

MEMORANDUM

TO: Water Right File 63-34139

FROM: Daniel Nelson – Analyst 3

DATE: November 19, 2020

SUBJECT: Licensing Review of Water Right 63-34139

The field exam for this right was performed by Patrick Kelly and reviewed by Certified Water Right Examiner Terry Scanlan of SPF Water Engineering. Mr. Kelly recommended 0.98 cubic feet per second (cfs) for the irrigation of 49 acres. It should be noted that Mr. Kelly did not recommend a volume for this permit, but he did perform the volume calculations in the field report. Mr. Kelly calculated 221 acre-feet of volume needed.

Overlap:

There are number of rights overlapping this permit. The permit holder has shares in Riverside Irrigation District. The field report doesn't provide the number of acres that can be irrigated by the Riverside Shares, but the maximum number of acres that appear to have been available for irrigation is between 49 to 53 acres.

Water right 63-3200 allows 0.34 cfs and 76.5 acre-feet for 17 acres of irrigation from Christian Gulch Wasteway. The place of use for these 17 acres is in the east field in Government Lot 1 (NENE) of Section 1.

Water right 63-9212 allows 0.72 cfs and 162 acre-feet for 36 acres of irrigation from Christian Gulch Wasteway. The place of sue for these 36 acres is in the west field in Government Lot 2 (NWNE) of Section 1.

The total number of acres irrigated from 63-3200 and 63-9212 is 53 acres. The maximum possible acres that could be irrigated by these rights within the place of use would not be more than the 53 acres authorized under these two water rights. The maximum diversion rate and volume for 53 acres is 1.06 cfs and 239 acre-feet.

Point of Diversion and Place of Use:

I found no issues with the point of diversion and place of use. I was able to recreate shape files and the found the same number of acres.

Diversion Rate and Volume:

The measurements taken from the permit holder's flow meter and the field examiner's flow meter were within the 0.4% of each other. I am confident that flow measurement made was accurate. The measurement did provide more than adequate water for this permit. The pictures do show that there is a lockable controlling works on the system, so the system can be valved back to the diversion rate this permit can authorize. The pumping system open discharges into a ditch, so there really isn't issue with excess pressure against the pump by valving back the system to an acceptable diversion rate. Some quick estimations show there would only be approximately 10 psi to 15 psi difference in pressure against the pump when theoretically comparing the flow rate measured to the flow rate that can be recommended. Most normal pumping systems can easily handle an additional 10 psi to 15 psi of pressure if needed.

Mr. Kelly did not provide a volume in the recommendations, but he did provide a volume estimate in the volume calculation portion of the field report of 221 acre-feet. I emailed the field examiner and the water right examiner concerning this issue and they were amiable to placing the volume on the license. The volume of 221 acre-feet will be placed on the license.

Conditions:

Conditions R65, R05, 176 and 004 should be carried forward to licensing. Condition 01J should be changed to condition R43 as is standard. Condition 121 should be changed to condition 103 as is standard. Condition X35 should be added as shown below:

Rights 63-3200, 63-9212, and 63-34139 when combined shall not exceed a total diversion rate of 1.06 cfs, a total annual maximum diversion volume of 239 af at the field headgate, and the irrigation of 53 acres.

I did not include the Riverside Irrigation District water rights in with the X35 condition above. By adding the Riverside Irrigation District rights into the above condition could be construed as limiting the Riverside Irrigation District water rights. The adjudication condition N99 has been used to show irrigation district or canal company overlapping water rights without limiting irrigation district or canal company water rights. Therefore, the following condition should be included in the license.

Use of this right may be combined with water from Riverside Irrigation District.

Nelson, Dan

From: Patrick Kelly <PKelly@spfwater.com>
Sent: Friday, November 19, 2021 9:41 AM
To: Terry Scanlan; Nelson, Dan
Subject: RE: Field Report for Permit 63-34139

Thank you Dan. Appreciate the quick feedback!

From: Terry Scanlan <TScanlan@spfwater.com>
Sent: Friday, November 19, 2021 9:37 AM
To: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>; Patrick Kelly <PKelly@spfwater.com>
Subject: RE: Field Report for Permit 63-34139

Thanks Dan.

