

STATE 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 INFORMATION1. Owner: Idaho Department of CorrectionPermit No. 63-12296Phone No. 658-2000Current Address: 1299 N. Orchard Street, Suite 110, Boise, Idaho 837062. Examiner's name: Edward Squires EXAM DATE : October 13, 2011 and several other dates described below3. Accompanied by: L. Pearson (HLI), R. Ward (ICC), M. Volk (IDOC) Email mvolk@idoc.idaho.govAddress: 1299 N. Orchard Street, Suite 110, Boise, Idaho 83706Relationship to Permit Holder: IDOC Building Operations Manager Phone No. (208) 658-20004. Source: Ground Water tributary to _____**B. OVERLAP REVIEW**1. Other water rights with the same place of use: 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297, 63-302982. Other water rights with the same point of diversion: 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297, 63-30298**C. DIVERSION AND DELIVERY SYSTEM****1. Point(s) of Diversion:**

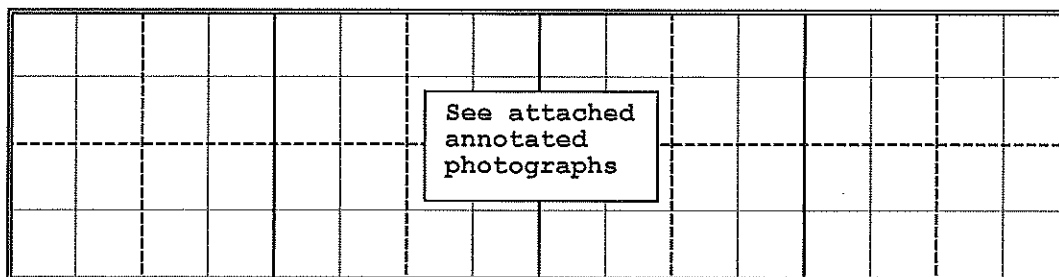
Ident. No.	Govt Lot	¼	¼	¼	Sec	Twp.	Rge.	County	Method of Determination/Remarks
Well #7			SE	NE	32	2N	2E	Ada	Site visit, USGS map, & GPS
Well #8			NE	NE	32	2N	2E	Ada	Site visit, USGS map, & GPS
Well #3B			SW	SW	29	2N	2E	Ada	Site visit, USGS map, & GPS

2. Place(s) of Use: Permissible Place of Use Indicate Method of Determination SRBA, Transfer No. 67055, Permit No. 63-12296

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
						The place of use is within the boundaries of the state prison facilities													

The place of use is within the boundaries of the state prison facilities

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.



Scale: 1" = _____

- ☒ Copy of USGS Quadrangle Attached showing location(s) of point(s) of diversion and place(s) of use. (Figure 1).
☒ Aerial Photo Attached (required for irrigation of 10+ acres). (Figure 2)
☒ Photos of Diversion and System Attached (Figures 3-20)

4.

Well or Diversion Identification No.*	Motor Make	HP	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well #3-B	Wood Group ESP	350-400	1HB2D16045	Goulds 11CHC	SN = 580578
Well #7	Hitachi	200	Not known	Goulds 12 CHC	8-inch
Well #8	Hitachi	200	Not known	Goulds 10RJHC	6-inch

*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 #8 Flow-Meter	Impeller	Sensus	W-3500	1558270	8-inch	Sept. 10, 1998
Well #7 Flow-Meter	Impeller	Sensus	W-2000	1558047	6-inch	Sept. 1, 1998
Well #3-B Flow-Meter	Impeller	Water Specialties	ML03-12	884863	12-inch	Sept. 2, 1988

2. **Measurements** The discharge measurements for this examination were made using the installed propeller flow-meters listed above and all water-level measurements were taken with HLI's "Test-Well" electric sounders. There are some issues with the installed flow-meters that bear mention. On ISCI Wells #7 and #8, the installed "Sensus" brand flow-meters do *not* meet manufacturer's specifications (Appendix A) with respect to minimum straight pipe lengths downstream of the flow-meter (Figures 3 and 4). The minimum length of straight pipe required in the downstream direction (as long as there is a flow-straightener – which there *is* in both locations) is 3 pipe diameters (24-inches in this case). Wells #7 and #8 have only 12-inches of straight pipe present in the downstream direction. We spoke with the Sensus technical experts as to the accuracy of these installations, they (expectedly) told us that the installed meters *could* well be accurate installed in this way but, because the requirements are not met, the only real way to know the current existing accuracy of the meters, would be to test the well by pumping using a second calibrated flow-meter, weir, or by the timed filling of a known volume. Although this *could* be accomplished using the ICC 250,000 gallon on-site storage reservoir (Figure 4), our comparisons with the available previous hydraulic testing results, the pump-

performance curves, and on-site measurements, lead us to believe that the existing flow-meter installations are probably providing fairly accurate discharge readings and sufficiently accurate for purposes of this licensing examination. Although the ISCI Well #3-B flow-meter meets the installation requirements of the manufacturer (Appendix A, Figure 5), its installation is also somewhat problematic for two reasons. First, the current well head plumbing configuration is that both wells #3-A and #3-B share a single flow-meter (last calibration 9/2/1988). Although only one of these wells can be operated at a time, the current set-up does not allow separation of the volumes pumped from each well. Such monitoring is not currently required but we have recommended that IDOC re-plumb the pump house piping to include a second flow-meter so that each well can be monitored separately. Secondly, the existing plumbing allows for the single flow-meter for both Wells #3-A and #3-B to be bypassed by valving and running the discharge through a sand-trap tank (Figure 5). We have recommended to IDOC that this tank be removed and our understanding is that IDOC has obtained approval from IDEQ for the recommended plumbing alterations and that those revisions and installation of a second flow-meter are underway. For purposes of this evaluation, the existing flow-meter used to gage the discharge rate of Well #3-B is deemed satisfactory and adequate.

E. NARRATIVE/REMARKS/COMMENTS

Application for Permit No. 63-12296 was originally filed on 7/7/1998 to allow for two new wells for irrigation and domestic use for a new planned private prison south of Boise. This application was amended three separate times over the years and was closely related, and included in, Transfer No. 67055. The various amendments, the transfer, the SRBA process, and much creative thinking by IDWR, have all contributed to simplifying what was a very complicated collection of interrelated water rights. In other words, the transfer approval and SRBA decrees (Appendix B) have greatly clarified and validated right No. 63-12296 to a large degree with a Permissible Place of Use and Multiple Mutual Points of Diversion conditions. An excellent summary of the considerations behind the resultant conditions and discussion of beneficial use for Transfer No. 67055 and Amendment No. 69884 is provided by Steve Lester's file memorandum dated October 27, 2006 (Appendix C). The only remaining concerns for this licensing examination are the flow-rates and water system components related to the two wells serving the "Private Prison" (ISCI Wells #7 and #8) and a third well (ISCI Well #3-B) drilled and constructed at the ISCI site. Before any meaningful analysis can be presented, some clarification of the well numbering system and the various facility acronyms is needed:

- 1) All wells and associated water rights are owned by the Idaho Department of Correction (IDOC).
- 2) The Idaho State Correctional Institution (ISCI) is the original prison facility dating back to the early 1960's.
- 3) The Idaho Correctional Center (ICC) is the private prison run by Corrections Corporation of America (CCA).
- 4) The ICC facility is on the west side of Pleasant Valley Road whereas ISCI is on the east side (see Figures 1 and 2).
- 5) Under the original 63-12296 Permit, the ICC wells were referred to as ICC Well #1 and ICC Well #2.
- 6) IDOC, the owner of the wells and water rights, refers to these wells as Well #7 (ICC #1) and Well #8 (ICC #2).
- 7) IDOC's well numbering is in keeping with its entire well field and the order in which the wells were drilled.
- 8) ICC continues to refer to the wells as Well #1 and Well #2 (not the order in which they were drilled).
- 9) IDOC's well numbering system is the system that I use herein (Wells #7 & #8).

Although the main field examination for this water right was carried out on October 13, 2011, I rely on several additional site visits during 2011 for first-hand measurements and documentation of the IDOC's well field and water system.

ISCI Well #3-B: The Well #3-B was drilled, constructed, and tested during December 2010 (Figure 1). The well was actually temporarily plumbed into the ISCI distribution system by Christmas (with the installed test pumping plant) but the permanent pumping plant was installed in September of 2011 (Figure 7). Hydro Logic, Inc. (HLI) was contracted by the Division of Public Works (DPW) to design and oversee the development of this well so I am intimately familiar with its construction testing and yield. HLI's as-built well construction diagram, including other related hydrogeologic information, is included as Figure 6 and the Well Driller's Report is included in Appendix D. The Well #3-B is completed to a depth of 997 feet below ground level (bgl) with a 14-inch diameter steel-cased pump-chamber to 671 feet bgl. Non-pumping water level is ~ 480 feet bgl. HLI supervised and documented the installation of the permanent pumping plant on September 14, 2011. The well is equipped with a 4-stage, 3600 rpm, Goulds submersible turbine pump, Model 11 CHC for which the performance curve is Figure 8. The design point for this pump is 1,400 gpm at 752 feet of total dynamic head (TDH). The pump is driven by a 350-to-400 (variable) HP, 2,200 volt, submersible motor manufactured by Wood Group ESP. The pump intake is set at 668 feet bgl on 9-inch diameter pump column (Figure 7). Well #3-B is not inside of a pump house. Rather, it is equipped with a pit-less adaptor unit for below ground discharge into an 8-inch water main that connects the well with the existing ISCI Well #3-A pump/control house (Figure 9) with which it currently shares much of the existing plumbing (Figures 5 and 10). On the electrical power side, however, Well #3-B has its own power line and "outside" control panel that are separate from Well #3-A electrical supply (Figure 11). We tested the well on several separate occasions using the installed permanent pumping plant, water distribution system, and flow-meter that exists today. A designated 1-inch diameter monitoring tube was installed with the pumping plant and this tube facilitates non-pumping and pumping water level measurements. Attached as Figure 12 is a 48-hour test of the well at 1,400 gpm (3.1 cubic feet per second (cfs)). Measured ground water temperature at the end of the test was 79.0 degrees F. Judging from the pump performance curve, the installed HP, and differing water demand between winter and summer, the Well #3-B is very likely capable of slightly higher discharge rates between 1500-to-1,600 gpm (3.57 cfs) but it is unlikely that the well could be produced at more than 1,600 gpm for usable pumping periods of longer than 24 hours say. Well #3-B is pumped to a 1.5 MG ground storage tank (Figure 9) adjacent to the well site so that system pressure is not a factor to pump performance. All of the ISCI municipal wells pump to this reservoir and the water system is pressurized from there; including the filling of the 300,000 gallon elevated tank located directly next to Well #3-B (Figure 9).

ISCI Well #7 (ICC Well #2): We met Randy Ward, ICC Maintenance Supervisor, on-site at 8:35 hours on October 13, 2011. Well #7 is located on a small concrete slab outside the nearby 8 ft X 8 ft foot pump control house (Figure 13). The well is equipped with a pit-less unit for below ground discharge to the nearby 250,000 gallon above ground storage reservoir (Figure 4). Well #7 is completed to a depth of 705 feet bgl with an open interval (to the aquifer) of 500-to-690-feet bgl and a 16-inch diameter pump chamber casing to 495 feet bgl (Figure 14). The well was not pumping at the time of the site visit and a non-pumping water level of 397.87 feet below top of casing (btoc) was measured (the top of casing is 1.95 feet above ground level) using the installed monitoring tube.

ISCI Well #7 was tested twice in December of 1998 at the completion of the well (Appendix E). For one test, the well was pumped at 1906 gpm for 10 hours with only 35 feet of drawdown (specific capacity = 54 gpm/ft) and the second test was conducted at 2077 gpm for 18 hours with only 38 feet of drawdown (specific capacity of 55 gpm/ft). Therefore the well *itself* is more than capable of producing the water right amount.

There were no identification or specification tags at the well head or pump control house and ICC had no pumping plant information in its files. We did a public information request to the IDEQ which requires such information to be filed for Public Drinking Water System wells; that information is the source for the following description of the installed pumping plant. This

well is equipped with an 8-stage, 1700 rpm Goulds submersible turbine pump Model 12CHC with an 8.69-inch impeller trim (Appendix F) and a design point of 1,200 gpm at 500 feet of TDH. The pump is set on ~470 feet of 8-inch diameter steel pump column and driven by a 200 HP 3-phase Hitachi submersible motor (Appendix F).

According to Randy Ward, it was not possible to run the Well #7 into the ICC water system at the time of the field exam and ISCI Well #8 was supplying the facility. It was possible to produce the well to waste but, unfortunately, the flow-meter is downstream (in the well head plumbing) of the flushing line so that the discharge rate to waste could not be measured. We had Randy operate the Well #7 pump which was discharged through an 8-inch diameter flush line to an open rocky depression located approximately 120 feet away from the well (Figure 15). Because the flush line discharge is at ground level, it was not possible to give a reasonable visual estimate of the discharge rate (Figure 15) which was very roughly estimated at 1,500-to-1,800 gpm. However, using the known specific capacity of 54 gpm/ft, the measured drawdown, and the calculated head being pumped against, we can use the pump performance curve to show that the well should have been pumping at 1,500 gpm under those conditions (conditions that would *not* include the 35-foot height of the storage tank or the 1,400-feet of 12-inch and 8-inch mainline between the well and the reservoir during normal operating conditions). Adding in the frictional head losses from these two sources (35 feet and 19 feet respectively), and the two 8-inch diameter check valves (15 feet) at a discharge rate of 1,200 gpm, would give a TDH of about 500 feet. Using the same calculations and the pump performance curve, the estimated discharge rate to the water system would be 1,200 gpm. Note that the pressure gage on the mainline was broken (Figure 16) and *that* head loss could not be measured. Also, the Well #7 pumping plant was apparently refurbished in 2011 so the pump performance curve (Figure 17) should be a fairly accurate means of determining discharge (as opposed to a pump with worn impellers).

ISCI Well #8 (ICC Well #1): ISCI Well #8 is located on a small concrete slab outside the nearby 8 ft X 8 ft foot control house (Figure 4). The well is equipped with a pit-less unit for below ground discharge to the nearby 250,000 gallon above ground storage reservoir (Figure 4). Well #8 is completed to a depth of 640 feet bgl with an open interval (to the aquifer) of 495-to-616-feet bgl and a 12-inch diameter pump chamber casing to 495 feet bgl (Figure 18). The well was pumping at the time of the site visit but the well is not equipped with a monitoring tube so no attempt was made to measure water levels in this well because of the high possibility of tangling up a sounding tape in the submersible pump cable and pump column given the great depth to water. ISCI Well #8 was tested twice in December of 1998 at the completion of the well (Appendix F). For one test, the well was pumped at 1,134 gpm for 14 hours with only 32 feet of drawdown (specific capacity = 35 gpm/ft) and the second test was conducted at 1,313 gpm for 12 hours with only 33 feet of drawdown (specific capacity of 40 gpm/ft). Therefore the well *itself* is more than capable of producing the water right amount.

There were no pump identification or specification tags at the well head or pump control house and ICC had no pumping plant information in its files. We filed a public information request to the IDEQ which requires such information to be filed for Public Drinking Water System wells; that information is the source for the following description of the installed pumping plant. This well is equipped with a 14-stage, 1700 rpm Goulds submersible turbine pump Model 10RJHC with an 6.62-inch impeller trim and a design point of 700 gpm at 450 feet of TDH (Figure 19). The pump is set on ~480 feet of 6-inch diameter steel pump column and driven by a 125 HP 3-phase Hitachi submersible motor (Appendix E).

Because the Well #8 was pumping to the system (filling the storage reservoir) during the field exam, we used the totalizing flow-meter to time (rotating needle type) the discharge rate at 630 gpm. The line pressure gage for this well was also inoperative (Figure 20). All available information considered, the design point for the pumping plant of 700 gpm (1.6 cfs) appears to be a reasonable beneficial use discharge rate for this well. According to Randy Ward, this pumping plant is the original installed plant without any rebuilding or maintenance so that some impeller wear is probably likely and a cause of

some temporary loss in productive yield. Accumulated declines in regional water levels, which are known to have occurred in this area of the Valley, could also account for some decline in production rate that could be compensated for when this worn plant is replaced.

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?

All conditions of the Permit No. 63-12296 have been met.

F. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

See Appendix G

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:

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use From	To	Rate of Diversion Q (cfs)	Annual Volume V (afa)
ISCI Well #3-B	Jan. 1	Dec. 31	3.57 cfs	
ISCI Well #7	Jan. 1	Dec. 31	1.56 cfs	
ISCI Well #8	Jan. 1	Dec. 31	2.67 cfs	
Totals:			7.8 cfs	

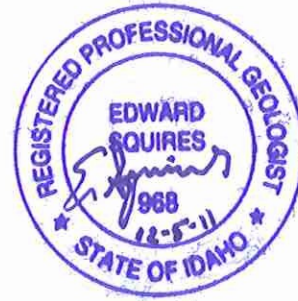
In addition to the 17 Conditions of Approval listed on the Amended Permit, recommend the diversion rates for the three points of diversion listed above.

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 Ed Squires Date 12-5-2011



SEAL

Reviewer _____ Date _____

FIGURES

Idaho State Correctional Institution
Place of Use and Points of Diversion Location Map
Township 2 North Range 2 East
November 1, 2011

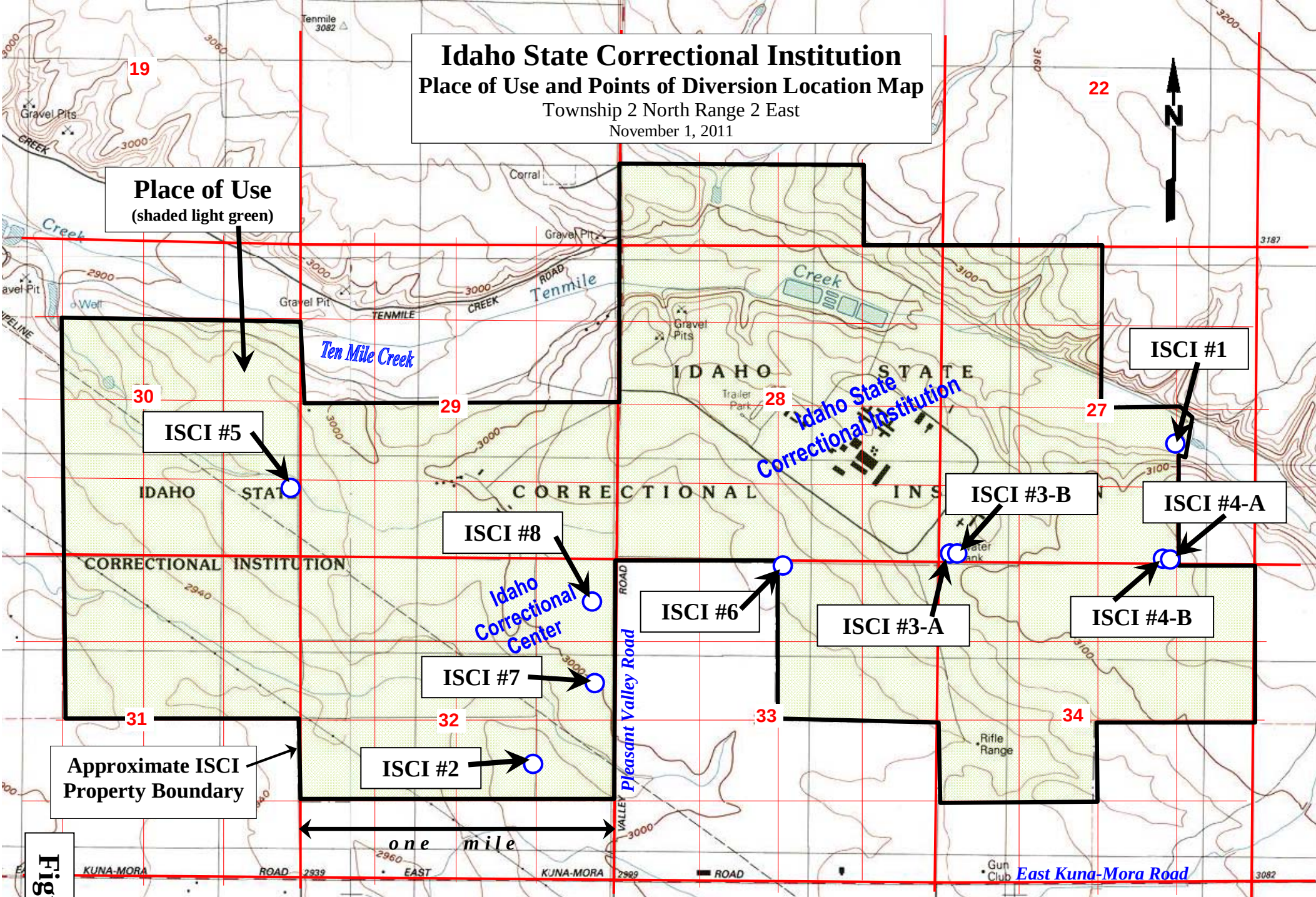


Figure 1. Base map is a (1:24,000 scale) USGS 7½ - minute map.

Hydro Logic, Inc. - Boise, Idaho

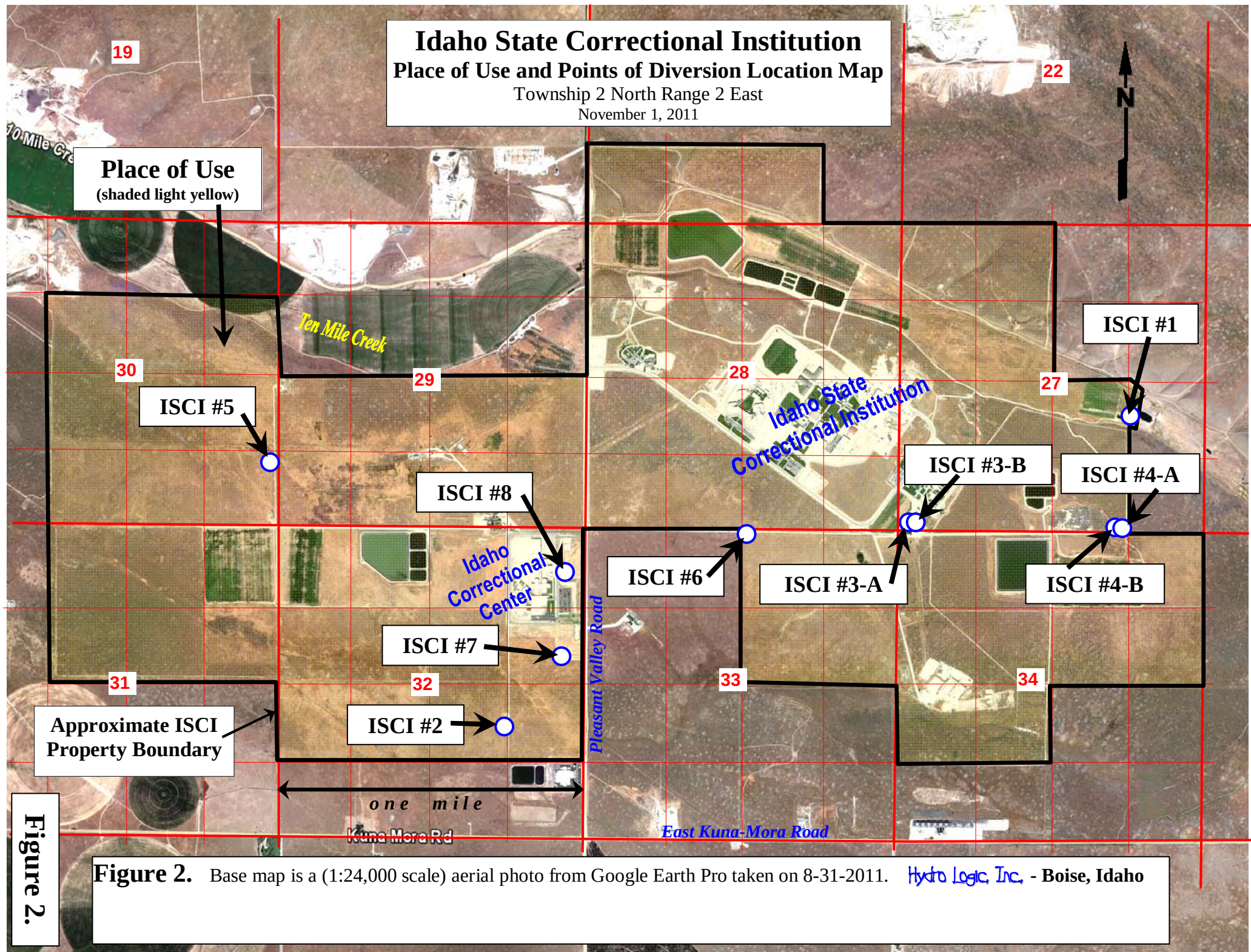


Figure 2. Base map is a (1:24,000 scale) aerial photo from Google Earth Pro taken on 8-31-2011. **Hydro Logic, Inc. - Boise, Idaho**



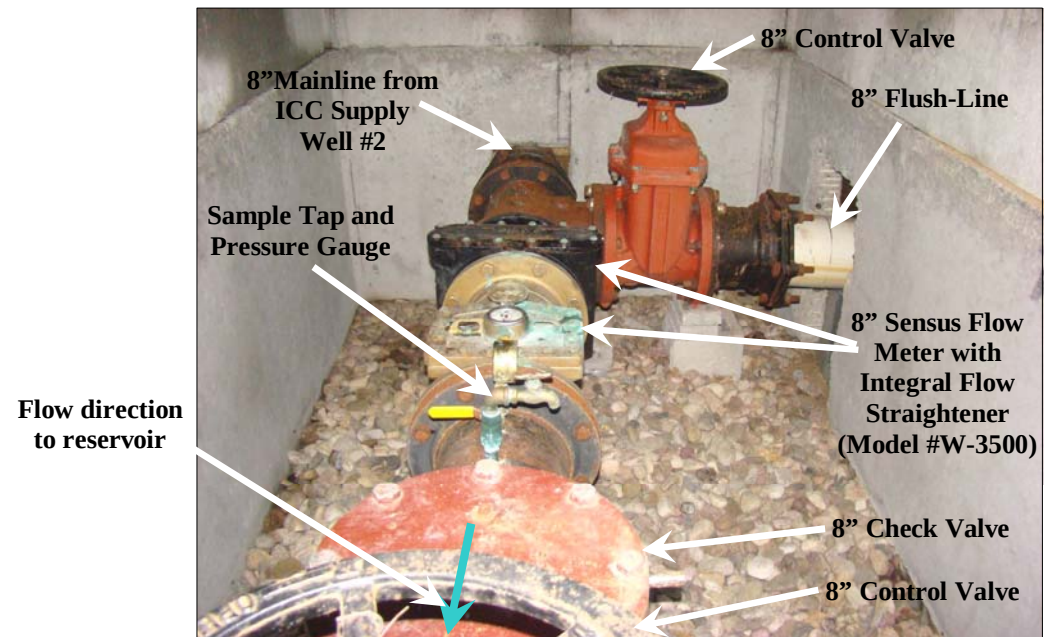
South-looking view of ISCI Well #7 electrical control house and power transformer.



