

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-9147

Exam Date: 7/18/2008

1. Current Owner: CITY OF POST FALLS
408 N SPOKANE ST
POST FALLS ID 83854
(208)777-9857
2. Accompanied by: *Math Isch*
Phone No: *(208) 777.9857*
Address: *408 N Spokane ST, Post Falls, ID 83854*
Relationship to Permit Holder: *City Water Division*

3. SOURCE**TRIBUTARY**

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: *95-4458, 95-4460, 95-7436, 95-9137*
95-8768, 95-8048, 95-8862, 95-4457,
2. Other water rights with the same point of diversion: *95-9137, 95-8768*

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

GROUND WATER	NW1/4SW1/4, Sec. 1, Twp 50N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	L1 NE1/4NE1/4, Sec. 2, Twp 50N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	L1 NW1/4NW1/4, Sec. 8, Twp 50N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	L1 NW1/4NW1/4, Sec. 8, Twp 50N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	L1 NW1/4NW1/4, Sec. 8, Twp 50N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	NE1/4SE1/4, Sec. 1, Twp 50N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	SW1/4SE1/4, Sec. 27, Twp 51N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	SW1/4SE1/4, Sec. 27, Twp 51N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	NE1/4NE1/4, Sec. 34, Twp 51N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	NW1/4NE1/4, Sec. 34, Twp 51N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	NW1/4NE1/4, Sec. 34, Twp 51N, Rge 05W, B.M., KOOTENAI County
GROUND WATER	NW1/4NW1/4, Sec. 34, Twp 51N, Rge 05W, B.M., KOOTENAI County

2. Method of Determination: *Garmin GPS, USGS 7.5' Quadrangles 'Liberty Lake', 'Post Falls', 'Coeur d'Alene'*
3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable. *(On Map)*
- ☒ 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

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 Permit No: 95-8137
 4.

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Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well 1	U.S. Electric Motors	500	Type R45		
Well 2					
Well 3					
Well 4	Vertiline Aurora	200	974-03964	G.E.	JK1904105
Well 5	U.S.E.M.	200	Type RU	Peerless	SN: F2 27 26
Well 6	"	500	Type HUE		BR: G92498/Y051058032BE1
Well 7	"	500	FR 449TPH	Peerless	Model 14 MD SN: 636320A
Well 8	"	500	645727	Peerless	Model 14 M.D.
Well 9		125		Peerless	Model 14 MD-5 SN: 7414417
+ Majestic 1		25		Gould	Model 200L Submersible
+ Majestic 2		25		Gould	Model 200L Submersible
+ Majestic 3		125			

*Code to correspond with No. on map and aerial photo

+ (See Water Right 95-8678 Field Exam)

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Well Flowmeters	-	Varies	-	-	-	-
Watch	Wrist	Remington	-	-	-	-

2. Measurements: (See below with Flow Calculations)

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method:

PUMP	EQUATION	W.R.	95-9137	City of Post Falls	Well 1	DEQ Tag EO005211
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	125	425.0884	0.8	250	75.7
Q =	2.073 cfs		930.6 gpm			

Flowmeter (100 gal) 369145.00

- 369090.00

55 x 100 = 5500 ÷ 8 MIN = 687.5 GPM = 1.5306 CFS

PUMP	EQUATION	W.R.	95-9137	City of Post Falls	Well 2	DEQ Tag EO005210
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	75	370.0884354	0.8	195	75.7
Q =	1.429 cfs		641.4 gpm			

Flowmeter (100 gal) 594341

- 594320

21 x 100 = 21,000 ÷ 5 MIN = 420 GPM = 0.935 CFS

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PUMP	EQUATION	W.R.	95-9137	City of Post Falls	Well 3	DEQ Tag EO005213
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	200	435.0884354	0.8	260	71.3
Q =	3.319 cfs		1489.6 gpm			