From: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Sent: Friday, November 19, 2021 9:16 AM
To: Terry Scanlan <TScanlan@spfwater.com>; Patrick Kelly <PKelly@spfwater.com>
Subject: Field Report for Permit 63-34139

Hello Terry and Patrick,

I wanted to inform you that I have gone through the field report for permit 63-34139. I am in the process of preparing the review memo and the draft license for final review. I was able to recreate same number of acres in my GIS shape file, and I was extremely impressed that the owner meter and your meter were within 0.4% of each other. I have no doubt whatsoever of the measurement for this permit. It is extremely rare that two meters come that close, which suggests that both flow meters are extremely accurate.

The only issue I found was that no volume was recommended in Section H of the field report. You did properly calculate the volume in Section G. The Idaho Administrative Code Beneficial Use Examination Rules, IDAPA 37.03.02.035.01.j.viii states the following:

Irrigation using natural stream flow diverted from a stream or spring. (Volumes must be reported for irrigation uses from ponds, lakes and ground water and for irrigation storage and irrigation from storage.)

The above exemption from including a volume for irrigation uses is only for "natural stream flow diverted from a stream or spring." A drain is not a natural stream or spring, so a volume is required. Whereas you correctly calculated 221 acre-feet volume for 49 acres at the recommended diversion rate in Section G, I am going to include the 221 acre-feet on the license of this permit. I wanted to give you the reasoning for including the volume on a water right from a manmade structure so you will not be surprised when you see the volume on the license.

The field report looks very well done. I want to thank you so much for doing such a nice job on this field report.

Respectfully,

Daniel Nelson
Water Right Analyst 3
Idaho Department of Water Resources
Telephone (208) 287-4856
Fax (208) 287-6700 (attn: Dan Nelson)

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 63-341391. Owner Dixie Land LLC Phone No. 208-459-3029Current address 22993 Howe Rd2. Examiner's name Patrick Kelly and Terry Scanlan EXAM DATE 10/13/20213. Accompanied by Tucker J Shaw Email _____

Address _____

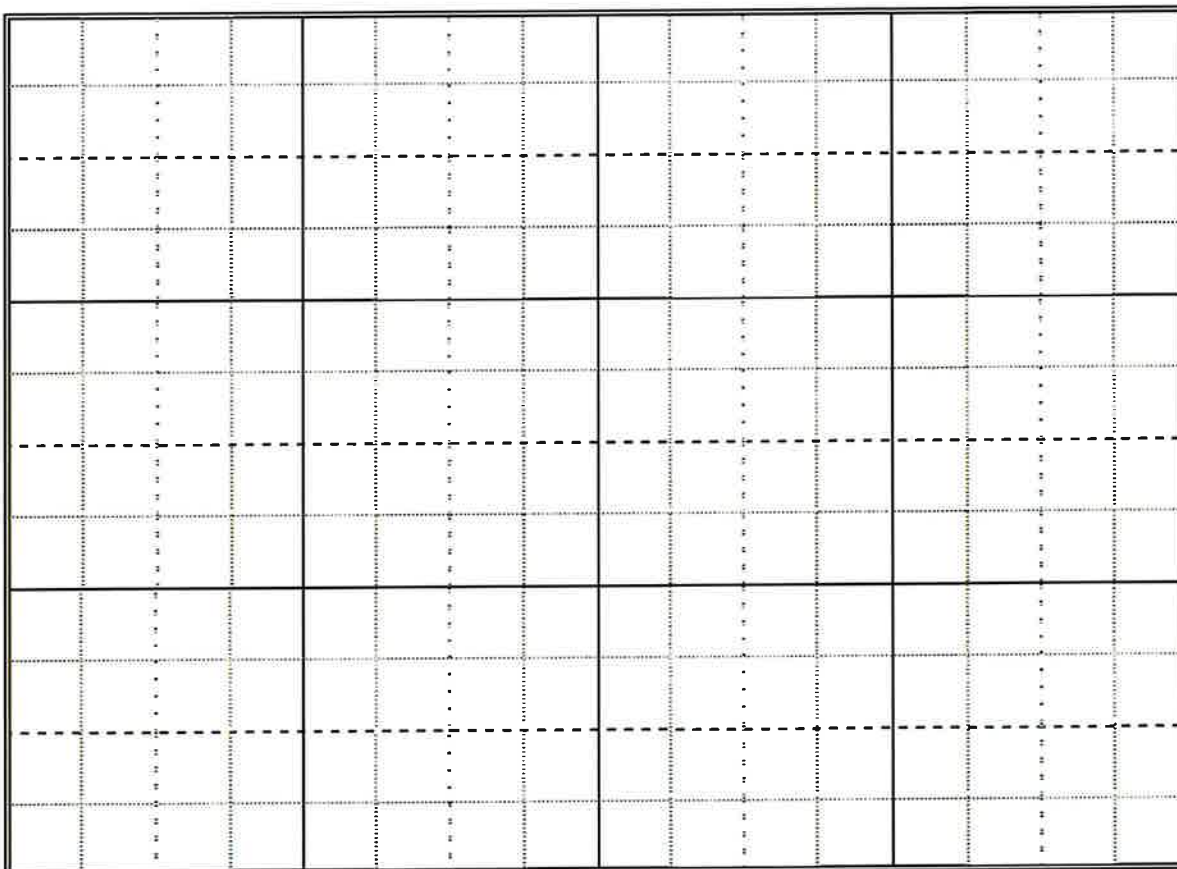
Relationship to permit holder Registered Agent/Member Phone No. 208-899-04554. Source North Drain tributary to Dixie Slough**B. OVERLAP REVIEW**1. Other water rights with the same place of use 63-9212, 63-3200 & Riverside Irrigation District LTD2. Other water rights with the same source and point of diversion Eureka Ditch Co No. 2**C. DIVERSION AND DELIVERY SYSTEM****1. Point(s) of Diversion:**