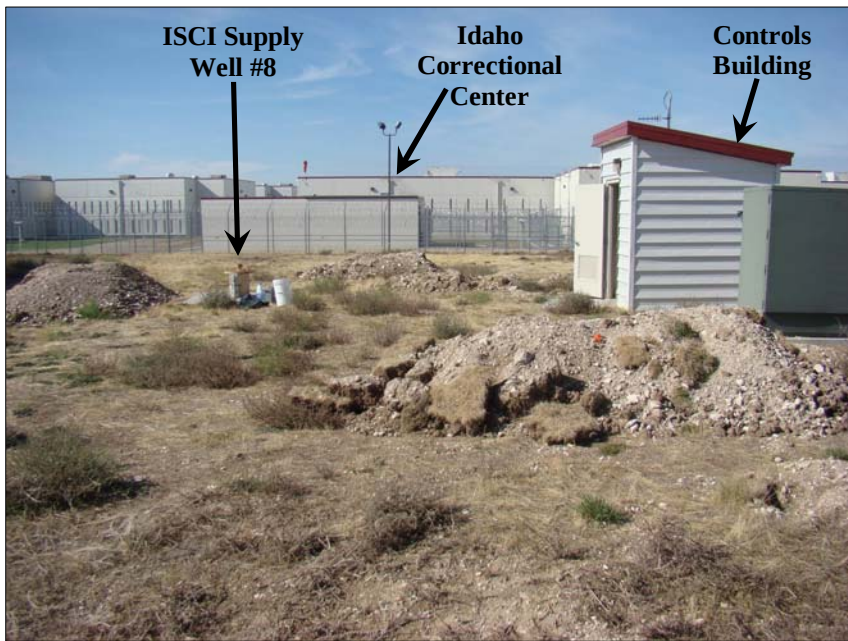
View of the inside of ISCI Well #7 (ICC Well #2) controls building looking at the 200-HP control panel for the submersible pumping plant.



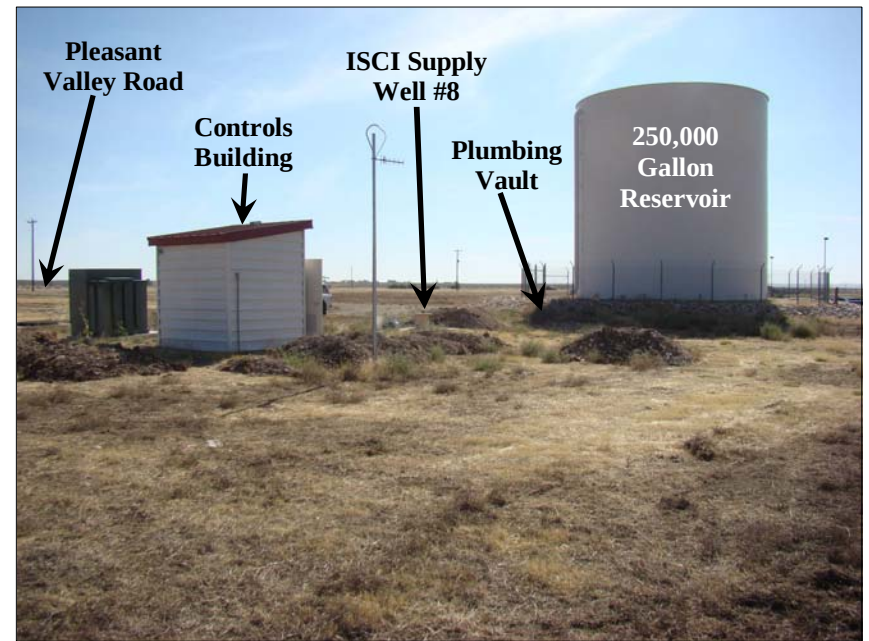
Manhole entrance to ISCI Well #7 plumbing vault.



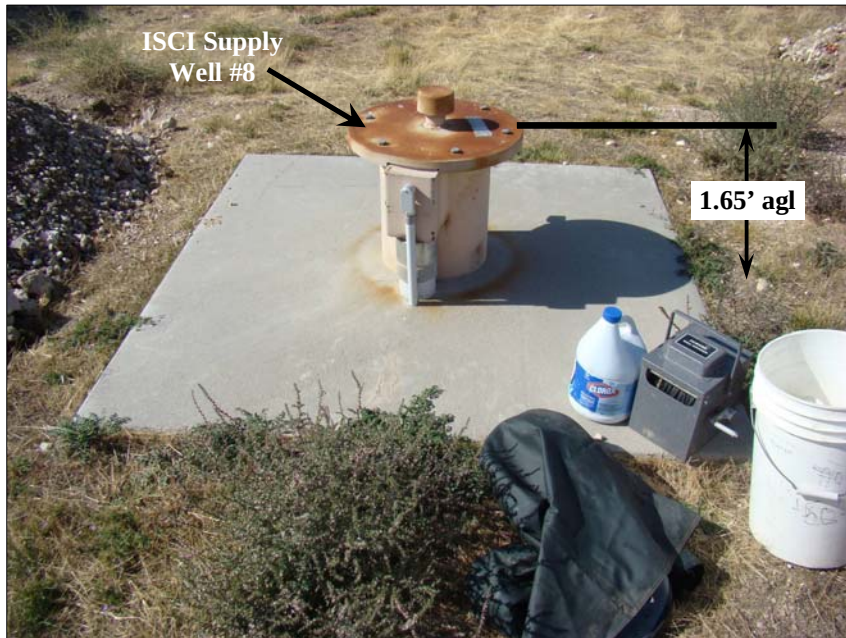
ISCI Well #7 well head plumbing configuration on October 13, 2011.



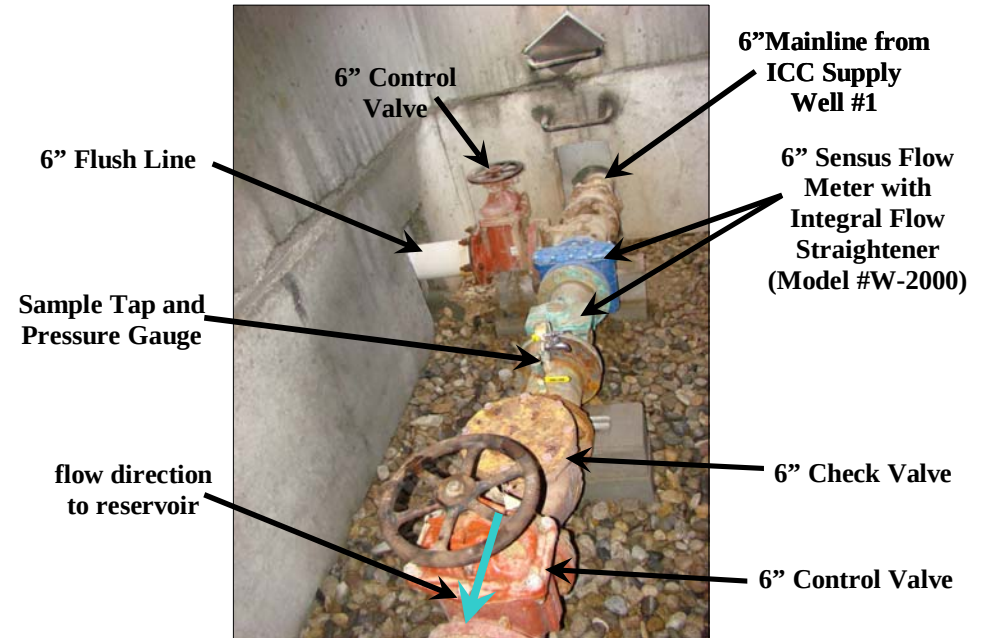
View looking west at the ISCI Supply Well #8 (ICC Well #1) well site with the Idaho Correctional Center facilities in the background.



View looking southeast at the ISCI Supply Well #8 well site with Pleasant Valley Road in the background.



Well head for ISCI Supply Well #8 is an 14-inch-to-12-inch Maass Midwest Model MB pit-less unit.



ISCI Well #8 well head plumbing configuration in below ground vault on October 13, 2011.

Figure 5. Photos of the existing well head plumbing in ISCI Supply Well #3-A pump/control house – October 13, 2011.

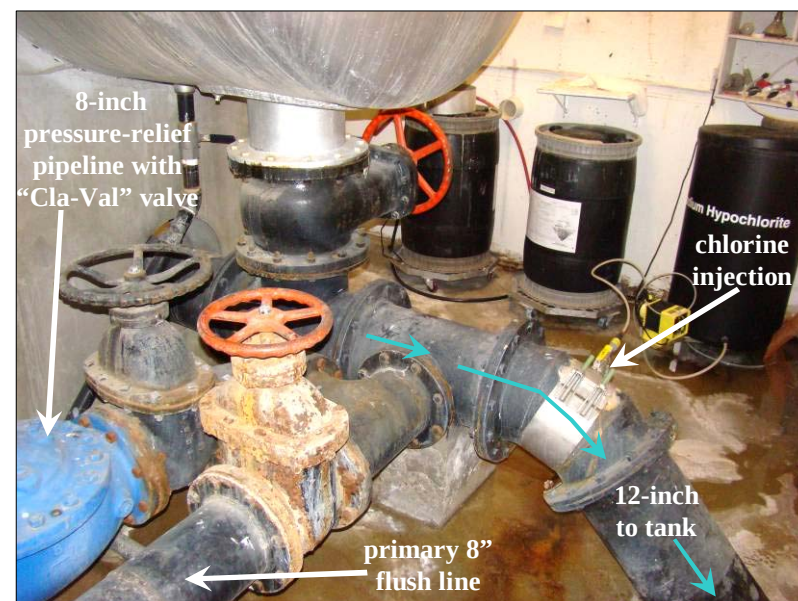
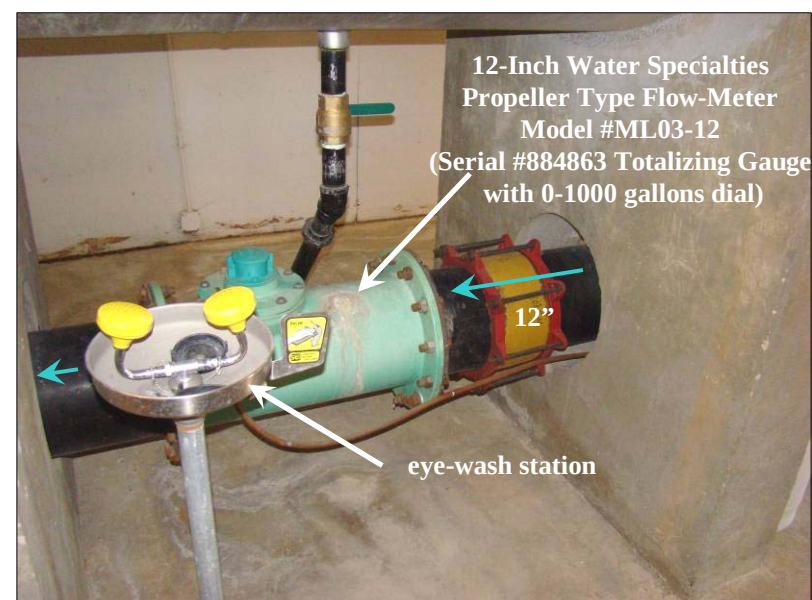
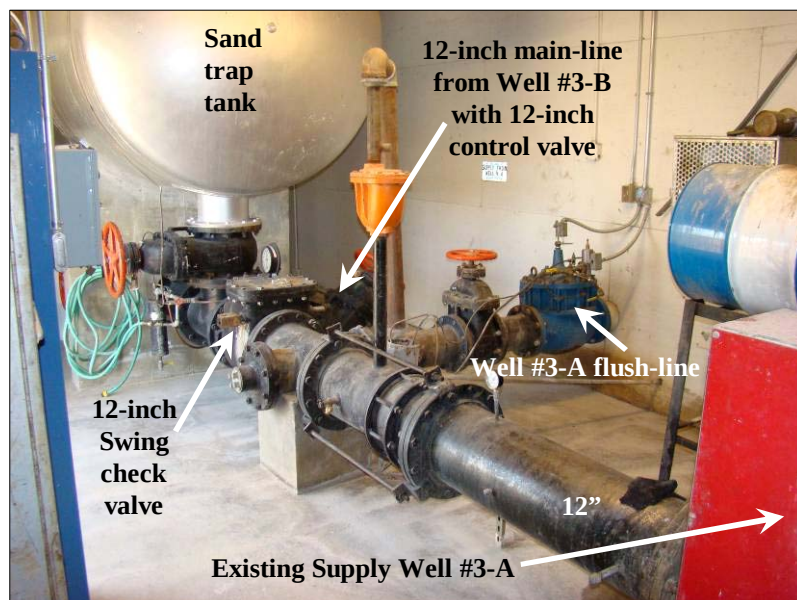
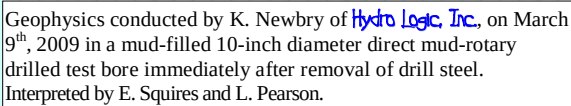


Figure 5. Existing pump house plumbing configuration inside the ISCI Well #3-A pump/control house. The existing plumbing facilities will be used for the new Well #3-B until planned modifications (underway) are completed.

REGISTERED PROFESSIONAL GEOLOGIST
EDWARD SQUIRES
968
STATE OF IDAHO

Hydro Logic, Inc.

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



PACKER-REDUCER SEAL
(constructed from #304 stainless steel components)

LOWERING SLOTS
(4-to-the-round; accepts 1-inch diameter pins that are mounted into the lowering tool.)

CENTRALIZING PINS
(4-to-the-round; 1-inch diameter SS pins drilled through and welded into packer assembly)

10-INCH X 0.365" WALL (SS) PIPE

TWO NEOPRENE RUBBER FIGURE "K" 3-LIP PACKER/SEALS
(seals to 13.25" I.D. casing)

CENTRALIZING PINS
(see above description)

ENGAGEMENT SLOTS
(4-to-the-round; slots engage 1-inch diameter SS pins on headpipe)

3.0"

2"

Filter (test)

5' below ground level

6'

Water Level (feet below ground level)

Elapsed Time (minutes elapsed since pumping began)

$\Delta s_1 \approx 21.3$

$\Delta s_2 \approx 33.3$

Slight negative hydraulic boundary at ~80 minutes

Non-Pumping Water Level = 480.3 feet bgl at 09:48 hrs on 1/17/2011.

Specific Capacity = 9.5 gpm/foot after 8.5 hours of pumping at 1,400 gpm on January 17, 2011.

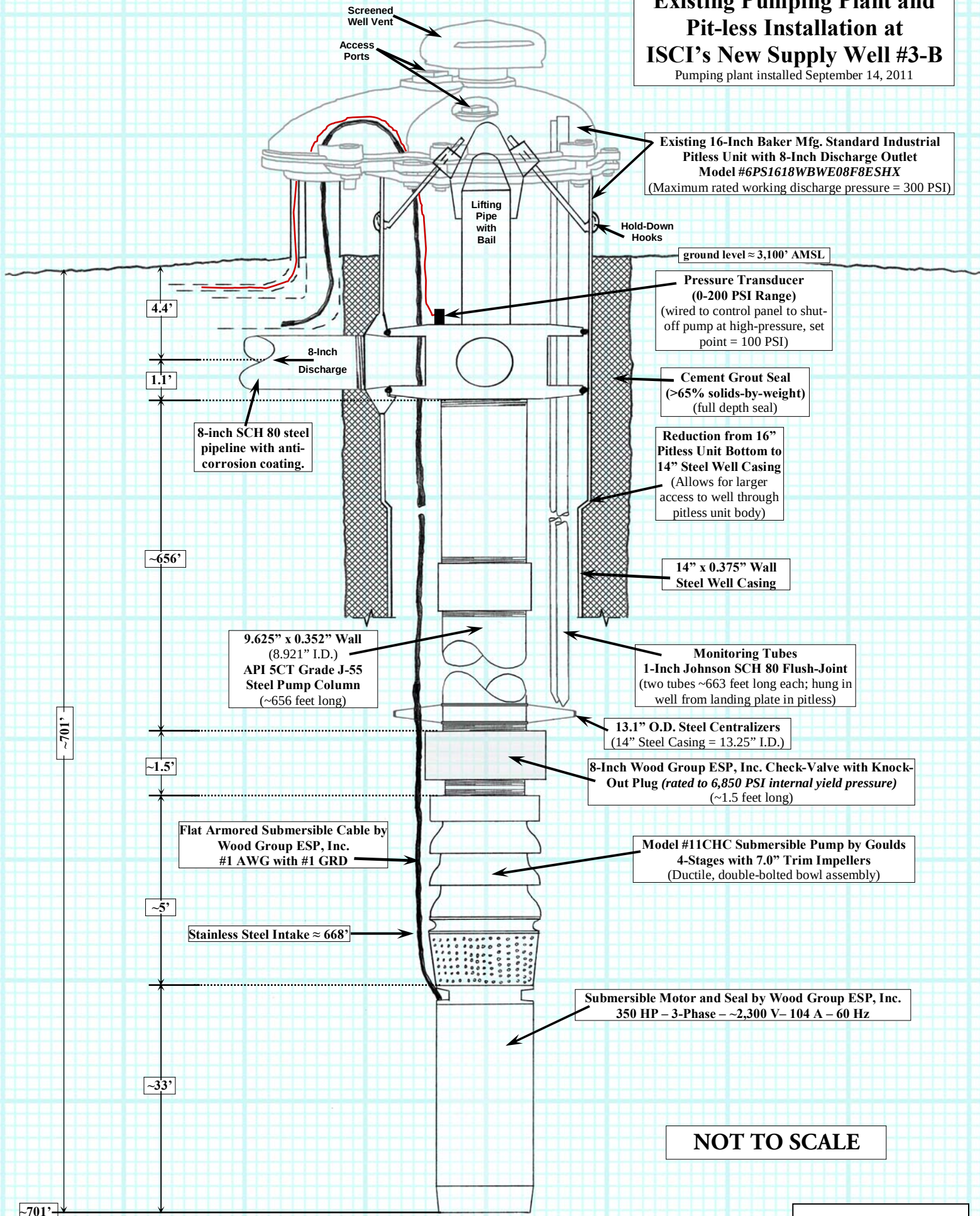
**Idaho State Correctional
Institution Supply Well #3-B**
T. 2 N. R. 2 E. Section 27, SW¹/₄, SW¹/₄, SW¹/₄
Latitude 43° 28' 24.7" Longitude 116° 12' 45.4"
Completed December 2010

Figure 6.

- Project administration by Idaho Division of Public Works, Norm Noonan Project Manager
- Well design, hydraulic testing design, well development design, final review of diagram format and project management by Ed Squires, R.P.G.
- On site inspection, documentation, water level measurement and water quality sampling by [Hydro Logic Inc.](#), Boise, ID (Kurt Newbry and Carlton Parker)
- Direct mud-rotary drilling, well construction and primary well development by Drill-Tech, Inc., Chino Valley, AZ (Garth Owens owner/driller)
- Test pump installation, discharge line setup and pump operation by Layne of Idaho, Nampa, ID. (Steve Cook Manager).
- Cable-tool with citric acid well development by McLeran Well Drilling, LLC, New Plymouth, ID.

Existing Pumping Plant and Pit-less Installation at ISCI's New Supply Well #3-B

Pumping plant installed September 14, 2011



NOT TO SCALE

Figure 7.

Company: ITT R&CW Goulds Pump

Name: Jeff Smith

Date: 5/16/2011

Pump Curve for ISCI Replacement Well #3-B **Goulds 11CHC 4-Stage Pump with 7.0" Trim Impellers** **at 1,400 Gallons/Minute**



Pump:

Size: 11CHC (4 stage)

Type: Submersible

Synch speed: 1800 rpm

Curve: E3141-2

Specific Speeds:

Dimensions:

Vertical Turbine:

Speed: 3450 rpm

Dia: 7 in

Impeller:

Ns: 2130

Nss: ---

Suction: --- in

Discharge: --- in

Bowl size: 11 in

Max lateral: 0.75 in

Thrust K factor: 7 lb/ft

Search Criteria:

Flow: 1400 US gpm

Head: 752 ft

Fluid:

Water

SG: 1

Viscosity: 1.105 cP

NPSHa: --- ft

Temperature: 60 °F

Vapor pressure: 0.2563 psi a

Atm pressure: 14.7 psi a

Motor:

Standard: NEMA

Enclosure: TEFC

Size: 400 hp

Speed: 1800

Frame: 449T

Sizing criteria: Max Power on Design Curve

Pump Limits:

Temperature: 120 °F

Pressure: 380 psi g

Sphere size: 0.68 in

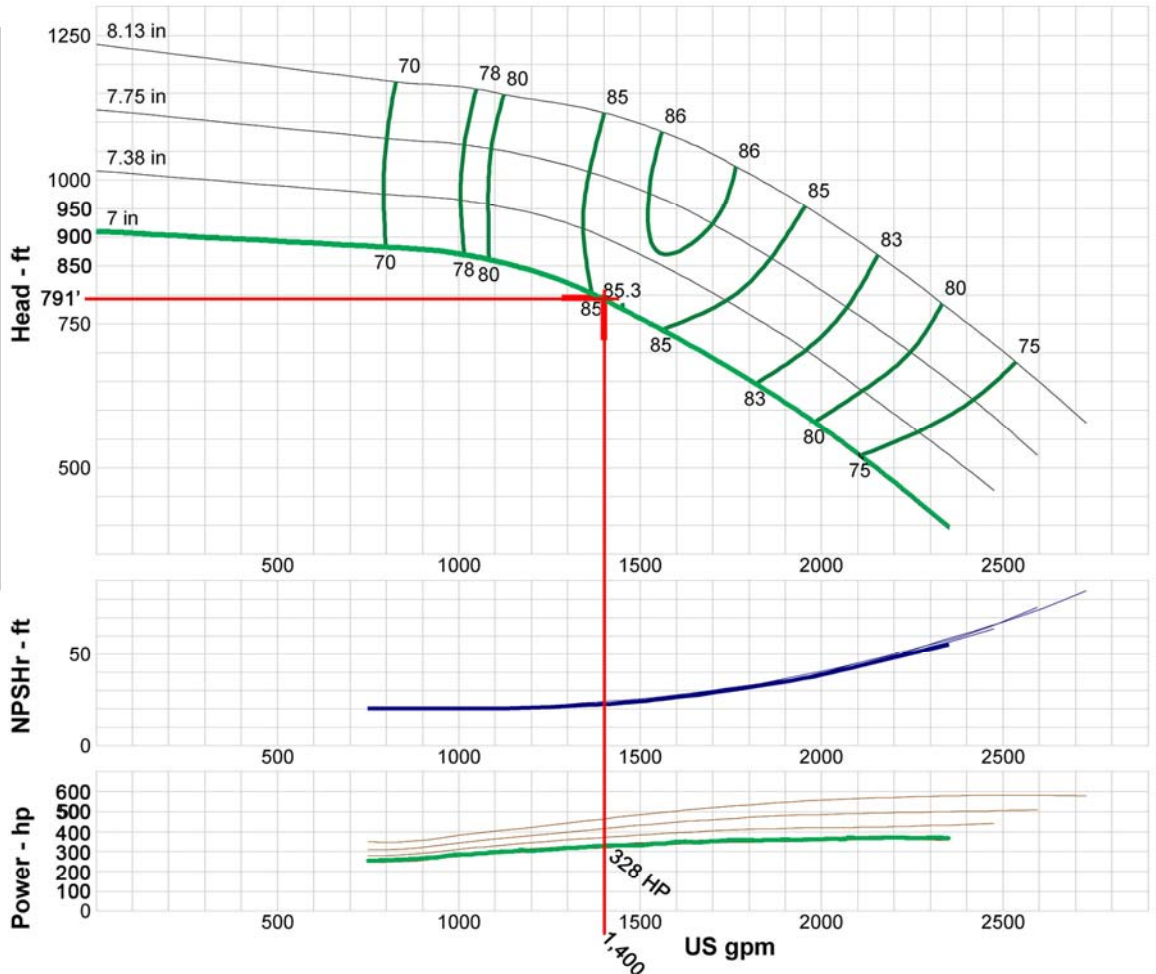
Power: --- hp

Eye area: --- in²

Pump Selection Warnings:

u

---- Data Point ----	
Flow:	1400 US gpm
Head:	791 ft
Eff:	85.1%
Power:	328 hp
NPSHr:	22.7 ft
---- Design Curve ----	
Shutoff head:	910 ft
Shutoff dP:	393 psi
Min flow:	--- US gpm
BEP:	85.3% @ 1451 US gpm
NOL power:	369 hp @ 2105 US gpm
-- Max Curve --	
Max power:	583 hp @ 2534 US gpm



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1680	3450	695	84.1	349	28.7
1400	3450	791	85.1	328	22.7
1120	3450	853	80.7	298	20.6
840	3450	880	71.6	260	20.4
560	3450	---	---	---	---

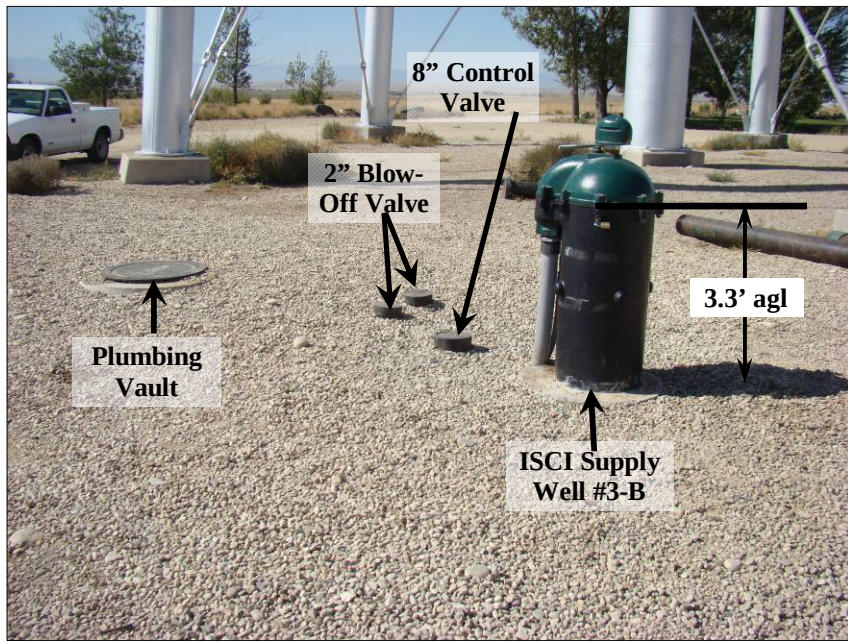
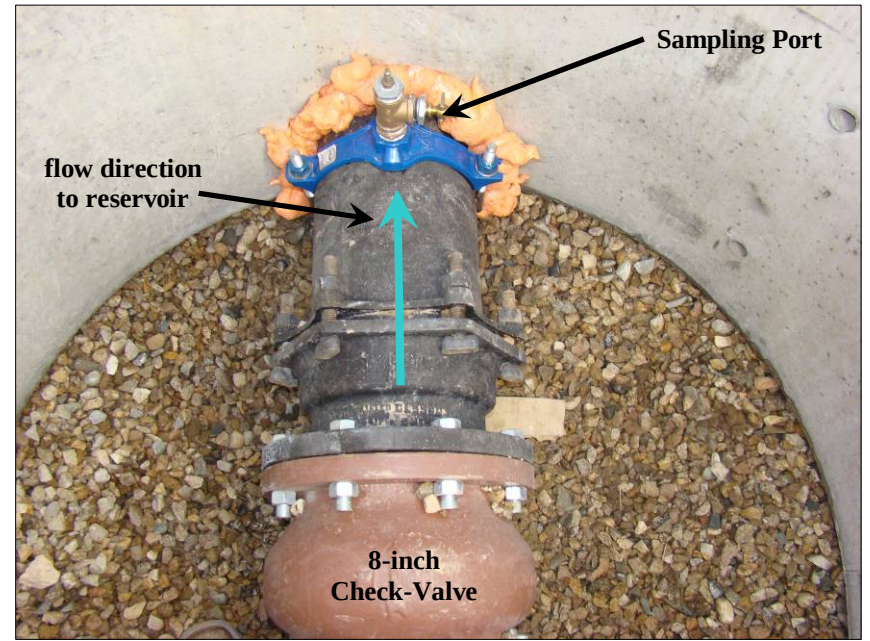


Photo looking west at ISCI Well #3-B well head.



View inside plumbing vault adjacent to ISCI Supply Well #3-B.



View looking northwest at the ISCI Wells #3-A and #3-B well site.

Figure 10. Photo of the 12-inch main from new replacement Well #3-B entering plumbing in ISCI supply Well #3-A pump house.



Figure 10.

