holder indicated that a measuring device is required for the use and had been installed. After several years of effort by the Department, the current property owner Logan Thomas, was contacted and a field examination was requested to confirm that the measuring device is installed. On April 25, 2025, a site visit confirmed that a weir was installed and photographs of the place of use (POU) were taken to document the use. The weir found on site is in very poor condition and flows on Pixley creek had already ceased for the year at the time of the examination. The place of use was previously cleared, and some remnants of possible delivery ditches were observed. As the flow had ceased measurements were taken of the high-water marks at the now defunct rectangular weir installed on Pixley Creek, upstream of the point of diversion. Those measurements, elevations found using GIS and Google Earth Pro, and Mannings Equation for open channel flows were used to make a theoretical calculation of the historical flow in Pixley Creek near the permitted POU.

The POU area inferred from geological constraints due to the valley and Castle Creek, the remains of old ditch lines, and cleared areas where grass was found in both historical imagery and at the time of the examination. The POU area measured approximately 6.4 acres at its fullest extent observed in historical imagery from the development period ending in May 1995. The remaining ditch segments suggest that flows were gravity fed to the north and dispersed fanning out over the natural slopes with any excess flow returning to the creek overland.

The mean high water (MHW) mark within the 2' rectangular weir was approximately 8" to 9" total depth. Elevation data from Google Earth Pro and GIS DEM data found about a 4ft elevation change within a 100 ft reach of the channel passing through the rectangular weir. A Manning's

Equation calculation for a poorly maintained open channel found that at high flow Pixley Creek may have reached a flow of 4.22 cfs. There is no method for determining the amount diverted from the natural flow downstream at the POD. Even if the flow diverted is 1/10 of the maximum stream flow the permitted rate of 0.40 cfs would be exceeded at the historical diversion point. However, the rate licensed should be based on the use developed which is approximately 6.4 acres of irrigation (confined by the stream and valley boundaries). I recommend that the license is issued with a maximum instantaneous rate of 0.13cfs (per the statutory standard rate of 1.0cfs/50 acres).

I recommend that the license is issued with conditions R05, R63, 933, R43, and 004. Conditions 053, 052, 26A, and the stockwater description were removed, per current guidance. Condition 005 was replaced with R05, condition 03A was replaced with R63, condition 051 was replaced with 933, and condition 01E was replaced with R43 to update the right to carry current active conditions.

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>	
IRRIGATION	4/15 to 10/15	0.13 CFS	

Totals: 0.13 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 ☒ None

I. AUTHENTICATION

Bob Howe - Water Resource Agent, Sr.

