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MAY 01 2013

DEPARTMENT OF
WATER RESOURCESSTATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

★ Please direct inquiries to Ed Squires at 342-8369.

A. GENERAL INFORMATIONPermit No. 63-31630Phone No. (208) 898-55001. Owner: The City of Meridian, IdahoCurrent Address: 33 East Broadway Ave., Meridian, Idaho 836422. Examiner's name: Edward Squires, CWRE 13-125EXAM DATE : January 30, 20123. Accompanied by: Mr. Tracy BallantyneEmail ed@hydrologicinc.netAddress: Meridian Water Department 2235 8th Street, Meridian, Idaho 83642Relationship to Permit Holder: Water Quality Program ManagerPhone No. (208) 888-52424. Source: Ground Water – City of Meridian Supply Wells #25 & #28tributary to N/A**B. OVERLAP REVIEW**1. Other water rights with the same place of use: The City of Meridian's integrated portfolio of municipal water rights;2. Other water rights with the same point of diversion: 63-31858 – City of Meridian – Supply Well #26**C. DIVERSION AND DELIVERY SYSTEM****1. Point(s) of Diversion:**

Ident. No.	Govt Lot	¼	¼	¼	Sec	Twp.	Rge.	County	Method of Determination/Remarks
City Well #25		NE	NW	NE	29	3N	1E	Ada	Site visit, USGS 7 ½-minute Topographic Series maps and GPS GPS 43° 34' 31.6" 116° 21' 37.53" IDWR Well ID # = D0030863
City Well #28		SE	SW	NE	32	3N	1E	Ada	Site visit, USGS 7 ½-minute Topographic Series maps and GPS GPS 43° 33' 14.29" 116° 21' 38.12" IDWR Well ID # = D0053548

2. Place(s) of Use: City of Meridian's Service Area Indicate Method of Determination As approved by the Meridian City Council

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
			City of Meridian Water Delivery Service Area																

City of Meridian Water Delivery Service Area

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size / ditch size / pipe I.D. as applicable. Use space provided or ☒ see attached.

See attached annotated photographs, diagrams, and aerial photographic maps											
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Scale: 1" = _____

- ☒ Copy of USGS Quadrangle Attached showing location(s) of point(s) of diversion and place(s) of use
☒ Aerial Photo Attached (required for irrigation of 10+ acres).
☒ Photos 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
City Well # 25	U.S. Electrical Motors – HT (Emerson)	200	H06-41078559-008R-03	FlowWay Pumps Model: 14DKH 4-stage	14-inch bowls to 10-inch column and discharge piping. PumpTech serial number = 2K4 - 0415
City Well # 28	U.S. Electrical Motors – HT (Emerson)	250	R09-30720134-6T-03	National Pump Company Model: M14XXHC 4-stage	14-inch bowls to 10-inch column and discharge piping. No serial number available.

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calibration Date
Well #25 McCrometer Flow-meter	Propeller	MW500	E7000-000	E07-12019-10	10-inch	11/28/2007
Well #28 ABB Flow-Meter	Electro-Magnetic	ABB	MFE2513	3K62000005 3500	10-inch	8/ 2010

2. **Measurements Well #25:** Discharge measurements for this examination were made using the installed propeller flow-meter listed above (Figure 4). The installed length of straight water pipe in the downstream (from the flow-meter) direction is 18-inches (1.8 pipe diameters). The installed length of straight pipe in the upstream direction is 62-inches (6.2 pipe diameters). The minimum piping installation recommendations of the manufacturer (Appendix A) are for all

practical purposes met because an 18-inch length of straight-run pipe, without obstructions, is available downstream of the meter and 62-inches are available upstream (Figures 5 and 6). The instantaneous flow rate needle was observed to be steady at all discharge rates and the observed flow-rates match reasonably well with the pump performance curve (Figure 13) and, therefore, there is no reason to suspect the flow-meter was reading incorrectly (Figure 4).

Well #28: Discharge measurements for this examination were made using the installed magnetic flow-meter listed above (Figure 7). The installed length of straight pipe in the downstream (from the flow-meter) direction is 20-inches (2 pipe diameters). The installed length of straight pipe in the upstream direction is 50-inches (5 pipe diameters). The minimum piping installation recommendations of the manufacturer (Appendix A) are met because they require a 20-inch length of straight-run pipe, without obstructions, to be available downstream of the meter and 50-inches upstream (Figures 8 and 9). The instantaneous flow rate needle was observed to be steady at all discharge rates and the observed flow-rates match well with the pump performance curve and, therefore, there is no reason to suspect that the flow-meter was not reading correctly (Figure 7).

E. NARRATIVE/REMARKS/COMMENTS

Well #25: The field examination for this permit was carried out on January 30, 2012 by Ed Squires and Carlton Parker (Certified Water Rights Examiners with Hydro Logic, Inc), accompanied by Mr. Tracy Ballantyne (Water Quality Manager with the Meridian Water Department) and Loren Pearson (hydrogeologist with HLI). The Meridian #25 well is housed inside of a 28-foot by 28-foot cinder block pump house (Figure 10). The 17.4-inch diameter well (Figure 11) is equipped with a FloWay Pumps Company 4-stage, Model 14DKH deep well turbine pump (Figure 12) set on 150-feet of 10-inch pump column with a 12.4-foot long pump/ intake assembly (includes 10-feet of suction pipe). The pump is driven by a 200 hp, 460 volt, 1785 rpm, U.S. Electrical Motors – High Thrust motor (Figure 5). The 10-inch diameter discharge- piping is comprised of a series of 10-inch plumbing fittings and fixtures, including check-valve, tees, couplings, flow-meter, and control valve (Figures 5 and 6) prior to exiting through the pump-house floor where it joins with the water distribution system mainline running down Victory Road. The pumping plant is equipped with a variable speed drive unit designed to pump directly to the pressurized water distribution system. The flow-meter on the 10-inch discharge records all discharges from the Well # 25 to the distribution system. The well pump is set to operate within a predetermined pressure range in the distribution system that varies with demand; typically 60-to-90 psi.

When we arrived on-site, the Well #25 pump was operating with a line pressure of 67 psi at an average discharge of ~1,050 gpm (Appendix B). According to City staff, Well #25 is the lead pump for this pressure zone and could not be shut off for a long period of time. Pumping water level in the well was measured at 73.49 feet below measuring point (bmp) which 2.2 feet above finished pump house floor (71.29 feet below ground level). The pumping water level and discharge rate remained essentially the same for the hour prior to increasing the well pump (Appendix B). The volume-pumped totalizing read-out of the flow-meter was 875,586,000 gallons when we arrived at the site for the licensing exam (Figure 4). We had the system operators manually increase the pumping rate to simulate higher demand (summer) conditions (to a maximum of 60-Hz) and we measured pumping water level and line pressure for 12 minutes at a pumping rate of 2,250 gpm with a drawdown to 110.37 feet bgl before flow was reduced to 2,210 gpm for the next 18 minutes with the pumping water level maintaining around 111 feet bgl and a system pressure of 60 psi, and an observed frequency of 60 Hertz (Hz) out of 60 Hz available. The pump was operating on its "full speed" performance curve (Figure 13) against a very reasonable system operating pressure. Plotting the measured TDH against the observed flow rate on the "original" design pump curve (Figure 13) shows that the pumping plant is

reasonably close but not right on) its design and performance parameters (see calculations below) and the well's specific capacity had apparently improved by 24 percent since (Figure 14) the original hydraulic testing of the well eight years earlier.

HLI conducted a short-term hydraulic testing of the Well #25 on January 30, 2012. The resulting hydrographs is shown on Figure 14 with respect to the short-term data from the original pump test of the Well #25. From these tests it is clear that the Meridian Well #25, itself, is easily capable of productive yields exceeding the water right instantaneous diversion rate. Well #28: The field examination for this permit was carried out on January 30, 2012 by Ed Squires and Carlton Parker (Certified Water Right Examiners in the State of Idaho), accompanied by Mr. Tracy Ballantyne (Water Quality Manager with the Meridian Water Department) and Loren Pearson (hydrogeologist with HLI). The Meridian #28 well is housed inside of a 30-foot by 58-foot cinder block pump house (Figure 15). The 17.4-inch diameter well (Figure 16) is equipped with a National Pump Company 4-stage, Model 14XXHC well turbine pump (Figure 17) set on 200-feet of 10-inch pump column with a 12.5-foot long pump/ intake assembly (includes 10-feet of suction pipe) and a 5-ft 9-in pump bowl assembly. The pump is driven by a 250 hp, 460 volt, 1785 rpm, U.S. Electrical Motors – High Thrust motor (Figures 8 and 21). The 10-inch diameter discharge- piping is comprised of a series of 10-inch plumbing fittings and fixtures, including check-valve, tees, couplings, flow-meter, and control valve (Figures 8 and 9) prior to exiting through the pump-house floor where it joins with the mainline running down East Taconic Drive. The pumping plant is equipped with a variable speed drive unit designed to pump directly to the pressurized water distribution system. The flow-meter on the 10-inch discharge records all discharges from the Well # 28 to the distribution system. The well pump is set to operate within a predetermined pressure range in the distribution system that varies with demand; typically 60-to-90 psi and which can be run at various speeds to accommodate that demand.

When we arrived on-site, the Well #28 pump was operating at 321 gpm and the line pressure was 63 psi. Well #28 is the lead pump for the City's pressure zone 5 and could not be shut off for a long period of time and nor could the low winter demand accommodate the full instantaneous diversion rate of the water right. Pumping water level in the well was measured at 60.61 feet below measuring point (bmp) which 2.55 feet above the finished pump house floor (58.06 feet below ground level). The volume-pumped totalizing read-out of the flow-meter was 108,178,879 gallons when we arrived at the site for the licensing exam (Figure 7). We had the system operators manually increase the pumping rate by opening a system fire hydrant (but still maintaining a line pressure of 60 psi) to simulate higher demand (summer) conditions (to a maximum of 60-Hz) and we measured pumping water level and line pressure for 41 minutes when the water level was drawn down to 104.13 feet bmp (101.58 bgl) at a discharge of 2,260 gpm, a system pressure of 60 psi, and an observed frequency of 54.7 Hertz (Hz) out of 60 Hz available. In other words, the pump was not running at full speed.

HLI personnel conducted short-term hydraulic testing of the Well #28 on January 30, 2012. The resulting hydrographs is shown on Figure 19 with respect to the original pump test of the Well #28. From these tests it is clear that the Meridian Well #28, itself, is easily capable of producing the entire instantaneous diversion rate shared by both wells. The pumping water levels and calculated specific capacity measured during the field-licensing examination show an 18 percent increase in specific capacity compared to that of the initial hydraulic testing of the new well in 2004.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☐ Yes ☒ No If no, what must be done to meet the permit requirements?

Condition 10 of the Permit No. 63-31630 states "The wells proposed as points of diversion for this water right shall be constructed with a surface casing that shall not, under any discovered (during drilling) circumstances, be less than 200 feet in depth". The surface casing installed at Supply Well #25, although meeting the intent of the condition, was 4 feet short of the 200-foot limit. As can be seen on Figure 11, in order to stop the primary well casing in a low permeability stratum, it was placed to 196 feet below land surface. This is not considered a significant breach of the condition and no action is recommended or needed. Condition 12 of the Permit No. 63-31630 states "Water bearing zone to be appropriated is 300 to 900 feet". Meridian Supply Well #25 draws waters from 196 feet below land surface. Therefore, it will be recommended that the water-bearing zone designation be changed to reflect "196-to-900 feet".

F. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

Instantaneous flow rates are based on field-observed readings of a high-quality, calibrated, impeller flow-meter installed within manufacturer's specifications. These readings are supported by: 1) discussions with the pump operators responsible for upkeep of these wells, 2) by the operating conditions and pump performance curve for Wells #25 and #28, and 3) by the well-documented capacity of the City's #25 and #28 groundwater wells during previous pumping tests. Therefore, the requested, observed, calculated, and recommended maximum flow rates for the wells appear to be justified. Both wells are capable of producing the diversion rate of the water right which only allows a combined (two-well) diversion rate of 5 cfs at any given time. In my discussions with Meridian water Department staff, and through review of pumping information from the City, it is apparent that the water right diversion rate was accomplished during the beneficial use period and that the total instantaneous diversion rate was not exceeded by any combination of the two wells pumping. However, as the City grows, and water demand increases, the City is well advised to apply for additional water rights for these two wells.

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:

Not applicable to a municipal water right.

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use From	To	Rate of Diversion Q (cfs)	Annual Volume V (afa)
Municipal	Jan 1	Dec 31	5.00 cfs	N/A
Totals:			5.00 cfs	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 ☒ Other (water-bearing zone to be appropriated)

I. AUTHENTICATION

Field Examiner's Name E. Spivins Date May 1, 2013

Reviewer Gandy Hemmaway Date 1/16/2014

SEAL

FIGURES

Well Location and Point of Diversion Map for City of Meridian Supply Well #25 and #28

Supply Well #25 T. 3 N. R. 1 E. Section 29, NE¼, NW¼, NE¼

Supply Well #25 GPS Location: Latitude 43° 34' 31.60" Longitude 116° 21' 37.53"

Supply Well #28 T. 3 N. R. 1 E. Section 32, SE¼, SW¼, NE¼

Supply Well #28 GPS Location: Latitude 43° 33' 14.29" Longitude 116° 21' 38.12"

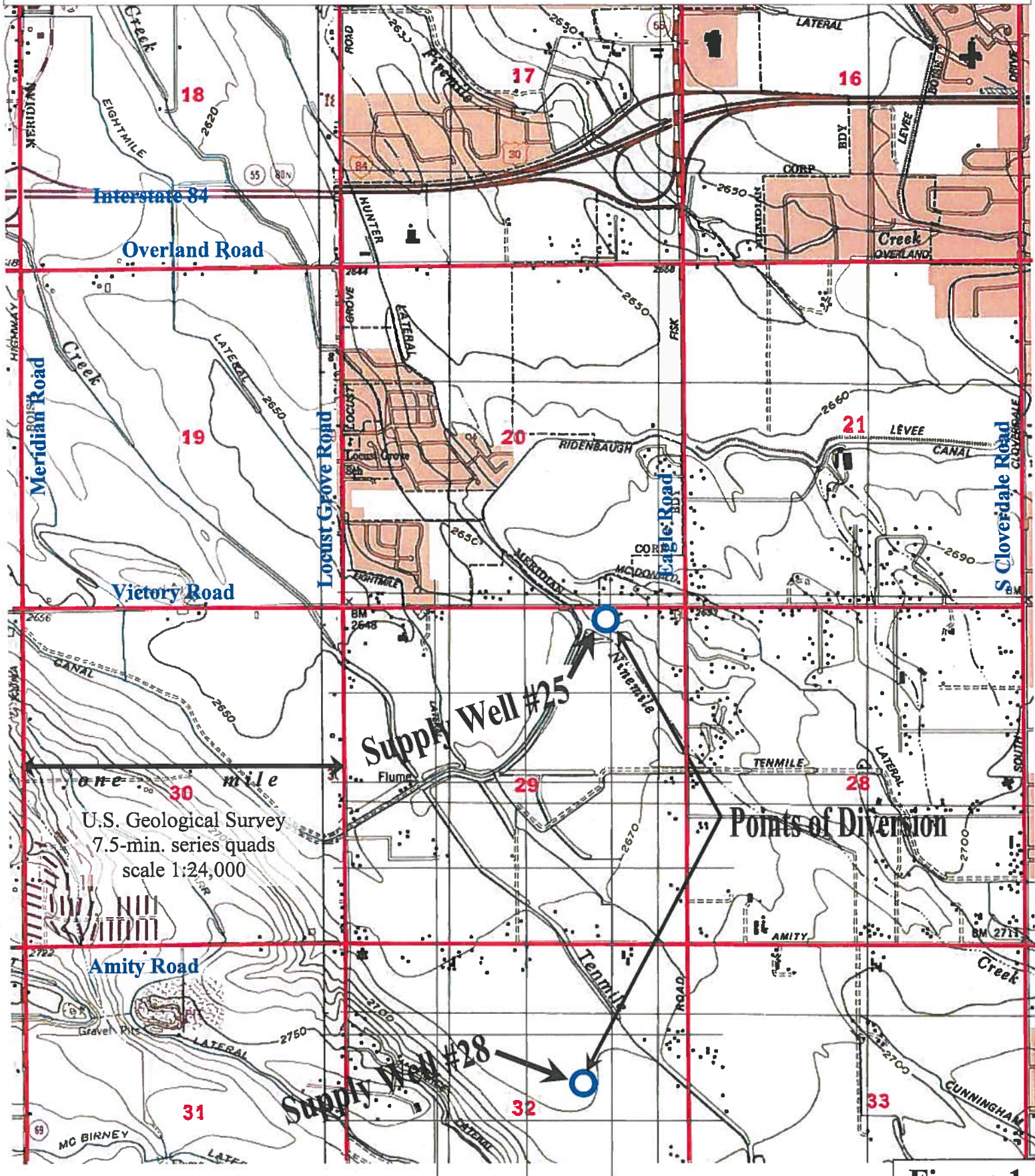


Figure 1.



