

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17139
Exam Date: 05/11/2021

1. Current Owner:
CITY OF SPIRIT LAKE 6159 W MAINE SPIRIT LAKE ID 83869
2. Accompanied by: Tim Wilkerson
Phone No: 208-946-8092
Address: Same as above
Relationship to permit Holder: City of Spirit Lake Public Works Director

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
95-9581	GROUNDWATER	MUNICIPAL	DECREEED
95-9591	GROUNDWATER	MUNICIPAL	DECREEED
95-9725	GROUNDWATER	MUNICIPAL	DECREEED
95-9950	GROUNDWATER	MUNICIPAL	DECREEED
95-17758	SPIRIT LAKE	MUNICIPAL	DECREEED

Comments: Right(s) 95-9581, 95-9591, 95-9725, and 95-9950 are existing City of Spirit Lake groundwater water rights that use the same water system infrastructure as this Permit, and have the same service area. Condition X35 was added to this permit at time of licensing to describe the combined municipal use for the four decreed rights + 95-17139, and their overall diversion rate limitations. Right 95-17758 is a surface source decreed right owned by the City of Spirit Lake for municipal use that overlaps this right's POU, but is not a concern for overlap.

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-9581	GROUNDWATER	MUNICIPAL	DECREEED
95-9591	GROUNDWATER	MUNICIPAL	DECREEED
95-9725	GROUNDWATER	MUNICIPAL	DECREEED
95-9950	GROUNDWATER	MUNICIPAL	DECREEED

Comments: Right(s) 95-9581, 95-9591, 95-9725, and 95-9950 are existing City of Spirit Lake water rights that use the same water system infrastructure as this Permit, and incorporate the same five (5) PODs. Condition F06 was added to describe that the five total rights (including this permit) have the same PODs listed below.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER SW¼ SE¼, Sec. 5, Twp 53N, Rge 04W, B.M. KOOTENAI County
 GROUND WATER SE¼ SE¼, Sec. 6, Twp 53N, Rge 04W, B.M. KOOTENAI County
 GROUND WATER SE¼ SE¼, Sec. 6, Twp 53N, Rge 04W, B.M. KOOTENAI County
 GROUND WATER SE¼ SE¼, Sec. 6, Twp 53N, Rge 04W, B.M. KOOTENAI County
 GROUND WATER L1 (NE¼ NE¼), Sec. 5, Twp 53N, Rge 04W, B.M. KOOTENAI County – **Well No.5**

Method of Determination: Well locations for all PODs were identified using Arcmap aerial imagery and prior water right license POD layer. Well No.5 associated with Permit 95-17139 (prior to amendment adding PODs) was GPS located at -116°51.238, 47°58.480; D0079883.

- 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
Well No.5 D0079883	NIDEC	200			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
FLOWMETER		ENDRESS+HAUSER		P901C416000		

2. Measurements: A flowmeter is installed from which the flow measurement was obtained after allowing the pump time to operate and stabilize. SCADA system digital read out was monitored, with the pump performance fluctuating between 822 gpm and 825 gpm. The 200 HP pump flow rate equals 825 gpm, or 1.84 cfs considering department rounding standards. Only the new well associated with this permit was considered for a flow measurement.

E. FLOW CALCULATIONS

Measured Method: flowmeter with pump operating demonstrated 825 gpm maximum flow rate from SCADA control panel at time of exam, which equals 1.84 cfs considering department rounding standards.

Existing City of Spirit Lake water rights 95-9581, 95-9591, 95-9725, and 95-9950 combined diversion rate = 4.67 cfs;

Condition X35 = 4.67 cfs (existing decreed rights) + 1.5 cfs (95-17139) = 6.17 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A
2. Volume Calculations for Other Uses: No diversion volume is applied to this municipal water right.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 5/11/2021 with the applicant's representative, Tim Wilkerson – City of Spirit Lake Public Works Director, showed a new groundwater well being used for municipal purposes for the City of Spirit Lake (City). The water system infrastructure includes 5 groundwater wells; the permit was approved for a single POD, but following the field exam the City requested an application for amendment to add all 5 PODs to the water right at time of licensing. The application for amendment was mailed to the City on 6/4/2021. The diversion rate applied for is associated with the new groundwater well identified as Well No.5 (D0079883). At the POD, the well is located next to a small pump house with a 200 HP NIDEC pump motor and main pipeline that routes to a co-located pump station.