Flowmeter (1000 gal) $\frac{435797}{-435790} \times 1000 \text{ RECORDS say GPM } 1232-1350 \text{ GPM}$
 $7 \times 1000 = 7000 \text{ GAL} \div 5 \text{ MIN} = 1400 \text{ GPM} = 2.035 \text{ CFS}$

PUMP	EQUATION	W.R.	95-9137	City of Post Falls	Well 4	DEQ Tag EO005214
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	200	395.6938776	0.8	225	73.8
Q =	3.564 cfs		1599.6 gpm			

Flowmeter (1000 gal) $\frac{292790.5}{292783.0}$
 $7.5 \times 1000 = 7500 \text{ GAL} \div 5 \text{ MIN} = 1500 \text{ GPM} = 3.342 \text{ CFS}$

PUMP	EQUATION	W.R.	95-9137	City of Post Falls	Well 5	DEQ Tag EO005212
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	200	435.7210884	0.8	287	64.3
Q =	3.237 cfs		1452.7 gpm			

Flowmeter (1000 gal) $\frac{333908}{333900}$
 $8 \times 1000 = 8000 \div 5 \text{ MIN} = 1600 \text{ GPM} = 3.564 \text{ CFS}$

PUMP	EQUATION	W.R.	95-9137	City of Post Falls	Well 6	DEQ Tag EO005215
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	500	423.4693878	0.8	250	75
Q =	8.326 cfs		3736.7 gpm			

Flowmeter (Micrometer Model A630-10) SN 96-00339 Meter #96-2746-12 (Full Scale 1-4000 GPM) well running at 1950 GPM indicated)
 $\frac{409291}{409281} \times 1000 = 10,000 \text{ GAL} \div 5 \text{ MIN} = 2000 \text{ GPM} = 4.456 \text{ CFS}$

PUMP	EQUATION	W.R.	95-9137	City of Post Falls	Well 7	Tag D0033494
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	500	473.4693878	0.8	300	75
Q =	7.446 cfs		3342.1 gpm			

Flowmeter (1000 gal) $\frac{794921}{794910}$
 $11 \times 1000 = 11,000 \text{ GAL} \div 5 \text{ MIN} = 2200 \text{ GPM} = 4.901 \text{ CFS}$

PUMP	EQUATION	W.R.	95-9137	City of Post Falls	Well 8	
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	500	440.4693878	0.7	267	75
Q =	7.004 cfs		3143.5 gpm			

Flowmeter (1000 gal) $\frac{400,000}{-395,000} \frac{801,560}{801,550}$
 $11,000 \text{ GAL} \div 5 \text{ MIN} = 2200 \text{ GPM} = 4.901 \text{ CFS}$

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PUMP	EQUATION	W.R.	95-9137	Majestic Well 1	Post Falls 95-8768	
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	25	276.39	0.6	160	44
Q =	0.505	cfs	226.7	gpm		

Flowmeter (100 gallons) $\frac{325,8100 - 325,7500}{600} \div 3 \text{ MIN} = 200 \text{ GPM} = .445 \text{ CFS}$

PUMP	EQUATION	W.R.	95-9137	Majestic Well 2	Post Falls 95-8768	
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	25	276.39	0.6	160	44
Q =	0.505	cfs	226.7	gpm		

Flowmeter (100 gallons) $\frac{325,8800 - 325,8100}{700} \div 3 \text{ MIN} = 233 \text{ GPM} = .519 \text{ CFS}$

PUMP	EQUATION	W.R.	95-9137	Majestic Fire Well (Well #3)	Post Falls 95-8768	
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	125	271.39	0.8	165	44
Q =	3.304	cfs	1482.9	gpm		

Flowmeter (100 gallons) $\frac{3277500 - 3276500}{2100} \div 13 = 1615.386 \text{ GPM} = 3.599 = 3.6 \text{ CFS}$

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: **NOT APPLICABLE W.R. PERMIT APPLICATION IS FOR MUNICIPAL**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses: **Municipal**

