

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-11866
Exam Date: 05/18/2021

1. Current Owner:
MP2 LAND COMPANY LLC PO BOX 397 SANDPOINT ID 83864-0397
2. Accompanied by: Mike Peak
Phone No: 208-290-2561
Address: Same as above
Relationship to permit Holder: Permit holder's representative

3. SOURCE:
GROUND WATER

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
95-13813	FIGHTING CREEK	DOMESTIC, STOCKWATER	DECREED

Comments: Decreed right 95-13813 uses water from Fighting Creek for domestic use which includes ½ acre irrigation & stockwater use for 75 head of mixed stock with both components overlapping this right's irrigation and stockwater POU's. Condition X35 was added during licensing review to describe the combined use limitations for the maximum number of mixed stock associated with stockwater use and maximum amount of irrigated acres between rights 95-13813 & 95-11866.

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

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

GROUND WATER L5 (SW¼ NW¼), Sec. 12, Twp 48N, Rge 05W, B.M. KOOTENAI County

Method of Determination: GPS; POD located at -116°56.0709, 47°31.2593 well 95-97-N-13.

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	
48N	05W	12							2.4										2.4

Total Acres: 2.4

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
48N	05W	12							X										

Method of Determination: Field exam and Arcmap aerial imagery.

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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
95-97-N-13	FRANKLIN	0.5		UNKOWN	

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform a flow measurement due to inadequate pipe requirements. The main water line routed direct from well to a pressure tank prior to distribution for uses. A Theoretic Pump Equation derived a flow rate of 6.9 gpm or **0.02 cfs** considering department rounding standards, which aligns with the same diversion rate as the well driller reports yield in gal/min illustrates.

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation = 0.5 hp pump installed at depth of 125 with operating pressure of 45 PSI equates to 6.9 gpm or 0.02 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I,R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.4 \text{ ac} \times 3.0 \text{ afa} = 7.2 \text{ af}$$

$$V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 9.8 \text{ af}$$

$$V = \text{Smaller of } V_{I,R} \text{ and } V_{D,R} = \mathbf{7.2 \text{ af}}$$

2. Volume Calculations for Other Uses:

- Stockwater annual volume = 5 cows x 12 gpd x 365-days = 21,900 gal per year / 325,850 gal per af = 0.07 af which rounds to **0.1 af** considering department rounding standards.
- Maximum diversion volume = 0.1 af (stockwater) + 7.2 af (irrigation) = **7.3 af**.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 5/18/2021 with an applicant's representative, Mike Peak, showed a groundwater well providing water for irrigation and stockwater uses. At the POD, well 95-97-N-13 with 0.5 HP pump motor installed has a main water line that routes directly to a pressure tank before distribution to beneficial uses, with inadequate pipe requirements to complete a flow measurement. A Theoretic Pump Equation derived a flow rate of 6.9 gpm or **0.02 cfs** considering department rounding standards, which aligns with the same diversion rate as the well driller reports illustrate as yield (gal/min). The pump is installed at a depth of 125 ft, with a 45 PSI operating pressure. The 0.02 cfs is less than the department standard for the irrigation acreage developed, but the applicant is limited by pump performance found at time of field exam. 0.02 cfs is recommended for each beneficial use diversion rate, as well as the maximum diversion rate for licensing purposes.

During the exam, the irrigation POU was walked with the applicant, and consists of green space corridors along the entry point to a gravel pit, lawn space around the home & office, and pastureland irrigation for stock feed. The irrigation system incorporates hose bibs and frost-free hydrants to hose & a variety of sprinklers to water throughout the irrigation season. The POU was sketched on field maps, and during licensing review Arcmap aerial imagery was used to trace out the acreage equaling 2.4 acres. The irrigation beneficial use annual volume equals $2.4 \text{ ac} \times 3.0 \text{ afa} = \mathbf{7.2 \text{ af}}$ which is recommended for licensing. There is a hay field in the SW portion of the applicant's property, but during the exam it was identified as dry agriculture land that was not actively irrigated during the permit's development period and not recommended for inclusion of the irrigation POU.

