



April 16, 2015

Mr. James Cefalo
Idaho Department of Water Resources
900 North Skyline Drive, Suite A
Idaho Falls, ID 83402-1718

RE: AQUIFER TEST FOR TODD DANIELS WATER RIGHTS APPLICATION

Dear Mr. Cefalo:

A groundwater impact assessment is provided in this letter report for Todd Daniels Water Right Application. He has approximately 75.7 acres of land west of Malad City, Idaho (Figure 1) and his application is for 1.03 cfs. A 24 hour, 750 gpm constant rate pump test was conducted in May of 2009 on Well 4 for the Malad City water system. This well about 1.45 miles northeast of the propose drill site. The parameters from the aquifer test are used in a computer simulation to predict the potential impacts to neighboring wells within ½ mile of the proposed point of diversion (POD). The results of the computer analysis show that the proposed diversion rate will not unreasonably impact neighboring wells.

Nearby PODs

The proposed well location is 14S, 36E, 21 SE NW as shown in Figure 2. A search was made for all existing points of diversions (PODs), i.e. water rights near Daniel's property. In Figures 3 through 6, a blue circle is shown with a ½ mile radius centered on the proposed Daniels well location. The circle encompasses portions of sections 20, 21, and a small portion of 16, T14S, R35E. A search of the IDWR on-line database for PODs in these sections indicates there are no surface water rights in either section 20 or 21 but there are six surface water rights in section 16 T14S R36E. However, none of the surface water rights in section 16 are within ½ radius of Mr. Daniels proposed POD. The results of the water right search are provided in Tables 1 through 3.

Nearby Wells

A search was performed of the IDWR drillers' log database for wells within ½ mile of the proposed well location. Thirty-seven wells were found in section 21, however; the majority of them are monitoring wells for a site investigation of a local gas station and some wells were outside of the ½ mile radius. As a result the list of 37 was down selected to 13 well logs. Thirteen wells were found in section 20, four of which are presented here. Seventeen wells were found in section 20, two of which are presented here. It should be noted that a subdivision resides within a ½ mile of Mr. Daniels proposed well location and it appears that most of the houses within a ½ mile radius use water from two City of Malad Municipal wells, one located in section 21 and the other located in section 16. Twenty representative well logs are provided in Attachment 1 to show the local hydrogeology. The average depth of the wells (excluding monitoring wells) is 176 ft and the average depth to water is 102 ft.



Hydrogeology

The lithology in this area is a series of unconsolidated sands, gravels and clays. There is not a marker layer or geologic unit that can be correlated over distances between wells (~ ½ mile), at least, as described in the lithology on the well logs. The inability to correlate geologic layers is consistent with the area being situated in a cut and fill sequence of the Malad River and locally Deep and Spring Creeks. It is further complicated by waxing and waning cycles of Lake Bonneville. For the purposes of this investigation it is assumed that the aquifer thickness is 200 ft in this area. This is based on driller logs for three irrigations wells in Section 30, T15S, R36E about seven miles south, southwest of the proposed POD and regional considerations of the hydrogeology. It should be noted that the aquifer is not one homogenous layer but a sequence of permeable lens of sand and gravel stringers, which are primarily confined. However, it is anticipated that in many areas of the Malad Valley the shallow sequences of the aquifer are unconfined.

Pumping Test

A 24 hour, 750 gpm constant rate pump test was conducted in May of 2009 on Well 4 for the Malad City water system. A graph of drawdown is in Attachment 2. The semi-log plot of time-drawdown results was used to calculate the transmissivity of the aquifer using the modified non-equilibrium equation described by Driscoll (1986). This equation is:

$$T = \frac{264Q}{\Delta s}$$

Where T = transmissivity in gallons per day per foot, Q=pumping rate, in gallons per minute (gpm), and Δs = change in drawdown between one log cycle of the time-drawdown graph. The redline in Attachment 2 semi-log plot represents the straight line trend of the data between 10 and 900 minutes. The slope of this line is 3 ft per log cycle.

Thus, the calculated value of transmissivity is 66,000 gpm/ft or 8,800 ft²/day.

Because there was no observation well the aquifer storativity could not be accurately calculated. The storativity in this location was assumed to be the same as the storativity measured in an aquifer test with an observation well conducted in reference textbooks (Freeze and Cherry, 1979). It is estimated to be 0.001.

Impact Assessment

Mr. Daniels wishes to irrigate 75.7 acres per IDWR estimates of usage this should require 0.013 cfs per acre or 462 gpm or 1.03 cfs. To estimate the long-term drawdown and impact to neighboring wells from pumping of the proposed Daniels Well, the forward solution capabilities of the AQTESOLV program were employed. The input parameters to the model are listed in Table 3-1 (see Attachment 3). Boundaries in AQTESOLV were enabled as shown in Figure 3-1 to represent Malad Valley. As depicted in Figure 3-1 and listed in Table 3-2 the model is 32,000 ft wide and 50,000 ft long. Because the Malad Valley is bounded by mountains consisting of Paleozoic and Mesozoic sedimentary rock that do not provide much water compared to the unconsolidated valley fill, the west, north and south boundaries are set as impermeable or “no flow” boundaries. Water is allowed to enter the model domain only through the east boundary.



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In the model domain the proposed POD well is located 24,679 ft east of the west boundary and 32,342 ft north of the south boundary.

Figure 3-2 shows the AQTESOLV[®] output plot of the forward calculation for the proposed well pumping at 1.03 cfs (462 gpm) constantly for 7 months (April 1 to Oct 31). At the end of the time period the predicted drawdown is estimated to be 17 feet in the proposed POD. The calculated drawdown for a well 1/2 mile north of the POD is predicted to be 3 ft.

It is my professional opinion that Mr. Daniel's water right application will not excessively impact his neighbors' right to divert water. I believe that the calculated drawdown over estimates the actual drawdown to be expected for the following reasons: 1) Mr. Daniels will never pump continuously at the maximum rate for 210 days to consume 429 acre – ft in a single year; 2) the Paleozoic/Mesozoic rocks of the mountains are not totally impermeable and will provide some water to the system, thus reducing drawdown, 3) several canals and the Malad River are within the domain of the model and no credit for recharge/leakage is taken in the model, and 4) the calculated impact used confined aquifer conditions for the entire domain, while it is known that unconfined conditions exist over large parts of the area. All of these factors will reduce the predicted drawdown presented here.

Please do not hesitate to call me if you have any questions about this letter or the calculations presented.

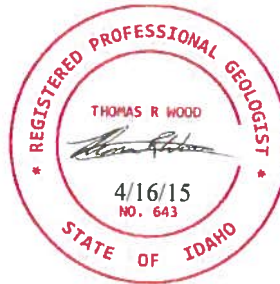
Respectfully,

A handwritten signature in black ink, appearing to read "Thomas R. Wood".

Thomas R. Wood, PhD, PG

cc

Tod Daniels 610 N 500 W Malad ID 83252



References

Freeze, R.A. and J.A. Cherry, 1979, Groundwater, ISBN 0-13-365312-9, Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632.

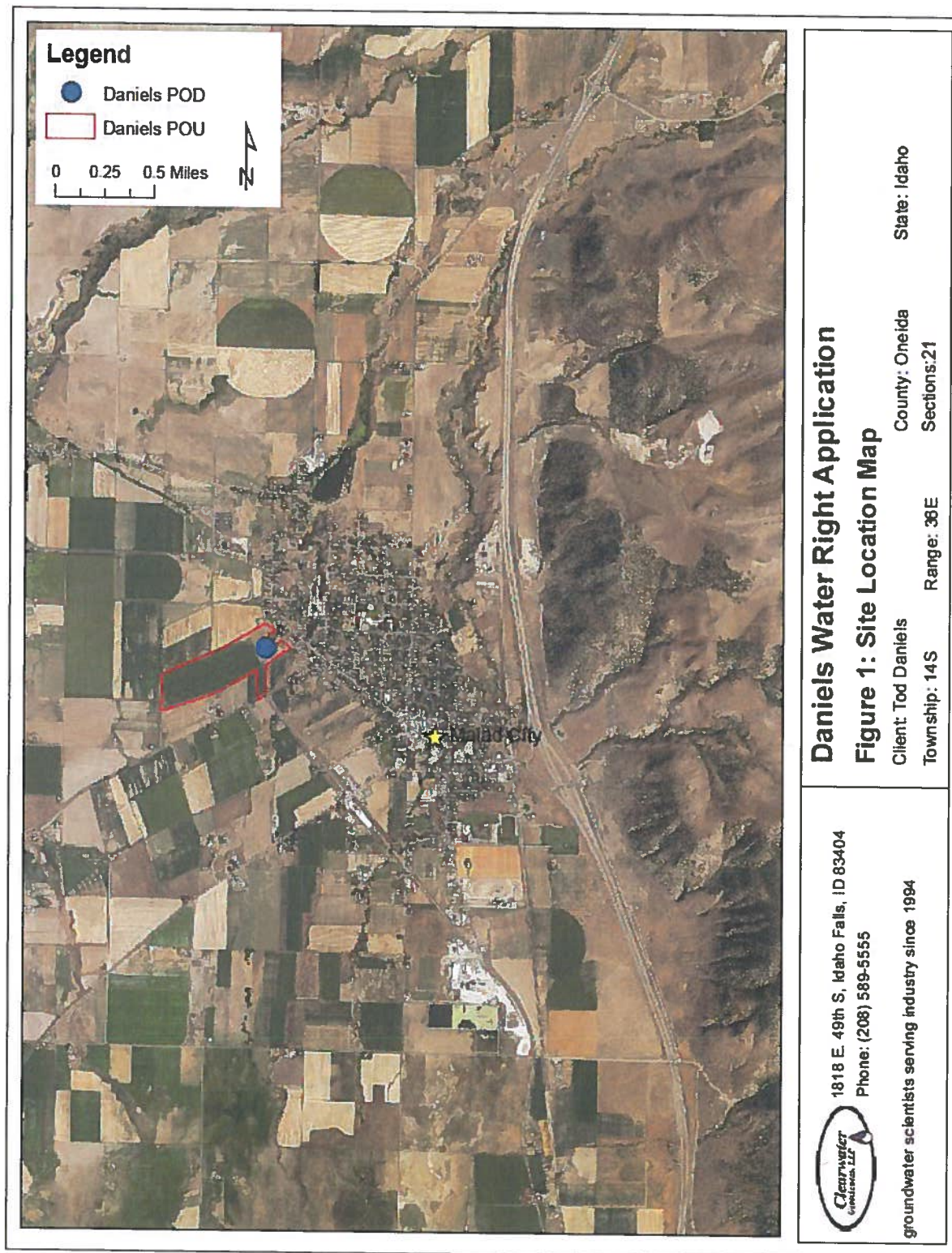


Figure 1. Map showing location of the Proposed Daniels well and POU.