Field Examiner's Name Bob Howe Date 5/9/25

Reviewer [Signature] Date 5-9-25

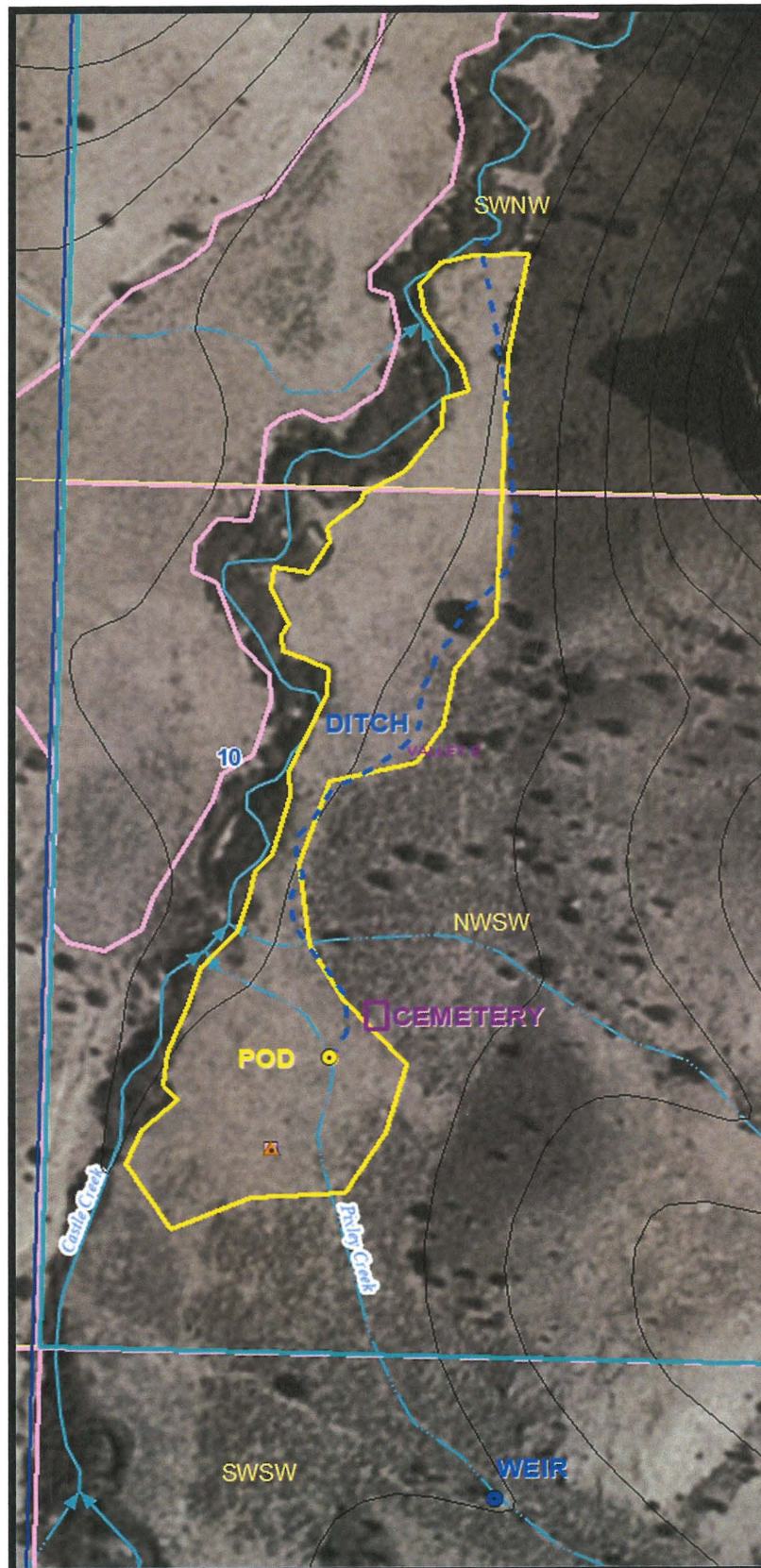


Figure 1- SYSTEM DIAGRAM (NAIP 1997-1999 Imagery)-POD and ditch are both partially inferred based on field photos and observations.