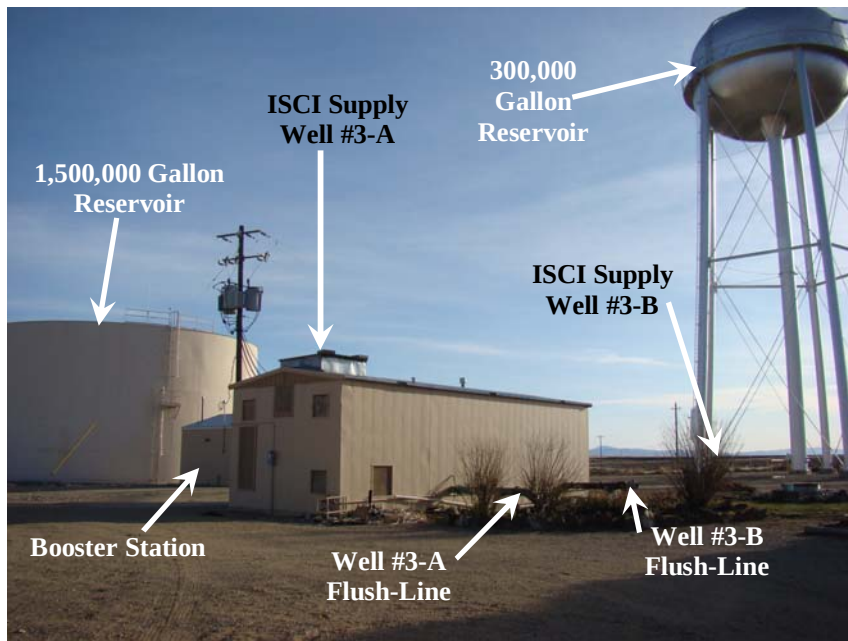


Photo looking east at Well #3-A pump house and ISCI's two tanks.



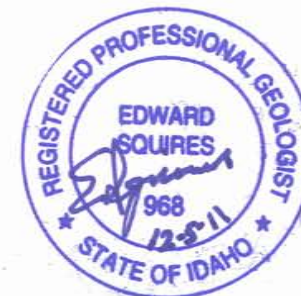
Photo looking west at Well #3-A pumphouse.



Photo looking west at power supply for ISCI Supply Well #3-B.

Well Test Design and Monitoring by
Hydro Logic, Inc. for the Idaho State
Correctional Institution

Pumping Water Levels in ISCI Supply Well #3-B Constant-Rate Discharge Test - 1,400 Gallons/Minute* for 48 Hours October 3, 2011 through October 5, 2011



©2011 Hydro Logic, Inc. This instrument is the property of Hydro Logic, Inc. Any reproduction, reuse, or modification of this instrument or its contents without the specific written permission of Hydro Logic, Inc. is strictly prohibited.

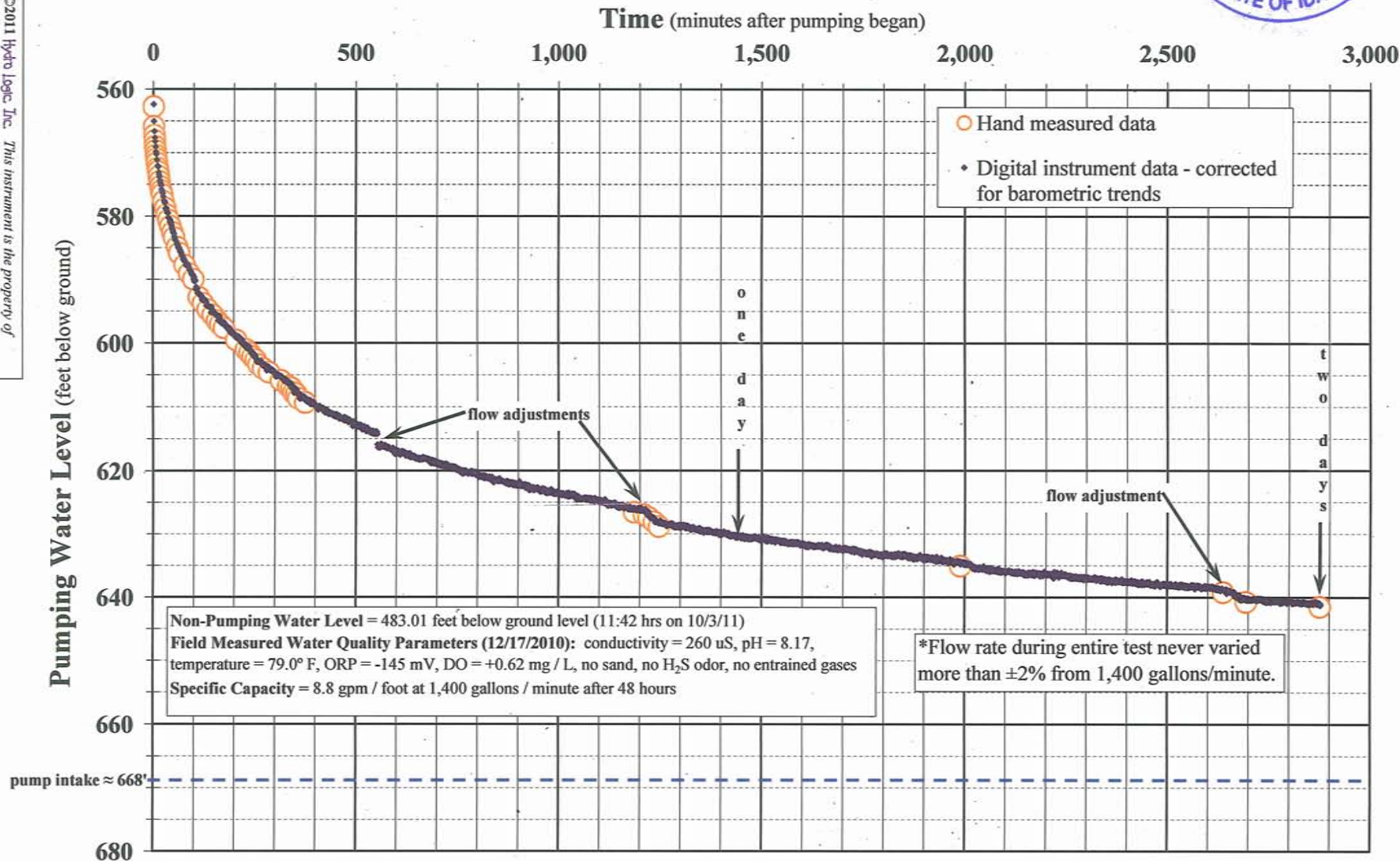
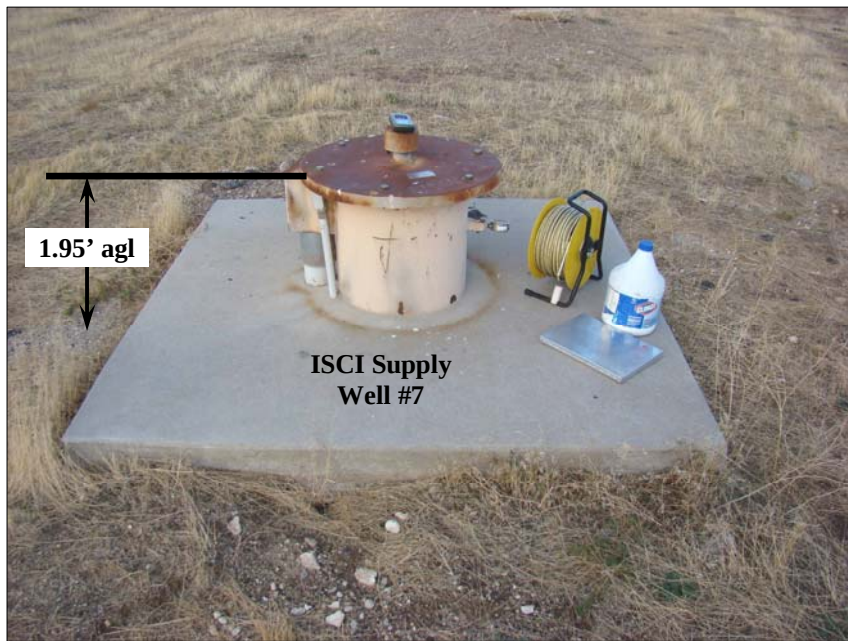
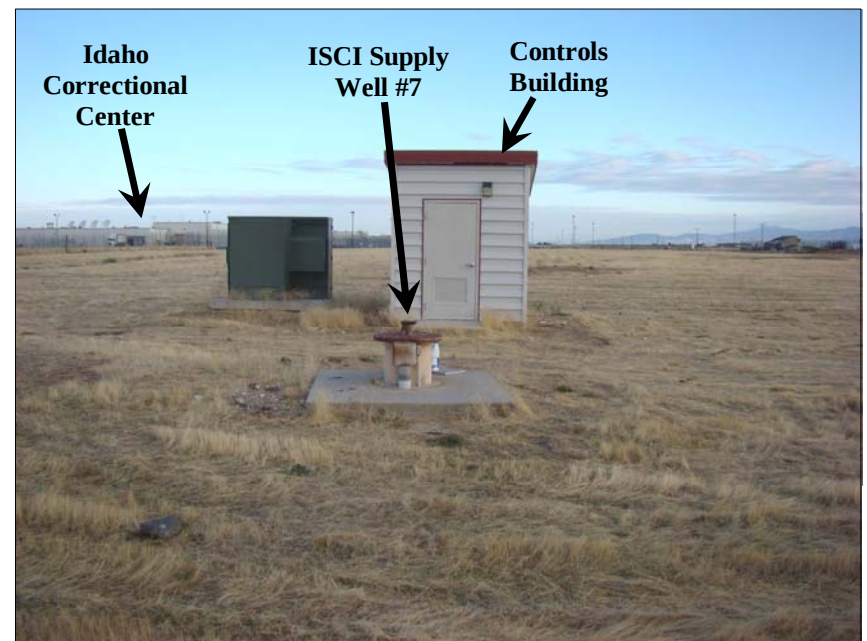


Figure 12.

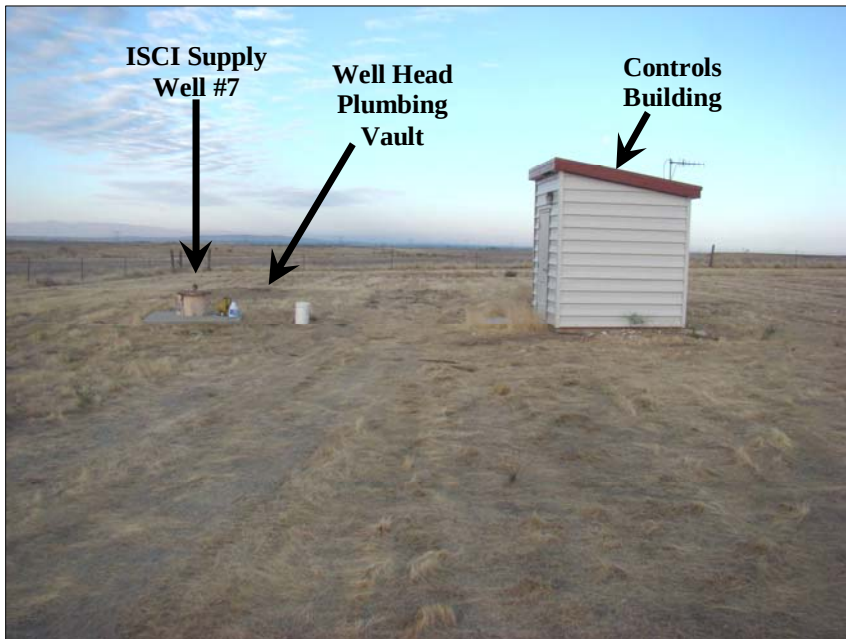
Arithmetic plot of pumping water level in the Idaho State Correctional Institution Supply Well #3-B. All water levels measured by Hydro Logic, Inc. are plotted.



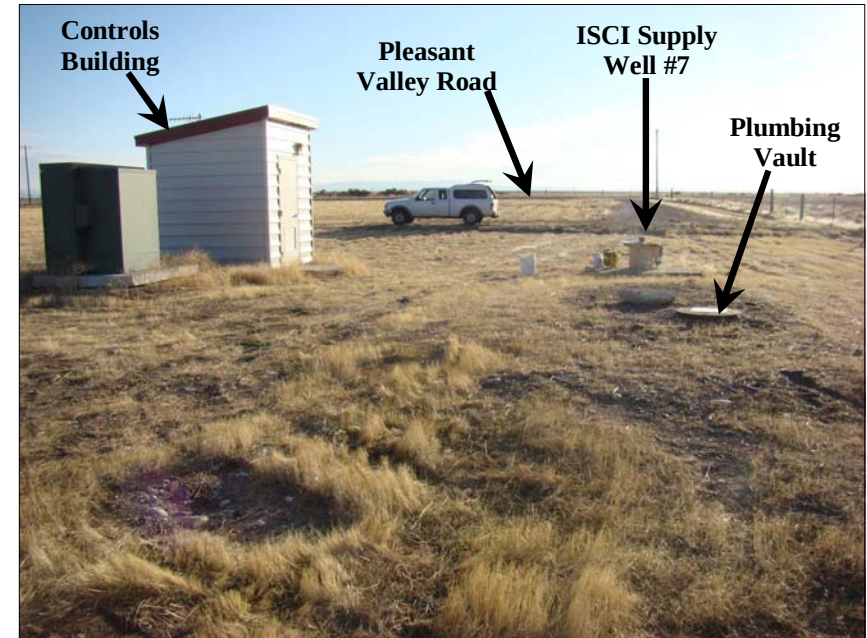
October 13, 2011 photograph of the well head for ISCI supply Well #7 (ICC Well #2) showing an 18-inch-to-16-inch Maass Midwest Model MB pit-less unit.



View looking north at the ISCI supply Well #7 well site with the Idaho Correctional Center facilities in the background.



View looking west at the ISCI supply Well #7 well site.

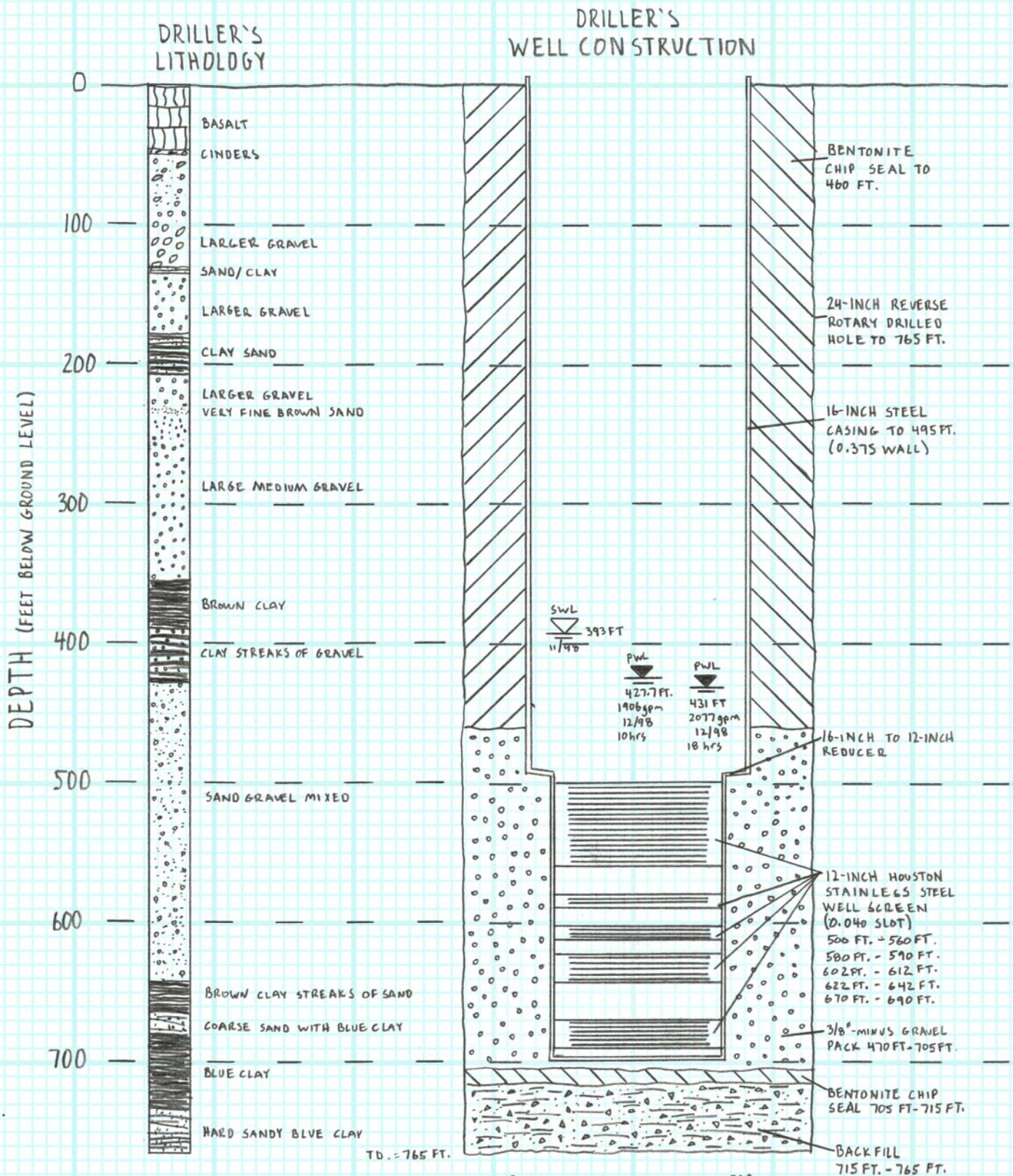


View looking east at the ISCI supply Well #7 well site with Pleasant Valley Road in the background.

IDAHO STATE CORRECTIONAL INSTITUTION #7 WELL

(PRIVATE PRISON WELL #2)

T.2N., R.2E., SEC. 32, SE 1/4, NE 1/4





October 13, 2011 photograph of the totalizing flow register of the 8-inch diameter “Sensus” flow meter for ISCI Supply Well #7 (ICC Well #2). Flow is measured by timing of rotating needle = 1,000 gpm per rotation.



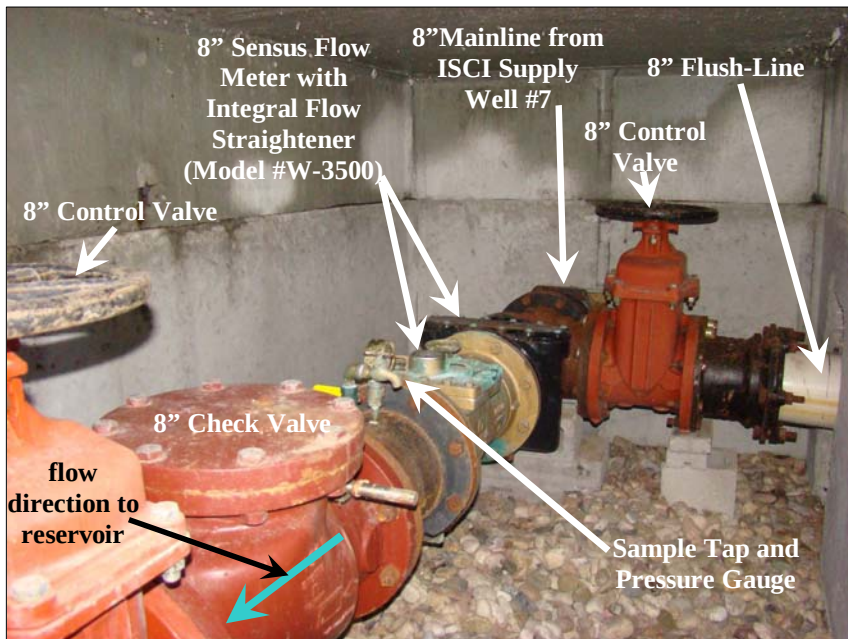
View looking west at ISCI supply Well #7 with lid removed for water level measurement during the pump test.



View of 8-inch diameter PVC flush-line day-lighting approximately 120-feet from ISCI supply Well #7 plumbing vault.



View of the discharge from the 8-inch flush-line during the ~1,500 gallons/minute pumping of the well on October 13, 2011.



October 13, 2011 photograph of the well head plumbing for ISCI Well #7 in below ground vault.



Water quality sample tap and main line pressure gage (broken) in the discharge piping of the ISCI Well #7.



8-inch Sensus flow meter with integral flow-straightener (Model #W-3500 and Serial #1558270) installed in ISCI Supply Well #7 plumbing.



8-inch Sensus flow meter with integral flow-straightener (Model #W-3500 and serial #1558270) installed in ISCI Supply Well #7 plumbing.

GOULDS PROPOSAL NO.	GOULDS S.O. NO.	INQUIRY NO.	CUSTOMER P.O. NO.	P.O. DATE	ITEM NO.	CUSTOMER		
PROJECT			SERVICE		GPM CAPACITY	F.T. TDH	% EFFICIENCY	RPM

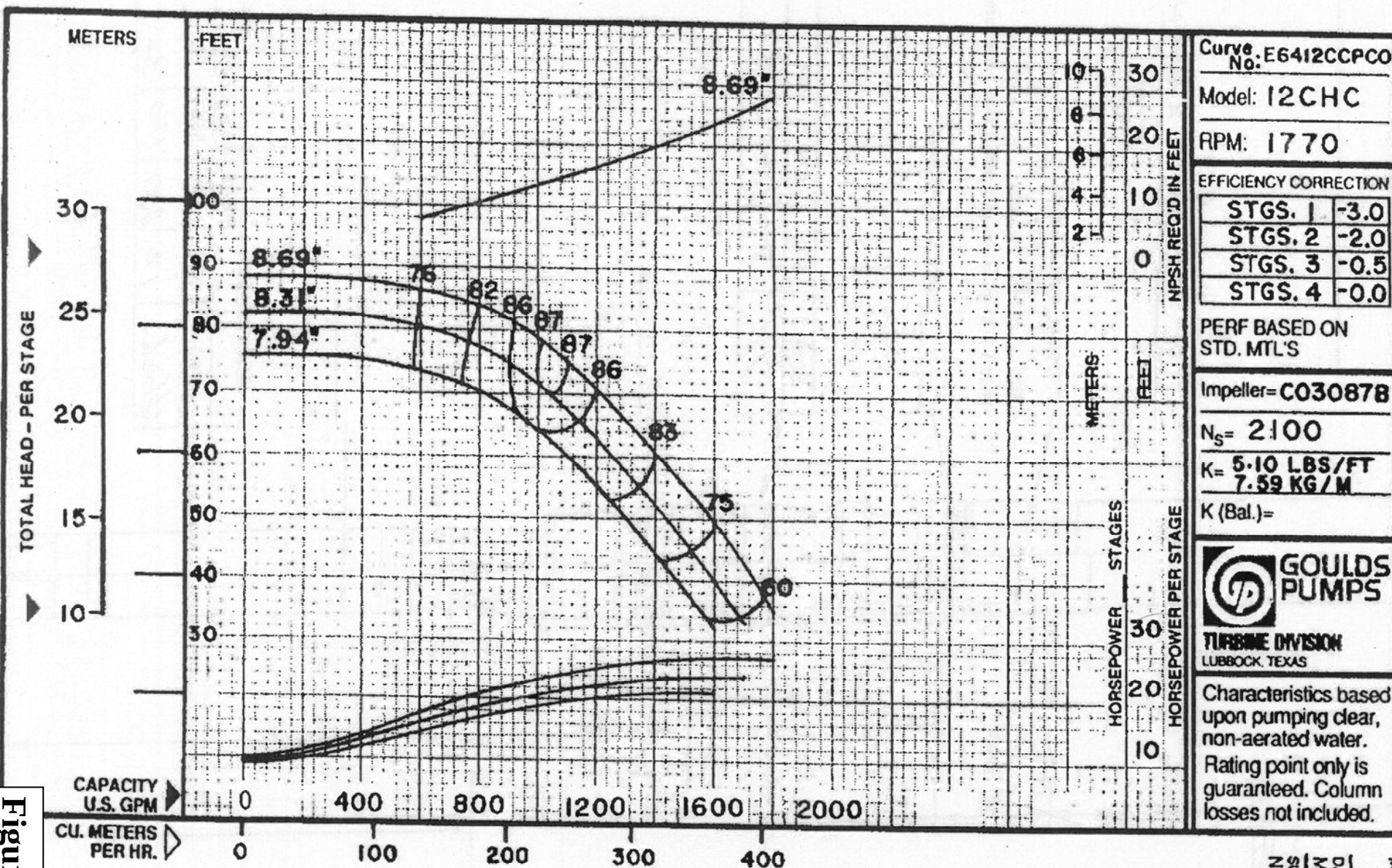


Figure 17.

Pump performance curve for ISCI Well #7 (ICC Well #2) from Scanlan Engineering Completion Report July 1999.

MODEL
12CHC
 DATE
 March 1995
 SUPERCEDES
 NEW

IDAHO STATE CORRECTIONAL INSTITUTION #8 WELL

(PRIVATE PRISON WELL #1)

T.2N., R.2E., SEC. 32, NE 1/4, NE 1/4

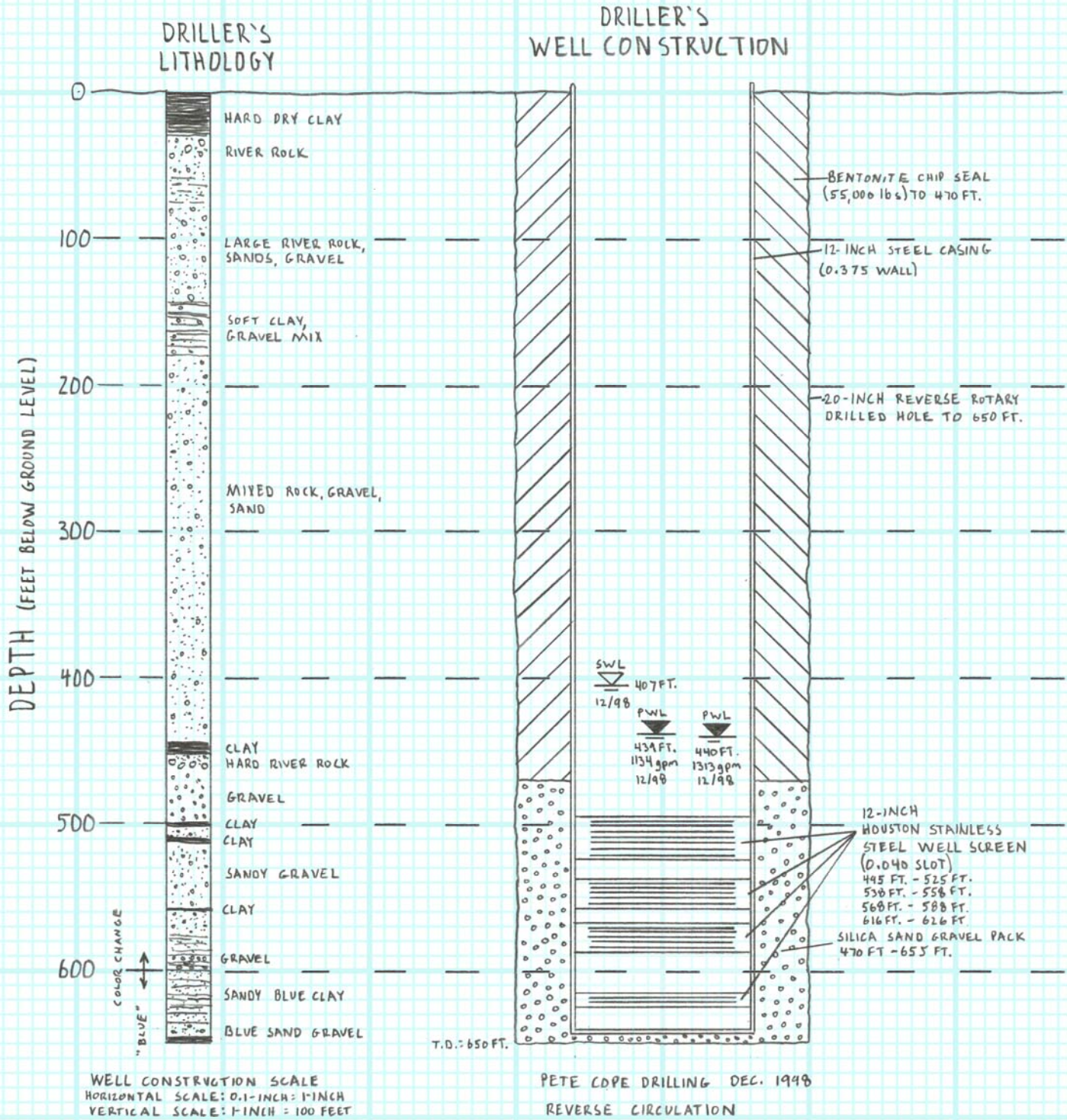


Figure 18.

