

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-8006

Exam Date: 05/22/2025

1. Current Owner:

VWH FAMILY LIMITED PARTNERSHIP 4181 DISTRICT FIVE RD BONNERS FERRY ID 83805-5490 AND
MICHAEL HUBBARD 4181 DISTRICT FIVE RD BONNERS FERRY ID 83805-5490 AND
WESLEY HUBBARD 4181 DISTRICT FIVE RD BONNERS FERRY ID 83805-5490

2. Accompanied by: Jake C/O Adam Newhouse

Phone No: 801-885-2168

Address: PO Box 688, Bonners Ferry ID 83805

Relationship to permit Holder: Adam Newhouse – Representative, Jake – irrigation system operator

3. **SOURCE:**

KOOTENAI RIVER

Tributary

COLUMBIA RIVER

Method of Determination: ArcMap and DRG.

B. OVERLAP REVIEW1. Other water rights with the same place of use: NO Overlap2. Other water rights with the same point-of-diversion: NO Overlap**C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:

KOOTENAI RIVER L11 (SE¼ SW¼), Sec. 31, Twp 63N, Rge 01E, B.M. BOUNDARY County

Method of Determination: GPS located diverting pump in Kootenai River at -116°23.1768, 48°45.6752.

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	
62N	01E	6		22.0 L2			30.0 L3	2.3 L5	6.7 L5	12.0									73.0
63N	01E	31											0.5 L11						0.5

Total Acres: 73.5

Method of Determination: Beneficial use field examination and ArcMap aerial imagery.

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.

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

Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Kootenai River Pump				Cornell	Model 3RB-EM16; 3-Inch Discharge

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Flow Meter	Transit Time	GE PANAMETRIC	PT900	M06210067	CLAMP-ON	4/1/2025

2. Measurements: I performed three 11-min measurements at the first Aluminum straight length of pipe from the centrifugal diesel pump. Three measurements were evaluated and the largest diversion rate recorded in measurement was 526.5881-gpm or 1.17 cfs considering Department rounding standards.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method: Department Panametric PT900 flow meter.

- Permit authorized diversion rate = 1.80 cfs
- Diversion rate authorized by irrigation acreage evaluated (73.5 ac) = 0.02 cfs x 73.5 ac = 1.47 cfs
- Flow meter evaluated maximum flow rate reading = 526.5881 (recorded at 10:27 a.m.) = 1.17 cfs considering Department rounding standards.
- Flow meter evaluated average flow rate = 520.719 gpm or 1.16 cfs considering Department rounding standards.
- Recommended Maximum diversion rate for licensing purposes = **1.17 cfs**

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 73.5 \text{ ac} \times 3.0 \text{ afa} = 220.5 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 1.17 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 497.0 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 220.5 \text{ af}$$

2. Volume Calculations for Other Uses: The irrigation beneficial use from the Kootenai River water source is exempt from the volume reporting requirements in accordance with IDAPA 37.03.02, Section 035.

G. NARRATIVE/REMARKS/COMMENTS

I conducted the beneficial use field exam on 5/22/2025 with one of the Permit Holder's representatives, Adam Newhouse – Representative & Jake – irrigation system operator, which showed Kootenai River water being diverted for irrigation uses. At the POD, an older Cornell brand diesel powered horizontal framed centrifugal pump is used to divert water conveying it to the irrigation POU via pipeline. I captured photographs of the diverting works and researched online during licensing review; data plates and pump stenciled information illustrate the pump is a frame mounted with a 5-inch suction end and 3-inch discharge end. The system incorporated 6-inch hard walled flexible braided rubber hose for both intake and initial discharge using reduction couplers. The system operator, know only by first name – Jake, asserts the intake pipe is screened and floats housed in a plastic tote in a river inlet.

The pump operates at a normal system pressure of 50 psi and as installed demonstrated a maximum pumping capacity of 526 gpm based on ultrasonic flowmeter measurements. I have recommended a maximum diversion rate of 1.17 cfs for

licensing purposes based on the largest observed flow rate achieved during the field exam. This is slightly larger than the 1.16 cfs average rate over 11 minutes but accurately depicts the pump's max capacity as recommended.

The water conveyance system uses 8-inch aluminum irrigation pipes routed southward from POD approximately 1,000-ft to conveying water to a center pivot, a marching line pivot, and multiple hand line irrigation risers. The exam was conducted early in season comparative to the grow season for the Kootenai River valley and most crops were planted and watering for the season hadn't hit daily watering yet. I observed active irrigation only from the center pivot located on the western extent of the irrigation POU. I collected numerous photographs to visually represent the irrigation system infrastructure and included them in this report along with a field exam map highlighting the primary components.

