

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED
APR 20 2010
DEPARTMENT OF
WATER RESOURCES

A. GENERAL INFORMATION

Permit No. 63-12461

1. Owner: City of Boise Public Works Department Phone No.: 208-384-3901

Current Address: PO Box 500, Boise, ID 83701-0500

2. Accompanied by: _____ EXAM DATE: April 5, 2010

Address: _____ Phone No. _____

Relationship to Permit Holder: _____

3. Source: Ground Water tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None

2. Other water rights with the same point of diversion: 63-3013, 63-3014, 63-7047, 63-7055A, 63-8435, 63-7005B, 63-7042B, 63-7053, 63-7055C, 63-7055D, 63-7064A, 63-7064B, 63-7078B, 63-7755B, 63-8130B, 63-9243, 63-9359 & 63-12470

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion: See Attachment B

Ident No.	Gov't Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
								Ada	Exam, 2009 Photo

2. Place(s) of Use:

Indicate Method of Determination Exam, 2009 Photo

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
1N	1E	27					32	32	36	40	8	2							150
		35													39	40			79

Total 229

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

Scale: 1" = _____

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

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

☒ Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well 11	US Motor	500	H08-7846-M	Floway	5-Stage 15DKH, #0475995

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Flow Meter	Vortex	EMCO – Fluidyne	Hydro-Flow 2200		12-inch	12/9/04

2. **Measurements:** Start-up testing was witnessed by Terry Scanlan on December 1, 2004. The well produced a measured flow of 3,000 gpm at 45 psi discharge pressure, 334-foot pumping water level, 60 hz, and 1770 rpm.

E. NARRATIVE/REMARKS/COMMENTS

A 500-hp vertical turbine pump with a variable frequency drive supplies groundwater for irrigation of 229 additional acres developed at the City of Boise Twenty-Mile South Farm (the Farm). The well is 20-inch diameter with a completed depth of 612 feet. The vertical turbine pump is set at a depth of 400 feet with 12-inch column pipe. The well is also known as Well 11 and is authorized for use within a twelve-well integrated irrigation system that serves the Farm. Diversion capacities for ten of the twelve wells have been determined and decreed. Well 11 was drilled to provide additional ground water for development of permit 63-12461 and Well 12 was drilled to provide additional ground water for development of permit 63-12470. The licensing recommendations for the flow rate and volume developed and beneficially used under permit 63-12461 are within the diversion capacity limits of Well 11 as indicated by the well test and associated pump curve included in Attachment C.

To allow development of permits 63-12461 and 63-12470, water right 2-2268B was purchased for mitigation and remains un-diverted in the Snake River. As conditioned, both permits, when combined, will not exceed irrigation of 595 acres, 9.8 cfs and 2317.6 afa at the field headgate. This is equivalent to 0.0165 cfs/acre and 3.895 afa/acre. The 229 acres recommended for licensing under permit 63-12461 are consequently limited to diversion of 3.77 cfs and 892 afa.

Water-bearing zone permitted was 300 to 600 feet. Developed water bearing zone is approximately 300 to 560 feet.

Attachment A is a copy of the permit, proof of beneficial use and decree 2-2268B (mitigation).

Attachment B is a copy of the points of diversion.

Attachment C is the well driller's report, well test and pump performance curve.

Attachment D is a topographical map and aerial photo.

Attachment E are photos of the place of use and Well 11.

Have conditions of permit approval been met? ☒ yes ☐ no

F. FLOW CALCULATIONS

Measured Method:

Y Additional Computation Sheets Attached

Pump Curve & Well Test (Attachment C)

Per Pump Test 12/1/04: 3000 gpm (6.69 cfs) at 45 psi

Pump Curve: 3000 gpm (6.69 cfs) at 500 feet TDH

Static Water Level = 283.3'

Pumping Water Level = 354.5' @ 3323 gpm

Drawdown at 3323 gpm = 71.2'

Specific Capacity = 46.7 gpm/ft (3323 gpm / 71.2' DD)

Pumping water level at 3000 gpm = 283.3' + (3000/46.7') = 347'

Friction loss (400 feet of 12-inch column, discharge head, miscellaneous valves and fittings) = 30'

Discharge pressure = 500 - 347 - 30 = 123' = 53 psi

Limited to 3.77 cfs per permit conditions

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 229 \times 3.895 \text{ afa limit} = 892 \text{ afa}$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 3.77 \times 260 \times 1.9835 = 1944 \text{ afa}$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 892 \text{ afa}$

2. Volume Calculations for Other Uses:

n/a

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use From To	Rate of Diversion Q (cfs)	Annual Volume V (afa)
Irrigation	3/1 11/15	3.77 cfs	892 afa