The pump station houses water main lines that are looped to service lines and water storage towers used to provide municipal water for the City. Well D0079883 has an Endress+Hauser Prowmag-L flowmeter installed to monitor flow rates, and the water system incorporates a SCADA monitoring system from which the flow measurement for well No.5 was observed. The pump was operated allowing it to stabilize, with pump performance fluctuating between 822 gpm & 825 gpm. The 200 HP pump flow rate equals 825 gpm, or 1.84 cfs considering department rounding standards. Only the new well associated with this permit was considered for a flow measurement, and the recommended diversion rate for licensing purposes equals **1.5 cfs**. The City is limited to the permit approved diversion rate, and the 0.33 cfs overage in diversion rate is absorbed by the combined use diversion rate for the City's five total water rights, mitigating any enlargement concerns related to diversion rates.

The City's municipal water system POU is a large area POU, and includes Section(s) 5-8, 17, and 18 located in Township 53 North, Range 04 West. During the field exam, field maps identifying the POU were reviewed with Mr. Wilkerson, who confirmed the POU is current. As a municipal license, the City can request a service area POU update as the service area expands in the future.

Conditions 26A and 046 were removed from the permit during licensing review. Condition F06 was added to describe the five water rights with the same POD(s). Condition X35 was added to this permit at time of licensing to describe the combined municipal use for the four decreed rights + 95-17139, and their overall diversion rate limitations. All other conditions on the permit shall be carried forward to the license. Overlap concerns: right(s) 95-9581, 95-9591, 95-9725, and 95-9950 are existing City of Spirit Lake water rights that use the same water system infrastructure as this Permit, and have the same service area. Condition X35 was added to this permit at time of licensing mitigating any overlap concerns between the City's water rights. Right 95-17758 is a surface source decreed right owned by the City of Spirit Lake for municipal use that overlaps this right's POU, but is not a concern for overlap. There are no additional overlap concerns for this right.

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>
MUNICIPAL	01/01 to 12/31	1.50 CFS

Totals: 1.50 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 - Water Resource Agent