Figure 2. Annotated aerial photograph of the Meridian #25 well site showing the location of the Meridian Supply Well #25 with respect to other area facilities.

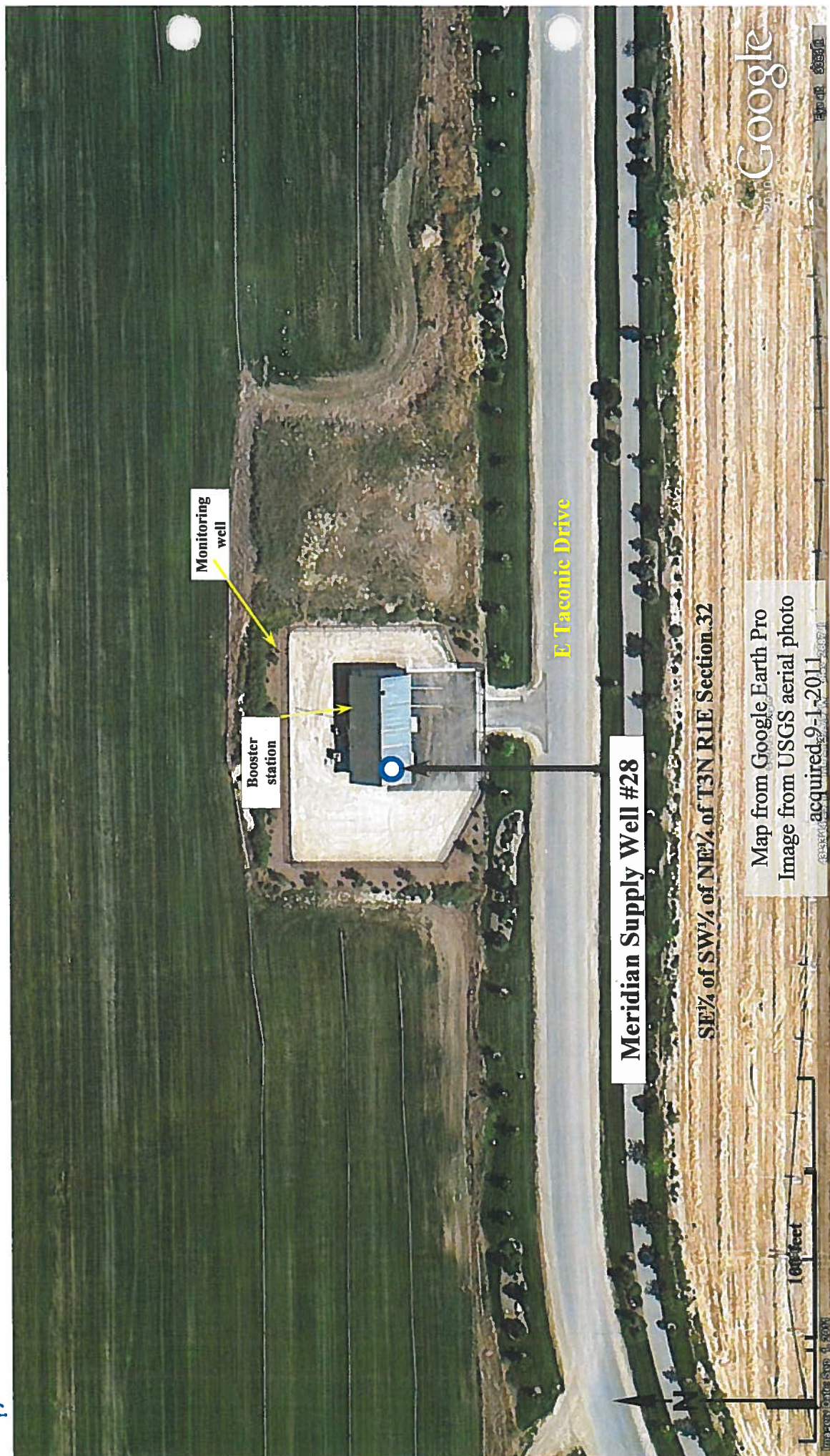


Figure 3. Annotated aerial photograph of the Meridian #28 well site showing the location of the Meridian Supply Well #28 with respect to other area facilities.

Figure 3.

Photos of the 10-inch flow meter and line-pressure gauge for Meridian Supply Well #25

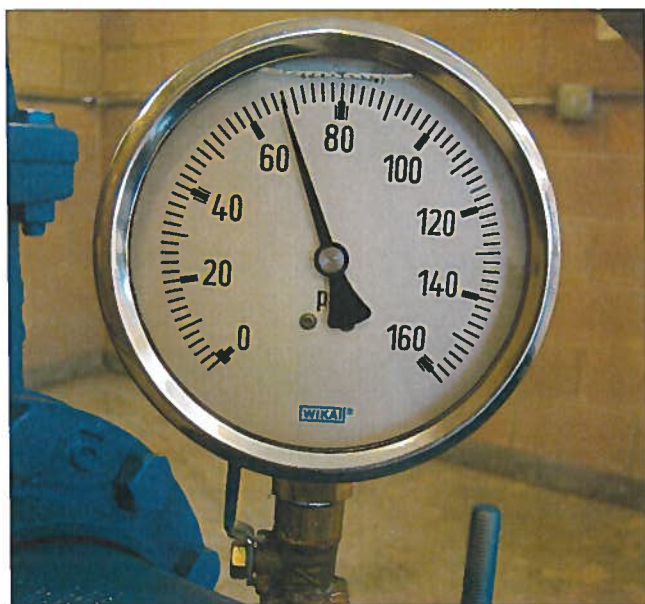
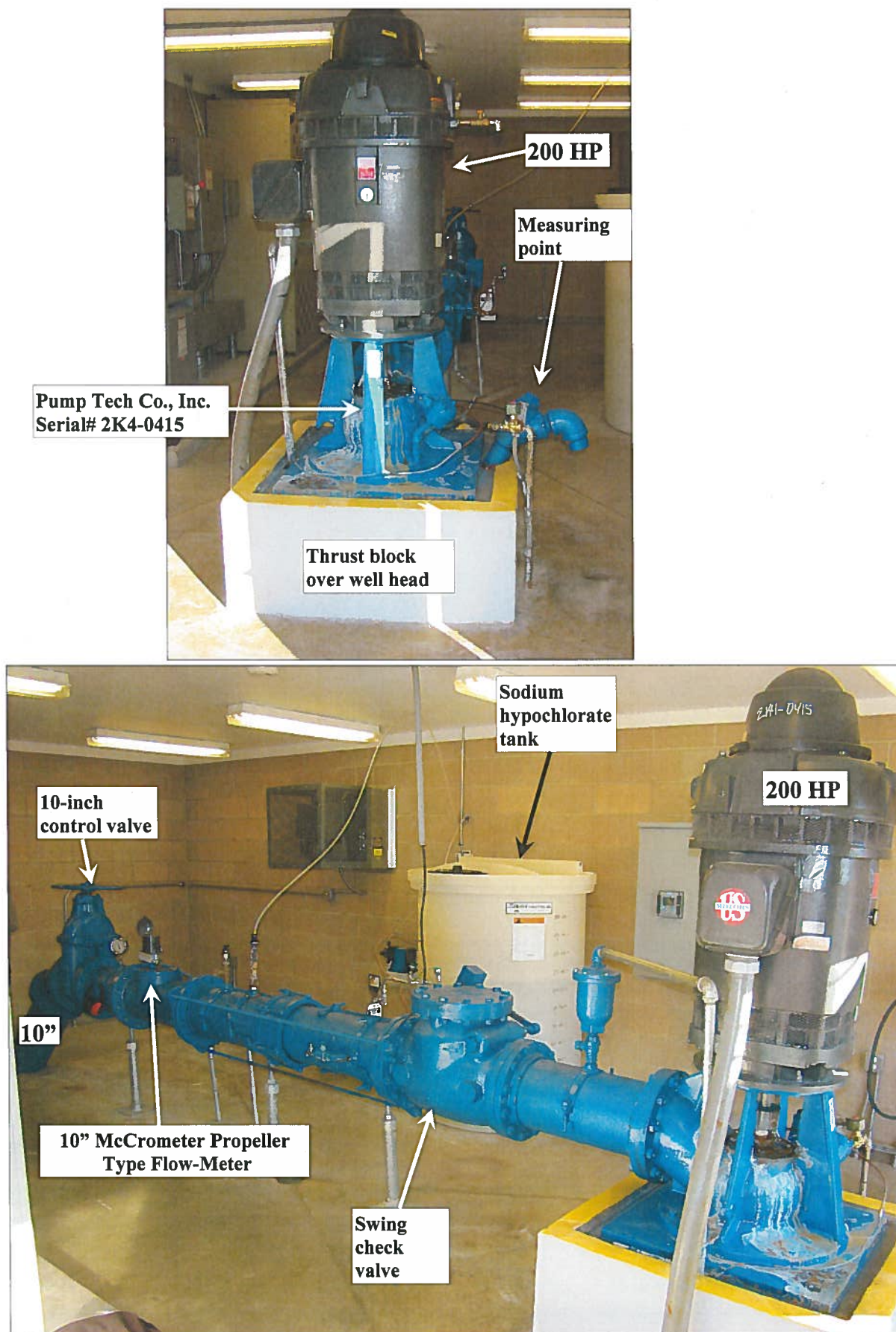


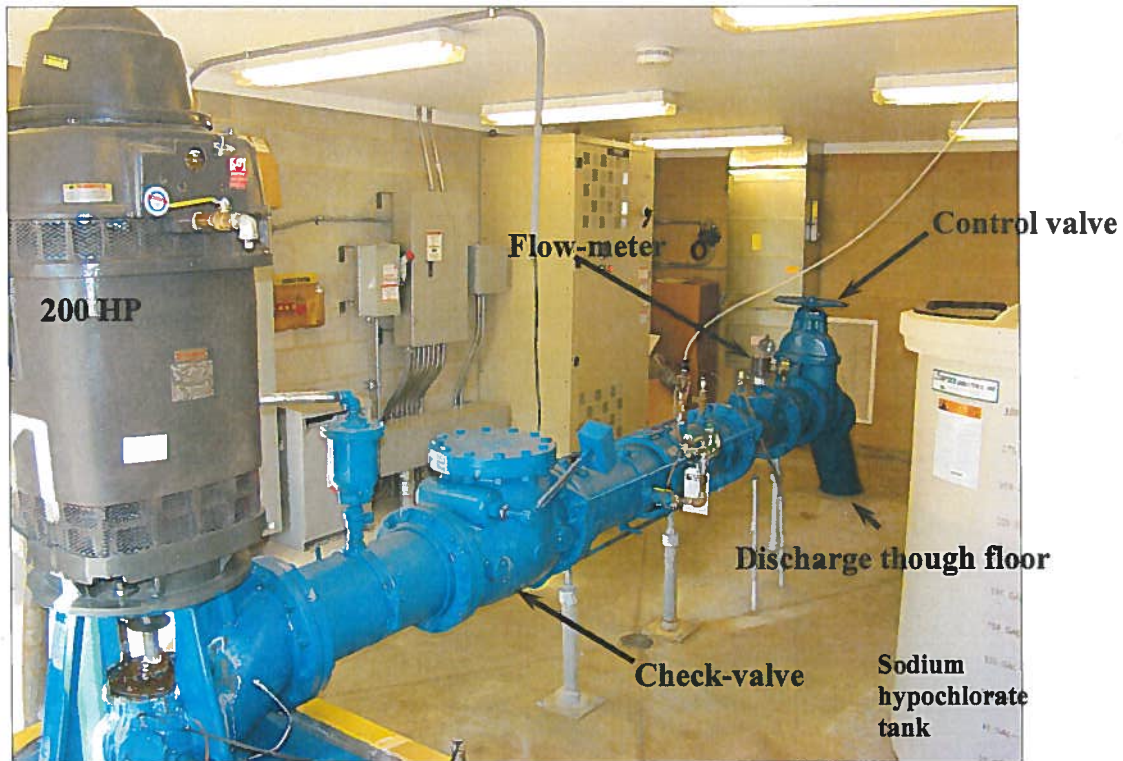
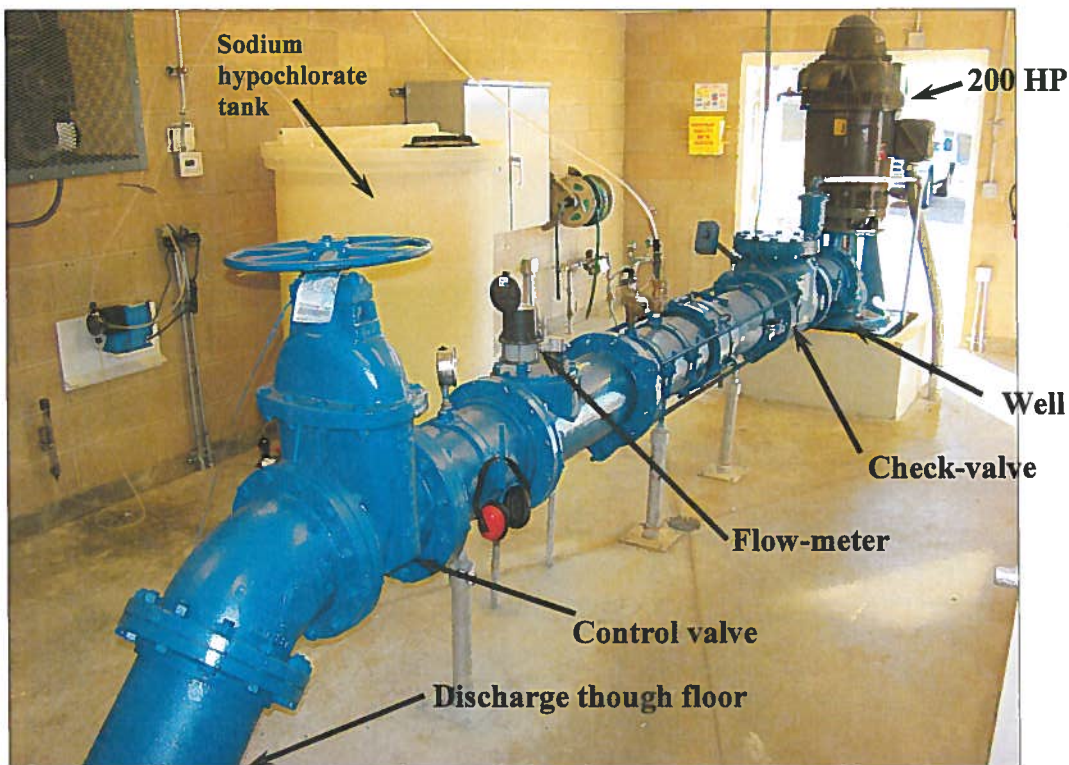
Figure 4. January 30, 2012 photographs of the "McCrometer" 10-inch propeller flow-meter and "Wika" line pressure gauge in the City of Meridian Well #25 discharge piping.

Figure 4.