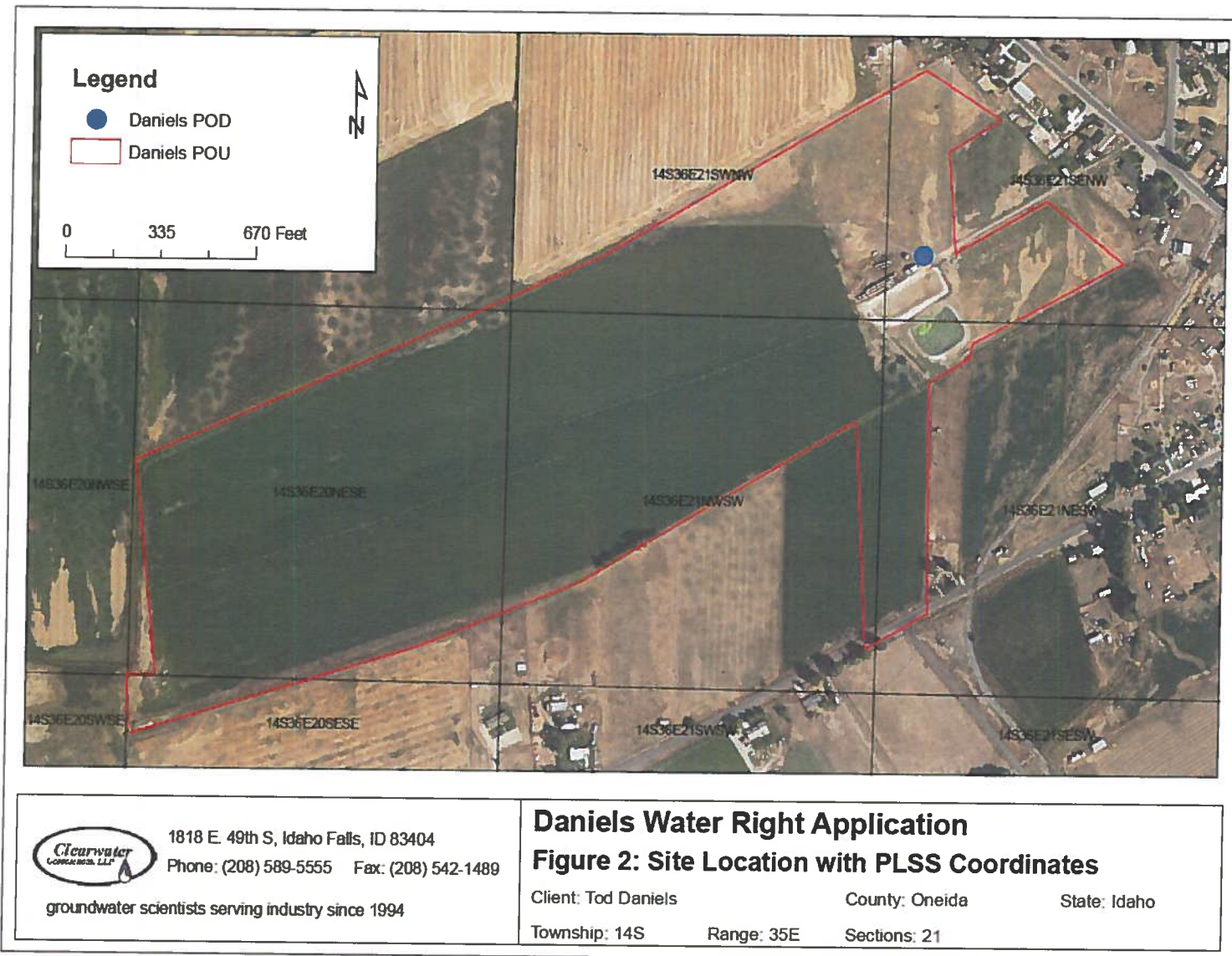


Figure 2 IDWR map area showing the township range section coordinates and the proposed well location as a blue dot.

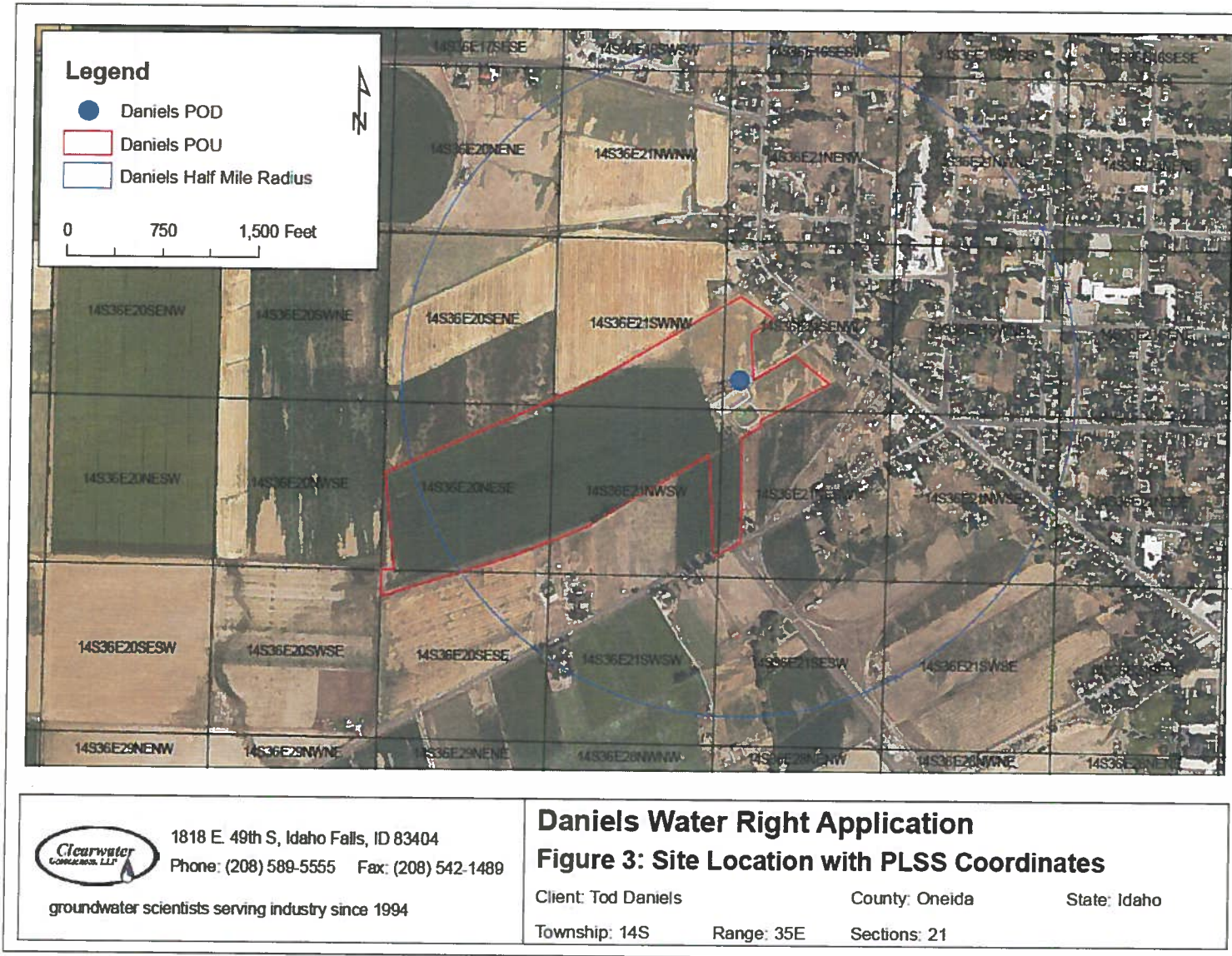


Figure 3 Daniels property with blue circle showing approximate ½ mile radius.

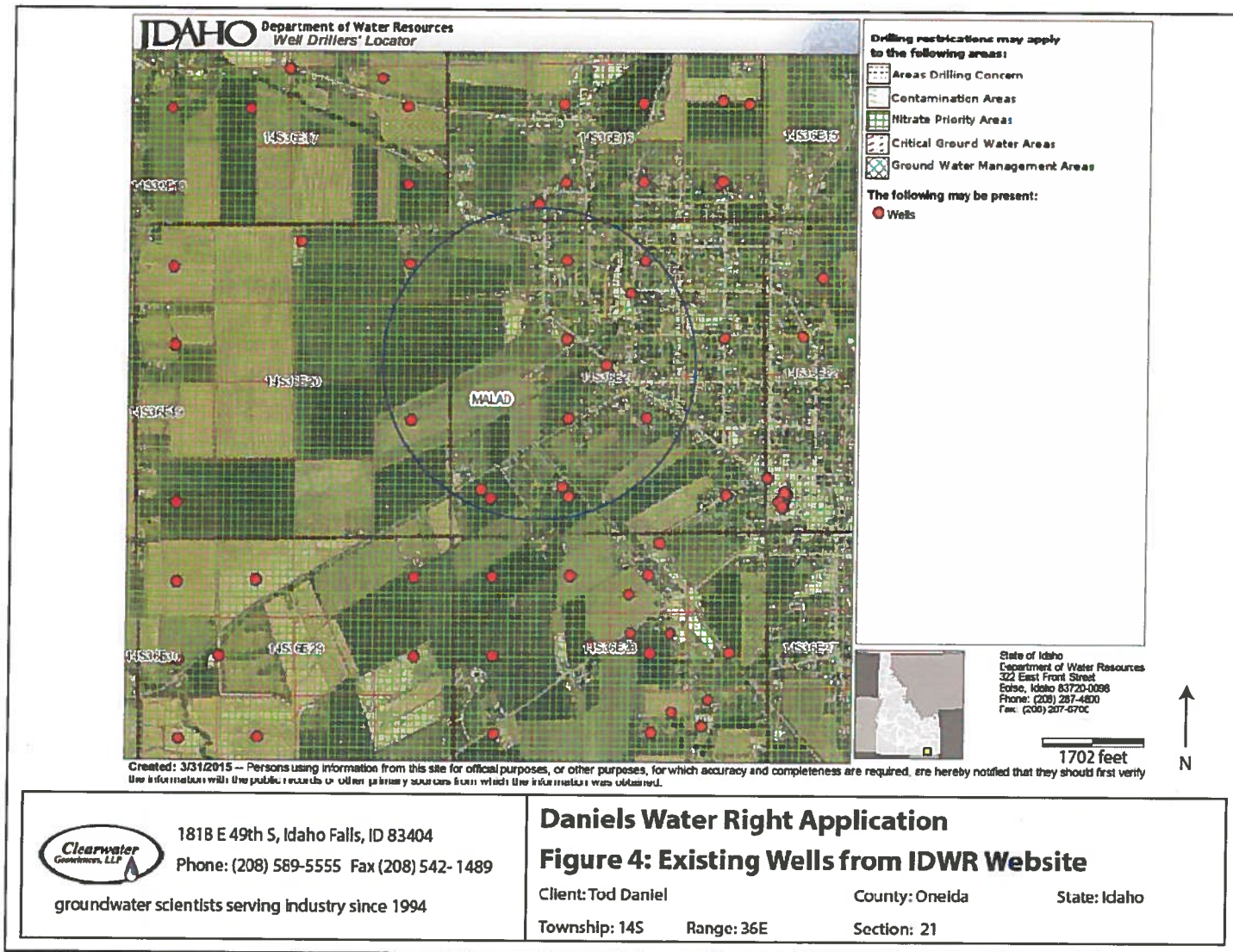


Figure 4 Existing Wells; from IDWR website and blue circle ½ mile diameter.

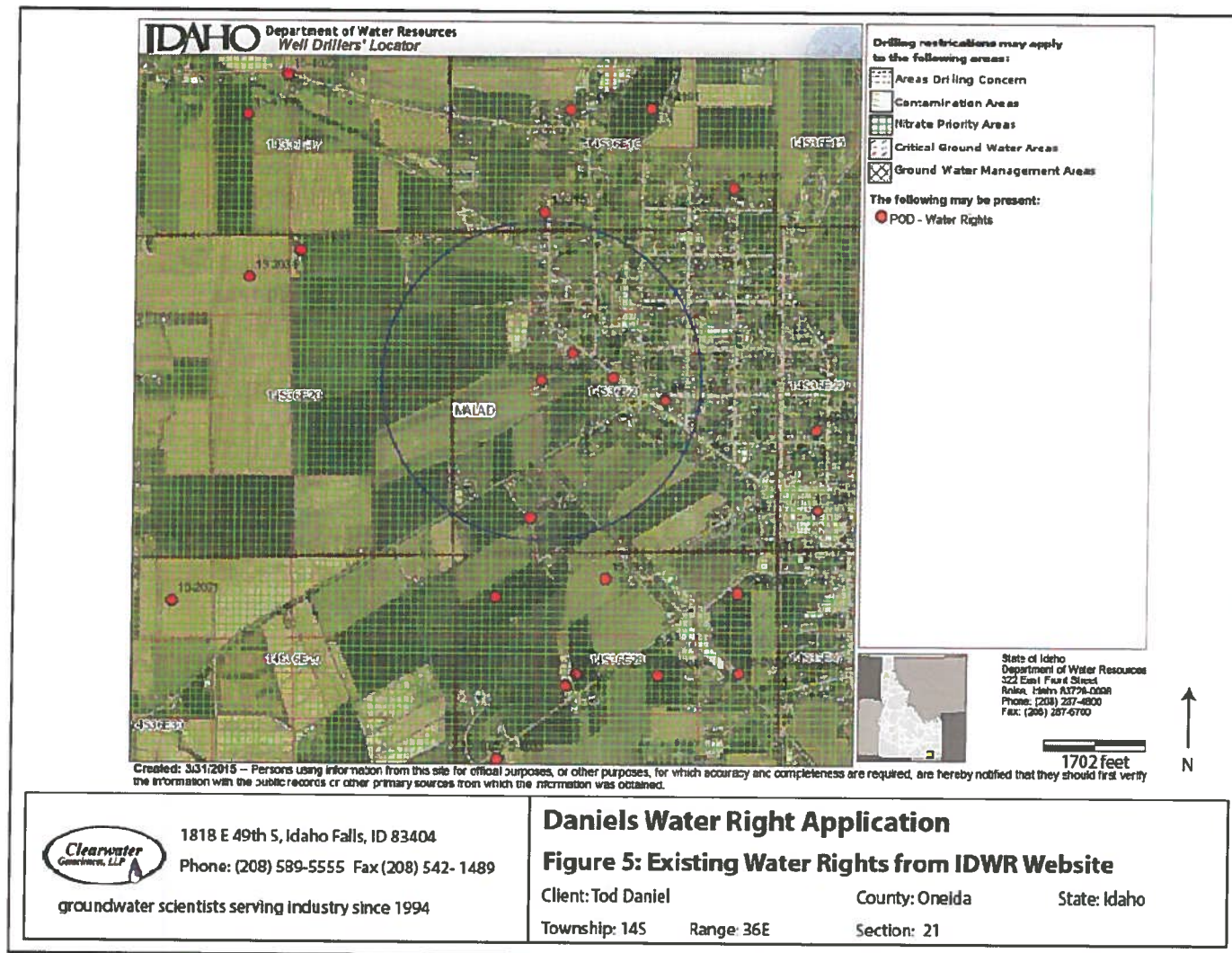


Figure 5 Existing Water Rights; from IDWR website and blue circle 1/2 mile diameter. The one well within the 1/2 mile radius is the Daniels' domestic well.