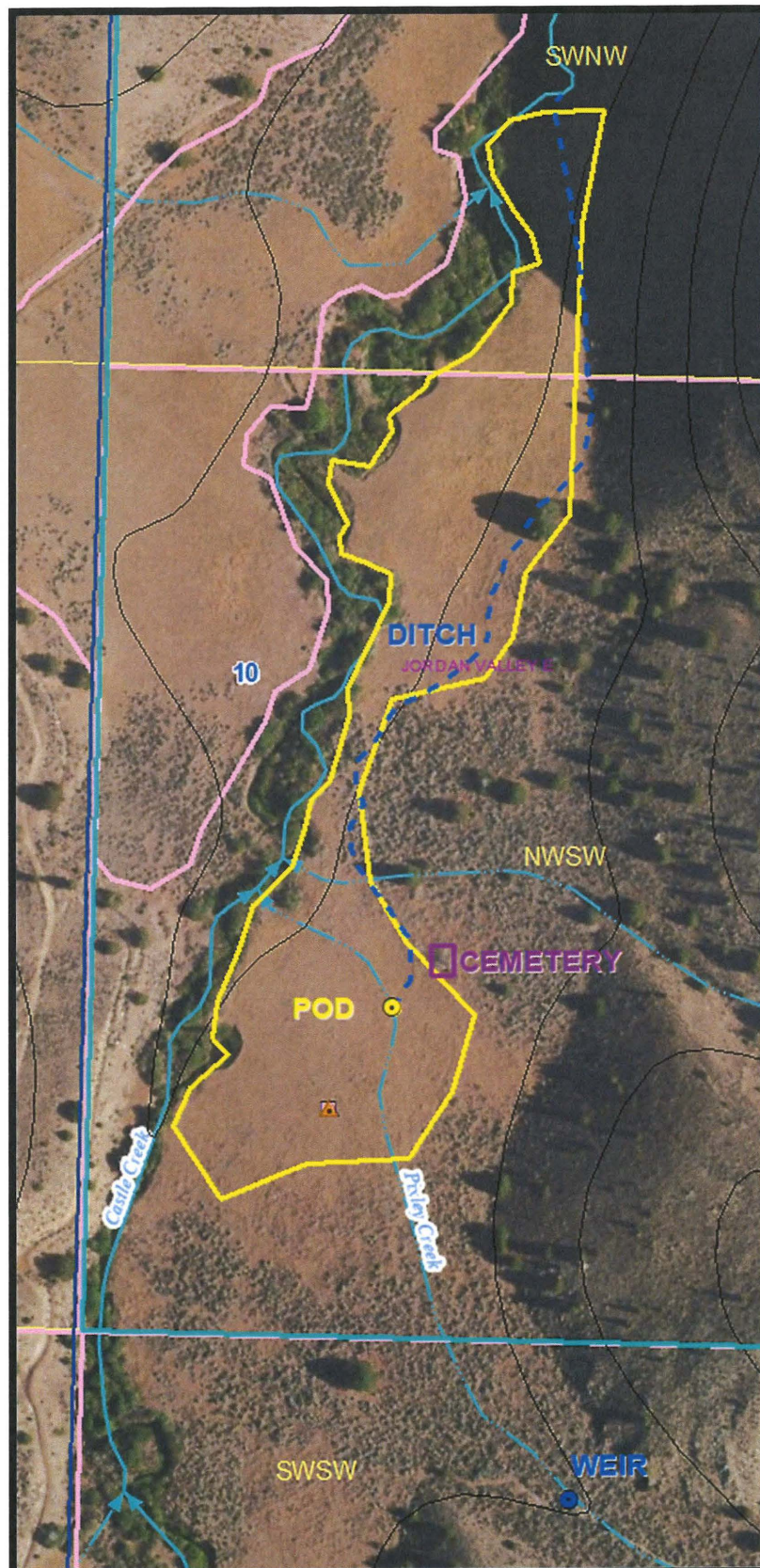
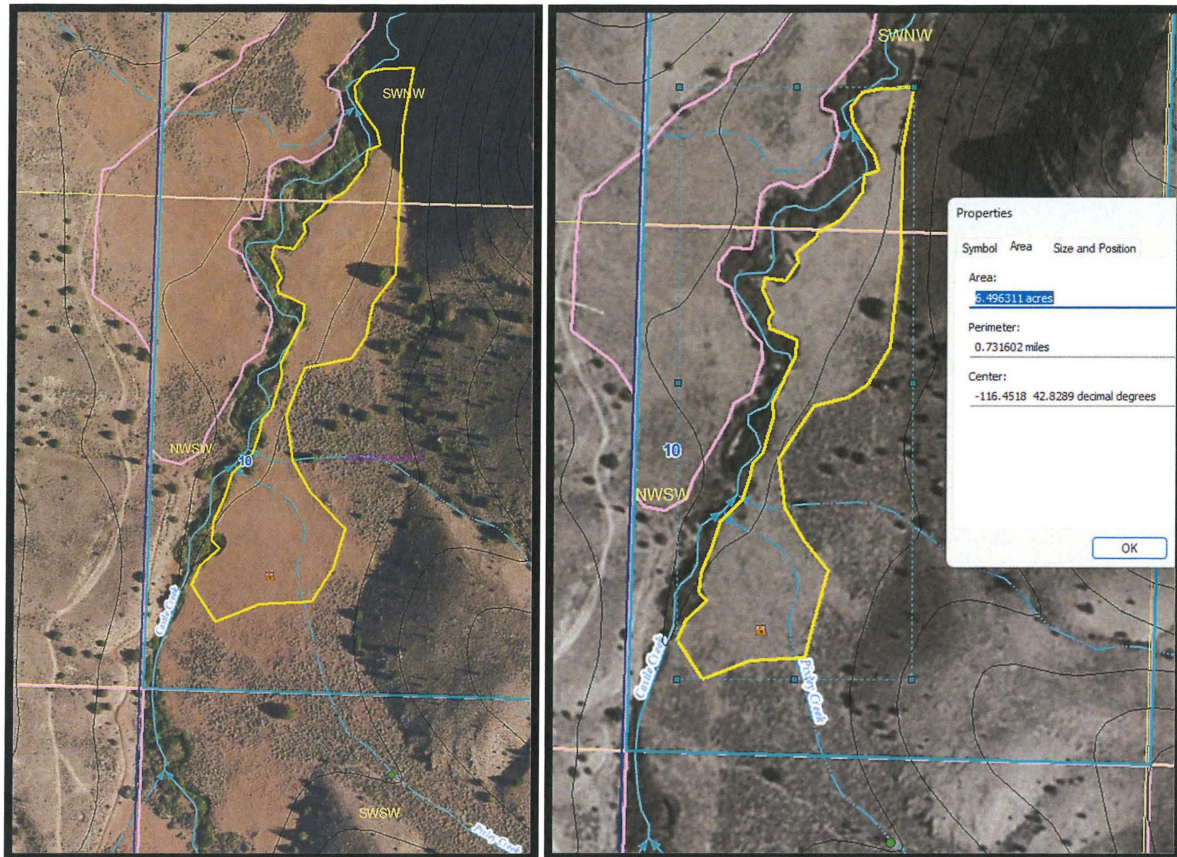