The stockwater POU was traced using Arcmap aerial imagery and consists of pasture lands used for 5 head of cattle that were on site during the exam. Portable stock tanks were filled by hoses from frost-free hydrants in altering pastures to allow the stock to be rotated throughout the year. The stockwater annual volume equals $5 \text{ cows} \times 12 \text{ gpd} \times 365\text{-days} = 21,900 \text{ gal per year} / 325,850 \text{ gal per af} = 0.07 \text{ af}$ which rounds to **0.1 af** considering department rounding standards. The maximum diversion volume recommended to license this water right equals the sum of the two beneficial use components or **7.3 af**.

Conditions 26A, 046, & X02 were removed from the permit during licensing review. Condition R62 was replaced by R66 describing irrigation diversion and volume values for licensing approval. Condition X35 was added to mitigate overlap concerns as discussed below. Condition 004 shall be carried forward to the license. Overlap concerns: Decreed right 95-13813 uses water from Fighting Creek for domestic use which includes $\frac{1}{2}$ acre irrigation & stockwater use for 75 head of mixed stock with both components overlapping this right's irrigation and stockwater POUs. Condition X35 was added during licensing review to describe the combined use limitations for the maximum number of mixed stock associated with stockwater use and maximum amount of irrigated acres between rights 95-13813 & 95-11866. There are no additional overlap concerns for this water right.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/15 to 11/15	0.02 CFS	7.2 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF

Totals: 0.02 CFS 7.3 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

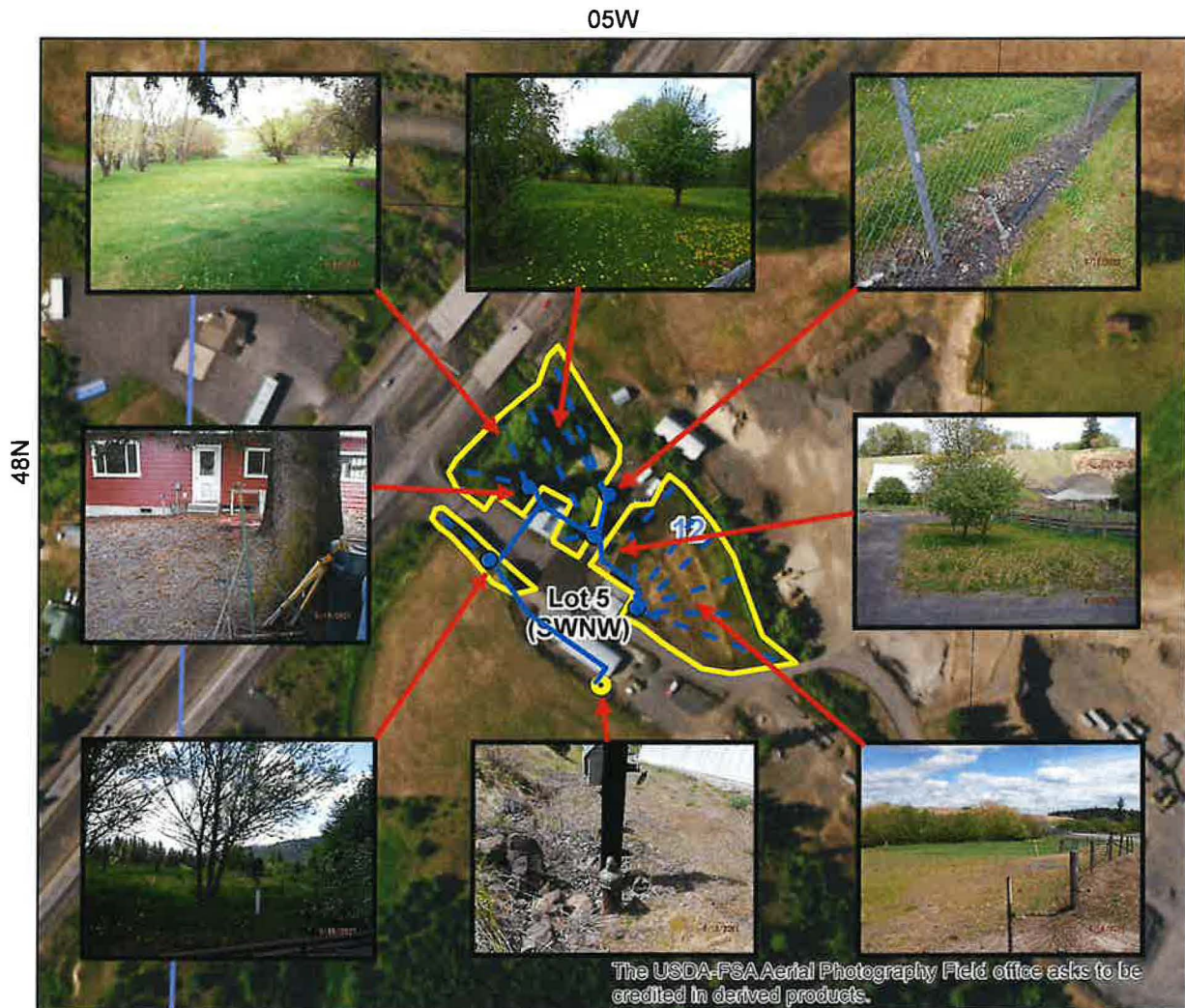
I. AUTHENTICATION Luke Bates -

Field Examiner's Name FBP Date 11/16/2021

Reviewer Ad F... Date 11/18/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-11866

IRRIGATION system diagram.



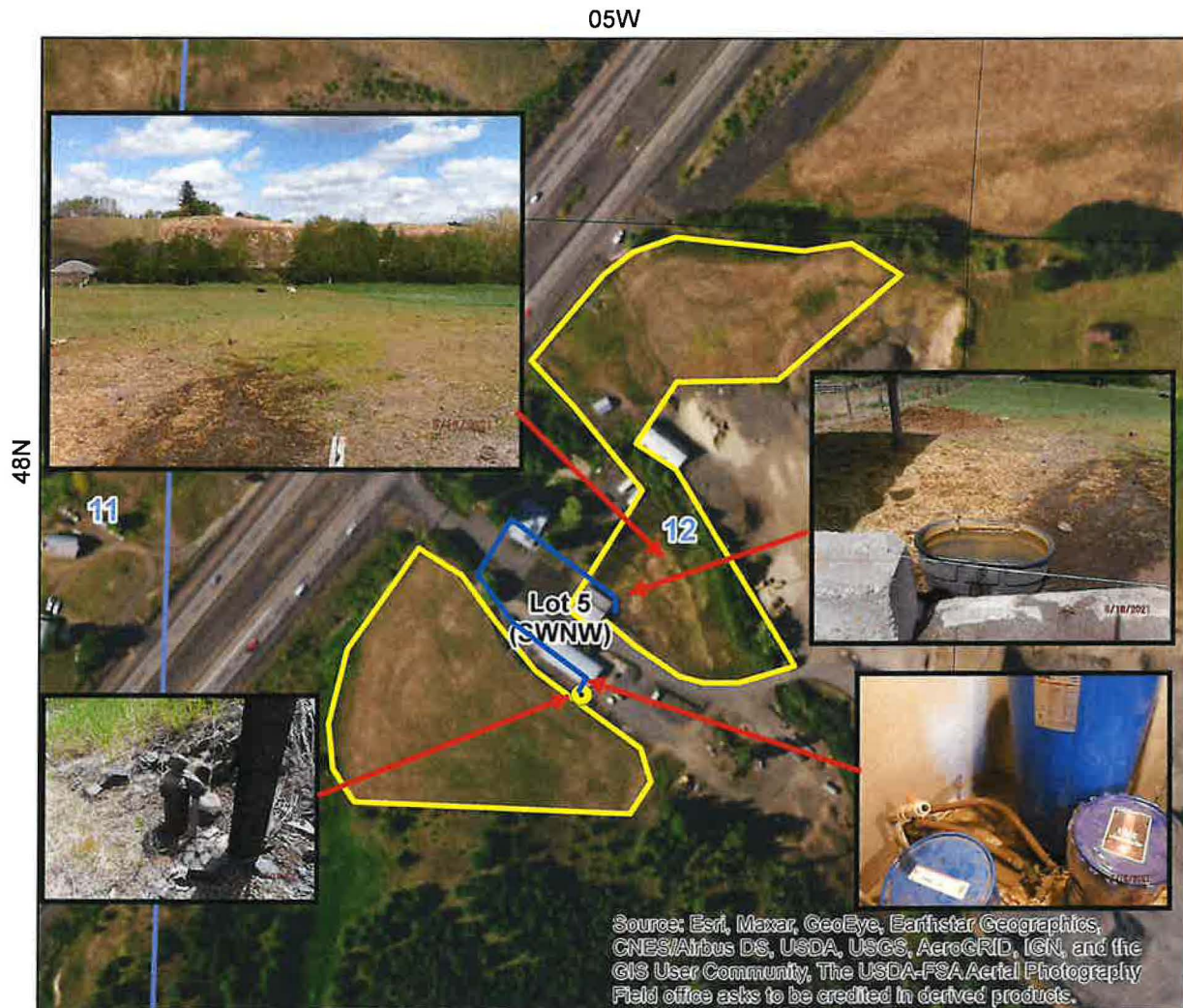
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.035 0.07 0.14 Miles