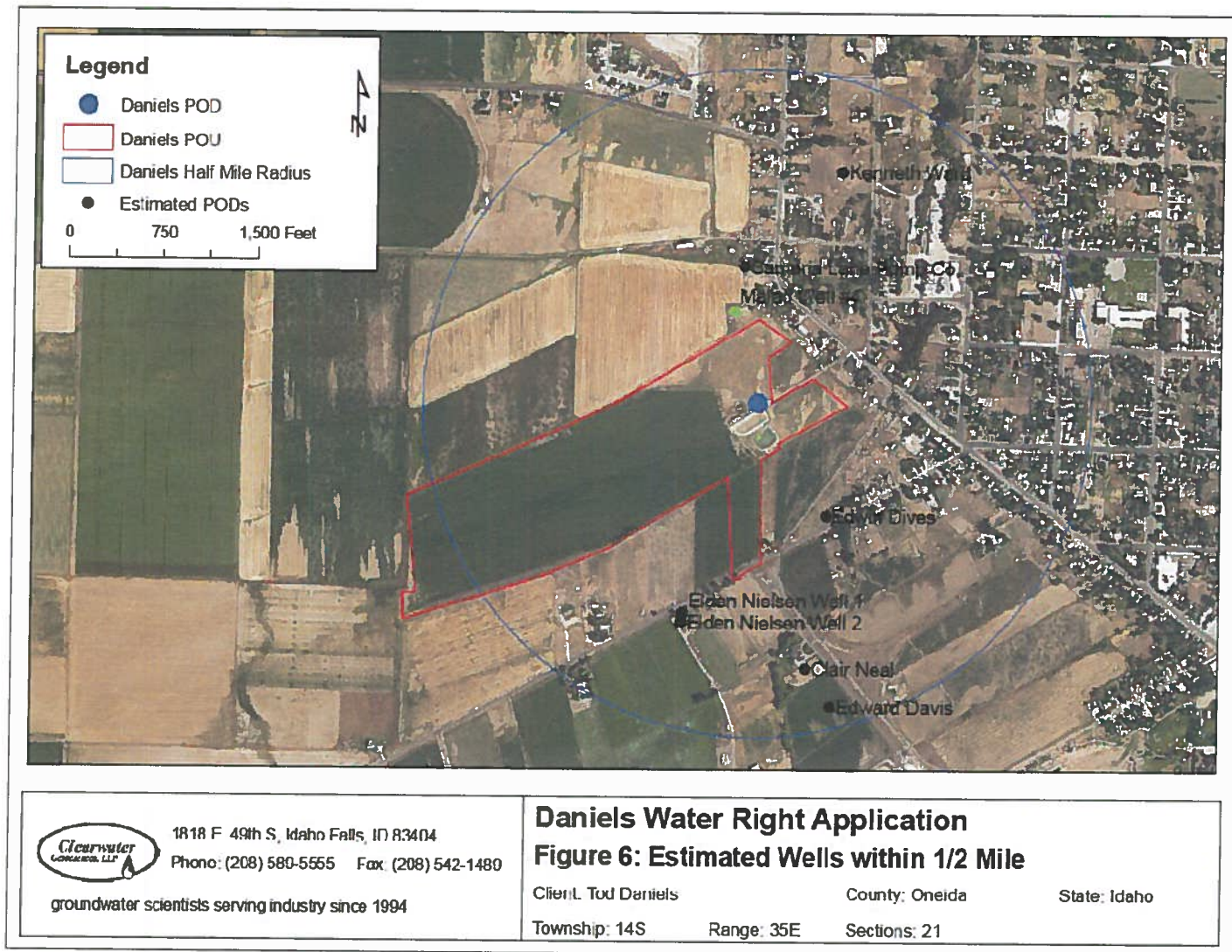


Figure 6 Estimated well locations within ½ mile of Daniels proposed location. Daniels POD is shown as a blue dot, Malad Well #4 is shown as a green dot, and estimated locations are shown as black dots.



Table 1 IDWR Search results for point of diversions in T14S, R35E, Section 21

Type	Basin	Sequence	Suffix	Application Number	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
<u>Water Right</u>	15	4200			Active	4/15/1963	0.06	GROUND WATER	DOMESTIC	LEWIS, AFTON M; LEWIS, THOMAS H
<u>Water Right</u>	15	7151			Active	4/7/1995	2.23	GROUND WATER	MUNICIPAL	CITY OF MALAD
<u>Water Right</u>	15	7153			Active	4/9/1996	2.58	GROUND WATER	IRRIGATION	NIELSEN, ELDEN D
<u>Water Right</u>	15	7361			Active	4/15/1954	1.61	GROUND WATER	IRRIGATION	DANIELS, ROY; DENNIS, THOMAS; JONES, IVES; JONES, JENKIN; LAWS, JOSEPH W; MILLS, PAUL H
<u>Water Right</u>	15	7362			Active	4/15/1954	0.49	GROUND WATER	IRRIGATION	DANIELS, RHONDA A; DANIELS, TOD F
<u>Water Permit</u>	15	7299			Active	1/12/2008	2	GROUND WATER	MUNICIPAL	CITY OF MALAD
<u>Water Application</u>	15	7401		79882	Active	2/19/2015	1.03	GROUND WATER	IRRIGATION	DANIELS, TOD F



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Table 2 IDWR Search results for point of diversions in T14S, R35E, Section 20

Type	Basin	Sequence	Suffix	Application Number	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
<u>Water Right</u>	15	2034			Active	5/24/1947	3.33	GROUND WATER	IRRIGATION	JONES & GODDARD
<u>Water Right</u>	15	7150			Active	4/24/1995	0.96	GROUND WATER	IRRIGATION	FLYNN, DAVID D; FLYNN, JUDY ANN
<u>Water Application</u>	15	7402		79904	Active	3/11/2015	0.04	GROUND WATER	IRRIGATION	FLYNN, DAVID D; FLYNN, JUDY ANN



Table 3 IDWR Search results for point of diversions in T14S, R35E, Section 16

Type	Basin	Sequence	Suffix	Application Number	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
WR	15	2076			Active	1/30/1948		DEVIL CREEK, SPRING CREEK	POWER FROM STORAGE, POWER STORAGE	CROWTHER BROTHERS MILLING CO
WR	15	2079			Active	5/9/1955		BIRCH CREEK, CAMPBELL CREEK, DEVIL CREEK, SPRING CREEK	POWER FROM STORAGE, POWER STORAGE	CROWTHER BROTHERS MILLING CO
WR	15	4022			Active	5/1/1955	0.54	SPRING	DOMESTIC, IRRIGATION	BEAL, DAVID A
WR	15	4135			Active	4/1/1918	0.04	SPRING	DOMESTIC	HUGHES, STEPHEN J
WR	15	4155			Active	7/1/1960	0.02	GROUND WATER	INDUSTRIAL	HESS BROTHERS CONTRACTORS
WR	15	4191			Active	8/1/1955	0.04	CROWTHERS RESERVOIR	IRRIGATION	MARBLE, BERT R
WR	15	7151			Active	4/7/1995	2.23	GROUND WATER	MUNICIPAL	CITY OF MALAD
WR Permit	15	7167			Active	1/9/1998		SPRING CREEK	IRRIGATION FROM STORAGE, IRRIGATION STORAGE	MALAD VALLEY IRRIGATION CO
WR Permit	15	7268			Active	12/31/2004	0.8	GROUND WATER	IRRIGATION, STOCKWATER	SMITH, GORDON
WR Permit	15	7374			Active	2/5/2014	0.2	GROUND WATER	DOMESTIC, IRRIGATION	CORBRIDGE, DAVID; CORBRIDGE, MAURINE



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Table 4 IDWR Search results for wells in T14S, R35E, Section 21

Contact	Use	Twp	Rng	Sec	Tract	Well Address	GPM	Static Water Level	Total Depth	Csg Dia	Const. Date
ONEIDA COUNTY SCHOOL DISTRICT #351(Owner/Operator)		14S	36E	21	NWN E		0	90	210	4	1/30/1995
ONEIDA COUNTY SCHOOL DISTRICT #351(Owner/Operator)		14S	36E	21	NWN E		0	90	210	4	1/30/1995
SAMARIA LANE PUMP CO(Applicant)		14S	36E	21	NW		1350	70	222		6/1/1954
EDWARD DAVIS(Owner/Operator)		14S	36E	21	SESW		150	45	142		12/6/1972
EDWIN C DIVES(Owner/Operator)		14S	36E	21	NES W		50	70	140	6	4/5/1994
BRENT MILLS(Owner/Operator)		14S	36E	21	SWS W			43	157		12/31/1999
TROY MILLS(Owner/Operator)	Domestic-Single Residence	14S	36E	21	SWS W	SAMARIA LANE	20	48	118	6	10/24/2002
LYNN NALDER(Owner/Operator)		14S	36E	21	SWS W			35	80		3/16/1976
CLAIR NEAL(Owner/Operator)	Domestic-Single Residence	14S	36E	21	SESW	DEPOT RD	40	65	160	6	2/24/2008
ELDEN NEILSON(Owner/Operator)	Domestic-Single Residence	14S	36E	21	SWS W	930 W SAMARIA LANE		80	196	6	8/9/2003
ELDEN D NIELSEN(Owner/Operator)	Irrigation	14S	36E	21	SWS W	930 W SAMARIA LN		77	198	16	10/6/2002
VARLO PRICE(Owner/Operator)		14S	36E	21	SENE	373 N 1ST WEST	10	20	55	6	9/25/1994



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KENNETH W WARD(Owner/Operator)	Domesti c-Single Residen ce	14S	36E	21	NEN W	556 W 500 N	50	120	220	6	10/3/2007
G PAUL WILLIE(Owner/Operator), CARL R WILLIE(Owner/Operator)		14S	36E	21	SESE	17 N DEPOT RD	0		94		11/5/1992



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Table 5 IDWR Search results for wells in T14S, R35E, Section 20

Contact	Use	Tw p	Rng	Sec	Tract	Well Address	GPM	Static Water Level	Total Depth	Csg. Dia.	Const. Date
CLINT BASTIAN(Owner/Operator)	Domesti c-Single Residenc e	14S	36E	20	SWS W	290 W 600 N		93	173	6	9/1/2010
MEL BINGHAM(Owner/Operator)	Domesti c-Single Residenc e	14S	36E	20	NENE	1190 W 1000 N		136	160	6	10/3/2014
JERRY D BUSH(Owner/Operator)		14S	36E	20	NENE		18	100	165	6	7/12/1990
JERRY D BUSH(Owner/Operator)		14S	36E	20	NENE		18	100	165	6	7/12/1990
WADE CHRISTOPHERSON(Owner/O perator)	Domesti c-Single Residenc e	14S	36E	20	NESE	1111 W SAMAR IA LN	40	63	120	6	9/8/2006
JEFF GIBSON(Owner/Operator)		14S	36E	20	SWS W	1800 W. SAMAR IA LANE	0	0	0		7/21/1998
DONNA GODDARD(Owner/Operator)	Domesti c-Single Residenc e	14S	36E	20	NWN W	2030 W 1000 N	25	130	200	6	9/4/2003
RAUHN R PANTING(Owner/Operator)		14S	36E	20	SWN W	264 NO DESCH AMPS RD	15	95	153	6	6/14/1992
CINDY L SMITH(Owner/Operator), D TY SMITH(Owner/Operator)		14S	36E	20	NWN E	1550 W 1000 N	0	115	218	10	6/1/1997
TY SMITH(Owner/Operator)	Domesti c-Single Residenc e	14S	36E	20	NWN E	1550 W 1000 N	500	128	300	10	8/28/2003
KEVIN STEVENS(Owner/Operator)		14S	36E	20	SWS W	245 N. 2100 W.	30	67	120	6	6/24/1999
DALE TUBBS(Owner/Operator)		14S	36E	20	NENE	ST JOHN RD	70	115	180	6	4/24/1995
TODD WINDER(Representative)	Domesti c-Single Residenc e	14S	36E	20	NENE	1212W 1000 N	40	92	160	6	6/14/2000