Figure 2- SYSTEM DIAGRAM (NAIP 2023 Imagery)-POD and ditch are both partially inferred based on photos and observations.



Figures 3 & 4- NAIP Imagery 2013 (Left)-NAIP Imagery 1997-1999 (Right) -Parts of the ditch are evident running north along the periphery of cleared POU. The permit holders stockwater right POU can be seen outlined in pink on the west side of Castle Creek. GIS measurement of the cleared and irrigated area is approximately 6 ½ acres.

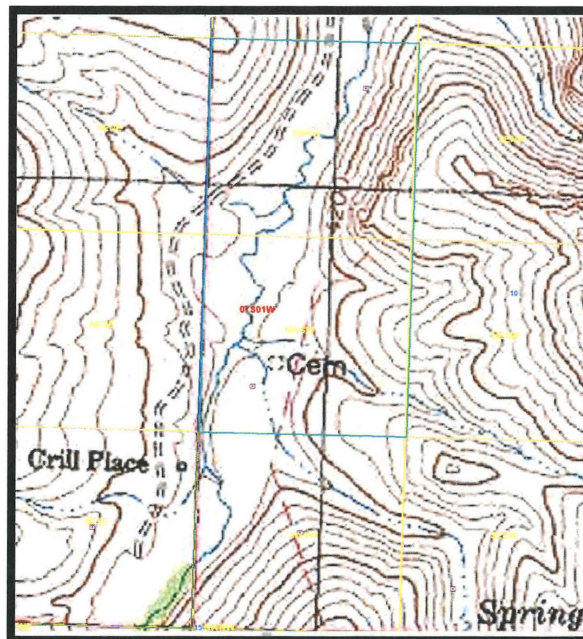


Figure 5- DRG Map- The Pixley Creek location is the same as current hydrography and a small fenced area still surrounds the cemetery adjacent to the old POD.

