

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

JAN 30 2009

DEPARTMENT OF
WATER RESOURCES

A. GENERAL INFORMATION

Permit No. 63-31787

1. Owner: City of Greenleaf Phone No.: 208-454-0552

Current Address: c/o City Clerk, 20523 N. Whittier Dr., Greenleaf, ID 83626

2. Accompanied by: Doug Amick, Public Services Director EXAM DATE: 1/29/2009

Address: City of Greenleaf, 20523 N. Whittier Dr., Greenleaf, ID 83626 Phone No. 208-454-0552

Relationship to Permit Holder: employee

3. Source: Ground Water tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-4117, 63-7094

2. Other water rights with the same point of diversion: 63-7094

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion:

Ident No.	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
			SW	NE	21	4N	4W	Canyon	Exam (Harmony Well 1)
			SW	NE	21	4N	4W	Canyon	Exam (Harmony Well 2)
			NE	NW	21	4N	4W	Canyon	Exam (Friends Well)
			NE	NW	21	4N	4W	Canyon	Exam (Butler Well)

2. Place(s) of Use:

Indicate Method of Determination Exam, 2006 aerial photo

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

Municipal Use within the service area for the City of Greenleaf currently on record at IDWR.

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe id as applicable. **See Attachment**

[illegible]

Scale: 1" = _____.

X Copy of USGS Quadrangle Attached Showing location(s) of point(s) of diversion and place(s) of use (required).

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

X Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Butler Well	CentriPro	75	unknown	Goulds	8-inch
Harmony Well 1	unknown	10	unknown	unknown	3-inch
Harmony Well 2	unknown	15	unknown	unknown	4-inch
Friends	unknown	15	unknown	unknown	2-inch

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Butler Well	magnetic meter	Siemens	Sitrans FM Magflow Mag3100W	7ME 635 148035T336	8-inch	New in 2006
Harmony 1	propeller meter	McCrometer		01-00334-2.5	2.5-inch	Rebuilt 10/07
Harmony 2	propeller meter	McCrometer		00-09665-4	4-inch	
Friends	turbine meter	Sensus	Z-13	55911035	2-inch	

2. Measurements:

Butler Well – The Butler well pump was operated at full speed (60 hz) for approximately 30 minutes and produced an average flow of 650 gpm (magnetic flow meter) from a pumping water level of approximately 205 feet (transducer reading) below ground surface. The well was pumping to the Butler storage tank.

Harmony Well 1 – The Harmony Well No. 1 was operated at 34 gpm (based on average of total metered flow over ten minutes) while pumping to the Harmony storage tank.

Harmony Well 2 – The Harmony Well No. 2 was operated at 140 gpm (based on average of total metered flow over ten minutes) while pumping to the Harmony storage tank.

Friends Well – The Friends Well was operated at 61 gpm (one minute total metered flow) while pumping to refill the pressure tank at a well pump discharge pressure of 45 psi. The well pump also produced 68 gpm at a discharge pressure of 25 psi.

Total measured flow into municipal water system from all sources was 885 gpm (650+34+140+45) or 1.97 cfs.

E. NARRATIVE/REMARKS/COMMENTS

The City of Greenleaf municipal water system consists of four operating wells (Butler, Harmony No. 1, Harmony No. 2, and Friends). Well driller's reports are attached. A fifth City well (Academy) is currently used as part of the City's municipal irrigation system, and is not connected to the municipal water system. A sixth well (Hillcrest) is out of service. The wells pump to two storage tanks (Harmony and Butler). Booster pumps at the tanks provide system pressure for normal operations and fire flow. The system can provide fire flows in excess of 1500 gpm.

The Butler Well was constructed in 2005. The well is constructed with 10-inch casing and well screen to a total depth of 488 feet. The well is equipped with a 75-hp submersible pump with a reported setting depth of 300 feet. The well discharges through a pitless adapter with 8-inch diameter pipe through a pump house and then to a 221,000-gallon storage tank. Water from the storage tank is delivered to the distribution system by two booster pumps of 20 hp and 100 hp. Magnetic flow meters are used for flow monitoring. All pumps are variable speed.

The Friends well was constructed in 1990. The well is constructed with 12-inch and 6-inch casings and 6-inch well screen to a total depth of 285 feet. The well is equipped with a constant speed 15-hp submersible pump. The pump discharges from a pitless adapter through 2-inch piping to a well house. An adjacent structure encloses a 1000-gallon hydropneumatic tank. Piping from the well house connects directly into the City distribution system.

The Harmony No. 1 well was constructed in 1967. The well is constructed with 12-inch and 8-inch casings and 8-inch well screen to a total depth of 300 feet. The well is equipped with a constant speed 10-hp submersible pump. The pump discharges within the well house through 3-inch piping, and then to the 10,000-gallon Harmony tank. Water from the storage tank is delivered to the distribution system by two booster pumps of 15 hp each.

The Harmony No. 2 well was constructed in 1984. The well is constructed with 12-inch, 8-inch, and 6-inch casings and 6-inch well screen to a total depth of 233 feet. The well is equipped with a constant speed 15-hp submersible pump. The pump discharges from a pitless adapter to the well house through 4-inch piping, and then to the 10,000-gallon Harmony tank. Water from the storage tank is delivered to the distribution system by the two booster pumps.

Have conditions of permit approval been met? ___ yes X no

Water-bearing zone on permit is 150 to 400 feet. Water-bearing zone developed was 182 to 488 feet (based on screen intervals for all wells). Recommend changing water-bearing zone to 150 to 500 feet. All other conditions have been met.

F. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method: **flow meters with theoretical calculation check**

Butler Well – 650 gpm measured; 832 gpm theoretical (250' TDH, 75 hp, 70% efficiency)

Friends Well – 61 gpm measured; 129 gpm theoretical (300' TDH, 15 hp, 65% efficiency)

Harmony No. 1 Well – 34 gpm measured; 79 gpm theoretical (300' TDH, 10 hp, 60% efficiency)

Harmony No. 2 Well – 140 gpm measured; 119 gpm theoretical (300' TDH, 15 hp, 65% efficiency)

Total Flow = 1.97 cfs (885 gpm) measured and 2.58 cfs (1,159 gpm) theoretical

Flow calculation does not include Academy Well which is connected to the municipal irrigation system; estimated Academy Well capacity is 0.10 cfs for purposes of SRBA recommendation

Well capacity under other water rights: 0.31 cfs (63-7094 = 0.21 cfs, 63-4117 = 0.10 cfs)

Total Municipal Water Flow (1.97 cfs measured plus 0.10 cfs Academy estimate) minus other water rights (0.31 cfs) = 1.76 cfs; 1.0 cfs flow available under this permit

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

2. Volume Calculations for Other Uses:

Potential Volume: 1.0 cfs x 365 days x 1.9835 af/cfs-day = 724 afa

Volume not applicable for a municipal water right

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
Municipal	1/1 12/31	1.00	N/A

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 X Other

Change water-bearing zone from 150 to 400 feet to 150 to 500 feet.