The main pipeline tees toward the southern extent of the POU and above ground piping is then routed as buried pipeline west across a plot to riser and center pivot and east to three irrigation risers serving a marching lateral wheel pivot with drag hose and two hand-line connecting points. The irrigation POU was sketched on field maps and during licensing review I used ArcMap aerial imagery to accurately trace out the total irrigation acreage equaling 73.5 acres. In every instance each Permit authorized QQ/Q acreage reduced in value as license recommended. The permit authorized development of 90 acres for irrigation but I'm only able to recommend 73.5 acres as developed in the Permit's development period. The annual volume authorized for this acreage is 3.0 afa which equates to 220.5 af, but as the system uses a surface water river source no volume reporting is applied to the face of the license; conditions of approval serve to designate the max diversion rate of 0.02 cfs per acre and 3.0 afa per acre at the field headgate for irrigation at the place of use.

The POD is located on property not owned by the Permit Holder, but an existing land use agreement submitted at time of application submission (located in backfile) is still currently active, mitigating any right-of-way concerns at time of licensing. I recommend maintaining condition 004 for licensing purposes as the agreement between neighbors is not currently a recorded easement. All conditions on the Permit are being carried forward to the license and there aren't any overlapping water right concerns toward licensing 98-8006.

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	04/01 to 10/31	1.17 CFS

Totals: 1.17 CFS

2. Recommended Amendments

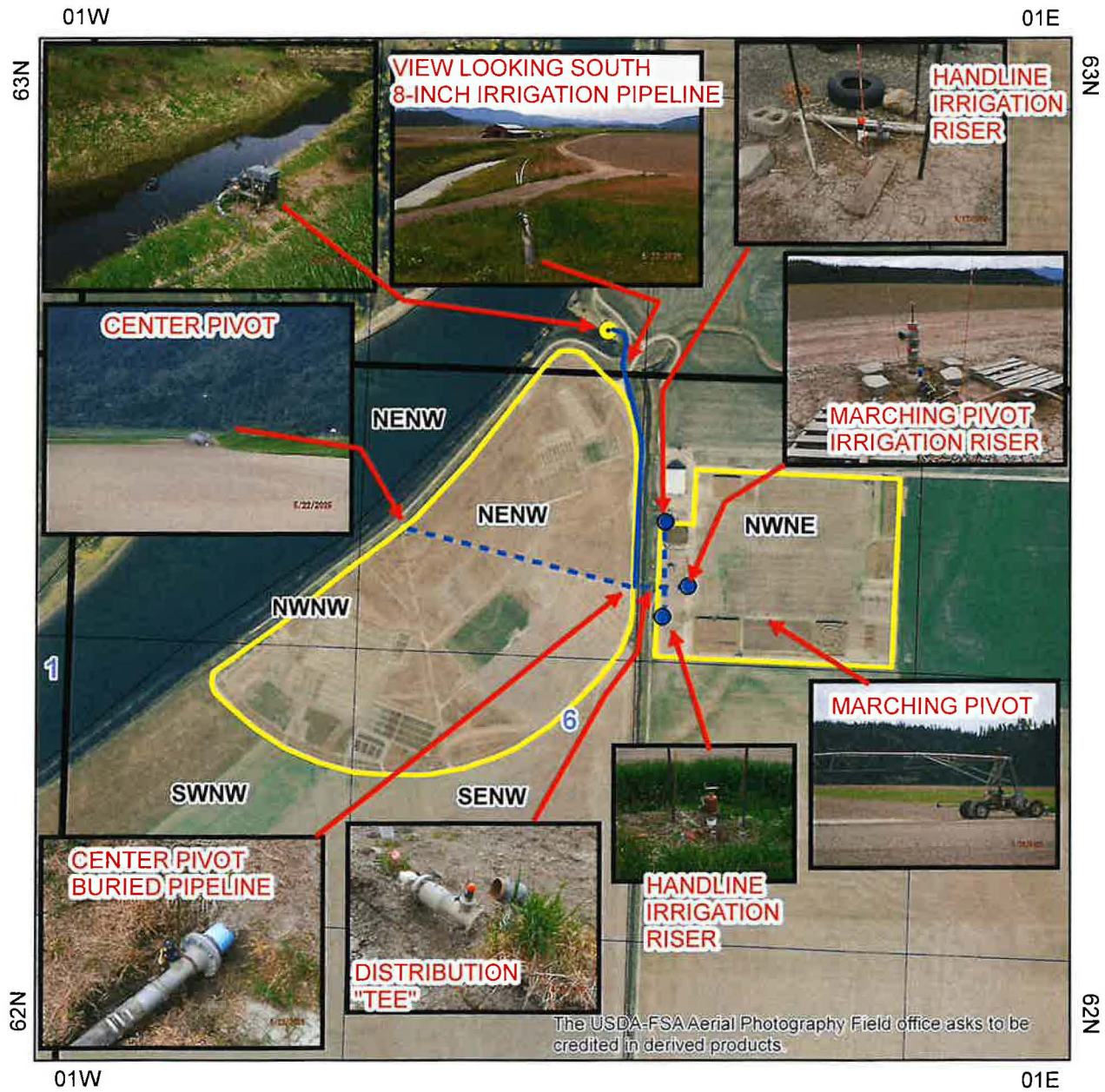
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION Luke Bates – Sr Water Resource Agent