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

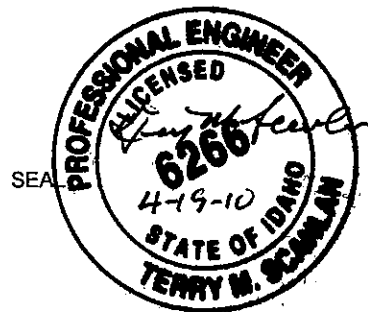
I. AUTHENTICATION

Field Examiner's Name Terry M. Scanlan, P.E., Certified Water Right Examiner 11-129 Date 4-19-10

Field Examiner's Signature



Reviewer _____ Date _____



ATTACHMENT A

PERMIT RECORD, PROOF OF BENEFICIAL USE & DECREE 2-2268B

[Close](#)IDAHO DEPARTMENT OF WATER RESOURCES
Water Permit Report

3/17/2010

WATER RIGHT NO. 63-12461

Owner Type	Name and Address
Current Owner	CITY OF BOISE PUBLIC WORKS DEPT PO BOX 500 BOISE, ID 83701-0500 (208)384-3901
Representative	SPF WATER ENGINEERING LLC C/O LORI GRAVES 300 E MALLARD DR STE 350 BOISE, ID 83706 (208)383-4140
Original Owner	BRIAN WATKINS 4794 W CREE WY BOISE, ID 83709 (208)362-0567
Original Owner	DON WATKINS PO BOX 32 KUNA, ID 83634-0032 (208)362-0433

Priority Date: 07/22/1998

Status: Active

Source	Tributary
GROUND WATER	

Beneficial Use	From	To	Diversion Rate	Volume
IRRIGATION	03/01	11/15	6.4 CFS	
Total Diversion			6.4 CFS	

Location of Point(s) of Diversion:

GROUND WATER	SESW	Sec. 23	Township 01N	Range 01E	ADA County
GROUND WATER	SWSW	Sec. 24	Township 01N	Range 01E	ADA County
GROUND WATER	SESW	Sec. 25	Township 01N	Range 01E	ADA County
GROUND WATER	SESW	Sec. 25	Township 01N	Range 01E	ADA County
GROUND WATER	NWSE	Sec. 25	Township 01N	Range 01E	ADA County
GROUND WATER	NWSW	Sec. 27	Township 01N	Range 01E	ADA County
GROUND WATER	NENE	Sec. 33	Township 01N	Range 01E	ADA County
GROUND WATER	SWNE	Sec. 34	Township 01N	Range 01E	ADA County
GROUND WATER	NWNW	Sec. 34	Township 01N	Range 01E	ADA County
GROUND WATER	NENW	Sec. 35	Township 01N	Range 01E	ADA County
GROUND WATER	NWNW	Sec. 35	Township 01N	Range 01E	ADA County
GROUND WATER	NENE	Sec. 36	Township 01N	Range 01E	ADA County

Place(s) of use:

Place of Use Legal Description: IRRIGATION ADA County

Township	Range	Section	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres
01N	01E	27		NENW	40		NWNW	40		SWNW	40		SESW	40
				NESW	40		NWSW	20		SWSW	10		SESW	10
		35		NESE	40		NWSE	40						

Total Acres: 320

Conditions of Approval:

1. The Department retains jurisdiction until proof of beneficial use is submitted or the proof of beneficial use date as listed in the permit or as subsequently extended by action of the department, whichever date occurs first, to modify the conditions of approval relative to the mitigation plan. The modified conditions may provide for additional acreage to be irrigated and more water to be diverted within the limits of the applications as filed if the right holder provides additional mitigation or the need for mitigation is found to be unnecessary in whole or part.
2. Water bearing zone to be appropriated is 300 to 600 feet.
3. 046 Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
4. Failure to comply with the mitigation plan requirements or conditions of this approval is cause for the Department to cancel this permit.
To mitigate for the depletion of water resulting from the use of water under this right and to prevent injury to senior water right holders, the right holder shall cease diverting and using water as authorized by the following water rights for the purposes and amounts specified below. Moreover, the official record for the following water right will be changed to show that diversion and use of water is not authorized because the rights, or portion thereof, are being dedicated to mitigation purposes. Use Changed Mitigation Mitigation Right No. to Mitigation Rate (cfs) Volume (AF) Acres 2-2268B Irrigation 9.8 2317.6 579 The land that will no longer be irrigated under this right is located within the W 1/2 NE, W 1/2 SE and SW 1/4, Section 20 and W 1/2NE, N 1/2SW, and NW 1/4, Section 29, Township 07S, Range 13E, B.M. If the specified mitigation right, or portion thereof, is sold, transferred, leased, used on any place of use, or is not deliverable due to a shortage of water or a priority call, then the amount of water authorized for diversion under this permit approval shall be reduced by the same proportion as the reduction to the mitigation rights.
5. 170
6. 01M 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. Annual reporting shall include documentation that Bell Rapids' diversion rate and volume have been reduced and the acreage associated with the right holder's purchased portion of the right has not been irrigated and other expansion of acreage under Bell Rapids' right has not occurred.
7. 26A The right holder shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
8. R65 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.
9. The permit holder is not authorized to assign ownership of the permit or the water right used for mitigation without prior written approval of the Department. In its consideration of a request for assignment, the Department will review the permit holder's diligence in the development of a water right and the extent of development performed under terms of the permit.
10. X35 Rights 63-12461 and 63-12470 when combined shall not exceed a total diversion rate of 9.80 cfs, a total annual maximum diversion volume of 2317.6 af at the field headgate, and the irrigation of 595 acres.

