



June 1, 2015

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

RE: AQUIFER TEST FOR CHET AND JILL KEETCH WATER RIGHTS APPLICATION

Dear Mr. Cefalo:

A groundwater impact assessment is provided in this letter report for Chet and Jill Keetch Water Right Application. They have approximately 80 acres of land northwest of Malad City, Idaho (Figure 1) and their application is for 1.6 cfs. Results of two different pumping tests were used as the basis for this evaluation. The Jeff Thomas pumping test was conducted on June 20-24, 2005 in a well about 1.3 miles south of the proposed drill site and a test of the Malad Well #4 on April 23, 2011 2.7 miles southeast of the proposed drill site (Figure 1). 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 have a minimal or negligible impact on neighboring wells.

Nearby PODs

The proposed well location is 14S, 35E, 12 SE SE as shown in Figure 2. A search was made for all existing points of diversions (PODs), i.e. water rights near Keetch's property. In Figures 3 through 6, a blue circle is shown with a ½ mile radius centered on the proposed Keetch well location. The circle encompasses portions of sections 12, 13, T14S, R35E and sections 7 and 18 of T 14S 36E. A search of the IDWR on-line database for PODs in these sections indicates there are four surface water rights in section 12 of T14S R35E, no surface water rights in section 13 of T14S R35E, one surface water right in section 7 of T14S R36E, and one surface water right in section 18 of T14S R36E. However, none of the surface water rights in any of these sections are within a ½ mile radius of Mr. and Mrs. Keetch's proposed POD. The results of the water right search are provided in Tables 1 through 4.

Nearby Wells

A search was performed of the IDWR drillers' log database for wells within ½ mile of the proposed well location. 17 wells were found in section 12 of T14S, R35E; 21 wells were found in section 13 of T14S, R35E; 25 wells were found in section 18 of T14S, R36E; and 19 wells were found in section 7 of T14S, R356E. The results of the well log search are provided in Tables 5 through 8. Twenty eight representative well logs are provided in Attachment 1 to show the local hydrogeology. The average depth of the wells in these sections is 256 ft and the average depth to water is 161 ft.

Hydrogeology



The Malad Valley is surrounded by mountains made of old crystalline rock, which were up-lifted and formed a deep valley between them. During the ice ages, the entire Salt Lake Basin was filled with water forming a vast inland lake on several occasions. The water extended into the area of the subject property. During periods of high water fine sediment and sand were deposited. During periods of low water the sediments were incised by surface streams, which also deposited coarse sands and gravels. Two of the most prominent lake levels were the Bonneville at about 5200 ft and the Provo at about 4800 ft above mean sea level. The elevation of the subject property is about 4730 ft, so it is expected that fine lake bed sediments from the Provo and Bonneville Lake Levels exist in the shallow subsurface below the property. In this area the lake bed sediments may have been cut by the ancestral Malad River. This stream also may have deposited sands and gravels as reported on the well drillers logs.

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, 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. It is further complicated by waxing and waning cycles of ancient Lake Bonneville. For the purposes of this investigation it is assumed that the aquifer thickness is 220 ft in this area. This is based on driller log for the Jeff Thomas Test Well and regional considerations of the hydrogeology although the aquifer may be thinning northward of the Thomas location away from the basin center. It should be noted that the aquifer is a sequence of permeable lens of sand and gravel stringers, which are primarily confined or semi-confined. Locally the aquifer may be unconfined.

Pumping Test

An irrigation well was completed to a depth of 489 feet on the Thomas Property, T14S, 35E, Section 24, on May 20, 2005. It is perforated from 280 ft to 481 feet in order to draw water from a deeper part of the aquifer. The well log is provided in Attachment 1, Figure 1-1. The geology beneath the Jeff Thomas property consists of interlayered sediment ranging from unconsolidated sands and gravel to brown sticky clay. With depth, the layers of sand are reported to be lithified into harder more competent sandstone intervals.

The four-day pumping test was conducted June 20-24, 2005 at a rate of 1,000 gpm. Water levels were monitored in nine surrounding wells, using electronic pressure transducers. The radial distance between the Thomas Well and the observation wells ranged from 528 feet to 3,168 feet. On the basis of the depth to water measurements, there appears to be at least three sub-units to the aquifer: 1) a shallow zone with depth to water between 7 and 10 feet, 2) a middle aquifer sub-unit with depth to water measurements between 73 and 76 feet and a deeper sub-unit with depth to water measuring between 97 and 104 feet.

Drawdown plots for the observation wells can be found in Attachment 2. The effects of pumping the Jeff Thomas well could not be seen in any of the observation wells. The pumping test was conducted when other nearby irrigation wells were pumping, which tended to make the aquifer data "noisy". Nevertheless, if drawdown from pumping the Jeff Thomas well impacted the observation wells, it was minimal and could not be defined.



Aquifer test analyses could only be performed on the pumped well because drawdown was not observed in any of the observation wells. Attachment 3 contains the aquifer test analyses performed using the AQTESOLV computer program for a leaky confined aquifer (Hantush, 1960). The first two plots are the drawdown and recovery curves. The transmissivity is 1392 ft²/day using the leaky confined aquifer solution. In the third plot, a match to the Theis solution for a confined aquifer is provided in Attachment 3. As can be noted, the match to the confined Theis solution is not as good as the match to the leaky confined solution. Below the plots in Attachment 3 are listed the residual statistics for each match using the automatic curve matching option in AQTESOLV. The objective function that is minimized during automatic curve matching is the sum of the squared residuals. Automatic curve matching seeks to minimize the residual sum of squares, residual variance and standard deviation and obtain a residual mean close to zero. As can be seen by the residual statistics, the variance and the standard error are significantly less for the leaky confined match than for the confined solution. This indicates that in this area the aquifer is under leaky confined conditions.

The City of Malad Well #4 is located 2.7 miles southeast of the location of the proposed Keetch POD (see Figure 1). The Malad Municipal #4 well is 530 ft deep, having a cased completion in clayey sand and gravel at 530 ft. The well log is provided in Attachment 1, Figure 1-2. 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. This analysis is for a confined aquifer. The primary data is not available so it is not possible to perform a detailed analysis to determine if the aquifer test data would better match a leaky confined solution. Because the geology of the two locations is similar and because it is closer and a more thorough analysis could be performed on the Jeff Thomas data, it is assumed that the aquifer for the Keetch POD is leaky confined with a transmissivity of 1392 ft²/day.

Because there was no observation well for either test, the aquifer storativity could not be accurately calculated. The storativity in this location was assumed from values found in a well-respected reference textbook (Freeze and Cherry, 1979). It is estimated to be 0.01.

Impact Assessment

Mr. and Mrs. Keetch wish to irrigate 80 acres per IDWR estimates of usage this should require 0.02 cfs per acre or 718 gpm or 1.60 cfs. To estimate the long-term drawdown and impact to neighboring wells from pumping of the proposed Keetch POD, the forward solution capabilities of the AQTESOLV program were employed. The input parameters to the model are listed in Table 4-1 (see Attachment 4). Boundaries in AQTESOLV were enabled as shown in Figure 4-1



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to represent Malad Valley. As depicted in Figure 4-1 and listed in Table 4-2 the model is 30,700 ft wide and 40,200 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 and north boundaries are set as impermeable or "no flow" boundaries. The southern end of the domain has no barrier (This assumption of an infinite aquifer). The east boundary of the domain is defined as constant head boundary.

In the model domain the proposed POD well is located 16,870 ft east of the west boundary and 25,260 ft north of the south boundary. This represents the proximity of the proposed POD to the nearby mountains, which will have the effect of increasing drawdown.

Figure 4-2 shows the AQTESOLV[®] output plot of the forward calculation for the proposed well pumping at 1.6 cfs (718 gpm) constantly for 7 months (April 1 to Oct 31). At the end of the time period the predicted drawdown is estimated to be 70 feet in the proposed POD. The drawdown for well at ½ mile distance from the POD is predicted to not be measurable. For a well 500 ft north of the POD the predicted drawdown is less than 0.01 ft. The prediction of minimal measurable drawdown in nearby wells is consistent with the Jeff Thomas aquifer test where no drawdown was observed in any nearby wells.

It is my professional opinion that Mr. and Mrs. Keetch's water right application will not excessively impact their 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. and Mrs. Keetch will not pump continuously at the maximum rate for 210 days to consume 462 acre – ft in a single year; and 2) the Paleozoic/Mesozoic rocks of the mountains are not totally impermeable and will provide some water to the system, thus reducing drawdown. These factors will reduce the predicted drawdown presented here.

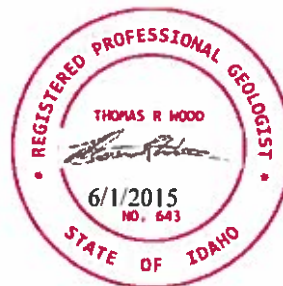
Please do not hesitate to call me if you have any questions about this letter or the calculations.