I. AUTHENTICATION

Field Examiner's Name Terry M. Scanlan, P.E., P.G. (Examiner No. 9-129) Date 1-30-09

Field Examiner's Signature *Terry M. Scanlan*

Reviewer _____ Date _____



ATTACHMENT A

PERMIT RECORD AND PROOF OF BENEFICIAL USE

IDAHO DEPARTMENT OF WATER RESOURCES
Water Permit Report

1/30/2009

WATER RIGHT NO. 63-31787

Owner Type	Name and Address
Current Owner	CITY OF GREENLEAF C/O CITY CLERK 20523 N WHITTIER DR GREENLEAF, ID 83626 (208)454-0552
Representative	SPF WATER ENGINEERING LLC C/O TERRY SCANLAN 300 E MALLARD DR, STE 350 BOISE, ID 83706 (208)383-4140

Priority Date: 08/15/2003

Status: Active

Source	Tributary
GROUND WATER	

Beneficial Use	From	To	Diversion Rate	Volume
MUNICIPAL	01/01	12/31	1 CFS	
Total Diversion			1 CFS	

Location of Point(s) of Diversion:

GROUND WATER	SWNE	Sec. 21	Township 04N	Range 04W	CANYON County
GROUND WATER	SWNE	Sec. 21	Township 04N	Range 04W	CANYON County
GROUND WATER	NENW	Sec. 21	Township 04N	Range 04W	CANYON County
GROUND WATER	NENW	Sec. 21	Township 04N	Range 04W	CANYON County
GROUND WATER	NENW	Sec. 21	Township 04N	Range 04W	CANYON County

Place(s) of use: No POUs found for this right

Conditions of Approval:

1. 26A Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
2. 046 Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
3. Water bearing zone to be appropriated is 150 to 400 feet.
4. 01M After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to determine the amount of water diverted from power records and shall annually report the information to the Department.
5. 102 The right holder shall not provide water diverted under this right for the irrigation of land having appurtenant surface water rights as a primary source of irrigation water except when the surface water rights are not available for use. This condition applies to all land with appurtenant surface water rights, including land converted from irrigated agricultural use to other land uses but still requiring water to irrigate lawns and landscaping.
6. 124 Place of use is within the service area of the City of Greenleaf municipal water supply system as provided for under Idaho Law.
7. 121 The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.

Dates:

Proof Due Date: 02/01/2009

Proof Made Date:

Approved Date: 02/23/2004

Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Application Received Date: 08/15/2003
Protest Deadline Date: 11/24/2003
Number of Protests: 0
Field Exam Date:.
Date Sent to State Off:
Date Received at State Off:

Other Information:
State or Federal:
Owner Name Connector:
Water District Number:
Generic Max Rate per Acre:
Generic Max Volume per Acre:
Swan Falls Trust or Nontrust:
Swan Falls Dismissed:
DLE Act Number:
Cary Act Number:
Mitigation Plan: False

ATTACHMENT B

WELL LOGS

REPORT OF WELL DRILLER
State of Idaho

RECEIVED
JUN 23 1967
Department of Reclamation

State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well

WELL OWNER:

Name Greenleaf Village, Inc.
Address Greenleaf, Idaho

Owner's Permit No. 63-7094
NATURE OF WORK (check): Replacement well ☐
New well ☒ Deepened ☐ Abandoned ☐

Water is to be used for: domestic

METHOD OF CONSTRUCTION: Rotary ☐ Cable ☒
Dug ☐ Other ☐

(explain)
CASING SCHEDULE: Threaded ☐ Welded ☒
12" Diam. from 0 ft. to 251 ft.
"Diam. from 0 ft. to 251 ft.
"Diam. from 0 ft. to 251 ft.
"Diam. from 0 ft. to 251 ft.
Thickness of casing: 250 Material:
Steel ☒ concrete ☐ wood ☐ other ☐

(explain)
PERFORATED? Yes ☐ No ☒ Type of
perforator used:

Size of perforations: by
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

WAS SCREEN INSTALLED? Yes ☒ No ☐

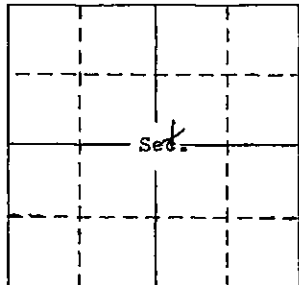
Manufacturer's name Johnson
Type telescope Model No.
Diam. 8" Slot size 28 Set from 245 ft. to 255 ft.
Diam. 8" Slot size 28 Set from 260 ft. to 270 ft.

CONSTRUCTION: Well gravel packed? Yes ☒
No. ☐ size of gravel 1/4" on down Gravel
placed from 250 ft. to 300 ft. Surface seal
provided? Yes ☒ No ☐ To what depth?
5 ft. Material used in seal: clay

Did any strata contain unusable water? Yes ☐
No. ☒ Type of water:
Depth of strata ft. Method of sealing
strata off:

Surface casing used? Yes ☐ No. ☒
Cemented in place? Yes ☐ No ☐

Locate well in section



LOCATION OF WELL: County Canyon
SW 1/4 NE 1/4 Sec. 21 T. 4 N/S R. 4 E/W

Size of drilled hole: 12" Total -
depth of well: 303 Standing water
level below ground: Temp.
Fahr. 50 Test delivery: 120 gpm
or cfs Pump? ☐ Bail ☐ min.
Size of pump and motor used to make test:
3" turbin pump; 200 hp motor
Length of time of test: 4 Hrs. Min.
Drawdown: 105 ft. Artesian pressure: ft.
above land surface Give flow cfs
or gpm. Shutoff pressure:
Controlled by: Valve ☐ Cap ☐ Plug ☐
No control ☐ Does well leak around casing?
Yes ☐ No ☐