Dates:

Proof Due Date: 05/01/2010

Proof Made Date:

Approved Date: 09/21/2009

Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Application Received Date: 07/22/1998

Protest Deadline Date:

Number of Protests: 0

Field Exam Date::

Date Sent to State Off:

Date Received at State Off:

Other Information:

State or Federal:

Owner Name Connector:

Water District Number:

Generic Max Rate per Acre:

Generic Max Volume per Acre:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: True

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
STATEMENT OF COMPLETION
FOR SUBMITTING PROOF OF BENEFICIAL USE

FOR OFFICE USE ONLY

Amt. of Fee \$: _____
Receipt No. _____
Receipt By: _____
Date Received: _____

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.

1. Permit No. 63-12461 Telephone No. 208-384-3900

2. Name of Permit Holder(s): City of Boise Public Works Department

3. Mailing Address: PO Box 500 City Boise

State ID Zip 83701-0500 Email: _____

4. Source of Water: Ground Water If **GROUND WATER** (well), Date Drilled: mo. Nov / yr. 2003

Well Driller: Stevens and Sons Drilling Permit Number: 877067-803008

5. 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): 229 Other: _____

6. Total rate of diversion or storage volume for which proof is submitted: 3.77 cfs OR _____ acre-feet.

7. Compliance with a Measuring Device requirement and/or other Conditions of Permit: *(Refer to the approval conditions on your permit and respond accordingly.)*

Measuring Device: Is a measuring device required?
If yes, has the measuring device been installed?

Yes ☒ or No ☐
Yes ☒ or No ☐

Conditions of Permit: Does your permit require you to submit additional information in connection with your proof of beneficial use? (If yes, please list the conditions below and provide documents if necessary.)

Mitigation via 2-2268B

Completed?

Yes ☒ or No ☐

Completed?

Yes ☐ or No ☐

8. Fee Enclosed: \$ N/A (See Fee Schedule on back of the instructions for filing proof of beneficial use. Proofs filed without an appropriate fee, will be considered incomplete.)

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

Name: _____ Telephone Number: _____

Mailing Address: _____ City _____

State _____ Zip _____ Email: _____

10. *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: _____

(include your title, if on behalf of company or organization)
Assistant City Engineer

Date: 4/16/10

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Adjudication Recommended Right Report

3/19/2010

WATER RIGHT NO. 2-2268B

Owner Type	Name and Address
Current Owner	CITY OF BOISE PUBLIC WORKS DEPT PO BOX 500 BOISE, ID 83701-0500 (208)384-3901
Original Owner	BELL RAPIDS MUTUAL IRRIGATION CO 388 E 5900 N HAGERMAN, ID 83332 (208)837-6241

Priority Date: 12/16/1963

Basis: License

Status: Active

Source	Tributary
SNAKE RIVER	COLUMBIA RIVER

Beneficial Use	From	To	Diversion Rate	Volume
IRRIGATION	03/15	11/15	9.8 CFS	2317.6 AFA
Total Diversion			9.8 CFS	

Location of Point(s) of Diversion:

SNAKE RIVER|SWSENE Lt 2|Sec. 16|Township 07S|Range 13E|TWIN FALLS County

Place(s) of use:

Place of Use Legal Description: IRRIGATION TWIN FALLS County

Township	Range	Section	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres
07S	13E	20		NWNE	28		SWNE	35						
				NESW	40		NWSW	39		SWSW	39		SESW	40
		29		NWSE	39		SWSE	39						
				NWNE	39		SWNE	33						
				NENW	40		NWNW	39		SWNW	39		SENW	39
				NESW	20		NWSW	31						

Total Acres: 579

Conditions of Approval:

1. C18 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. Section 42-1412(6), Idaho Code.
2. This right will be used as mitigation per the Conditions of Approval for permits 63-12461 and 63-12470. This right will be left undiverted in the Snake River.