Field Examiner's Name  Date 6/4/2021

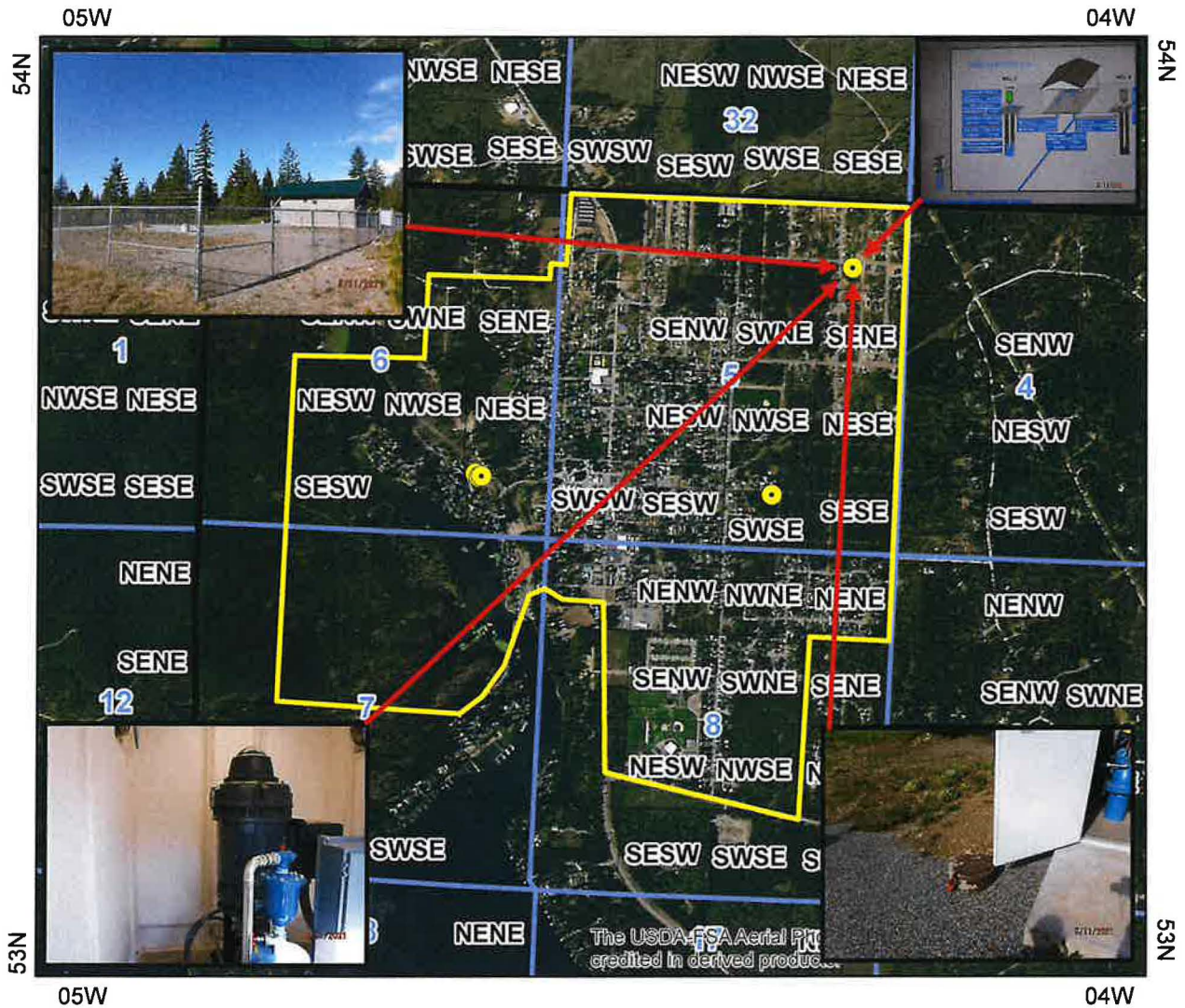
Reviewer  Date 7/14/2021

City Of Spirit Lake