Field Examiner's Name  Date 6/23/2025
 Reviewer Michelle Richman Date 6/29/2026

State of Idaho
Department of Water Resources
Attachment to Field Exam
98-8006

This map depicts the IRRIGATION system diagram.



- Place Of Use Boundary
- Point of Diversion
- Townships
- PLS Sections
- Quarter Quarters

0 0.075 0.15 0.3 Miles



Flow Measurement Beneficial Use Field Exam 98-8006

Date/Time 5/22/2025	Velocity ft/s	Volume Gallons/min	Fwd Totalizer Fwd Gallons	Error				
10:22:01	3.3866	518.0587	11831.6729	Error:0				
10:23:01	3.4181	522.8735	12355.0303	Error:0				
10:24:01	3.4106	521.7231	12875.6816	Error:0				
10:25:01	3.4031	520.5804	13396.5664	Error:0				
10:26:01	3.4174	522.7754	13916.292	Error:0				
10:27:01	3.4424	526.5881	14438.8037	Error:0				
10:28:01	3.397	519.6521	14961.1455	Error:0				
10:29:01	3.3908	518.6989	15482.1914	Error:0				
10:30:01	3.4016	520.3499	16000.3613	Error:0				
10:31:01	3.3773	516.6398	16520.2773	Error:0				
10:32:01	3.4063	521.0744	17038.8613	Error:0				
Average Velocity3.40 Max Velocity3.4424 Min Velocity3.3773 CORNELL 3RB-EM16 DIESEL POWERED CENTRIFUGAL PUMP								
Average GPM	520.8							
Max GPM	526.6	Max CFS	1.170					
Min GPM	516.6							
Beginning Reading			11831.673					
Ending Reading			17038.861					
Difference in Readings			5207.188					
Difference / 10 readings			520.719	GPM				
Conversion from GPM to CFS (/448.83)			1.16	CFS				
Measure Device: GE PT900 S/N M06210067			Last Calibration Date: 4/1/2025					

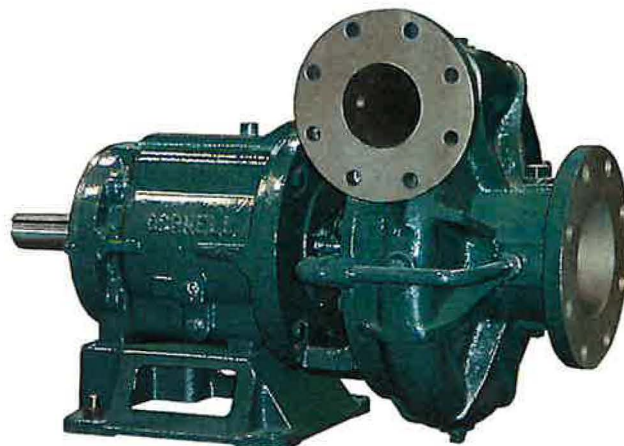
**AVAILABLE MOUNTING CONFIGURATIONS**

3RB-F FRAME MOUNT - 16F8
3RB-RP-F REDI-PRIME FRAME MOUNT
3RB-EM ENGINE MOUNT - EM16
3RB-RP-EM REDI-PRIME ENGINE MOUNT
3RB-VF VERTICAL FRAME MOUNT
3RB-VC VERTICAL COUPLED

OPERATING LEVELS

MIN FLOW	75 GPM	17 m ³ /h
MAX FLOW	900 GPM	204 m ³ /h
DISCHARGE SIZE	3"	76.2 mm
SUCTION SIZE	5"	127 mm
SOLIDS HANDLING	0.5"	12.7 mm
MAX SPEED	2600 RPM	2600 RPM
SHUT-OFF HEAD	400'	122 m
MAX WORKING PRESSURE	175 PSI	1207 kPa
BEP HEAD	350'	107 m
BEP FLOW	800 GPM	182 m ³ /h
BEP PERCENT	79%	79%