LAYNE PUMPS, INC
Project: layne of idaho
by: LAYNE PUMPS, INC.

Goulds Pump Selection Software ver: 5.07

File: (untitled)
Dec 29, 1998

PUMP DATA SHEET
Goulds Turbine 60 Hz

Catalog: VTURB60 v. 1.2

Curve: 3114-1

TYPE - SPEED: VERTTURBINE - 1800

PUMP Size: 10RJHC - 14 stages

125 HP

Speed: 1740 rpm
Imp dia: 6.62 in

Max Temperature: - °F
Max Pressure: 430 psig

Max Sphere Size: 0.88 in

Specific Speed No. 2880
Suction Nss: -

Suction size: 6 in
Discharge size: 6 in

FLUID Water temp: 60 °F

SG: 1

vsc: 1.122 cP

vapor: 0.2568 psi

atm: 14.7 psi

NPSHa: - ft

PIPING Pressure: - psi

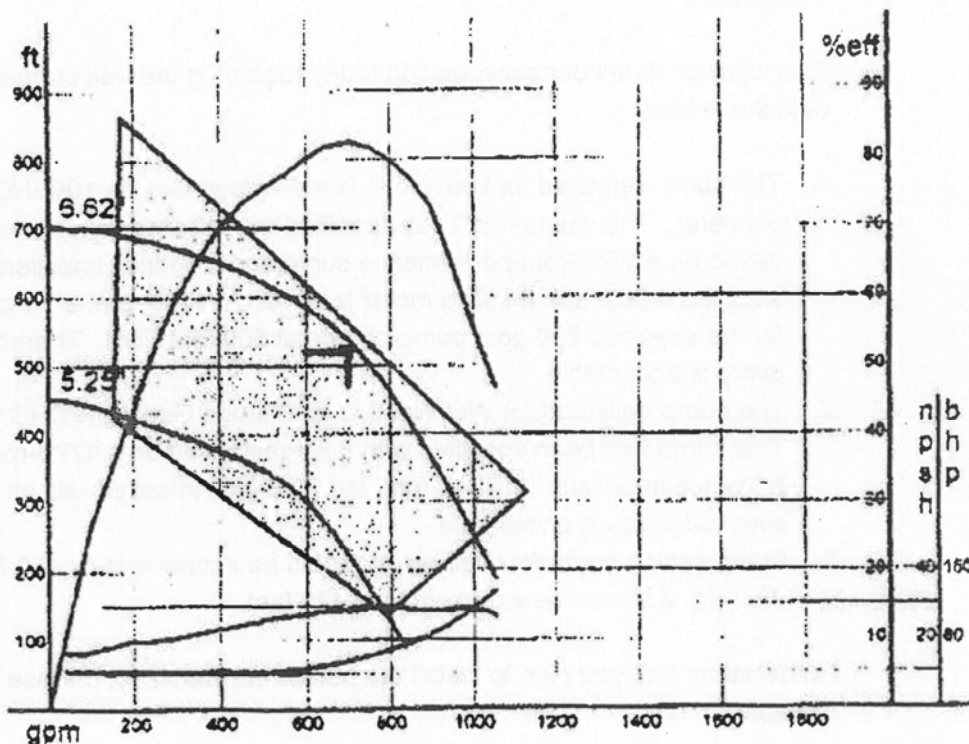
Suction elev: - ft

size: - in

Discharge size: - in

Max Lateral= .75". 8" Disch dia also avail. Thrust K Factor= 7 LBS/FT (10.4 KG/M)

DESIGN POINT
Flow: 700 gpm
Head: 520 ft
DATA POINT
Flow: 700 gpm
Head: 536 ft
Eff: 82.4%
Power: 115 bhp
NPSHr: 13.8 ft
DESIGN CURVE
Shutoff Head: 705 ft
Pressure: 305 psig
Min Flow: - gpm
BEP: 82.5% eff @ 697
Max: 117 bhp @ 795
MAX DIAMETER
Max: 117 bhp @ 795



PERFORMANCE EVALUATION

Flow gpm	Speed rpm	Head ft	Pump %eff	Power bhp	NPSHr ft	Motor %eff	Power kW	Hrs/yr	Cost
840	1740	424	77.8	116	18.3				
700	1740	538	82.4	115	13.8				
560	1740	600	78.3	108	10.9				
420	1740	644	71.6	95.4	10.8				
280	1740	674	57.2	83.3	10.8				

448

536
26 Cal
510
430 lift
80
50 w Tank
30

Pump performance curve for ISCI Well #8 (ICC Well #1) from
Scanlan Engineering Well Completion Report of July 1999.

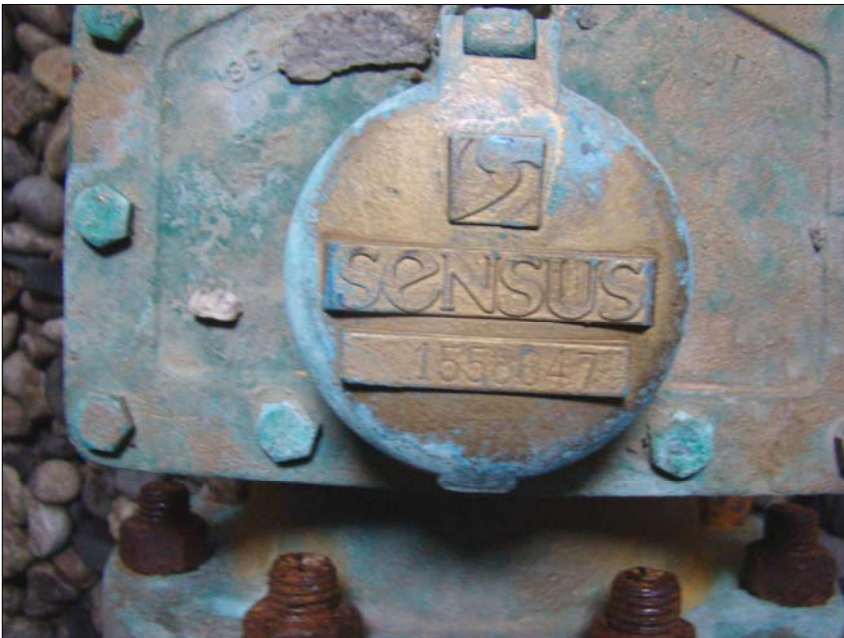
Figure 19.



October 13, 2011 photograph of water quality sample tap and main line pressure gage (broken) on the ISCI Well #8 (ICC Well #1) well head plumbing.



Integral flow-straightener on Sensus Model #W-2000 flow meter of ISCI Well #8.



6-inch Sensus flow meter with integral flow-straightener (Model #W-2000 and Serial #1558047) installed in ISCI Supply Well #8 plumbing.



Totalizing flow register on 8-inch Sensus flow meter for ISCI Supply Well #8.

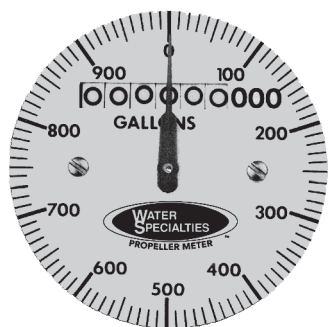
APPENDICES

Appendix A.

**Installation specifications for existing totalizing
flow-meters on ISCI supply wells Nos. 3-B, 7, and 8.**



MODEL ML03
 150 psi FLANGED TUBE METER
 SEALED METER MECHANISM - MAGNETIC DRIVE
 SEALED TOTALIZER
 SIZES 2" thru 48"



TOTALIZER



DESCRIPTION

MODEL ML03 FLANGED TUBE METERS are manufactured to the highest standards. Materials used on all meters and flow ranges for the low velocity meter meet or exceed AWWA standard C704-02. The flanged end tube design permits use in a wide range of applications with up to 150 psi working pressure. Flanged ends are 150 lb. AWWA class D flat face steel flanges. Fabricated steel meter tubes have straightening vanes and are protected internally and externally with 12-15 mils of NSF approved, fusion bonded epoxy resin.

INSTALLATION is made similar to placing a short length of flanged end pipe in the line. The meter can be installed in any of the following positions: vertically, horizontally or inclined on suction or discharge lines. The meter must have a full flow of liquid for proper accuracy. Fully opened gate valves, fittings or other obstructions that tend to set up flow disturbances should be a minimum of five pipe diameters upstream and two pipe diameters downstream from the meter.

PROPELLER is magnetically coupled with the drive mechanism through the sealed oil filled gearbox. This completely eliminates water entering the meter assembly, as well as the need for any packing gland. The propeller is a conical shaped three bladed propeller, injection molded of thermoplastic material resistant to normal water corrosion and deformity due to high flow velocities.

BEARING in propeller is a water lubricated ceramic sleeve and spindle bearing system with a ceramic/stainless steel spindle. Dual ceramic thrust bearings, standard on all meters, handle flows in both forward and reverse directions. The bearing design promotes extended periods of maintenance free propeller operation. Bearings within the sealed meter mechanism are shielded precision stainless steel bearings and are factory lubricated for the life of the meter.

TOTALIZER is o-ring sealed and magnetically coupled with the driving mechanism, and features a six digit totalizer with a full 3" diameter, 100 division, center sweep dial that permits extremely accurate readings for timing purposes in determining flow rates. The totalizer dial can be furnished in gallons, cubic feet, acre feet or any standard liquid measuring units. The bonnet, with padlock hasp, can be positioned in four different directions for the easiest possible reading when the meters are mounted in unusual positions.

CHANGE GEARS may be easily exchanged in the field when changing the dial, or when recalibrating for different pipe sizes. It is not necessary to remove pressure from the line for these changes.

O-RING SEALS are used at the meter head and all points where seals are required, making the meter mechanism completely immune to any of the corrosive effects of atmospheric moisture or the liquids measured by the meter assembly.

SPECIFICATIONS

ACCURACY plus or minus 2% of actual flow within the range specified for each meter size.

PRESSURE RANGE up to 150 PSI maximum working pressure.

TEMPERATURE RANGE 140° F Maximum. Consult factory for special construction for higher temperatures.

MINIMUM FLOWS as shown for each meter size and construction are required for accurate registration. See flow chart. NOTE: Minimum flow will be higher when auxiliary equipment is added.

MAXIMUM FLOWS as shown for each meter size and construction are rated for continuous operation. See flow chart.

INTERMITTENT FLOWS as shown for each meter size are rated for 10%-15% of the total time the meter is operating. Consult factory for High Velocity construction when intermittent flows are higher than shown on flow chart and/or when longer operating periods are required.

MATERIALS used in construction are chosen to minimize the corrosive effects of the liquids measured by the meter assembly.

MAGNETS are permanent ceramic type.

INTERIOR BEARINGS are shielded stainless steel.

PROPELLER BEARING is ceramic sleeve type.

PROPELLER SPINDLE is ceramic sleeve/stainless steel.

PROPELLER is injection molded thermoplastic.

GEARBOX is cast bronze.

SEPARATOR and SHAFTS are stainless steel.

METER HEAD BOLTS are stainless steel on 2"-20" units and plated steel on 24"-48" units.

METER HEAD is cast iron or fabricated steel NSF approved, fusion bonded epoxy coated.

METER TUBE is fabricated steel with straightening vanes and coated, inside and out, with 12-15 mils of NSF approved, fusion bonded epoxy by the fluidized bed method.

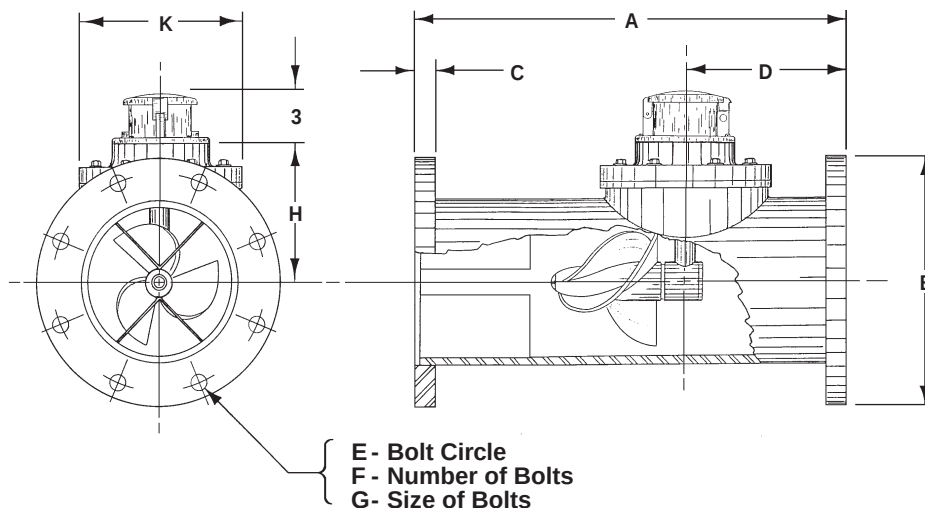
OPTIONAL EQUIPMENT is available upon request, including totalizer extensions, special construction or materials and a wide range of controls and instruments for indicating, totalizing and recording flow data.

A 5 YEAR GUARANTEE IS AVAILABLE FOR 2"-36" METERS.

ORDERING INFO must be specified by the customer and should include minimum and maximum flow ranges, the temperature of the meter environment, the totalizer dial units required, the type of materials/construction needed and optional equipment desired.

MODEL ML03

150 psi FLANGED TUBE METER
SEALED METER MECHANISM - MAGNETIC DRIVE
SEALED TOTALIZER
SIZES 2" thru 48"



METER & PIPE SIZE	*LOW VELOCITY CONSTRUCTION MIN. - MAX.	FLOW RANGES,GPM STANDARD CONSTRUCTION MIN. - MAX. - INT.	HIGH VELOCITY CONSTRUCTION MIN. - MAX.	DIMENSIONS									EST SHIPPING WEIGHT POUNDS
				A	B	C	D	E	F	G	H	K	
2	N/A	40-160-225	N/A	18	6	5/8	7	4 ³ / ₄	4	5/8	5 ¹ / ₄	9	70
3	40-250	45-250-350	N/A	18	7 ¹ / ₂	5/8	7	6	4	5/8	5 ¹ / ₄	9	70
4	50-500	55-500-700	200-700	18	9	5/8	7	7 ¹ / ₂	8	5/8	5 ¹ / ₄	9	80
6	90-1200	120-1200-1500	300-1500	22	11	11/16	9	9 ¹ / ₂	8	3/4	6 ¹ / ₄	9	150
8	100-1500	150-1500-2000	400-2500	24	13 ¹ / ₂	11/16	9	11 ³ / ₄	8	3/4	7 ¹ / ₄	9	170
10	125-2000	180-2000-3000	500-3500	26	16	11/16	10	14 ¹ / ₄	12	7/8	8 ¹ / ₂	11	230
12	150-2800	200-3000-3500	800-5000	28	19	13/16	10	17	12	7/8	9 ¹ / ₂	11	288
14	250-3750	300-4000-4500	1000-6000	42	21	15/16	12	18 ³ / ₄	12	1	10 ¹ / ₂	13 ¹ / ₂	396
16	350-4750	400-5000-6000	1200-7500	48	23 ¹ / ₂	1	12	21 ¹ / ₄	16	1	11 ¹ / ₂	13 ¹ / ₂	547
18	N/A	700-6000-7500	1500-9000	54	25	1 ¹ / ₁₆	15	22 ³ / ₄	16	1 ¹ / ₈	12 ¹ / ₂	13 ¹ / ₂	665
20	N/A	850-8000-9000	2000-12000	60	27 ¹ / ₂	1 ¹ / ₈	15	25	20	1 ¹ / ₈	13 ¹ / ₂	13 ¹ / ₂	780
24	N/A	1000-10000-13500	3000-15000	72	32	1 ¹ / ₄	18	29 ¹ / ₂	20	1 ¹ / ₄	17 ¹ / ₂	21	1250
30	N/A	1800-15000-21000	4000-25000	84	38 ³ / ₄	1 ³ / ₈	18	36	28	1 ¹ / ₄	20 ¹ / ₂	21	2010
36	N/A	2000-20000-30000	5000-35000	96	46	1 ⁵ / ₈	20	42 ³ / ₄	32	1 ¹ / ₂	23 ¹ / ₂	21	2840
42	N/A	3000-30000-40000	6000-50000	96	53	1 ³ / ₄	24	49 ¹ / ₂	36	1 ⁵ / ₈	28	32	4300
48	N/A	5500-35000-50000	7000-60000	96	59 ¹ / ₂	1 ⁷ / ₈	24	56	44	1 ⁵ / ₈	31	32	4730

Standard construction will be supplied for all main line meters unless special flow range, materials, or construction are required.

* Low velocity (LV) construction has the same low and maximum flow rates as AWWA C704.

Series “W” Turbo Meters

Model W-3500 DR

Bronze Magnetic Drive Flanged Ends Size 8” (DN 200mm)

DESCRIPTION

Model: W-3500 DR Turbo Meter is based on the turbine principle of measurement; its operating range is from 35 to 3500 gallons per minute (8 to 795 m³/h) with registration accuracy of 100% ±1.5% of actual thruput.

Conformance to Standards: Sensus Turbo Meters comply with ANSI/AWWA Standard C701 (most recent revision). Each meter is performance tested to insure compliance.

Performance: The meter’s unique principle of measurement assures extended accuracy life. The W-3500 DR has no restrictions as to sustained flow rates within its operating range. The design permits continuous operation up to its rated maximum flow capacity, without affecting long term accuracy or causing undue wear.

Construction: The meter consists of two basic assemblies— the maincase and the measuring chamber. Straightening vanes in the maincase minimize the swirl upstream of the meter so as to direct the flow evenly to the rotor. The measuring chamber assembly includes the rotor, adjusting vane (for calibration) and sealed Direct Reading (DR) register.

Magnetic Drive: The Right Angle Magnetic Drive eliminates conventional worm or miter gears normally required for horizontally mounted rotors or turbine measuring elements. Registration is accomplished by combining the magnetic actions of a driver magnet (embedded in the rear face of the rotor), a three-legged flux carrier and a cylindrical follower magnet attached to the gear train shaft inside the register’s magnet well. Water flowing through the meter causes the rotor (with magnet) to turn; as one of the magnet poles passes one of the flux carrier legs, the magnetic force is transmitted through the flux carrier leg to the follower magnet, causing the register shaft to rotate. The only moving part in water is the rotor assembly.

Rotor: The thermoplastic rotor with graphite bearing rotates on a chrome plated stainless steel shaft. The rotor assembly is virtually weightless in water, thus adding to bearing life.

Maintenance: The measuring chamber and straightening vanes can be removed, repaired and/or replaced without disturbing the maincase in the line. A spare chamber can be utilized in the event maintenance is required. Cover plates are also available to keep the line in service while the measuring chamber is repaired and recalibrated. Factory testing, repair and measuring chamber exchange programs are available.

Strainer: The meter comes equipped with an AWWA type strainer and must be installed immediately upstream of the meter. Sensus recommends the use of an approved strainer with this meter.



W-3500 DR Turbo Meter with AWWA Strainer

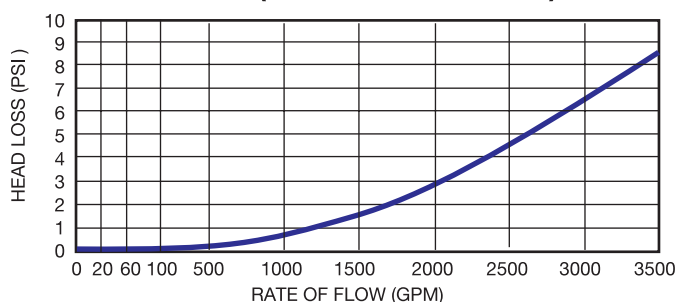


Intelligent Communications Encoder (ICE) Register

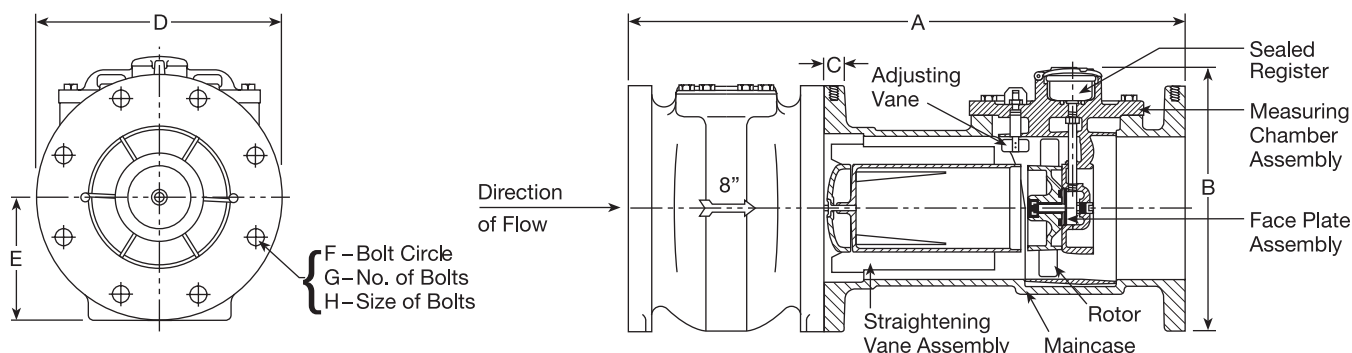
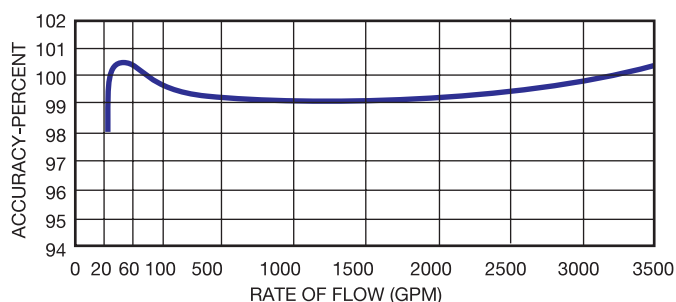
AMR / AMI Systems: Meters and encoders are compatible with current Sensus AMR/AMI systems.

Guarantee: Sensus Turbo Meters are backed by “The Sensus Guarantee.” Ask your Sensus representative for details or see Bulletin G-500.

Head Loss Curve (With AWWA Strainer)



Accuracy Curve (With AWWA Strainer)



DIMENSIONS AND NET WEIGHTS

Meter and Pipe Size	Normal Operating Range		Connections	Dimensions								Net Weight	Shipping Weight
				A	B	C	D	E	F	G	H		
8" DN 200mm	35 gpm 8 m ³ /hr	3500 gpm ¹ 795 m ³ /hr	Flanged	30-1/8" 765mm	15" 381mm	11/16" 17mm	13-1/2" 343mm	6-3/4" 172mm	11-3/4" 300mm	8 8	3/4" 19mm	305 lbs. 138 kg	340 lbs. 154 kg

¹ For continuous flows; 4400 GPM (998m³/h) maximum for intermittent flows.

SPECIFICATIONS

SERVICE	Measurement of potable cold water with flow in one direction only.
OPERATING RANGE	Continuous Flows: 35 to 3500 gpm (8 to 795 m ³ /h) Intermittent Flows: 4400 gpm max. (998 m ³ /h)
ACCURACY	100% ±1.5% of actual thruput
LOW FLOW	95% at 30 gpm (6.8 m ³ /h)
PRESSURE LOSS	Meter and Strainer—8.3 psi at 3500 gpm (.6 bar at 800 m ³ /h)
MAXIMUM CONTINUOUS OPERATION	150 psi (10.0 bar)
FLANGE	8" U.S. ANSI B 16.1 Class 125. Optional drillings, if specified, British Standard B.S. 10 or metric standard ISO R2084
REGISTER	Hermetically Sealed Direct Reading Register with Low Flow Indicator. Remote reading unit optional.

METER REGISTRATION	1,000,000,000 gallons 1,000 gallons/sweep hand revolution 100,000,000 cubic feet 100 cubic feet/sweep hand revolution 10,000,000 m ³ 10 m ³ /sweep hand revolution
---------------------------	---

MATERIALS	Maincase—Bronze Measuring Chamber—Bronze Straightening Vanes—Stainless Steel Rotor—Thermoplastic Radial Bearing—Ceramic Trim—Stainless Steel Thrust Bearings—Tungsten Carbide Magnets—Ceramic
------------------	--

STRAINER MATERIALS	Body and Cover—Cast Iron Screen—Stainless Steel
---------------------------	--

Series “W” Turbo Meters

Installation Recommendations

INSTALLATION INSTRUCTIONS

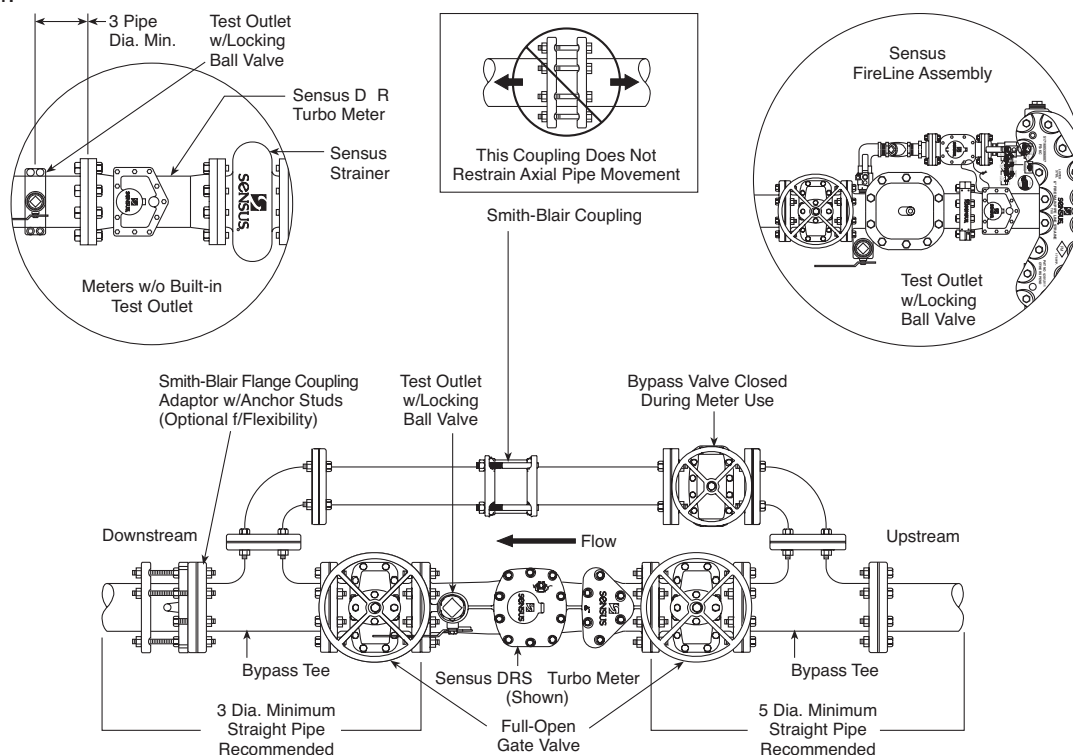
To insure valid registration and proper performance, the following factors should be considered when installing Sensus Turbo Meters or other velocity style meters.

