

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 2-10464

Exam Date: 10/1/2015

1. Current Owner: CATHERINE VANDER STELT
DONALD LEE VANDER STELT
STEVEN CLARENCE VANDER STELT
12400 LANDAU WAY
NAMPA, ID 83686

2. Accompanied by: Craig Castigneto

Phone No: 208-250-7148

Address:

Relationship to Permit Holder: Farm Manager for Allen Noble

3. SOURCE

Snake River

TRIBUTARY

Columbia River

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 2-2167, 2-2198 See attached overlap comparison sheet
2. Other water rights with the same point of diversion: 2-2160A, 2-2160B, 2-2171, 2-2162, 2-2170, 2-2167, 2-2198
Permits: 2-10461, 2-10463, 2-10460

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

SNAKE RIVER L5(SENW) Sec. 22, Twp 01N, Rge 03W, CANYON County

Method of Determination: ArcMap tools using PLSS maps over aerial imagery.

2. PLACE OF USE:

IRRIGATION within CANYON County

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01N	03W	10	39.0	39.0	40.0	40.0									39.0	40.0	39.0	39.0	315.0
01N	03W	15	39.0	40.0	40.0	36.0													155.0

POU Total Acres: 470.0

Method of Determination: POU describes acres under permit holders active water rights.

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.

Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
1	US Motors	150	1263850		
2	US Motors	150	1257485		
3	US Motors	150	1207695		
4	US Motors	150	1263849		
5	US Motors	200	1217728		
6	US Motors	200	1319346		
8	US Motors	300	1280354		
9	US Motors	300	1266433		
10	GE	300	ENJ511127		

* Code to correspond with No. on diagram

Pump House Diagram:

8	9	10	NORTH ↓
3	4	5	
1	2	6	

D. FLOW MEASUREMENTS

1.Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Open Channel	Acoustic Doppler Current Profiler	Teledyne	StreamPro	432	2,000 kHz	
Open Channel	Acoustic Doppler Velocimeter	SonTek	FlowTracker	P4553		

2. Measurements: Collected on-site during field exam.**E. FLOW CALCULATIONS**☒ Additional Computation Sheets AttachedMeasured Method: Acoustic Doppler Current Profiler

See attached flow measurements

Permit	2.25 cfs
B.U. Standard Allowance	9.40 cfs
B.U. Proof Fee	\$150 → 2.01 to 3.00 cfs
Additional B.U. Rate	0.91 cfs
License Recommendation	0.91 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 470 \times 4.5 = 2,115.0$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.91 \times 260 \times 1.9835 = 469.3$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 469.3$$

2. Volume Calculations for Other Uses: None.

G. NARRATIVE/REMARKS/COMMENTS

The field exam was conducted by Corbin Knowles, Angie Grimm, Dennis Owsley and Patrick Kelly on October 1, 2015. Craig Castigneto of Allen Noble Farms escorted our group about the properties and ran the pump operations.

The purpose of the four permits filed on this system is to bring the diversion rate up to an inch per acre on the 1,623 acres already covered by existing water rights. The four permits total an extra diversion rate of 8.83 cfs. There is an existing 23.63 cfs authorized under active water rights. The goal of the field exam was to measure a maximum diversion rate of 32.46 cfs.

There is a pump station located on the north shore of the Snake River at the POD described above that pumps water roughly 500 feet up the ridge to a ditch. There are a total of nine pumps that are owned by several parties. A total of three pumping ponds exist on the ditch where booster pumps feed pivots and wheel lines. These pumping ponds and booster stations are privately owned and operated by individual users on the ditch.

Open channel measurements were completed by Dennis Owsley using a Teledyne Acoustic Doppler Current Profiler, (aka "the boat") and Angie Grimm using the Handheld ADV (FlowTracker). At the start of the test, all pumps were running. A flow reading of 22.7 cfs was recorded by Dennis while Angie measured 22.9 cfs. This was significantly lower than the 32.46 cfs target. This began the question of which pumps were delivering their share of the water. It was decided that the pumps would be shut down, and restarted in groups by which they serve an individual user.