- ① No Permit Condition limiting number of homes.
- ② Proof of Beneficial Use ~~For~~ (Statement of Completion) for 95-9147 states 5.79 CFS No Acre Feet (AF) listed
- ③ Application for Permit (95-9147) states this ~~application~~ w.r. based on Ken Way (Majestic View Estates) wells. Permit application for Majestic View 95-8768 states 88 homes.
 $(88) \times (1.2) = 105.6 \text{ AFA}$

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Water Rights 95-8768, 95-9137, 95-9147 PODs

Pod Well	Theoretical CFS	Flowmeter CFS
1	2.073	1.5306
2	1.429	.935
3	3.319	2.835
4	3.564	3.342
5	3.237	3.564
6	8.326	4.456
7	7.446	4.901
8	7.004	4.326
9	4.203	4.901
~~POD~~ MAJESTIC #1	.505	.445
MAJESTIC #2	.505	.519
MAJESTIC #3	3.304	3.6
	<u>44.915 CFS</u>	<u>35.3546 CFS</u>

TRANSFER 70678 includes W.R. 95-4457
 95-4458
 95-4460
 95-7436
 95-8048
 95-8862 } 17.86

~~W.R.~~ Water Rights 95-9137 (3.0 CFS)
 95-9147 (5.79 CFS)
 95-8768 (3.75 CFS) } 12.54 CFS

$$17.86 + 12.54 = 30.40 \text{ CFS}$$

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G. NARRATIVE/REMARKS/COMMENTS

The Permit has been amended. All City of Post Falls wells that are connected to the common city water system have been added as Points of Diversion (POD). The service area map has also been updated.

Licensing 95-9147 adds 5.79 CFS to the City of Post Falls diversion capacity for three municipal wells located at the Majestic View Estates subdivision. The three wells have a measured flowmeter capacity of 4.56 CFS and a theoretical capacity of 4.31 CFS. Water Right 95-8768 adds 3.75 CFS and 95-9147 adds 5.79 CFS to the diversion capacity for the City which can be easily met by the combined diversion capacity of City of Post Falls wells.

The three wells for the Majestic View Estates system were built by prior owner Ken Way before he assigned the Permit to the City of Post Falls. The City is now the operator. The three wells are part of a sub-system that serves Majestic View Estates. The Majestic sub-system is configured to allow the three wells to supply the remainder of the City of Post Falls system and so the sub-system can receive water from the main City system. All three wells are located within a building on a city owned lot (Majestic View Estates Lot 20 Block 1). Well 1 and Well 2 are for municipal use. Well 3 is currently used mostly for fire protection.

Review of flowmeter readings and theoretical calculations for the 95-9147 Field Exam and the City of Post Falls water rights 95-4457, 95-4458, 95-4460, 95-7436, 95-8048, 95-8768, and 95-8862 indicates that the total theoretical capacity of City wells 1-9 and the three Majestic wells on the common City water system is 44.915 CFS. 2008 Flowmeter readings indicate these wells produce 35.35 CFS. The licensed capacity from these wells is 17.86 CFS (prior to licensing 95-8768, 95-9137, and 95-9147). Water rights 95-8768, 95-9137, and 95-9147, when licensed, will add another 12.54 CFS of diversion capacity. The total diversion capacity, after 95-8768, 95-9137, and 95-9147 are licensed, will total 30.40 CFS. 30.40 CFS is well below the flowmeter and theoretical capacity of Wells 1-9 and the three Majestic wells. The additional diversion capacity sought for 95-9147 can be easily supplied by a combination of wells.