Attachment to Field Exam

95-17139

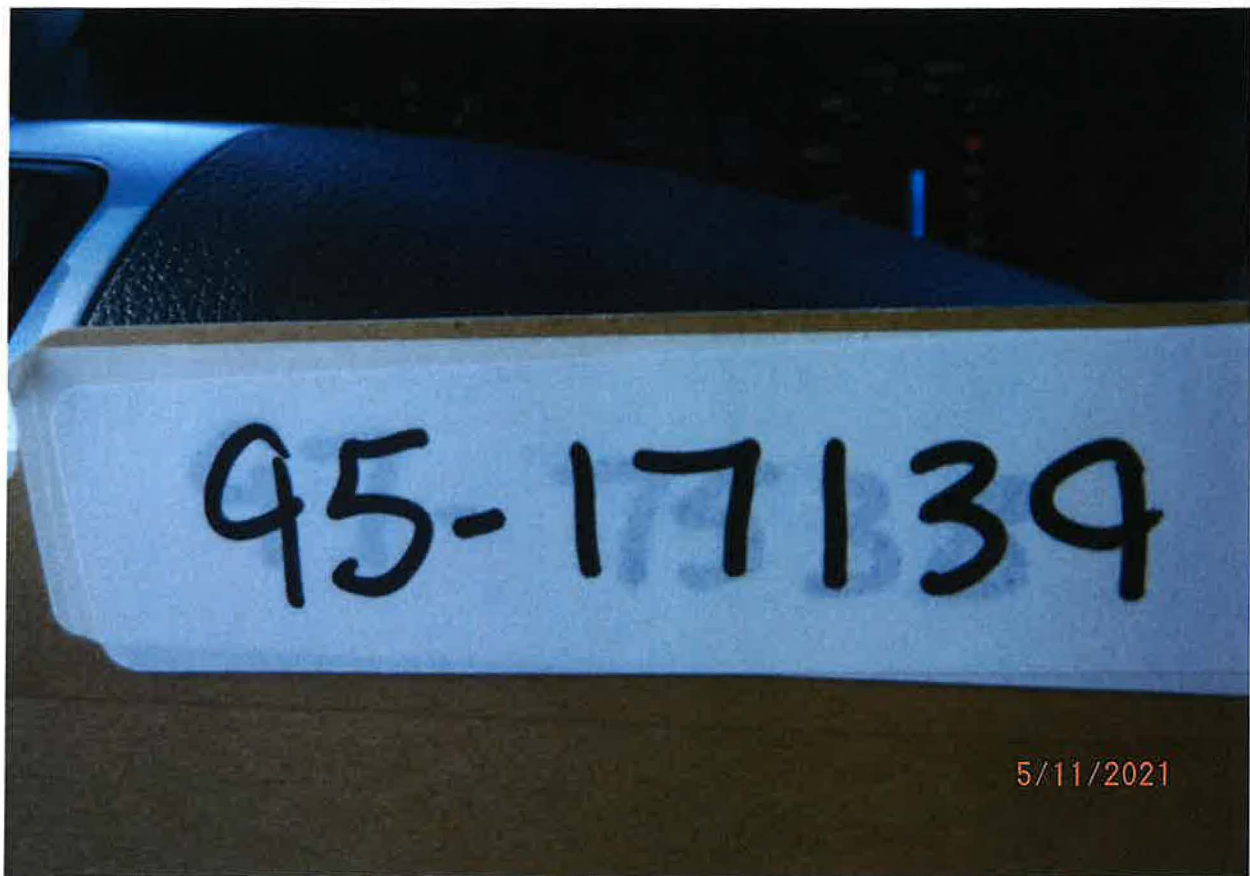
MUNICIPAL system diagram (Well No. 5)