Dates:

Other Information:

State or Federal: S

Owner Name Connector:

Water District Number:

Generic Max Rate per Acre:

ATTACHMENT B
POINTS OF DIVERSION

ATTACHMENT B

Points of Diversion

Lot	1/4	1/4	1/4	Sec	Twp	Rge	County	Local name for diversion
		SE	SW	23	1N	1E	Ada	Well 1
		SE	NW	25	1N	1E	Ada	Well 2
		NW	SE	25	1N	1E	Ada	Well 3
		SE	SW	25	1N	1E	Ada	Well 4
		NE	NE	36	1N	1E	Ada	Well 5
		NE	NW	35	1N	1E	Ada	Well 6
		NW	NW	35	1N	1E	Ada	Well 7
		SW	NE	34	1N	1E	Ada	Well 8
		NW	NW	34	1N	1E	Ada	Well 9
		NE	NE	33	1N	1E	Ada	Well 10
		NW	SW	27	1N	1E	Ada	Well 11
		SW	SW	24	1N	1E	Ada	Well 12



ATTACHMENT C

WELL LOG, PUMP TEST & PUMP CURVE

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

803008

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

1. WELL TAG NO. D D0029543
877067-803008

DRILLING PERMIT NO. _____

Other IDWR No. WR 63-12461

2. OWNER: City of Boise Public Works Dept
Name PO Box 500
Address Boise State ID Zip 83701
City _____

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

Section 36 of Township 1 North, Range 27 East, Section 14, Government Lot 10, County Ada, Idaho. Address of Well Site Cloverdale Rd 1/2 mile south of Nicholson Rd City _____

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

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

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☒ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
bentonite chips	0	118	27K#	poured

Was drive shoe used? ☒ Yes ☐ No Shoe Depth(s) top & bottom
Was drive shoe seal tested? ☐ Yes ☐ No How? of liner

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
20"	+2	118	375	steel	☒	☐	☐	☐
12"	450	560	365	steel	☐	☒	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method mills knife
Screens Screen Type Johnson V wire

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
540	600	1/2" x 3/8"	2880	12"	steel	☐	☒
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

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WATER RESOURCES
WESTERN REGION

FORWARD WHITE COPY TO WATER RESOURCES

11. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
24	0	4	topsoil w/ rocks		X
	4	30	rock		X
	30	35	fractured rock		X
	35	118	rock		X
20	118	139	rock		X
	139	141	red clay		X
	141	185	rock		X
	185	188	brown clay streak		X
	188	334	rock-some fractures	X	
	334	335	porous w/ tan clay in holes		X
	335	370	black lava rock		X
	370	375	black lava w/ tan clay in pores		X
	375	406	black lava rock		X
	406	410	broken rock		X
	410	469	rock		X
	469	472	porous rock (easy drilling)		X
	472	483	hard rock		X
	483	485	porous rock (soft drilling)		X
	485	500	rock		X
	500	517	porous rock (easy drill)		X
	517	530	red cinders		X
	530	565	light brown sandy clay		X
	565	585	brown clay-some sand		X
	585	612	sand & clay		X
			AMENDED 4/1/04		
			432'9"-499'3" perforated		
			1/2" x 3/8" 2880 12" steel		
			screen: 499'3" 560 40 slot 12" stnls		

Completed Depth 560'560' (Measurable)
Date: Started 6/4/03 Completed 11/1/03

13. DRILLER'S CERTIFICATION

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

Company Name Stevens & Sons Firm No. 153

Firm Official: _____ Date: 11/12/03

and _____

Driller or Operator _____ Date: _____

(Sign once as Firm Official & Operator)

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

803008

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

1. WELL TAG NO. D D0029543
877067-803008
DRILLING PERMIT NO. _____
Other IDWR No. WR 63-12461

2. OWNER: City of Boise Public Works Dept
Name _____
Address P.O. Box 500
City Boise State ID Zip 83701

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
W E S
Twp. 1 North ☒ or South ☐
Rge. 27 East ☐ or West ☐
Sec. 1/4 N/W ☐ S/W ☐
Gov't Lot _____ County Ada 1/4 40 acres 1/4 50 acres
Lat: _____ Long: _____

Address of Well Site Cloverdale Rd - 1/2 mile south of Nicholson Rd City _____
(Give at least name of road + distance to road or landmark)

Lt. _____ Bk. _____ Sub. Name _____

4. USE:

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

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

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☐ Air Rotary ☒ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
bentonite chips	0	118	27K#		poured
			27,000		

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) top & bottom

Was drive shoe seal tested? ☐ Y ☐ N How? of liner

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
20"	+2	118	375	steel	☒	☐	☐	☐
12"	450	540	365	steel	☐	☒	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method mills knife

Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
540	600	1/4 X 3	2880	12	steel	☐	☒

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
3500	20 ft draw down		

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
24	0	4	topsoil w/ rocks		X
	4	30	rock		X
	30	35	fractured rock		X
	35	118	rock		X
20	118	139	rock		X
	139	141	red clay		X
	141	185	rock		X
	185	188	brown clay streak		X
	188	334	rock-some fractures	X	
	334	335	porous w/ tan clay in holes		X
	335	370	black lava rock		X
	370	375	black lava w/ tan clay in pores		X
	375	406	black lava rock		X
	406	410	broken rock		X
	410	469	rock		X
	469	472	porous rock (easy drilling)		X
	472	483	hard rock		X
	483	485	porous rock (soft drilling)		X
	485	500	rock		X
	500	517	porous rock (easy drill)		X
	517	530	red cinders		X
	530	565	light brown sandy clay		X
	565	585	brown clay-some sand		X
	585	612	sand & clay	X	

RECEIVED

FEB 03 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 612 (Measurable)
Date: Started 6/4/03 Completed 11/1/03

13. DRILLER'S CERTIFICATION

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

Company Name Stevens & Sons Firm No. 153

Firm Official _____ 1/12/03
and _____
Driller or Operator _____

AQUIFER TEST DATA

Well No: Boise Public Works, 20 Mile South No. 11 Qave = 3371 gpm

Test conducted by: SPF Water Engineering and Layne Pump Co.