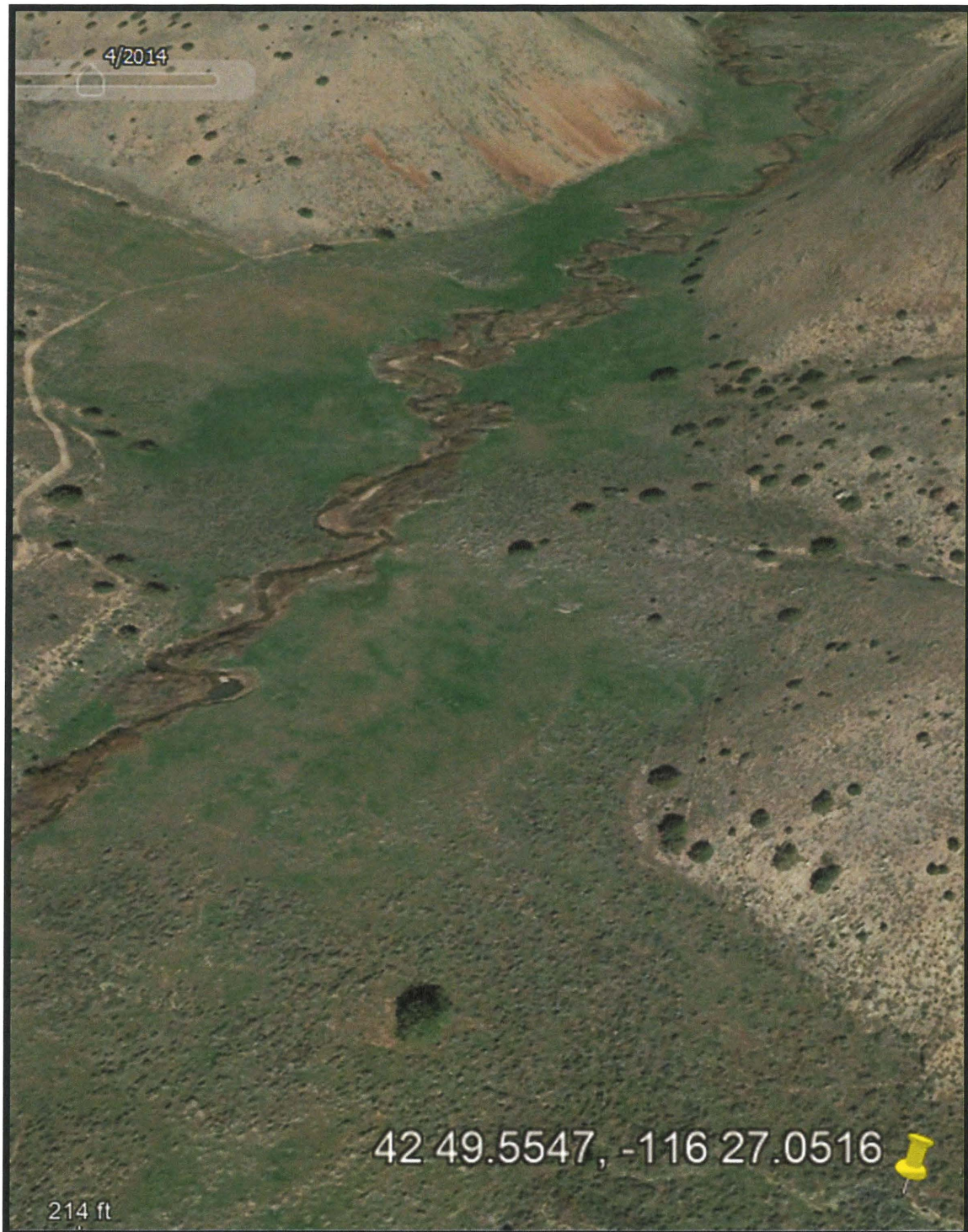


Figure 6- Google Earth Pro- C. April, 2014- The pin in the lower right corner of the image is at the GPS coordinates for the weir recorded during the field examination. Remnants of the ditch can be seen in the image running north on the east side of the permitted POU.