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
	L1		NE	NE	01	04N	05W	Canyon	Floating Pump & Motor in N. Drain

2. Place(s) of Use: Method of determination Digital PLSS mapping tools and aerial imagery

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
04N	05W	01	15	34															49
			L1	L2															

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.



Scale: 1" = _____

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ 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
	Marathon Electric	7.5			

*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
GE Panametrics	UltraSonic	GE	PT878	07140	#403 Hz	4/5/2021
McCrometer Dura Mag	Electroma	McCromet	DM08-2101	DM18-0450	8"	6/29/18 mfg

2. **Measurements:** _____

A mag meter is installed on the system. Flow readings in this meter were confirmed with a GE Panametrics device.

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

GE Panametrics: Fwd Gallons over 10 minute test = 8,348.232 gallons = 1.86 cfs

McCrometer Dura Mag observed range during test = 820 to 862 gpm = 1.83 - 1.92 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 49 \text{ ac} \times 4.5 \text{ af/ac} = 220.5 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 0.98 \times 260 \times 1.9835 = 505.4 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 221 \text{ af}$$

2. Volume Calculations for Other Uses:

No other uses permitted.

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
Irrigation	3/1	11/15	0.98	
Totals:			0.98	

2. Recommended Amendments

☐ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☒ None☐ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other**I. AUTHENTICATION**

Field Examiner's Signature

Terry M. Scanlan

Date

10/19/21

Reviewer

TH

Date

12/10/21



ATTACHMENT A – NARRATIVE

The field exam for permit 63-34139 was conducted on October 13, 2021 by Patrick Kelly and reviewed by Terry Scanlan, P.E., P.G. (CWRE 129) of SPF Water Engineering. Mr. Kelly was accompanied by the property and permit owner, Tucker Shaw. According to current Canyon County Assessor's office, the property (Parcel 36637000 0) is owned by Dixie Land, LLC. Dixie Land, LLC is an active registered company with the State of Idaho. Changes to ownership are not recommended.

A 7.5 hp motor and pump is located on a floating dock in North Drain, tributary to the Dixie Slough which delivers irrigation water to the property. Water is pumped from the drain through an 8-inch McCrometer DuraMag measuring device before the pipe is buried. Water is released from the pipe into an open ditch at the south-east corner of the property. An open ditch runs down the south end of the property which uses siphon tubes and gated pipe to irrigate the fields. This diversion is located within Govt. Lot 1 concurrent with the permit. Amendments to the POD are not necessary.