Photos of the well head and discharge piping for Meridian Supply Well #25



Photos of wellhead and discharge piping during beneficial use exam of Meridian Supply Well #25



Photos of the 10-inch flow meter and line-pressure gauge for Meridian Supply Well #28

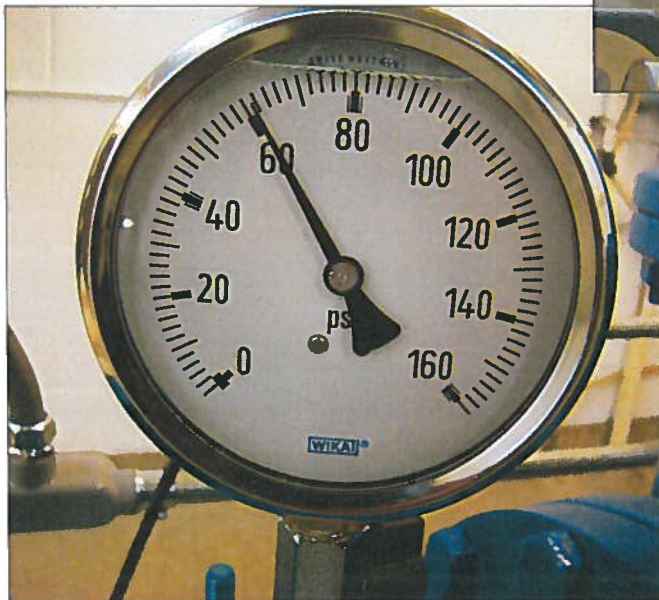
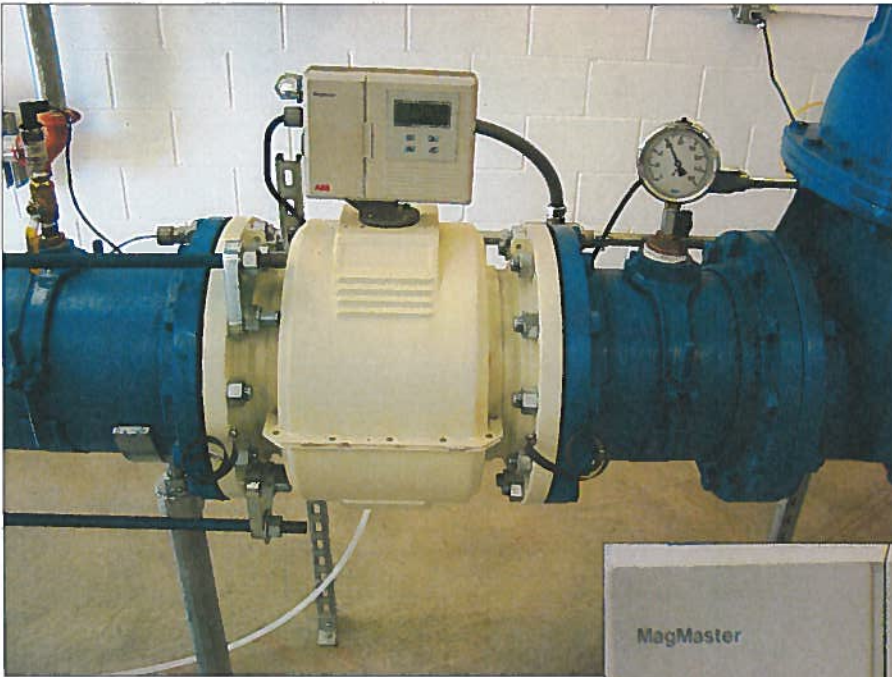
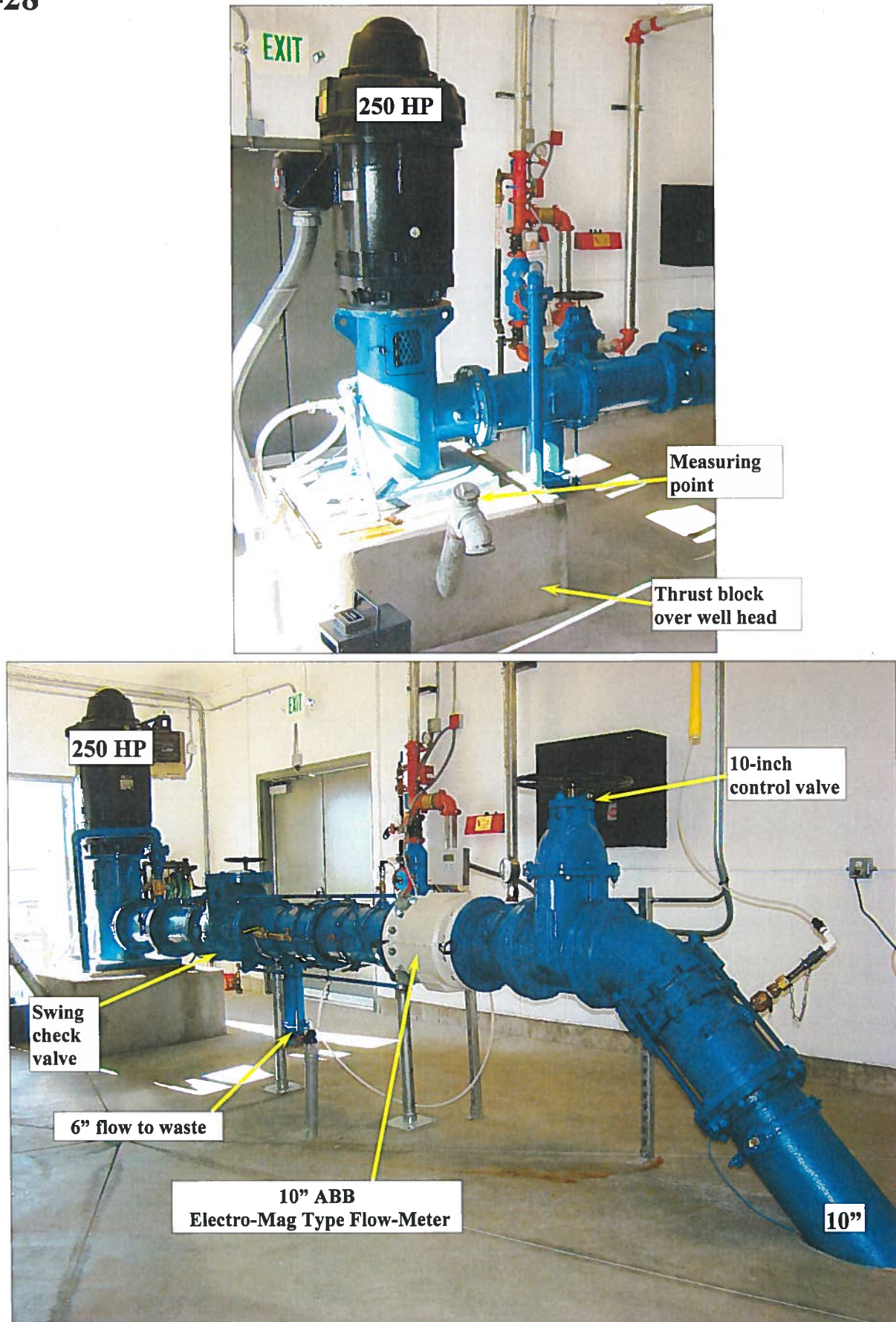


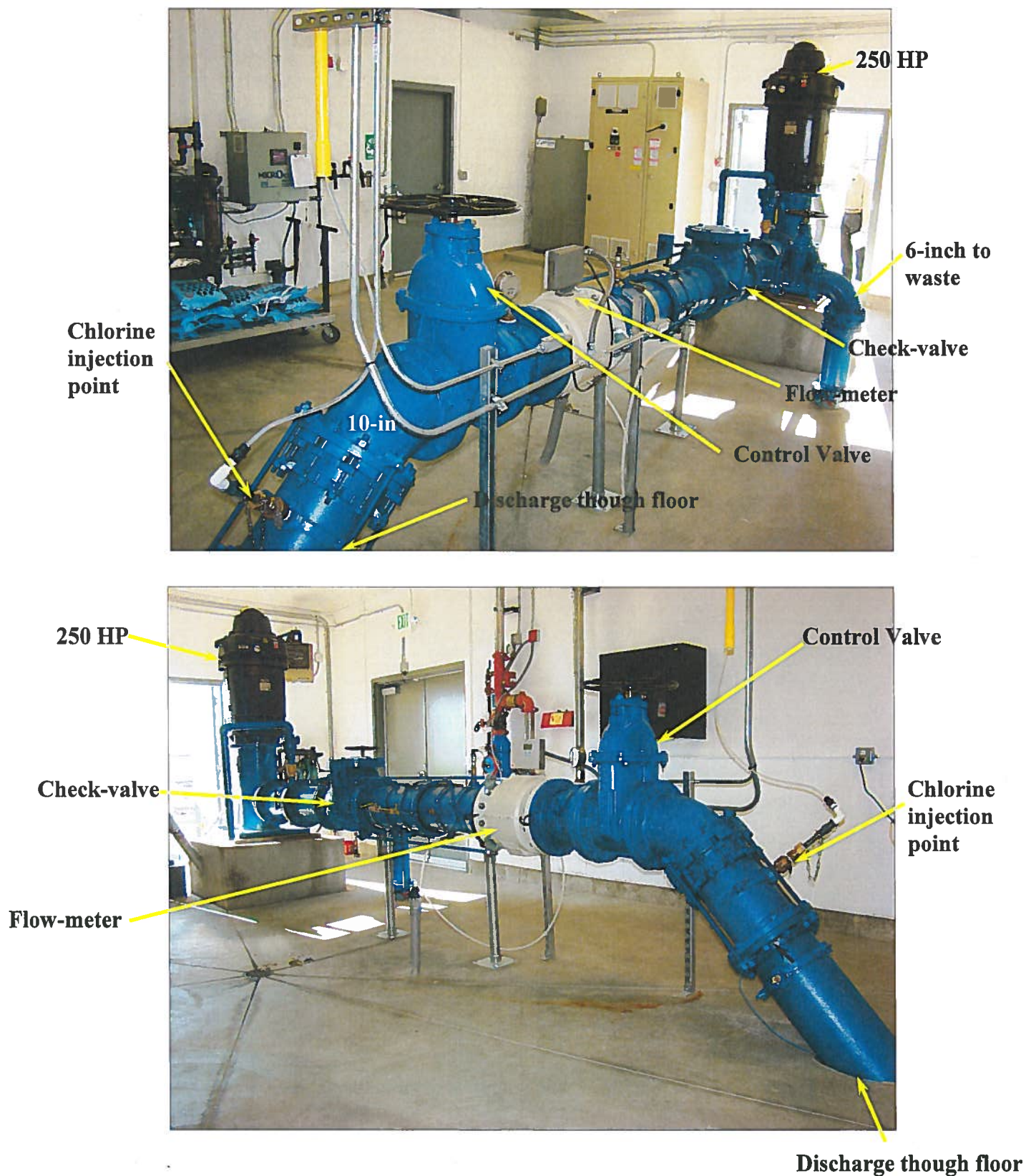
Figure 7. January 30, 2012 photographs of the “ABB” 10-inch electro-magnetic flow-meter and “Wika” line pressure gauge in the City of Meridian Well #28 discharge piping.

Figure 7.

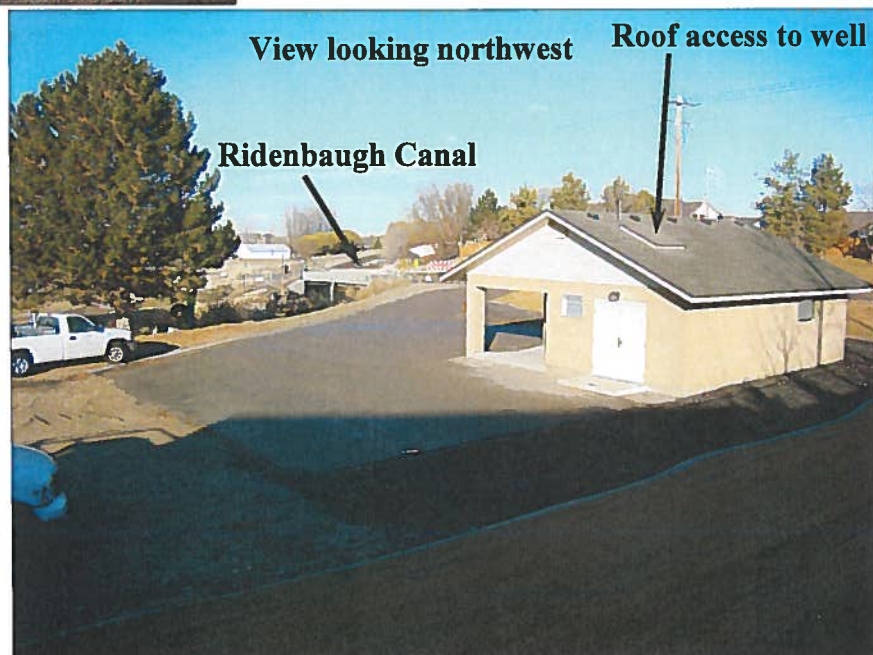
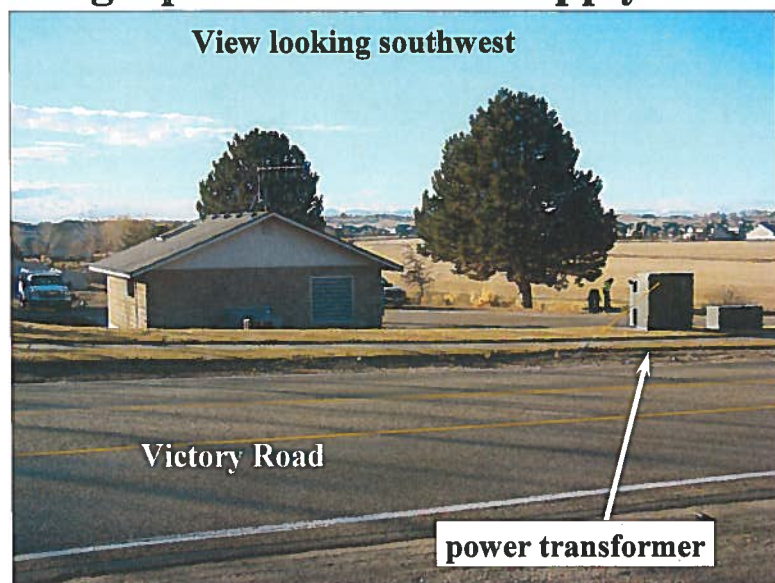
Photos of the well head and discharge piping for Meridian Supply Well #28



Photos of wellhead and discharge piping during beneficial use exam of Meridian Supply Well #28



Photographs of Meridian Supply Well #25 pump/control house



Lithology

Hydro Logic, Inc. lithologic log is interpreted and drawn from geophysical logs and analysis of direct mud-rotary drill cuttings, sampled by the on-site geologists (L. Pearson and B. Cavanagh) during drilling of #25 Test Well and Supply Well #25 boreholes.

Interpretations and Final Diagram Revisions March 2012 by Hydro Logic, Inc. Loren Pearson and Ed Squires

Depth
(feet below ground level)

As-Built Well Construction

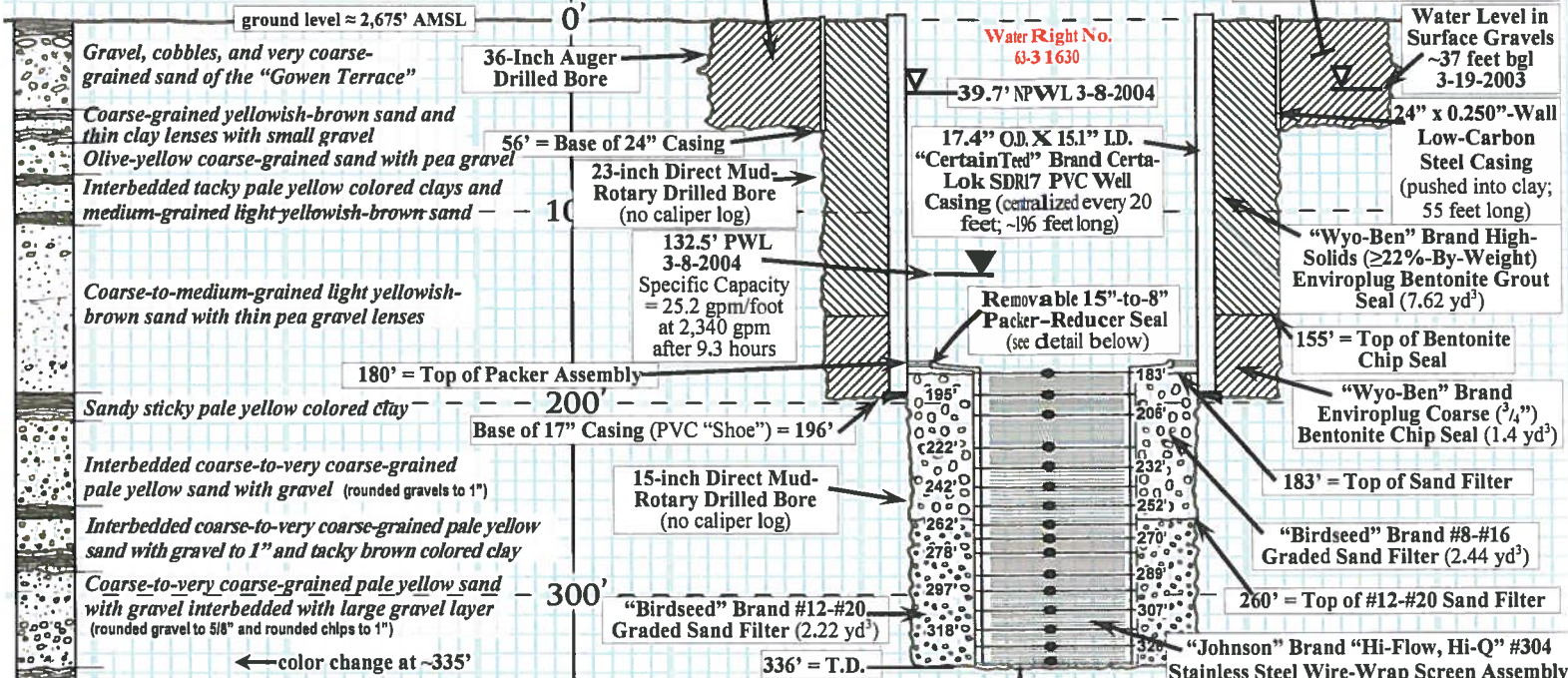
(horizontal scale 0.1"=1" and vertical scale 1"=100')
all measurements to ground level = pumphouse floor

10"

Note: All "Wyo-Ben" brand bentonite chip was poured into place through mud-filled hole and tagged into place with an incremented, weighted, sounding line by the on-site hydrogeologist.