Run 2 consisted of pumps labeled 8, 9 & 10, owned by Allen Noble Farms Inc. Permit 2-10461 owned by Allen Noble Farms Inc sought to add 3.76 cfs to existing rights 2-2171 and 2-2160A which each allows the appropriation of 4.52 cfs on a total of 640 acres. $4.52 + 4.52 = 9.04$ cfs. Measurements taken by Dennis found a total discharge of 12.7 cfs coming from the three pumps. This means an additional 3.66 cfs has been additionally appropriated by Allen Noble Farms Inc.

Run 3 consisted of pumps labeled 3, 4 & 5, owned by Catherine, Steven and Donald Vander Stelt. Permit 2-10464 owned by the Vander Stelt's sought to add 2.25 cfs to existing rights 2-2167 and 2-21698 which allows the appropriation of 4.77 and 2.38 cfs respectively on a total of 315 acres. $4.77 + 2.38 = 7.15$ cfs. Measurements taken by Dennis found a total discharge of 8.06 cfs coming from the three pumps. This means an additional 0.91 cfs has been additionally appropriated by the Vander Stelt's.

Run 4 consisted of pumps labeled 1 & 2, owned by A D Cattle Co Inc. Permit 2-10460 owned by the A D Cattle Co Inc sought to add 1.88 cfs to existing rights 2-2160B which allows the appropriation of 4.52 cfs on a total of 320 acres. Measurements taken by Angie found a total discharge of 3.38 cfs coming from the two pumps. No additional water has been appropriated by A D Cattle Co Inc.

Run 5 consisted of pump labeled 6, owned by Bigfoot Farms LLC. Permit 2-10463 owned by the Bigfoot Farms LLC sought to add 0.94 cfs to existing rights 2-2162 and 2-2170 which allows the appropriation of 2.38 and 0.54 cfs respectively on a total of 193 acres. $2.38 + 0.54 = 2.92$ cfs. Measurements taken by Angie found a total discharge of 2.08 cfs coming from the pump. No additional water has been appropriated by Bigfoot Farms LLC.

The system seems to operate more efficiently when all nine pumps are not running at once. When each individual run is added, a total of 26.17 cfs is measured. However, a significant drop in flow rate is found when all nine pumps run together.

Combined use limits will be placed on the rights in terms of total acres, since multiple water rights overlap the same place of use.

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>
IRRIGATION	3/1 TO 11/15	0.91 CFS	
<u>Totals:</u>		0.91 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

I. AUTHENTICATION

Field Examiner's Name Patrick Kelly Date 10-1-2015

Reviewer _____ Date _____

ation Name: pump test 1

meas. No. 0

Date: 10/01/2015

Party:

Width: 4.70 ft

Processed by:

Boat/Motor:

Area: 4.30 ft²

Mean Velocity: 1.88 ft/s

Gage Height: 0.00 ft

G.H.Change: 0.000 ft

Discharge: 8.06 ft³/s

Area Method: Avg. Course

ADCP Depth: 0.230 ft

Index Vel.: 0.00 ft/s

Rating No.: 1

Nav. Method: Bottom Track

Shore Ens.:10

Adj.Mean Vel: 0.00 ft/s

Qm Rating: U

MagVar Method: None (0.0°)

Bottom Est: Power (0.1667)

Rated Area: 0.000 ft²

Diff.: 0.000%

Depth Sounder: Not Used

Top Est: Power (0.1667)

Control1: Unspecified

Control2: Unspecified

Control3: Unspecified

Discharge Method: None

% Correction: 0.00

Screening Thresholds:

3T 3-Beam Solution: YES

Max. Vel.: 4.43 ft/s

ADCP:

NT 3-Beam Solution: YES

Max. Depth: 1.38 ft

Type/Freq.: StreamPro / 2000 kHz

3T Error Vel.: 0.33 ft/s

Mean Depth: 0.915 ft

Serial #: 432

Firmware: 31.13

NT Error Vel.: 3.50 ft/s

% Meas.: 28.34

Bin Size: 2 cm

Blank: 50 cm

3T Up Vel.: 1.00 ft/s

Water Temp.: None

BT Mode: 0

BT Pings: 1

NT Up Vel.: 1.64 ft/s

ADCP Temp.: 66.9 °F

WT Mode: 12

WT Pings: 6

Use Weighted Mean Depth: YES

Performed Diag. Test: NO

Project Name: pump test 1_0.mmt

Performed Moving Bed Test: NO

Software: 2.11

Performed Compass Calibration: NO

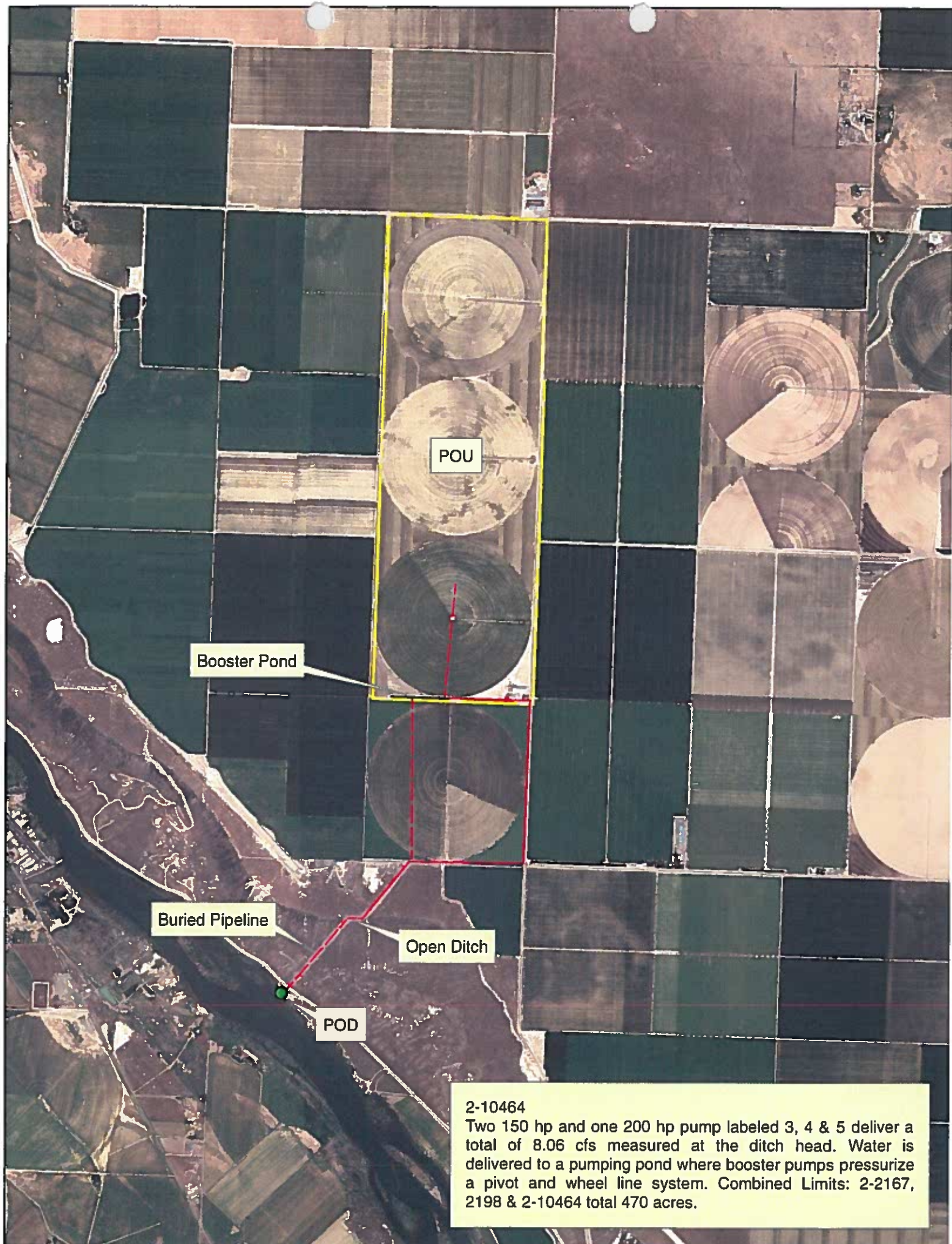
Evaluation: NO

Meas. Location:

#	Edge Distance			#Ens.	Discharge						Width	Area	Time		Mean Vel.		% Bad	
	L	R	Top		Middle	Bottom	Left	Right	Total	Start			End	Boat	Water	Ens.	Bins	
0	L	1	1	52	2.75	2.30	1.34	0.671	0.600	7.66	4	4	13:45	13:46	0.05	1.87	0	0
1	R	1	1	54	3.14	2.30	1.55	0.671	0.600	8.26	5	4	13:46	13:47	0.05	1.89	0	0
2	L	1	1	56	3.04	2.15	1.45	0.671	0.459	7.73	5	4	13:48	13:49	0.05	1.83	0	0
3	R	1	1	65	3.18	2.40	1.55	0.777	0.671	8.58	5	4	13:49	13:50	0.04	1.92	9	0
Mean	1	1	56	3.03	2.29	1.47	0.697	0.583	8.06	5	4	Total	00:05	0.05	1.88	2	0	
Dev	0	0	6	0.192	0.101	0.101	0.053	0.089	0.439	0.2	0.2							
M	0.00	0.00	0.10	0.06	0.04	0.07	0.08	0.15	0.05	0.04	0.04							

marks:

Discharge for transects in *italics* have a total Q more than 5% from the mean



2-10464

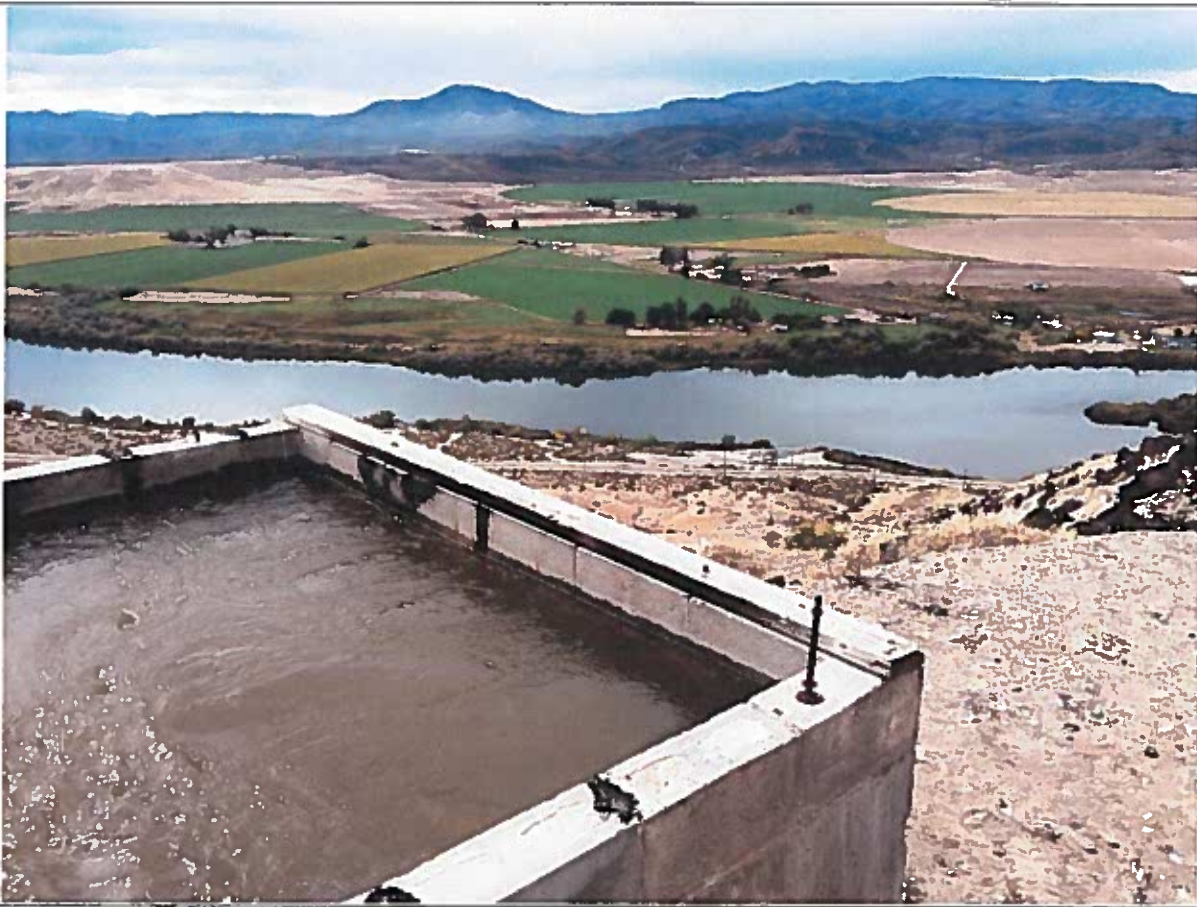
Two 150 hp and one 200 hp pump labeled 3, 4 & 5 deliver a total of 8.06 cfs measured at the ditch head. Water is delivered to a pumping pond where booster pumps pressurize a pivot and wheel line system. Combined Limits: 2-2167, 2198 & 2-10464 total 470 acres.