Respectfully,

Thomas R. Wood, PhD, PG

cc

Chet and Jill Keetch 3450 W 2800 N. Malad, Idaho 83252



References

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

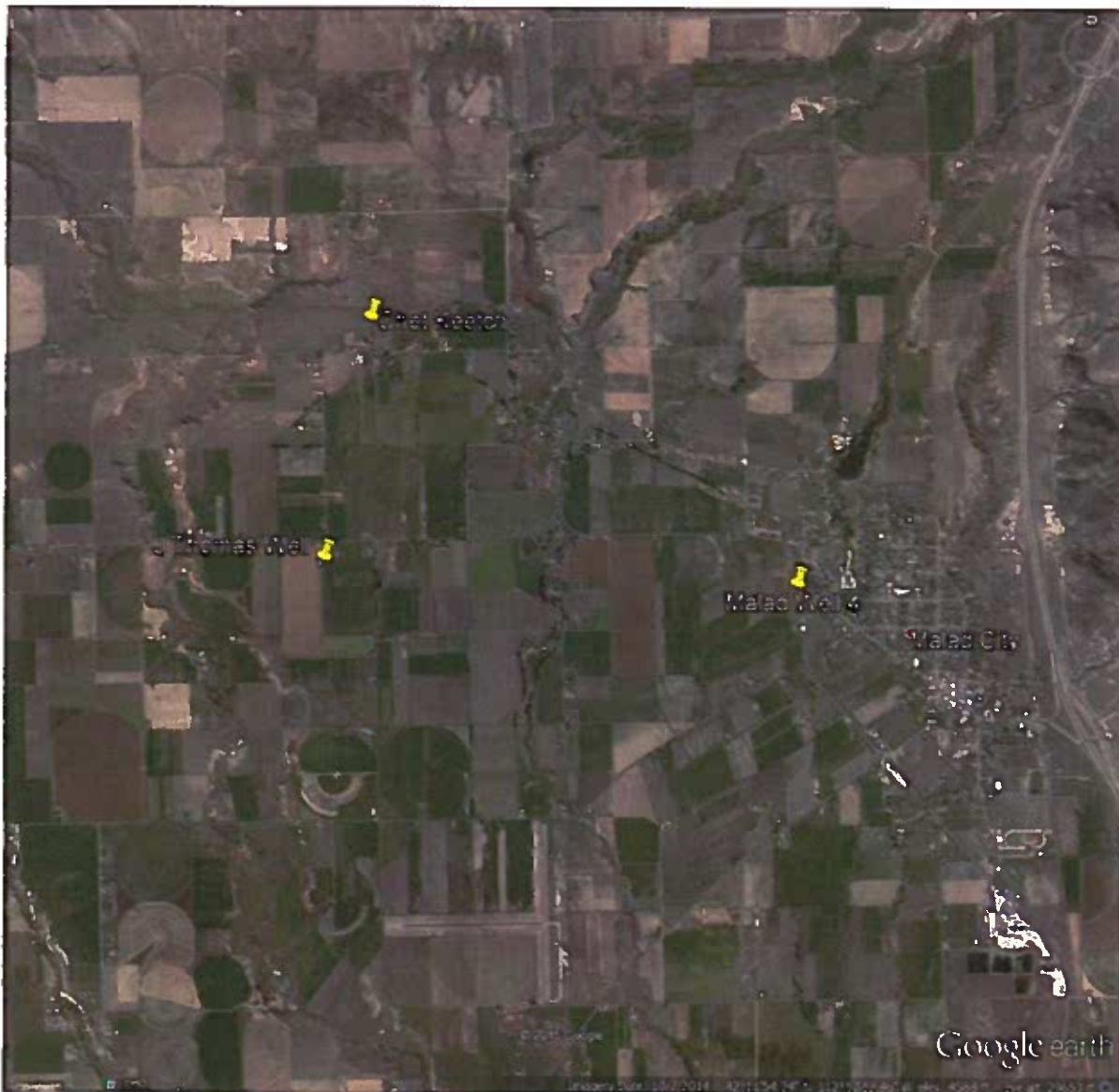


Figure 1. Map showing locations of the Proposed Keetch POD and pump tested wells of Jeff Thomas Well and Malad #4 Well.

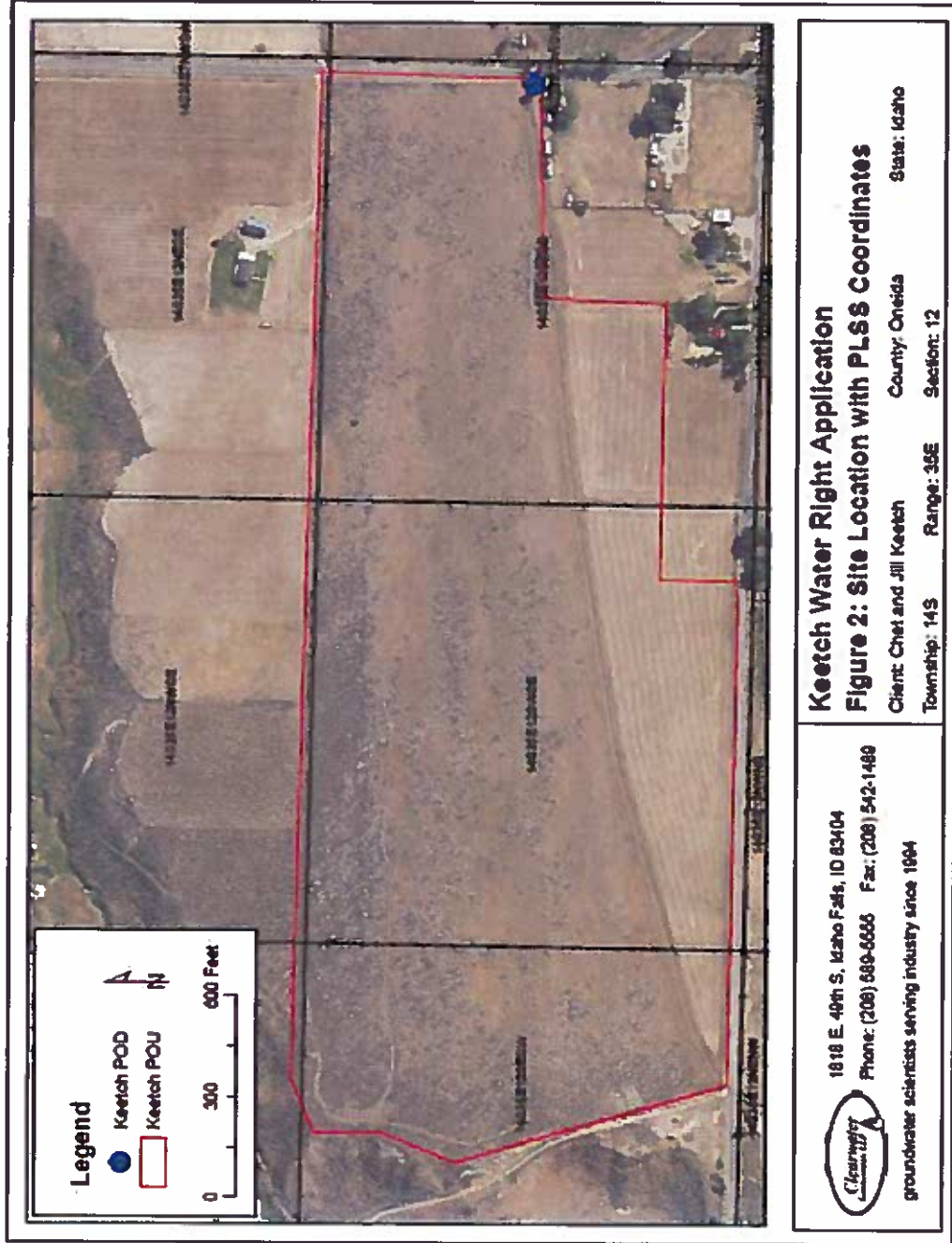


Figure 2 IDWR map area showing the township range section coordinates and the proposed well location as a blue dot.