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Table 6 IDWR Search results for wells in T14S, R35E, Section 16

Contact	Use	Twp	Rng	Sec	Tract	Well Address	GPM	Static Water Level	Total Depth	Csg. Dia.	Const. Date
CITY OF MALAD(Owner/Operator)		14S	36E	16	SESW	655 N 600 W	675	148	410	18	11/11/1993
		14S	36E	16	SESE		0	21	61		6/2/1979
BRADLEY J HESS(Owner/Operator)		14S	36E	16	SWNE		15	200	275	8	
MARIN HESS(Owner/Operator)		14S	36E	16	SESE		15	206	212		4/12/1975
MARVIN HESS(Owner/Operator)	Domestic-Single Residence	14S	36E	16	SESE	222 W 700 N		250	378	8	10/12/2007
MICHAEL J HESS(Owner/Operator)		14S	36E	16	NWNE		10	190	240	6	
MIKE HESS(Owner/Operator)	Domestic-Single Residence	14S	36E	16	SESW	640 NORTH 600 WEST		180	320	6	10/27/2000
SPENCE HORSLEY(Owner/Operator)	Domestic-Single Residence	14S	36E	16	NESW	5TH WEST 759 N		197	288	6	4/18/2014
ROSELL MILLS(Owner/Operator)		14S	36E	16	NESW		0	38	70		10/8/1973
GORDON SMITH(Owner/Operator)	Domestic-Single Residence	14S	36E	16	SESE	3RD WEST 800 NORTH	15	45	80	6	12/4/2000
GORDON SMITH(Owner/Operator)	Irrigation	14S	36E	16	NESE	300 W 800 N		268	376	10	1/19/2010
GORDON SMITH(Owner/Operator)	Livestock	14S	36E	16	NESE	300 W 800 N		268	376	10	1/19/2010
RULA J THOMAS(Applicant)		14S	36E	16	SENE		0	47	92		5/26/1979
RULA J THOMAS(Applicant)		14S	36E	16	NESE		0	37	77		5/29/1979
RULA J THOMAS(Applicant)		14S	36E	16	NESE		0	32	75		5/31/1979
RULA J THOMAS(Owner/Operator)		14S	36E	16	NWSE		0		367	6	9/10/1991



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DEWEY TOGLESBEE(Owner/Operator)	Irrigation	14S	36E	16	NWNW	1/4 MILE WEST OF NEW MALAD CITY WELL	35	140	168	6	9/8/2000
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Attachment 1

REPRESENTATIVE WELL LOGS



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Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0051336

DRILLING PERMIT NO. _____

Water Right or Injection Well No. _____

2. OWNER:

Name City of Malad

Address 595 Barnack St.

City Malad State ID Zip 83252

3. LOCATION OF WELL by legal description:

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

Twp. 14 North ☐ or South ☒
Rge. 36 East ☒ or West ☐
Sec. 21 1/4 SW 1/4 NW 1/4
Gov't Lot _____
County Blaine

Lat: _____ Long: _____

Address of Well Site 595 Barnack St. # 200

City Malad

LI _____ 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 Material	From	To	Weight / Volume	Seal Placement Method
Heat cement grout	0	100	115 ft ³	direct to annulus

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 3/3'

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
18"	+1.5'	33.5'	0.375	Steel	☒	☐	☒	☐
10"	272'	530'	0.365	Steel	☐	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☒ N type centralized by steel tabs.

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method Tecch

Screen Type & Method of Installation

From	To	Size	Number	Diameter	Material	Casing	Liner
314'	530'	3/16"	600	8"	Steel	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
3/8" washed pea gravel	290	530	12 yds ³	from surface

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

92' ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Depth to access port or control devices _____

12. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
750	35'	127'	2.5 hrs.

Water Temp. 56°F Bottom hole temp 56°F

Water Quality test or comments odorless, tasteless, apparent good.

Depth first Water Encounter 92'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
22	0	2	Dark brown top soil		X
22	2	18	Tan clay		X
22	18	33	Sand & gravel w/ tan clay		X
22	33	40	Tan to lt. brown clay stone		X
22	40	50	lt. brown sandy clay w/ gravel		X
22	50	57	lt. brown clayey sand w/ gravel		X
22	57	62	Brown clay w/ gravel		X
22	62	97	lt. brown clayey gravel and sand, well consolidated/abrasive		X
22	97	100	Tan clay		X
18	100	110	lt. brown clayey gravel w/ sand		X
18	110	128	lt. brown-grey clay, some gravel		X
18	128	162	lt. brown clayey sandstone w/ gravel / abrasive		X
18	162	172	lt. brown-grey clay w/ gravel		X
18	172	387	lt. brown clayey sandstone w/ gravel. Various degree of cementation		X
18	387	390	lt. brown clay w/ coarse gravel		X
16	390	415	lt. brown sandy clay, some gravel		X
16	415	420	clay & coarse gravel		X
16	420	464	lt. brown sandy clay, some gravel		X
16	464	472	Consolidated clayey sand & gravel		X
16	472	488	Clayey sand & gravel		X
16	488	500	Sticky clay w/ gravel & sand		X
16	500	530	clayey sand & gravel		X

RECEIVED

JUN 02 2009

Department of Water Resources
Eastern Region

Completed Depth 530' (Measurable)

Date: Started 9/10/08 Completed 5/20/09

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 Stan Lloyd Drilling, LLC Firm No. 294

Principal Driller Alan Lloyd Date 5/28/09

and Driller or Operator II _____ Date _____

Operator I _____ Date _____

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

Figure 1-1 Well log for City of Malad



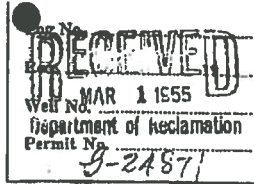
FORWARD WHITE COPY TO WATER RESOURCES

1818 East 49th South, Idaho Falls, ID 83404, Ph. 208-589-5555 Fax 542-1489



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WELL LOG AND REPORT TO THE 048775
STATE RECLAMATION ENGINEER OF IDAHO



Owner Samaria Lane Pump Co. Driller Charles B. Gardner
Address Mulad, Idaho Address Mulad, Idaho Lic. No. 63
Location of Well: S. 1/2 NW 1/4 Sec. 21, T. 14 N, R. 36 E, 1/4 Oneida County.
and _____ feet N/S, and _____ feet E/W from _____ corner of _____ 1/4 Sec. _____
Water will be used for Irrigation Total depth of well 222'
Size of drilled hole 14 1/2" Weight of casing per linear foot 43
Thickness of casing 1/4" Casing Material Double Hand Rolled Steel
Diameter, length and location of casing 14 1/2" from 0 to 222 ft
(Casing 12" in diameter and under give inside diameter; casing over 12" in diameter give outside diameter.)
Number and size of perforations 3/4 x 3/2 x 7 ft located 70 feet to 215 feet
from surface of ground.
Other Perforations: all gravel strata perforated from 70' to 215'
If flowing well, give flow in c.f.s. _____ or g.p.m. _____ and shut in pressure _____
If nonflowing well, give depth of standing water from surface 70'
If flowing well, describe control works _____
On pumping test delivery was 1350 g.p.m. or _____ c.f.s. Drawdown was 97 feet
Length of time pumped during check was pumping season min. Water temp. 54 °Fahrenheit.
Date of commencement of well May 1954 Date of Completion of well June 1954
Type of well rig Cable tool

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—Seals, Grouting, Etc.
14 1/2"	0	222	222	

GENERAL INFORMATION—Pumping Test, Quality of Water, Etc.

1350 gpm 145-36E-21 3 1/2 NW

Figure 1-3 Well log for Samaria Lane Pump Co.

[illegible]

This well was drilled under my jurisdiction and the above information is true and correct to the best of my knowledge and belief.

Signed _____

By _____

Dated _____ 19__

License No. _____

Subscribed and sworn before me this.....day of.....19.....

NOTARIZATION NOT NECESSARY
UNDER NEW LAW.

Notary Public

My Commission expires _____

Reading at

22



Clearwater Geosciences, LLP
Ground Water Development and Exploration

USE TYPEWRITE
BALL POINT PEN

State of Idaho
Department of Water Administration

IDAHO DEPARTMENT OF WATER ADMINISTRATION
EASTERN DISTRICT OFFICE
240 S. HOLMES
IDAHO FALLS, IDAHO 83401

WELL DRILLER'S REPORT

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

1. WELL OWNER Name <u>Eddy Davis</u> Address <u>Shelbourn Hill Rd. Melba</u> Owner's Permit No. <u>8</u>		7. WATER LEVEL Static water level <u>45</u> feet below land surface Flowing? ☐ Yes ☐ No G.P.M. flow _____ Temperature <u>55</u> ° F. Quality _____ Artesian closed-in pressure _____ p.s.i. Controlled by ☐ Valve ☐ Cap ☐ Plug																																											
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning)		8. WELL TEST DATA ☐ Pump ☐ Sailer ☒ Other <u>air lift</u> Discharge G.P.M. <u>150</u> Draw Down <u>30 ft</u> Hours Pumped <u>15</u>																																											
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☐ Stock		9. LITHOLOGIC LOG <u>044919</u> <table border="1"><thead><tr><th>Hole Diam.</th><th>Depth From</th><th>To</th><th>Material</th><th>Water Yes</th><th>No</th></tr></thead><tbody><tr><td>4"</td><td>0</td><td>2</td><td>Soil</td><td></td><td>☒</td></tr><tr><td>ED</td><td>2</td><td>20</td><td>Clay yellow</td><td></td><td>☒</td></tr><tr><td></td><td>20</td><td>65</td><td>Heavy Clay</td><td></td><td>☒</td></tr><tr><td></td><td>65</td><td>71</td><td>Gravel</td><td></td><td>☒</td></tr><tr><td></td><td>71</td><td>125</td><td>Gravel-Clay</td><td></td><td>☒</td></tr><tr><td></td><td>125</td><td>142</td><td>Gravel</td><td></td><td>☒</td></tr></tbody></table>		Hole Diam.	Depth From	To	Material	Water Yes	No	4"	0	2	Soil		☒	ED	2	20	Clay yellow		☒		20	65	Heavy Clay		☒		65	71	Gravel		☒		71	125	Gravel-Clay		☒		125	142	Gravel		☒
Hole Diam.	Depth From	To	Material	Water Yes	No																																								
4"	0	2	Soil		☒																																								
ED	2	20	Clay yellow		☒																																								
	20	65	Heavy Clay		☒																																								
	65	71	Gravel		☒																																								
	71	125	Gravel-Clay		☒																																								
	125	142	Gravel		☒																																								
4. METHOD DRILLED ☐ Cable ☒ Rotary ☐ Dug ☐ Other		 APR 24 1974 WATER ADMINISTRATION Area Office																																											
5. WELL CONSTRUCTION Diameter of hole <u>4</u> inches Total depth <u>142</u> feet Casing schedule: ☐ Steel ☐ Concrete Thickness <u>250</u> inches Diameter <u>4</u> inches From <u>1</u> feet To <u>142</u> feet _____ inches _____ inches _____ feet _____ feet _____ inches _____ inches _____ feet _____ feet _____ inches _____ inches _____ feet _____ feet Was a packer or seal used? ☐ Yes ☐ No Perforated? ☒ Yes ☐ No How perforated? ☐ Factory ☐ Knife ☒ Torch Size of perforation <u>1/4</u> inches by <u>1/4</u> inches Number <u>165</u> perforations From <u>70</u> feet To <u>135</u> feet _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet Well screen installed? ☐ Yes ☐ No Manufacturer's name _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☒ Yes ☐ No Size of gravel <u>pearl</u> Placed from <u>20</u> feet to <u>142</u> feet Surface seal? ☒ Yes ☐ No To what depth <u>142</u> feet Material used in seal ☐ Cement grout ☒ Pudding clay																																													
6. LOCATION OF WELL Sketch map location must agree with written location. County <u>Blaine</u> <u>SE</u> & <u>SW</u> 1/4 Sec <u>26</u> T. <u>14</u> N. R. <u>36</u> E.				10. Work started <u>Nov 29, 72</u> finished <u>Dec 6, 72</u>																																									
11. DRILLER'S CERTIFICATION This well was drilled under my supervision and this report is true to the best of my knowledge. <u>Edward Well Drilling Co</u> Driller's or Firm's Name _____ Number _____ <u>147 So. Main</u> Address _____ <u>Bernard E. Eddy</u> 8/2/73 Signed by _____																																													