1. When installing Turbo Meters with a strainer, a minimum of five (5) pipe diameters of straight run of pipe or equivalent full open components is required upstream of the meter strainer inlet flange. A minimum of ten (10) pipe diameters of full open components should be used upstream of the meter's inlet flange when installed without a strainer. The deletion of a strainer, however, is not recommended on any meter. Full open flow components may consist of: straight pipe, full open gate valves, bypass tees and concentric reducers (1 nominal reduction only).
2. Do not install elbows, bends, nonconcentric reducers, check valves, back flow preventers and/or pressure reducing devices within ten (10) pipe diameters upstream or five (5) pipe diameters downstream of the meter.

3. Do not install butterfly valves within five (5) pipe diameters upstream or three (3) pipe diameters downstream of the meter.

4. Gate valves located immediately upstream of the meter setting are acceptable, provided they are fully open during meter service and are not used to throttle flow rates through the meter.

Accuracy levels may be determined by comparison accuracy testing either by using a Sensus Portable Large Meter Tester or by removing the suspect meter and testing it on a calibrated test bench. The Turbo Meter's adjusting vane is factory set and its position is marked for reference. Accuracy level adjustments may be accomplished by changing the adjusting vane setting. A linear accuracy adjustment of $\pm 3\%$ is typical within the normal operating range of the Turbo Meter.



Appendix B.

**Amended Permit No. 63-12296, Statement of Completion for submitting
Proof of Beneficial Use, and Snake River Basin Adjudication Partial Decrees
for the IDOC's water rights appurtenant to its south Boise ISCI and ICC facilities**

RECEIVED

NOV 01 2011

RECEIVED

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

NOV 03 2011

STATEMENT OF COMPLETION

FOR SUBMITTING PROOF OF BENEFICIAL USE

FOR OFFICE USE ONLY

Amt. of Fee \$: 200

Receipt No. W039727

Receipt By: JMW

Date Received: 11-1-11

WATER RESOURCES
WESTERN REGION**For inquiries please contact Ed Squires at (208) 631-6781**

The Idaho Department of Water Resources considers this form a statement by the permit holder(s) that development of a water right has been completed and that water has been applied to beneficial use to the extent described below. This form must be accompanied by an examination fee, when necessary, or by a completed Beneficial Use Field Report prepared by a certified water right examiner. Please refer to the instructions and fee schedule for this form. If ownership of the permit has changed, please contact any Department office or visit the Department's website at: www.idwr.idaho.gov for an Assignment of Permit form. If you wish to relinquish your permit because you have not established the authorized use of the water and are not applying for an extension, please notify the Department in writing.

- Permit No.: 63-12296 Telephone No.: (208) 658-2000
- Name of Permit Holder(s): State of Idaho Department of Correction
- Mailing Address: 1299 N. Orchard, Suite 110 City: Boise
State: ID Zip: 83706 Email:
- Source of Water: Ground water If GROUND WATER (well), Date Drilled: mo. 12 / yr. 2010
Well Driller: Drill-Tech, Inc. Drilling Permit Number: 911199-859844
- Extent of use(s) completed (as authorized by the water right permit):
Domestic (No. of households): Stockwater (No. and type of stock):
Irrigation (No. of acres): Other: Municipal and Irrigation for state prison facilities
- Total rate of diversion or storage volume for which proof is submitted: 4.23 cfs OR 414.5 acre-feet.
- Compliance with a measuring device requirement, lockable controlling device requirement, and/or other conditions of permit: Refer to the approval conditions on your permit and respond accordingly. The Department will not issue a license if permit conditions are not met.

Measuring Device: Is a measuring device required?

Yes ☐ No ☒

If yes, has the measuring device been installed?

Yes ☐ No ☐

Lockable Controlling Device: Is a lockable device required to control the diversion?

Yes ☐ No ☒

If yes, has the lockable device been installed?

Yes ☐ No ☐

Other Conditions of Permit: Do the approval conditions on your permit require you to submit additional information in connection with your proof of beneficial use? If yes, list the conditions below and attach documents with the required information.

Rightholder shall comply with drilling permit requirements

Completed?

Yes ☒ No ☐

- Fee Enclosed: \$ 200 See fee schedule on back of the Instructions for filing proof of beneficial use. Proofs filed without an appropriate fee, will be considered incomplete.

- Person to contact to accompany the Department representative during field examination of the water system.

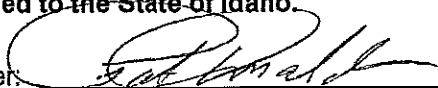
Name: Ed Squires Telephone Number: (208) 631-6781

Mailing Address: 1002 W. Franklin Street City: Boise

State: ID Zip: 83702 Email: ed@hydrologicinc.net

The information given on this form is my true statement of the extent to which the above numbered permit has been developed and water has been diverted and applied to a beneficial use. I understand that any undeveloped portion of the permit is relinquished to the State of Idaho.

Signature of permit holder:



Date: October 28, 2011

(Include your title, if on behalf of company or organization)

Pat Donaldson, Deputy Chief - Contract Services, IDOC

Mail to: Idaho Department of Water Resources, PO Box 83720, Boise, ID 83720-0098

State of Idaho
Department of Water Resources
Amendment of Permit

NO. 63-12296

Priority: December 10, 1995

Maximum Diversion Rate: 5.00 CFS

This is to certify, that STATE OF IDAHO
DEPT OF CORRECTIONS
1299 N ORCHARD STE 110
BOISE ID 83706

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>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/15 to 11/15	0.90 CFS	
MUNICIPAL	01/01 to 12/31	4.23 CFS	414.5 AF

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER	NE1/4NE1/4	Sec. 32, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	SE1/4NE1/4	Sec. 32, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	SE1/4SE1/4	Sec. 30, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	NW1/4NE1/4	Sec. 33, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	NE1/4SE1/4	Sec. 27, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	SW1/4SW1/4	Sec. 27, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	SW1/4SE1/4	Sec. 27, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	SW1/4SE1/4	Sec. 27, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	SW1/4SW1/4	Sec. 27, Twp 02N, Rge 02E, B.M., ADA County
GROUND WATER	NW1/4SE1/4	Sec. 32, Twp 02N, Rge 02E, B.M., ADA County

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N 02E 21									40.0	40.0			40.0				120.0
02N 02E 27					40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	5.0	40.0	40.0		405.0
02N 02E 28	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	640.0
02N 02E 29									40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	320.0
02N 02E 30			40.0	40.0				40.0	40.0			40.0	40.0	40.0	40.0	40.0	360.0
02N 02E 31	40.0	40.0	40.0	40.0	40.0			40.0									240.0
02N 02E 32	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0			40.0	40.0			480.0
02N 02E 33	40.0	40.0	40.0	40.0													160.0
02N 02E 34	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0							400.0

Total Acres: 3125

State of Idaho
Department of Water Resources
Amendment of Permit

NO. 63-12296

PLACE OF USE: MUNICIPAL

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N 02E 21											X	X			X		
02N 02E 27					X	X	X	X	X	X	X	X	X	X	X		
02N 02E 28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02N 02E 29									X	X	X	X	X	X	X	X	
02N 02E 30			X	X				X	X			X	X	X	X	X	
02N 02E 31	X	X	X	X	X			X									
02N 02E 32	X	X	X	X	X	X	X	X	X	X			X	X			
02N 02E 33	X	X	X	X													
02N 02E 34	X	X	X	X	X	X	X	X	X	X							

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **November 01, 2011**.
2. Subject to all prior water rights.
3. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
4. 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.
5. The Director retains jurisdiction to require the right holder to install and maintain acceptable measuring device(s), including data logger(s), at the dedicated distribution lines to the authorized place of use for this right.
6. Place of use for municipal purposes is within the service area of the Idaho Department of Corrections as provided for under Idaho law. The place of use is generally described as within the state prison facilities.
7. A map depicting the place of use boundary for the municipal use component of this water right at the time of this approval is attached to this document for illustration purposes.
8. Municipal use includes irrigation of open spaces with the state prison facilities, but it does not include irrigation of agricultural cropland. However, municipal waste water may be applied to agricultural cropland within the irrigation place of use to satisfy water quality requirements.
9. Water diverted for municipal use under this right is considered to be fully consumed.
10. This right is limited to the irrigation of 45 acres within the place of use described above in a single irrigation season.
11. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the lands above.

State of Idaho
Department of Water Resources
Amendment of Permit

NO. 63-12296

12. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088 and 63-12296 when combined shall not exceed a total diversion rate of 19.54 cfs for irrigation use and the irrigation of 1,120 acres within the place of use described above in a single irrigation season.
13. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 are also diverted through the points of diversion described above.
14. Rights 63-3487, 63-7025, 63-30297, 63-30298 and 63-12296 when combined shall not exceed a diversion rate of 10.41 cfs nor a total annual maximum diversion volume of 2469.0 af for municipal use.
15. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297, 63-30298 and 63-12296 when combined shall not exceed a total diversion rate of 26.24 cfs for all authorized purposes and the irrigation of 1,120 acres within the place of use described above in a single irrigation season.
16. 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.
17. Diversion of water from the points of diversion located in the SWSW, Section 27, T2N, R2E shall not exceed 5 cfs at any give time.

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 3rd day of November, 2008.


JOHN WESTRA, Western Regional Manager

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA

Case No. 39576

PARTIAL DECREE PURSUANT TO
I.R.C.P. 54(b) FOR

Water Right 63-03271

DISTRICT COURT - SRBA	
Fifth Judicial District	
County of Twin Falls - State of Idaho	
FEB - 6 2009	
By _____	Clerk
Deputy Clerk	

NAME AND ADDRESS: STATE OF IDAHO
DEPT OF CORRECTIONS
1299 N ORCHARD STE 110
BOISE, ID 83706

SOURCE: GROUND WATER

QUANTITY: 2.92 CFS
1026.00 AFY

Rights 63-3271, 63-3445, 63-3487, 63-7025 and 63-8088 when combined shall not exceed a total diversion rate of 18.64 cfs nor a total annual maximum diversion volume of 4860 af for irrigation. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 21.24 cfs, and a total annual maximum diversion volume of 6914.5 af for municipal use and irrigation.

PRIORITY DATE: 01/02/1962

POINT OF DIVERSION:	T02N R02E S27	NESE	Within Ada County
		SWSE	
		SWSE	
		SWSW	
	S30	SESE	
	S32	NENE	
		SENE	
		NWSE	
	S33	NWNE	

PURPOSE AND PERIOD OF USE:	PURPOSE OF USE	PERIOD OF USE	QUANTITY
	Irrigation	03-01 TO 11-15	2.92 CFS
			1026.00 AFY

PLACE OF USE:	Irrigation	Within Ada County
	T02N R02E S21	SWSW 40.0
		SWSE 40.0
	S27	NENW 40.0
		SNNW 40.0
		NESW 40.0
		SWSW 40.0
		NESE 5.0
		SWSE 40.0
	S28	NENE 40.0
		SWNE 40.0
		NENN 40.0
		SNNW 40.0
		NESW 40.0
		SWSW 40.0
		NESE 40.0
		SWSE 40.0
	S29	NESW 40.0
		SWSW 40.0
		NESE 40.0
		SWSE 40.0
	S30	SWNE 40.0
		SENE 40.0
		SESW 40.0

SRBA Partial Decree Pursuant to I.R.C.P. 54(b) (continued)

PLACE OF USE (continued)

	SESW 40.0	NESE 40.0
	NWSE 40.0	SWSE 40.0
	SESE 40.0	
S31	NENE 40.0	NNNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	SENW 40.0
S32	NENE 40.0	NNNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	NNNW 40.0
	SWNW 40.0	SENW 40.0
	NESW 40.0	NWSW 40.0
	NESE 40.0	NWSE 40.0
S33	NENE 40.0	NNNE 40.0
	SWNE 40.0	SENE 40.0
S34	NENE 40.0	NNNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	NNNW 40.0
	SWNW 40.0	SENW 40.0
	NESW 40.0	NWSW 40.0

3125.0 Acres Total

This right is limited to the irrigation of 228 acres within the place of use described above in a single irrigation season. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined are limited to the irrigation of 1,080 acres within the place of use described above in a single irrigation season.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. I.C. SECTION 42-1412(6).

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.

John M. Melanson

John M. Melanson
Presiding Judge of the
Snake River Basin Adjudication

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

DISTRICT COURT - SRBA :
Fifth Judicial District
County of Twin Falls - State of Idaho

FEB - 6 2009

In Re SRBA :
Case No. 39576

PARTIAL DECREE PURSUANT TO
I.R.C.P. 54(b) FOR

Water Right 63-03445

By

Clerk

Deputy Clerk

NAME AND ADDRESS: STATE OF IDAHO.
DEPT OF CORRECTIONS
1299 N ORCHARD STE 110
BOISE, ID 83706

SOURCE: GROUND WATER

QUANTITY: 4.74 CFS
1066.50 AFY

Rights 63-3271, 63-3445, 63-3487, 63-7025 and 63-8088 when combined shall not exceed a total diversion rate of 18.64 cfs nor a total annual maximum diversion volume of 4860 af for irrigation. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 21.24 cfs, a total annual maximum diversion volume of 6914.5 af for municipal use and irrigation.

PRIORITY DATE: 04/16/1965

POINT OF DIVERSION: T02N R02E S27 SWSW Within Ada County
NESE
SWSE
SNSE
S30 SESE
S32 NENE
NWSE
SENE
S33 NWNE

PURPOSE AND PERIOD OF USE:	PURPOSE OF USE	PERIOD OF USE	QUANTITY
	Irrigation	03-15 TO 11-15	4.74 CFS 1066.50 AFY

The use of water for irrigation under this right may begin as early as March 1, provided other elements of the right are not exceeded. The use of water before March 15 under this remark is subordinate to all water rights having no subordinated early or late irrigation use and a priority date earlier than the date a partial decree is entered for this right.

PLACE OF USE:	Irrigation	Within Ada County
T02N R02E S21	SWSW 40.0	SESW 40.0
	SWSE 40.0	
S27	NENW 40.0	NWNW 40.0
	SWNW 40.0	SENW 40.0
	NESW 40.0	NNSW 40.0
	SWSW 40.0	SESW 40.0
	NESE 5.0	NWSE 40.0
	SWSE 40.0	
S28	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	NWNW 40.0
	SWNW 40.0	SENW 40.0
	NESW 40.0	NNSW 40.0
	SWSW 40.0	SESW 40.0
	NESE 40.0	NWSE 40.0

SRBA Partial Decree Pursuant to I.R.C.P. 54(b) (continued)

PLACE OF USE (continued)

	SWSE 40.0	SESE 40.0
S29	NESW 40.0	NWSW 40.0
	SWSW 40.0	SESW 40.0
	NESE 40.0	NWSE 40.0
	SWSE 40.0	SESE 40.0
S30	SWNE 40.0	SENE 40.0
	SESW 40.0	NESW 40.0
	SWSE 40.0	SESE 40.0
	SESE 40.0	SESE 40.0
S31	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	SENW 40.0
S32	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	NWNW 40.0
	SWNW 40.0	SENW 40.0
	NESW 40.0	NWSW 40.0
	NESE 40.0	NWSE 40.0
S33	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
S34	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	NWNW 40.0
	SWNW 40.0	SENW 40.0
	NESW 40.0	NWSW 40.0
3125.0 Acres Total		

This right is limited to the irrigation of 237 acres within the place of use described above in a single irrigation season. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined are limited to the irrigation of 1,080 acres within the place of use described above in a single irrigation season.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. I.C. SECTION 42-1412(6).

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.

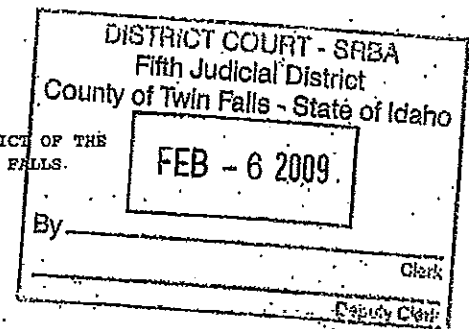
John M. Melanson
 John M. Melanson
 Presiding Judge of the
 Snake River Basin Adjudication

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS.

In Re SRBA
Case No. 39576

PARTIAL DECREE PURSUANT TO
I.R.C.P. 54(b) FOR

Water Right 63-03487



NAME AND ADDRESS: STATE OF IDAHO
DEPT OF CORRECTIONS
1299 N ORCHARD STE 110
BOISE, ID 83706

SOURCE: GROUND WATER

QUANTITY: 5.40 CFS
2601.00 AFY

Rights 63-3487, 63-7025, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 6.18 cfs nor a total annual maximum diversion volume of 2054.5 af for municipal use. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 21.24 cfs, a total annual maximum diversion volume of 6914.5 af for municipal use and irrigation. Rights 63-3271, 63-3445, 63-3487, 63-7025 and 63-8088 when combined shall not exceed a total diversion rate of 18.64 cfs nor a total annual maximum diversion volume of 4860 af for irrigation.

PRIORITY DATE: 01/20/1966

POINT OF DIVERSION: T02N R02E S27 SWSW Within Ada County
NESE
SWSE
SWSE
S30 SESE
S32 NENE
SENE
NWSE
S33 NNWE

PURPOSE AND
PERIOD OF USE:

PURPOSE OF USE	PERIOD OF USE	QUANTITY
Irrigation	03-15 TO 11-15	2.80 CFS 630.00 AFY
Municipal	01-01 TO 12-31	5.40 CFS 1971.00 AFY

Municipal place of use is within the service area of Idaho Dept. of Corrections as provided for under Idaho law. The place of use is generally described as within the state prison facilities. Municipal use includes irrigation of open spaces within the state prison facilities and does not include irrigation of agricultural cropland. The water used for municipal purposes is applied to and irrigates land listed in the place of use to satisfy water quality requirements. Water diverted for municipal purposes shall not irrigate agricultural cropland unless the water is first beneficially used in the prison facility as authorized by this right. The use of water for irrigation under this right may begin as early as March 1, provided other elements of the right are not exceeded. The use of water before March 15 under this remark is subordinate to all water rights having no subordinated early or late irrigation use and a priority date earlier than the date a partial decree is entered for this right.

SRBA Partial Decree Pursuant to I.R.C.P. 54(b) (continued)

PLACE OF USE:	Irrigation		Within Ada County
	T02N R02E S21	SWSW 40.0	SESW 40.0
		SWSE 40.0	
	S27	NENW 40.0	NWNW 40.0
		SWNW 40.0	SENW 40.0
		NESW 40.0	NWSW 40.0
		SWSW 40.0	SESW 40.0
		NESE 5.0	NWSE 40.0
		SWSE 40.0	
	S28	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
		NENW 40.0	NWNW 40.0
		SWNW 40.0	SENW 40.0
		NESW 40.0	NWSW 40.0
		SWSW 40.0	SESW 40.0
		NESE 40.0	NWSE 40.0
		SWSE 40.0	SESE 40.0
	S29	NESW 40.0	NWSW 40.0
		SWSW 40.0	SESW 40.0
		NESE 40.0	NWSE 40.0
		SWSE 40.0	SESE 40.0
	S30	SWNE 40.0	SENE 40.0
		SENW 40.0	NESW 40.0
		SESW 40.0	NESE 40.0
		NWSE 40.0	SWSE 40.0
		SESE 40.0	
	S31	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
		NENW 40.0	SENW 40.0
	S32	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
		NENW 40.0	NWNW 40.0
		SWNW 40.0	SENW 40.0
		NESW 40.0	NWSW 40.0
		NESE 40.0	NWSE 40.0
	S33	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
	S34	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
		NENW 40.0	NWNW 40.0
		SWNW 40.0	SENW 40.0
		NESW 40.0	NWSW 40.0
	3125.0 Acres Total		

Municipal
Same as Irrigation

Within Ada County

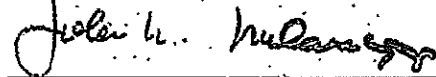
This right is limited to the irrigation of 140 acres within the place of use described above in a single irrigation season. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined are limited to the irrigation of 1,080 acres within the place of use described above in a single irrigation season.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. I.C. SECTION 42-1412(6).

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.



John M. Melanson
Presiding Judge of the
Snake River Basin Adjudication

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

DISTRICT COURT - SRBA
Fifth Judicial District
County of Twin Falls - State of Idaho

FEB - 6 2009

By: _____
Clerk

Deputy Clerk

In Re SRBA

Case No. 39576

PARTIAL DECREE PURSUANT TO
I.R.C.P. 54(b) FOR

Water Right 63-07025

NAME AND ADDRESS:

STATE OF IDAHO
DEPT OF CORRECTIONS
1299 N ORCHARD STE 110
BOISE, ID 83706

SOURCE:

GROUND WATER

QUANTITY:

3.38 CFS
1252.00 AFY

Rights 63-3487, 63-7025, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 6.18 cfs nor a total annual maximum diversion volume of 2054.5 af for municipal use. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 21.24 cfs, a total annual maximum diversion volume of 6914.5 af for municipal use and irrigation. Rights 63-3271, 63-3445, 63-3487, 63-7025 and 63-8088 when combined shall not exceed a total diversion rate of 18.64 cfs nor a total annual maximum diversion volume of 4860 af for irrigation.

PRIORITY DATE:

09/22/1967

POINT OF DIVERSION:

T02N R02E S27 SWSW Within Ada County
NESE
SWSE
SWSE
SESE
S30
S32 NENE
SENE
NWSE
S33 NNNE

PURPOSE AND
PERIOD OF USE:

PURPOSE OF USE	PERIOD OF USE	QUANTITY
Irrigation	03-15 TO 11-15	3.38 CFS 1184.80 AFY
Municipal	01-01 TO 12-31	0.50 CFS 67.20 AFY

Municipal place of use is within the service area of Idaho Dept. of Corrections as provided for under Idaho law. The place of use is generally described as within the state prison facilities. Municipal use includes irrigation of open spaces within the state prison facilities and does not include irrigation of agricultural cropland. The water used for municipal purposes is applied to and irrigates land listed in the place of use to satisfy water quality requirements. Water diverted for municipal purposes shall not irrigate agricultural cropland unless the water is first beneficially used in the prison facility as authorized by this right. The use of water for irrigation under this right may begin as early as March 1, provided other elements of the right are not exceeded. The use of water before March 15 under this remark is subordinate to all water rights having no subordinated early or late irrigation use and a priority date earlier than the date a partial decree is entered for this right.

SRBA Partial Decree Pursuant to I.R.C.P. 54(b) (continued)

PLACE OF USE:	Irrigation		Within Ada County
	T02N R02E S21	SWSW 40.0	SESW 40.0
		SWSE 40.0	
	S27	NENW 40.0	NWNW 40.0
		SWNW 40.0	SENW 40.0
		NESW 40.0	NWSW 40.0
		SWSW 40.0	SESW 40.0
		NESE 5.0	NWSE 40.0
		SWSE 40.0	
	S28	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
		NENW 40.0	NWNW 40.0
		SWNW 40.0	SENW 40.0
		NESW 40.0	NWSW 40.0
		SWSW 40.0	SESW 40.0
		NESE 40.0	NWSE 40.0
		SWSE 40.0	SESE 40.0
	S29	NESW 40.0	NWSW 40.0
		SWSW 40.0	SESW 40.0
		NESE 40.0	NWSE 40.0
		SWSE 40.0	SESE 40.0
	S30	SWNE 40.0	SENE 40.0
		SENW 40.0	NESW 40.0
		SESW 40.0	NESE 40.0
		NWSE 40.0	SWSE 40.0
		SESE 40.0	
	S31	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
		NENW 40.0	SENW 40.0
	S32	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
		NENW 40.0	NWNW 40.0
		SWNW 40.0	SENW 40.0
		NESW 40.0	NWSW 40.0
		NESE 40.0	NWSE 40.0
	S33	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
	S34	NENE 40.0	NWNE 40.0
		SWNE 40.0	SENE 40.0
		NENW 40.0	NWNW 40.0
		SWNW 40.0	SENW 40.0
		NESW 40.0	NWSW 40.0
	3125.0 Acres Total		

Municipal
Same as Irrigation

Within Ada County

This right is limited to the irrigation of 264 acres within the place of use described above in a single irrigation season. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined are limited to the irrigation of 1,080 acres within the place of use described above in a single irrigation season.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. I.C. SECTION 42-1412(6).

SRBA Partial Decree Pursuant to I.R.C.P. 54(b) (continued)

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.



John M. Melanson
Presiding Judge of the
Snake River Basin Adjudication

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

DISTRICT COURT - SRBA

Fifth Judicial District
County of Twin Falls - State of Idaho

APR - 3 2009

In Re SRBA)
)
Case No. 39576)

PARTIAL DECREE PURSUANT TO
I.R.C.P. 54(b) FOR

Water Right 63-08088

By _____ Clerk

Deputy Clerk

NAME AND ADDRESS: STATE OF IDAHO
DEPT OF CORRECTIONS
1299 N ORCHARD STE 110
BOISE, ID 83706

SOURCE: GROUND WATER

QUANTITY: 4.80 CFS
1404.00 AFY

Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and
63-30298 when combined shall not exceed a total diversion rate
of 21.24 cfs, a total annual maximum diversion volume of 6914.5
af for municipal use and irrigation. Rights 63-3271, 63-3445,
63-3487, 63-7025 and 63-8088 when combined shall not exceed a
total diversion rate of 18.64 cfs nor a total annual maximum
diversion volume of 4860 af for irrigation.

PRIORITY DATE: 02/27/1975

POINT OF DIVERSION: T02N R02E S27 SWSW Within Ada County
NESE
SWSE
SWSE
S30 SESE
S32 NENE
SENE
NWSE
S33 NWNE

PURPOSE AND PERIOD OF USE:	PURPOSE OF USE	PERIOD OF USE	QUANTITY
	Irrigation	04-01 TO 11-01	4.80 CFS 1404.00 AFY

The use of water for irrigation under this right may begin as
early as March 1, provided other elements of the right are not
exceeded. The use of water before April 1 under this remark is
subordinate to all water rights having no subordinated early or
late irrigation use and a priority date earlier than the date a
partial decree is entered for this right.

PLACE OF USE:	Irrigation	Within Ada County
T02N R02E S21	SWSW 40.0 SWSE 40.0	SESW 40.0
S27	NENW 40.0 SWNW 40.0 NESW 40.0 SWSW 40.0 NESE 5.0 SWSE 40.0	NNNW 40.0 SENW 40.0 NWSW 40.0 SESW 40.0 NWSE 40.0
S28	NENE 40.0 SWNE 40.0 NENW 40.0 SWNW 40.0 NESW 40.0 SWSW 40.0 NESE 40.0	NWNE 40.0 SENE 40.0 NNNW 40.0 SENW 40.0 NWSW 40.0 SESW 40.0 NWSE 40.0

SRBA Partial Decree Pursuant to I.R.C.P. 54(b) (continued)

PLACE OF USE (continued)

	SWSE 40.0	SESE 40.0
S29	NESW 40.0	NWSW 40.0
	SWSW 40.0	SESW 40.0
	NESE 40.0	NWSE 40.0
	SWSE 40.0	SESE 40.0
S30	SWNE 40.0	SENE 40.0
	SENN 40.0	NESW 40.0
	SESW 40.0	NESE 40.0
	NWSE 40.0	SWSE 40.0
	SESE 40.0	
S31	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	SENN 40.0
S32	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	NWNW 40.0
	SWNW 40.0	SENN 40.0
	NESW 40.0	NWSW 40.0
	NESE 40.0	NWSE 40.0
S33	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
S34	NENE 40.0	NWNE 40.0
	SWNE 40.0	SENE 40.0
	NENW 40.0	NWNW 40.0
	SWNW 40.0	SENN 40.0
	NESW 40.0	NWSW 40.0

3125.0 Acres Total

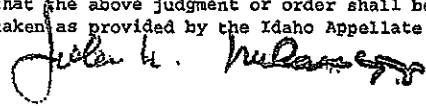
This right is limited to the irrigation of 312 acres within the place of use described above in a single irrigation season. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined are limited to the irrigation of 1,080 acres within the place of use described above in a single irrigation season.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. I.C. SECTION 42-1412(6).

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.