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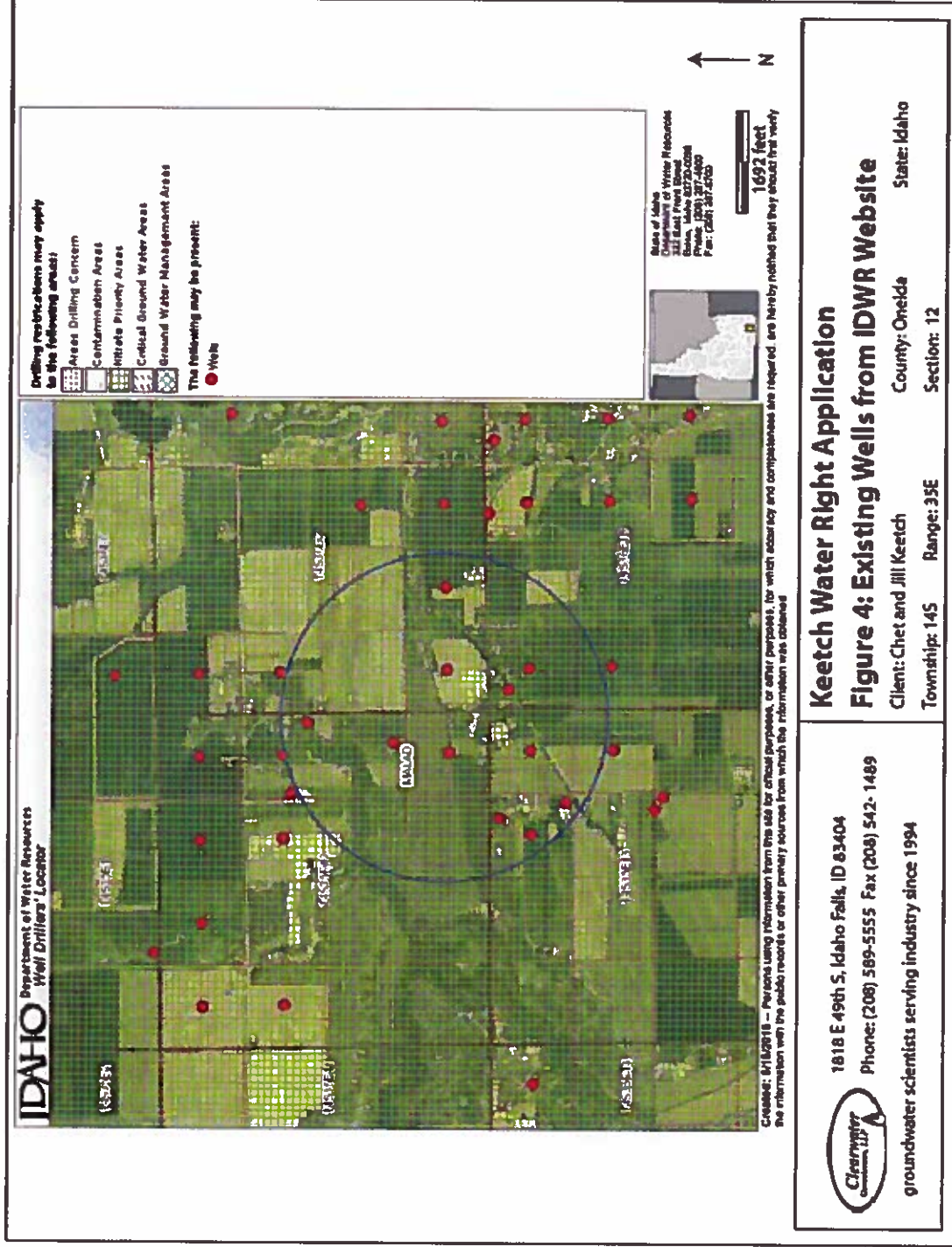


Figure 4 Existing Wells; from IDWR website and blue circle 1/2 mile diameter.



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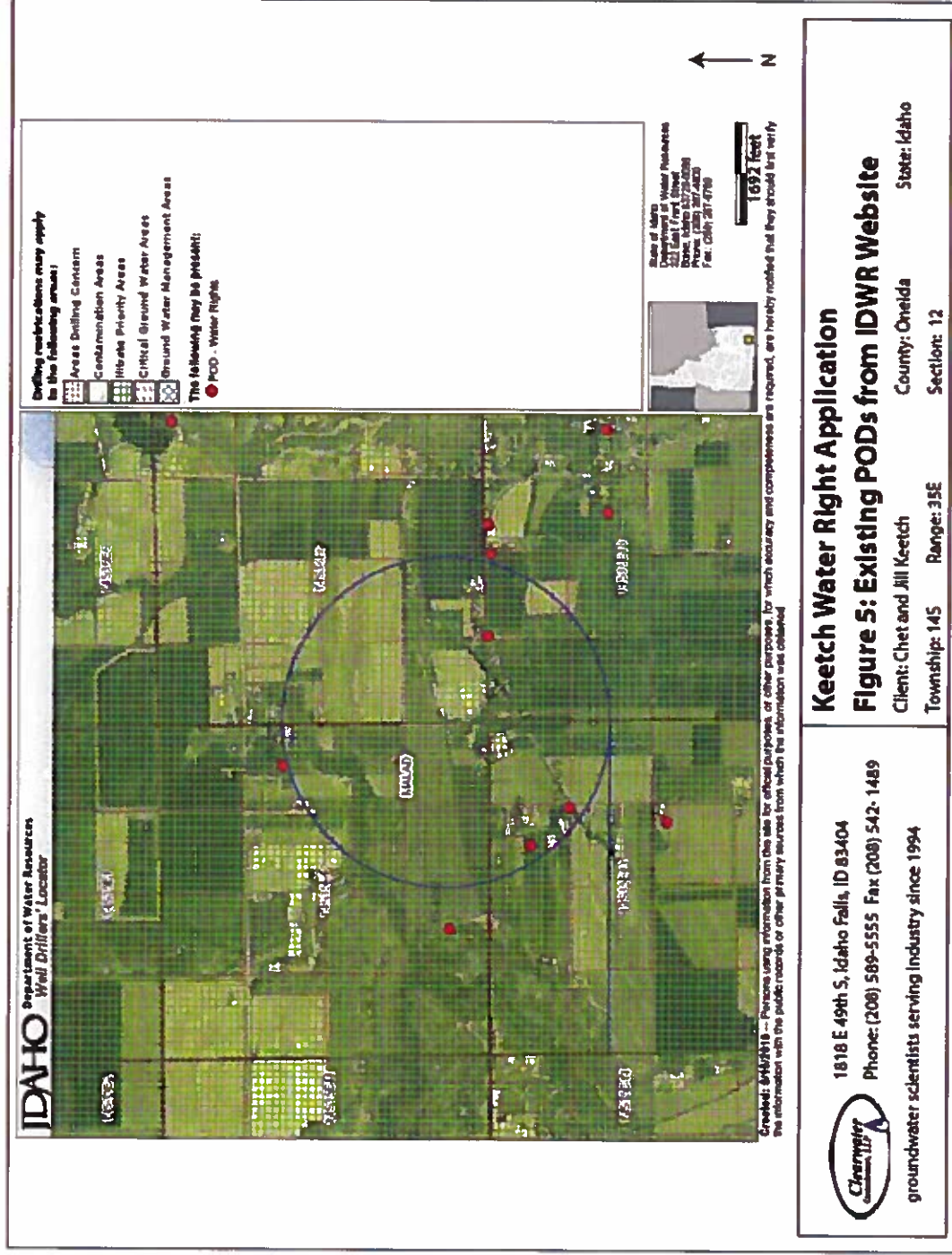


Figure 5 Existing Water Rights; from IDWR website and blue circle 1/2 mile diameter. The one well within the 1/2 mile radius is the Daniels' domestic well.

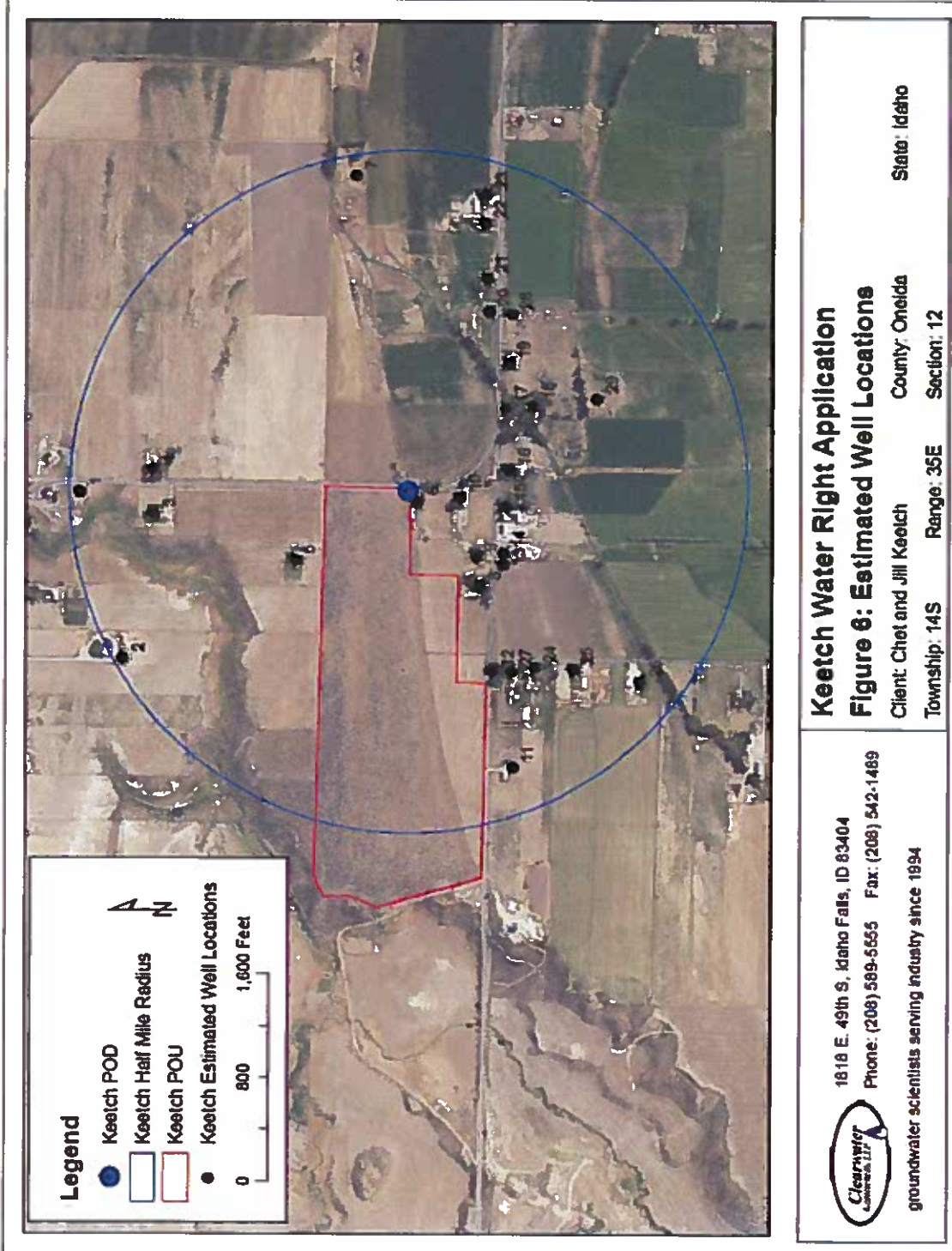


Figure 6 Estimated well locations within 1/2 mile of Keetch proposed location. Keetch POD is shown as a blue dot and estimated locations are shown as black dots.