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STOCKWATER system diagram.



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

0 0.035 0.07 0.14 Miles



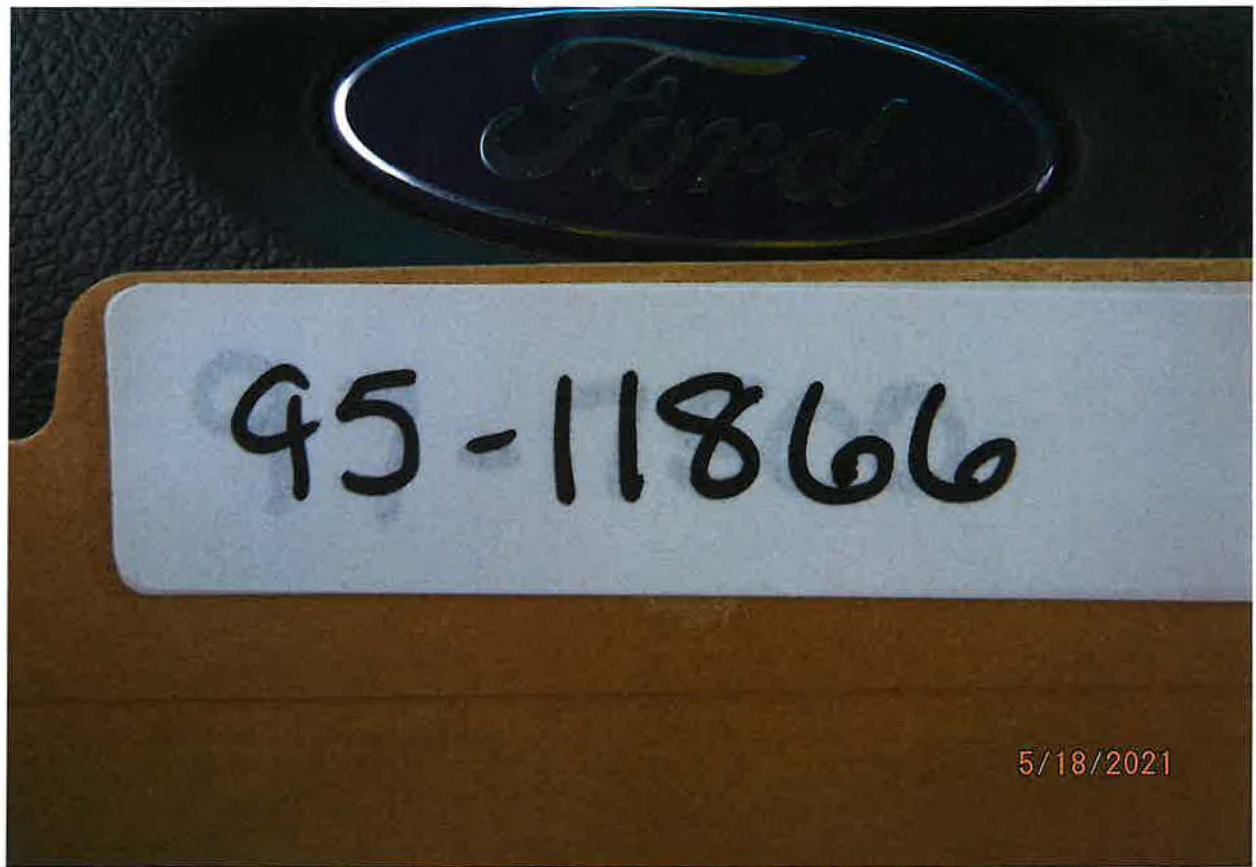
THEORETICAL PUMPING EQUATION FOR WR# 95-11866

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 125 ft, and running at 45 psi.