Pumping station looking north. Water is delivered above ridge in photo.



Pumps are lined in three rows of three, 9 pumps total, labeled as shown. (There is no No. 7)



Ditch head on ridge facing south towards Snake River.

Pumping station seen on shoreline.

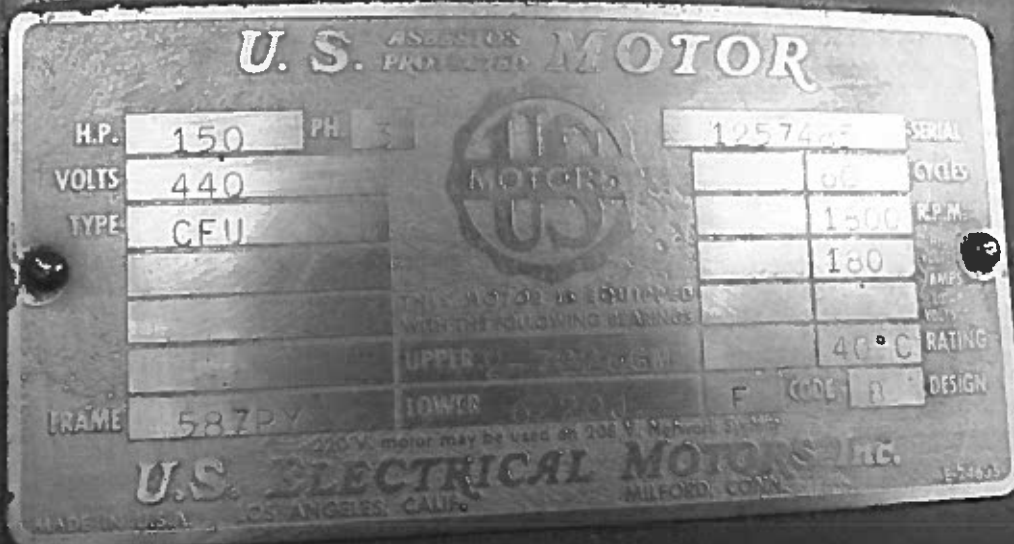


Ditch head on ridge facing NE.

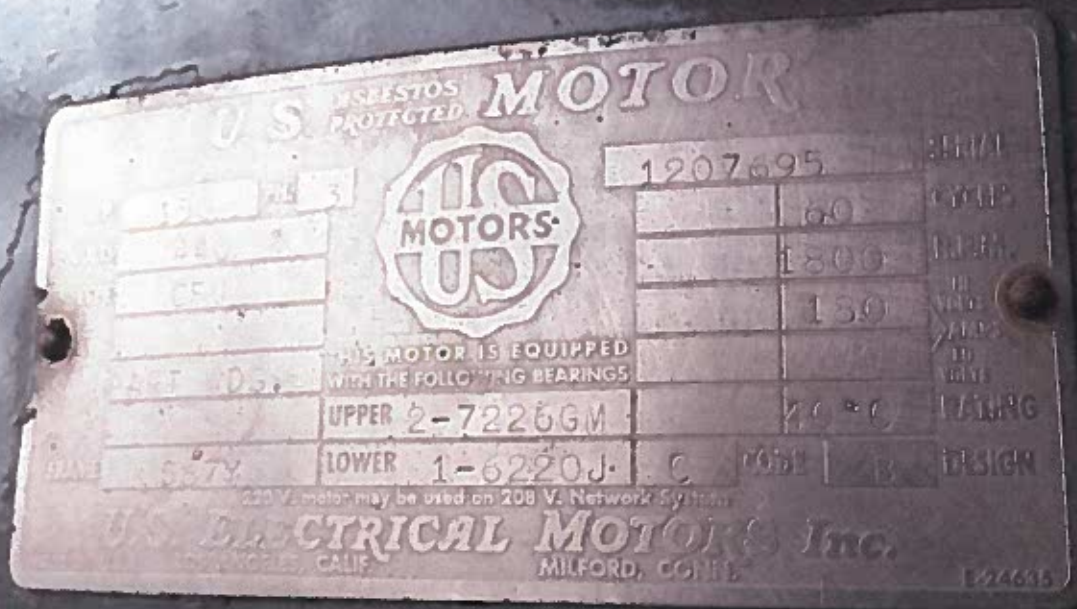
Measurement location shown.