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Table 1 IDWR Search results for point of diversions in T14S, R35E, Section 12

Type	Basin	Sequence	Application Number	Basis	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
Water Right	15	4052		Statutory Claim	Active	10/31/1922	0.3	SMALL CREEK	IRRIGATION	JENSEN, MARY W; JENSEN, WELDON P
Water Right	15	4090		Statutory Claim	Active	4/1/1969	0.05	SPRING	STOCKWATER	MC DANIEL, BUFORD R; MC DANIEL, HELEN H
Water Permit	15	7281			Active	8/18/2006	0.2	SPRING	DIVERSION TO STORAGE, IRRIGATION, IRRIGATION FROM STORAGE, IRRIGATION STORAGE	STONE, BOYD MARK
Water Permit	15	7283			Active	8/28/2006	0.04	SPRING	DOMESTIC, STOCKWATER	STONE, BOYD MARK
Water Application	15	7394	79760		Active	12/31/2014	1.6	GROUND WATER	IRRIGATION	CHET, KEETCH; JILL, KEETCH

Table 2 IDWR Search results for point of diversions in T14S, R35E, Section 13

Type	Basin	Sequence	Basis	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
Water Right	15	2022	License	Active	13906	2.5	GROUND WATER	DOMESTIC, IRRIGATION	PROGRESS IRRIGATING CO INC
Water Right	15	7079	License	Active	41960	0.72	GROUND WATER	IRRIGATION	WEEKS, BILL; WEEKS, JALYN
Water Right	15	7089	License	Active	30449	0.03	GROUND WATER	DOMESTIC, STOCKWATER	JOHN, ELDON



Table 3 IDWR Search results for point of diversions in T14S, R36E, Section 18

Type	Basin	Sequence	Basis	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
Water Right	15	4161	Statutory Claim	Active	15867	0.08	GROUND WATER	DOMESTIC, IRRIGATION	CHURCH OF JESUS CHRIST OF THE LATTER DAY SAINTS
Water Right	15	7033	License	Active	27977	0.13	UNNAMED DRAIN	IRRIGATION, STOCKWATER	TUTTLE, DELL T
Water Right	15	7228	License	Active	37414	0.3	GROUND WATER	IRRIGATION	DANIELS, OWEN
Water Right	15	7232	License	Active	37502	0.1	GROUND WATER	DOMESTIC, IRRIGATION, STOCKWATER	DAWSON, KATHRYN
Water Right	15	7247	License	Active	37788	0.7	GROUND WATER	IRRIGATION	TUBBS, AUSTIN

Table 4 IDWR Search results for point of diversions in T14S, R36E, Section 7

Type	Basin	Sequence	Basis	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
Water Right	15	4161	Statutory Claim	Active	15867	0.08	GROUND WATER	DOMESTIC, IRRIGATION	CHURCH OF JESUS CHRIST OF THE LATTER DAY SAINTS
Water Right	15	7033	License	Active	27977	0.13	UNNAMED DRAIN	IRRIGATION, STOCKWATER	TUTTLE, DELL T
Water Right	15	7228	License	Active	37414	0.3	GROUND WATER	IRRIGATION	DANIELS, OWEN
Water Right	15	7232	License	Active	37502	0.1	GROUND WATER	DOMESTIC, IRRIGATION, STOCKWATER	DAWSON, KATHRYN
Water Right	15	7247	License	Active	37788	0.7	GROUND WATER	IRRIGATION	TUBBS, AUSTIN



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Table 5 IDWR Search results for wells in T14S, R35E, Section 12

Contact	Use	Twp	Rng	Sec	Tract	Address	GPM	Static Water Level	Total Depth	Csg. Dia.	Const. Date
ERMA CLARK RANCH(Owner/Operator)		14S	35E	12	SESE	2112 NORTH 3100 WEST	30	210	299	6	3/9/2001
D KENT BEETON(Owner/Operator)		14S	35E	12	NENW	2839 N. 3400 W.	20	207	288	6	6/7/1999
SETH BRIGGS(Owner/Operator)	Domestic-Single Residence	14S	35E	12	NESE	3100 W 1/4 MI NORTH OF INT. 2000 N; THEN W 400 FT		196	274	6	4/30/2007
DALE DAVIS(Owner/Operator)	Domestic-Single Residence	14S	35E	12	SENE	2672 N 3100 W	30	235	319	6	8/2/2003
CALVIN DREDGE(Owner/Operator)		14S	35E	12	NENE	2636 N 3100 W	15	143	240	6	7/15/1998
JOHN FACER(Owner/Operator)	Domestic-Single Residence	14S	35E	12	SWNE	UPPER ST JOHN RD	25	218	280	6	4/17/2003
MARTY HILL(Owner/Operator)		14S	35E	12	SESE	3225 W 2000 N	30	205	290	6	2/22/2001
CHET KECTCH(Owner/Operator)	Domestic-Single Residence	14S	35E	12	SENE	3450 W 2800 N	30	179	250	6	5/17/2007
ERIC J LEAVITT(Owner/Operator)		14S	35E	12	SWNW	HERB RD	20	185	260	6	9/23/1995
BYRON MARSHALL(Owner/Operator), RUTH MARSHALL(Owner/Operator)		14S	35E	12	NWNE	339 W UPPER ST JOHN RD	0	202	280	6	1/16/1995
TERRY MURPHY(Owner/Operator)	Domestic-Single Residence	14S	35E	12	NWNW	3975 W 2800 N	25	219	300	6	8/30/2004
BRETT ROSE(Owner/Operator)		14S	35E	12	NWNW		0	167	300	6	12/19/1994



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EARL ROSE(Owner/Operator)		14S	35E	12	NENE	DANNIELS ROAD	30	75	231	6	11/11/1998
BOYD STOKES(Owner/Operator)	Domestic	14S	35E	12		2526 N 3100 W APPR OX 4M WEST OF MALAD		137	240	8	3/11/2011
DALE THOMAS(Owner/Operator)	Domestic-Single Residence	14S	35E	12	SESE	2030 NORTH 3100 WEST	50	200	276	6	12/23/1999
DON YOUNG(Owner/Operator)	Domestic-Single Residence	14S	35E	12	NWNW	NOT GIVEN ON START CARD	50	120	205	6	8/10/2000
DON YOUNG(Owner/Operator)	Domestic-Single Residence	14S	35E	12	NWNW	ONEIDA COUNTY	30	230	340	6	7/25/2003

Table 6 IDWR Search results for wells in T14S, R35E, Section 13

Contact	Use	Twp	Rng	Sec	Tract	Address	GPM	Static Water Level	Total Depth	Csg. Dia.	Const. Date
MARY BLAISDELL(Owner/Operator)	Domestic-Single Residence	14S	35E	13	SESE	3135 W 1000 N		75	113	5	2/23/2014
SCOTT D BLAISDELL(Owner/Operator)		14S	35E	13	SESW	368 W ST JOHN RD	100	106	200	6	10/8/1993
LEANNA BOSWORTH(Owner/Operator)	Domestic-Single Residence	14S	35E	13	SWSE	1086 N 3400 W	15	50	120	6	6/20/2005
GARY T DAVIS(Owner/Operator)		14S	35E	13	SENE	WEST HARRISON RD	100	140	220	6	5/11/1993
GARY T DAVIS(Owner/Operator)		14S	35E	13	NENE	HARRISON RD	20	200	260	6	7/11/1997
JOE DAVIS(Owner/Operator)		14S	35E	13	NENE	311 HARRISON RD	30	205	280	6	10/27/2001
STEVE DREDGE(Owner/Operator)	Domestic-Single Residence	14S	35E	13	NWN E	1918 N 3400 W		170	320	6	8/28/2012
RAMOND EVANS(Owner/Operator)	Domestic-Single Residence	14S	35E	13	NWN E	1950 W 3400 W	25	227	295	6	6/29/2007