DEPTH		MATERIAL	31604	WATER
FROM	TO		YES	OR NO
FEET	FEET			
0	2	topsoil		No
2	20	sandy clay		No
20	25	hard pan		No
25	40	gravel and clay		Yes
40	100	white clay		No
100	110	gray sand "gas"		Yes
110	166	blue shale		No
166	184	blue sand		Yes
184	186	sandy shale		No
186	220	blue sand		Yes
220	240	blue shale		No
240	242	sandy		Yes
242	245	blue shale		No
245	255	soft spot		No
255	260	shale		No
260	270	soft spot, shells, lumps		Yes
270	290	shale		No
290	303	sand		Yes
303		shale		

Work started: 6/6/66
Work finished: 7/27/66
Well Driller's Statement: This well was
drilled under my supervision and this report
is true to the best of my knowledge.
Name: Marlin Witt
Address: Route 6 Box 600 Nampe, Idaho
Signed by: Marlin Witt
License No. 138 Date: 6/16/67

Use other side for additional remarks

USGS

Harmony

WELL DRILLER'S REPORT

State law request

At this report he filed with the Director, Department of We
days after the completion or abandonment of the well.

Source within 30.

1. WELL OWNER

Name Shenling Water Corp.
Address Shenling Rd. Sec. 21 T. 4 N. 4 E. W. 8 NW
Owner's Permit No. 65-84-C-1037000

2. NATURE OF WORK

☒ New Well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandonment)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)
☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Auger ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 12 inches Total depth 233 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
<u>2.50</u> inches	<u>12</u> inches	<u>1.5</u> feet	<u>197</u> feet
<u>2.50</u> inches	<u>8</u> inches	<u>1.7</u> feet	<u>190</u> feet
<u>2.50</u> inches	<u>6</u> inches	<u>2.2</u> feet	<u>233</u> feet

Vibro casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☒ Yes ☐ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name Tenneco
Type P.S. Model No. 364 Standard
Diameter 12 Slot size 36 Set from 182 feet to 220 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Gravel packed? ☒ Yes ☐ No Size of gravel #8
Placed from 171 feet to 233 feet

Surface seal depth 18 Material used in seal ☐ Cement grout
☒ Bentonite ☐ Pudding clay ☐ Well cappings
Sealing procedure used ☐ Sherry jet ☐ Temporary surface sealing
☒ Overlays to seal depths

6. LOCATION OF WELL

Sketch map location must agree with written location.

Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon

S.W. 1/4 Sec. 21 T. 4 N. 4 E. W. 8 NW

7. WATER LEVEL

Static water level 75 feet below land surface
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Temperature _____ °F Quality _____ p.p.t.
Artesian closed-in pressure _____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailor ☐ Other no test

Discharge G.P.M.	Draw-Down	Hours Pumped

9. LITHOLOGIC LOG

Depth From	To	Material
190	0	Topsoil
19	2	Clay
13	18	Clay
1	30	shale
1	45	clay
1	110	sandy silt
1	110	clay shale
1	135	blue shale
1	135	blue shale
1	155	blue shale
1	170	blue sand (fine)
1	170	blue sand (fine)
1	186	sandy shale
1	194	blue sand
1	205	shale & trunk
1	205	blue sand
1	234	blue shale
1	234	blue shale

8" x 12" lead packer @ 164'

RECEIVED
JUN 5 1984
Department of Water Resources
Western Regional Office

10. DRILLERS CERTIFICATION

Firm Name MATLIN WITT Firm No. 180
Address 6016 Airport Rd Date 5-17-84
Signed by (Firm Official) [Signature]
and Operator same

Work started 1-27-84 finished 5-17-84

Harmony #2

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.

1. WELL OWNER Name <u>Greenleaf Water Association</u> Address <u>PO Box 444, Greenleaf ID 83626</u> Owner's Permit No. <u>Drilling-6389-w-206</u> <u>Water 63-4117/63-7094</u>	7. WATER LEVEL Static water level <u>81</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature <u>68</u> °F. Quality <u>good</u> <i>Describe artesian or temperature zones below.</i>																																																																																																																						
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)	8. WELL TEST DATA ☒ Pump ☐ Bailer ☐ Air ☐ Other _____ <table border="1"><thead><tr><th>Discharge G.P.M.</th><th>Pumping Level</th><th>Hours Pumped</th></tr></thead><tbody><tr><td><u>125</u></td><td><u>172</u></td><td><u>3</u></td></tr></tbody></table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>125</u>	<u>172</u>	<u>3</u>																																																																																																																
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12"	275	285	clay - gray																																																																																																																				
4. METHOD DRILLED ☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary ☒ Cable ☐ Dug ☐ Other _____	RECEIVED MAR 12 1990 Department of Water Resources Western Regional Office																																																																																																																						
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ <table border="1"><thead><tr><th>Thickness</th><th>Diameter</th><th>From</th><th>To</th></tr></thead><tbody><tr><td><u>.250</u> inches</td><td><u>12</u> inches</td><td><u>2</u> feet</td><td><u>207</u> feet</td></tr><tr><td><u>.250</u> inches</td><td><u>6</u> inches</td><td><u>173</u> feet</td><td><u>209</u> feet</td></tr><tr><td><u>.250</u> inches</td><td><u>6</u> inches</td><td><u>219</u> feet</td><td><u>231</u> feet</td></tr><tr><td><u>.250</u> inches</td><td><u>6</u> inches</td><td><u>241</u> feet</td><td><u>255</u> feet</td></tr></tbody></table> Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☒ Yes ☐ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch Size of perforation _____ inches by _____ inches <table border="1"><thead><tr><th>Number</th><th>From</th><th>To</th></tr></thead><tbody><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr></tbody></table> Well screen installed? ☒ Yes ☐ No Manufacturer's name <u>Houston</u> Type <u>304 Stainless</u> Model No. _____ Diameter <u>6</u> Slot size <u>30</u> Set from <u>209</u> feet to <u>219</u> feet Diameter <u>6</u> Slot size <u>30</u> Set from <u>231</u> feet to <u>241</u> feet Gravel packed? ☒ Yes ☐ No ☐ Size of gravel <u>1/8" sand</u> Placed from <u>194</u> feet to <u>285</u> feet Surface seal depth <u>30</u> Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ _____ Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port <u>top of casing</u>		Thickness	Diameter	From	To	<u>.250</u> inches	<u>12</u> inches	<u>2</u> feet	<u>207</u> feet	<u>.250</u> inches	<u>6</u> inches	<u>173</u> feet	<u>209</u> feet	<u>.250</u> inches	<u>6</u> inches	<u>219</u> feet	<u>231</u> feet	<u>.250</u> inches	<u>6</u> inches	<u>241</u> feet	<u>255</u> feet	Number	From	To	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet																																																																																						
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6. LOCATION OF WELL Sketch map location must agree with written location. <table border="1"><tr><td>N</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>X</td><td></td><td></td><td></td></tr><tr><td>W</td><td></td><td></td><td></td><td>E</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td>S</td></tr></table> Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Canyon</u> NE 1/4 NW 1/4 Sec. <u>21</u>, T. <u>4</u> N, R. <u>4</u> E	N						X				W				E										S	10. Work started <u>11-13-89</u> finished <u>2-15-90</u>																																																																																													
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11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Don W. J. Drilling</u> Firm No. <u>399</u> Address <u>837 West Idaho</u> Date <u>Feb 26-90</u> Signed by (Firm Official) _____ and _____ (Operator) <u>Owner</u>																																																																																																																							