 John M. Melanson
 Presiding Judge of the
 Snake River Basin Adjudication

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA)
Case No. 39576)
PARTIAL DECREE PURSUANT TO
I.R.C.P. 54(b) FOR
Water Right 63-30297

NAME AND ADDRESS: STATE OF IDAHO
DEPT OF CORRECTIONS
1299 N ORCHARD STE 110
BOISE, ID 83706

SOURCE: GROUND WATER

QUANTITY: 0.04 CFS
2.80 AFY

The daily diversion volume under this municipal right shall not exceed 2,500 gallons in accordance with Section 42-111, Idaho Code. Rights 63-3487, 63-7025, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 6.18 cfs nor a total annual maximum diversion volume of 2054.5 af for municipal use. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 21.24 cfs, a total annual maximum diversion volume of 6914.5 af for municipal use and irrigation.

PRIORITY DATE: 08/01/1977

POINT OF DIVERSION: T02N R02E S27 SWSW Within Ada County
NESE
SHSE
SWSE
S30 SESE
S32 NENE
SENE
NWSE
S33 NWNE

PURPOSE AND PERIOD OF USE:	PURPOSE OF USE	PERIOD OF USE	QUANTITY
	Municipal	01-01 TO 12-31	0.04 CFS 2.80 AFY

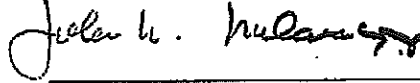
PLACE OF USE: Municipal place of use is within the service area of Idaho Dept. of Corrections as provided for under Idaho law. The place of use is generally described as within the state prison facilities. Municipal use includes irrigation of open spaces within the state prison facilities and does not include irrigation of agricultural cropland. The water used for municipal purposes is applied to and irrigates land listed in the place of use to satisfy water quality requirements. Water diverted for municipal purposes shall not irrigate agricultural cropland unless the water is first beneficially used in the prison facility as authorized by this right.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. I.C. SECTION 42-1412(6).

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.



John M. Melanson
Presiding Judge of the
Snake River Basin Adjudication

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

DISTRICT COURT - SRBA
Fifth Judicial District
County of Twin Falls - State of Idaho

JUN 17 2009

By _____ Clerk
Deputy Clerk

In Re SRBA)
) PARTIAL DECREE PURSUANT TO
) I.R.C.P. 54(b) FOR
Case No. 39576)
) Water Right 63-30298

RECEIVED

JUN 18 2009

DEPARTMENT OF
WATER RESOURCES

NAME AND ADDRESS: STATE OF IDAHO
DEPT OF CORRECTIONS
1299 N ORCHARD STE 110
BOISE, ID 83706

SOURCE: GROUND WATER

QUANTITY: 0.24 CFS
13.50 AFY

The daily diversion volume under this municipal right shall not exceed 12,050 gallons in accordance with Section 42-111, Idaho Code, Rights 63-3487, 63-7025, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 6.18 cfs nor a total annual maximum diversion volume of 2054.5 af for municipal use. Rights 63-3271, 63-3445, 63-3487, 63-7025, 63-8088, 63-30297 and 63-30298 when combined shall not exceed a total diversion rate of 21.24 cfs, a total annual maximum diversion volume of 6914.5 af for municipal use and irrigation.

PRIORITY DATE: 08/01/1977

POINT OF DIVERSION: T02N R02E S27 SWSW Within Ada County
NESE
SWSE
SWSW
S30 SESE
S32 NENE
SENE
NWSE
S33 NNNE

PURPOSE AND PERIOD OF USE:	PURPOSE OF USE	PERIOD OF USE	QUANTITY
	Municipal	01-01 TO 12-31	0.24 CFS
			13.50 AFY

Municipal use includes irrigation of open spaces within the state prison facilities and does not include irrigation of agricultural cropland. The water used for municipal purposes is applied to and irrigates land listed in the place of use to satisfy water quality requirements. Water diverted for municipal purposes shall not irrigate agricultural cropland unless the water is first beneficially used in the prison facility as authorized by this right.

PLACE OF USE: Municipal place of use is within the service area of Idaho Dept. of Corrections as provided for under Idaho law. The place of use is generally described as within the state prison facilities.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE

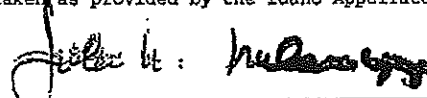
SRBA Partial Decree Pursuant to I.R.C.P. 54(b) (continued)

OTHER PROVISIONS (continued)

ENTRY OF A FINAL UNIFIED DECREE. I.C. SECTION 42-1412(6).

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.



John M. Melanson
Presiding Judge of the
Snake River Basin Adjudication

Appendix C.

**Summary of the considerations behind the resultant conditions and discussion of
beneficial use for Transfer No. 67055 and Amendment No. 69884 by
Steve Lester's file memorandum dated October 27, 2006**

MEMORANDUM

TO: Transfer No. 67055 & Amendment No. 69884 Files
FROM: Steve Lester 
DATE: October 27, 2006
RE: Evaluation of Sufficiency of Information Submitted

Transfer – includes 5 licenses (63-3271, 63-3445, 63-3487, 63-7025 and 63-8088) plus 3 beneficial use claims (63-30296, 63-30297 and 63-30298).

Amendment – permit 63-12296.

The Idaho Department of Corrections (IDOC) proposed changes to its water rights serving the prison complex south of Boise. The transfer and permit amendment applications originated in 1999. Previously amended versions were protested by United Water Idaho (UWI). The parties resolved the protest with a private agreement submitted to IDWR. The agreement does not include conditions subject to IDWR jurisdiction.

IDOC and IDWR worked together in recent months for approvals to be issued. Western Region allocation and adjudication staff met recently with IDOC to work through some remaining issues. Accordingly, IDOC amended both applications on October 11. Although additional legal notice and fees were not needed for this step, UWI was provided a comment period through October 25. Roger Dittus from UWI called Western Region on October 26 to report that UWI did not have concerns about the amended applications.

The recently amended applications propose these revisions:

1. List all wells as P/D for all rights instead of segregating irrigation from municipal wells (one system vs. two).
2. List all wells to 40-acre instead of 10-acre locations.
3. Amend the permit by retaining irrigation use but changing 4.23 cfs from domestic to municipal (instead of changing all 5.00 cfs to municipal).

The applications can be approved as outlined in this memo. The applicant will have an opportunity to respond to the approvals. Assuming no significant changes result from that process, IDWR can prepare SRBA recommendations based on the transfer approval (the permit is beyond SRBA scope). SRBA recommendations need to be completed by November 17 to be included in the Basin 63 Part III Director's Report.

Everything is on track to successfully meet the SRBA deadline.

SCANNED

NOV 01 2006

Preliminary Orders approving the applications should be sent to IDOC ATTN Pat Donaldson with a copy to Deputy AG David Barber. Those two have been very helpful in working through this process.

Summary of Information Submitted

Note: For simplicity, the rights being transferred and the permit being amended are sometimes collectively referred to as rights.

Authority to File: The applicant owns the rights.

Water Right Validity: Transferred rights are presumed valid based on thorough SRBA review with one exception noted below. Licensed rights were claimed more or less as licensed with some minor differences generally focused on accomplished P/D changes. All of the licensed irrigation is recognized by the adjudication review. Note that right 63-3445 will revert to its pre-Transfer 5314 full irrigation status. Previous IDWR file information in that regard adequately verified full irrigation. Approval of Transfer 5314 was followed by the filing of Transfer 67055 about one year later. These factors favor reversal of Transfer 5314 without complications.

Beneficial use expansion claim 63-32096 will be disallowed in the SRBA. That claim is not included in the transfer approval. That claim was not included in application data entry due to some problems dealing with this in Workflow.

The permit remains in good standing assuming an approved extension of time to file proof of beneficial use (pending at SO). Ideally the extension approval will be part of the amendment approval.

Injury to Other Water Rights: Injury to other rights is not found. Settlement of the protest reinforces this conclusion.

Enlargement of Use: Enlargement is prevented by limiting the nature of use change to appropriate amounts reflected in the draft approvals. While municipal use in the permit is considered fully consumptive (existing condition of approval), municipal use in the transfer is not. This fully consumptive issue revolves around land application practices necessary for environmental requirements.

Transfer approval should not include a condition stating that municipal use is fully consumptive. Since municipal water under the transfer derives from retired irrigation, a fully consumptive clause would result in an enlargement. Land application of municipal water will result in de minimus consumptive use during the non-irrigation season if this practice is needed during those times. Land application of municipal water during the irrigation season will mimic irrigation use after water is first used for non-consumptive uses (potable water etc.). Therefore, land application under the transfer will not result in an enlargement.

Local Public Interest: Both approvals serve local public interests.

Beneficial Use/Conservation of Water Resources: Both applications propose beneficial use consistent with conservation of water resources in Idaho.

Approval of both applications is consistent with criteria of I. C. § 42-211 (amendment) and § 42-222 (transfer).

Discussion

Data entry affected correct records.

The same boundary will define irrigation and municipal uses. The uses are kept separate to distinguish traditional irrigation of cropland from typical municipal uses generally served by separate wells. (The separate well thought is subject to change in the future for this site as noted below.)

Both draft approvals reflect a system of 9 wells for dual uses in a large area. The wells can provide irrigation and/or municipal uses within the boundary. The boundary is a 3125 acre PPOU for irrigation that doubles as a municipal use service area.

All the public water supply wells can provide backup to irrigation use but not vice versa. Some of the wells are older irrigation wells that cannot be used for potable water at this time. However, IDOC estimated that eventual replacement of such a well with a well constructed to public water supply standards would be cost effective in the long run. The approvals reflect this possible flexibility. The approvals also list the wells to 40-acre tracts for additional well replacement flexibility in the future.

Both applications propose some irrigation and some municipal uses. IDOC has ceased irrigating cropland at the site. Apparently the irrigation rights or portions of rights will be leased into the water bank. Municipal approvals will provide the necessary water for the site. This will include miscellaneous irrigation (defined under municipal use) other than agricultural cropland.

Verifying Beneficial Use and Combined Limits For Transfer

Transfer 5314 for 63-3445 will be reversed to cover full irrigation as in the original license. That irrigation was previously verified and is reconfirmed by current SRBA analysis. All the other irrigation licenses are similarly verified by adjudication review. Acres, rates and volumes are adapted from the licenses with one exception. Volume in 63-3271 was not previously defined. Using "volume required vs. volume diverted" analysis, allow full volume of 1026 afa for that license ($V_r < V_d$).

Additional review reveals license 63-7025 adds 163 unique acres to the total (264 acres minus 101 overlap acres with 63-3271 and 63-3487). Total licensed acres includes 1080 unique acres with 18.64 cfs and 4860 afa (full volume).

As already noted, expansion claim 63-30296 (added 33 unique acres to the total) will be disallowed and is excluded from transfer approval. It is not necessary for transfer approval to state this disallowal – that can be covered by the adjudication process.

Licenses 63-3487 and 63-7025 include about 6 cfs/2038 afa for domestic use that can be changed to municipal use. Again, SRBA verification of historic use supports this change. Additionally, current transfer policy (Transfer Memo #24, item 5d "enlargement of use," subsection 13

“historic use recognized for municipal purposes”) supports this change. The thrust of subsection 13 recognizes that domestic use historically acting like municipal use can be changed without considering this an enlargement of use.

Beneficial use claims 63-30297 and 63-30298 for “42-111 exemptions” were verified by SRBA review. The claims include data collected by SRBA staff in the mid-1990s. Staff visited on-site with system operators, which resulted in the claims being filed. Domestic use for the meat packing plant in 63-30297 is limited to 2500 gpd. Stockwater use for 63-30298 is limited to 13,000 gpd. Allow 2500 gpd all year for the former without additional data (2.8 afa). Allow 12,050 gpd all year for the latter based on system data previously provided to IDWR (13.5 afa). It is not unreasonable to assume year around usage or close thereto for the prison setting.

The total municipal rate of flow in the transfer must be limited by constraints for the rights that will provide this use. Then the total municipal rate can be factored into all necessary constraints to yield the total flow rate for all uses in the transfer. Here is the layout for that:

Total irrigation rate = 18.64	= + 18.64
Municipal rate 63-3487 = 5.40 / only 2.60 cfs of that is additive per license	= + 2.60
Municipal rate 63-7025 = 0.50 / but none of that is additive per license	= + 0.00
Municipal rate 63-30297 = 0.04 / all of which is additive in transfer	= + 0.04
Municipal rate 63-30298 = 0.24 / all of which is additive in transfer	= + 0.24
Sum of above rates	= 21.52
Allow maximum rate applied for in transfer	= 21.24

Allow 18.64 cfs for irrigation and 6.18 cfs for municipal. Limit the total combined rate to the maximum applied for in the transfer application, 21.24 cfs. Volumes for those uses are additive (6914.5 afa) and are capable of being produced by the system ($21.24 \times 365 \times 1.8935 = 15,377$ afa).

Disregard “fire protection” use in any rights. That does not add rate or volume to any right in the transfer and will be covered by municipal use.

Transfer limits should be linked with permit limits.

Limits in Amending the Permit

The permit authorizes 45 acres in a 165 acre P/U. It also covers 4.23 cfs for up to 3700 people. The permit is considered fully consumptive due to land application requirements.

The 45 acres add 40 unique acres to the total P/U (5 acre overlap with 63-3445 when consider original licensed irrigation prior to T5314 that is now being reversed). Therefore there will be 1120 total unique acres of irrigation under the transfer (1080) combined with the permit (40).

Use the 100 gpd/person licensing standard for this setting (same standard used in most recent license with domestic use, 63-7025). Limit municipal use to the maximum volume the domestic use could be licensed for: $(3700 \times 100 \times 365) / 325850 = 414.5$ afa.

Irrigation volume remains undefined by IDWR standards in the permit. Rate limits are maintained in the amendment ($0.90 + 4.23 = 5.00$ cfs). Conditions of approval reflect combined limits with the transfer where appropriate.

See the attached tables for a summary of transfer and amendment uses, flow rates, volumes and combined limits. Also see the attached irrigation overlap diagram.

Conditions of Approval

Draft conditions are based on existing conditions, standard requirements for proposed uses, and a few odds and ends. The odds and ends are noted below.

Internal IDWR consultation suggested a condition of approval that municipal use does not cover crops. IDOC asked for a condition of approval clarifying that municipal use does include other types of irrigation (lawns etc.).

Internal IDWR consultation also suggested a condition to verify which use is being served by which well(s) at any given time since two separate systems are not proposed. A suggested condition from a previous case was modified to require this if needed in the future (for example, if annual reporting becomes required).

A condition notes that municipal use does not include irrigation of cropland, another suggestion resulting from internal IDWR consultation.

A condition notes that municipal use does include other types of irrigation. This was requested by the applicant for future clarity – seems like a good idea.

Summary

1. See draft approvals. Note that it is acceptable to remain silent on disallowal of expansion claim 63-30296.
2. Include approved extension of time for permit (5 years?).
3. Issue preliminary orders ASAP to accommodate SRBA deadlines.
4. Mail orders to IDOC Attn. Pat Donaldson at applicant's address.
5. Send a copy of orders to Deputy AG David Barber at:

PO BOX 83720
BOISE ID 83720-0010 (tel 334-2400, fax 334-2690).

Attachments: Table 1. Transfer 67055
Table 2. Amendment 63-12296
Table 3. Transfer 67055 and Amendment 63-12296 Combined
IDOC Irrigation Overlap Diagram

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TABLE 1. Transfer 67055

<u>#</u>	<u>USE</u>	<u>ACRES</u>	<u>CFS</u>	<u>AF¹</u>
63-3271	IRR	228	2.92	1026
63.3445	IRR	237	4.74	1066.5 ^{2/}
63.3487	IRR	140	2.80	630
	Muni	-	5.40	1971
63.7025	IRR	264	3.38	1184.8
	Muni	-	0.50	67.2
63.8088	IRR	312	4.80	1404
63.30297	Muni	-	0.04	2.8
63.30298	Muni	-	0.24	13.5
<u>SUBTOTAL</u>	IRR	1080 ^{3/}	18.64	4860
<u>SUBTOTAL</u>	Muni	-	6.18	2054.5
<u>TOTAL ALL USES</u>		1080	21.24 ^{4/}	6914.5

1/ DIVERSION volume, note full volume per acre

2/ REVERSES T. 5314, reflects original license

3/ UNIQUE ACRES PER IRR FEEBOOK for 3125 acre apportion

4/ PER Application limit

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10/17/06

TABLE 2. AMENDMENT 63.12296

<u>USE</u>	<u>ACRES</u>	<u>CFS</u>	<u>AFA</u> ^{1/}
IRR	45	0.90	UNDEFINED
MUNI	—	4.23	414.5
<u>TOTAL</u>	45	5.00	UNDEFINED

TABLE 3. TRANSFER 67055 & AMENDMENT 63.12296 COMBINED

<u>USE</u>	<u>ACRES</u>	<u>CFS</u>	<u>AFA</u> ^{1/}	<u>NOTES</u>
IRR }	1080	18.64	4860	TRANSFER
	45	0.90	UNDEFINED	AMENDMENT
<u>SUBTOTAL</u>	1120 ^{2/}	19.54	UNDEFINED	COMBINED
MUNI }	—	6.18	2054.5	TRANSFER
	—	4.23	414.5	AMENDMENT
<u>SUBTOTAL</u>	—	10.41	2469	COMBINED
<u>TOTAL</u>	1120	26.24	UNDEFINED	COMBINED

^{1/} diversion volume

^{2/} UNIQUE ACRES PER IRR SEASON FOR 3125 Acre PPM

SCANNED

NOV 11 2006

Pg. 2 of 2

Section line
1/4 1/4 lines

Section # 21

UNIQUE ACRES per
Overlap

63-3271

15

63-7025

9 15

TOTAL 30

TOTAL 25

63-8088

30

29

28

7

30

22

17

25

5

13

4

27

22

5

TOTAL 12

14 23 10 30
40 40 40 40 20 15 40

*

31

39

39

32

40 40 40 39

35 35

35 35

40 39

33

TOTAL 40 ÷ 39

40 40 40

2

34

63-3445 After

T.S. 314 REVERSED

63-3487

*

Permit

63-12296

5 Overlap Acres in E 1/2 NE 1/4 S. 32
40 other " " NE 1/4 & E 1/2 NW S. 31

Appendix D.

**State of Idaho Well Driller's Reports for
IDOC's ISCI supply wells Nos. 3-B, 7, and 8.**

13

859844

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0059061 PAGE 1 OF 3

Drilling Permit No. 911199-859844 ISCI Well #3-B

Water right or injection well # 63-12296

2. OWNER

Name State of Idaho - Department of Corrections

Address 1299 N. Orchard St., Suite #110

City Boise State ID Zip 83706

3. WELL LOCATION:

Twp. 2 North ☒ or South ☐ Rge. 2 East ☒ or West ☐

Sec. 27 SW 1/4 SW 1/4 SW 1/4

Gov't Lot _____ County Ada

Lat. 43° 28.403' (Deg. and Decimal minutes)

Long. 116° 12.764' (Deg. and Decimal minutes)

Address of Well Site Penitentiary Trail (~6,000 ft east of Pleasant Valley Road) City Boise

(Circle lot, section or range - Distance to Road or Landmark)

Lot. _____ Blk. _____ Sub. Name ISCI

4. USE:

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

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Replacement well ☐ Modify existing well

☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☒ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
				SEE TABLE PAGE 3

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
20"	0	7.5'	.250	low-carbon steel	☒	☐	☐	☒
14"	+3'	693'	.375	low-carbon steel	☒	☐	☐	☒

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

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method N/A

Manufactured screen ☒ Y ☐ N Type Johnson Stainless Vee-Wire Wrap

Method of installation Lowered, centralized and enveloped with filter sand

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
671.6	695	0.020	3-pieces	10" PS	Stainless	
695	996	0.035	15-pieces	10" PS	Stainless	

SEE TABLE PAGE 3

Length of Headpipe 21.5 feet Length of Tailpipe no tailpipe

Packer ☒ Y ☐ N Type 14"110" w/ two 3-lip Figure "K" packers

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
#8-#16 filter sand	673'	1004'	110.7 ft³	pour and tag into place

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) 92 PSI (693' - 480')

Describe control device 14" welded steel wellhead to be installed by owner.

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 479.63' bgl

Water temp. (°F) 79.1 °F Bottom hole temp. (°F) 75.8 °F

Describe access port 2" steel nipple with locked steel cap

Well test:

Test method:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
165.87 feet	765 gpm	7 hours	☒	☐	☐	☐

Chemistry: pH=8.07; DO=+0.62;
Cond.=260uS; ORP=-145mV

Water Quality test or comments: no degassing; no odors; clean, smooth taste

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y N
24"	0	1	Fill dirt by Treasure Valley Drilling = TVD	☒
24"	1	4.5	Caliche / top soil (by TVD)	☒
24"	4.5	7.5	Fractured basalt (by TVD)	☒
19"	7.5	37	Fractured basalt (by TVD)	☒
19"	37	39	Red cinders (by TVD)	☒
19"	39	41	Brown baked clay (by TVD)	☒
19"	41	45	Brown baked clay (remainder by Drill Tech)	☒
19"	45	72	Gravel & sand mix	☒
19"	72	75	Tan sand with some gravel	☒
19"	75	102	Gravel with cobbles	☒
19"	102	119	Tan sand & some gravel	☒
19"	119	140	Gravel & boulders	☒
19"	140	172	Gravel	☒
19"	172	176	Tan sand & gravel mix	☒
19"	176	178	Gravel & some cobbles	☒
19"	178	193	Gravel & tan sand mix	☒
19"	193	201	Tan gravel & cobbles	☒
19"	201	245	Tan sand & gravel mix	☒
19"	245	310	Gravel & tan sand mix with some cobbles	☒
19"	310	329	Gravel & tan sand mix	☒
19"	329	344	Cemented gravel with tan sand & cobbles	☒
19"	344	348	Tan sand & gravel	☒
19"	348	374	Cemented gravel & cobbles	☒
19"	374	379	Gravel with some tan sand	☒
19"	379	385	Cemented gravel & some boulders	☒
19"	385	392	Tan sand & gravel mix	☒
19"	392	405	Cemented gravel with tan clay lenses	☒
19"	405	418	Cemented gravel w/lenses of white & gray clay	☒
19"	418	425	Cemented gravel	☒
19"	425	443	Boulders	☒
19"	443	448	Cemented gravel & tan sand	☒
19"	448	449	Gravel, sand, & clay mix	☒

Completed Depth (Measurable) 996 feet bgl

Date: Started September 16, 2010 Completed December 17, 2010

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 Drill Tech, Inc. Co. No. 654

*Principal Driller Garth Owens Date 1-10-11

*Driller Garth Owens Date 1-10-11

*Operator II Chris Ruffer Date 1-10-11

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

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MAR 11 2011

WATER RESOURCES
WESTERN REGION

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0059061 PAGE 2 OF 3

Drilling Permit No. **911199-859844** **ISCI Well #3-B**

Water right or injection well # **63-12296**

2. OWNER

Name **State of Idaho - Department of Corrections**

Address **1299 N. Orchard St., Suite #110**

City **Boise** State **ID** Zip **83706**

3. WELL LOCATION:

Twp. **2** North ☒ or South ☐ Rge. **2** East ☒ or West ☐

Sec. **27** SW 1/4 SW 1/4 SW 1/4
10 acres 40 acres 160 acres

Gov't Lot _____ County **Ada**

Lat. **43° 28.403'** (Deg. and Decimal minutes)

Long. **116° 12.764'** (Deg. and Decimal minutes)

Address of Well Site **Penitentiary Trail (~6,000 ft east of Pleasant Valley Road)** City **Boise**

Lot. _____ Blk. _____ Sub. Name **ISCI**

4. USE:

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

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☒ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
				SEE TABLE PAGE 3

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Uner	Threaded	Welded
				SEE PAGE 1	☐	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) **N/A**

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method **N/A**

Manufactured screen ☒ Y ☐ N Type **Johnson Stainless Vee-Wire Wrap**

Method of installation **Lowered, centralized and enveloped with filter sand**

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
671.5	695	0.020	3-pieces	10" PS	Stainless	
695	996	0.035	15-pieces	10" PS	Stainless	
					SEE TABLE PAGE 3	

Length of Headpipe **21.5 feet** Length of Tailpipe **no tailpipe**

Packer ☒ Y ☐ N Type **14" 110" w/ two 3-lip Figure "K" packers**

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method
				SEE TABLE PAGE 1

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) **92 PSI (693' - 480')**

Describe control device **14" welded steel wellhead to be installed by owner.**

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) **479.63' bgl**

Water temp. (°F) **79.1 °F** Bottom hole temp. (°F) **75.8 °F**

Describe access port **2" steel nipple with locked steel cap**

Well test:

Test method:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
156.87 feet	765 gpm	7 hours	☒	☐	☐	☐

Chemistry: pH=8.07; DO=+0.62;
Cond.=260uS; ORP=-145mV

Water Quality test or comments: **no degassing; no odors; clean, smooth taste**

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y N
19"	449	452	Tan sand & some cemented gravel	X
19"	452	459	Gravel with thin lenses of tan clay	X
19"	459	460	Sand & tan clay	X
19"	460	462	Gravel with thin lenses of sandy tan clay	X
19"	462	470	Cemented gravel	X
19"	470	482	Sandy tan clay w/ some white precipitate	?
19"	482	500	Cobbles & gravel w/ white clay in lower portion	X
19"	500	510	Cemented gravel & some sand	X
19"	510	528	Tan sand & gravel with some white precipitate	X
19"	528	538	Gravel & coarse tan sand & sandy tan clay	X
19"	538	551	Sandy tan clay with some gravel	X
19"	551	568	Coarse tan sand & clay with some white clay	X
19"	568	575	Cemented gravels with some tan clay	X
19"	575	582	Clayey gravelly tan sand	X
19"	582	594	Thin layers of tan sand and white clay	X
19"	594	600	Clayey tan sand with areas of gravel	X
19"	600	614	Thin layers of tan sand and white clay	X
19"	614	632	Sticky tan clay with some tan sand	X
19"	632	652	Brown gravel with tan clay lenses	X
19"	652	675	Brown gravel with tan sand	X
19"	675	695	Sandy gravel with thin tan clay at bottom	X
14"	695	715	Boulders, tan sand & some white clay	X
14"	715	722	Gravel & tan sand with some brown clay	X
14"	722	730	Cemented gravel with tan sand	X
14"	730	757	Boulders & gravel with very little clay	X
14"	757	760	Tan colored quartz sand	X
14"	760	767	Tan colored qtz sand w/gravel & white/tan clay	X
14"	767	783	Sandy sticky tan clay	X
14"	783	801	Sandy tan clay with some coarse sand	X
14"	801	814	Coarse tan sand with sandy white clay	X
14"	814	825	Coarse tan sand with sandy tan clay	X
14"	825	852	Sandy tan clay	X

Completed Depth (Measurable) **996 feet bgl**

Date: Started **September 16, 2010** Completed **December 17, 2010**

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 **Drill Tech, Inc.** Co. No. **654**

*Principal Driller **Garth Owens** Date **12/17/2010**

*Driller **Garth Owens** Date **12/17/2010**

*Operator II **Chris Ruffer** Date **12/17/2010**

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

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WATER RESOURCES
WESTERN REGION

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0059061 PAGE 3 OF 3

Drilling Permit No. 911199-859844 ISCI Well #3-B
Water right or injection well # 63-12296

2. OWNER

Name State of Idaho - Department of Corrections
Address 1299 N. Orchard St., Suite #110
City Boise State ID Zip ID

3. WELL LOCATION:

Twp. 2 North ☒ or South ☐ Rge. 2 East ☒ or West ☐
Sec. 27 SW 1/4 SW 1/4 SW 1/4
10 acres 40 acres 160 acres

Gov't Lot _____ County Ada

Lat. 43° 28.403' (Deg. and Decimal minutes)

Long. 116° 12.764' (Deg. and Decimal minutes)

Address of Well Site Penitentiary Trail (~6,000 ft east of Pleasant Valley Road) City Boise

Lot. _____ Blk. _____ Sub. Name ISCI

4. USE:

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

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☒ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
				SEE TABLE THIS PAGE

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
					☐	☐	☐	☐
				SEE PAGE 1	☐	☐	☐	☐

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

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method N/A
Manufactured screen ☒ Y ☐ N Type Johnson Stainless Vee-Wire Wrap
Method of installation Lowered, centralized and enveloped with filter sand

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
671.6	695	0.020	3-pieces	10" PS	Stainless	
695	996	0.035	16-pieces	10" PS	Stainless	
					SEE TABLE THIS PAGE	

Length of Headpipe 21.5 feet Length of Tailpipe no tailpipe
Packer ☒ Y ☐ N Type 14" x 10" w/ two 3-lip Figure "K" packers

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
				SEE PAGE 1

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) 92 PSI (693' - 480')
Describe control device 14" welded steel wellhead to be installed by owner.