Pump ID # 1
150 hp
1263850



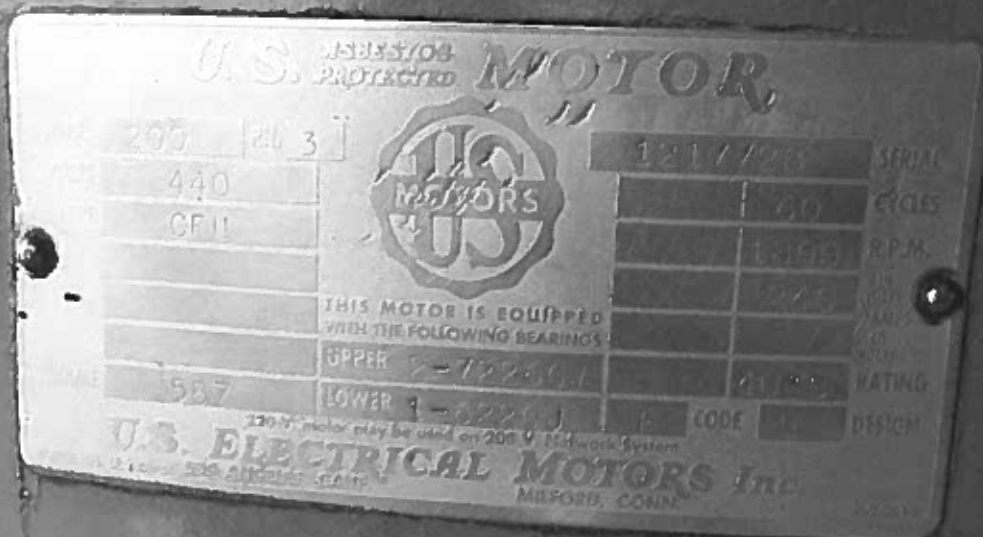
Pump ID # 2
150 hp
1257485



Pump ID # 3
150 hp
1207695



Pump ID # 4
150 hp
1263849



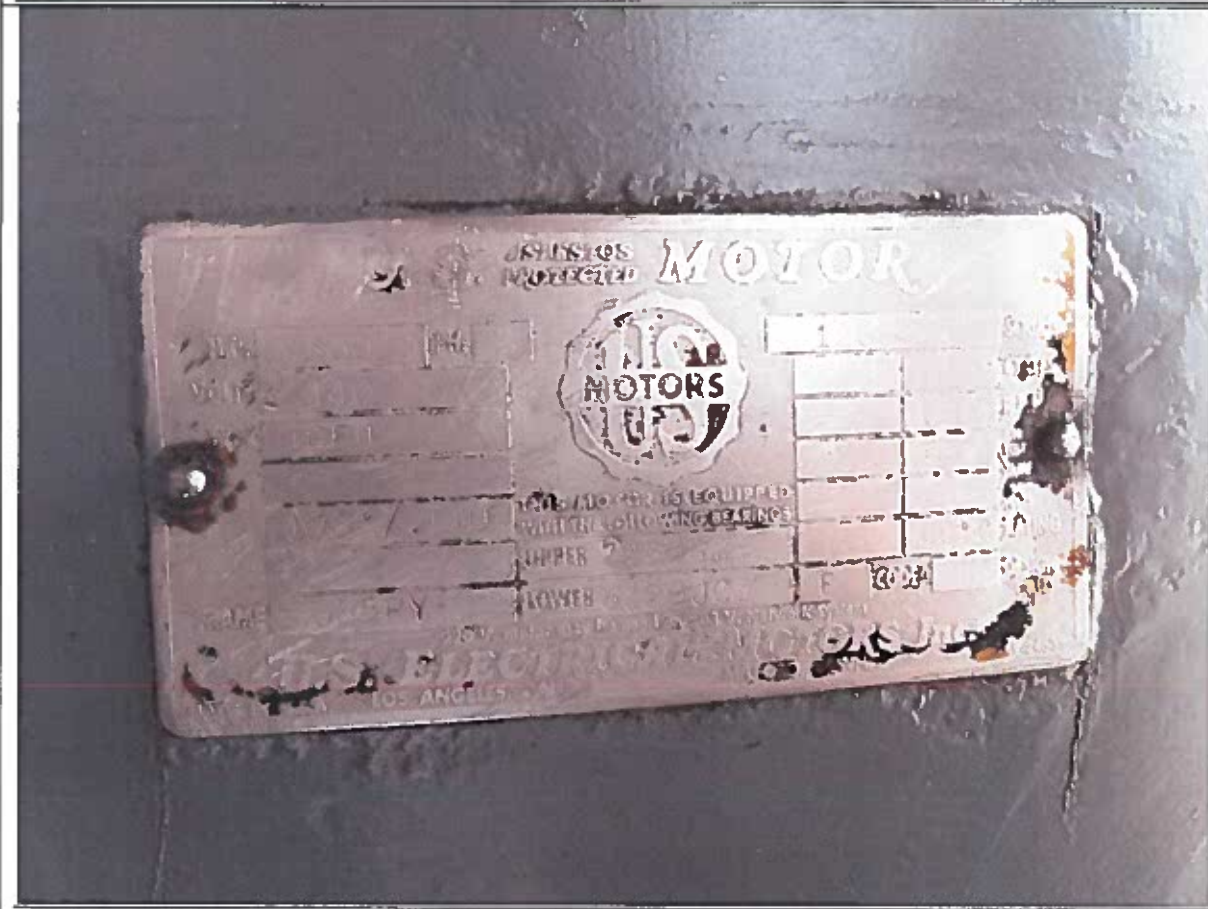
Pump ID # 5
200 hp
1217728



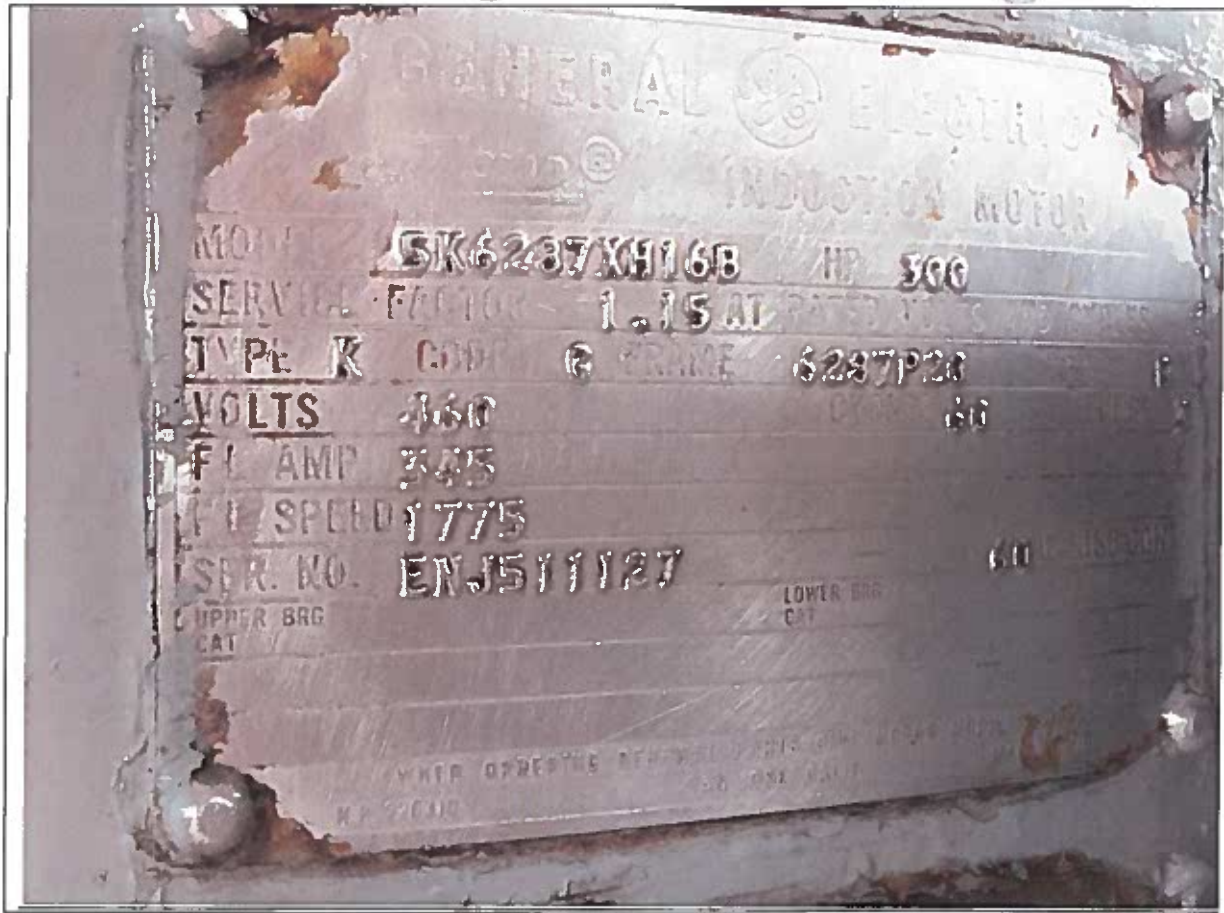
Pump ID # 6
200 hp
1319346



Pump ID # 8
300 hp
1280354



Pump ID # 9
300 hp
1266433



Pump ID # 10
300 hp
ENJ511127

1 N 3W S15

Process	Basin Sequence	Draft	Owner	Source	POD/ POU	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Permit	2-10463	N	BIGFOOT FARM LLC	SNAKE RIVER	POU													40.0	39.0	38.0	40.0	157
Water Permit	2-10464	N	VANDER STELT, CATHERINE;	SNAKE RIVER	POU	39.0	40.0	40.0	36.0													155
Water Right	2-105	N	VANDER STELT, DONALD LEE; VANDED FARM	SNAKE RIVER	POU					40.0	40.0	40.0	40.0	40.0	40.0	19.0	39.0					298