603
Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

835335

Office Use Only		
Well ID No.	405845	
Inspected by		
Twp	Rge	Sec
1/4	1/4	1/4
Lat:	:	Long:

1. WELL TAG NO. D 0039237
DRILLING PERMIT NO. 890354-835335
Water Right or Injection Well No. 31787

2. OWNER:

Name CITY OF GREENLEAF
Address 20523 WHITTIER DRIVE
City GREENLEAF State ID Zip 83626

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 4 North ☒ or South ☐
Rge. 4 East ☐ or West ☒
Sec. 21 1/4 NE 1/4 NW 1/4
Gov't Lot _____
County CANON

Lat: _____ Long: _____
Address of Well Site BUTLER LANE, 2000 FT. N. OF INTERSECTION
HWY 19 + FRIENDS ROAD City GREENLEAF
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name N/A

4. USE:

☐ Domestic ☒ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
5/8" BENTONITE	0	430	48,000	Dry Pour
BENTONITE + CLAY	430	498	634 7,000	

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____

Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
10"	+2	458	3.65	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe N/A Length of Tailpipe 5'

Packer ☐ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
458	488	.020		10"	S.S.	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
10-20 SAND	430	498	15,000	Dry Pour

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

61 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____
1 1/2" pipe

12. WELL TESTS:

☒ Pump ☐ Baller ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
530	108	169	8 hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
20"	0	2	TOP SOIL		
	2	21	BRN CLAY		
	21	23	CEMENTED GRAVEL		
	23	36	SAND, GRAVEL		
	36	136	CLAY		
	136	141	FINE BLACK SAND		
	141	174	BLE CLAY		
	174	183	FINE - COARSE SAND		
	183	457	CLAY w/ 5m LAYERS OF FINE SAND		
	457	496	FINE - COARSE SAND LAYERS		
	496	596	CLAY		
	596	604	FINE SAND w/ CLAY STREAKS		
	604	634	CLAY		

RECEIVED

OCT 14 2005

WATER RESOURCES
WESTERN REGION

Completed Depth 488' (Measurable)

Date: Started 8-1-05 Completed 9-15-05

14. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name RIVERSIDE INC Firm No. 333

Principal Driller _____ Date 10-5-05

Driller or Operator II _____ Date _____

Operator I _____ Date 10-5-05

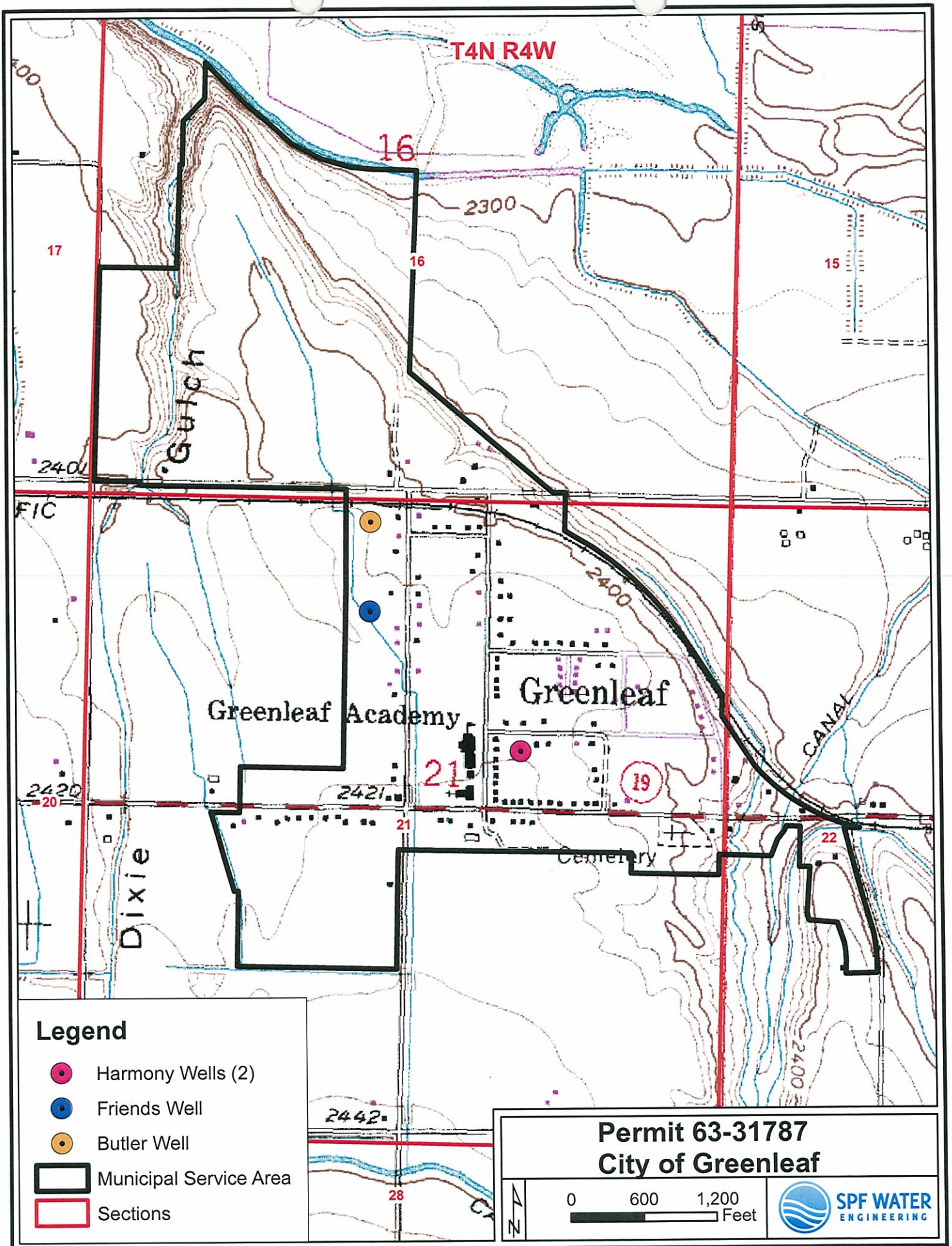
Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Butler