All "Birdseed" brand graded sand filters were poured into place through mud-filled bore and tagged into place with an incremented, weighted, sounding line by the on-site hydrogeologist.

All seal and filter pack material volumes were checked against volumetric calculations of the borehole and pipe(s) sizes and were found to be closely correlated.



Hydro Logic, Inc.

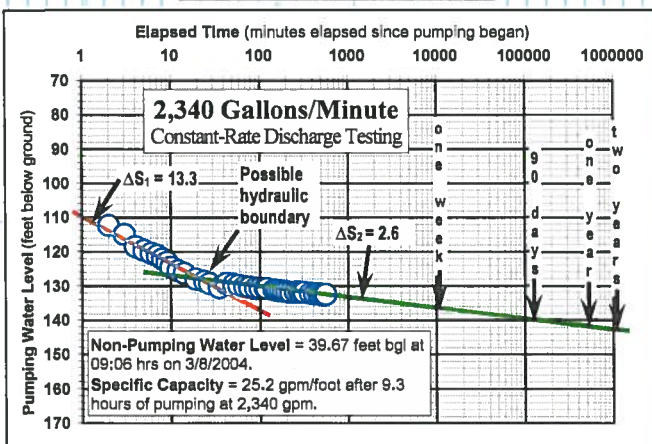
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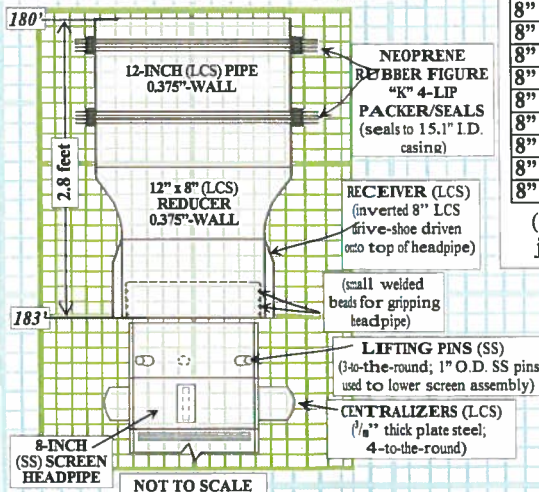
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Interior details of well construction inspected with Hydro Logic, Inc. depth-calibrated camera survey on February 25th, 2004.

Hydraulic Testing



REMOVABLE DRIVE-ON PACKER-REDUCER / HEADPIPE CONNECTION AS-BUILT (constructed from low-carbon steel (LCS) components)



City of Meridian Supply Well #25

T. 3 N.R. 1 E. Section 29, NE¹/₄, NW¹/₄, NE¹/₄
Latitude 43° 34' 31.60" Longitude 116° 21' 37.53"
Well Completed March 2004

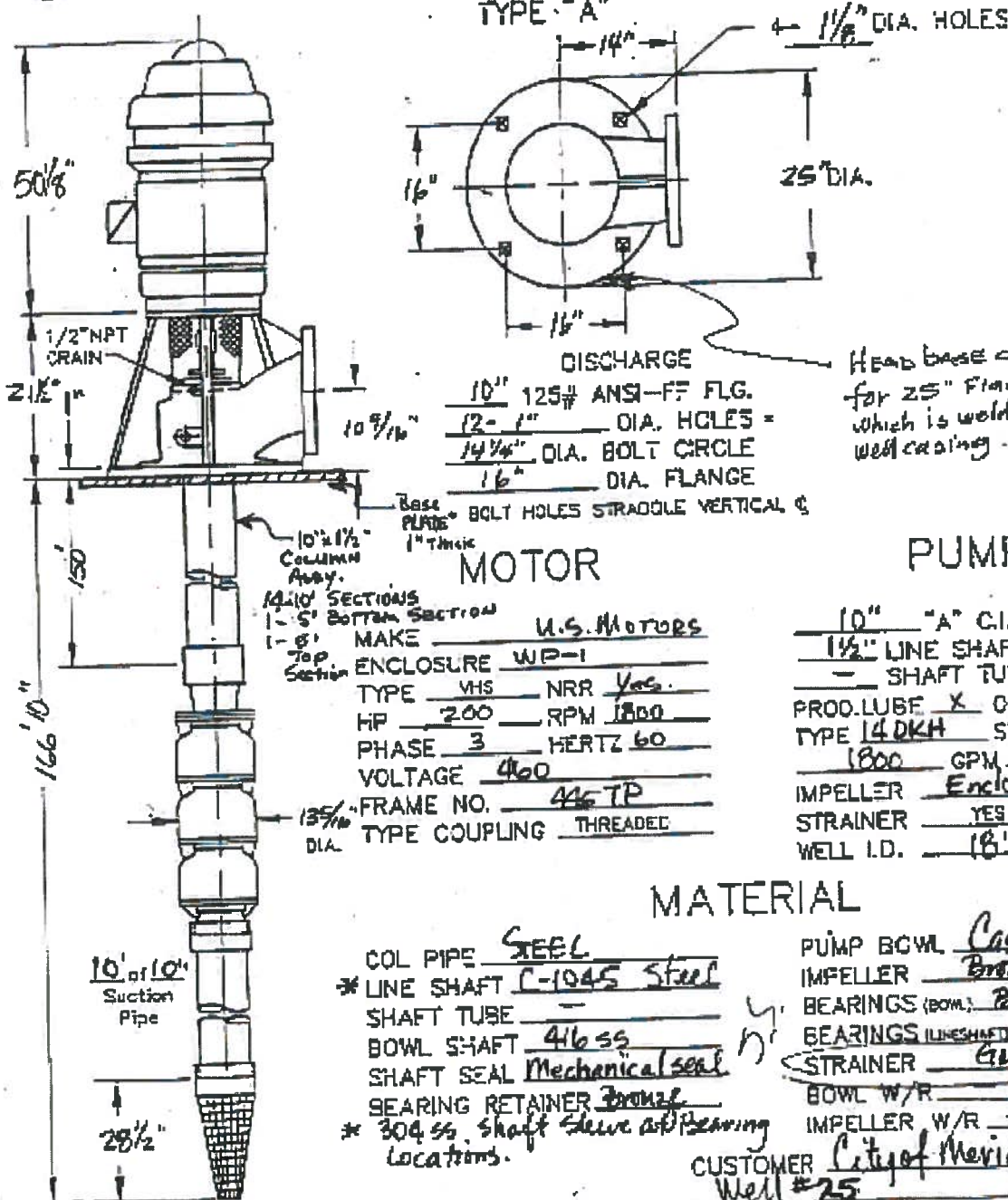
Diagram of installed pumping plant at Meridian Supply Well #25

FRESNO, CALIFORNIA

25

VERTICAL TURBINE PUMP

TYPE "A"



MOTOR

10' 125# ANSI-FF FLG.
12-1" DIA. HOLES =
14 1/4" DIA. BOLT CIRCLE
16" DIA. FLANGE
BOLT HOLES STRADDLE VERTICAL C

Base PLATE 1" Thick
10' x 1 1/2" COLUMN AWAY.
14 1/2' SECTIONS
1-5' BOTTOM SECTION
1-8' TOP SECTION

MAKE U.S. MOTORS
ENCLOSURE WP-1
TYPE VHS NRR Yes
HP 200 RPM 1800
PHASE 3 HERTZ 60
VOLTAGE 460
FRAME NO. 446 TP
TYPE COUPLING THREADED

PUMP

10" "A" C.I. DISCH. HD.
1 1/2" LINE SHAFT 10" COL
SHAFT TUBE
PROD. LUBE X OIL LUBE.
TYPE 14 DKH STAGE 4
1800 GPM 266 TCH
IMPELLER Enclosed
STRAINER YES
WELL I.D. 18"

MATERIAL

COL PIPE STEEL
* LINE SHAFT C-1045 Steel
SHAFT TUBE —
BOWL SHAFT 416 SS
SHAFT SEAL Mechanical seal
BEARING RETAINER Bronze
* 304 SS. Shaft Sleeve at Bearing Locations.

PUMP BOWL Cast Iron
IMPELLER Bronze
BEARINGS (BOWL) Bronze
BEARINGS (LINE SHAFT) Rubber
STRAINER Galvanized
BOWL W/R —
IMPELLER W/R —

CUSTOMER City of Meridian, Idaho
Well #25

REMARKS
NO. UNITS REQ'D. 1
Base plate welded to
Well casing, - 25"
FLANGE

FLUID WATER
SPEC. GRAVITY 1.0
VISCOSITY —
TEMPERATURE 60° F
PH —

ORDER NO. —
SUPPLIER Pump Tech Co. Inc.
Idaho Falls, Idaho

DWG. NO. —
SERIAL NO. —

Hydro Logic Inc.
Boise, Idaho

DATE 7-14-01

NOT TO BE USED
FOR CONSTRUCTION
UNLESS CERTIFIED

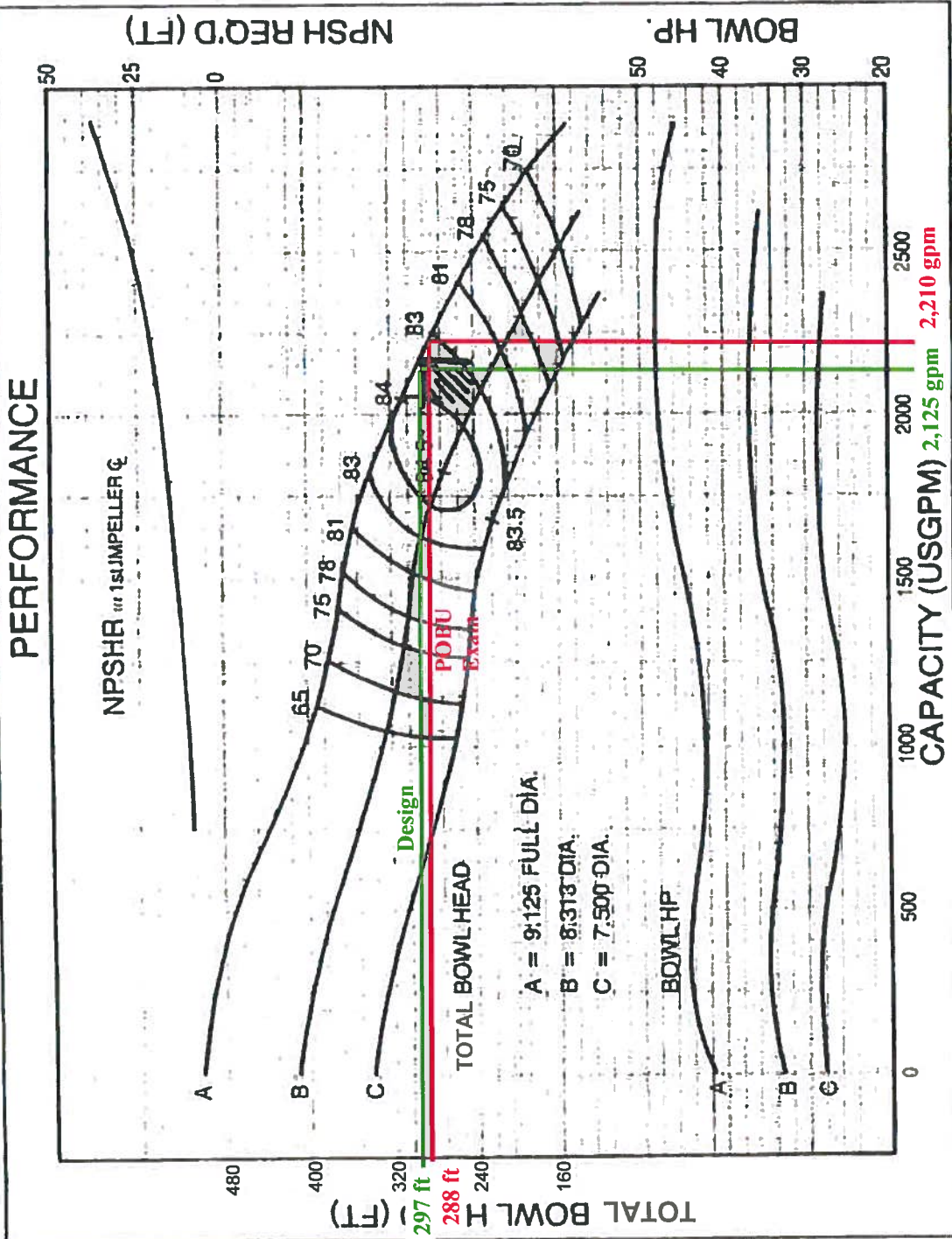
Figure 12.

5/1/96

Pumping plant performance curve at design point for Meridian Supply Well #25

Hydro Logic, Inc.
Boise, Idaho

1770 RPM ENCLOSED TYPE IMPELLER 14DKH



NO. OF STAGES 1
EFF. CHANGE (NO. OF POINTS) -3
-1
-0

HORSEPOWER WILL BE EFFECTED BY CHANGE IN EFFICIENCY

PERFORMANCE FOR:

Bowl Pattern No.: 542434-C-R7
Imp. Pattern No.: 542424-B-R2

PUMP DATA

Shaft Dia. (IN.)	1 15/16
Maximum Sphere (IN.)	1 1/4
Maximum Head (FT.)	767
Min. Submergence (IN.)	24
Impeller Wt. (LBS.)	26.9
Thrust Constant (K)	16.5
Bowl O.D. (IN.)	13 3/8

NOTES

Performance indicated based on cold water with a specific gravity of 1.0.

* Standard construction.

** Minimum submergence over lip of bell to prevent vortexing.

Efficiency improvements are available in certain instances. Please contact the factory.

Figure 13. Original design-point pump performance curve for the Meridian Well #25 line-shaft turbine pump. HL's measurements show the actual installed pump performance is reasonably close to the design point.

Figure 13.