(See attached Calculation Sheet)

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>
MUNICIPAL	01/01 to 12/31	5.790 CFS	
<u>Totals:</u>		5.790 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

William M. Miley

Date

1/16/09

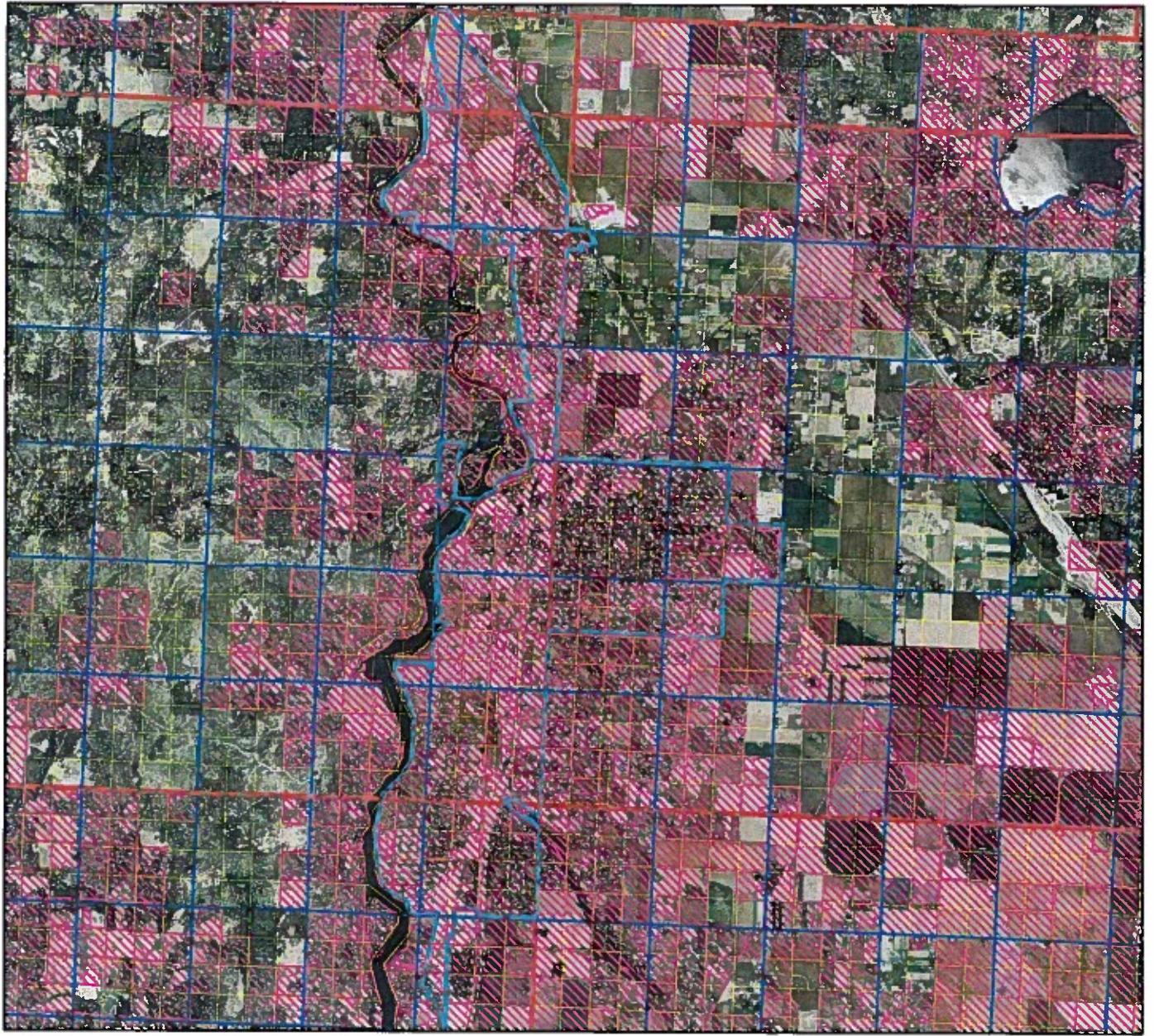
Reviewer

Bob Houghner

Date

1/26/09

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PF Well 1 & Irrigation Pump.JPG