Water Right	2-2162	N	DEVELOPMEN T CORP	SNAKE RIVER	POU													40.0	39.0	38.0	40.0	157
Water Right	2-2167	N	BIGFOOT FARM LLC	SNAKE RIVER	POU	39.0	40.0	40.0	36.0													155
Water Right	2-2219B	N	VANDER STELT, CATHERINE; VANDER STELT, DONALD LEE; VANDED FARM	SNAKE RIVER	POU					40.0	40.0	40.0	40.0	40.0	39.0	17.0	37.0					293
Water Right	2-2219C	N	DEVELOPMEN T CORP	SNAKE RIVER	POU					40.0	40.0	40.0	40.0	40.0	40.0	19.0	39.0					298
Water Right	63-21737	N	FIVE JS	GROUND WATER	POU				X													0

4.17
ok

IN 3w SLO

Process	Basin Sequence	Draft	Owner	Source	POD/ POU	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Permit	2-10464	N	VANDER STELT, CATHERINE; VANDER STELT, DONALD LEE; VANDER FARM	SNAKE RIVER	POU	39.0	39.0	40.0	40.0									39.0	40.0	39.0	39.0	315
Water Right	2-105	N	DEVELOPMEN T CORP VANDER STELT, CATHERINE; VANDER STELT, DONALD LEE; VANDER FARM	SNAKE RIVER	POU											40.0	40.0					80
Water Right	2-2167	N	VANDER STELT, CATHERINE; VANDER STELT, DONALD LEE; VANDER FARM	SNAKE RIVER	POU													39.0	40.0	39.0	39.0	157
Water Right	2-2198	N	VANDER STELT, CATHERINE; VANDER STELT, DONALD LEE; VANDER FARM	SNAKE RIVER	POU	39.0	39.0	40.0	40.0													158
Water Right	2-2201	N	BRANDT, MARILYN I	SNAKE RIVER	POU					40.0			40.0	40.0	38.0							158
Water Right	2-2202	N	ALLEN NOBLE FARMS INC FARM	SNAKE RIVER	POU					39.0	39.0											78
Water Right	2-2219B	N	DEVELOPMEN T CORP FARM	SNAKE RIVER	POU											40.0	40.0					80
Water Right	2-2219C	N	DEVELOPMEN T CORP	SNAKE RIVER	POU											40.0	40.0					80

4-77
CS

2-38
CF