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 479.53' bgl
Water temp. (°F) 79.1 °F Bottom hole temp. (°F) 75.8 °F

Describe access port 2" steel nipple with locked steel cap

Well test:

Test method:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
165.87 feet	765 gpm	7 hours	☒	☐	☐	☐

Chemistry: pH=8.07; DO=+0.52;
Cond.=260uS; ORP=-145mV

Water Quality test or comments: no degassing; no odors; clean, smooth taste

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
14"	852	870	Fine to coarse sand and minor gravels	X	
14"	870	878	Sandy tan clay with rusty colored sand	X	
14"	878	895	Fine-to-coarse grained sand with gravels	X	
14"	895	904	Boulders with some sand & gravel	X	
14"	904	949	Gravelly tan coarse-to-fine grained sand	X	
14"	949	962	Quartz tan & red sand w/minor white clay	X	
14"	962	966	Quartz tan & red sand with sandy tan clay	X	
14"	966	995	Finer tan sand with a minor tan clay	X	
14"	995	1004	Sandy tan clay with some white clay	X	

Well Design by: Hydro Logic, Inc. - Boise, Idaho.

SEALING PROCEDURES

(All bentonite seals are Baroid brand 3/4" chip.
All neat cement was mixed to a content of 65% solids by weight.)
24" 0 8 bentonite chip - 0.3 yd³
19" 686 693 bentonite chip - 0.5 yd³
19" 0 686 cement grout - 23 yd³

SCREEN ASSEMBLY

Johnson #304 Stainless Steel Vee-Wire Wrap
(all screens have 18" s.s. weld rings on the top and 2" s.s. weld rings on the bottom)
.020" slot lengths, one each: 5-ft, 7-ft, and 11-ft
.035" slot lengths are all 20-ft nominal
671.6 695 10" Pipe Size x .020" slot, w/0.6" adaptor on top
695 996 10" Pipe Size x .035" slot; bull nose on bottom

STAINLESS STEEL PACKER REDUCER

669.2 671.6 total length = 2.3', packer overshot onto 10"
screens, turn off clockwise

Completed Depth (Measurable) 996 feet bgl

Date: Started September 16, 2010 Completed December 17, 2010

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 Drill Tech, Inc. Co. No. 654

*Principal Driller Garth Owens Date _____

*Driller Garth Owens Date _____

*Operator II Chris Ruffer Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

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WATER RESOURCES
WESTERN REGION

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

94749

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 1/4 1/4
Lat: _____ Long: _____

1. DRILLING PERMIT NO. 63-98-C-0531-000
Other IDWR No. Tag # D0000603

2. OWNER:

Name STATE OF IDAHO DEPT OF CORRECTIONS
Address 1299 N ORCHARD ST. SUITE 105
City BOISE State ID Zip 83706

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
W E S
Twp. 2N North ☒ or South ☐
Rge. 2E East ☒ or West ☐
Sec. 32 NE 1/4 NE 1/4 1/4
Gov't Lot _____ County ADA 10 acres 40 acres 160 acres
Lat: _____ Long: _____
Address of Well Site PLEASANT VY RD.
6 MILES SOUTH OF BOISE City BOISE
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name PRISON

4. USE: PRISON

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

5. TYPE OF WORK check all that apply NEW WELL (Replacement etc.)

☐ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD REVERSE CIRCULATION

☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
<u>BENTONITE</u>	<u>0</u>	<u>4'20"</u>	<u>55000#</u>		<u>POURED</u>

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
<u>12"</u>	<u>42</u>	<u>495</u>	<u>375</u>	<u>STEEL</u>	☒	☐	☒	☐
<u>12"</u>	<u>525</u>	<u>538</u>	<u>375</u>	<u>STEEL</u>	☒	☐	☒	☐
<u>12"</u>	<u>538</u>	<u>568</u>	<u>375</u>	<u>STEEL</u>	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method _____
☐ Screens Screen Type HOUSTON

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>495</u>	<u>525</u>	<u>40</u>		<u>12"</u>	<u>STAINLESS</u>	☐	☐
<u>538</u>	<u>558</u>	<u>40</u>		<u>12"</u>	<u>STAINLESS</u>	☐	☐
<u>568</u>	<u>588</u>	<u>40</u>		<u>12"</u>	<u>STAINLESS</u>	☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

40.7 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: Piteless Adaptor

11. WELL TESTS:

☐ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>1134 +</u>	<u>32'</u>	<u>439</u>	<u>14 hrs</u>
<u>1313</u>	<u>33'</u>	<u>440</u>	<u>12 hrs</u>

Water Temp. COLD Bottom hole temp. COLD

Water Quality test or comments: CLEAR, GOOD, NO SMELL

Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>20"</u>	<u>0</u>	<u>36</u>	<u>HARD DRY CLAY</u>		
	<u>36</u>	<u>45</u>	<u>RIVER ROCK</u>		
	<u>45</u>	<u>60</u>	<u>RIVER ROCK SANDS GRAVEL</u>		
	<u>60</u>	<u>75</u>	<u>CLAY SAND GRAVEL STRINGERS</u>		
	<u>75</u>	<u>146</u>	<u>LARGE RIVER ROCK SANDS GRAVEL</u>		
	<u>146</u>	<u>180</u>	<u>SOFT CLAY GRAVEL MIX</u>		
	<u>180</u>	<u>447</u>	<u>MIXED ROCK GRAVEL SAND</u>		
	<u>445</u>	<u>451</u>	<u>CLAY</u>		
	<u>451</u>	<u>456</u>	<u>SANDY GRAVEL</u>		
	<u>456</u>	<u>463</u>	<u>HARD RIVER ROCK</u>		
	<u>463</u>	<u>500</u>	<u>GRAVEL</u>		
	<u>500</u>	<u>502</u>	<u>CLAY</u>		
	<u>502</u>	<u>511</u>	<u>SANDY GRAVEL</u>		
	<u>511</u>	<u>513</u>	<u>CLAY</u>		
	<u>513</u>	<u>559</u>	<u>SANDY GRAVEL</u>		
	<u>559</u>	<u>560</u>	<u>CLAY</u>		
	<u>560</u>	<u>575</u>	<u>SAND GRAVEL</u>		
	<u>575</u>	<u>591</u>	<u>SANDY CLAY</u>		
	<u>591</u>	<u>593</u>	<u>GRAVEL</u>		
	<u>593</u>	<u>600</u>	<u>CLAY AND GRAVEL</u>		
	<u>600</u>	<u>602</u>	<u>COURSE SAND</u>		
	<u>602</u>	<u>639</u>	<u>SANDY BLUE CLAY</u>		
	<u>639</u>	<u>646</u>	<u>BLUE SAND GRAVEL</u>		
	<u>646</u>	<u>650</u>	<u>BLUE CLAY</u>		

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JAN 19 1999
Department of Water Resources

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JAN 11 1999
WATER RESOURCES
WESTERN REGION

MICROFILMED
MAR 08 1999

Completed Depth 640 FEET (Measurable)
Date: Started 11/19/98 Completed 12/11/98

13. DRILLER'S CERTIFICATION

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

Firm Name PETE COPE DRILLING CO., INC. Firm No. 213

Firm Official Pete Cope Date 1-10-99
and
Supervisor or Operator Robert J. Chasler Date 1-10-99

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

94750

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat: _____ Long: _____

1. DRILLING PERMIT NO. 63-98-C-0531-000
Other IDWR No. Tag # D6000603

2. OWNER:

Name STATE OF IDAHO DEPT OF CORRECTIONS
Address 1299 N ORCHARD ST. SUITE 105
City BOISE State ID Zip 83706

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
E
S
W

ISCI Well #8

Twp. 2N North ☐ or South ☐
Rge. 2E East ☐ or West ☐
Sec. 32 NE 1/4 NE 1/4 1/4
Gov't Lot _____ County ADA 10 acres 40 acres 160 acres
Lat: _____ Long: _____
Address of Well Site PLEASANT VY RD.
6 MILES SOUTH OF BOISE City BOISE
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name PRISON

4. USE: PRISON

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

5. TYPE OF WORK check all that apply NEW WELL (Replacement etc.)

- ☐ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD REVERSE CIRCULATION

- ☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
<u>BENTONITE</u>	<u>0</u>	<u>420</u>	<u>35000#</u>		<u>POUR</u>

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
<u>12"</u>	<u>588</u>	<u>616</u>	<u>375</u>	<u>STEEL</u>	☒	☐	☒	☐
<u>12"</u>	<u>626</u>	<u>640</u>	<u>375</u>	<u>STEEL</u>	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

- ☐ Perforations Method _____
☐ Screens Screen Type HOUSTON

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>616</u>	<u>626</u>	<u>40</u>		<u>12"</u>	<u>STANLEY</u>	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

_____ ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

- ☐ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. COLD Bottom hole temp. COLD
Water Quality test or comments: CLEAR, GOOD, NO SMELL

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>20"</u>	<u>0</u>	<u>36</u>	<u>HARD DRY CLAY</u>		
	<u>36</u>	<u>45</u>	<u>RIVER ROCK</u>		
	<u>45</u>	<u>60</u>	<u>RIVER ROCK SANDS GRAVEL</u>		
	<u>60</u>	<u>75</u>	<u>CLAY SAND GRAVEL STRINGERS</u>		
	<u>75</u>	<u>146</u>	<u>LARGE RIVER ROCK SANDS GRAVEL</u>		
	<u>146</u>	<u>180</u>	<u>SOFT CLAY GRAVEL MIX</u>		
	<u>180</u>	<u>447</u>	<u>MIXED ROCK GRAVEL SAND</u>		
	<u>445</u>	<u>451</u>	<u>CLAY</u>		
	<u>451</u>	<u>456</u>	<u>SANDY GRAVEL</u>		
	<u>456</u>	<u>463</u>	<u>HARD RIVER ROCK</u>		
	<u>463</u>	<u>500</u>	<u>GRAVEL</u>		
	<u>500</u>	<u>502</u>	<u>CLAY</u>		
	<u>502</u>	<u>511</u>	<u>SANDY GRAVEL</u>		
	<u>511</u>	<u>513</u>	<u>CLAY</u>		
	<u>513</u>	<u>539</u>	<u>SANDY GRAVEL</u>		
	<u>539</u>	<u>560</u>	<u>CLAY</u>		
	<u>560</u>	<u>575</u>	<u>SAND GRAVEL</u>		
	<u>575</u>	<u>591</u>	<u>SANDY CLAY</u>		
	<u>591</u>	<u>593</u>	<u>GRAVEL</u>		
	<u>593</u>	<u>600</u>	<u>CLAY AND GRAVEL</u>		
	<u>600</u>	<u>602</u>	<u>COURSE SAND</u>		
	<u>602</u>	<u>639</u>	<u>SANDY BLUE CLAY</u>		
	<u>639</u>	<u>646</u>	<u>BLUE SAND GRAVEL</u>		
	<u>646</u>	<u>650</u>	<u>BLUE CLAY</u>		

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JAN 19 1999

Department of Water Resources

RECEIVED

JAN 11 1999

WATER RESOURCES
WESTERN REGION

MICROFILMED

MAR 08 1999

Completed Depth 640 FEET (Measurable)
Date: Started 11/19/98 Completed _____

13. DRILLER'S CERTIFICATION

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

Firm Name PETE COPE DRILLING CO., INC. Firm No. 213

Firm Official _____ Date _____

and
Supervisor or Operator [Signature] Date 1-10-99

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

064748

Office Use Only		
Inspected by _____		
Twp _____ Rge _____ Sec _____		
_____ 1/4 _____ 1/4 _____ 1/4		
Lat: _____ : _____ : _____	Long: _____ : _____ : _____	

1. DRILLING PERMIT NO. 63-98-C-0538-000Other IDWR No. Well Tag No. D0000602

2. OWNER:

Name STATE OF ID. DEPT. CORRECTIONSAddress 1299 N. ORCHARD ST. SUITE 110City BOISE State ID Zip 83706

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

ISCI Well #7

N		Twp. <u>2N</u>		North ☒ or South ☐	
W		Rge. <u>2E</u>		East ☒ or West ☐	
E		Sec. <u>32</u>		SE 1/4 NE 1/4 1/4	
S		Gov't Lot _____		County <u>ADA</u> 10 acres 40 acres 160 acres	
		Lat: _____		Long: _____	

Address of Well Site _____

PLEASANT VY. S. OF BOISECity BOISE

(Give at least name of road + Distance to Road or Landmark)

Lt. 3 Blk. 1 Sub. Name PRISON4. USE: PRISON

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

5. TYPE OF WORK check all that apply NEW WELL (Replacement etc.)

- ☐ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD REVERSE CIRCULATION

- ☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
<u>BENTONITE</u>	<u>715</u>	<u>705</u>	<u>2500#</u>		<u>POURED</u>
	<u>0</u>	<u>460</u>	<u>64000#</u>		<u>POURED</u>

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) NO.Was drive shoe seal tested? ☐ Y ☒ N How? X

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>16"</u>	<u>+2'</u>	<u>495</u>	<u>375</u>	<u>STEEL</u>	☐	☐	☒	☐
<u>12"</u>	<u>495</u>	<u>500</u>	<u>375</u>	<u>STEEL</u>	☐	☐	☒	☐
<u>12"</u>	<u>560</u>	<u>580</u>	<u>375</u>	<u>STEEL</u>	☐	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe 10

9. PERFORATIONS/SCREENS

- ☐ Perforations Method _____
☒ Screens Screen Type HOUSTON

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>500</u>	<u>560</u>	<u>40</u>		<u>12"</u>	<u>STAINLESS</u>	☐	☐
<u>580</u>	<u>590</u>	<u>40</u>		<u>12"</u>	<u>STAINLESS</u>	☐	☐
<u>602</u>	<u>612</u>	<u>40</u>		<u>12"</u>	<u>STAINLESS</u>	☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

373 ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or

control devices: pitless

11. WELL TESTS:

- ☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>1906</u>	<u>37.7</u>	<u>427.7</u>	<u>10 HRS</u>
<u>2077</u>	<u>38</u>	<u>431</u>	<u>18 HRS</u>

Water Temp. COLD 72° Bottom hole temp. COLDWater Quality test or comments: CLEAR, GOOD, NO SMELL

Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>24"</u>	<u>0</u>	<u>2</u>	<u>TOPSOIL</u>		☒
	<u>2</u>	<u>45</u>	<u>BASALT</u>		☒
	<u>45</u>	<u>50</u>	<u>CINDERS</u>		☒
	<u>50</u>	<u>70</u>	<u>CEMENTED GRAVEL SAND</u>		☒
	<u>70</u>	<u>80</u>	<u>SAND RIVER GRAVEL</u>		☒
	<u>80</u>	<u>132</u>	<u>LARGER GRAVEL</u>		☒
	<u>132</u>	<u>135</u>	<u>SAND/CLAY</u>		☒
	<u>135</u>	<u>178</u>	<u>LARGE GRAVEL</u>		☒
	<u>178</u>	<u>207</u>	<u>CLAY/SAND</u>		☒
	<u>207</u>	<u>230</u>	<u>LARGE GRAVEL</u>		☒
	<u>230</u>	<u>235</u>	<u>VERY FINE BRN SAND</u>		☒
	<u>235</u>	<u>353</u>	<u>LARGE MED. GRAVEL</u>		☒
	<u>353</u>	<u>361</u>	<u>CLAY</u>		☒
	<u>361</u>	<u>384</u>	<u>BRN CLAY</u>		☒
	<u>384</u>	<u>424</u>	<u>CLAY STRICKS GRAVEL</u>	☒	
	<u>424</u>	<u>429</u>	<u>HARD CLAY</u>		☒
	<u>429</u>	<u>465</u>	<u>HARD SAND GRAVEL</u>	☒	
	<u>465</u>	<u>642</u>	<u>SAND GRAVEL MIXED</u>	☒	
	<u>642</u>	<u>665</u>	<u>BRN CLAY STRICK SAND</u>	☒	
	<u>665</u>	<u>680</u>	<u>CRS SAND W/BLEU CLAY</u>	☒	
	<u>680</u>	<u>733</u>	<u>BLUE CLAY</u>	☒	☒
	<u>733</u>	<u>765</u>	<u>HARD SANDY BLUE CLAY</u>		☒

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DEC 21 1998

DEC 15 1998

Department of Water Resources

WATER RESOURCES
WESTERN REGION

Completed Depth 700 FT. (Measurable)
 Date: Started 10/23/98 Completed 11-15-98

13. DRILLER'S CERTIFICATION

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

Firm Name PETE COPE DRILLING CO., INC. Firm No. 213Firm Official Pete Cope Date 12-14-98

and _____

Supervisor or Operator _____ Date _____

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

WELL DRILLER'S REPORT

064749

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

Other IDWR No. Well Tag No. D0000602

City BOISE State ID Zip 83706

ISCI Well #7

ISCI Well #7

N

W E

Twp. 2N North ☐ or South ☐

Rge. 2E East ☐ or West ☐

Sec. 32 SE 1/4 NE 1/4 1/4

40 acres 40 acres 160 acres

Gov't Lot _____ County ADA

Lat: : : Long: : :

PLEASANT VY. S. OF BULSE
(Give at least name of road + Distance to Road or Landmark)

Lt. **3** Blk. **1** Sub. Name **PRISON**

☐ Thermal ☐ Injection ☐ Other

☐ New Well ☐ Modify ☐ Abandonment ☐ Other _____

☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
~~BENTONITE~~	715	705	2500#	~~POURED~~
	0	460	64000#	POURED

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

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
12"	590	602	375	STEEL	☐	☐	☒	☐
12"	612	622	375	STEEL	☐	☐	☒	☐
12"	642	670	375	STEEL	☐	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe **10** _____

☒ Screens	Screen Type	HOLSTON
---	-------------	---------

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
622	642	40		12"	STAINLESS	☐	☐
670	690	40		12"	STAINLESS	☐	☐

343 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or
control devices:

☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
1906	37.7	427.7	10 HRS
2077	38	431	

Water Quality test or comments: CLEAR, GOOD, NO SMELL

Depth first Water Encountered _____

Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
24"	0	2	TOPSOIL		
	2	45	BASALT		
	45	50	CINDERS		
	50	70	CEMENTED GRAVEL SAND		
	70	80	SAND RIVER GRAVEL		
	80	132	LARGER GRAVEL		
	132	135	SAND/CLAY		
	135	178	LARGE GRAVEL		
	178	207	CLAY/SAND		
	207	230	LARGE GRAVEL		
	230	235	VERY FINE BRN SAND		
	235	353	LARGE MED GRAVEL		
	353	361	CLAY		
	361	384	BRN CLAY		
	384	424	CLAY STRICKS GRAVEL		
	424	429	HARD CLAY		
	429	465	HARD SAND GRAVEL		
	465	642	SAND GRAVEL MIXED		
	642	665	BRN CLAY STRICK SAND		
	665	680	CRS SAND W/BLEU CLAY		
	680	733	BLUE CLAY		
	733	765	HARD SANDY BLUE CLAY		

RECEIVED

~~DEC 21 1998~~

~~MIC Env Department of Water Resources~~

MAR 08 1993

Completed Depth 700 FT. (Measurable)

Date: Started 10/23/98 Completed _____

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

Firm Name **PETE COPE DRILLING CO., INC.** Firm No. **213**

Firm Official _____ Date _____

and

Supervisor or Operator _____ Date _____

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Appendix E.

**Hydraulic Test Data for ISCI Well No. 7 (ICC Well #2) and
ISCI Well No. 8 (ICC Well #1) from Scanlan Engineering's
Well Completion Report for the two wells dated July, 1999.**

LAYNE OF IDAHO, Inc.

P.O. Box 1005
Nampa, Idaho 83651
(208) 466-7376

71°

WELL TESTING REPORT AND AGREEMENT.

CUSTOMER NAME YMC LOCATION Dec DATE 12-16-98

DRILLER Peter Capra Drilling

WELL ID 12 WELL DEPTH 1050 STATIC LEVEL 407

AMOUNT OF CASING _____ AMOUNT OF SCREEN _____

PUMP SETTING 430 BOWL SIZE _____ DISCHARGE SIZE 10 ORIFICE SIZE 6

TIME	WATER LEVEL FROM TOP	PSI	G.P.Y.	REMARKS
	407			Step test
3:05	416	850	487	Clear air 4.1 Hz
3:30	417	850	487	Clear
3:35	423	950	744	Clear
3:45	423	950	744	Clear
7:00	424	950	744	Clear
7:05	430	1050	1048	Clear
7:15	431	1050	1048	Clear
9:30	432	1050	1048	Clear
9:35	438	1200	95"	Clear
7:45	439	1200	95"	Clear
0:00	439	1200	95"	Clear
				Change orifice to 8"
0:15	439	1200	1313	Clear
0:30	439	1200	1313	Clear
0:45	440	1200	1313	Clear
1:00	440	1200	1313	Clear
:15	440	1200	1313	Clear
:30	440	1200	1313	Clear
:45	439	1200	1313	Clear

TESTED BY _____

APPROVED BY _____

MRS. TESTED _____



LAYNE OF IDAHO, Inc.

P.O. Box 1005
Nampa, Idaho 83651
(208) 466-7376

WELL TESTING REPORT AND AGREEMENT.

CUSTOMER NAME Y. H. O. LOCATION 1.00 DATE 12-16-98
DRILLER 2222 Paper Mills
WELL NO. 1050 STATIC LEVEL 14"
AMOUNT OF CASING 56.5 AMOUNT OF SCREEN 82
PUMP SETTING 4 5/8" BOWL SIZE 1.5 DISCHARGE SIZE 10" ORIFICE SIZE 8"

TIME	WATER LEVEL FROM TOP	R.P.M. METER	G.P.Y.	REMARKS
2:00	440	1200	1313	Clear
2:15	440	1200	1313	Clear
2:15	440	1200	1313	Clear
2:30	440	1200	1313	Clear
2:45	440	1200	1313	Clear
3:00	440	1200	1313	Clear
3:15	440	1200	1313	Clear
3:30	440	1200	1313	Clear
3:45	440	1200	1313	Clear
4:00	440	1200	1313	Clear
4:15	440	1200	1313	Clear
4:30	440	1200	1313	Clear

TESTED BY

APPROVED BY

HRS. TESTED



LAYNE OF IDAHO, Inc.

P.O. Box 1005
Nampa, Idaho 83651
(208) 466-7376

WELL TESTING REPORT AND AGREEMENT.

CUSTOMER NAME VMC LOCATION LOC DATE 12-16-98
DRILLER Pete Cape Drilling
WELL ID 12 WELL DEPTH 650 STATIC LEVEL 467
AMOUNT OF CASING 5700 AMOUNT OF SCREEN 800
PUMP SETTING 480 BOWL SIZE 10 DISCHARGE SIZE 10 ORIFICE SIZE 8

TIME	WATER LEVEL FROM TOP	~~2 PM~~ MANOMETER	G.P.M.	REMARKS
4:45	440	1200	1313	Clear
5:00	440	1200	1313	Clear
5:15	440	1200	1313	Clear
5:30	440	1200	1313	Clear
5:45	440	1200	1313	Clear
6:00	440	1200	1313	Clear
6:15	440	1200	1313	Clear
6:30	440	1200	1313	Clear
6:45	440	1200	1313	Clear
7:00	440	1200	1313	Clear
7:15	440	1200	1313	Clear
7:30	440	1200	1313	Clear
7:45	440	1200	1313	Clear
8:00	440	1200	1313	Clear

TESTED BY

APPROVED BY

HRS. TESTED

LAYNE OF IDAHO, Inc.

P.O. Box 1005
Nampa, Idaho 83651
(208) 466-7376

pg. 1

WELL TESTING REPORT AND AGREEMENT

CUSTOMER NAME YMC / Terry Scanlan (emp.) LOCATION PRIVATE PRISON DATE 11-30-98

DRILLER Pete Cape Drilling

WELL ID Well #2 WELL DEPTH _____ STATIC LEVEL 392

AMOUNT OF CASING _____ AMOUNT OF SCREEN _____

PUMP SETTING 480 BOWL SIZE _____ DISCHARGE SIZE 10 DRIFICE SIZE 8

TIME	WATER LEVEL FROM TOP	~~WATER~~ PRESSURE	G.P.M.	REMARKS
10:45				Start test
0:55	4:22	1750	1906	Very little clear 2 min. clear
1:15	4:24.5"	1750	1906	Clear
1:25	4:25	1750	1906	clear
1:30	4:26 2"	1750	1906	clear
1:35	4:25 3"	1750	1906	clear
1:40	4:25 5"	1750	1906	clear
1:45	4:25 8"	1750	1906	clear
1:50	4:25 9"	1750	1906	clear
1:55	4:25 10"	1750	1906	clear
2:00	4:25.10 1/2"	1750	1906	clear
2:10	426.1	1750	1906	clear
2:20	426.1	1750	1906	clear
2:30	426.1	1750	1906	clear
2:40	426.4	1750	1906	clear
2:50	426.5	1750	1906	Clear
3:00	426.5 1/2"	1750	1906	Clear
3:10	426.5 1/2"	1750	1906	clear
3:20	426.6	1750	1906	clear
3:30	426.6	1750	1906	clear

Chris Salazar

TESTED BY

APPROVED BY

HRS. TESTED



LAYNE OF IDAHO, Inc.

P.O. Box 1005
Nampa, Idaho 83651
(208) 466-7376

Pg. 2

WELL TESTING REPORT AND AGREEMENT

CUSTOMER NAME _____ LOCATION Private Person DATE 11-30-98
DRILLER _____
WELL NO. Well #2 WELL DEPTH _____ STATIC LEVEL _____
AMOUNT OF CASING _____ AMOUNT OF SCREEN _____
PUMP SETTING _____ BOWL SIZE _____ DISCHARGE SIZE 10 ORIFICE SIZE 8

TIME	WATER LEVEL FROM TOP	RPM MONOMETER	G.P.M.	REMARKS
1:40	426.5	1750	1906	clear
1:50	426.4 1/2	1750	1906	clear
2:00	426.5	1750	1906	clear
2:10	426.6 1/2	1750	1906	clear
2:20	426.6	1750	1906	clear
2:30	426.5	1750	1906	clear
2:40	426.5	1750	1906	clear
2:50	426.6	1750	1906	clear
3:00	426.6	1750	1906	clear
3:10	426.6	1750	1906	clear up thru the bit
3:20	426.6	1750	1906	clear
3:30	426.7	1750	1906	clear
3:40	426.6	1750	1906	clear
3:50	426.7	1750	1906	clear
4:00	426.8	1750	1906	clear
4:10	426.8	1750	1906	clear up thru the
4:20	426.11	1750	1906	clear
4:30	426.10 1/2	1750	1906	clear
4:40	426.10	1750	1906	clear
4:50	426.8 1/2	1750	1906	clear up thru the

71. D.



LAYNE OF IDAHO, Inc.

P.O. Box 1005
Nampa, Idaho 83651
(208) 466-7376

Pg 3

WELL TESTING REPORT AND AGREEMENT

CUSTOMER NAME _____ LOCATION Private Pkwn DATE 11-30-98

DRILLER _____

WELL ID Well #2 WELL DEPTH _____ STATIC LEVEL _____

AMOUNT OF CASING _____ AMOUNT OF SCREEN _____

PUMP SETTING _____ BOWL SIZE _____ DISCHARGE SIZE 10 ORIFICE SIZE 5

TIME	WATER LEVEL FROM TOP	RPM MOMMETER	G.P.M.	REMARKS
5:00	427.5	1750	1902	clear
5:10	427.5	1750	1906	clear
5:20	427.4	1750	1906	clear
5:30	427.5	1750	1906	clear
5:40	427.4	1750	1906	clear
5:50	427.5	1750	1906	clear
6:00	427.4	1750	1906	clear
6:10	427.5	1750	1906	clear
6:20	427.5 1/2	1750	1906	clear
6:30	427.5	1750	1906	clear
6:40	427.5	1750	1906	clear
6:50	427.4	1750	1906	clear
7:00	427.4	1750	1906	clear
7:10	427.4	1750	1906	clear
7:20	427.5	1750	1906	clear
7:30	427.4	1750	1906	clear
7:40	427.4 1/2	1750	1906	clear
7:50	427.5	1750	1906	clear
8:00	427.4	1750	1906	clear
8:10	427.4	1750	1906	clear up throttle

Chris J. Lorne



LAYNE OF IDAHO, Inc.