ATTACHMENT C

TOPO MAP AND 2006 AERIAL PHOTO



T4N R4W
(2006 Aerial Photo)

17

16

15

20

21

22

28

Legend

● Harmony Wells (2)

● Friends Well

● Butler Well

▭ Municipal Service Area

▭ Sections

Permit 63-31787
City of Greenleaf



0 600 1,200
Feet



ATTACHMENT D

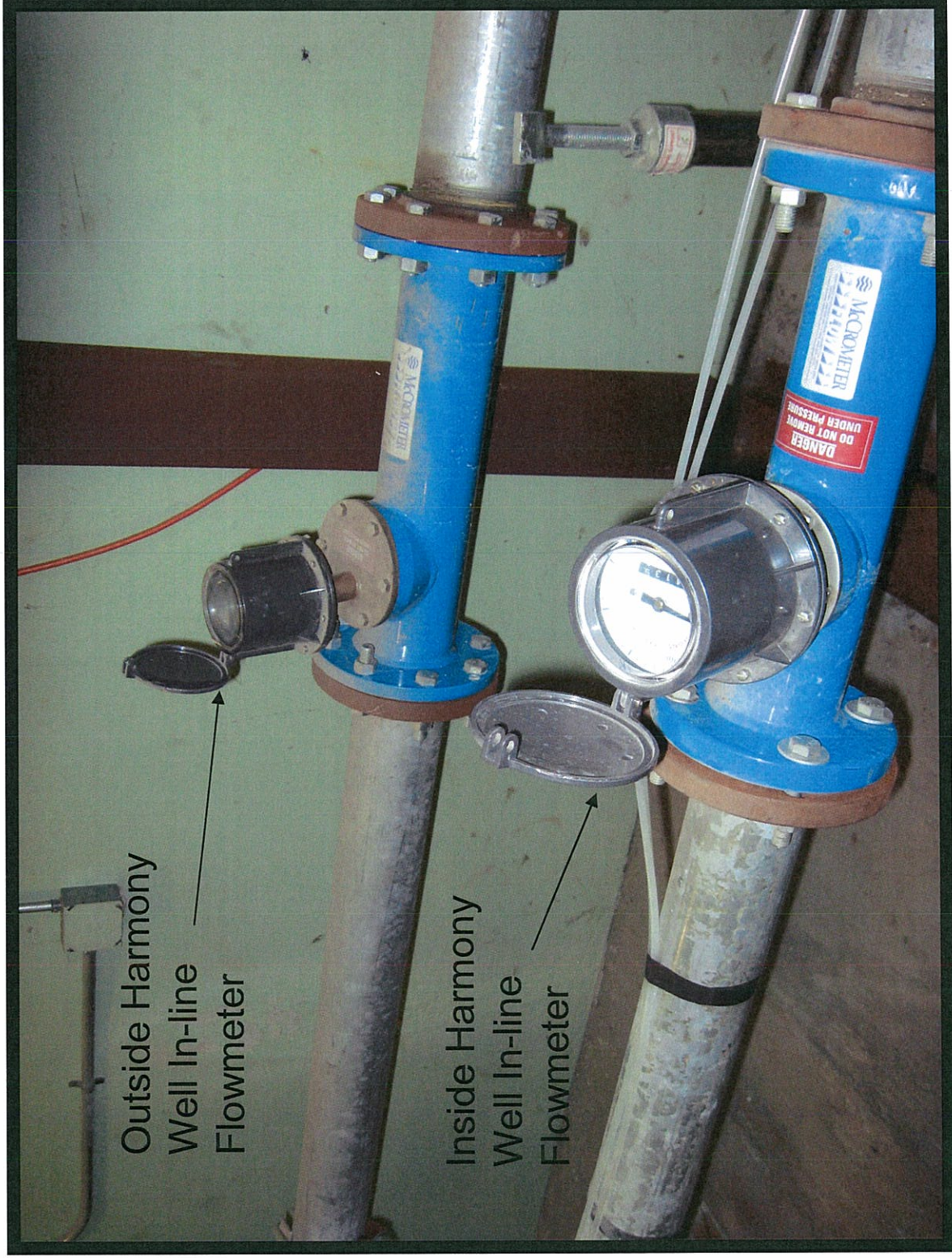
PHOTOS



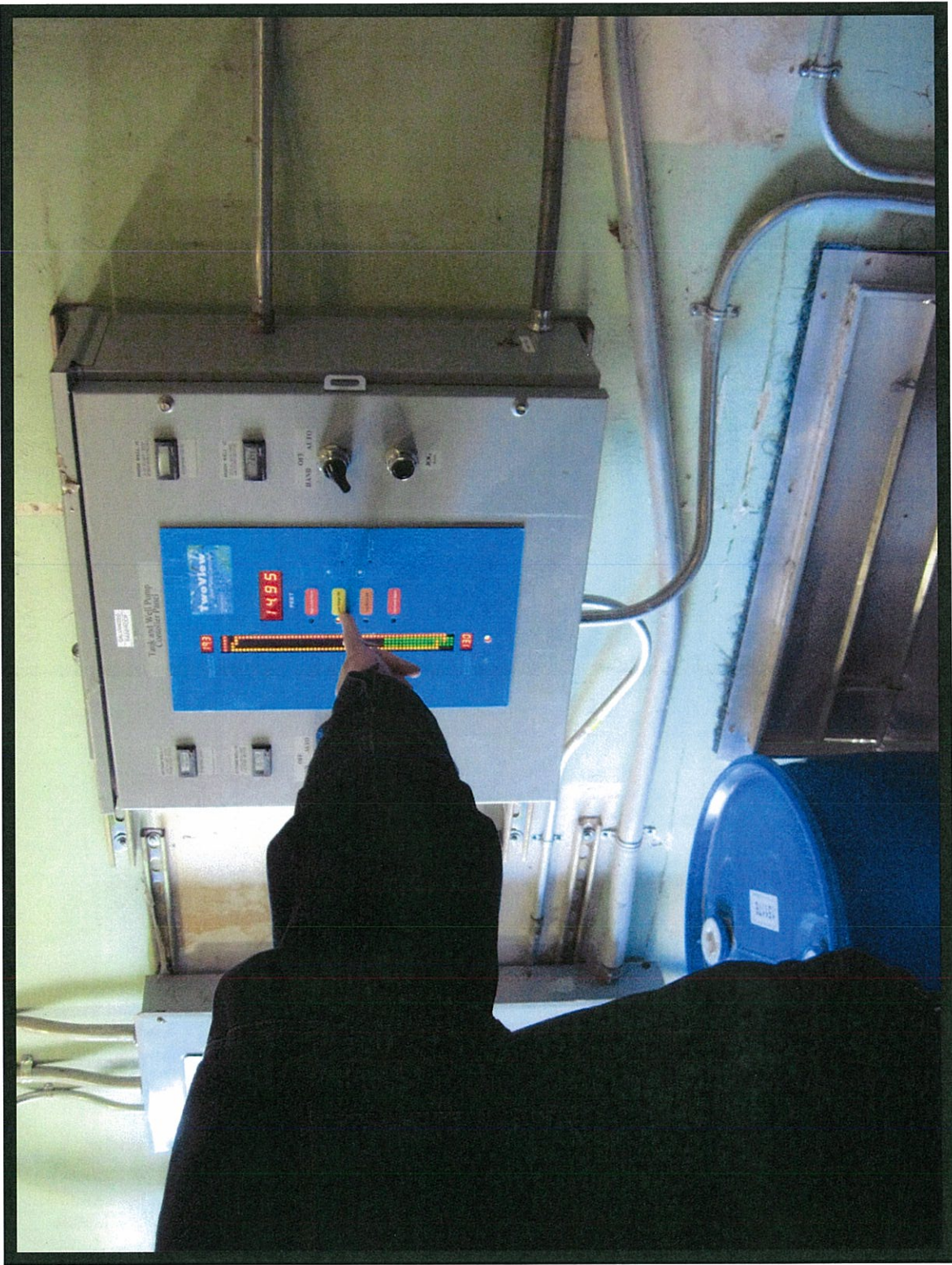
Harmony Wells Pump House and Storage Tank



Harmony Inside Well



Flowmeters for Harmony Wells



Harmony Wells System Monitor



Harmony Wells Booster Pumps and System



Friends Well Pump House (Storage tank in Rear Building)