Short-term water levels Measured During Meridian Supply Well #25 Constant-Rate Discharge Test Pumping of Newly Competed Well in 2004, and During Proof of Beneficial Use Field Exam on January 30, 2012

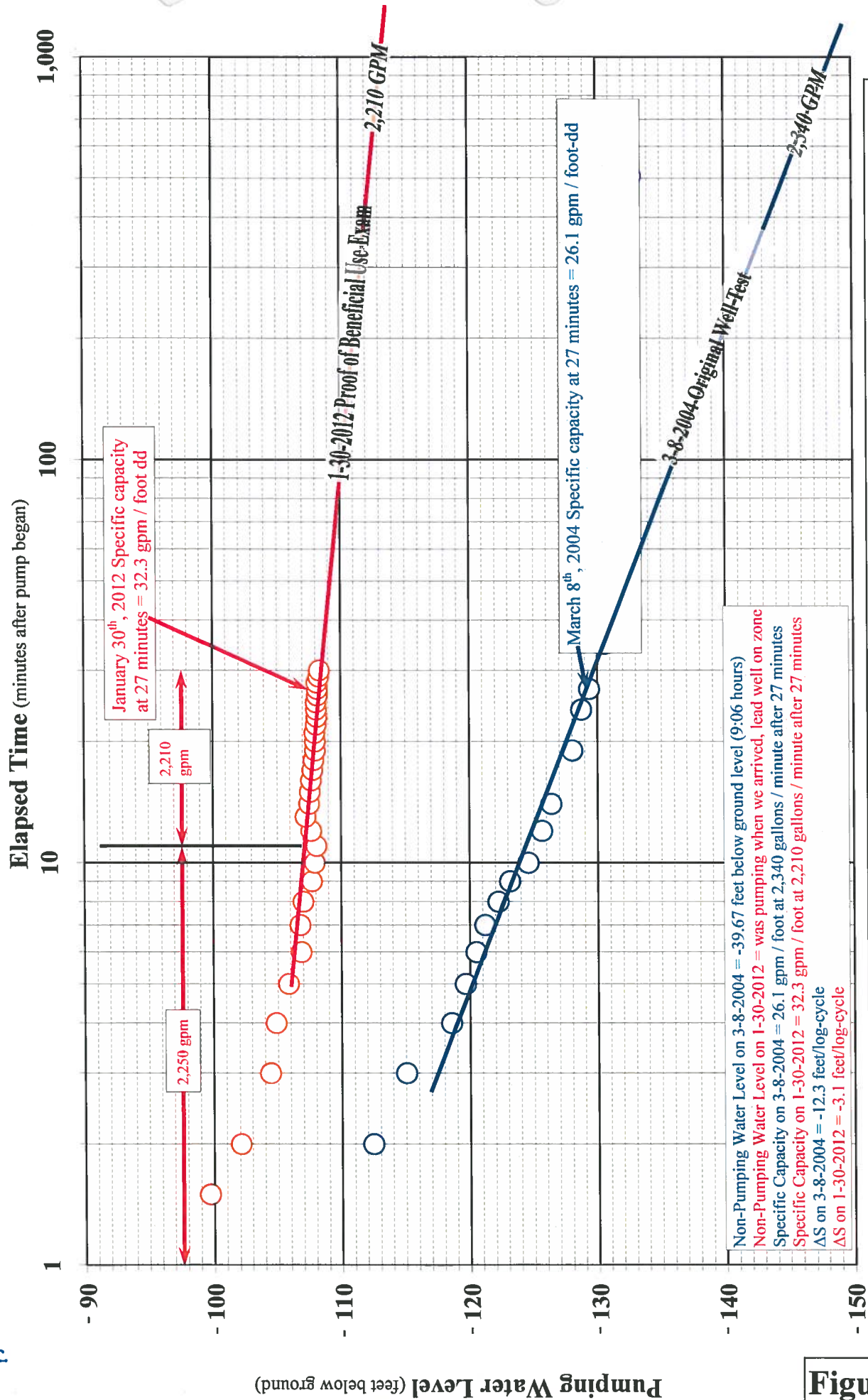
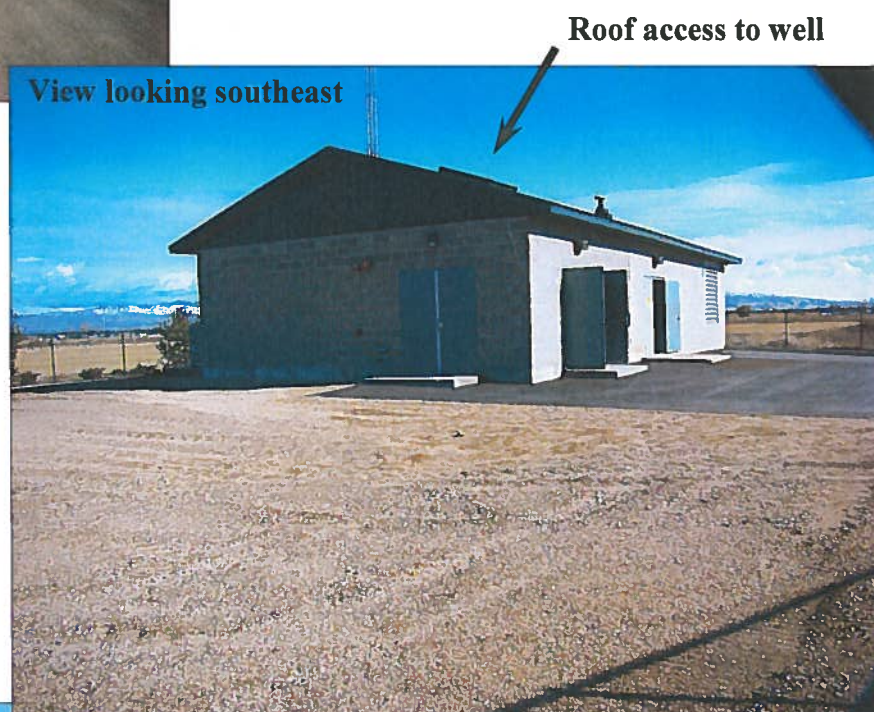


Figure 14. Comparison plots of two short-term hydraulic tests of the Meridian Well #25 at two different diversion rates. Both specific capacities are remarkably high for this productive well, and the POBU exam date shows a 24 percent improvement from original well test.

Figure 14.

Photographs of Meridian #28 Pump/Control/Booster House



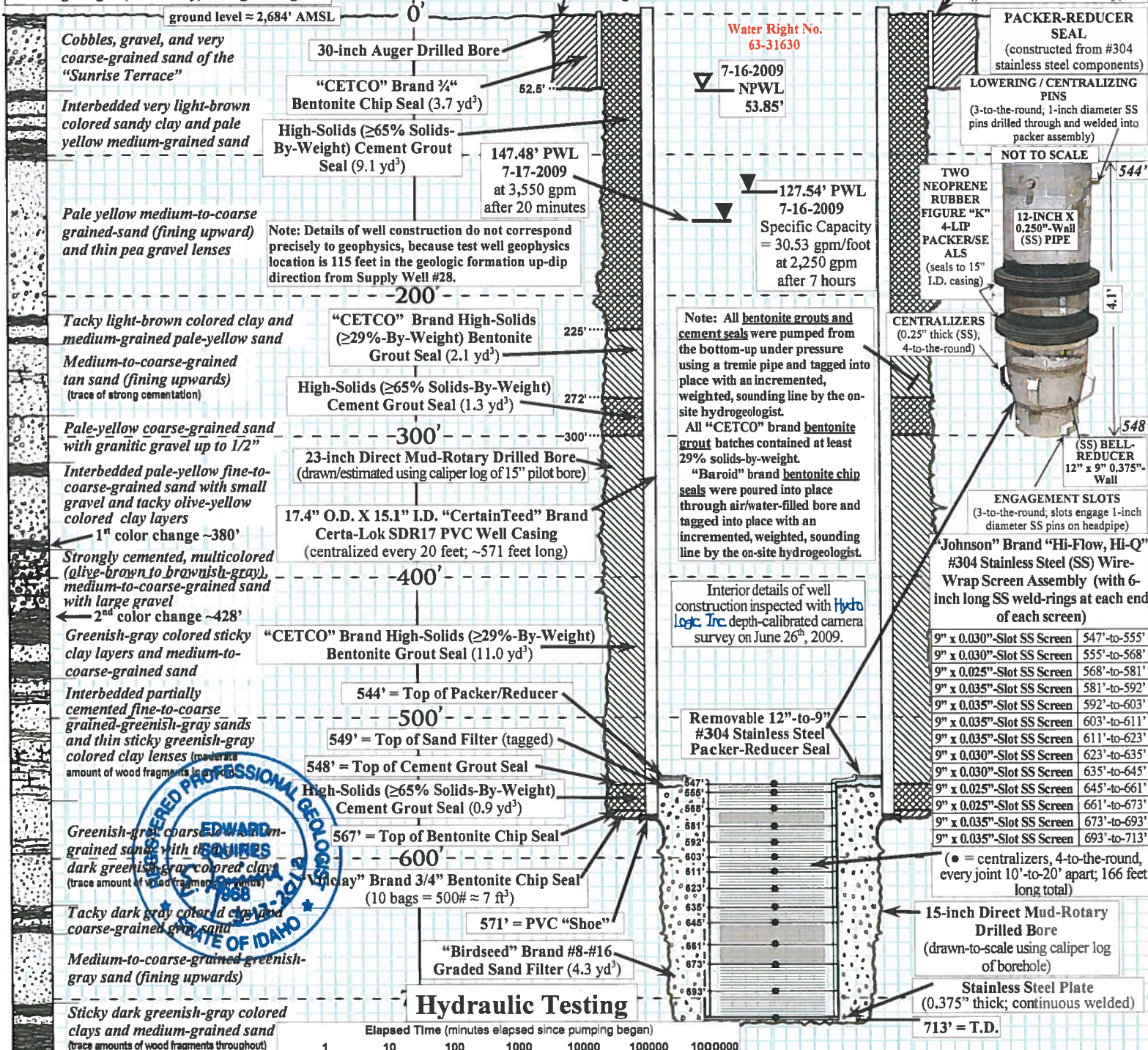
Lithology

Hydro Logic, Inc. lithologic log is interpreted and drawn from geophysical logs and analysis of direct mud-rotary drill cuttings, sampled by the on site geologist (K. Newbry) during drilling.

Depth
(feet below ground level)

As-Built Well Construction

(horizontal scale 0.1"=1" and vertical scale 1"=100')
all measurements to ground level = pumphouse floor



Note: All "Birdseed" Brand graded sand filter were poured into place through mud-filled bore and tagged into place with an incremented, weighted, sounding line by the on-site hydrogeologist. All seal and filter pack material volumes were checked against volumetric calculations of the borehole and pipe(s) sizes and were found to be closely correlated.

Hydro Logic, Inc.

1002 W. Franklin St.
Boise, Idaho 83702
(208) 342-8369
hli@hydrologicinc.net

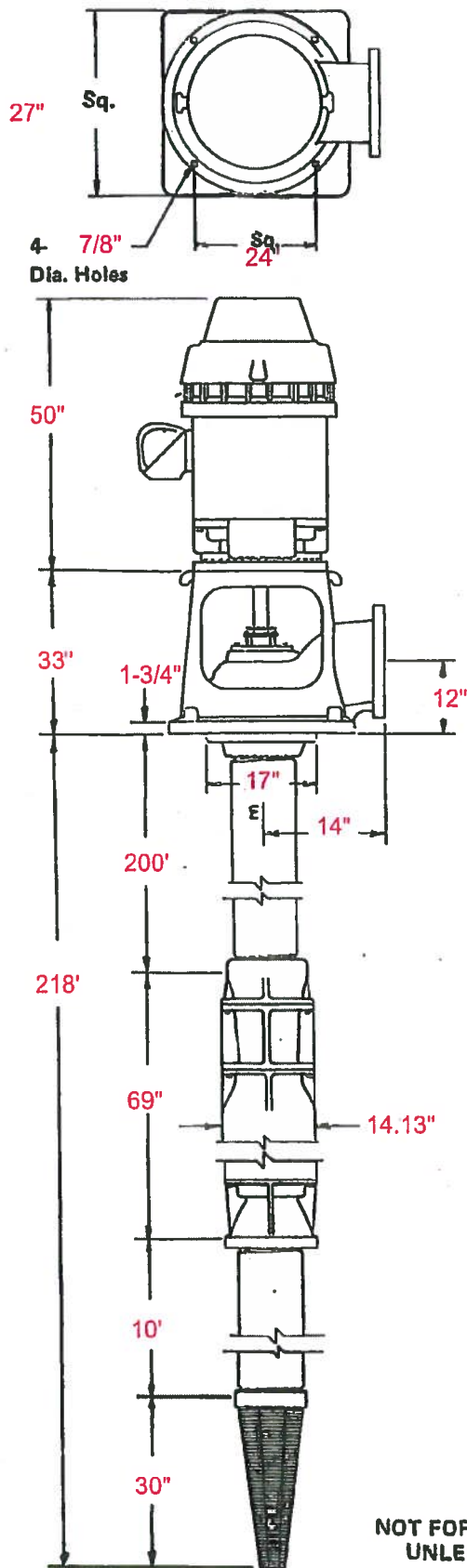
City of Meridian Supply Well #28

T. 3 N. R. 1 E. Section 32, SE 1/4, SW 1/4, NE 1/4
Latitude 43° 33' 14.29" Longitude 116° 21' 38.12"
Well Completed July 2009

Figure 16.

VERTICAL TURBINE PUMP

NATIONAL
pumps



NOT FOR CONSTRUCTION
UNLESS CERTIFIED

MOTOR

250 H. P. 3 Phase 60 Cycle 460 Volts
1800 R. P. M. Mfg. U.S. Motor
 Vertical Hollowshaft Shaft with NRR Coupling.
 Enclosure WP-1 Enclosure, RUSI, Premium Efficient
Frame 445TPA, 1-11/16" NRR

DISCHARGE HEAD

Fab Steel Discharge Head
10 " Discharge Matches 150 # ANSI Dimensions
 Shaft Seal: ☒ Packing Box ☐ Oil Lube

COLUMN

10 " X .279 " Wall Column Pipe
☒ Open Lineshaft ☐ Enclosed Lineshaft
1-11/16 " Dia. Lineshaft
 "Sch. Enclosing Tube

PUMP

4 Stage M14XXHC Bowl Assembly
2000 USGPM @ 394' Ft. T. D. H.
 Suction Pipe: ☒ Yes ☐ No 10' x 10" Size
 Strainer: ☒ Yes ☐ No Cone. Type

MATERIALS

Bowls: Cast Iron Column Pipe Steel
 Impellers Bronze Enclsg. Tube N/A
 Bowl Shaft 416 S.S. Brg. Retainer
 Bowl Brgs. Bronze Lineshaft Brgs. N/A
 Strainer Stainless Steel Lineshaft C1045
Steel Head
Graphite Packing

Customer ALTA INC.
5266 W. State Street
Boise, ID 83703
 Furnished By: PumpTech Co. Inc.
4444 So. Yellowstone Hwy
Idaho Falls, Id 83402
 P. O. No.

Pump Serial No.

GA-3

MFG. BY NATIONAL PUMP CO. GLENDALE, ARIZONA

Dwn. By J.R. Cazier

Date 21-June-2010

Drawing No. 1

Figure 17. Meridian Well No. 28
Pumping Facilities showing the
well pump assembly detail.