Figure 1-4 Well log for Edward Davis



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 538-7
0182

DMD ✓ C

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR
BALLPOINT PEN

WELL DRILLER'S REPORT

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

1. WELL OWNER Name <u>Edwin C. Dives</u> Address <u>341 W. 4th St. Minidoka</u> Drilling Permit No. <u>15-94-E-003</u> Water Right Permit No. _____		7. WATER LEVEL Static water level <u>70'</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature <u>Cold</u> °F. Quality <u>Good</u> Describe artesian or temperature zones below: _____																																																													
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Well diameter increase ☐ Modification ☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9)		8. WELL TEST DATA ☐ Pump ☐ Dailer ☒ Air ☐ Other _____ Discharge G.P.M. <u>50</u> Pumping Level _____ Hours Pumped _____																																																													
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Monitor ☐ Industrial ☐ Stock ☐ Waste Disposal or injection ☐ Other _____ (specify type)		9. LITHOLOGIC LOG <u>071955</u> <table border="1"><thead><tr><th>Bore Diam.</th><th>Depth From To</th><th>Material</th><th>Water Yes No</th></tr></thead><tbody><tr><td>10"</td><td>0 20</td><td>BROWN CLAY</td><td></td></tr><tr><td>6"</td><td>20 25</td><td>LARGE GRAVEL</td><td></td></tr><tr><td></td><td>25 32</td><td>GRAVEL SAND</td><td></td></tr><tr><td></td><td>32 39</td><td>GRAY SAND</td><td></td></tr><tr><td></td><td>39 58</td><td>GRAVEL SAND</td><td></td></tr><tr><td></td><td>58 75</td><td>COBBLE ROCK</td><td></td></tr><tr><td></td><td>75 77</td><td>GRAY SAND</td><td></td></tr><tr><td></td><td>77 83</td><td>LARGE GRAVEL</td><td>X</td></tr><tr><td></td><td>83 97</td><td>SAND</td><td>X</td></tr><tr><td></td><td>97 99</td><td>SANDSTONE</td><td>X</td></tr><tr><td></td><td>99 102</td><td>SAND</td><td>X</td></tr><tr><td></td><td>102 124</td><td>COARSE GRAVEL</td><td>X</td></tr><tr><td></td><td>124 137</td><td>WHITE CLAY GRAVEL</td><td>X</td></tr><tr><td></td><td>137 140</td><td>GRAVEL</td><td>X</td></tr></tbody></table>		Bore Diam.	Depth From To	Material	Water Yes No	10"	0 20	BROWN CLAY		6"	20 25	LARGE GRAVEL			25 32	GRAVEL SAND			32 39	GRAY SAND			39 58	GRAVEL SAND			58 75	COBBLE ROCK			75 77	GRAY SAND			77 83	LARGE GRAVEL	X		83 97	SAND	X		97 99	SANDSTONE	X		99 102	SAND	X		102 124	COARSE GRAVEL	X		124 137	WHITE CLAY GRAVEL	X		137 140	GRAVEL	X
Bore Diam.	Depth From To	Material	Water Yes No																																																												
10"	0 20	BROWN CLAY																																																													
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	32 39	GRAY SAND																																																													
	39 58	GRAVEL SAND																																																													
	58 75	COBBLE ROCK																																																													
	75 77	GRAY SAND																																																													
	77 83	LARGE GRAVEL	X																																																												
	83 97	SAND	X																																																												
	97 99	SANDSTONE	X																																																												
	99 102	SAND	X																																																												
	102 124	COARSE GRAVEL	X																																																												
	124 137	WHITE CLAY GRAVEL	X																																																												
	137 140	GRAVEL	X																																																												
4. METHOD DRILLED ☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary ☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)																																																															
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ Thickness _____ Diameter _____ From _____ To _____ <u>250</u> inches <u>6</u> inches + <u>1</u> foot <u>119</u> feet _____ inches _____ inches _____ feet _____ feet _____ inches _____ inches _____ feet _____ feet Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☒ Yes ☐ No How perforated? ☐ Factory ☐ Knife ☒ Turb ☐ Gun Size of perforation? <u>1/8</u> inches by <u>12</u> inches Number _____ From _____ To _____ <u>20</u> perforations <u>111</u> feet <u>110</u> feet _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet Well screen installed? ☐ Yes ☒ No Manufacturer _____ Type _____ Top Packer or Headpipe _____ Bottom of Tailpipe _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>10</u> Material used in seal: ☐ Cement grout ☒ Bentonite ☒ Pudding clay _____ Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth Method of joining casing: ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port <u>TOP</u>																																																															
6. LOCATION OF WELL Sketch map location must agree with written location. Subdivision Name _____ Lot No. _____ Block No. _____ County <u>ONEIDA</u> Address of Well Site _____ (give at least name of road) <u>NE 1/4 SW 1/4 Sec. 21, T. 14, R. 36</u> N ☐ or S ☒ E ☒ or W ☐		10. Work started <u>3-30-94</u> finished <u>4/5/94</u>																																																													
11. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Clearwater Geosciences, LLP</u> Firm No. <u>166</u> Address <u>SAVA IDAHO</u> Date _____ Signed by Drilling Supervisor <u>[Signature]</u> and <u>[Signature]</u> (Operation <u>Charles Dives</u> (if different than the Drilling Supervisor))																																																															

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Figure 1-5 Well log for Edwin Dives



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Permit 233-7
11/97
DMD

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 00026222
DRILLING PERMIT NO. 7-8-8246
Other IDWR No. _____

2. OWNER: Troy Mills
Name _____
Address 550 N. 100 W
City Malad State ID Zip 83252

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location

Section 3 map and location details:

North ☐ or South ☒
East ☒ or West ☐
Sec. 29 Twp. 14 Rge. 36
Gov. Lot _____ County _____
Address of Well Site same City _____
(Give at least name of road or distance to road or landmark)

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

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

6. DRILL METHOD
☒ Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEALANT	PACK	AMOUNT	METHOD
Material	From	To	Spoke or Pounds
Benzal	0	20	Pound Trim

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

8. CASING/LINER:

Diameter	Foot	to	Depth	Material	Casing	Line	Sealed	Threaded
6	0	120	1/4	Prime	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method N/A
Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Line

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
48 ft below ground Artesian pressure _____ b.
Depth flow encountered _____ ft. Describe access port or control devices: _____

Office Use Only
Inspected by _____
Twp. _____ Age _____ Sec. _____
1/4 _____ 1/4 _____
Lat. _____ Long. _____
☐ Flowing Artesian

11. WELL TESTS:

Pump	Discharge	Pumping Level	Time
10-20	23	65	16

Water Temp. C Bottom hole temp. C
Water Quality test or comments: good

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

From	To	Remarks	Lithology, Water Quality & Temperature	Y	N
10	0	3	Top soil		
10	3	24	white clay		
6	24	56	Blue clay		
	56	94	Grey & Blue clay		
	94	105	Sand Gravel		
	105	118	Clean Gravel		

Completion Depth 118 ft (Measureable)
Date: Started 10-17-02 Completed 10-24-02

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the log was removed.
Company Name Gardner Drilling Firm No. 45-4
Firm Official J.C. Gardner Date March 18 06
Signature _____ Date _____
(Sign and Print Well Driller's Name)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-6 Well log for Troy Mills



State of Idaho
Department of Water Resources

RECEIVED

State law requires that this report be filed with the Director, Department of Water Resources within 20 days after the completion or abandonment of the well. DEC 8 1976

[illegible]

Figure 1-7 Well log for Lynn Nalder



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

15

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

1. WELL TAG NO. D 0049082
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER: Clair Neal
Name _____
Address 6234 S. Old Hwy 191
City Malad State ID Zip 83250

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 14 North ☐ or South ☒
Rge. 36 East ☒ or West ☐
Sec. 21 1/4 SE 1/4 SW 1/4
Gov't Lot _____
County Blaine
Lat: _____ Long: _____
Address of Well Site Deport Rd
City Malad
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 Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	20	8 bags	overboard

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 160
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	0	160	250	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____
Packer ☐ Y ☐ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method touch
Screen Type & Method of Installation

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
148	160	1/4-6	15	6	Steel	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
-----------------	------	----	-----------------	------------------

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
6.5 ft. below ground Artesian pressure _____ ft.
Depth flow encountered _____ ft. Describe access port or control devices: _____

12. WELL TESTS:
☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40			

Water Temp. cold Bottom hole temp cold
Water Quality test or comments: good Depth first Water Encounter 90

13. LITHOLOGIC LOG: (Describe repairs or abandonment)						Water	
Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N		
10	0	20	Bar clay				
6	20	30	gravel				
6	30	50	Bar clay gravel				
6	50	60	gravel Bar clay				
6	60	75	Bar clay				
6	75	90	gravel Bar clay				
6	90	120	Bar clay				
6	120	130	gravel				
6	130	145	Bar clay				
6	145	158	gravel				
6	158	160	clay Bar				

RECEIVED

MAR 25 2008

Completed Depth 160 (Measurable)
Date: Started 2-21-08 Completed 2-24-08

14. DRILLER'S CERTIFICATION
We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Mt. West Well Drilling Firm No. 543
Principal Driller Michael Zandy Date 2-14-08
and Miles Frandam Date 3-9-08
Driller or Operator II _____ Date _____
Operator I _____ Date _____
Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-8 Well log for Clair Neal



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
6/02 IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0027204
DRILLING PERMIT NO. 5
Water Right or Injection Well No. _____

2. OWNER:
Name Elden D Nielson
Address 930 W Samara Ln
City Malad City State ID Zip 83252

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well
Twp 14 North ☐ or South ☒
Rge 36 East ☒ or West ☐
Sec 27 1/4 SW 1/4 SW 1/4
Gov't Lot _____ County Oneida
Lat: _____ Long: _____
Address of Well Site 930 W. Samara Ln
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 Material Bentonite From 0 To 20 Weight / Volume 4 bags Seal Placement Method overbore
Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:
Diameter 6 From 0 To 196 Gauge 0.05 Material steel Casing ☒ Liner ☐ Welded ☒ Threaded ☐
Length of Headpipe _____ Length of Tailpipe _____
Packer ☐ Y ☐ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method none
Screen Type & Method of Installation _____
From _____ To _____ Slot Size _____ Number _____ Diameter _____ Material _____ Casing ☐ Liner ☐

10. FILTER PACK
Filter Material _____ From _____ To _____ Weight Volume _____ Placement Method _____

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
80 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

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

12. WELL TESTS:
Pump Bailer Air Flowing Artesian
Yield gal./min. Drawdown Pumping Level Time
Water Temp. cold Bottom hole temp cold
Water Quality test or comments: good

13. LITHOLOGIC LOG: (Describe repairs or abandonment) Water
Bore Dia. From To Remarks: Lithology, Water Quality & Temperature Y N
6 0 20 Brown clay + sand ☒ ☐
6 20 45 Brown clay gravel ☒ ☐
6 45 70 clay gravel ☒ ☐
6 70 90 gravel ☐ ☒
6 90 100 clay gravel ☐ ☒
6 100 130 gravel clay ☒ ☐
6 130 145 Brown clay ☐ ☒
6 145 170 gravel ☒ ☐
6 170 196 Brown clay sand gravel ☒ ☐
6 196 210 gravel ☒ ☐
6 210 215 Brown clay ☐ ☒
6 210 215 gravel ☒ ☒

RECEIVED
AUG 19 2003

Department of Water Resources
Eastern Region

RECEIVED

SEP 09 2003

Department of Water Resources
Eastern Region

Completed Depth 196 (Measurable)
Date Started 8-7-03 Completed 8-9-03

14. DRILLER'S CERTIFICATION
We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Alt West Well Drilling Firm N 543
Principal Driller Michael Frandner Date 8-1-03
and Driller or Operator II Michael Frandner Date 8-26-03
Operator _____ Date _____
Principal Driller and Rig Operator Required
Operator I must have signature of Driller/Operator I.