Figure 6- Google Earth Pro- C. 2013- The point in the lower right corner is at the GPS coordinates for the weir found during the field examination.

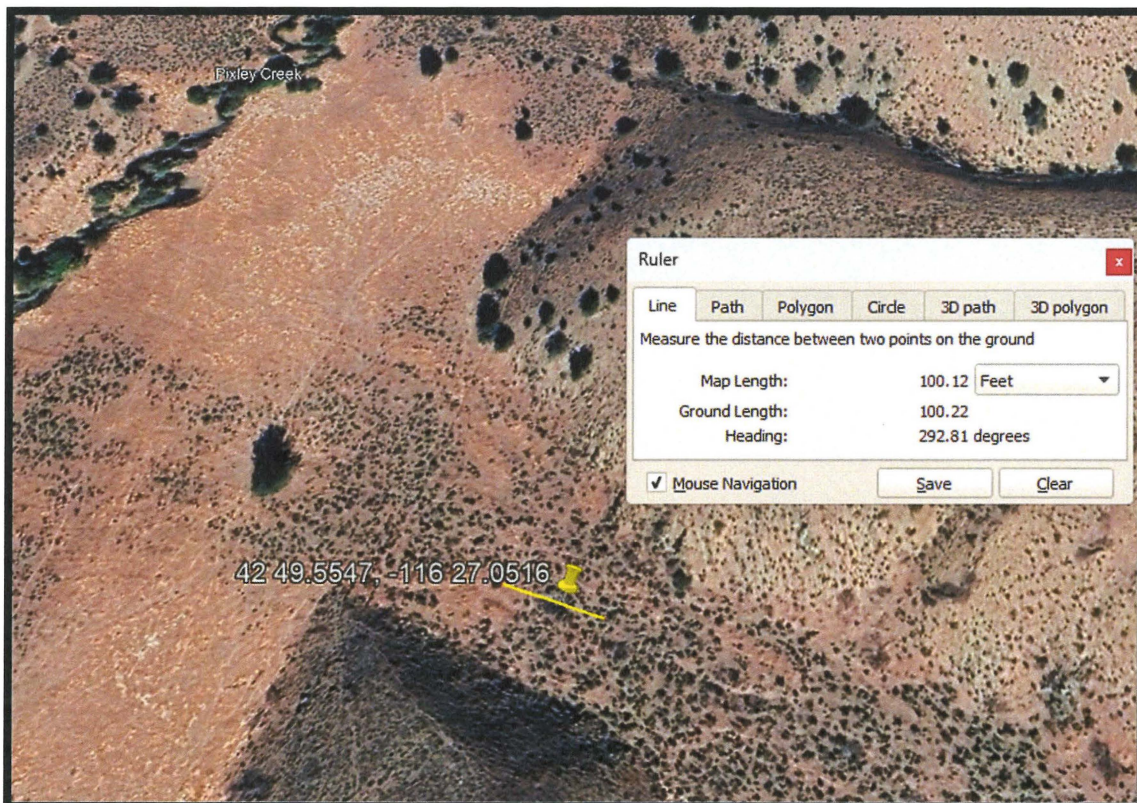


Figure 7- Google Earth Pro- 2024 imagery- Elevation at the southeast end of the measured channel is 4145 ft and the northwest end of the measured channel is at 4141 ft. An approximated 4 ft drop in 100 feet.