PF Well 1 Telemetry.JPG



PF Well 3 Exterior.JPG



PF Well 4 Exterior.JPG



PF Well 5 & 7 Gate.JPG



PF Well 5 Data Plate.JPG



PF Well 5 Interior.JPG



PF Well 6 74 PSI.JPG



PF Well 7 Inside.JPG



PF Well 7 Telemetry.JPG



PF Well 8 Inside.JPG



PF Well 8 Pump and Motor.JPG



PF Well 8 Telemetry 1956 GPM.JPG



PF Well 9 Pump Data.JPG



PF Wells 5 & 7 Reservoir.JPG



Well 9 & Reservoir.JPG



3rd AVE Lift Station and Reservoir.JPG

95-9147



Well 1 and Irrigation Pump



Well 1 Telemetry

95-9147



Well 3 Exterior



Well 4 Exterior

95-9147



Well 5 And Well 7



Well 5 Data Plate

Well 5 Interior

95-9147



Well 6 74 PSI



Well 7 Inside

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PF Well 7 Telemetry

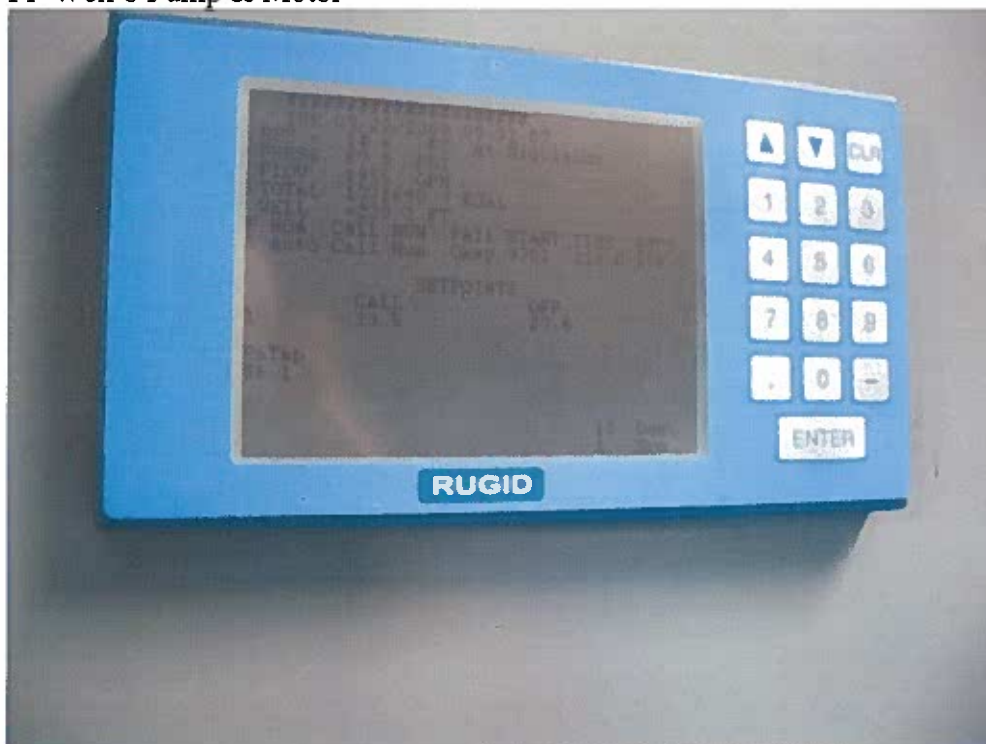


PF Well 8 Inside

95-9147



PF Well 8 Pump & Motor



Well 8 Telemetry 1956 GPM

95-9147



Well 9 Pump Data



PF Wells 5 & 7 Reservoir

95-9147



Well 9 and Reservoir



3rd AVE Lift Station and Reservoir

95-9147