Figure 1-9 Well log for Elden Neilson



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 228-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 1/4 1/4
Lat _____ Long _____
Flowing Artesian ☐

1. WELL TAG NO. D 0026203
DRILLING PERMIT NO. 787796
Other IDWR No. 15-07153
2. OWNER:
Name Elden O Neilson
Address 930 W Samaria Ln
City Malden City State ID Zip 83252

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

North ☐ or South ☒
Twp. 14 North ☐ or South ☒
Rge. 36 East ☒ or West ☐
Sec. 21 1/4 SW 1/4 SW 1/4
Govt Lot _____ County Oneida State ID
Lat: _____ Long: _____
Address of Well Site Same as
City Malden
(Give at least name of road or distance to road or landmark)
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	0 20 16	Over Bore

Was drive shoe used? ☒ N ☐ Shoe Depth(s) 198'
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16"	0	198	3/5	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method Machine
Screens Screen Type _____

From	To	Shot Size	Number	Diameter	Material	Casing	Liner
170	130	1/4"	420	16"	Steel	☒	☐
138	170	1/4"	756	16"	Steel	☒	☐
180	195	1/4"	120	16"	Steel	☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

77 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 good

Depth first Water Encounter 70

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
20"	0	20	Brown clay		☒
16"	20	35	Brown clay		☒
16"	35	45	Gravel & Brown clay		☒
16"	45	55	Brown clay		☒
16"	55	70	Brown clay & Gravel		☒
16"	70	90	Gravel	☒	
16"	90	100	Gravel & Brown clay	☒	
16"	100	130	Gravel	☒	
16"	130	138	Brown clay & Gravel		☒
16"	138	150	Gravel	☒	
16"	150	160	Brown clay & Gravel		☒
16"	160	170	Gravel & Brown clay	☒	
16"	170	185	Brown clay		☒
16"	185	198	Gravel	☒	

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 Mountain West Well Drilling No. 543

Firm Official Mike Frander Date 10-30-02

and Driller or Operator Mike Frander Date 10-30-02

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-10 Well log for Elden Neilson



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
1/84

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter
or
Ball Point Pen

56285

1. DRILLING PERMIT NO. 15-94-E-024-000

Other IDWR No. _____

2. OWNER:

Name Varlo Price

Address 373 N 1st West

City Malab State Id Zip _____

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp. <u>14</u> North ☐ or South ☒	
E		Rge. <u>26</u> East ☒ or West ☐	
S		Sec. <u>21</u> 1/4 <u>SE</u> 1/4 <u>NE</u> 1/4	
W		Gov't Lot _____ County _____	

Address of Well Site 373 N 1st West
City Malab

Li. _____ Blk. _____ Sub. Name _____

4. PROPOSED USE:

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

5. TYPE OF WORK

☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD

☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
Granular Sealant	0	20	450		Dry
Gravel	20	55	1 sack		

Was drive shoe used? Y ☐ N ☒

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	1	55	.25	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method Pie slot
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
95	55	1/2"	40			☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

20 ft. below ground Artesian pressure _____ lb.

Depth flow encountered 45 ft. Describe access port or

control devices: plug in Sanitary well seal

11. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
10	None		

Water Temp. 53.0 Bottom hole temp. -95.0

Water Quality test or comments: good

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bores Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
8"	0	13	Sand fine gravel			X
8"	12	25	White clay			X
8"	25	45	Blue clay			
8"	45	55	gravel		X	

RECEIVED
OCT 19 1994
Department of Water Resources
Eastern District Office

RECEIVED
NOV 4 1994
Department of Water Resources

Completed Depth 9-25-94 55' (Measurable)
Date: Started 9-20-94 Completed 9-25-94

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 DO Drilling Firm No. 542

Firm Official Ruben Bane Date 10-12-94

and Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-11 Well log for Varlo Price



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0048576

Drilling Permit No. _____

Water right or Injection well # _____

2. OWNER:

Name Kenneth Ward

Address 556 W 5000

City Malad State ID Zip 83246

3. WELL LOCATION

Twp 14 North ☐ or South ☒ Rge 36 East ☒ or West ☐

Sec 21 1/4 NE 1/4 NW 1/4

Gov't Lot _____ County Oneida

Lat. _____ (Deg and Dec to minutes)

Long. _____ (Deg and Dec to minutes)

Address of Well Site Same City _____

Lot. _____ Blk. _____ Sub Name _____

4. USE: ☒ Domestic ☐ Municipal ☐ Mining ☐ Irrigation ☐ Thermal ☐ Injection

☐ Other _____

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well

☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material Benlate From (ft) 0 To (ft) 8 Quantity (lb or yd) 8 bags Placement (mud, cement, etc.) cement

8. CASING/LINER:

Diameter (nominal) (in) From (ft) To (ft) Gauge/Schedule Material 6 0 20 20 Steel

Casing Line Threaded Vented ☒ ☐ ☐ ☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth (ft) 220

9. PERFORATIONS/SCREENS:

Perforations ☒ Y ☐ N Method touch

Manufactured screen ☐ Y ☐ N Type _____

Method of installation _____

on (ft) To (ft) Slot size Number of Screens (nominal) Material Gauge or Schedule

20 220 46 38 6 Steel 250

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☐ N Type _____

10. FILTER PACK:

Filter Material From (ft) To (ft) Grains (yds or m³) Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 140 Static water level (ft) 120

Water temp. (F) Cold Bottom hole temp. (F) Cold

Describe access point _____

Well test: ☐ Drawdown (feet) ☐ Discharge (gpm) ☐ Calculation (minutes) ☐ Test method: ☐ Pump ☐ Baler ☒ Air ☐ Loading (lb/min)

Water quality test or comments: Cold

13. LITHOLOGIC LOG and/or repairs or abandonment:

From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water
10	0	Br. Clay	X
6	20	Br. Clay	X
6	40	gravel Br. clay	X
6	60	Br. clay	X
6	80	Br. clay	X
6	100	Br. clay	X
6	120	gravel Br. clay	X
6	140	gravel with Br. clay	X
6	160	gravel	X
6	180	Br. clay	X
6	200	gravel with Br. clay	X

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OCT 16 2007

IDAHO DEPARTMENT OF WATER RESOURCES
CAREY R. RICHARDS

Completed Depth (Measureable): 220

Date Started 10-7-07 Date Completed 10-03-07

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 Michael's Drilling Co. No. 513

*Principal Driller Michael's Drilling Co. Date 10-6-07

*Driller Michael's Drilling Co. Date 10-6-07

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required

Figure 1-12 Well log for Kenneth Ward

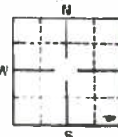
STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

USE TYPEWRITER OR
BALLPOINT PEN

JUL 15 1953

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

POSTAGE WILL BE PAID BY ADDRESSEE

1. WELL OWNER Name <u>Paul Wille</u> Address <u>17 Depot RD. mailad 7664573</u> Owner's Permit No. <u>15-92E-026-300</u>	7. WATER LEVEL Static water level <u>0</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow <u>0</u> Artesian closed-in pressure <u>0</u> p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature <u>0</u> °F, Quality <u>0</u> Describe artesian or temperature zones below.																																																																																												
2. NATURE OF WORK <u>WR #15-07130</u> ☒ New well ☐ Deepened ☐ Replacement ☒ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)	8. WELL TEST DATA ☐ Pump ☐ Bailor ☐ Air ☐ Other _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped																																																																																									
Discharge G.P.M.	Pumping Level	Hours Pumped																																																																																											
3. PROPOSED USE ☐ Domestic ☒ Irrigation ☐ Test ☐ Municipal ☐ Industry ☐ Stock ☐ Waste Disposal or Injection ☐ Other: _____ (specify type)	9. LITHOLOGIC LOG 70193 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th rowspan="2">Water Yield</th> </tr> <tr> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>0</td> <td>10</td> <td>Top soil</td> <td> </td> </tr> <tr> <td> </td> <td>10</td> <td>37</td> <td>white clay</td> <td> </td> </tr> <tr> <td> </td> <td>37</td> <td>94</td> <td>fine sandy gravel ~~fine sand~~</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>~~fine sand~~</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>Comglomerate</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>Comglomerated fine gravel</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>~~fine sand~~</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>plugged hole with neat cement.</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>Log.</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>~~0 4~~</td> <td> </td> </tr> <tr> <td> </td> <td>0</td> <td>4</td> <td>Top soil - neat cement</td> <td> </td> </tr> <tr> <td> </td> <td>4</td> <td>94</td> <td>cement was placed with this pipe 2"</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>RECEIVED</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>JUN 20 1993</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>Department of Water Resources Eastern District</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>FEB 09 1994</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>Work started <u>10-2</u> finished <u>11-5-92</u></td> <td> </td> </tr> </tbody> </table>	Bore Diam.	Depth		Material	Water Yield	From	To	10	0	10	Top soil			10	37	white clay			37	94	fine sandy gravel ~~fine sand~~					~~fine sand~~					Comglomerate					Comglomerated fine gravel					~~fine sand~~					plugged hole with neat cement.					Log.					~~0 4~~			0	4	Top soil - neat cement			4	94	cement was placed with this pipe 2"					RECEIVED					JUN 20 1993					Department of Water Resources Eastern District					FEB 09 1994					Work started <u>10-2</u> finished <u>11-5-92</u>	
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4. METHOD DRILLED ☒ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary ☐ Cable ☐ Dig ☐ Other _____	5. WELL CONSTRUCTION Casing schedule: ☐ Steel ☐ Concrete ☐ Other _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>Inches +</th> <th>From</th> <th>foot</th> <th>To</th> <th>foot</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Was casing drive shoe used? ☐ Yes ☒ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch Size of perforation _____ inches by _____ inches <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Number</th> <th>From</th> <th>foot</th> <th>To</th> <th>foot</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ foot to _____ foot Diameter _____ Slot size _____ Set from _____ foot to _____ foot Gravel packed? ☐ Yes ☒ No Size of gravel _____ Placed from _____ foot to _____ foot Surface seal depth _____ Material used in seal: ☒ Cement grout ☐ Bentonite ☐ Pudding clay ☐ _____ Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbars to seal depth _____ Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent Weld ☒ Cemented between struts Describe across port _____	Thickness	Diameter	Inches +	From	foot	To	foot																													Number	From	foot	To	foot																																																				
Thickness	Diameter	Inches +	From	foot	To	foot																																																																																							
Number	From	foot	To	foot																																																																																									
6. LOCATION OF WELL - 17 N Depot RD Sketch map location <u>must</u> agree with written location.  Subdivision Name _____ Lot No. _____ Block No. _____ County <u>So Oneida</u> Map <u>10</u> Sec. <u>28</u> T. <u>14</u> N. R. <u>36</u> E. W.	11. DRILLERS CERTIFICATION "We certify that all minimum well construction standards were complied with at the time the rig was removed." Firm Name <u>Gardner Drilling</u> Firm No. <u>454</u> Address <u>151 South Main</u> Date <u>3-1-93</u> Signed By (Firm Official) <u>Cole Gardner</u> and _____ (Operator) _____																																																																																												

USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE DEPARTMENT

Figure 1-13 Well log for Paul Wille



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0065775

Drilling Permit No. _____
Water right or injection well # _____

2. OWNER:

Name Mel & Ann Bingham
Address 1190 West 1000 North
City Malad State ID Zip 83252

3. WELL LOCATION:

Twp. 14 North ☐ or South ☒ Rge 36 East ☒ or West ☐
Sec. 20 1/4 NE 1/4 NE 1/4

Gov't Lot _____ County Oneida
Lat. 42 11.934 (Deg. and Decimal minutes)
Long. 112 16.169 (Deg. and Decimal minutes)
Address of Well Site 1190 West 1000 North
City Malad

Lot _____ Blk. _____ Sub. Name _____

4. USE:

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

5. TYPE OF WORK:

☒ 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
Bentonite	0'	-40'	1250 lbs	Annular

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Uner	Threaded	Welded
6"	+2'	-155'	.250	Steel	☒	☐	☐	☒

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 155'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____

Manufactured screen ☐ Y ☒ N Type _____

Method of installation _____

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☒ N Type _____

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 136' Static water level (ft) 136'

Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Beer	Air	Flowing artesian
10	80		☐	☐	☒	☐