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STEVE FINDER(Owner/Operator)	Domestic-Single Residence	14S	35E	13	NWN E	3560 W 2000 N	40	220	295	6	6/16/2004
RONE GAMBLE(Owner/Operator)	Domestic-Single Residence	14S	35E	13	NWN E	1970 N 3400 W	35	213	290	6	9/21/2004
MIKE MADSEN(Owner/Operator)	Domestic-Single Residence	14S	35E	13	SEN W	NONE GIVEN		181	275	5	11/7/2014
TIM MORRIS(Owner/Operator)		14S	35E	13	NENE	1950 N. 3400 W.	20	157	200		9/21/1998
STEVEN STAYNER(Owner/Operator), JACKIE STAYNER(Owner/Operator)	Domestic-Single Residence	14S	35E	13	NENE	3130 WEST 2000 NORTH	30	200	290	6	12/20/2000
SETH SWEETEN(Owner/Operator)	Domestic-Single Residence	14S	35E	13	SWS W	TALBOT RD	30	150	210	6	5/13/2002
DAVE TALBOT(Owner/Operator)	Domestic-Single Residence	14S	35E	13	NWS E	1212 NORTH 3400 WEST		78	145	6	9/23/2014
DAVID D TALBOT(Owner/Operator)		14S	35E	13	SENE	1444 NORTH 3400 WEST	25	75	135	6	9/10/1999
DOYLE TULBAT(Owner/Operator)	Domestic-Single Residence	14S	35E	13	NWS E	1444 N 3440 W		106	412	10	7/2/2012
RICHARD VAN BEBBER(Owner/Operator)		14S	35E	13	SWSE		42	85	205	8	11/7/1989
BILL WEEKS(Owner/Operator)	Domestic-Single Residence	14S	35E	13	NWN E	1800 N 3400 W	40	175	315	6	4/20/2010
GRANT WEEKS(Owner/Operator)		14S	35E	13	NWN E		0	12	320		8/20/1981
SIDNEY WILLIAMS(Owner/Operator)		14S	35E	13	NENE	3250 WEST 2000 NORTH ST.JOHN	35	198	290	6	2/28/2001



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Table 7 IDWR Search results for wells in T14S, R36E, Section 18

Contact	Use	Twp	Rng	Sec	Tract	Address	GPM	Static Water Level	Total Depth	Csg. Dia.	Const. Date
L DALE ATKINSON(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NENE	1885 N 2400 W	30	190	271	6	11/6/2003
JOSEPH D BARNES(Owner/Operator)		14S	36E	18	SENE	206 UPPER ST JOHN RD	25	154	200	6	10/12/1992
DAN DANIELS(Owner/Operator)		14S	36E	18	NWN E			197	280	6	2/20/1997
DAN DANIELS(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NWN E	2585 W 2000 N		197	280	6	1/16/2014
OWEN DANIELS(Owner/Operator)	Irrigation	14S	36E	18	SWSE	2585 W 2000 N	300	180	278	10	2/13/2003
KATHRYN DAWSON(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NWN W	2870 N 2000 W	50	200	316	8	10/1/2002
KEVIN DEGN(Owner/Operator)	Domestic-Single Residence	14S	36E	18	SESW	2075 W 1000 N	30	110	257	6	11/12/2003
GREG GALLOGUS(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NESE	3130 N 2100 W	30	139	200	6	2/12/2009
DIANA L GROVER(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NENE	1983 N 2400 W	30	120	287	6	7/11/2002
JOHN HARDING(Owner/Operator)	Domestic-Single Residence	14S	36E	18	SENE	UPPER ST JOHN RD	40	210	240	6	1/11/2009
GLENNA ILLUM(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NWN W	3010 W 2000 N	8	15	40	6	12/6/2002
DAVE ISAACSON(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NENE	2255 W 1500 N	30	165	226	6	4/18/2005
BRAD JACOBS(Owner/Operator)		14S	36E	18	NWN W	UPPER ST JOHN RD	40	175	240	6	6/11/1999
GENE JONES(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NWN W	160 E 100 N	30	205	318	6	5/20/2002
JAMES JONES(Applicant)		14S	36E	18	NESE		0	110	235		9/1/1972
KHALIL MONSON(Owner/Operator)	Domestic-Single Residence	14S	36E	18	SESW	258 S 1000 N	15	64	180	8	11/1/2004
VAN PRICE(Owner/Operator)	Irrigation	14S	36E	18	NWN E	1730 N 2400 W	600	207	340	10	4/11/2005



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SCOTT RAY(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NENE	CEMETER Y RD	30	207	280	10	3/27/2007
SYLVESTER REED(Owner/Operator)		14S	36E	18	SWN W		30	146	200	6	10/22/1996
KRISTINE SMITH(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NESE	2100 W 1600	50	128	265	6	10/5/2007
DALE TUTTLE(Owner/Operator)		14S	36E	18	NWN E		0	70	135		9/26/1979
STEVE WARD(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NENE	1847 N 2400 W	30	190	267	6	9/16/2004
WILLIAM JEDD WARD(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NWS E	1331 N 2600 W	40	127	240	6	3/24/2006
STEVE WORKMAN(Owner/Operator)	Domestic-Single Residence	14S	36E	18	NWN W	2998 W 2000 N	10	15	40	6	10/21/2002
RALPH YEARSLEY(Owner/Operator)		14S	36E	18	SWN E		18	120	150		9/5/1973

Table 8 IDWR Search results for wells in T14S, R36E, Section 7

Contact	Use	Twp	Rng	Sec	Tract	Well Address	GPM	Static Water Level	Total Depth	Csg. Dia.	Const. Date
DAVID BECK(Owner/Operator)	Domestic-Single Residence	14S	36E	7	SWSE	UPPER ST. JOHN ROAD	25	250	288	6	12/12/2001
CHRIS BOWEN(Owner/Operator)		14S	36E	7	SESW	2787 WEST 8000 NORTH	20	183	240	6	9/11/1999
CHRIS BOWEN(Owner/Operator)	Domestic-Single Residence	14S	36E	7	SESW	2787 WEST 8000 NORTH	25	196	280	6	8/19/2000
STEVE DREDGE(Owner/Operator)	Domestic-Single Residence	14S	36E	7	SESE	ST JOHNS RESEVOIR RD		252	350	8	11/23/2007
TOM HAWKINS(Owner/Operator)	Domestic-Single Residence	14S	36E	7	NWSE	2230 N 2400 W	20	227	307	6	1/23/2003
LEE HOGAN(Owner/Operator)	Domestic-Single Residence	14S	36E	7	SESE	2121 N 2400 W	30	223	280	6	12/28/2001
CINDY JOHNSON(Owner/Operator), ROY JOHNSON(Owner/Operator)		14S	36E	7	NWNW	3100 W 2800 N	40		200	6	1/11/1997



Clearwater Geosciences, LLP
Ground Water Development and Exploration

J MARLA LEWIS(Owner/Operator)	Domestic-Single Residence	14S	36E	7	SESW	2741 W 2000 N	30	193	384	6	8/5/2004
MARLO J LEWIS(Owner/Operator)		14S	36E	7	SWSE		0	115	235	8	11/29/1989
DANEL MADSEN(Owner/Operator)	Domestic-Single Residence	14S	36E	7	SESW	2845 W 2000 N	30	200	316	6	5/29/2002
JERRY ROSE(Owner/Operator)		14S	36E	7	NWNW		20	145	205	6	8/20/1998
NATHAN RUFI(Owner/Operator)		14S	36E	7	SWNW		20	140	197	6	5/29/1997
LAWRENCE SCHOW(Owner/Operator)	Domestic-Single Residence	14S	36E	7	SWNW	ST. JOHN	35	145	240	6	10/17/2005
DAVID D TALBOT(Owner/Operator)	Domestic-Single Residence	14S	36E	7	NENE	ST JOHNS RES.	30	115	273	6	1/18/2003
DAVID D TALBOT(Owner/Operator)	Irrigation	14S	36E	7	NENE	1444 N 3400 W	17	140	520	20	10/10/2003
JEFFERY J THOMAS(Owner/Operator)	Domestic-Single Residence	14S	36E	7	SESW	2705 W 2000 W	30	205	320	6	6/7/2003
JOHN THOMAS(Owner/Operator)		14S	36E	7	SWNW	ST JOHN RD	40	124	200	6	10/7/1996
BART WILLIAMS(Owner/Operator)		14S	36E	7	SESE	2400 W 2081 N	20	207	280	6	4/15/1999
DEAN L WILLIAMS(Owner/Operator)		14S	36E	7	SWSW		30	190	250	6	6/3/1997



Attachment 1

REPRESENTATIVE WELL LOGS



Clearwater Geosciences, LLP Ground Water Development and Exploration

Form 2387
9/02
DMD

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

15

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

1. WELL TAG NO. D 00351412
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Jeff Thomas
Address 205 W. 2000 N
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 35 East ☒ or West ☐
Sec 24 1/4 1/4 1/4 1/4
Gov't Lot _____
County Carida
Lat: _____ Long _____
Address of Well Site 3410 W. 1000 N
City Malad

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		overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 489
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Length	Material	Casing	Liner	Weighted	Threaded
50	0	489	250	Steel	☒	☐	☒	☐

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

9. PERFORATIONS/SCREENS PACKER TYPE Machine JUN 14 2005
Perforation Method _____ Department of Water Resources
Screen Type & Method of Installation _____ Eastern Region

