

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATIONPermit No: 57-11805Exam Date: < 5/29/2019

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? Y X N
- Irrigation of 5 acres or less
 - Storage of up to 14.6 AF for stockwater purposes only
 - Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
 - Other < >

2. Current Owner: Name: Juayo Ranch LTD Partnership
- Owner of Record Correct? X Y N
- Address of Record Correct? X Y N
- If No: Address

3. Fees have been paid: X Y N Receipt No: C097120

4. SOURCE**TRIBUTARY**

Waste Water

Macks Creek

Method of Determination: Visual inspection

Change in Source:

Y X N**B. OVERLAP REVIEW**

1. Other water rights with the same place of use: NONE

Water Right No.	Source	Purpose of Use	Basis
57-7610	License	MACKS CREEK, REYNOLDS CREEK	IRRIGATION FROM STORAGE, IRRIGATION STORAGE

Comments: Water rights (WR) 57-262 and 57-11516 have POU acres in the NWNE quarter quarter (QQ) of sec. 23, T02S R04W, however examination of claim files show they are for acres south of the ponds in this QQ. Additionally, these are surface water rights sourced from Macks Creek and diverted through a system of gravity fed ditches. The POU for 57-11805 is up hill from these diversions and there is currently no physical way to divert this water to the POU of 57-11805. WR 57-7454 also has a POU that describes acres in the NWNE QQ but again, claim file information shows it too is used for irrigation south of the ponds and is fed by a gravity fed ditch system that is downhill of 57-11805 and has no physical way to deliver water to the POU of 57-11805. WR 57-7454 is for irrigation storage and irrigation from storage and could theoretically be pumped up to the POU for 57-11805, however, at the time of the field exam there were no indications of this taking place or of any signs of this intention. WR 57-7610 was licensed in 2015 and was created as a means to exchange releases from irrigation storage water for surface water from Macks and Reynolds Creeks. The POU shape shows a direct overlap of 1.6 acres with 57-11805, however all the diversion works from Macks and Reynolds Creeks are gravity fed ditches that are downslope of 57-11805 and have no physical means of reaching the POU of 57-11805. Again, there were no signs of a pumping system nor were there any indications of future development of such a system.

2. Other water rights with the same point of diversion: X NONE

Water Right No.	Source	Purpose of Use	Basis

Comments: N/A

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

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Wastewater			SW	SE	14	02S	04W	B.M.	Owyhee
								B.M.	
								B.M.	

Method of Determination: Visual inspection and GPS coordinates.

Change in POD? ____Y X____N Amendment Required? ____Y X____N**2. PLACE OF USE:** Use:

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02S	04W	14															2		2
02S	04W	23		3.9															3.9
		Lot #																	
Total Acres =																			5.9

Method of Determination: Visual inspection and GIS

Change in POU? ____Y X____N Amendment Required? ____Y X____N3. X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

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

X Photo of Diversion and System Attached

4. Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size

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

D. FLOW MEASUREMENTS

1.Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: _____

E. FLOW CALCULATIONS

____X____ Additional Computation Sheets Attached

Measured Method:

Channel Profile and Manning's Equation

Channel Capacity = 12.39 cfs**Permit allowed = 0.24 cfs****Max Allowable = 5.9 ac x 0.02 cfs/sc = 0.118 cfs, rounded to 0.12 cfs.****License recommend for 0.12 cfs.****F. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 5.9 \times 3.5 = 20.7$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.12 \times 246 \times 1.9835 = 58.6$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 20.7 \text{ af}$$

2. Volume Calculations for Other Uses:

G. PURPOSE OF USEIrrigation X Y N # Stock _____ Domestic # of Homes _____

Other: < >

Change in Purpose of Use? ____Y ____X ____N

Method of Determination:

If Yes: From Use _____ To Use _____ Amount _____ CFS _____ AFA _____

H. NARRATIVE/REMARKS/COMMENTS

The original permit application was submitted in response to a complaint made by neighboring property owners to Connie Brandeau, watermaster for Reynolds Creek district 57R. The neighbor was concerned that the owners of the Junayo Ranch were tilling up new ground and improving a ditch for irrigation from a waste water source for which Junayo Ranch did not have water rights. Per correspondence letters in the file of 57-11805, the original complaint was made to the watermaster on December 13, 2011, Connie passed on the complaint and the findings of her investigation to the Department on January 12, 2012, and John Westra with the Department met with Owen Orndorff, owner of the Junayo Ranch, on February 2, 2012. That meeting resulted in the application for permit 57-11805.