- Point of Diversion
- Water Service Area Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.325 0.65 1.3 Miles





FIELD EXAM DATE – 5/11/2021



POD – WELL D0079883



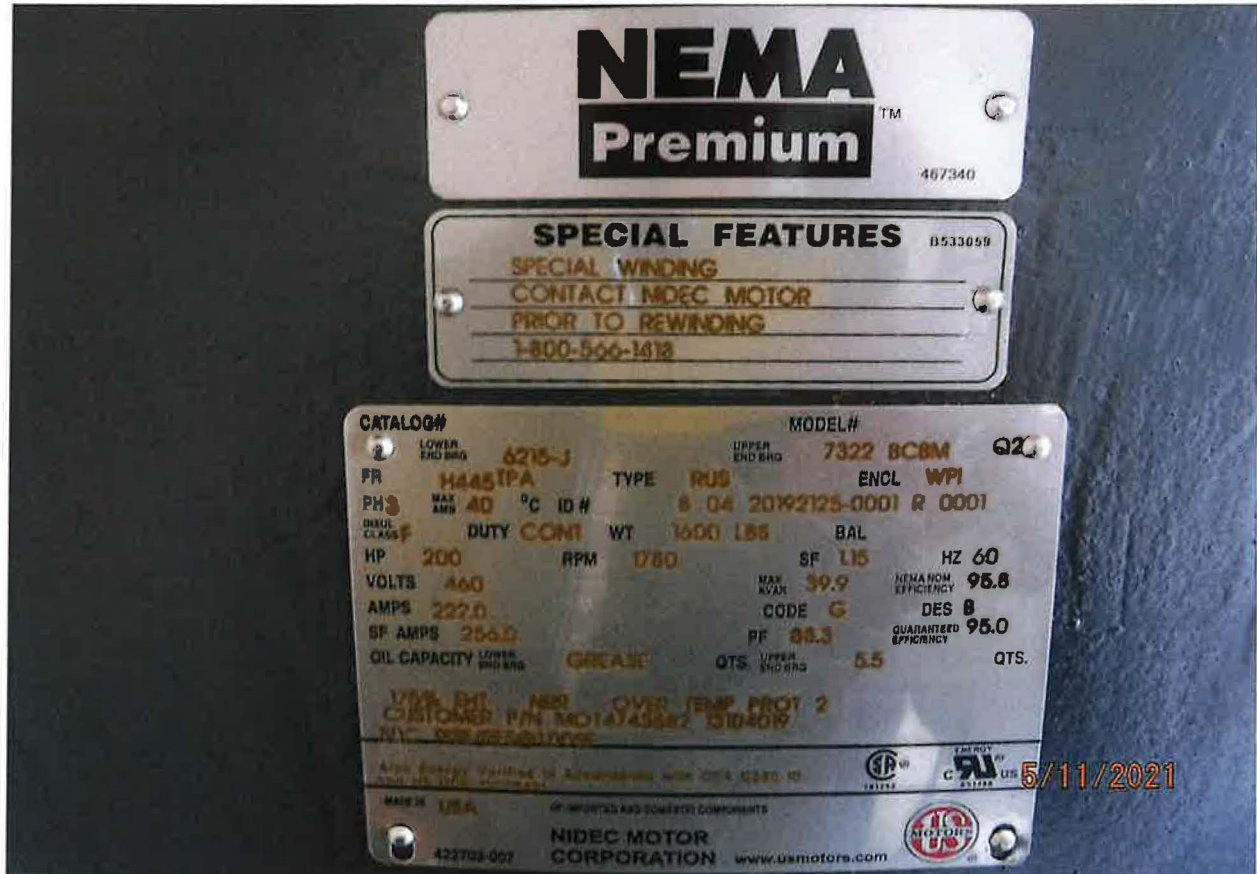