Water quality test or comments: _____

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
10	0	40		Y N
8	40	160		
	0	34	Brown Clay	
	34	53	Brown Clay & Gravel	X
	53	71	Large Gravel Brown Clay	X
	71	131	Brown Clay Trace Gravel	X
	131	153	Large Gravel & Brown Clay	X
	153	160	Brown Clay & Gravel	X

RECEIVED

OCT 21 2014

Department of Water Resources
Eastern Region

Completed Depth (Measurable): 160'

Date Started: 10/02/2014

Date Completed: 10/03/2014

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 Independent Drilling/KC Co. No. 343

*Principal Driller [Signature] Date 10/03/2014

*Driller [Signature] Date 10/03/2014

*Operator II [Signature] Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

Figure 1-14 Well log for Mel Bingham



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 239
5/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

15

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

1. WELL TAG NO. D D0044067
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Wade, Christopher
Address 366 W. 700 N.
City Malad State ID Zip 83252

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Bk, Sub. or Directions to well.
Twp. 14 North ☐ or South ☒
Rge. R36 East ☒ or West ☐
Sec. 20 1/4 NE 1/4 SE 1/4
Gov't Lot _____ County Blaine
Lat. _____ Long. _____
Address of Well Site 1111 West Samaria Lane
City Malad
Li. _____ Bk. _____ Sub. Name _____

4. USE:
☒ Domestic ☐ Municipal ☐ Mineral ☐ 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 Material Benotite From 0 To 18 Weight / Volume 9 bags Seal Placement Method Overbore
Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 120
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:
Diameter From To Gauge Material Casing Liner Welded Threaded
6" 0 120 250 Steel ☒ ☐ ☒ ☐
Length of Headpipe _____ Length of Tailpipe _____
Packer ☐ Y ☐ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method Toach
Screen Type & Method of Installation No screens
From To Slot Size Number Diameter Material Casing Liner
105 120 4x16 45 6" Steel ☒ ☐
☐ ☐

10. FILTER PACK
Filter Material From To Weight / Volume Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
63 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

12. WELL TESTS:
☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian
Yield gpm _____ Drawdown _____ Pump g Level _____
Water Temp Cold Bottom hole temp Cold
Water Quality test or comments good Depth first Water Encounter 65

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology Water Quality & Temperature	Y	N
10"	0	15	Brown clay / gravel		☒
10"	15	20	Gravel, clay + cobbles		☒
6"	20	28	Gravel, cobbles + clay		☒
6"	28	40	Brown clay		☒
6"	40	60	Gravel, cobbles		☒
6"	60	65	Brown clay		☒
6"	65	85	Gravel, water	☒	
6"	85	90	Brown clay		☒
6"	90	105	Brown clay w/ gravel, water		☒
6"	105	110	Gravel, water	☒	
6"	110	115	Brown clay		☒
6"	115	120	Gravel, water	☒	

RECEIVED

OCT 24 2006

Department of Water Resources
Eastern Region

Completed Depth 120' (Measurable)
Date: Started 7-7-06 Completed 9-8-06

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 Mountain West Well Dr. Firm No 543
Principal Driller Michael Franchini Date 9-17-06
and Mike Franchini Date 9-17-06
Driller or Operator II _____ Date _____
Operator I _____ Date _____
Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-15 Well log for Wade Christopherson



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 236-7
7/94

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

49194

Use Typewriter
or
Ball Point Pen

1. DRILLING PERMIT NO. 15-95-E-0005-000
Other IDWR No. _____

2. OWNER:
Name Dale Tubbs
Address 145 ST John Rd
City Malad State ID Zip 83246

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N		Twp. <u>14S</u> North ☐ or South ☒	
E		Rge. <u>36</u> East ☐ or West ☐	
S		Sec. <u>20</u> 1/4 <u>NE</u> 1/4 <u>NE</u> 1/4	
		Gov't Lot _____ County <u>Oneida</u>	

Address of Well Site _____
ST John Rd City Malad
(Give at least name of road - Distance to Road or Landmark)

Lt. _____ Slt. _____ Sub. Name _____

4. PROPOSED USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Feet	Pounds	
<u>Bentonite</u>	<u>0</u>	<u>160</u>	<u>4</u>		
<u>+ Pulling clay</u>					

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 129
Was drive shoe seal tested? Y ☐ N ☐ How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6"</u>	<u>0</u>	<u>129</u>	<u>35</u>	<u>Steel</u>	☐	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method Machine + Torch
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>160</u>	<u>160</u>	<u>1/2"</u>	<u>100</u>	<u>1/4"</u>	<u>Machine</u>	☒	☐
<u>160</u>	<u>127</u>	<u>8"</u>	<u>40</u>	<u>1/4"</u>	<u>Torch</u>	☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal/min.	Drawdown	Pumping Level	Time
<u>70</u>			

Water Temp. Cold Bottom hole temp. _____
Water Quality test or comments: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
<u>8"</u>	<u>0</u>	<u>40</u>	<u>clay</u>			☒
<u>6</u>	<u>40</u>	<u>130</u>	<u>gravel + clay</u>			☒
<u>6</u>	<u>130</u>	<u>145</u>	<u>clay</u>			☒
<u>6</u>	<u>145</u>	<u>155</u>	<u>gravel + clay</u>			☒
<u>6</u>	<u>155</u>	<u>180</u>	<u>ground little clay (good)</u>			☒

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MAY 03 1995

Department of Water Resources
Eastern District Office

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MAY 15 1995

Department of Water Resources

Completed Depth 180 (Measurable)
Date Started 4-20-95 Completed 4-24-95

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 Mountain West Drilling Firm No. 543

Firm Official Mike Froude Date 4-25-95

and
Supervisor or Operator _____ Date _____

(Sign once if Firm Official & Operator)

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Figure 1-16 Well log for Dale Tubbs



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat _____ Long _____
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

1. WELL TAG NO. D0014076
DRILLING PERMIT NO. 764952
Other IDWR No. _____

2. OWNER:
Name Todd Winder
Address 1212 West 1000 North
City Malad State Idaho Zip 83252

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

W Twp. 14 North ☐ or South ☒
Rge. 36 East ☒ or West ☐
Sec. 20 1/4 NE 1/4 NE 1/4
Gov't Lot _____ County Oneida
Lat _____ Long _____
Address of Well Site 1212 West 1000 N
City Malad

Li. _____ 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
☒ Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	20	5	Over Bore

Was drive shoe used? ☒ N Shoe Depth(s) 160'
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6"</u>	<u>+1</u>	<u>160'</u>	<u>25.75</u>	<u>Steel</u>	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method None
Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal. min.	Drawdown	Pumping Level	Time
<u>40</u>			

Water Temp. cold Bottom hole temp. _____
Water Quality test or comments: good

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>8 1/2"</u>	<u>0</u>	<u>20</u>	<u>Brown clay</u>		☒
<u>6"</u>	<u>20</u>	<u>60</u>	<u>Gravel & Cobbles</u>		☒
<u>6"</u>	<u>60</u>	<u>100</u>	<u>Gravel & Brown clay</u>		☒
<u>6"</u>	<u>100</u>	<u>110</u>	<u>Brown clay</u>		☒
<u>6"</u>	<u>110</u>	<u>150</u>	<u>Gravel & Clay</u>	☒	
<u>6"</u>	<u>150</u>	<u>160</u>	<u>Gravel</u>	☒	

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JUL 24 2000
Department of Water Resources
Eastern Region

Completed _____ Depth 160 (Measurable)
Date: Started 6-15-00 Completed 6-14-00

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 W. W. Lathrop Drilling Firm No. 543

Firm Official Michael Thompson Date 6-22-00

Driller or Operator _____ Date _____

(Sign once if Firm Official & Operator)

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Figure 1-17 Well log for Todd Winders



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat _____ Long _____
☒ Air ☐ Flowing Artesian

1. WELL TAG NO. D 0014435
DRILLING PERMIT NO. 767252
Other IDWR No. _____

2. OWNER:
Name Mike Hess
Address 640 N 600 West
City Malad State Id Zip 83252

11. WELL TESTS:

☐ Pump ☐ Bailor

Yield gal/min	Drawdown	Pumping Level	Time

Water Temp _____ Bottom hole temp _____

Water Quality test or comments: _____

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

Sketch map location must agree with written location.

Twp. 14 North ☐ or South ☒
Rge. 36 East ☒ or West ☐
Sec. 16 1/4 SE 1/4 SW 1/4
Gov't Lot _____ County Oneida
Lat _____ Long _____
Address of Well Site 640 N 600
City Malad

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	0	20	6 Sacks	Overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 319"
Was drive shoe seal tested? ☒ Y ☐ N How? Pressure

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+142	319	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment) 210

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
8"	0	5	Dirt		☒
8"	5	10	Gravel		☒
8"	10	20	Sand		☒
6"	20	30	Sand		☒
6"	30	50	Sand & Gravel		☒
6"	50	100	Grey Clay		☒
6"	100	110	Brown Clay & gravel		☒
6"	110	130	Gravel		☒
6"	130	140	Clay		☒
6"	140	150	Clay & Gravel		☒
6"	150	200	Clay		☒
6"	200	210	Clay & Gravel		☒
6"	210	220	Gravel	☒	
6"	220	230	Clay		☒
6"	230	240	Gravel	☒	
6"	240	250	Clay		☒
6"	250	255	Gravel	☒	
6"	255	260	Clay		☒
6"	260	275	Gravel	☒	
6"	275	280	Clay		☒
6"	280	300	Gravel	☒	
6"	300	305	Clay		☒
6"	305	320	Gravel	☒	

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NOV - 8 2000

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Department of Water Resources

NOV 02 2000

Department of Water Resources
Eastern Region

Completed _____ Depth 320 (Measurable)
Date: Started 12/24/00 Completed 10/27/00

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 Vallner Drilling Firm No. 383
Firm Official [Signature] Date 11/01/00
and [Signature]
Driller or Operator Jay Vallner Date 11/1/00
(Sign once if Firm Official & Operator)

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Figure 1-18 Well log for Mike Hess



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 20011944
DRILLING PERMIT NO. 764121
Other IDWR No. _____

2. OWNER:
Name M. J. Memorial Lint Partnership
Address 2525 Himsley Road
City Colorado Springs Colorado Zip 80918

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

Section 3 map grid showing Township 15 North, Range 35 East, Section 14, and County Oneida. Address of Well Site: 130 South Main, City: Samarita.

Lt. _____ Bld. _____ 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	0 20	OVER BORE

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	Inner	Welded	Threaded
8 1/2	140	250		Steel	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Inner
None							

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal/min	Drawdown	Pumping Level	Time
120-130		140	1 1/2

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Water
10	0	20	CLAY	
8	20	40	CLAY	
4	40	50	CLAY & GRAVEL	
4	50	100	GRAVEL	
4	100	110	SAND GRAVEL	
4	110	140	LARGE GRAVEL	

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Department of Water Resources

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SEP 06 2000

Department of Water Resources
Eastern Region

Completed Depth 140 (Measurable)
Date Started 6-21-00 Completed 6-29-00

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 Landstream Well Drilling Firm No. 118

Firm Official Donna Lunkin Date 6-29-00

and Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

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Figure 1-19 Well log for Jeff Davis



Attachment 2

Pumping Test of Malad City Well #4



Analysis of the Malad Well #4 Pumping Test

A 24 hour, 750 gpm constant rate pump test was conducted in May of 2009 on Well 4 for the Malad City water system. A graph of drawdown is attached. The semi-log plot of time-drawdown results was used to calculate the transmissivity of the aquifer using the modified non-equilibrium equation described by Driscoll (1986). This equation is:

$$T = \frac{264Q}{\Delta s}$$

Where T = transmissivity in gallons per day per foot, Q=pumping rate, in gallons per minute (gpm), and Δs = change in drawdown between one log cycle of the time-drawdown graph. The redline in the attached semi-log plot represents the straight line trend of the data between 10 and 900 minutes. The slope of this line is 3 ft per log cycle.

Thus, the calculated value of transmissivity is 66,000 gpm/ft or 8,823 ft²/day.

Because there was no observation well the aquifer storativity could not be accurately calculated. The storativity in this location was assumed to be the same as the storativity measured in an aquifer test with an observation well conducted in reference textbooks (Freeze and Cherry, 1979). It is estimated to be 0.001.