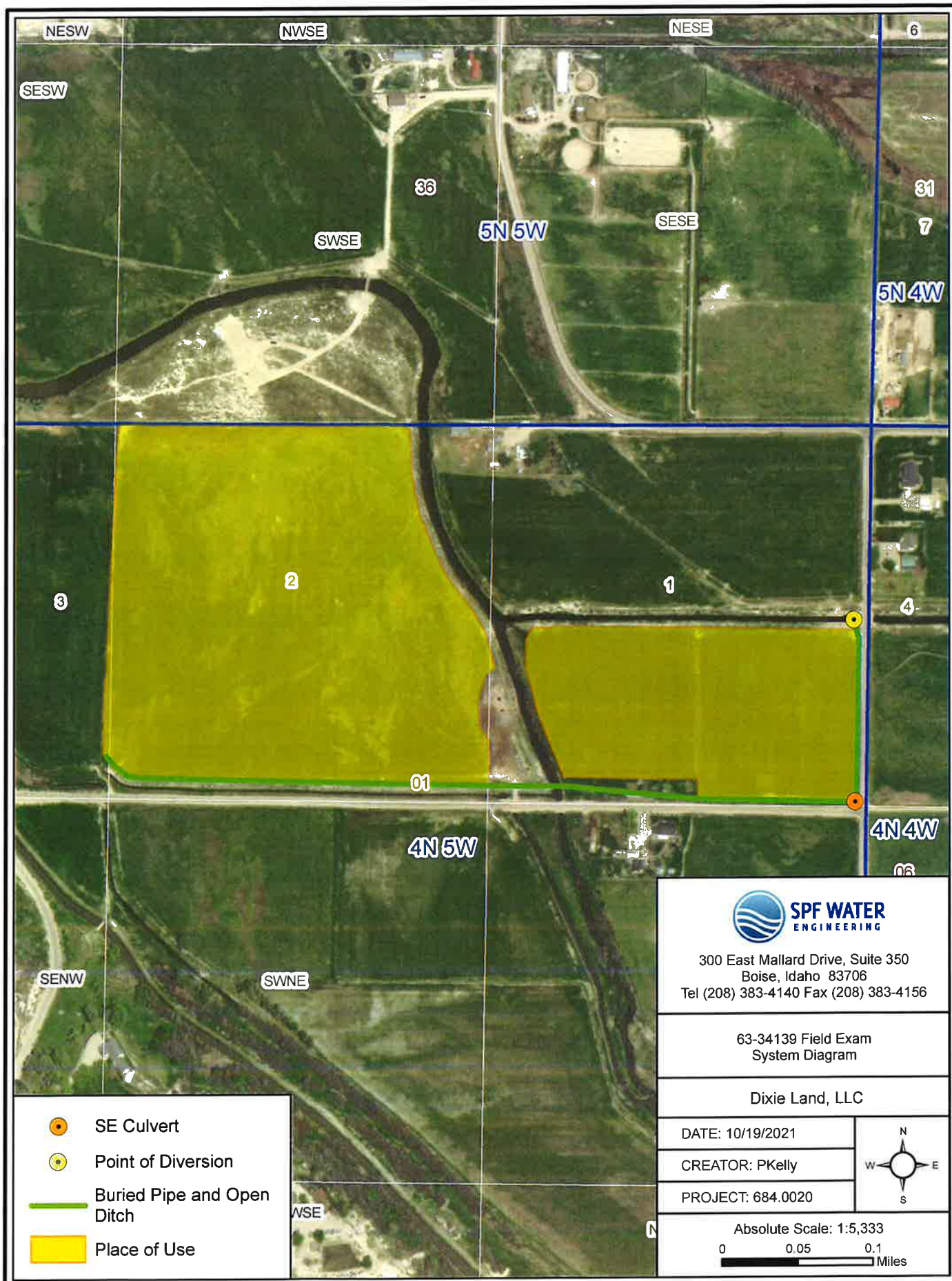
Aerial imagery was used with digital PLSS maps to measure an irrigation use of 48.9 acres. Using IDWR's 2 significant figure rule for each quarter-quarter, the place of use is rounded to a total of 49 acres. Amendments to the POU are not necessary.

The property does have shares with Riverside Irrigation District which does get delivered to the property from a culvert at the SE corner of the property. Water from the drain is only pumped during the shoulder season, when Riverside water is not being delivered.