Company: PumpTech Co. Inc
 Name: J.R. Cazier
 Date: 6/21/2010

Meridian Well # 28



Pump:

Size: M14XXHC (4 stage)
 Type: VERT.TURBINE
 Synch speed: 1800 rpm
 Curve: CVM14XXH4P6C
 Specific Speeds:
 Dimensions:
 Speed: 1770 rpm
 Dia: 11.07 in
 Impeller:
 Ns: 2315
 Nss: 5172
 Suction: 10 in
 Discharge: 12 in

Search Criteria:

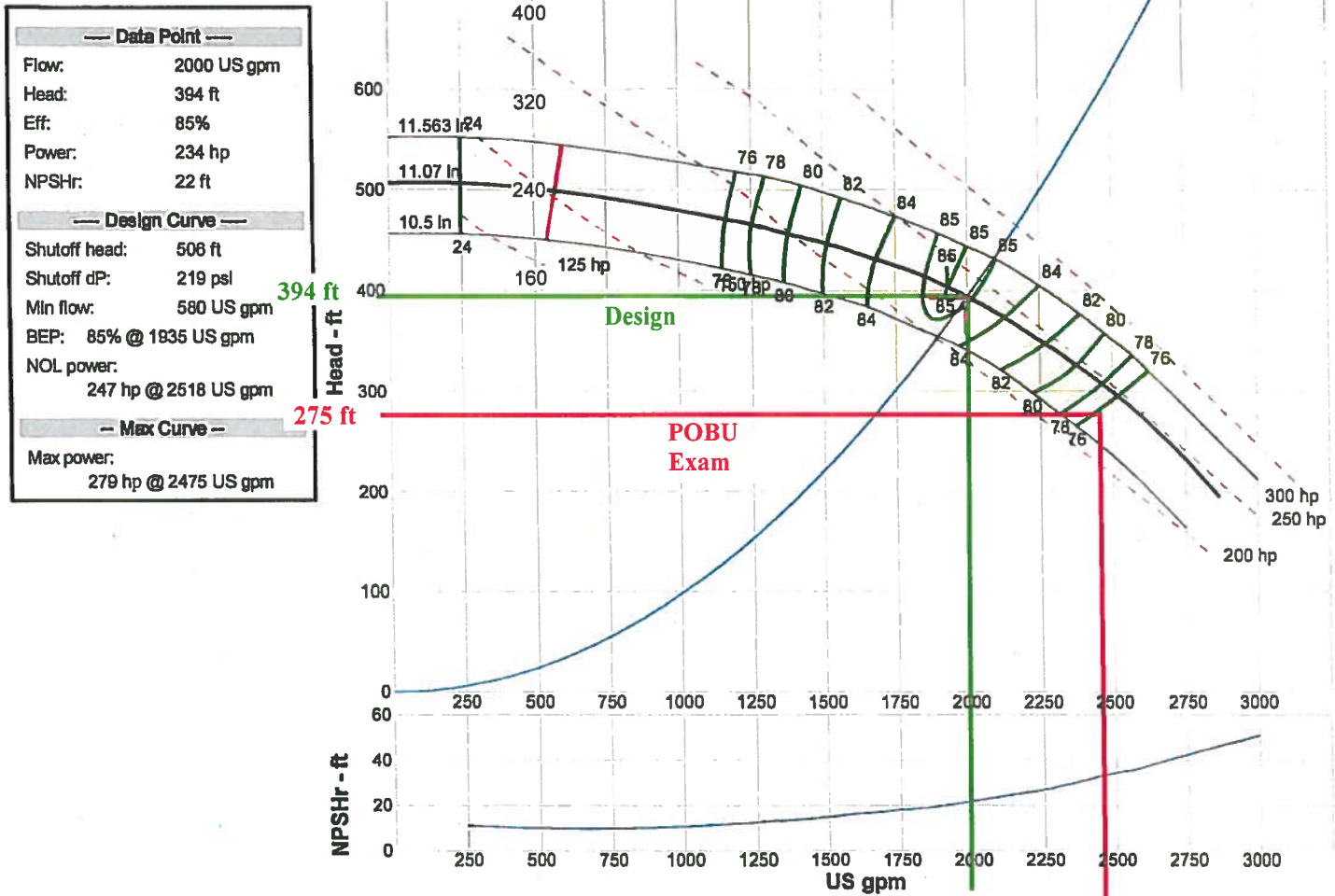
Flow: 2000 US gpm
 Head: 394 ft
 Fluid:
 Water
 SG: 1
 Viscosity: 1.105 cP
 NPSHa: —
 Temperature: 60 °F
 Vapor pressure: 0.2563 psi a
 Atm pressure: 14.7 psi a

Pump Limits:

Temperature: 180 °F
 Pressure: 321 psi g
 Sphere size: 0.84 in
 Power: — 480
 Eye area: 25.4 in²

Motor:

Standard: NEMA
 Enclosure: WP-1
 Sizing criteria: Max Power on Design Curve
 Size: 250 hp
 Speed: 1800
 Frame: 447



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
2400	1770	321	79	245	31.5
2000	1770	394	85	234	22
1600	1770	439	83	213	16.3
1200	1770	469	77	185	12
800	1770	485	55	163	11.6

2,000 gpm 2,479 gpm

Selected from catalog: National Pump Company.60 Vers: 60cy0331

Figure 18. Original design-point pump performance curve for the Meridian Well #28 line-shaft turbine pump. HLI's measurements show the actual installed pump performance does not fall exactly on this curve, most likely due to **wearing of the impeller.**

Short-Term Water Levels Measured During Meridian Supply Well #28 Constant-Rate Discharge Test Pumping of Newly Built Well in 2009, and During Proof of Beneficial Use Field Exam on January 30, 2012

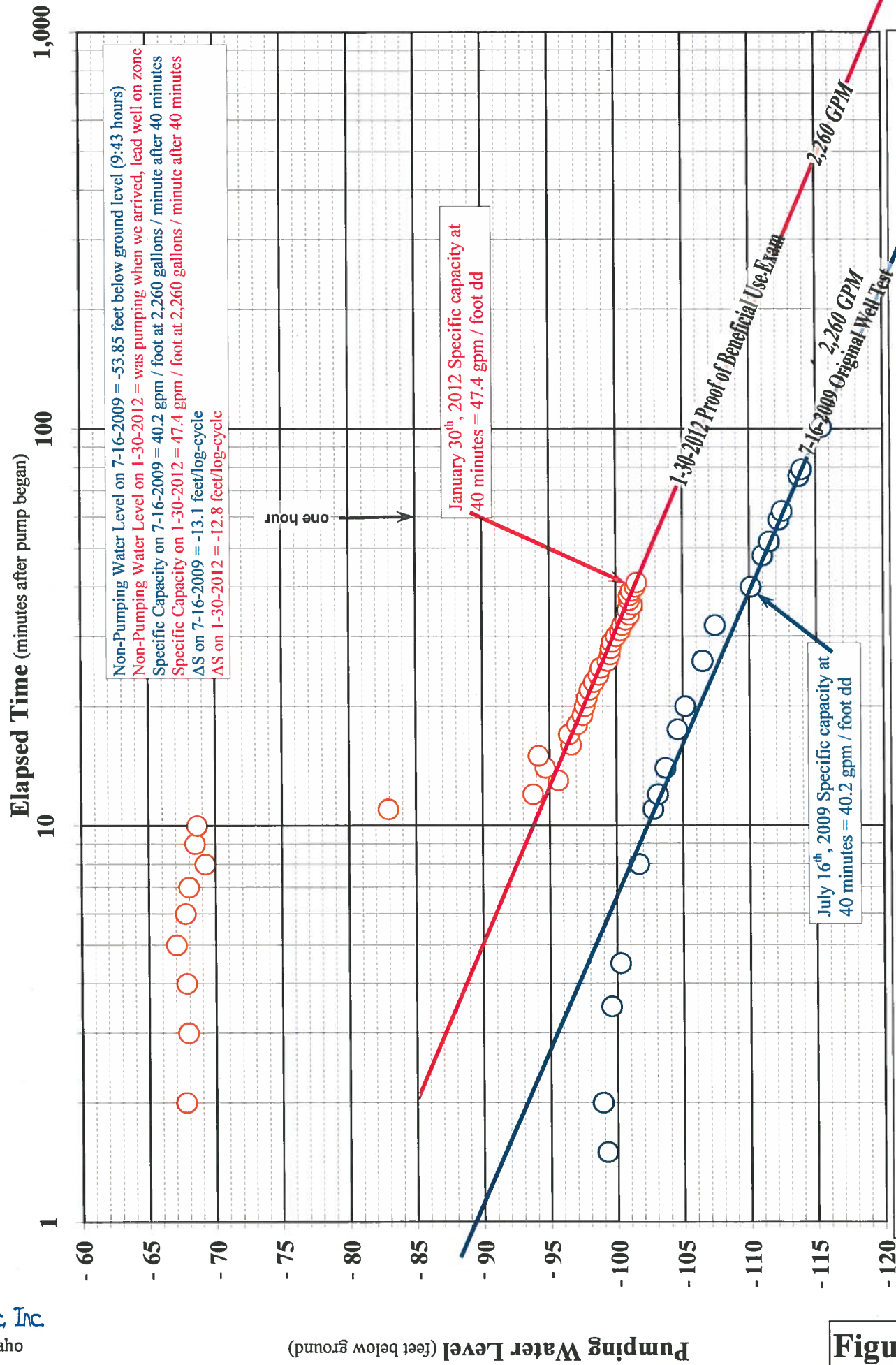
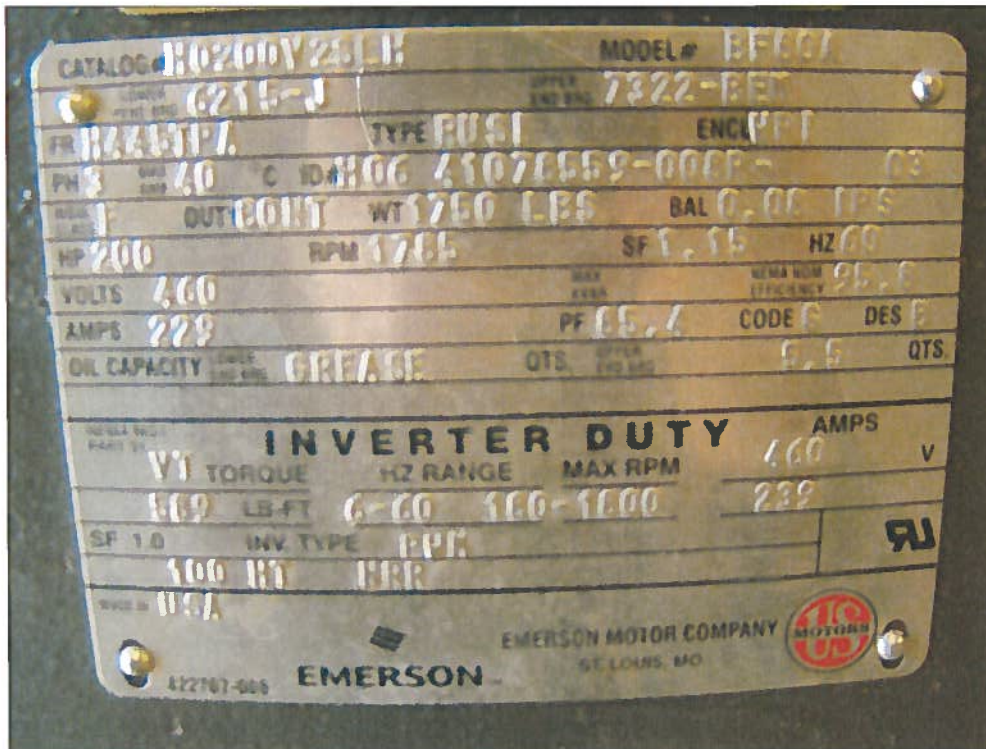


Figure 19. Comparison plots of two short-term hydraulic tests of the Meridian Well #28 at the same diversion rate of 2,260 gpm. Both specific capacities are remarkably high for this productive well, and the POBU exam date shows an 18 percent improvement from the original well test in terms of specific capacity.

Figure 19.

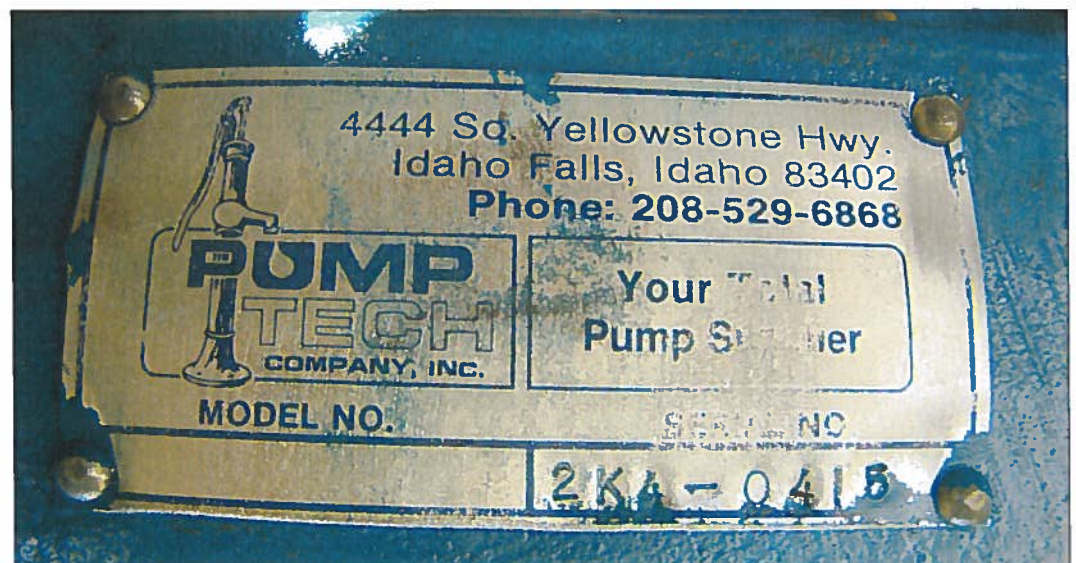
January 30, 2012 Photographs of Motor Plate and IDWR Well Tag



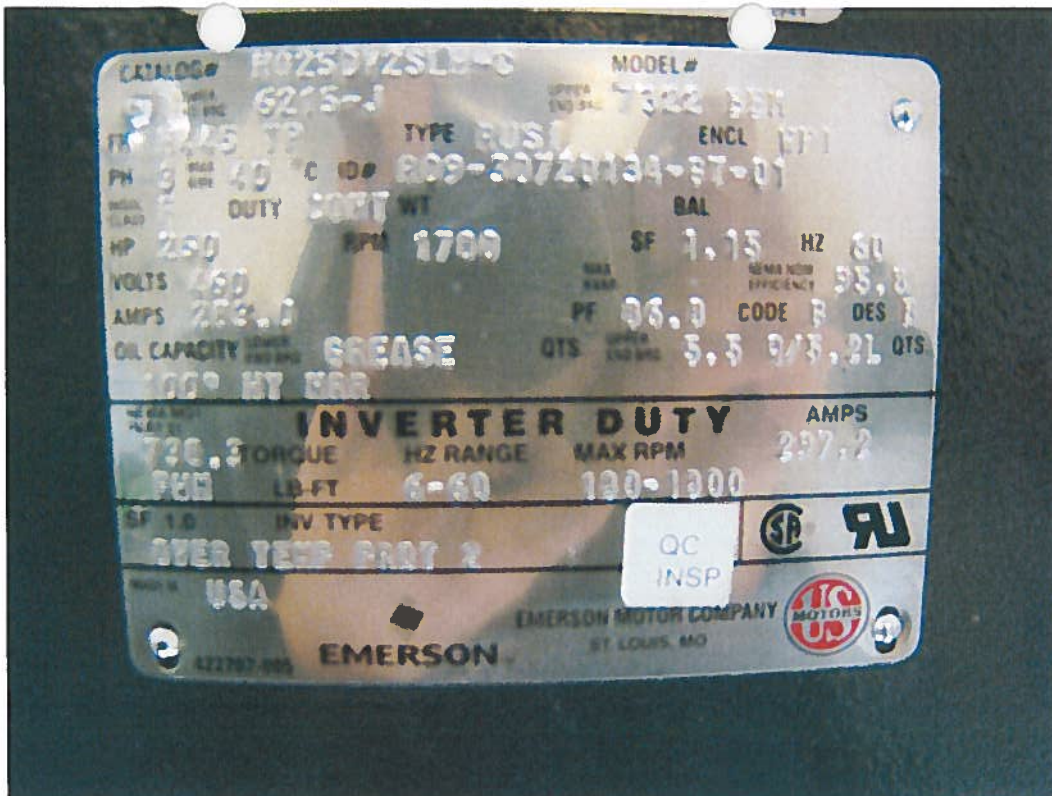
Meridian Well #25 hollow shaft turbine pump motor plate.



Meridian Well #25 IDWR
 Tag D0030863



Meridian Well #25 Pump Serial Number 2KA-0415



Meridian Well #28 hollow shaft turbine pump motor plate.



Meridian Well #25 IDWR Well Tag # D0053548

APPENDICES

Appendix A.

**Installation Requirements for the 10-inch Diameter McCrometer Flow-Meter
Installed in the Well Head Discharge Piping of the City of Meridian Well #25**

**Installation Requirements for the 10-inch Diameter ABB Flow-Meter Installed in the
Well Head Discharge Piping of the City of Meridian Well #28**



MODEL MW500 / MZ500

CONFIGURATION SHEET MAIN LINE FLOWMETER

DESCRIPTION

Model MW500 and MZ500 Main Line Propeller Flowmeters are manufactured to comply with the applicable provisions of the American Water Works Association Standard No. C704-02 for propeller type flowmeters. The model MW500 is designed for a maximum continuous working pressure of up to 150 psi and is fitted with AWWA Class D flanges. The model MZ500 is designed for a continuous working pressure of up to 300 psi and is fitted with ANSI B16.5 Class 300 flanges. The impeller and drive assembly are easily removed through the top flange connection. The meter flow tubes are coated with fusion-bonded epoxy for maximum corrosion protection, and integral flow straightening vanes reduce upstream flow turbulence. As with all McCrometer propeller flowmeters, standard features include a magnetically coupled drive, instantaneous flowrate indicator and straight reading, six-digit totalizer.

Impellers are manufactured of high-impact plastic, capable of retaining their shape and accuracy over the life of the meter. Each impeller is individually calibrated at the factory to accommodate the use of any standard McCrometer

register. The MW500 and MZ500 can be field-serviced without the need for factory recalibration. Factory lubricated, stainless steel bearings are used to support the impeller shaft. The shielded bearing design limits the entry of materials and fluids into the bearing chamber providing maximum bearing protection.