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
280	421	1/2-4	489	20	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 _____ lb.
Depth flow encountered _____ ft. Describe access point or control device: _____

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gpm.	Drawdown	Pumping Level	Time

Water Temp. cold Bottom hole temp. cold
Water Quality test or comments: good Depth first Water Encounter 70

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

From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
24	30	Blue clay		X
30	35	Blue clay		X
35	40	Blue clay & sand		X
40	45	Blue clay & sand		X
45	50	Gravel		X
50	55	Gravel		X
55	60	Gravel		X
60	65	Gravel		X
65	70	Gravel		X
70	75	Gravel		X
75	80	Gravel		X
80	85	Gravel		X
85	90	Gravel		X
90	95	Gravel		X
95	100	Gravel		X
100	105	Gravel		X
105	110	Gravel		X
110	115	Gravel		X
115	120	Gravel		X
120	125	Gravel		X
125	130	Gravel		X
130	135	Gravel		X
135	140	Gravel		X
140	145	Gravel		X
145	150	Gravel		X
150	155	Gravel		X
155	160	Gravel		X
160	165	Gravel		X
165	170	Gravel		X
170	175	Gravel		X
175	180	Gravel		X
180	185	Gravel		X
185	190	Gravel		X
190	195	Gravel		X
195	200	Gravel		X
200	205	Gravel		X
205	210	Gravel		X
210	215	Gravel		X
215	220	Gravel		X
220	225	Gravel		X
225	230	Gravel		X
230	235	Gravel		X
235	240	Gravel		X
240	245	Gravel		X
245	250	Gravel		X
250	255	Gravel		X
255	260	Gravel		X
260	265	Gravel		X
265	270	Gravel		X
270	275	Gravel		X
275	280	Gravel		X
280	285	Gravel		X
285	290	Gravel		X
290	295	Gravel		X
295	300	Gravel		X
300	305	Gravel		X
305	310	Gravel		X
310	315	Gravel		X
315	320	Gravel		X
320	325	Gravel		X
325	330	Gravel		X
330	335	Gravel		X
335	340	Gravel		X
340	345	Gravel		X
345	350	Gravel		X
350	355	Gravel		X
355	360	Gravel		X
360	365	Gravel		X
365	370	Gravel		X
370	375	Gravel		X
375	380	Gravel		X
380	385	Gravel		X
385	390	Gravel		X
390	395	Gravel		X
395	400	Gravel		X
400	405	Gravel		X
405	410	Gravel		X
410	415	Gravel		X
415	420	Gravel		X
420	425	Gravel		X
425	430	Gravel		X
430	435	Gravel		X
435	440	Gravel		X
440	445	Gravel		X
445	450	Gravel		X
450	455	Gravel		X
455	460	Gravel		X
460	465	Gravel		X
465	470	Gravel		X
470	475	Gravel		X
475	480	Gravel		X
480	485	Gravel		X
485	490	Gravel		X
490	495	Gravel		X
495	500	Gravel		X

Completed Depth 489 (Measurable)
Date: Started 10-6-04 Completed 5-20-05

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. 513
Principal Driller Michael Thomas Date 6-4-05
Driller or Operator Date
Operator Date
Principal Driller and Rig Operator Required
(Operator I must have signature of Driller/Operator II)

Figure 1-1 Jeff Thomas irrigation well (aquifer pumping test well).



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 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 Orinda
Lat: _____ Long: _____
Address of Well Site 595 Barnack St. # 200'
West 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	2375	Steel	☒	☐	☐	☐
10"	272	530	2345	Steel	☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____
Packer ☐ Y ☒ N type centralized by steel tabs

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method Torch
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 _____ ft.
Depth flow encountered _____ ft. Depth to 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:

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 w/ 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-gray clay, some gravel		X
18	128	162	lt. brown clayey sandstone w/ gravel / abrasive		X
18	162	172	lt. brown-gray clay w/ gravel		X
18	172	387	lt. brown clayey sandstone w/ gravel. Various degree of consolidation		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

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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 I must have signature of Driller/Operator II.

Figure 1-2 Well log for City of Malad Municipal Well (aquifer pumping test well).



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		
to All	Flowing Artesian		

1. WELL TAG NO. D 0014724
DRILLING PERMIT NO. 768136
Other IDWR No. _____

2. OWNER:
Name Erma Clark Ranch
Address 2112 W. 3100 N.
City Malad State ID Zip 83252

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

	Twp. <u>14</u>	North <u>L</u> or South <u>S</u>
	Rge. <u>35</u>	East <u>W</u> or West <u>E</u>
	Sec. <u>12</u>	1/4 <u>SE</u> 1/4 <u>SE</u> 1/4
	County <u>Blaine</u>	Lat. _____ Long. _____
Address of Well Site _____ City _____		

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/PLUG PACK	AMOUNT	DEPTH
Material	From To	Shots or Pounds
<u>Bentonite</u>	<u>0</u> <u>20</u>	<u>6</u>
		<u>Over Box</u>

Was drive shoe used? ☒ Yes ☐ No Shoe Depth(s) 299
Was drive shoe seal tested? ☐ Yes ☐ No How? _____

8. CASING/LINER:

Casing	From	To	Color	Material	Casing ID	Welded	Inspected
<u>6"</u>	<u>0</u>	<u>299</u>	<u>255</u>	<u>Steel</u>	<u>52</u>	<u>25</u>	<u>L</u>

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	CL: Sec	Yards	Feet	Material	Casing	Ver
		<u>None</u>					

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal./hr	Drawdown	Pumping Level	Time
<u>30</u>			

Water Temp. cold Bottom hole temp cold

Water Quality test or comments: good

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Depth	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>8 1/2'</u>	<u>0</u>	<u>20</u>	<u>Brown Clay & Sand</u>		<u>X</u>
<u>6"</u>	<u>20</u>	<u>45</u>	<u>Brown Clay & Sand</u>		<u>X</u>
<u>6"</u>	<u>45</u>	<u>195</u>	<u>Gray Clay</u>		<u>X</u>
<u>6"</u>	<u>195</u>	<u>260</u>	<u>Gravel</u>	<u>X</u>	
<u>6"</u>	<u>260</u>	<u>293</u>	<u>Brown clay</u>		<u>X</u>
<u>6"</u>	<u>293</u>	<u>299</u>	<u>Gravel</u> <u>little sand</u>	<u>X</u>	

Completed Depth 299 (Measurable)
Date Started 3-7-01 Completed 3-9-01

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 Michael J. Anderson Firm No. 542
Firm Official Michael J. Anderson Date 3-12-01
and
Driller or Operator Michael J. Anderson 3-12-01
(Signature of Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-3 Well log for Erma Clark Ranch Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Manufactured by
Alexander Clark Printing
Boise, Idaho (208) 323-0611

15

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0045883
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Seth + Christina Briggs
Address 830 N. 500W Apt A
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. 35 East ☒ or West ☐
Sec. 12 SE 1/4 NE 1/4 SE 1/4
Gov't Lot _____
Lat: _____ Long: _____
Address of Well Site 3100 W. 1/4 mile of Ind. W. 2000 N.
Thru W 500 City Malad
L1. _____ Blk _____ Sub. Name N/A

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

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

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

7. SEALING PROCEDURES
Box Material Br. stone From 0 To 229 bags Seal Placement Method overlaid
Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 274
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:
Diameter From To Gauge Material Casing Liner Wellbore Treatment
6 0 274 250 steel ☒ ☐ ☐ ☐
Length of Headpipe _____ Length of Tailpipe _____
Packer ☐ Y ☐ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method torch
Screen Type & Method of Installation
From To 3/4 Size Number Diameter Material Casing Liner
258 274 1/4-16 45 6 steel ☒ ☐

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

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
196 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 _____ Hge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat: _____ Long: _____

12. WELL TESTS:

Yield potential	Drawdown	Pumping Level	Time
<u>35</u>			

Water Temp cold Bottom hole temp cold
Water Quality test or comments: good
Depth first Water Encounter 185

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Top	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
10	0	20	Br. Clay gravel			X
20	20	50	Br. clay			X
50	50	100	Grey clay			X
100	100	115	gravel clay			X
115	115	125	Tan clay			X
125	125	137	gravel			X
137	137	143	Tan Clay gravel			X
143	143	155	gravel clay			X
155	155	200	Br. clay			X
200	200	203	gravel			X
203	203	208	Grey Br. clay			X
208	208	210	gravel			X
210	210	212	Br. clay			X
212	212	228	gravel Br. clay			X
228	228	235	Br. clay			X
235	235	240	gravel Br. clay			X
240	240	250	Br. clay			X
250	250	274	gravel Br. clay			X

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AUG 24 2007
Department of Water Resources
Eastern Region

Completed Depth 274 (Measureable)
Date: Started 4-26-07 Completed 4-30-07

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 Well Drilling Firm No. 543
Principal Driller Michael Frander Date 5-9-07
Driller or Operator Mike Frander Date 5-8-07

Figure 1-4 Well log for Seth Briggs Domestic Well



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 00 27203

DRILLING PERMIT NO.

Water Right or Injection Well No.