Water rights 63-3200 and 63-9212 are irrigation rights from the Christian Gulch Wasteway. Dixie Land, LLC owns both of these rights. Eureka Ditch Co. No. 2 (Eureka) has seven water rights that share the point of diversion with this permit. A 2016 POD transfer (80380) filed by Eureka authorized the injection of water from the Eureka Ditch into the North Drain and rediversion of water at the location shared by Dixie Land, LLC. Conditions of approval under Eureka's group of water rights state that the quantity of water authorized for rediversion from the North Drain is limited to the amount injected and shall not exceed 3.22 cfs.

The pump and motor were turned on at the time of the field exam. The McCrometer flow meter was functioning and displayed a flow rate that was consistent with SPF's GE Panametrics device that was running.

ATTACHMENT B – SYSTEM DIAGRAM



ATTACHMENT C – PHOTOGRAPHS

Field Exam Photographs



Floating Diversion on North Drain.

43.718, -116.872

East field POU shown in background.



8" McCrometer
DuraMag flow meter
installed on system.

Field Exam Photographs

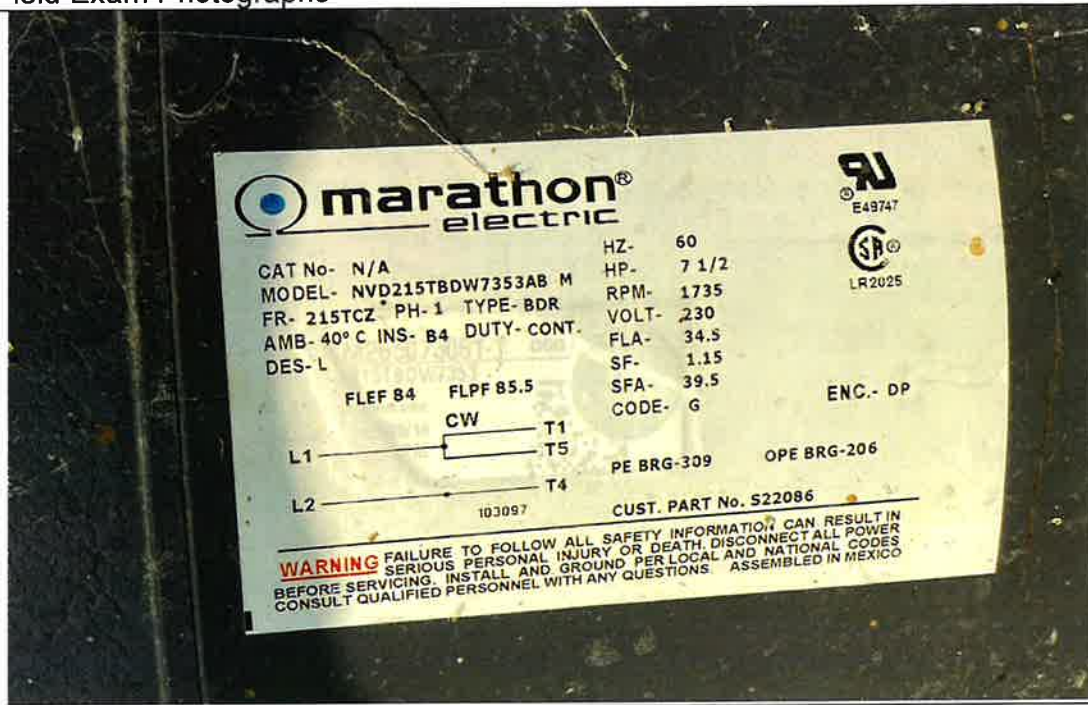


Diversion of water averaged 1.86 cfs according to GE Panametrics device.



McCrometer flows were consistent with the GE Panametrics device. Meter is working in good order.

Field Exam Photographs



7.5 hp Marathon Electric motor.



SE Culvert:

From the pump, a water line is buried along the east border of the property. It then turns west into an open ditch along the south border of the property. The left side of the photo shows water entering from a culvert under Bluff Lane. Riverside District water enters the property from this location.

Field Exam Photographs



Dixie Slough

Standing on Bluff Lane looking north.

Water from the southern ditch crosses Dixie Slough through the pipe shown in the photo. This delivers water to the west field POU.



West field POU.

Standing at SE corner of western field.

Water from the pipe crossing Dixie Slough opens back into an open ditch running along south end of property and POU.