Flow measured by: Manometer with 12x10 orifice

Water levels measured by: well sounder Water level measure point: top of casing

MP elevation: Static WL: 283.3 [ft]

Pump on: 3/31/2004 9:51 Pump off: 3/31/2004 15:03

Date	time	t [min]	t' [min]	t/t'	WL [ft]	Drawdown [ft]	Head [in]	Q [gpm]	Comments
3/31/2004	9:51:00	-			-	-	-	-	start
3/31/2004	9:54:00	3			327.50	44.20	48	3395	water levels in manometer generally fluctuate +/- 2"
3/31/2004	9:55:00	4			334.90	51.60			
3/31/2004	9:56:00	5			337.10	53.80			
3/31/2004	9:57:00	6			338.00	54.70	46	3323	
3/31/2004	9:59:00	8			339.50	56.20	48	3395	
3/31/2004	10:00:00	9			339.00	55.70	48	3395	
3/31/2004	10:01:00	10			338.10	54.80	48	3395	
3/31/2004	10:02:00	11			336.90	53.60			
3/31/2004	10:04:00	13			336.30	53.00	48	3395	
3/31/2004	10:06:00	15			338.00	54.70	49	3430	
3/31/2004	10:09:00	18			338.20	54.90			
3/31/2004	10:11:00	20							
3/31/2004	10:12:00	21			338.20	54.90	48	3395	
3/31/2004	10:20:00	29			339.80	56.50	48	3395	
3/31/2004	10:23:00	32			338.80	55.50	48	3395	
3/31/2004	10:26:00	35			340.20	56.90			EC/SC=247/262, T=22.1C
3/31/2004	10:31:00	40			339.20	55.90	48	3395	
3/31/2004	10:46:00	55			340.90	57.60	47.5	3377	
3/31/2004	11:00:00	69			343.90	60.60			
3/31/2004	11:15:00	84			346.00	62.70			
3/31/2004	11:30:00	99			346.60	63.30			
3/31/2004	11:45:00	114			347.40	64.10			
3/31/2004	12:00:00	129			348.70	65.40			
3/31/2004	12:15:00	144			348.60	65.30			
3/31/2004	12:30:00	159			348.80	65.50			
3/31/2004	12:45:00	174			349.00	65.70			
3/31/2004	13:00:00	189			349.00	65.70			
3/31/2004	13:45:00	234			351.50	68.20			
3/31/2004	14:00:00	249			352.00	68.70			
3/31/2004	14:06:00	255			351.00	67.70	45	3287	EC/SC=302.8/312.3, T=23.3C motor revs increased slightly engine revs go up (?) reduce so that man=48"
3/31/2004	14:13:00	262			351.00	67.70			
3/31/2004	14:18:00	267			354.30	71.00	46	3323	
3/31/2004	14:22:00	271			354.80	71.50			
3/31/2004	14:25:00	274							
3/31/2004	14:28:00	277			354.70	71.40	48	3395	
3/31/2004	14:31:00	280			355.00	71.70	48	3395	
3/31/2004	14:39:00	288			354.90	71.60	47	3359	
3/31/2004	14:41:00	290			356.20	72.90	46	3323	
3/31/2004	14:42:00	291			355.80	72.50	46	3323	
3/31/2004	14:45:00	294					50	3465	
3/31/2004	14:48:00	297			355.30	72.00	47	3359	
3/31/2004	14:49:00	298			355.30	72.00	47	3359	
3/31/2004	14:51:00	300			355.60	72.30	47	3359	
3/31/2004	14:55:00	304			355.20	71.90	47	3359	water continues to be well-aerated, possibly from cascading water earlier measurements outside of meas. tube suggest cascading water from approx. 292' zone
3/31/2004	14:58:00	307			356.50	73.20	48	3395	
3/31/2004	14:59:00	308			354.30	71.00	46	3323	
3/31/2004	15:00:00	309			355.20	71.90			
3/31/2004	15:02:00	311			354.50	71.20	46	3323	
3/31/2004	15:04:00	313	1	313	280.00	-3.30			
3/31/2004	15:05:00	314	2	157	284.00	0.70			
3/31/2004	15:05:30	314.50	2.50	126	284.00	0.70			
3/31/2004	15:06:10	315.17	3.17	100	283.50	0.20			
3/31/2004	15:07:30	316.50	4.50	70	283.30	0.00			
3/31/2004	15:09:10	318.17	6.17	52	283.20	-0.10			
3/31/2004	15:10:50	319.83	7.83	41	283.80	0.50			
3/31/2004	15:11:45	320.75	8.75	37	283.75	0.45			
3/31/2004	15:12:20	321.33	9.33	34	283.75	0.45			