This irrigation system consists of a ditch running off an irrigated field on the neighboring property, under the road through a culvert and into a small pond on the east side of the road, on the Junayo Ranch property. The pond has a culvert outlet into another ditch that leads to the place of use, all on the Junayo Ranch property. The culvert outlet from the pond to the ditch is elevated in the berm and only flows when there is excess waste water flowing off the neighboring field and

filling the pond. Just downstream and south of the pond, the ditch runs through another culvert with a vertical access pipe to allow the lowering of a staff gage into flowing water to measure depth and calculate a flow rate. This measuring device was inspected and approved by the watermaster after installation. The ditch continues south to a lockable field headgate which flows into gated pipes that distribute water across a 5.9 acre field. The size of the field was determined through GIS analysis. Prior to the ditch development, the waste water flowed through the culvert under the road, onto the Junayo Ranch property and into Cottle Creek at a location on the Junayo Ranch property. Cottle Creek flows into Macks Creek on the Junayo Ranch property and therefore there is no threat of injury to any other water rights from Cottle Creek downstream of the point of diversion.

The water source on this permit is waste water from WR 57-11574, used to irrigate a field on the neighboring property to the east. Water availability for 57-11805 is completely dependent on the irrigation of the neighboring fields and when they are irrigated with enough water to produce waste water runoff. Condition 176 is on the permit and should be retained on the license to address this

There was no flow in the ditch at the time of the exam. Channel profile data was collected and used to calculate Manning's Equation, which equaled a flow rate of 39.19 cfs. Although this is well above the 0.24 cfs allowed by the permit, the time and amount of flow is directly dependent on when and how much waste water runs off of 57-11574. Because of this, condition R63 found on the permit, which limits the annual volume to 3.5 afa per acre per year, should remain on the license.

WR 57-7610 has a POU shape showing 1.6 acres of direct overlap. Although the diversion works for this right cannot physically deliver water to 57-11805, condition R63, limiting irrigation to 0.02 cfs per acre and 3.5 afa per acre, will remain on the license to prevent enlargement on these acres. This is also consistent with conditions listed on 57-7610.

Conditions R05, 176, R63 and 004 on the permit will be retained on the license. Condition 01J was changed to R43 and condition 121 changed to m103.

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

I. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Irrigation	03/15 – 11/15	0.12 CFS	20.7 AF
<u>Totals:</u>		0.12 CFS	20.7 AF

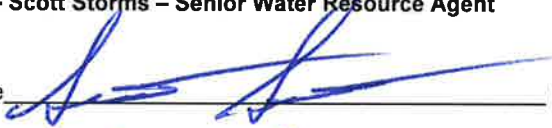
2. Recommended Amendments

☐ 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

Other:

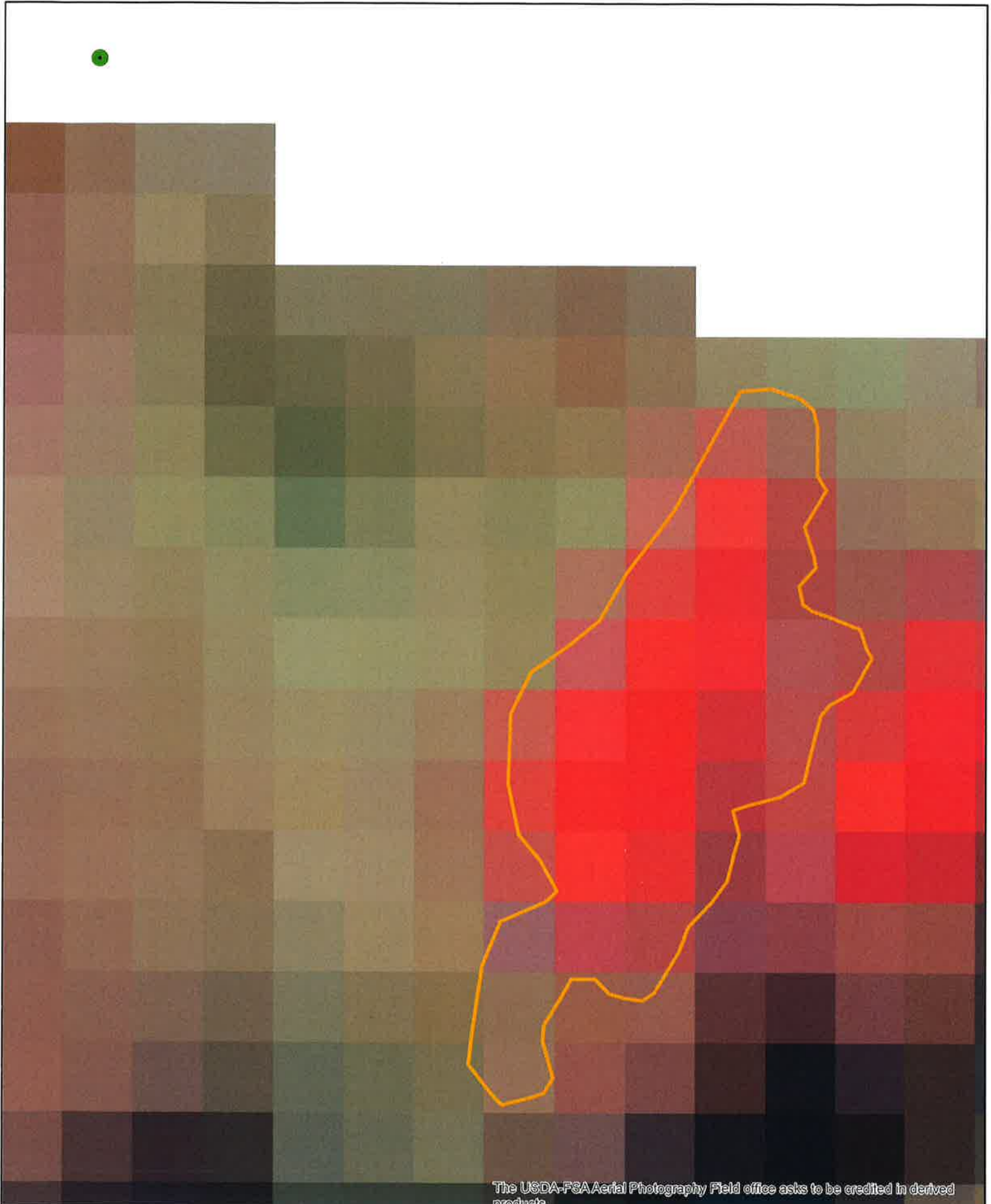
J. AUTHENTICATION – Scott Storms – Senior Water Resource Agent