P.O. Box 1005
Nampa, Idaho 83651
(208) 466-7376

WELL TESTING REPORT AND AGREEMENT

CUSTOMER NAME _____ LOCATION _____ DATE 11-27-98

DRILLER _____

WELL ID _____ WELL DEPTH _____ STATIC LEVEL _____

AMOUNT OF CASING _____ AMOUNT OF SCREEN _____

PUMP SETTING _____ BOWL SIZE _____ DISCHARGE SIZE 10 ORIFICE SIZE 8

TIME	WATER LEVEL FROM TOP	^{RPM} MONOMETER	G.P.M.	REMARKS
				Step test 72 Water Lugs
5:00	402	1475	674	Clear
5:15	403	1475	674	Clear
5:30	403 1/2	1475	674	Clear
5:31	410	1525	1147	Clear
5:45	411	1525	1127	Clear
6:00	411	1525	1127	Clear
6:01	420	1600	1637	Clear
6:15	421	1600	1637	Clear
6:30	421	1600	1637	Clear
6:31	429 1/2	1800	2098	Clear
6:45	430	1800	2098	Clear
7:00	430	1800	2077	Clear

Appendix F

**Tabulated data for the 48-hour hydraulic testing of the
ISCI Well #3-B by Hydro Logic, Inc. on October 3, 2011**

and

**Data on the installed pumping plants for ISCI Well No. 7 (ICC Well #2)
and ISCI Well No. 8 (ICC Well #1) from Scanlan Engineering's
Well Completion Report for the two wells dated July, 1999.**

Loca 1: ISCF Well 3-B

Who: K. Newberry, C. Parker

Date(s): 10/03/2011 - 10/05/2011

Elapsed Time (minutes)	Time (24 hour)	Water Level (feet below measure point = 3' above ground)	Flow (gallons/minute)	Totalizer Reading	Comments
	11:42	486.01	- 0 -	346515600	
	11:50				(pump on)
1	11:51	565.75			
2	11:52	568.88	~141		Water clearing up
3	11:53	570.22	1410		Water turned dark orange
4	11:54	571.12			Water clearing up
5	11:55	571.93	1,410		
6	11:56	572.65	1,410		Water almost clear
7	11:57	573.35	1,410		
8	11:58	573.93	1,410		
9	11:59	574.55	1,419		
11	12:01	575.40			
12	12:02	575.95	1,416		59 psi
14	12:04	576.74	1,406		
16	12:06	577.53	1,406		bump up flow we will try to keep around 1400 gpm.
18	12:08	578.30	1,418		
20	12:10	578.98	1,411		
22	12:12	579.54	1,410		
	12:13:00		1,410		bump up flow
26	12:16	580.65			
	12:17		1,407		bump up at 12:17:30
	12:19		1,412		
30	12:20	581.73	1,411		bump up flow at 12:20:20
34	12:24	582.77	1,420		57 psi
38	12:28	583.62	1,420		temp = 80.6°F, slight sulfur smell, slight chlorine taste.
43	12:33	584.58	1,420		
	12:37		1,402		
48	12:38	585.55			12:38:30 bump up flow
52	12:42	586.39	1,407		bump up flow
	12:47		1,422		
60	12:50	587.88	1,410		
65	12:55	588.83			
79	13:09	590.77	1,404		add valve to sample port and disinfect.
90	13:20	592.03	1,407		
100	13:30	592.99	1,397		open sample tap and let flow, up flow at 13:30:50
	13:35		1,398		open up valve next
	13:41		1,434		
114	13:44	595.82	1,424		
124	13:54	596.74	1,414		
136	14:06	597.72	1,413		
	14:16		1,404		
148	14:18	598.61	1,404		
159	14:29	599.48	1,408		
167	14:37	600.05	1,403		psi = 49
176	14:46	600.64	1,406	346787000 @ 15:00:45	psi = 34.7
	15:16	602.53	1,402	346811000 @ 15:20:00	tot flow = 27,000 / 19.35 min = 1400.00 gpm
	15:40	604.03	1,398	346841000 @ 15:44:59	tot flow = 35,000 / 24.983 = 1402.95 gpm, 48 psi
	15:49	604.54			up flow at 15:47:30
	15:52		1,404	346857000 @ 15:52:50	psi = 47, tot flow = 11,000 / 7.85 = 1401.27

Location: ISCI Well 3-B
Who: K. Newberry, C. Parker
Date(s): 10/03/2011 - 10/05/2011

Elapsed Time (minutes)	Time (24 hour)	Water Level (feet below measure point = <u>3'</u> above ground)	Flow (gallons/minute)	Totalizer Reading	Comments
Hydro Logic, Inc. 1002 W. Franklin Street Boise, Idaho 83702 - 5431					
	15:56	605.16	1401	34686800 @ 16:01:41	tot flow = 11,000 / 7.85 = 1401.27, psi = 77
	16:04	605.63	1405	34687800 @ 16:07:44	up flow at 16:04:30 psi = 45, tot flow = 10,000 / 7.1167 = 1405.146 gpm
	16:11	606.38	1408	34689500 @ 16:17:52	tot flow = 17,000 / 12.067 = 1408.84 gpm psi = 45
	16:20	606.99			
	16:37	607.60	1405	34692200 @ 16:39:05	tot flow = 27,000 / 19.2167 = 1405.03 gpm psi = 45
	17:06	608.89	1404	34696300 @ 17:08:17	tot flow = 41,000 / 29.22 = 1404.11 gpm
	17:24	609.75	1400	34698100 @ 17:21:08	tot flow = 18,000 / 12.85 = 1400.78 gpm, psi = 45
	17:32	610.06		34700900 @ 17:34:40	17:32:30 up flow, after psi = 43
	17:57	610.80	1408	34701000 @ 17:41:46	tot flow = 10,000 / 7.10 = 1408.45 gpm
	17:49	611.00	1409	34701700 @ 17:46:45	up flow at 17:45:00, 41 psi after, tot flow = 7,000 / 4.983 = 1404
	17:49	611.67			
	18:06	612.30	1412	34704100 @ 18:03:45	tot flow = 27,000 / 17 = 1411.72 gpm, psi = 41, tot flow since start = 525700 / 373.75 = 1405.9 gpm
	18:08				low up
	20:55		1405		42.67, 42.62, 42.82 sec / 1,000 GAL = 1405 gpm ↑
	21:07		1430		41.90, 42.10, 41.85 sec / 1,000 GAL = 1430 gpm ↓
	21:13		1422		42.14, 42.15, 42.25 sec / 1,000 GAL = 1422 gpm
10/4	7:08		1407	34814600 @ 7:08:57	tot flow since 18:06 = 1105000 / 785.20 = 1407.25 gpm, tot flow since start = 1630400 / 1158.95 = 1406.8 gpm
	7:20		1399	34816200 @ 7:20:23	tot flow = 16000 / 11.4333 = 1399.4 gpm
	07:36	629.64	1378.6	34819200 @ 7:41:50	tot flow = 30,000 / 21.45 = 1398.6
	08:00	629.97			
	08:05				increase flow
	08:06		1400	34822700 @ 8:06:57	
	08:11	630.41			increase flow
	8:25	631.11	1405	34823800 @ 8:13:17	7000 / 4.91 = 1407.1, 7:21 8,000 / 5.68467 = 1407, 8:26 up flow
	8:34		1420		9000 / 6.3718 = 1420
	8:37	631.85			3-A @ 9:00 = 490.08' bmp - lots of oil, hard to get water level
	9:09		1413	34831300 @ 9:07:47	tot flow since 8:13 = 72,000 / 51.55 = 1412.84, 8,000 / 5.68467 = 1414.84 gpm
	21:00	638.08	1397	34932100 @ 21:04	43.01 42.64 43.20 / 1,000 GAL = 1,397.6 gpm @ 21:05
			1393		42.77 43.29 43.15 / 1,000 GAL = 1,393.6 gpm @ 21:25
			1409		42.37 43.06 42.29 / 1,000 GAL = 1,409.6 gpm @ 21:35
10/5	7:48	642.16'	1397	35020600 @ 7:36:26	Flow w / 1,000 gal time = 1397 gpm
	7:50	642.28'	1395	35022800 @ 7:52:17	tot flow = 22,000 / 15.7667 = 1395.3 gpm, 7:36 increase flow
	8:15	642.60'	1398	35023800 @ 8:17:59:22	9,000 / 6.42" = 1397.6 gpm, 8:16 increase flow
	8:28		1404		6.24, 7,000 / 4.91" = 1,408.67 = 1,401, 8:28 increase flow
	8:45	643.20'	1408		7,000 / 4.95" = 1,414.35 / 4.97 = 1408
	11:07	644.25'	1406	35021800 @ 11:18:34	290,000 / 207.3667 = 8000 / 5.68467 = 1406.4
	11:27				3-A W.L. = 2490.72' bmp
	11:47	644.44'			
	11:50				Pump off end tot = 350562240
	11:50:24	565.00'			
	11:51	549.30'			
	11:52	547.45'			
	11:53	546.18'			
	11:54	545.20'			
	11:55	544.40'			
	11:56	543.68'			
	11:58	542.35'			
	12:02	540.18'			

YMC Well #1

480'
~~550'~~

480'
16" Col ~~550'~~ x .280 wall
3/4 TAPER

OPTIONAL CHECK VALVE
SIZE 6" (2)
(Add 1' - 0" to assembled length if check valve furnished)

1' - 0" Approx.

6" SIZE NPT DISCHARGE CONN.

BOWL	STG.	GPM	TDH	ASS'Y NO.
10	12	700	450	

SUBMERSIBLE MOTOR						
MFGR.	SIZE	HP	RPM	PH.	CY.	VOLTS
Hartford	10	125	1760	3	60	480

Proposed pumping plant installation diagram for ICC
Well #1 from Scanlan Engineering July 1999.

SCANLAN ENGINEERING

Groundwater and Environmental Engineering

March 11, 1999

Byron Wood
Layne of Idaho
P.O. Box 1005
Nampa, ID 83653-1005

Subject: Submersible Well Pumps – CCA Private Prison of Idaho Project

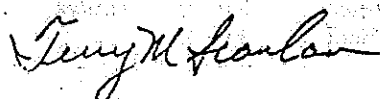
Dear Byron:

This letter confirms our conversation today regarding the well pumps for the CCA Private Prison of Idaho Project.

1. The pump delivered for Well No. 1 is a 14-stage Goulds 10RJHC with 6.62-inch impeller diameter. This pump had been specified with 13 stages in my letter of December 24, 1998 based on a 1760-rpm performance curve and 6.56-inch impellers. Actual speed of the supplied 4-pole submersible motor is 1740. At 1740 rpm, a 14-stage pump is more suitable for the specified 700 gpm pumping rate at 500 feet TDH. Therefore, the supplied 14-stage pump is acceptable.
2. The pump delivered for Well No. 2 is an 8-stage Goulds 12CHC with 8.69-inch impellers. This pump had been specified with 8 stages based on a 1770-rpm performance curve with 8.31-inch impellers. At 1740 rpm, the 8.69-inch impellers will be suitable. Therefore, the supplied pump is acceptable.
3. Pump setting depth for Well No. 1 should be approximately 480 feet. Pump setting depth for Well No. 2 should be approximately 470 feet.

I understand that you plan to install the pumps on March 15. Please advise me if the schedule changes.

Sincerely,



Terry M. Scanlan, P.E.

Cc: Glenn Boardman – CSHQA
Pat Clemons - MK

SCANLAN ENGINEERING

Groundwater and Environmental Engineering

December 24, 1998

Pat Clemons
Morrison Knudsen Corporation
P.O. Box 16327
Boise, ID 83715

Subject: Well No. 1 Pump

Dear Pat:

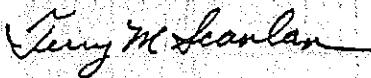
Testing of CCA Idaho Prison Well No. 1 was completed last week. The well was pumped at a rate of 1313 gpm with a pumping level after ten hours of approximately 440 feet below ground surface. This testing suggests that the well should be capable of producing the target yield of 700 gpm with a pumping level of approximately 430 feet below ground surface. Total lift, including friction loss and elevation difference between the well head and top of tank, is approximately 500 feet.

A 12-stage Goulds 10RJHC pump was proposed in the original submittal from YMC (July 10, 1998). This pump is approved if supplied with 13-stages. The extra stage is needed to produce 700 gpm with a TDH of 500 feet.

Please note that the specifications called for a 550-foot column pipe length. Given that the well is completed somewhat shallower than originally anticipated, I now recommend a column length of approximately 480 feet.

Please contact me with any questions.

Sincerely,



Terry M. Scanlan, P.E.

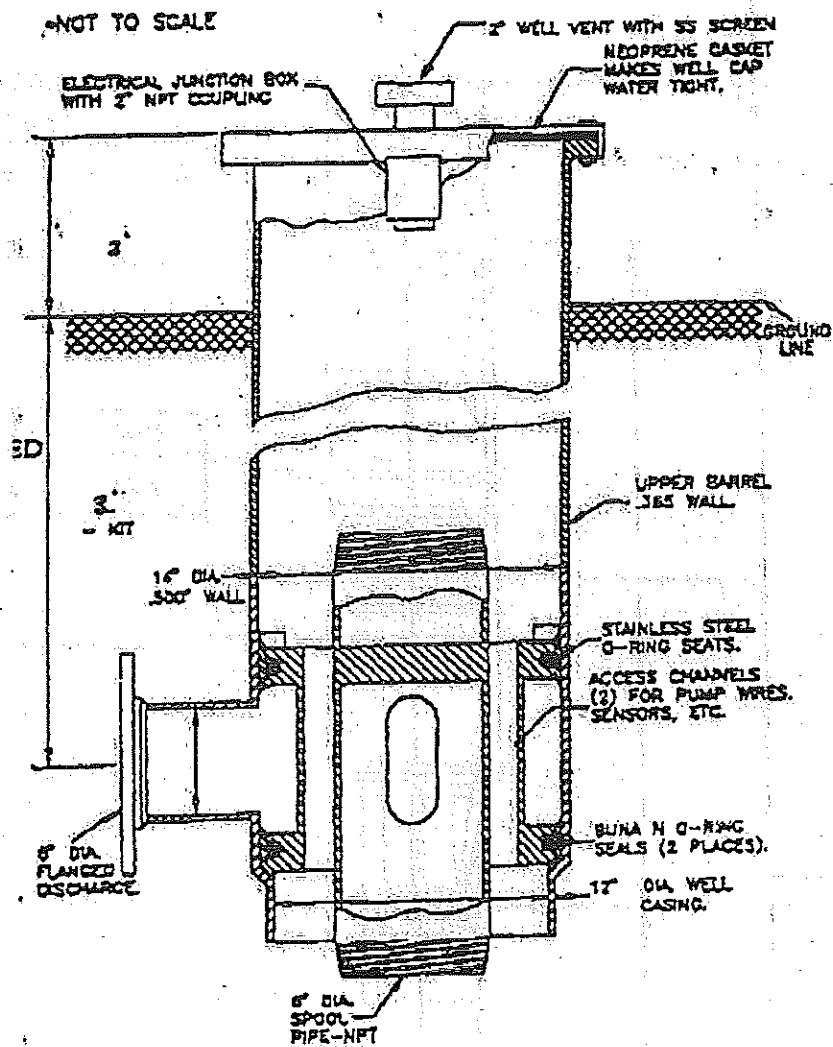
Cc: Glenn Boardman

QUOTATION

We are pleased to submit for your consideration a quotation on your Model MB pitless unit as described below.

Model No.: MB,HD,S-12,14-6F-6-NPT-WT-0

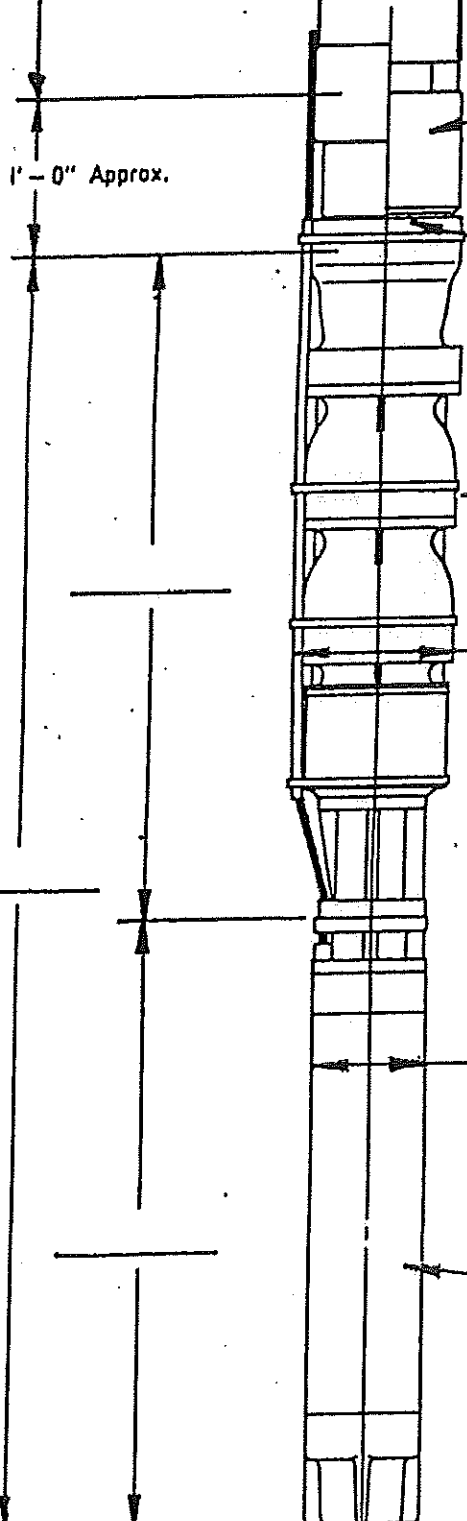
Quote #: 061198-17-REV.



YMC Well #2

470'
~~550'~~

8" Col. ^{470'}~~550'~~ x .322 wall
3/4 Taper



OPTIONAL CHECK VALVE

SIZE 8 (2)

(Add 1'-0" to assembled length if check valve furnished)

SIZE NPT DISCHARGE CONN.

BOWL	STG.	GPM	TDH	ASS'Y NO.
12	8	1200	500	

SUBMERSIBLE MOTOR						
MFGR.	SIZE	HP	RPM	PH.	CY.	VOLTS
Hitachi	12	200	1760	3	60	48

Proposed pumping plant installation diagram for ICC Well #2 from Scanlan Engineering July 1999.

SCANLAN ENGINEERING

Groundwater and Environmental Engineering

March 11, 1999

Byron Wood
Layne of Idaho
P.O. Box 1005
Nampa, ID 83653-1005

Subject: Submersible Well Pumps – CCA Private Prison of Idaho Project

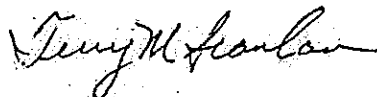
Dear Byron:

This letter confirms our conversation today regarding the well pumps for the CCA Private Prison of Idaho Project.

1. The pump delivered for Well No. 1 is a 14-stage Goulds 10RJHC with 6.62-inch impeller diameter. This pump had been specified with 13 stages in my letter of December 24, 1998 based on a 1760-rpm performance curve and 6.56-inch impellers. Actual speed of the supplied 4-pole submersible motor is 1740. At 1740 rpm, a 14-stage pump is more suitable for the specified 700 gpm pumping rate at 500 feet TDH. Therefore, the supplied 14-stage pump is acceptable.
2. The pump delivered for Well No. 2 is an 8-stage Goulds 12CHC with 8.69-inch impellers. This pump had been specified with 8 stages based on a 1770-rpm performance curve with 8.31-inch impellers. At 1740 rpm, the 8.69-inch impellers will be suitable. Therefore, the supplied pump is acceptable.
3. Pump setting depth for Well No. 1 should be approximately 480 feet. Pump setting depth for Well No. 2 should be approximately 470 feet.

I understand that you plan to install the pumps on March 15. Please advise me if the schedule changes.

Sincerely,



Terry M. Scanlan, P.E.

Cc: Glenn Boardman -- CSHQA
Pat Clemons - MK

SCANLAN ENGINEERING

Groundwater and Environmental Engineering

December 2, 1998

Pat Clemons
Morrison Knudsen Corporation
14601 South Pleasant Valley Road
Boise, ID 83705

Subject: Well No. 2 Pump Final Approval

Dear Pat:

Testing of CCA Idaho Prison Well No. 2 was completed on Monday. The testing suggests that the well should be capable of producing the target yield of 1200 gpm with a pumping level of approximately 420 feet below ground surface. Total lift, including friction loss and elevation difference between the well head and top of tank, is approximately 500 feet.

The July 10, 1998 submittal from YMC proposed an 8-stage Goulds 12CHC pump for Well No. 2. This pump is approved.

Please note that the specifications called for a 550-foot column pipe length. The well as constructed includes a 16x12 reducer at 495 feet. Therefore, the column pipe length must be shortened to keep the pump above the reducer. I suggest a column length of approximately 475 feet.

Please contact me with any questions.

Sincerely,



Terry M. Scanlan, P.E.

Cc: Glenn Boardman



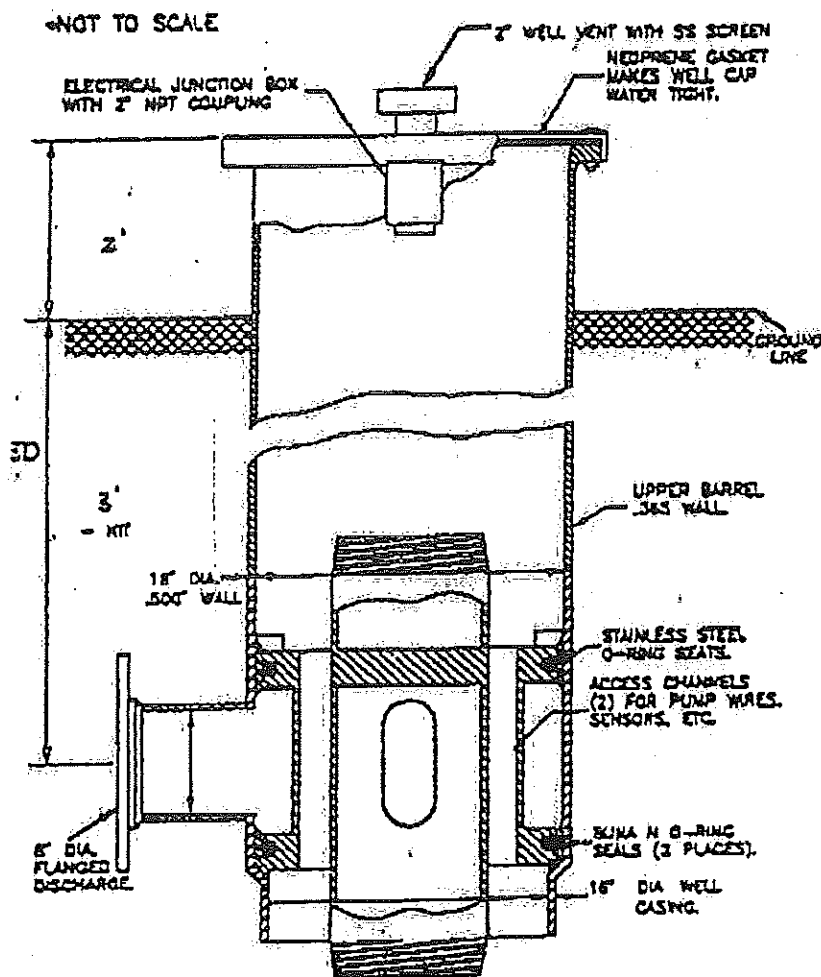
MANUFACTURERS OF QUALITY WATER WELL ACCESSORIES

QUOTATION

We are pleased to submit for your consideration a quotation on your Model MB pitless unit as described below.

Model No.: MB,HD,S-16,18-8,F-8,NPT-WT-0

Quote #: 061198-16



This quotation is valid for 60 days from date given above.

SPOOL
PIPE-NPT

Appendix G

Calculations

SPECIFIC CAPACITY

NPWL = 483 ft bgl

PWL at 1,400 gpm = 640 ft bgl

$$\begin{array}{r} 640 \text{ ft PWL} \\ - 483 \text{ ft NPWL} \\ \hline 157 \text{ ft drawdown} \end{array}$$

Specific Capacity = 8.9 gpm/ft

$$157 \text{ ft} \over 1400 \text{ gpm} = 8.9 \text{ gpm/ft of dd}$$

TOTAL DYNAMIC HEAD (1400 gpm)

Hazen Williams = 120

- PWL = 640 ft = pump lift = 640 ft = 640 ft
- 656 ft of 9" column losses = 12 ft = 12 ft
- one 8" check valve in pump column = 15 ft
- one 8" check valve in main line = 15 ft
- 380 ft of 12" discharge pipe (main line) = 2 ft
- 120 ft of 8" discharge pipe (main line) = 4 ft
- 240 ft of 6" discharge pipe (main line) = 40 ft
- Miscellaneous elbows + fittings = 9 ft
- + Line pressure of 20 psi (full reservoir) = 40 ft

conservatively
high
estimate

777 ft = TDH

SUBJECT ISCI Well #7 (ICC Well #2)

DATE 10-14-2011

Specific Capacity + Total Dynamic Head Calculations

SHEET 1 OF 1

SPECIFIC CAPACITY

NPWL = 393 ft (Nov. 98) bgl
398 ft (Oct. 11) bgl

431 ft
393 ft

38 ft dd

PWL at 2077 gpm after 18 hrs = 431 ft bgl

Specific Capacity = ~~54~~ 54 gpm/ft

38 ft $\overline{) 54.66 \text{ gpm/ft}}$
2077 gpm
190

177
152

258
228

290

TOTAL DYNAMIC HEAD (1200 gpm est)

Hazen-Williams 120

- PWL = 22 ft dd + NPWL 393 = 415 ft
- 470 ft of 8" dia. steel column = 10 ft
- one 8" check valve pump column = 7 ft
- one 8" check valve well head = 7 ft
- height of tank reservoir = 35 ft
- 740 ft of 8" PVC main line = 17 ft
- 660 ft of 12" PVC main line = 2 ft
- + - Misc. ells + fittings = 5 ft

} conservatively high
or measured

498 ft = TDH

NPWL = 407 ft (125 m) bgl

PWL at 700 gpm (est) = 17.5 ft

PWL at 1313 gpm at 12 hrs = 440 ft hgl

Specific Capacity = 40 gpm/ft

$$\begin{array}{r} 440 \text{ ft bgl} \\ - 407 \text{ " " } \\ \hline 33 \text{ ft of draw down} \end{array}$$

$\rightarrow 39.8 \text{ gpm/ft}$
 $33 \overline{) 1313 \text{ gpm}}$
 $\underline{99}$
 323
 $\underline{297}$
 260

TOTAL DYNAMIC HEAD (700 gpm est) HW = 120

- | | | | |
|--------------------------------|---|--------|-----|
| - PWL = 17.5 ft + NPWL 407 ft | = | 424 ft | pgl |
| - 480 ft of 6" dia. column | = | 16 ft | |
| - one 6" check valve in column | = | 8 ft | |
| - one 6" check valve in vault | = | 8 ft | |
| - height of reservoir | = | 35 ft | |
| - 70 ft of 6" PVC manhole | = | 2 ft | |
| - Misc. ell's and fittings | = | 1 ft | |

$$494.5 \text{ ft} = \text{TDM}$$