AQUIFER TEST DATA

Well No: Boise Public Works, 20 Mile South No. 11 Qave = 3371 gpm

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Flow measured by: Manometer with 12x10 orifice

Water levels measured by: well sounder Water level measure point: top of casing

MP elevation: Static WL: 283.3 [ft]

Pump on: 3/31/2004 9:51 Pump off: 3/31/2004 15:03

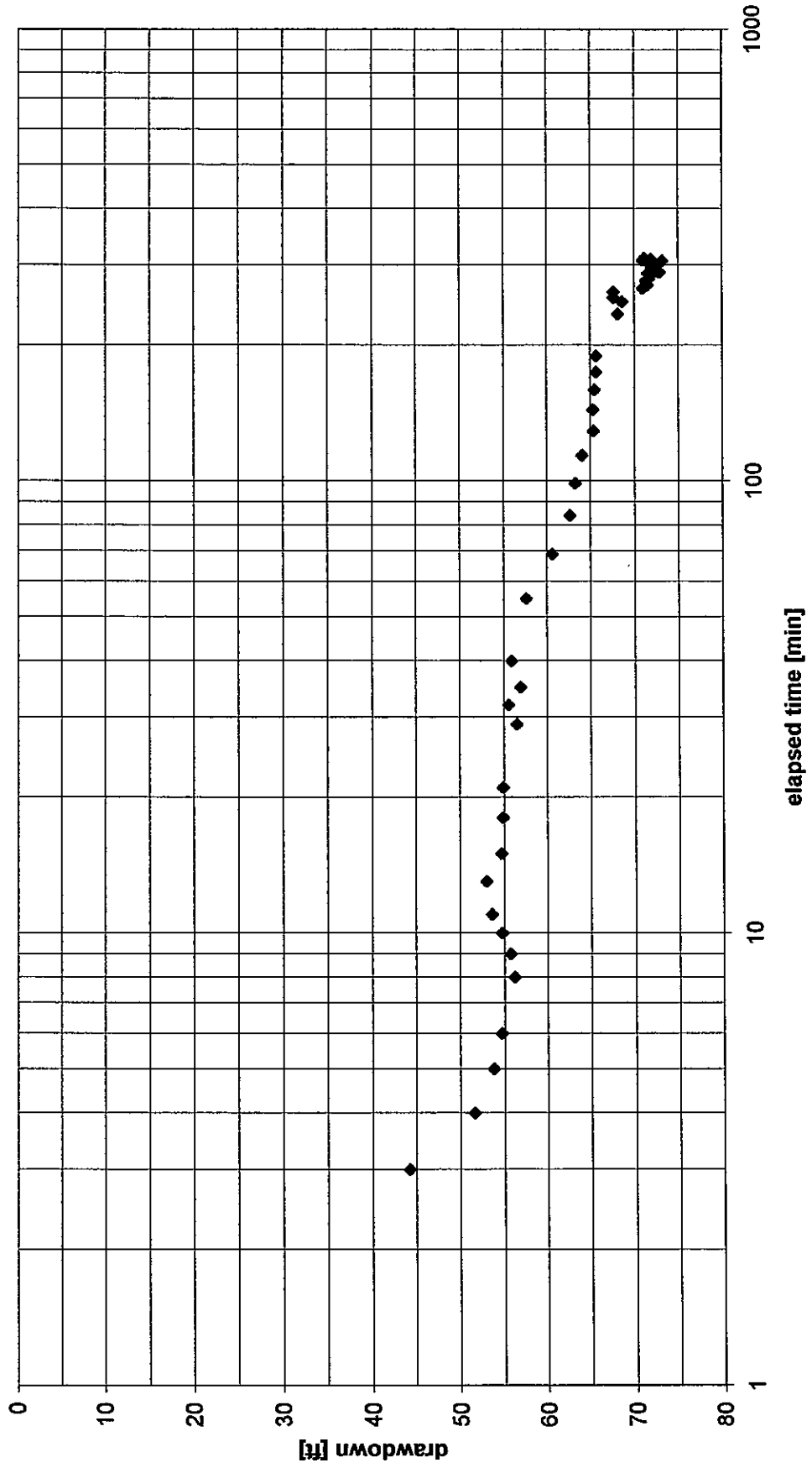
Date	time	t [min]	t' [min]	t/t'	WL [ft]	Drawdown [ft]	Head [in]	Q [gpm]	Comments
3/31/2004	15:14:00	323.00	11.00	29	283.65	0.35			
3/31/2004	15:16:00	325.00	13.00	25	283.60	0.30			
3/31/2004	15:17:25	326.42	14.42	23	283.60	0.30			
3/31/2004	15:19:20	328.33	16.33	20	283.60	0.30			
3/31/2004	15:20:00	329.00	17.00	19	283.60	0.30			