PUMP EQUATIONS

WATER RIGHT No. 95-11866

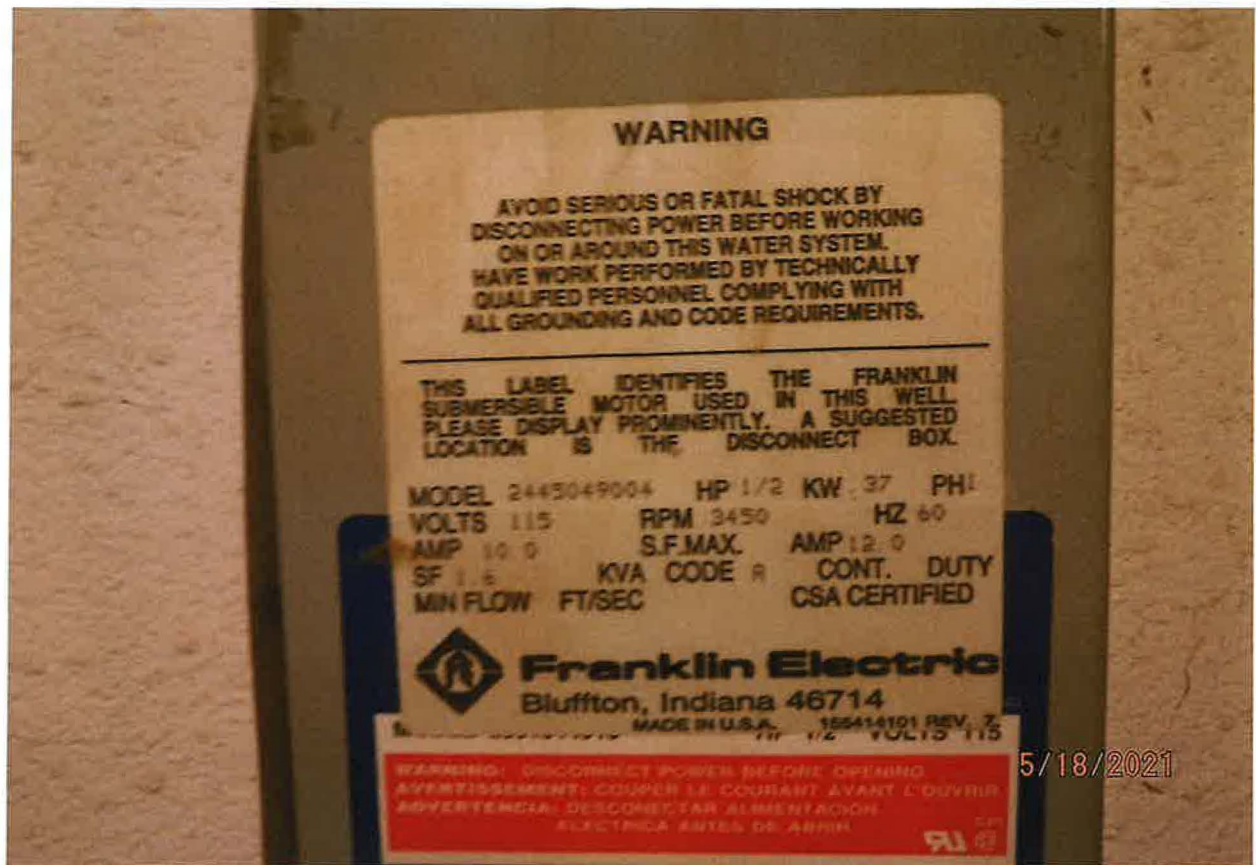
95-97-N-13	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = $HP * 8.8 * Eff / H$	0.5	229.0816	0.8	125	45
Q = 0.015 cfs 6.9 gpm					