The instantaneous flowrate indicator is standard and available in gallons per minute, cubic feet per second, liters per second and other units. The register is driven by a flexible steel cable encased within a protective vinyl liner. The register housing protects both the register and cable drive system from moisture while allowing clear reading of the flowrate indicator and totalizer.

INSTALLATION

Standard installation is horizontal mount. If the meter is to be mounted in the vertical position, please advise the factory. A straight run of full pipe the length of five diameters ahead and one diameter behind the meter is the minimum normally recommended.



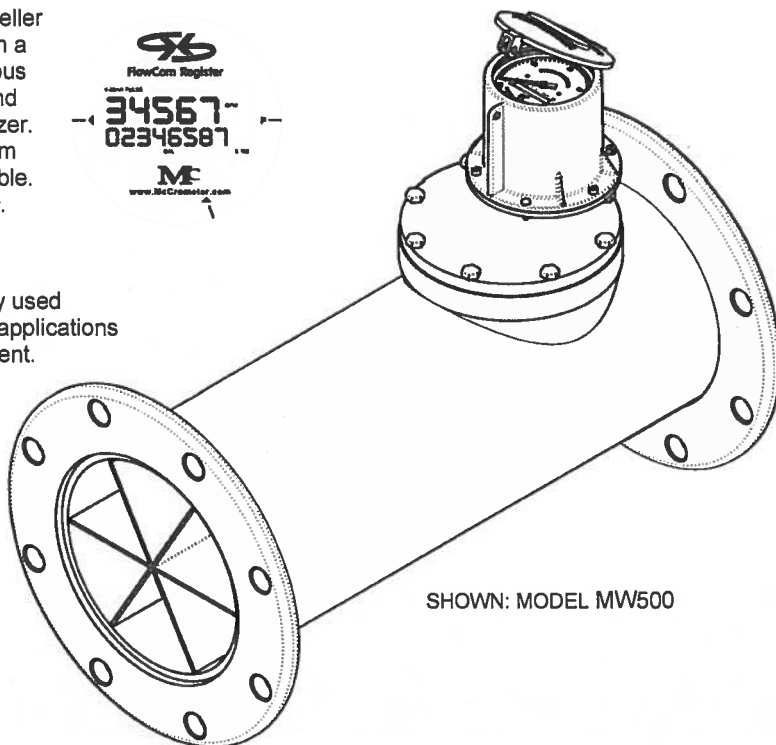
The McCrometer Propeller flowmeter comes with a standard instantaneous flowrate indicator and straight-reading totalizer. An optional FlowCom register is also available.
Typical face plates.



APPLICATIONS

The McCrometer propeller meter is the most widely used flowmeter for municipal and wastewater treatment applications as well as agricultural and turf irrigation measurement. Typical applications include:

- Water and wastewater management
- Center pivot systems
- Sprinkler irrigation systems
- Drip irrigation systems
- Golf course and park water management
- Gravity turnouts from underground pipelines
- Commercial nurseries



SHOWN: MODEL MW500



MAIN LINE FLOWMETER MODEL MW500 / MZ500

SPECIFICATIONS

PERFORMANCE

ACCURACY: ±2% of reading guaranteed throughout range.

RANGE: See dimensions chart below

HEAD LOSS: See dimensions chart below

MAXIMUM TEMPERATURE: (Standard Construction)
160°F constant

PRESSURE RATING: Model MW500: 150 psi
Model MZ500: 300 psi

MATERIALS

BEARING ASSEMBLY: Impeller shaft is 316 stainless steel.
Ball bearings are 440C stainless steel.

MAGNETS: (Permanent type) Cast or sintered Alnico

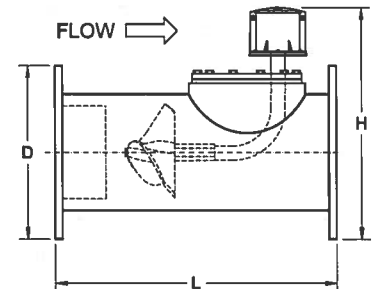
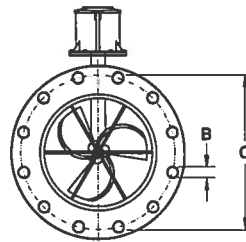
BEARING HOUSING: Brass; Stainless Steel optional

REGISTER: An instantaneous flowrate indicator and six-digit straight-reading totalizer are standard. The register is hermetically sealed within a die cast aluminum case. This protective housing includes a domed acrylic lens and hinged cover with locking hasp.

IMPELLER: Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter. High temperature impeller is optional.

OPTIONS

- International flange standards available
- Other than standard laying lengths available
- Register extensions available
- Forward/reverse flow measurement
- All stainless steel construction
- High temperature construction
- "Over Run" bearing assembly for higher-than-normal flowrates
- Electronic propeller meter available in all sizes of this model
- A complete line of flow recording/control instrumentation
- Certified calibration test results



McCROMETER reserves the right to change design or specifications without notice.

MW500/MZ500	DIMENSIONS														
Meter and Nominal Pipe Size	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	30	36
Maximum Flow U.S. GPM	250	250	250	600	1200	1500	1800	2500	3000	4000	5000	6000	8500	12,500	17,000
Minimum Flow U.S. GPM	40	40	40	50	90	100	125	150	250	275	400	475	700	1200	1500
Approx. Head Loss in Inches at Max. Flow	29.50	29.50	29.50	23.00	17.00	6.75	3.75	2.75	2.00	1.75	1.50	1.25	1.00	1.00	1.00
MW500															
Approx. Shipping Weight-lbs.	36	36	43	54	115	135	197	325	465	530	744	890	1,293	1450	1650
B (Inches)	3/4	3/4	3/4	3/4	7/8	7/8	1	1 1/8	1 1/8	1 1/8	1 1/4	1 1/4	1 3/8	1 3/8	1 5/8
C (Inches)	4 3/4	5 1/2	6	7 1/2	9 1/2	11 3/4	14 1/4	17	18 3/4	21 1/4	22 3/4	25	29 1/2	36	42 3/4
D (Inches)	6	7	7 1/2	9	11	13 1/2	16	19	21	23 1/2	25	27 1/2	32	38 3/4	46
H (Inches)	11 3/4	12 1/4	12 1/2	15 1/4	16 1/4	18 1/2	21 3/4	24 1/4	25 1/4	28 1/2	29 1/4	32 1/2	36 3/4	42 3/4	49 1/4
L (Inches)	14	16	16	20	22	24	26	28	42	48	54	60	60	60	60
No. of Bolts per Flange	4	4	4	8	8	8	12	12	12	16	16	20	20	28	32
No. of Topplate Bolts	6	6	6	6	8	8	12	12	12	12	16	16	16	16	16
MZ500															
Approx. Shipping Weight-lbs.	50	55	62	90	145	220	340	430	650	820	1,315	1,508	2,165		
B (Inches)	3/4	7/8	7/8	7/8	7/8	1	1 1/8	1 1/4	1 1/4	1 3/8	1 3/8	1 3/8	1 5/8		
C (Inches)	5	5 7/8	6 5/8	7 7/8	10 5/8	13	15 1/4	17 3/4	20 1/4	22 1/2	24 3/4	27	32		
D (Inches)	6 1/2	7 1/2	8 1/4	10	12 1/2	15	17 1/2	20 1/2	23	25 1/2	28	30 1/2	36		
H (Inches)	12	12 1/2	12 7/8	15 3/4	17	19 1/4	22 1/2	25	26 1/4	29 1/2	32 3/4	34	38 3/4		
L (Inches)	20	20	20	24	26	28	30	32	42	48	54	60	60		
No. of Bolts per Flange	8	8	8	8	12	12	16	16	20	20	24	24	24		

Note: Flanges meet ASTM-A-181 specs. Larger flowmeters on special order.

REPRESENTED BY:

Electro-Magnetic Flowmeters
Electromagnetic Sensor
MagMaster™ Plus MFF

- **Unrivalled, fully traceable flow performance**
 - 0.15% accuracy
- **Operable flow range: 1500:1**
 - insures more precise revenue measurement
 - superior control of process
 - accurate night-flow measurement
- **Bi-directional system.**
- **Pulsed DC technology incorporates benefits of AC systems.**
- **Submersible and buriable**
 - inherently suitable for use in flooded environments
 - eliminates meter vaults and promotes very low installation costs
- **Designed, manufactured and calibrated to internationally accepted standards**
 - ISO 9001/NAMAS/NIST/NATA
 - insures reliable, maintenance-free operation
- **2-year warranty as standard**
- **Built-in grounding electrode**
 - eliminates requirement for grounding rings
- **8 to 84 inch (200 to 2200 mm) meter sizes. Larger upon request.**
- **CalMaster enabled product.**

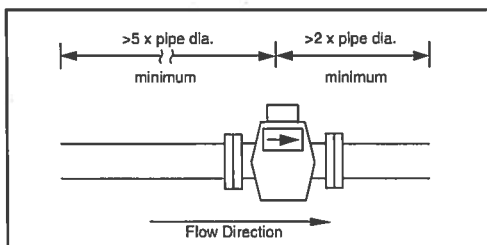


MagMaster Plus MFF
Electromagnetic Sensor

Recommended Mating Pipe Conditions:

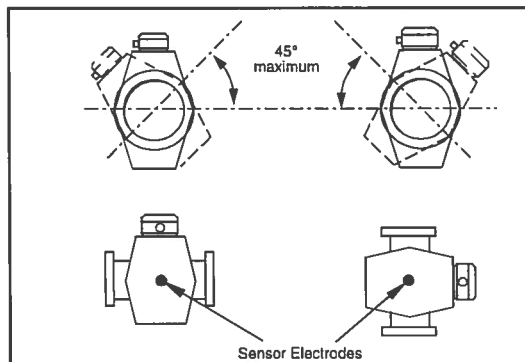
Upstream: 5 to 10 diameters straight pipe depending on performance requirements and upstream disturbance.

Downstream: 2 to 3 diameters straight pipe depending on performance requirements and downstream disturbances.



Mounting:

Directly into pipeline at any attitude. Electrodes can not be in vertical plane. Flow must be up if installed in a vertical pipe.

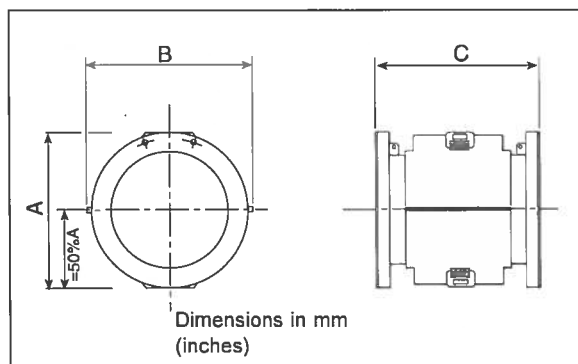


Transmitter/Sensor Separation: < 328ft (100m)

SENSOR DIMENSIONS (nominal)

200 to 600 mm (8 to 24in) ANSI Class 150 Flanges

Meter Size mm (in)	Dimensions mm (in)			Approx. Weight	
	A	B	C (with liners)	kg	lb
200 (8)	396 (15.6)	402 (15.8)	350 (13.8)	37	81
250 (10)	430 (16.9)	440 (17.3)	450 (17.7)	60	132
300 (12)	461 (18.1)	480 (18.9)	500 (19.7)	70	154
350 (14)	513 (20.2)	520 (20.5)	550 (21.7)	100	220
400 (16)	570 (22.4)	576 (22.7)	600 (23.6)	115	253
450 (18)	632 (24.9)	627 (24.7)	698 (27.5)	160	352
500 (20)	686 (27.0)	679 (26.7)	768 (30.2)	217	455
600 (24)	772 (30.4)	770 (30.3)	918 (36.1)	315	693



End Mating Connections:

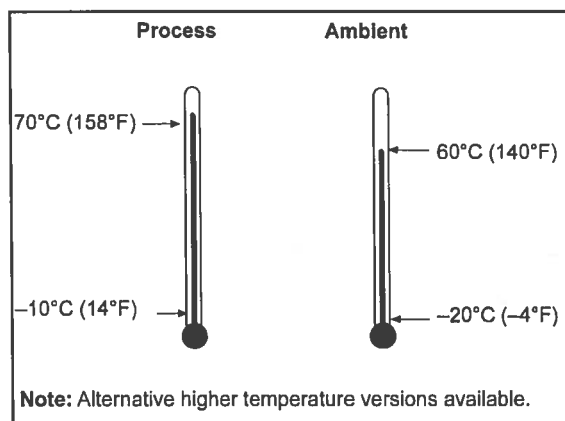
ANSI Class 150 (≤ 24 inch)

ANSI Class 300 (≤ 24 inch)

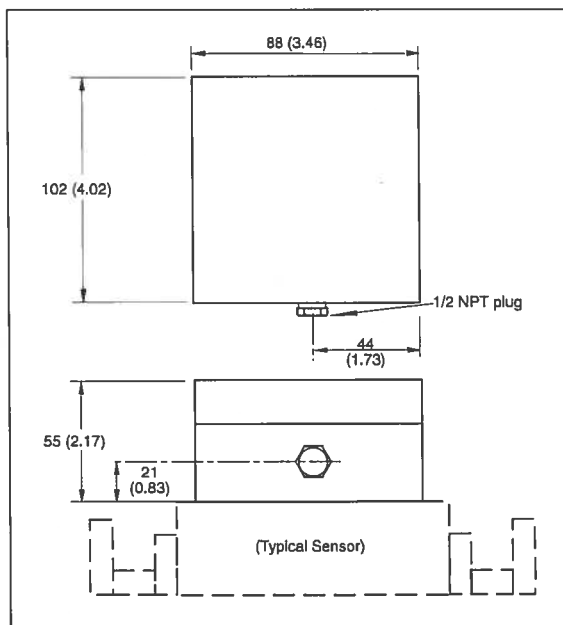
AWWA Class B

AWWA Class D

Temperature Ranges:



TERMINAL BOX DIMENSIONS (Mounted on Sensor)



Appendix B.

**Miscellaneous Field Notes and Calculations from the Proof of Beneficial Use Field
Licensing Examination for City of Meridian water right No. 63-31630.**

MERIDIAN SUPPLY WELL #25

PROOF OF BENEFICIAL USE CALCULATIONS

Non-Pumping Water Level (NPWL)

3-8-2004

-39.67 FEET BGLSPECIFIC CAPACITIES FOR WELL #25

1-30-2012 2,210 gpm, 27 minutes, 68.45 FEET OF DRAWDOWN *
 (* ASSUMING NPWL OF -39.67 FEET)

$$2,210 \text{ gpm} / 68.45 \text{ ft} = \underline{30.29 \text{ gpm/ft dd}}$$

3-8-2004 2,340 gpm, 27 minutes, 89.66 FEET OF DRAWDOWN

$$2,340 \text{ gpm} / 89.66 \text{ ft} = \underline{26.10 \text{ gpm/ft dd}}$$

TOTAL DYNAMIC HEAD

2,210 gpm @ 60 psi @ PWL = 110.98 BMP ON 1-30-2012

$$60 \text{ psi} \times 2.31 \text{ feet/psi} = 138.6 \text{ feet}$$

$$+ 110.98 \text{ feet PWL}$$

$$\underline{249.58 \text{ feet TDH @ 2,210 gpm}}$$

PUMPING WATER LEVEL AT 2,210 gpm AT SPECIFIC CAPACITY OF 30.29 gpm/ft dd

$$2,210 \text{ gpm} \div 30.29 \text{ gpm/ft dd} = 72.96 \text{ ft dd}$$

$$\therefore \text{PUMPING WATER LEVEL AT 2,210 gpm} = 72.96 \text{ ft dd} + 39.67' = \underline{112.63 \text{ ft}}$$

TDH FROM PUMP PERFORMANCE CURVE = 250 feet

$$\text{SYSTEM PRESSURE AVAILABLE} = 250 \text{ feet} - 112.63 \text{ feet} = 137.4 \text{ feet}$$

$$137.4 \text{ feet} \div 2.31 \text{ ft/psi} \approx 59.5 \text{ psi}$$

THEREFORE THE 2,210 gpm DIVERSION RATE RECORDED ON JANUARY 30, 2012 IS SUBSTANTIATED.