PARTS	STANDARD MATERIAL (CAST IRON BRONZE FITTED, CI IMPELLER)
WEAR RINGS	Bronze SAE 660
IMPELLER	Cast Iron ASTM A48 CL30
VOLUTE	Cast Iron ASTM A48 CL30
SHAFT	SAE 1144 Stressproof Steel
SHAFT SLEEVE	Bronze SAE 660
BACKPLATE	Cast Iron ASTM A48 CL30
PACKING (STANDARD)	Graphited Acrylic
MECHANICAL SEAL (OPTIONAL)	Single T-1, Buna, Carbon/ Ceramic
BEARING FRAME	Cast Iron ASTM A48 CL30



A typical picture of the pump is shown. Please contact Cornell Pump Company for further details. All information is approximate and for general guidance only.

The 3RB general purpose pump is designed with Cornell's renowned quality and durability. It features a 3" discharge and a 5" suction, enclosed multi-vane impeller and flanged tangential single volute. The pump end mounts to F5, F16, EM5, EM16, VC5, VC16, VF5, and VF16 bearing frames. Optional Redi-Prime or Venturi Prime priming system is available. Bearings are heavy-duty, grease lubricated, single ball bearings with a minimum of 20,000 hours bearing life.

- External hydraulic balance line
- Back pullout design
- Replaceable hub & suction wear rings
- Replaceable shaft sleeve
- High efficiency hydraulics
- Low operating costs
- Modular bearing frame
- Long B-10 bearing life (20,000 hour minimum)
- Two year warranty
- Optional Cycloseal® with type 1 mechanical seal
- Optional Run-Dry™ lubrication system
- Grease lubrication standard - oil lubrication optional
- SAE #3, 4 & 5 engine mount available to fit
- Oversized shaft and bearings