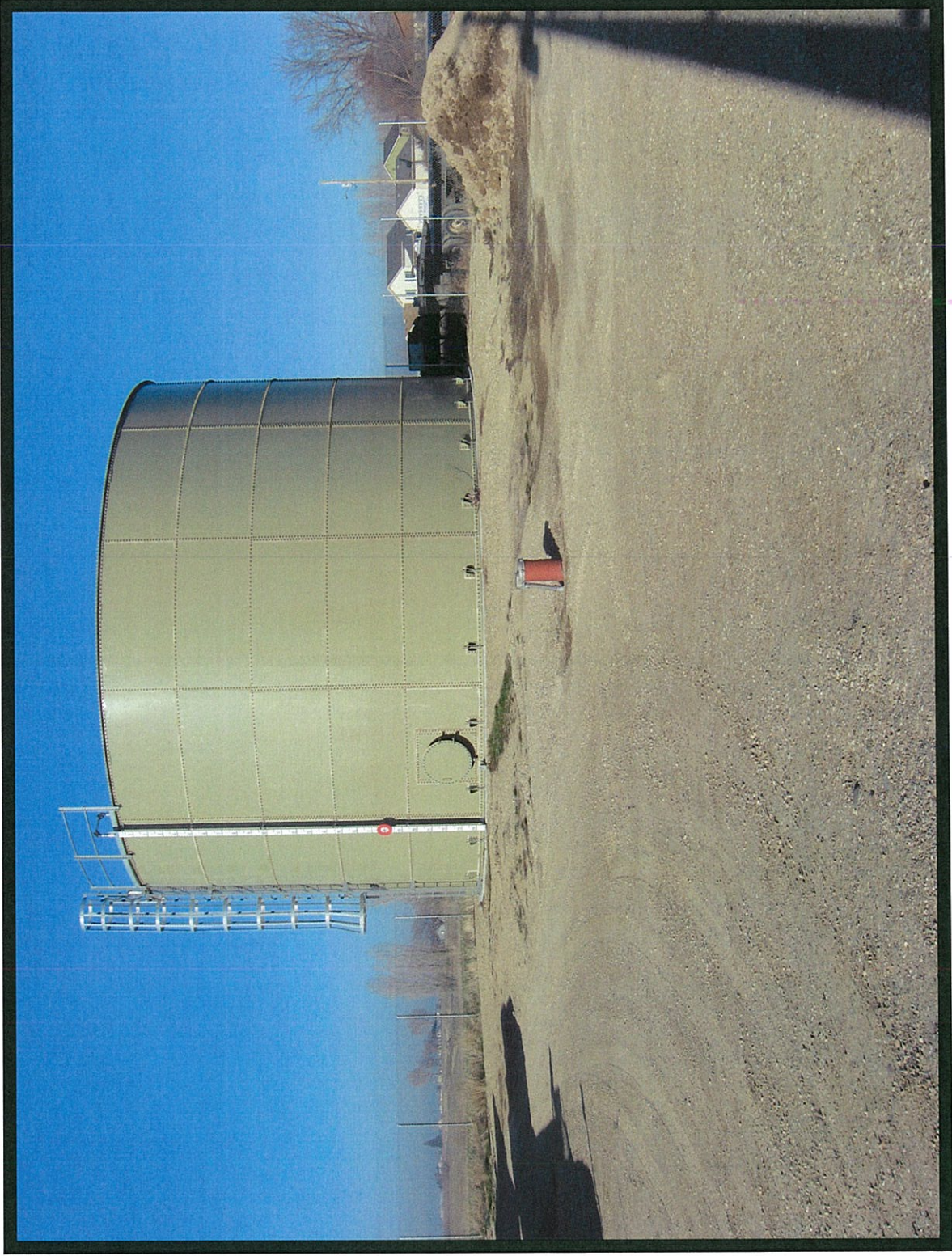
Friends Well



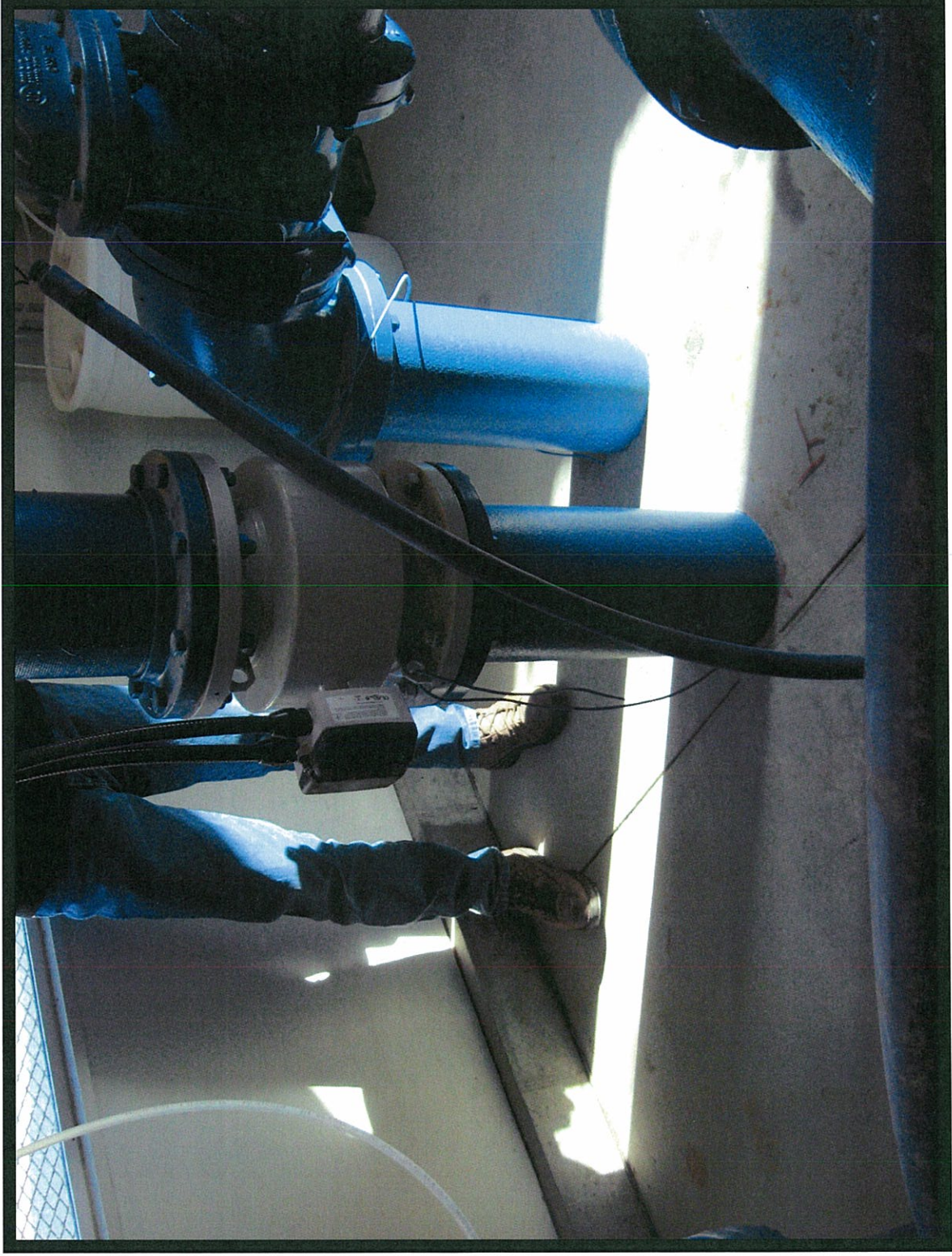
Friends Well In-line Flowmeter