Photos 1 & 2- Taken east of the valley facing west. Hill slopes and Castle Creek to the west of the POU considerably limit the areas that gravity fed irrigation can reach. In both images some of the remaining ditch line can be identified. Photo 2 (right side)- The cemetery is circled in blue.



Photo 3- Taken East of the valley facing west. Flow is downslope to the right in the image. Some sections of the ditch and swales are evident arcing around the west side of the large tree at left center of the image. Castle Creek runs in the background at the far end of the valley.



Photo 4- Taken facing north. The pole fence surrounds a small cemetery northeast of the point of diversion.



Photo 5- Taken facing west. The ruins of several stone structures on the west sided of Castle Creek are identified in the DRG map as "Crill Place".



Photo 5 - Pixley Creek entering the valley taken from the north side of Pixley Creek facing south. The weir is circled in blue about 200ft east of the fence line marking the property boundary.

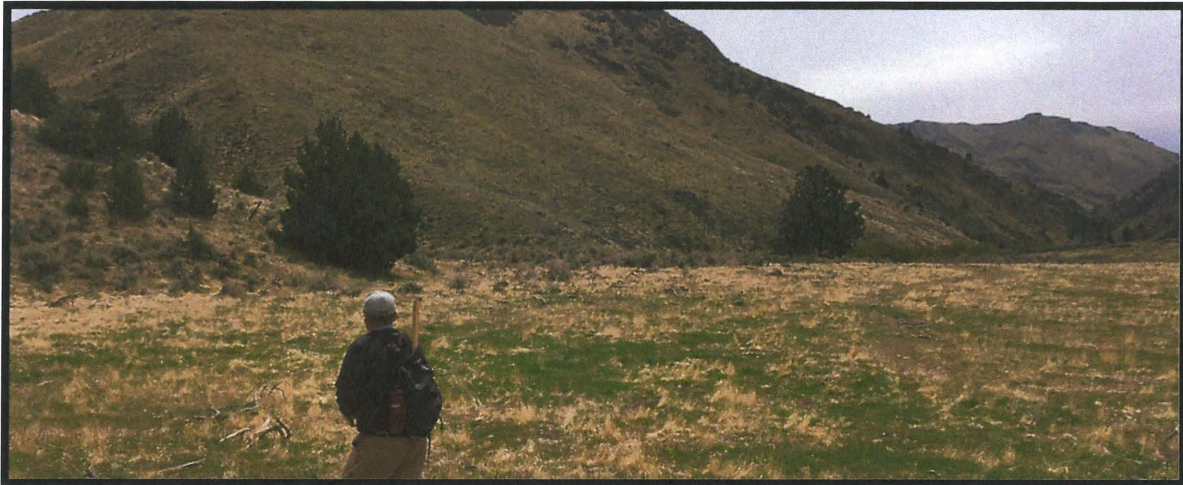


Photo 6 - Pixley Creek in the right of the image after entering the valley (taken facing south near the cemetery). The historic POD was inferred to have been just upstream of Pixley Creek making an "s" curve to the left in the image.



Photo 7 - Pixley Creek traverses from left to right in the image. The cemetery is near center of the image (taken facing west).



Photos 8 & 9- Standing east of the weir facing west.



Photo 10- Weir diameter measurement (24" wide).



Photo 11- Weir length measurement (48" total length). North is up in the image.



Photos 12 & 13- Staff gauge measurements taken at the east (upstream) end of the weir.



Photos 14 & 15- Staff gauge measurements taken at the west (downstream) end of the weir.



Photos 16 & 17- Standard tape measurements taken at the upstream (left image) and downstream (right) end of the weir. He MHW mark measured from about 8" to 9" in height.



Photo 18- Scale measurment of weir for hieght. Taken at east side facing west.