Field Examiner's Name  Date 6/10/19

Reviewer  Date 6-10-19

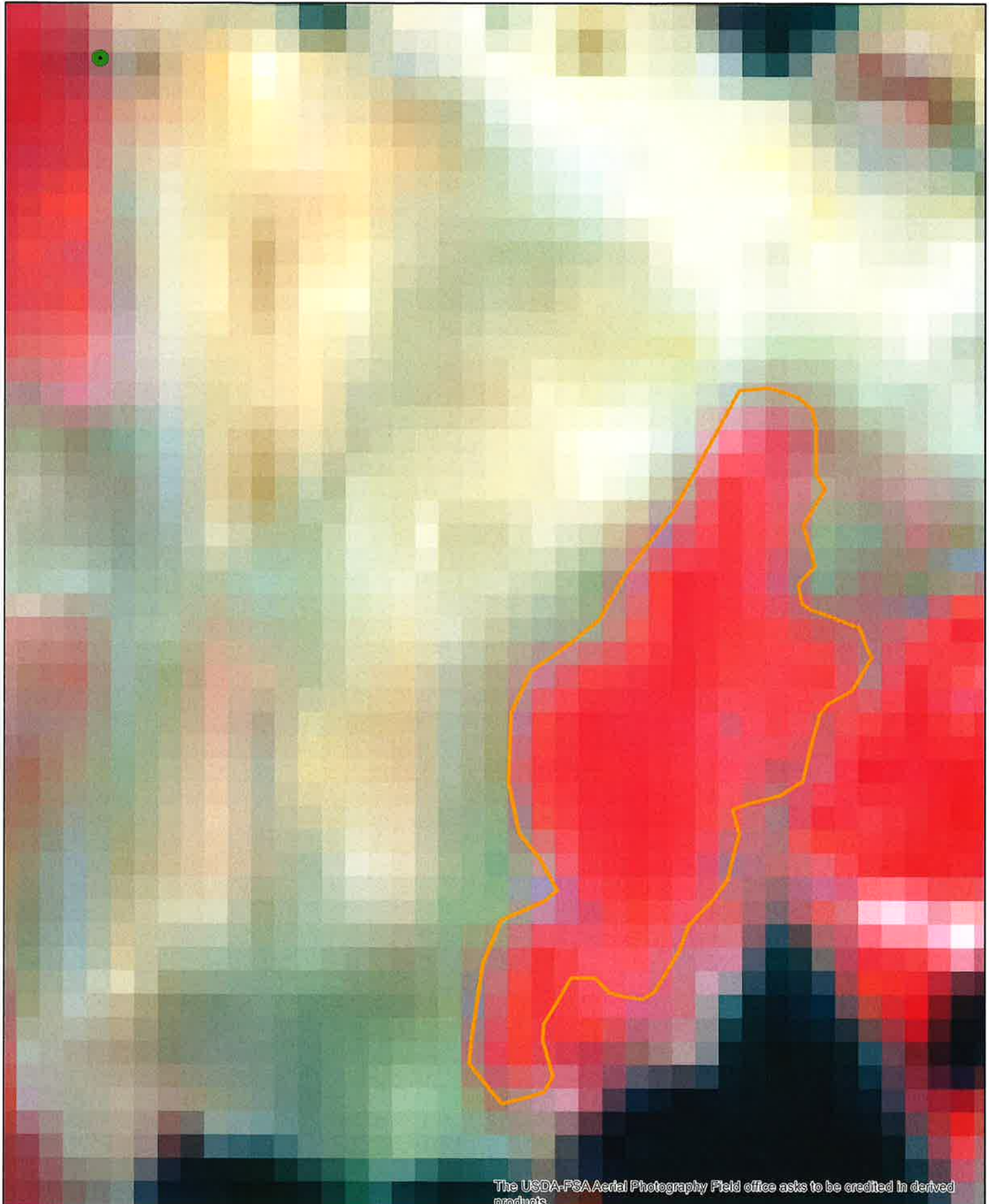


Landsat False Color May 5, 2012



The USDA-FSA Aerial Photography Field office asks to be credited in derived products.

Sentinel False Color May 24, 2017



Manning's Equation Calculator for Flow Rate in Any Open Channel

S = 0.0025 ft/ft

n = 0.060 manning's coefficient

A = 9.86 area (ft²)

WP = 9.62 wetted perimeter (ft)

R = 1.03 hydraulic radius (ft)

Q = 12.45 flow rate (CFS)

READ ME

Manning's Equation Calculator for Flow Rate in Any Open Channel

S = 0.0025 ft/ft

n = 0.060 manning's coefficient

A = 9.70 area (ft²)

WP = 9.36 wetted perimeter (ft)

R = 1.04 hydraulic radius (ft)

Q = 12.34 flow rate (CFS)

Channel Slope

Slope Options

☐ Manual Entry

☒ Slope Calculator

Slope Calculator

Rise = 0.25 feet

Run = 100 feet

Slope, S = 0.0025 ft/ft

Channel Material, (n):

natural channel, very poor condition

Channel Slope

Slope Options

☐ Manual Entry

☒ Slope Calculator

Slope Calculator

Rise = 0.25 feet

Run = 100 feet

Slope, S = 0.0025 ft/ft

Channel Material, (n):

natural channel, very poor condition

Manning's Equation (1), is an empirical formula that solves for velocity (v) in a open channel under uniform flow. The continuity equation (2) when combined with equation (1) allows for the computation of the flow rate (Q) in an open channel under uniform flow.

In equations (1) and (3), η refers to Manning's Coefficient of Roughness and can be found in tabulated form for many open channel types. R is the hydraulic radius of the open channel and is equal to the area of the open channel divided by the wetted perimeter, $R = A/P$. S is the slope of the energy grade line which is often assumed to be equal to the slope of the channel.

Because Manning's Equation is empirical the units are not arbitrary. To obtain a velocity in ft/s and a flow rate in ft³/s, area must be reported in ft², hydraulic radius must be reported in ft, and S must be reported in ft/ft. Manning's Coefficient of Roughness is a unitless constant.

$$(1) \quad v = 1.49 \left(\frac{1}{\eta} \right) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

$$(2) \quad Q = vA$$

$$(3) \quad Q = 1.49 \left(\frac{1}{\eta} \right) (A) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

Average of two cross section measurements = (12.45 cfs + 12.34 cfs)/2 = 12.39 cfs

PHOTOGRAPHER AND DATE OF PHOTOS SCOTT STORMS 5/29/2019

FILE NUMBER 57-11805



Figure 1. Pont of diversion. Culvert carrying waste water from neighboring property crosses under road and enters a ditch on the Junayo Ranch property.



Figure 2. Field headgate



Figure 3. Field headgate as it leads through berm and into gated pipe.



Figure 4. Outlet of field headgate leading into gated pipe along 5.9 acre place of use.



Figure 5. Panoramic view of the 5.9 acre place of use.