POD – WELL D-TAG D0079883



PUMP HOUSE FOR SPIRIT LAKE WELL No. 5



200 HP TURBINE PUMP INSTALLED IN WELL

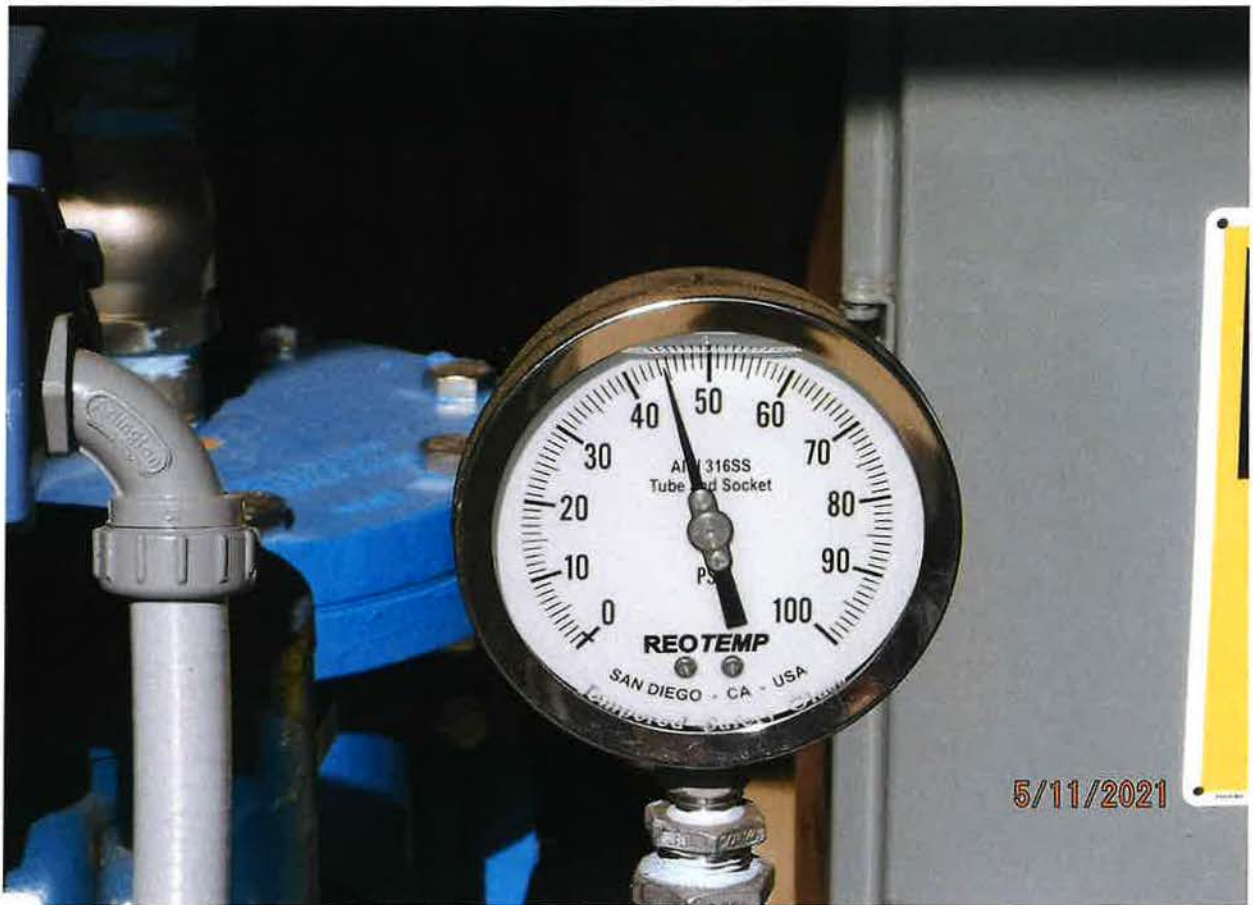


NIDEC MOTOR (200 HP) ATTACHED OT PUMP



WELL No. 5 PUMP STATION