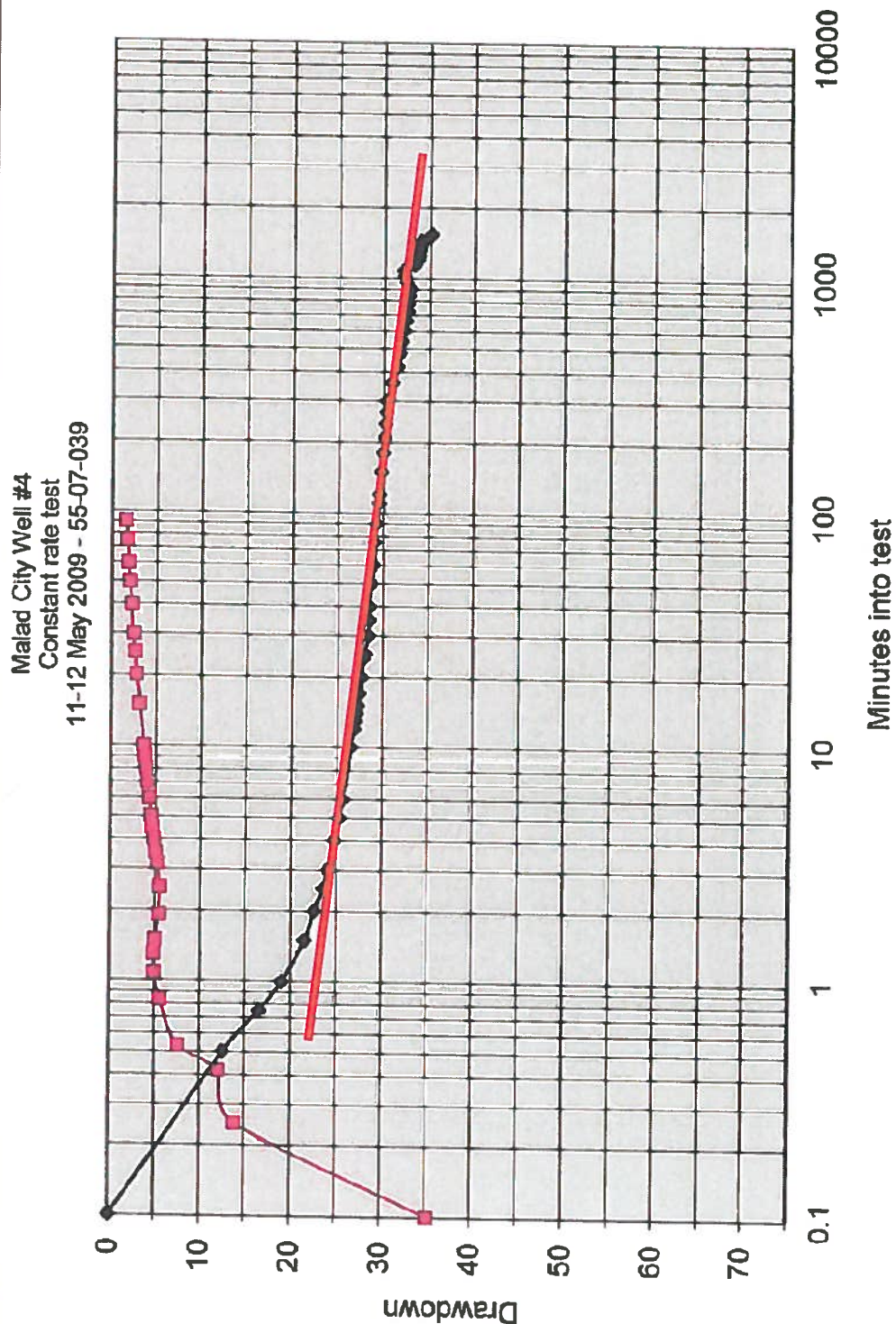


Figure 2-1. Plot of data set for pumping test Malad City Well #4. The red line represents the straight line trend of the data between elapsed time 10 to 900 minutes.



Attachment 3

AQUIFER IMPACT ANALYSIS



Table 4-1 Table of values used in AQTESOLV simulation.

Parameter	Value	Unit
Transmissivity	8,823	ft ² /d
Storativity	0.001	unitless
Flow Rate	462	gpm
Duration	302,400	min
Total volume	429	ac-ft
aquifer thickness (b)	200	ft
kz/Kr	0.1	unitless

Table 4-2 Table of locations for various boundary corners and wells used in the AQESOLV simulation.

Location	x	y
NW Corner	0	50000
NE Corner	32,000	50000
SW Corner	0	0
SE Corner	32,000	0
Daniels POD	24,679	32,342
1/2 mile north	24,679	34,982

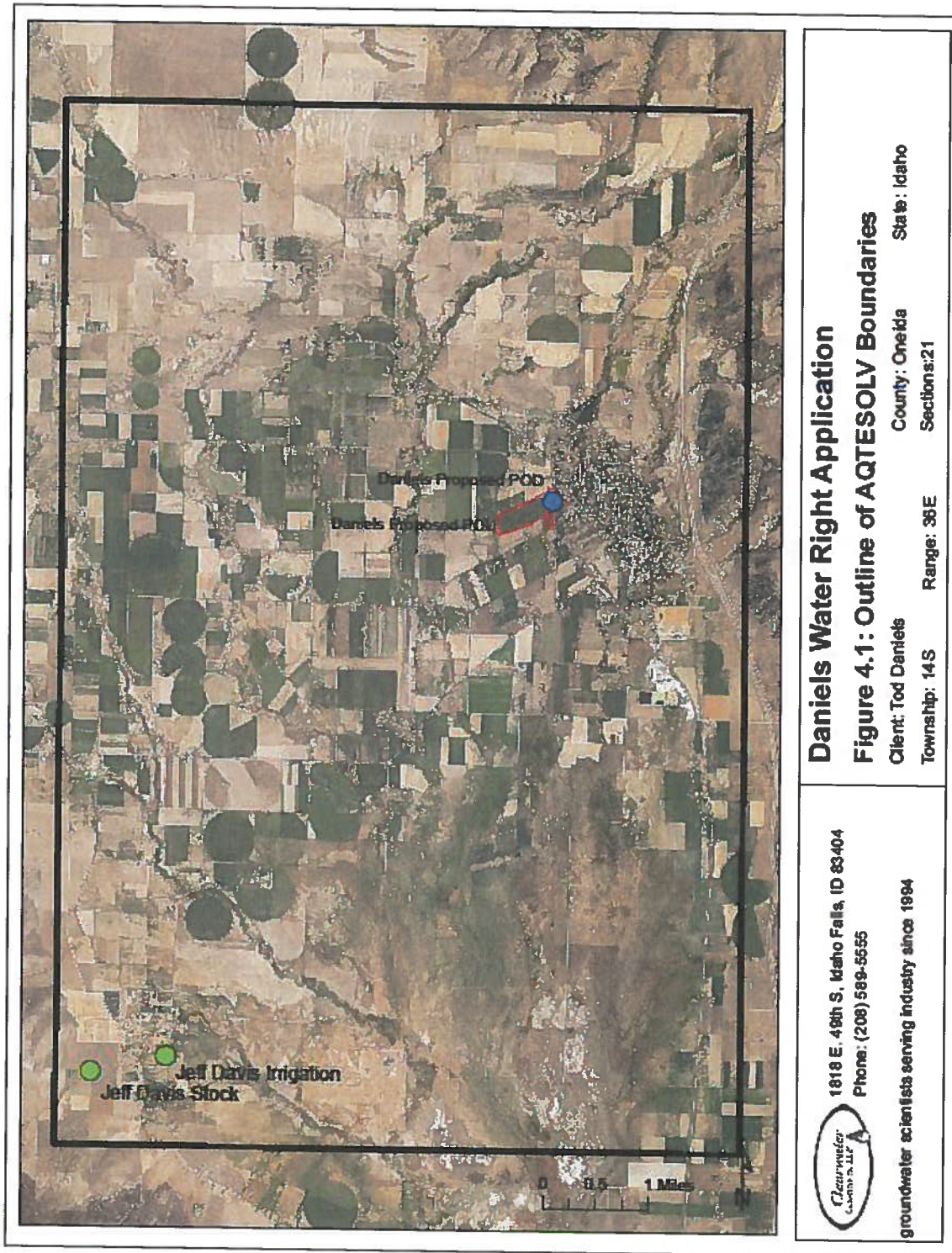


Figure 4-1 Outline of the boundaries used in the AQTESOLV forward solution calculation.

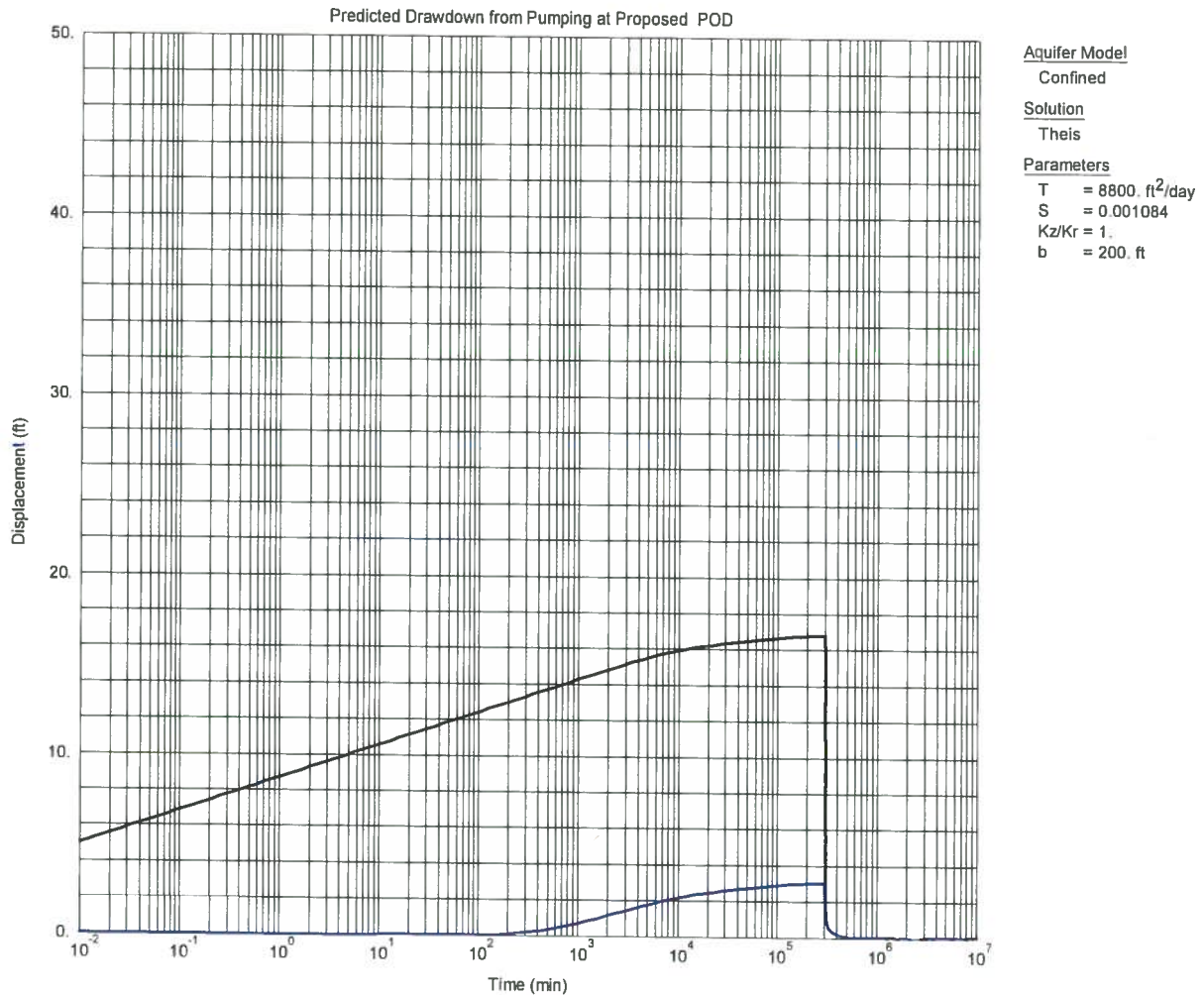


Figure 4-2 Predictive plot of drawdown at 462 gpm or 1.03 cfs for the full period of use 210 days. The black line is for the water level in the proposed Daniels Well pumping and the blue line is the water level predicted in a well 1/2 mile north of the proposed Daniels Well.

Key to line colors

Blue Imaginary well 1/2 mile north of the proposed POD
 Black Proposed POD for Daniels