AGRICULTURE



FOOD



INDUSTRIAL



MINING



MUNICIPAL



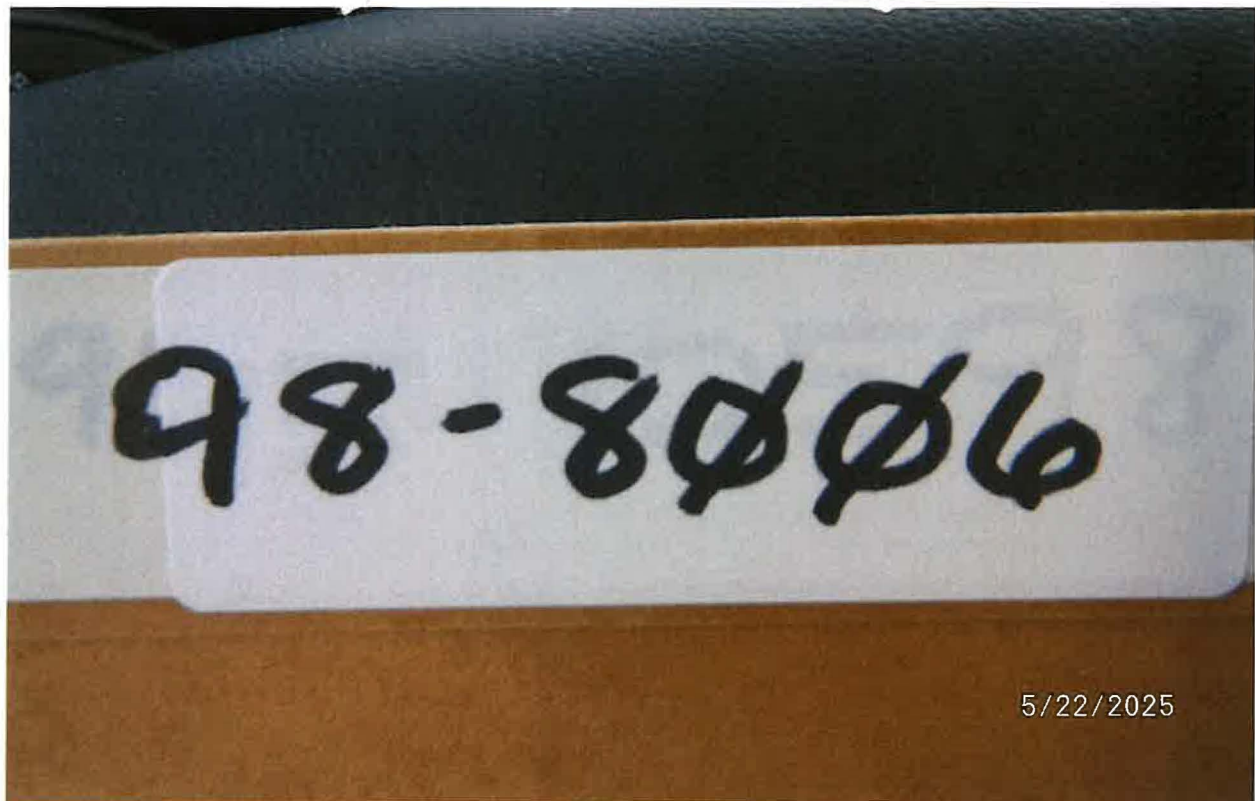
OIL & GAS



REFRIGERATION



RENTAL



BENEFICIAL USE FIELD EXAMINATION DATE 5/22/2025



POD – SCREENED INTAKE PIPE IN FLOATING BARREL AND DIESEL POWERED CENTRIFUGAL PUMP DIVERTING FROM SHALLOW INLET ON THE KOOTENAI RIVER