CALCULATIONS AND DESIGN DATA

PREPARED BY L. Pearson

SUBJECT

Meridian Supply Well #25

DATE

1-30-2012

Proof of Beneficial Use Field Exam

SHEET

1

OF

4

onsite 9:41 hrs Tracy Ballantyne is here and has the building open

Well #25 is the lead well for this Zone #4

Well Location

43° 34' 31.5"

116° 21' 37.5"

well is 8' north

- For the test pumping we will discharge part of the flow to the flush-line, so that we don't over-pressurize the distribution system.
- No Known Known water chemistry issues except for uranium.
 - Uranium has typically been around 24 µg/L
- Pump house floor is sloped to center of room where there is a 4" drain
- Pump house is heated and air conditioned
- Pump house can also be ventilated with powered fan and automatic louvred vents

11:39 hrs offsite

CALCULATIONS AND DESIGN DATA

PREPARED BY C PARKER

SUBJECT

ROBU FIBER EXAM HIER SW #25

DATE 30 Jan 2012

SHEET 3 OF 4

EMERSON MOTOR COMPANY
 CATALOG # 402.00Y2SLH
 MODEL BF80A
 FR H445TPA TYPE RUS1 LENC1 HP1
 PH 3 MAX 40°C 10# 406 41078559-008R-03
 HP 200 RPM 1785 SF 1.15 1/2 60
 Volts 460 AMPS 229 PF 85.4 CODE 6 OVS B

PUMP TECH CO. INC
 MODEL #
 SERIAL # 2KA-0415

3" PORT ACCESS
 TO WELL ON
 OPPOSITE SIDE
 HP 2.2' ABOVE PUMP
 HOUSE FLOOR

PRV VALVE

CLOW KENNEDY
 SWINGING ARM
 CHECK VALVE
 10" 200W

EYE-WASH
 STATION

SODIUM HYPOCHLORATE
 INJECTION PORT

NOSHOK
 TRANSMITTER
 0-100 PSI
 4-20 mA
 10-30 VDC

100-100-2-1-2-7
 + SUPPLY 1
 + OUTPUT 2

DIGITAL PRESSURE MONITOR

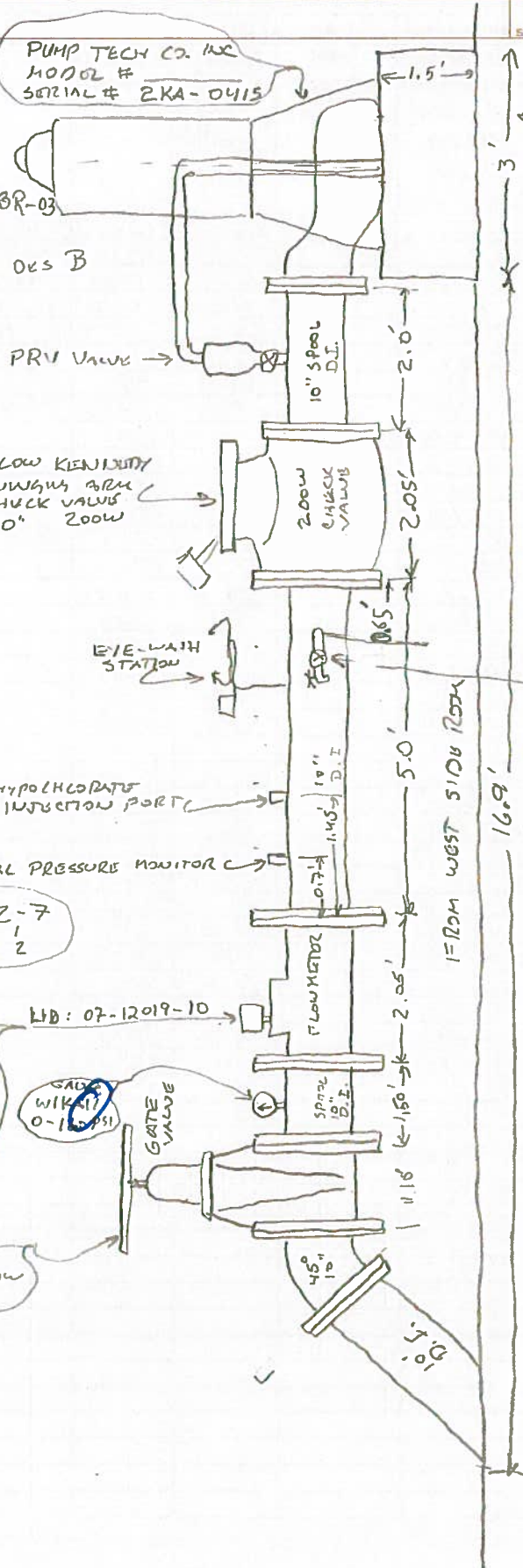
MC CROMETER
 MODEL # E7000-000
 ELEC. SERIAL # E07-03046
 METER SERIAL # 07-12019
 FULL SCALE 20-A: 3000 GPM
 TOTALIZER: N/A
 11/28/2007 690.00 RPM FS
 3225 W STETSON AVE
 HEMET, CA 92343 451
 PH (951) 652-6811

WID: 07-12019-10

GATE
 WIKIPI
 0-100 PSI

GATE
 VALVE

10 KENNEDY
 K.S. - RW 200W
 GATE VALVE



MERIDIAN SUPPLY Well #28

PROOF OF BENEFICIAL USE CALCULATIONS

Now Pumping Water Level (NPWL)7-16-2009 -53.85 FEET BGLSPECIFIC CAPACITIES FOR Well #28

1-30-2012 2,260 gpm, 40 minutes, 47.61 feet DD*

(* ASSUMING NPWL OF -53.85 FEET)

$$2,260 \text{ gpm} / 47.61 \text{ feet} = \underline{47.4 \text{ gpm/ft dd}}$$

7-16-2009 2,260 gpm, 40 minutes, 56.26 feet DD

$$2,260 \text{ gpm} / 56.26 \text{ feet} = \underline{40.2 \text{ gpm/ft dd}}$$

TOTAL DYNAMIC HEAD

OBSERVED 2,260 gpm, 60 psi, PWL 104.13' BHP @ 54.7 Hz on 1-30-2012

$$RPM_{\text{max}} = 1,800 \text{ RPM} / 60 \text{ Hz} = 30 \text{ RPM/Hz}$$

$$54.7 \text{ Hz} \times 30 \text{ RPM/Hz} = 1,641 \text{ RPM}$$

$$GPM \Rightarrow GPM_{\text{OBS}} = GPM_{\text{FULL SPEED}} \times \left(\frac{\text{OBS RPM}}{\text{MAX RPM}} \right)$$

REARRANGE EQUATION

$$\begin{aligned} GPM_{\text{FULL SPEED}} &= GPM_{\text{OBS}} \times \left(\frac{\text{MAX RPM}}{\text{OBS RPM}} \right) \\ &= 2,260 \text{ gpm} \times \left(\frac{1,800 \text{ RPM}}{1,641 \text{ RPM}} \right) = \underline{2,479 \text{ gpm}} \end{aligned}$$

$$\text{HEAD} \Rightarrow \text{HEAD}_{\text{OBS}} = \text{HEAD}_{\text{MAX SPEED}} \times \left(\frac{\text{OBS RPM}}{\text{MAX RPM}} \right)^2$$

REARRANGE EQUATION

$$\begin{aligned} \text{HEAD}_{\text{MAX SPEED}} &= \text{HEAD}_{\text{OBS}} \times \left(\frac{\text{MAX RPM}}{\text{OBS RPM}} \right)^2 \\ &= 60 \text{ psi} \times \left(\frac{1,800 \text{ RPM}}{1,641 \text{ RPM}} \right)^2 = \underline{72 \text{ psi}} \end{aligned}$$

SUBJECT

MERIDIAN SUPPLY WELL #28

DATE

PROOF OF BENEFICIAL USE CALCULATIONS

SHEET 2 OF 2

CHANGE w PWL FROM 2260 gpm to 2479 gpm

$$(2479 \text{ gpm} - 2260 \text{ gpm}) / 47.4 \text{ gpm / ft dd}$$

= 4.6 feet ADDITIONAL DD

$$\text{PWL @ 2260 gpm} = 104.134 \text{ BGL} \\ + 4.6 \text{ feet}$$

$$\underline{108.73 \text{ feet}} \text{ PWL}_{2479}$$

2,476 gpm @ 72 psi @ 108.73 feet PWL

$$72 \text{ psi} \times 2.31 \text{ ft/psi} = 166.32 \text{ feet}$$

$$\underline{108.73 \text{ feet}} \\ 275.05 \text{ feet TDH @ FULL SPEED}$$

TDH on CURVE = 275 feet

$$\text{SYSTEM PRESSURE: } 275 - 108.73 \text{ feet} = 166.27 \text{ feet}$$

$$166.27 \text{ feet} \div 2.31 \text{ ft/psi} = \underline{72 \text{ psi}}$$

THEFORE THE OBSERVATION 2,260 gpm @ 54.7 Hz @ 60 psi
 RECALCULATED TO FULL SPEED 2,479 gpm @ 60 Hz @ 72 psi
 FROM JANUARY 30, 2012 TEST IS SUBSTANTIATED

CALCULATIONS AND DESIGN DATA

PREPARED BY L. Pearson

SUBJECT Meridian Supply Well #28

DATE 1-30-2012

Proof of Beneficial Use Field Exam

SHEET 1 OF 4

onsite 11:46hrs Tracy Ballantyne is opening pump house.

Well Location
N 43° 33' 14.5"
W 116° 21' 38.1"
Well is ~12' north

• Well #28 was running at 400 gpm when we arrived

• Well #28 pumps primarily to Zone #4 and part of this flow is pumped up the hill to small subdivision (Zone #5)

• This well site also has a booster station that pumps water up the hill to Zone #5

- The booster station utilizes a 5-HP pump to supply the domestic needs of Zone #5 (no VFD; on at all times)
- The booster station also has two 100-HP pumps for fire flow conditions in Zone #5 (controlled by two VFDs)

• This pump house has a heater and air conditioning

• The floor of the pump house is sloped to the center where there is a 4-inch floor drain

• There is a 6" flush-line installed, but it is not useable.

- The flush-line will become useable when a vault and drain line are installed to the canal

13:01hrs Tracy has called in to the office and then turn off Well #25 to increase our flow at Meridian #28

13:09hrs Tracy called in again to see if wells other than #28 are pumping into zone.

- All wells are off except Well #28

13:12hrs Opened fire-hydrant to increase flow

- The most flow we achieved by turning off wells was 950 gpm

13:14hrs flow was surpassing the 2,250 gpm, so we used the 10" gate-valve to control the flow to ~2,250 gpm

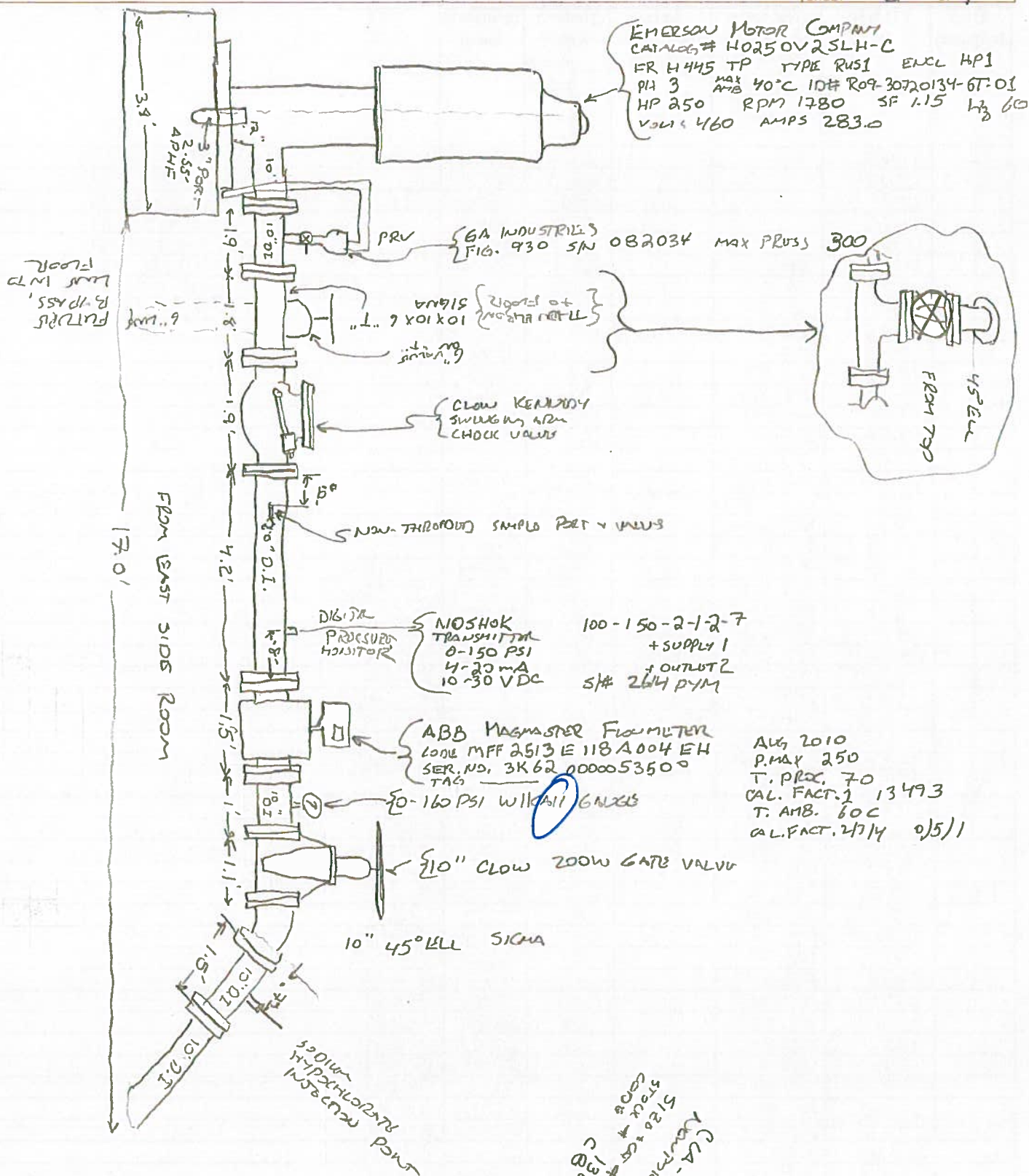
13:54hrs off site

SUBJECT

POBU FIELD EXAM Mon 5/14/28

DATE 30 Jan 2012

SHEET 3 OF 7



CA-VOL
5128
5128 + CA
5008
C 136-6
136-03-8426
Buck CA
136-03-8426

Appendix C.

**Permit to Appropriate Water No. 63-31630
Proof of Beneficial Use for Permit No. 63-31630**

State of Idaho
Department of Water Resources
Amendment of Permit

NO. 63-31630

Priority: March 11, 2003

Maximum Diversion Rate: 5.00 CFS

This is to certify, that CITY OF MERIDIAN
33 E BROADWAY AVE
MERIDIAN ID 83642-2619

has applied for an amendment of a permit and the amendment is APPROVED for development of water as follows:

Source: GROUND WATER

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>
MUNICIPAL	01/01 to 12/31	5.00 CFS

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER	SW1/4NE1/4	Sec. 32, Twp 03N, Rge 01E, B.M., ADA County
GROUND WATER	NE1/4NW1/4NE1/4	Sec. 29, Twp 03N, Rge 01E, B.M., ADA County

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **May 01, 2013**.
2. Subject to all prior water rights.
3. 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.
4. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
5. 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 use power records to determine the amount of water diverted and shall annually report the information to the Department.
6. 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.
7. 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.
8. Place of use is within the service area of the City of Meridian municipal water supply system as provided for under Idaho Law.

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9. The right holder shall extend unperforated surface casing from land surface to a confining layer directly overlying the top of the aquifer open to the wells.
10. The wells proposed as points of diversion for this right shall be constructed with a surface casing that shall not, under any discovered (during drilling) circumstances, be less than 200 feet in depth.
11. The wells proposed as points of diversion for this right shall be sealed by the emplacement of a continuous (full-depth) surface seal consisting of low-permeability grout or chip bentonite within the annular space between the open drilled hole and the surface casing.
12. Water bearing zone to be appropriated is 300 to 900 feet.

This amendment of permit is issued pursuant to the provisions of Section 42-211, Idaho Code. Witness the signature of the Director, affixed at Boise, this 7th day of May, 2009.


JOHN WESTRA, Western Regional Manager