2. OWNER:

Name Dale Davis
Address 2672 N 300 W
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. 35 East ☒ or West ☒
Sec. 12 1/4 SE 1/4 NE 1/4
Govt Lot Grundy
Lat. : : Long. : :
Address of Well Site

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
<u>Bentonite</u>	<u>0</u>	<u>20</u>	<u>5 bags overbore</u>	

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 319

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Use	Welded	Threaded
<u>6"</u>	<u>0</u>	<u>319</u>	<u>200</u>	<u>steel</u>	☒	☐	☐	☐

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	Size	No. of	Diameter	Material	Casing	Use

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Filter Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

12. WELL TESTS:

Pump	Bailer	Air	Flowing Artesian
<u>30</u>			

Water Temp cold Bottom hole temp. cold

Water Quality test or comments: good

Depth first Water Encounter 140

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Box	From	To	Remarks: Lithology, Water Quality & Temperature	Water
8"	0	20	Brown clay	X
6"	20	140	Blue clay	X
6"	140	145	light sand	X
6"	145	190	Blue clay	X
6"	190	235	Brown clay	X
6"	235	237	gravel	X
6"	237	305	Brown clay little gravel	X
6"	305	315	gravel & clay	X
6"	315	319	gravel	Y
6"	319	330	gravel clay	Y

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AUG 19 2003

Department of Water Resources
Eastern Region

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SEP 09 2003

Department of Water Resources
Eastern Region

Completed Depth 319 (Measurable)

Date Started 7-30-03 Complete 8-2-03

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 Mike's Well Drilling Firm No. 543

Principal Driller Michael Frandsen Date 8-26-03

and Driller or Operator II Michael Frandsen Date 8-26-03

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 1-5 Well log for Dale Davis Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 7307
8/02

IDAH0 DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0026591

DRILLING PERMIT NO. 799740

Water Right or Injection Well No. 15

2. OWNER:

Name John Facer

Address 4025 W. 500S.

City Malad State Id Zip 83352

3. LOCATION OF WELL by legal description:

You must provide address or Loc. Blk. Sub. or Directions to well.

Twp 14 North ☐ or South ☒

Rge. 35 East ☒ or West ☐

Sec. 32 1/4 SW 1/4 NE 1/4

Gov't Lot 0 County Blaine

Lat: 44° 15' N Long: 111° 30' W

Address of Well Site Upper St John Rd.

City Malad

Li. 0 Blk. 0 Sub. Name 0

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
<u>Bentonite</u>	<u>0</u>	<u>30</u>	<u>10 bags overbore</u>	

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) 0

Was drive shoe seal tested? ☐ Y ☐ N How? 0

8. CASING/LINER:

Diameter	From	To	Grade	Material	Casing	Line	Welder	Threaded
<u>6"</u>	<u>0</u>	<u>380</u>	<u>250</u>	<u>Steel</u>	☒	☐	☐	☐

Length of Leadpipe 0 Length of Tailpipe 0

Packer ☐ Y ☐ N Type 0

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method Machine

Screen Type & Method of Installation 0

From	To	Size	Material	Diameter	Grade	Casing	Line
<u>255</u>	<u>280</u>	<u>1/4"</u>	<u>200</u>	<u>6"</u>	<u>Steel</u>	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

218 ft below ground Artesian pressure 0

Depth 'fcw' encountered 0 ft. Describe access port or control dev ccs. 0

Office Use Only
Well ID No. 0026591
Inspected by 0
Twp 14 Hge 35 Sec 32
Lat: 44° 15' N Long: 111° 30' W

12. WELL TESTS:

Yield gal/min	Drawdown	Pumping Level	Time
<u>25</u>			

Water Temp. cold Bottom hole temp. cold

Water Quality test or comments: 0

Depth first Water Encounter 135

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Depth (ft)	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>0</u>	<u>Brown Sandy clay</u>	☒	☐
<u>30</u>	<u>Grey clay</u>	☒	☐
<u>40</u>	<u>Grey clay</u>	☒	☐
<u>115</u>	<u>Brown clay</u>	☒	☐
<u>120</u>	<u>Grey clay</u>	☒	☐
<u>125</u>	<u>Brown clay</u>	☒	☐
<u>135</u>	<u>1/2 gravel Brown clay</u>	☒	☐
<u>140</u>	<u>Brown clay</u>	☒	☐
<u>145</u>	<u>gravel</u>	☒	☐
<u>200</u>	<u>Brown clay gravel</u>	☒	☐
<u>255</u>	<u>gravel sandy clay</u>	☒	☐
<u>280</u>	<u>gravel clay</u>	☒	☐

RECEIVED

MAY 06 2003

Department of Water Resources
Eastern Region

Completed Depth 380 (Measurable)
Date: Started 4-12-03 Completed 4-17-03

14. DRILLER'S CERTIFICATION

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

Company Name Mountain West Well Drilling Firm No. 543

Principal Driller Michael Frandson Date 5-1-03

Driller or Operator II Miles Frandson Date 5-1-03

Operator I 0 Date 0

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

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-6 Well log for John Facer Domestic Well



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 ☐ Bailor ☐ Flowing Artesian

1. WELL TAG NO. D 0014722
DRILLING PERMIT NO. 768016
Other IDWR No. _____
2. OWNER:
Name Marty Hill
Address 3225 N 2000 W
City Midland State ID Zip 83252

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

Map grid showing location:
Twp. 14 North or South S
Rge. 35 East or West E
Sec. 13 1/4 3E 1/4 3E 1/4
Gov't Lot _____ County Oneida
Lat _____ Long _____
Address of Well Site 31.5000 City _____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☒ Pharma ☐ 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 _____

SPILL-PROOF PACK		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	20	6	Over-Bore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 290
Was drive shoe seal tested? ☐ Y ☒ N How? _____

Disinfectant	From	To	Gauge	Material	Casing	Line	Welded	Threaded
6"	0	290	250	3700	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
Perforations Method _____
Screens Screen Type _____

From	To	Net Size	Number	Element	Material	Cas 12	in
		10/60				☐	11

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

11. WELL TESTS:

Yield, gpm	Drawdown	Pressure, lb./sq. in.	Time
30			

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

Depth first Water Encounter 20

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

Depth	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
0	0	20	Brown clay		
20	20	45	Brown clay & sand		
45	45	180	Blue clay		
180	180	200	Gravel		
200	200	220	Brown clay		
220	220	240	Brown clay & gravel		
240	240	280	Brown clay		
280	280	290	Gravel		
290	290	300	Brown clay		

Completed Depth 290' (Measurable)
Date Started 2-16-01 Completed 2-22-01

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 Clearwater Geosciences, LLP No. 543

Firm Official Michael Friedman Date 2-23-01

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

FORWARD WHITE COPY TO WATER RESOURCES

Figure I-7 Well log for Marty Hill Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 208-7
0/02

IDAH0 DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0045849
DRIILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Chet Keetch
Address Lot 5 S. East. Provo, ID.
City Provo State UT Zip 84601

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. 35 East ☒ or West ☐
Sec. 12 ☒ or ☐
Gov't Lot _____ County Blaine
Lat: _____ Long: _____
Address of Well Site 3450 W 2800 N
City Malad

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

5. TYPE OF WORK check all that apply (Check additional if not)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

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

7. SEALING PROCEDURES
Seal Material Pentonite From 0 To 250 Depth (feet)
Was drive shoe used? ☒ YN Seal Depth(s) 250
Was drive shoe seal tested? ☒ YN How? _____

8. CASING/LINER:
Casing From 0 To 250 Depth (feet)
Casing Material Steel Casing Size 6 Casing Weight 50
Length of Headpipe _____ Length of Tailpipe _____
Packer NY Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method Machine
Screen Type & Vendor of installation _____
Screen From 238 To 250 Depth (feet) Screen Size 4-1/4 Screen Weight 40 Casing Size 6 Casing Weight 50

10. FILTER PACK
Filter Material _____ From _____ To _____ Depth (feet)
Filter Size _____ Filter Weight _____

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
179' ft. below ground ☐ Artesian pressure ☐
Depth flow encountered _____ ft. Pressure (static) or level of discharge _____

Office Use Only
Well ID No. _____
Inspected by _____
Twp. _____ Rge. _____ Sec. _____
Lat. _____ Long. _____
☐ Flowing Artesian

12. WELL TESTS:

Direction	Flow Rate	Pressure
30		

Water Temp. 50°C Bottom Hole Temp. 10.4
Water Quality test or comments: good

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Log No.	From	To	Remarks	Water Quality & Temperature	Water
10	0	20	Br. clay		X
10	20	30	Br. clay		X
10	30	40	Br. clay		X
10	40	50	Br. clay		X
10	50	60	Br. clay		X
10	60	70	Br. clay		X
10	70	80	Br. clay		X
10	80	90	Br. clay		X
10	90	100	Br. clay		X
10	100	110	Br. clay		X
10	110	120	Br. clay		X
10	120	130	Br. clay		X
10	130	140	Br. clay		X
10	140	150	Br. clay		X
10	150	160	Br. clay		X
10	160	170	Br. clay		X
10	170	180	Br. clay		X
10	180	190	Br. clay		X
10	190	200	Br. clay		X
10	200	210	Br. clay		X
10	210	220	Br. clay		X
10	220	230	Br. clay		X
10	230	240	Br. clay		X
10	240	250	Br. clay		X

RECEIVED

JUN 13 2007

Department of Water Resources
Eastern Region

Completed Depth 250 (feet)
Date Started 5-16-07 Completed 5-17-07

14. DRILLER'S CERTIFICATION
We certify that all minimum well construction standards were complied with at the time the log was removed.
Company Name At. Woodruff Drilling Firm No. 5413
Principal Driller Michael Enayeh Date 5-20-07
Driller or Operator Mike Enayeh Date 5-20-07

Operator Mike Enayeh Date _____
Principal Driller and Rig Operator Required
Operator must have signature of Driller/Operator

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-8 Well log for Chet Keetch Domestic Well



IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT
Use Typewriter or Ballpoint Pen 66430

1. DRILLING PERMIT NO. 15-97-E-0028-100
Other IDWR No. _____

Name Gary Davis
Address 309 W Harrison Rd
City Malad State ID Zip #8252

Sketch map location must agree with written location.