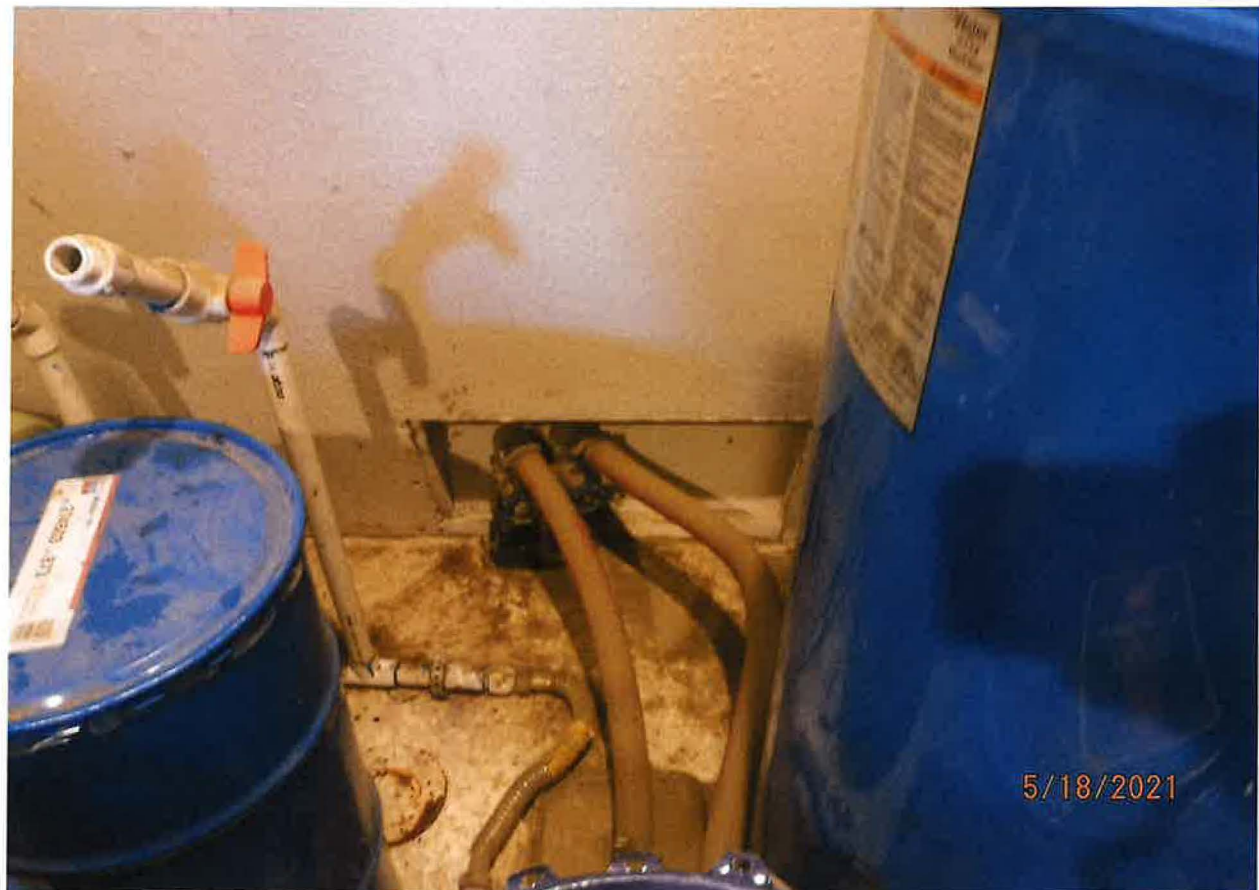
FIELD EXAM DATE 5/18/2021



POD – WELL 95-97-N-13



1/2 HP WELL PUMP INSTALLED IN WELL



220 GALLON PRESSURE TANK INSTALLED ON SYSTEM



STOCKWATER POU





STOCKWATER POU



IRRIGATION POU – FROST FREE HYDRANT



IRRIGATION POU – ALL WATERING ACCOMPLISHED USING FROST FREE HYDRANT-HOSE-SPRINKLERS





IRRIGATION POU





IRRIGATION POU



ASSORTED TRIPOD SPRINKLERS USED ON IRRIGATION POU