DIVERTING WORKS – FLEXIBLE 6-INCH INTAKE HOSE WITH SCREEN ATTACHED
TO CORNELL CENTRIFUGAL PUMP SUCTION FLANGE





POD – DIVERTING WORKS INCORPORATE A CORNELL BRAND CENTRIFUGAL PUMP MODEL NO. 3RB-EM16, DIESEL FUEL POWERED PUMP



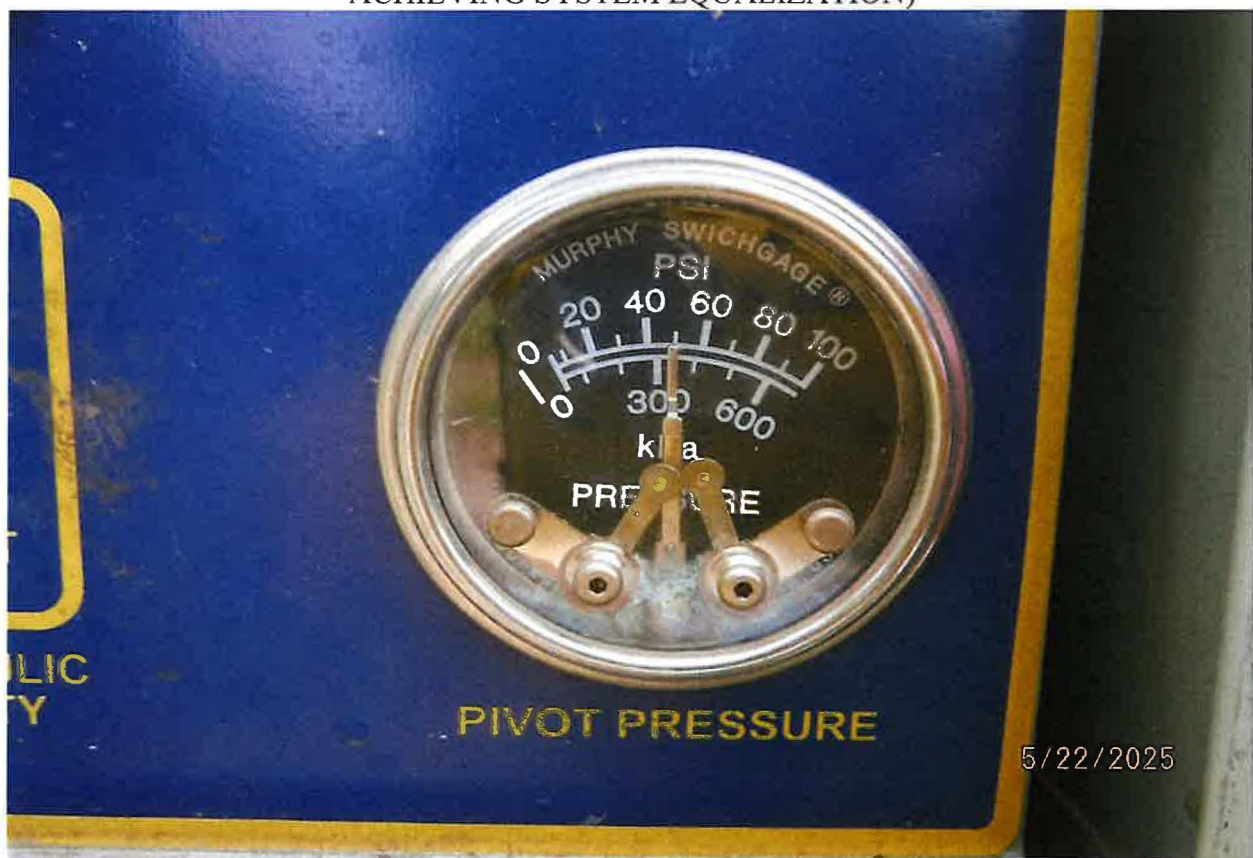


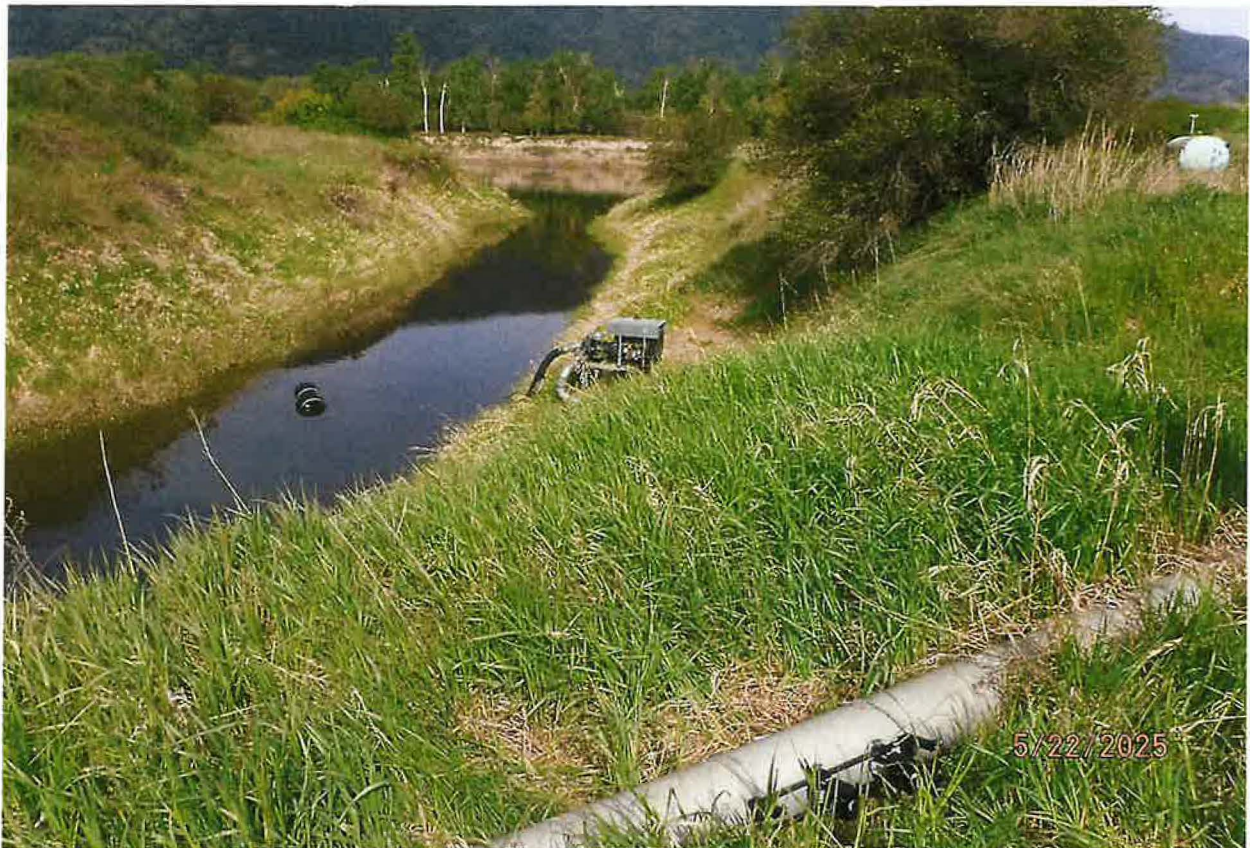
POD – CORNELL PUMP HAS A 3-INCH DISCHARGE ORIFICE THAT IS COUPLED UP TO A 6-INCH SOLID FLEXIBLE RUBBER HOSE





DURING NORMAL OPERATIONS THE DIVERTING PUMP MAINTAINS 50-55 PSI OPERATING PRESSURE (PICTURE TAKEN DURING INITIAL START BEFORE ACHIEVING SYSTEM EQUALIZATION)





DEPARTMENT GE PT-900 FLOWMETER USED TO TAKE FLOW MEASUREMENTS ON FIRST FULL LENGTH SECTION OF 8-INCH ALUMINUM PIPE





IRRIGATION WATER CONVEYANCE SYSTEM – APPROXIMATELY 1,000 FT OF 8-INCH ROUTES FROM POD, UP OVER/THROUGH DIKE EMBANKMENT, TO DISTRIBUTE WATER TO A CENTER PIVOT, A LATERAL WHEELED ‘MARCHING’ PIVOT, AND 2EA LATERAL HAND LINE IRRIGATION RISERS.