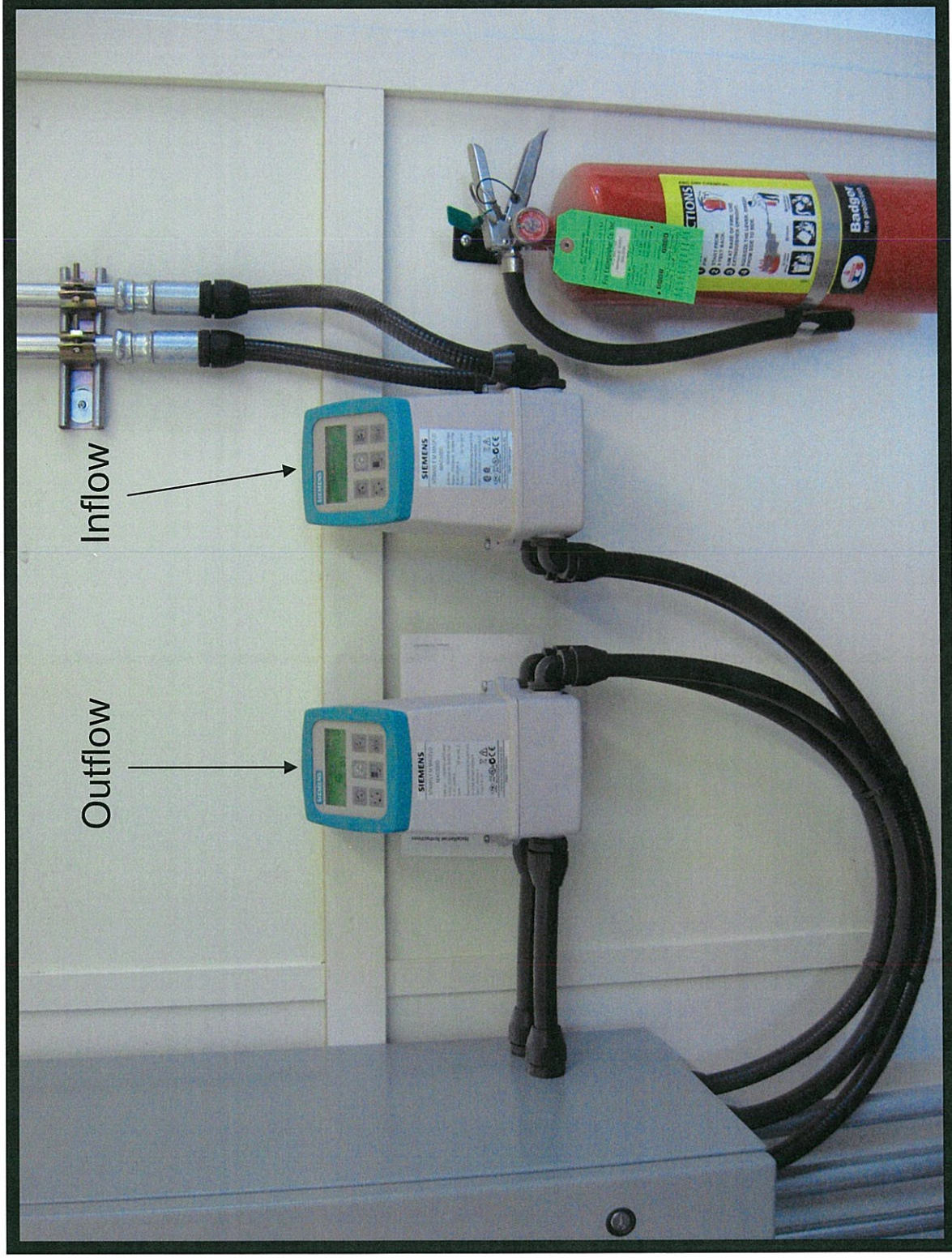
Friends Well Storage Tank



Butler Well and Storage Tank



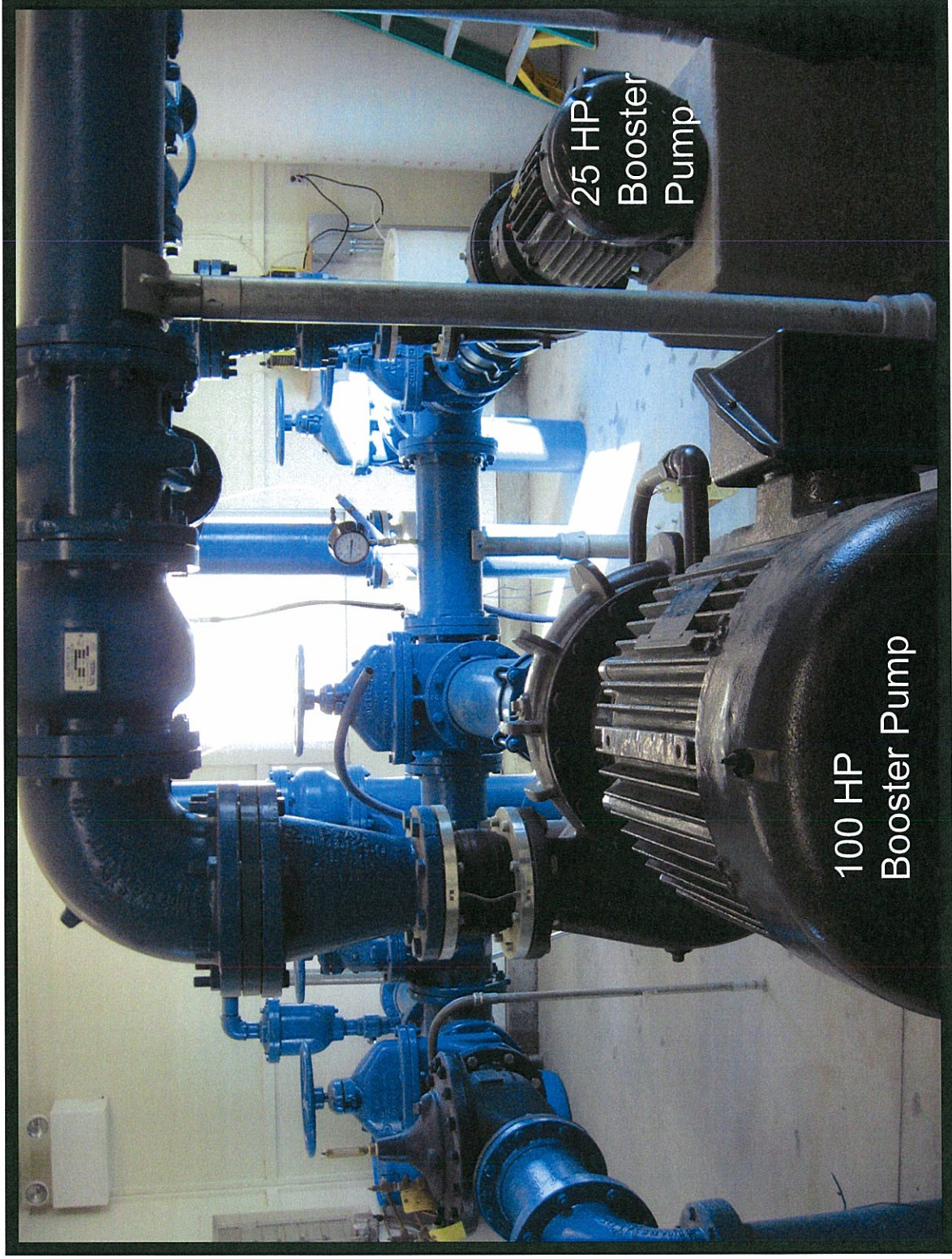
Butler Well In-line Flowmeter



Butler Well Flowmeter Monitors



Butler Well Pump System Controlling Works



Butler Well Pump System