45 PSI – 55 PSI SYSTEM OPERATING PRESSURE

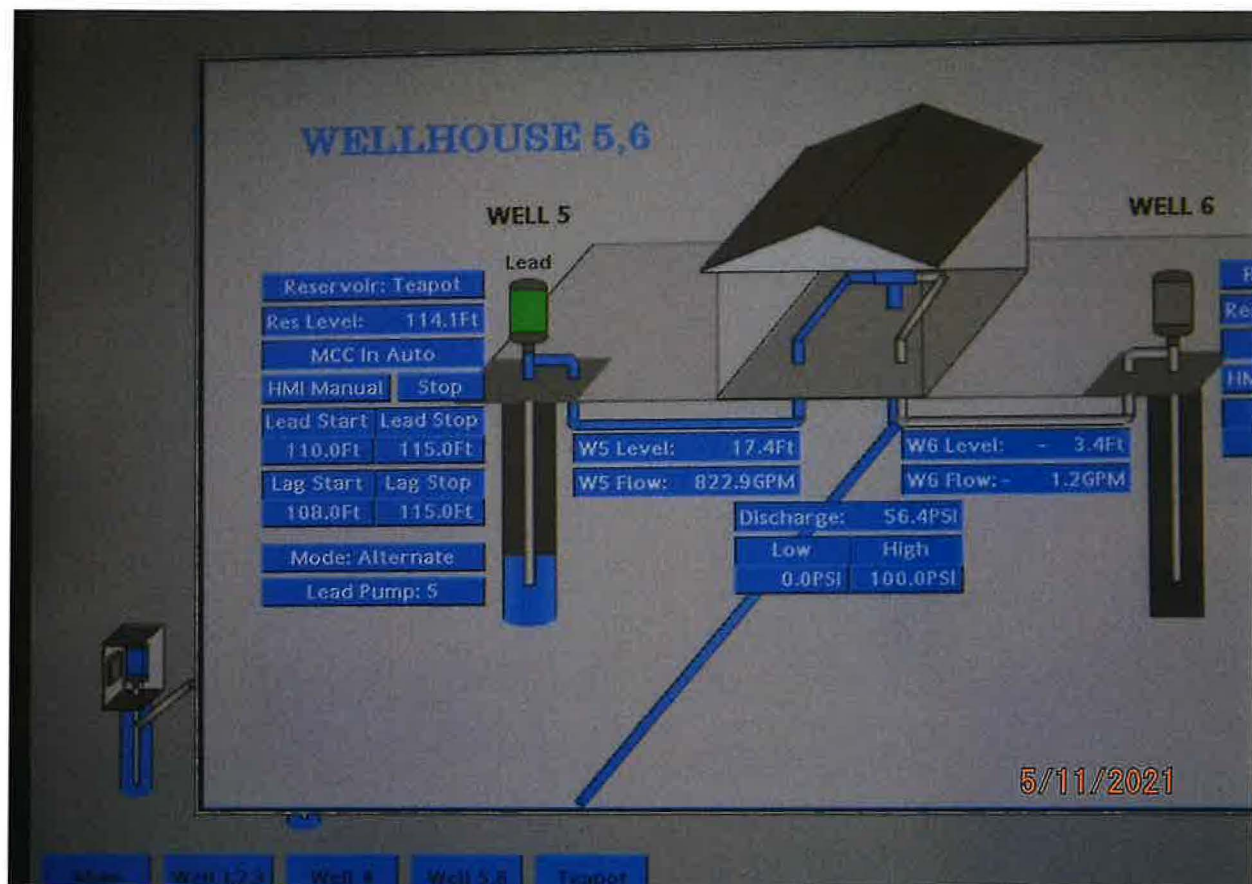




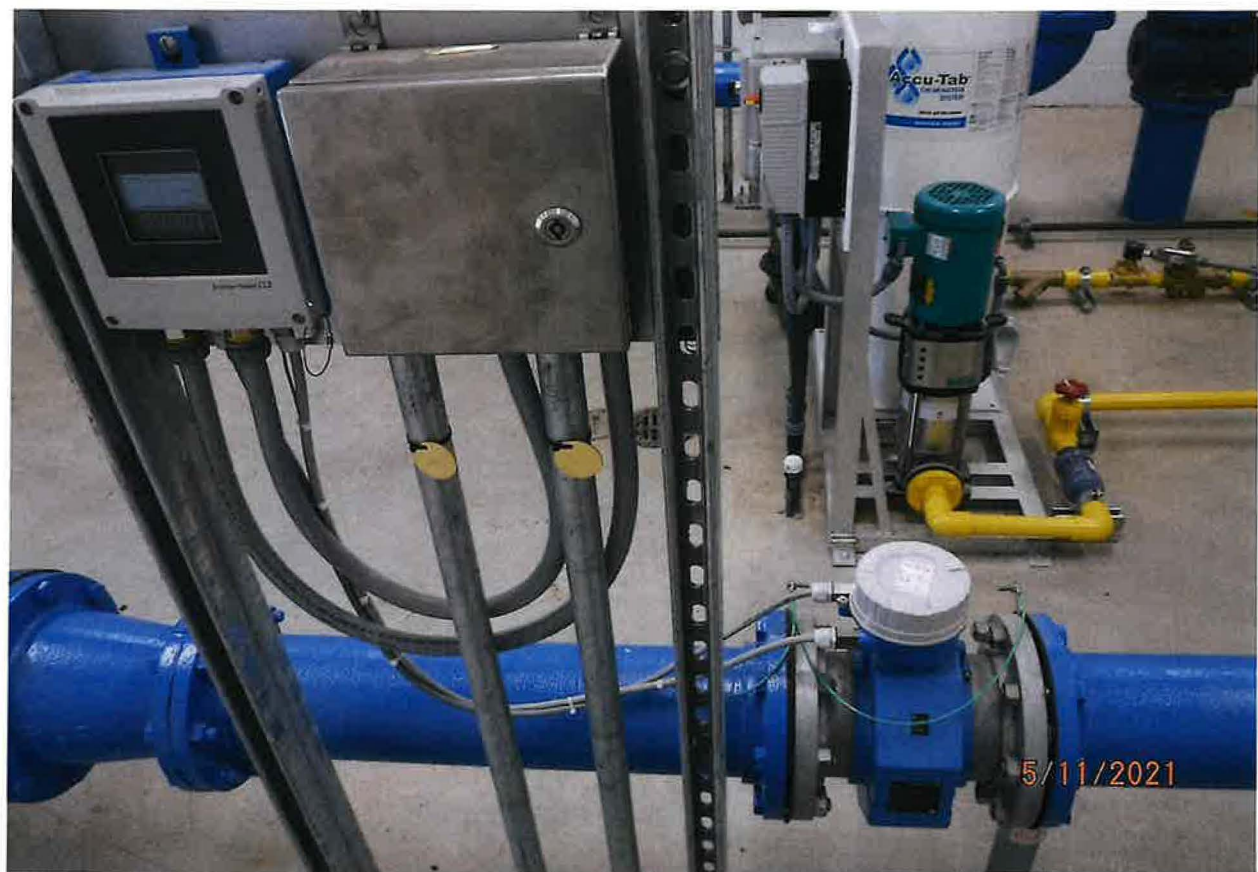
PUMP CONTROL PANEL



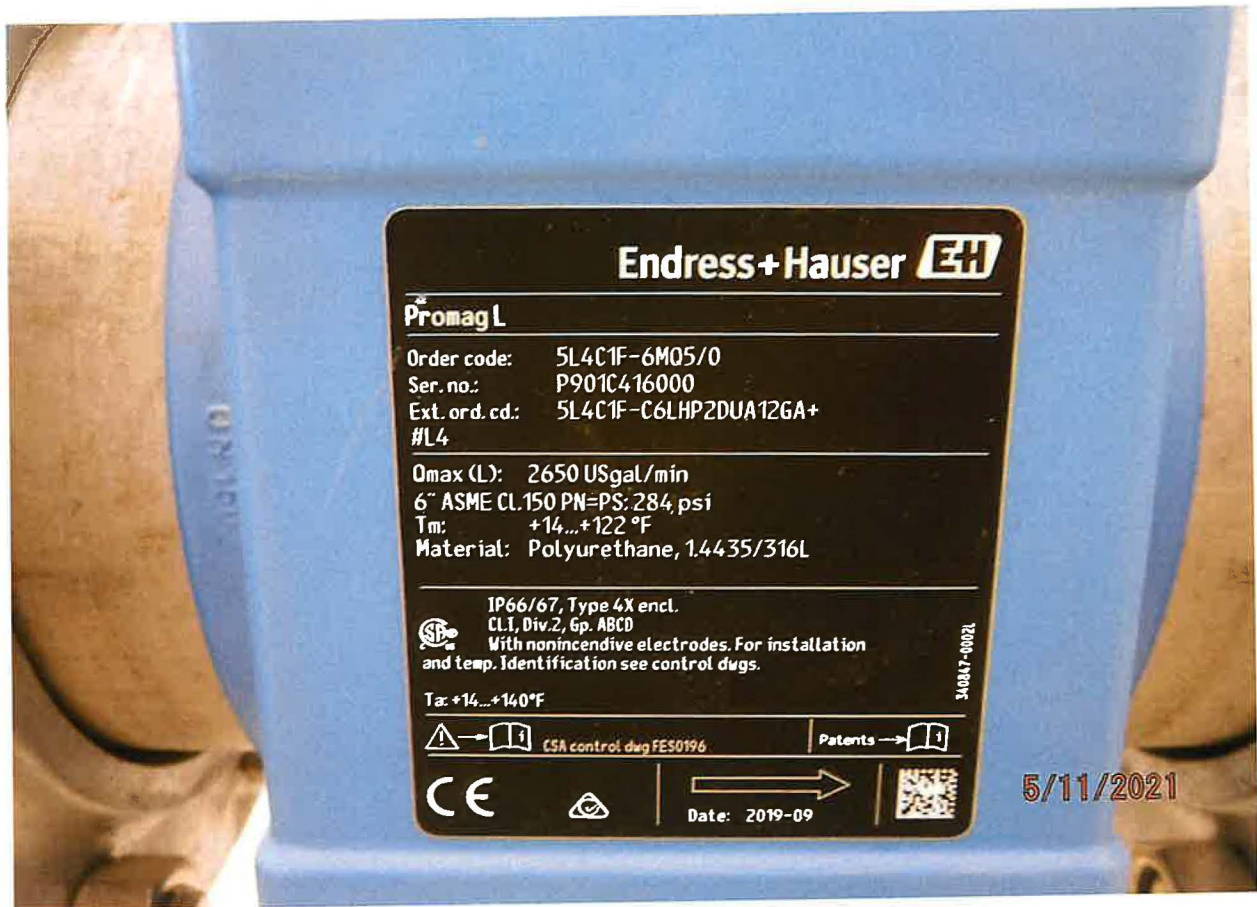
SCADA SYSTEM – MANAGES WELL(S) 1-5



FLOW MEASUREMENT WELL No. 5 = 822.9 FLUCTUATING UP TO 825.0 GPM DURING EXAM



ENDRESS+HAUSER FLOW METER INSTALLED ON DIVERTING WORKS



FLOW METER DATA PLATE



FLOW METER DIGITAL DISPLAY