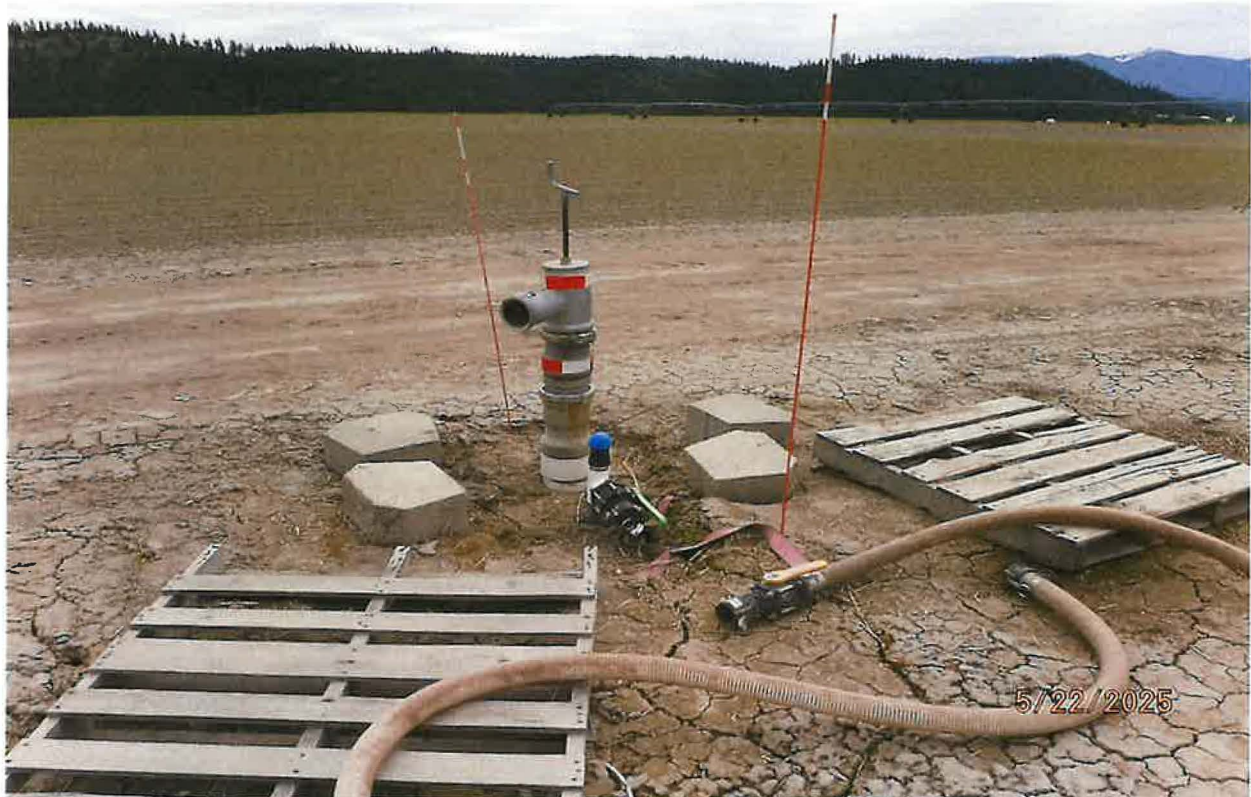
CONVEYANCE SYSTEM – 8-INCH ALUMINUM ROUTED ACROSS FIELD BURIED PIPELINE TO CENTER PIVOT



IRRIGATION POU – CENTER PIVOT LOCATED ALONGSIDE RIVER EMBANKMENT
(OPERATED FOR FLOW MEASUREMENTS)