Time - Drawdown

Boise Public Works

20 Mile South No. 11, Qave = 3371 gpm

Test date: March 31, 2004

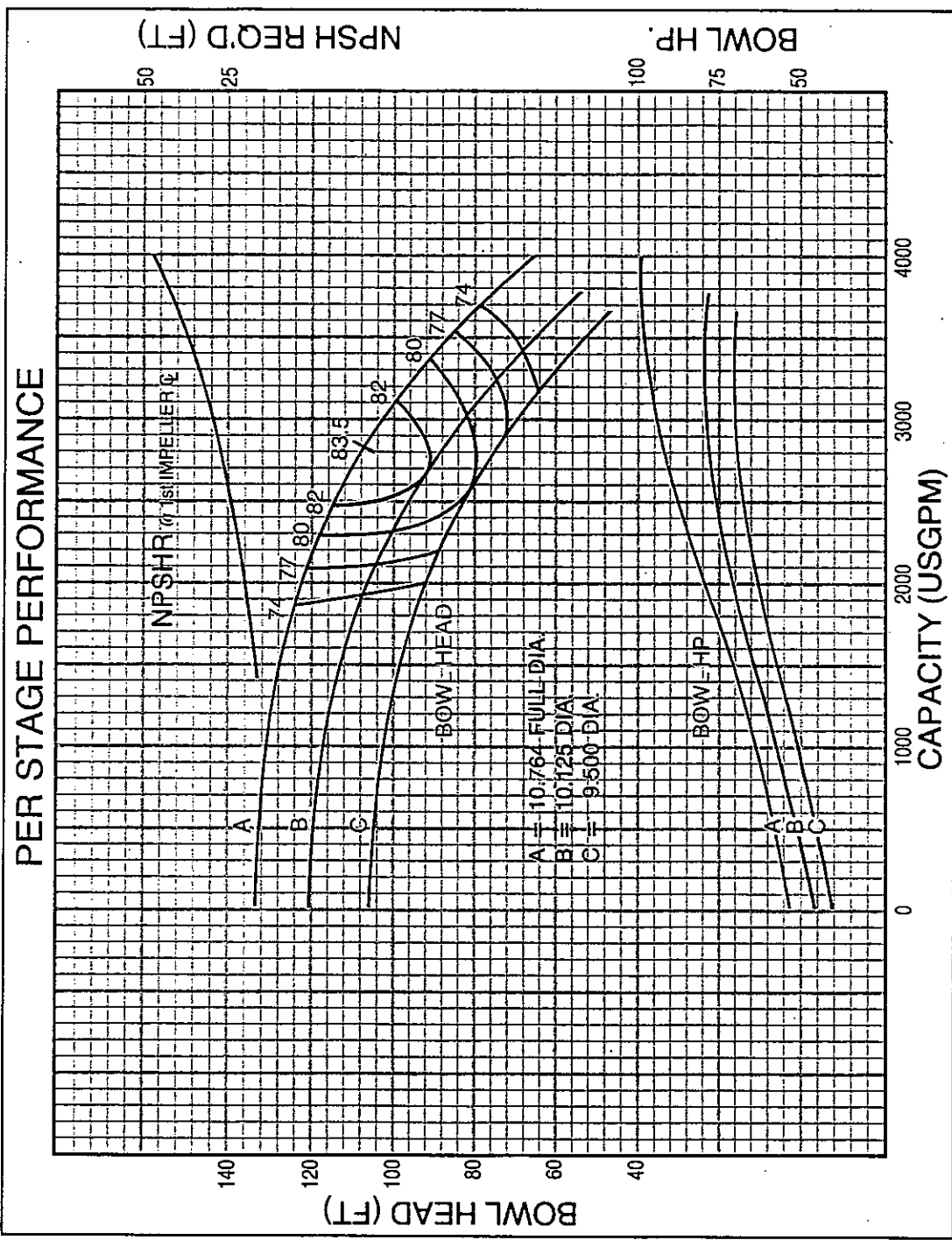


5-stage, 400-foot setting depth, 3000rpm @ 500 feet TDH

15DKH

ENCLOSED TYPE IMPELLER

1770 RPM



NO. OF STAGES	EFF. CHANGE (NO. OF POINTS)
1	-2
2	-1
3	-0

HORSEPOWER WILL BE EFFECTED BY CHANGE IN EFFICIENCY

PERFORMANCE FOR:
 Bowl Pattern No.: 548100-A-R2
 Imp. Pattern No.: 548103-B-R0

PUMP DATA

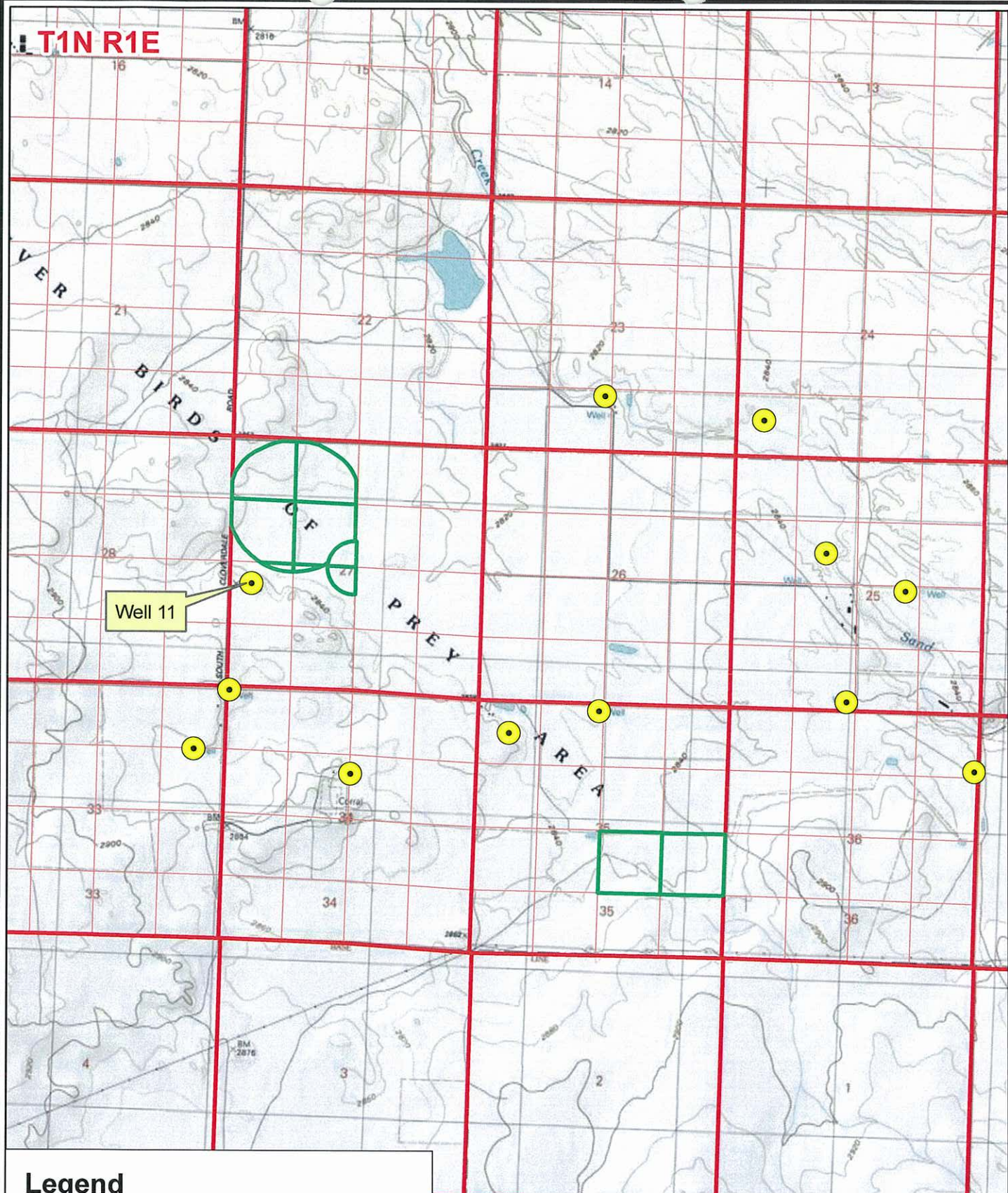
Shaft Dia. (IN.)	2 1/4
Maximum Sphere (IN.)	1 1/4
Maximum Head (FT.)*	698
Min. Submergence (IN.)**	32
Impeller Wt. (LBS.)	30.7
Thrust Constant (K)	17.3
Bowl O.D. (IN.)	14 7/8

NOTES

- Performance indicated based on cold water with a specific gravity of 1.0.
- * Standard construction.
- ** Minimum submergence over lip of bell to prevent vortexing.
- Efficiency improvements are available in certain instances. Please contact the factory.

ATTACHMENT D

TOPO MAP AND 2009 AERIAL PHOTO



Legend

-  63-12461 Place of Use (229 acres)
-  Proposed Points of Diversion
-  Sections

Permit 63-12461



0 0.25 0.5
Miles



T1N R1E

2009 Photo

16

15

14

13

18

21

22

23

24

19

28

27

26

25

30

Well 11

33

34

35

36

31

4

3

2

1

6

Legend

 63-12461 Place of Use (229 acres)

 Proposed Points of Diversion

 Sections

Permit 63-12461

27

0 0.25 0.5
Miles



ATTACHMENT E
PHOTOS



Well 11 & Pump



Well 11 Controlling Works



Well 11 Well/Pump Shed



NW1/4, Section 27