CONVEYANCE SYSTEM – 8-INCH ALUMINUM ROUTED EAST TO MAIN IRRIGATION
RISER FOR WHEELED MARCHING PIVOT



IRRIGATION RISER ATTACHES TO ABOVE GROUND DRAG HOSE CONNECTED TO
WHEELED MARCHING PIVOT
IRRIGATION POU IN PHOTO BACKDROP



IRRIGATION POU – INTERIOR IRRIGATION PLOT UTILIZING WHEELED MARCHING
PIVOT



TWO (2) IRRIGATION RISER POINTS ON EASTERN SIDE OF DRAINAGE DITCH USED TO IRRIGATE WITH HAND LINE SPRINKLERS

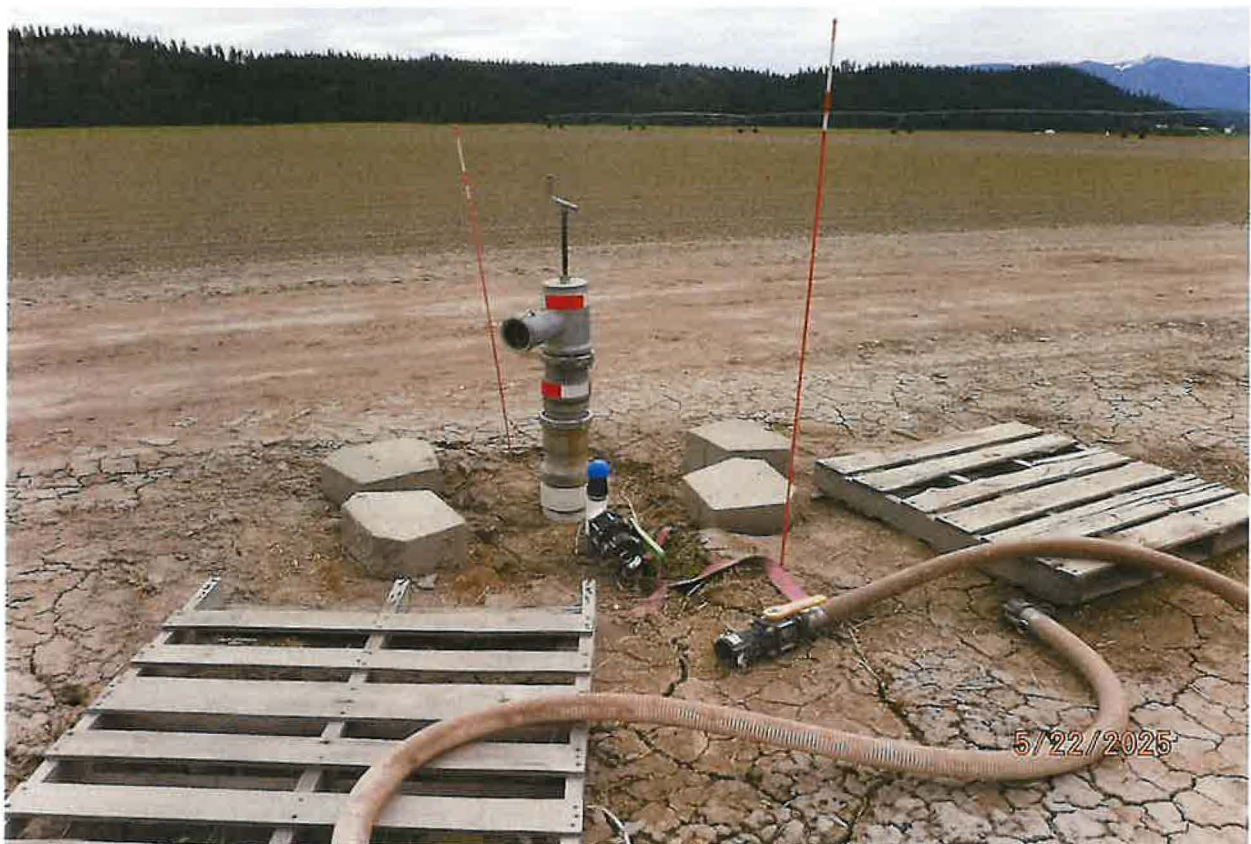




IRRIGATION POU – HAND LINE USED TO WATER SMALL PLOT BETWEEN TWO PIVOT PLOTS



HAND LINE (ONE OF TWO STACKS), WITH THIS ONE BEING THE SOUTHERN EXTENT OF HAND LINE PLOT



IRRIGATION POU – SMALL HAND LINE BANJO CONNECTION CO-LOCATED WITH LARGER IRRIGATION RISER; PIPING REDUCED TO WATER HOOP GARDEN SPACE





IRRIGATION POU – HOOP GARDEN SPACE AND STACK OF HANDLINE IRRIGATION PIPE (NORHTERN EXTENT OF HANDLINE PLOT)



IRRIGATION POU – INTERIOR WHEELED MARCHING PIVOT PLOT