Address of Web Site _____
City _____

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

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 260
Was drive shoe seal tested? ☒ Y ☐ N How? _____

Length of Headpipe _____ Length of Tailpipe _____

☒ Perforations Method Touch
☐ Screens Screen Type

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

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

Completion Depth 260 (Measurable)
Date Started 7-10-97 Completed 7-11-97

(Sign once: 1. If you are a user & operator)

Figure 1-9 Well log for Gary Davis Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
4/92

DMV

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

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.

RECEIVED
JUN 28 1993
USE TYPEWRITER OR
BALLPOINT PEN

1. WELL OWNER Name <u>Gary Davis</u> Address <u>Mailed 254 W - 2001</u> Drilling Permit No. <u>15-93E-003</u> Water Right Permit No. _____		7. WATER LEVEL Static water level <u>140</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ psi. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature <u>60</u> °F. Quality <u>100 G.P.M.</u> Describe artesian or temperature terms 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 ☐ Balier ☐ Air ☐ Other _____ <table border="1"><thead><tr><th>Discharge G.P.M.</th><th>Pumping Level</th><th>Hours Pumped</th></tr></thead><tbody><tr><td> </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 ☐ Monitor ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)		9. LITHOLOGIC LOG <u>20491</u> <table border="1"><thead><tr><th>Bore</th><th>Depth</th><th>Material</th><th>Water</th></tr><tr><th>Diam. From To</th><th>To</th><th></th><th>Yes No</th></tr></thead><tbody><tr><td>4 1/2 0</td><td>12</td><td>Clay</td><td>X</td></tr><tr><td>4 1/2 12</td><td>15</td><td>Clay</td><td>X</td></tr><tr><td>4 1/2 15</td><td>25</td><td>Clay</td><td>X</td></tr><tr><td>6 1/2 25</td><td>40</td><td>Quick sand</td><td>X</td></tr><tr><td>6 40</td><td>50</td><td>Clay</td><td> </td></tr><tr><td>6 50</td><td>180</td><td>Blue clay</td><td> </td></tr><tr><td>6 180</td><td>190</td><td>Gravel & sandstone</td><td>X</td></tr><tr><td>6 190</td><td>200</td><td>Blue clay</td><td>X</td></tr><tr><td>6 200</td><td>220</td><td>Gravel</td><td>X</td></tr></tbody></table>		Bore	Depth	Material	Water	Diam. From To	To		Yes No	4 1/2 0	12	Clay	X	4 1/2 12	15	Clay	X	4 1/2 15	25	Clay	X	6 1/2 25	40	Quick sand	X	6 40	50	Clay		6 50	180	Blue clay		6 180	190	Gravel & sandstone	X	6 190	200	Blue clay	X	6 200	220	Gravel	X
Bore	Depth	Material	Water																																												
Diam. From To	To		Yes No																																												
4 1/2 0	12	Clay	X																																												
4 1/2 12	15	Clay	X																																												
4 1/2 15	25	Clay	X																																												
6 1/2 25	40	Quick sand	X																																												
6 40	50	Clay																																													
6 50	180	Blue clay																																													
6 180	190	Gravel & sandstone	X																																												
6 190	200	Blue clay	X																																												
6 200	220	Gravel	X																																												
4. METHOD DRILLED ☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary ☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)		RECEIVED JUN 11 1993 Department of Water Resources Boise, Idaho 83720 FFR 08 1004																																													
5. WELL CONSTRUCTION Casing schedule: ☐ Steel ☐ Concrete ☐ Other _____ <table border="1"><thead><tr><th>Thickness</th><th>Diameter</th><th>From</th><th>To</th></tr></thead><tbody><tr><td>1/2 inch</td><td>6 inch</td><td>0</td><td>220 feet</td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><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 ☒ SC Torch ☐ Gun Size of perforation? <u>1/4</u> inches by <u>10</u> inches <table border="1"><thead><tr><th>Number</th><th>From</th><th>To</th></tr></thead><tbody><tr><td>30</td><td>perforations</td><td>200 feet</td></tr><tr><td> </td><td>perforations</td><td> </td></tr><tr><td> </td><td>perforations</td><td> </td></tr></tbody></table> 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>25</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: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between struts Describe access port <u>Top of well</u>				Thickness	Diameter	From	To	1/2 inch	6 inch	0	220 feet									Number	From	To	30	perforations	200 feet		perforations			perforations																	
Thickness	Diameter			From	To																																										
1/2 inch	6 inch			0	220 feet																																										
Number	From	To																																													
30	perforations	200 feet																																													
	perforations																																														
	perforations																																														
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 <u>W Harrison RD</u> <u>13</u> (give at least name of road) <u>SE 1/4 NE 1/4 Sec. 18</u> T. <u>14</u> N ☐ or S ☐ R. <u>25</u> E ☐ or W ☐		10. Work started <u>5-3-93</u> finished <u>5-11-93</u>																																													
11. DRILLER'S CERTIFICATION We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>L.W. Frazier, Inc.</u> Firm No. <u>354</u> Address <u>Lea ID</u> Date <u>5-12-93</u> Signed by Drilling Supervisor <u>L.W. Frazier</u> and (Operator) <u>Mike Frazier</u> (if different than the Drilling Supervisor)																																															

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

Figure 1-10 Well log for Gary Davis Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 239-7
11/99

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.		
24R	Flowing Artesian		

1. WELL TAG NO. D 0021724
DRILLING PERMIT NO. 771756
Other IDWR No. _____

2. OWNER:
Name Joe Davis
Address 311 Harrison Rd
City Malad State ID Zip 83252

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

N		E	
Twp <u>14</u>		North ☐ or South ☒	
Rge. <u>35</u>		East ☐ or West ☐	
Sec. <u>13</u>		1/4 <u>NE</u> 1/4 <u>NE</u> 1/4	
Gov. Lct _____		County <u>Ormside</u>	
St. _____		Long. _____	
Address of Well Site <u>311 Harrison Rd</u>		City <u>Malad</u>	

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

Material	From	To	ANJOAT Sacks or Pounds	METHOD
Bentonite	0	20	8	CV-41 Bore

Was drive shoe used? ☒ Yes ☐ No Shoe Depth: 200'
Was drive shoe seal tested? ☐ Yes ☐ No How? _____

8. CASING/LINER:

Casing	From	To	Size	Material	Casing	Inner	Welded	Threads
6"	0	210	350	ST-01	5"			

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Size	Number	Diameter	Material	Casing	Inner

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Well	Pump	Ball	Flow	Time
30				

Water Temp. cold Bottom hole temp. cold
Water Quality good Depth first Water Encounter 20

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Scale	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
8 1/2"	0	20	Gravel		X
6"	20	30	Sand & Clay		X
6"	30	180	Blue clay		X
6"	180	275	Brown clay		X
6"	275	280	Gravel		X

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DEC 13 2001

Completed Depth 200' (Measurable)
Date Started 10-23-01 Completed 10-27-01

13. DRILLER'S CERTIFICATION

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

Company Name Michael Frandson Drilling Firm No. 543
Firm Official Michael Frandson Date 11-15-01
and _____
Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-11 Well log for Joe Davis Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

15

1. WELL TAG NO. D 0002708

Drilling Permit No. _____

Water right or injection well # _____

2. OWNER: Steve Dredge

Name _____

Address 1918 N 3900 W

City Malad State ID Zip 83255

3. WELL LOCATION:

Twp. 14 North ☐ or South ☒ Rge. 35 East ☒ or West ☐

Sec. 13 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4

Gov't Lot _____ County Conrad

Lat. 42° 12' 28.6" (Dep. and Decimal minutes)

Long. 112° 08' 20.5" (Dep. and Decimal minutes)

Address of Well Site same

City Malad

From a hole drilled by _____

Lot _____ Blk _____ Sub. Name _____

4. USE:

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

☐ Other _____

6. TYPE OF WORK:

☐ New well ☐ Replacement well ☒ Modify existing well

☐ Abandonment ☐ Other _____

8. DRILL METHOD:

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

7. SEALING PROCEDURES:

Seal material _____ From (ft) _____ To (ft) _____ (Quantity (lb or ft)) _____

Sealing method(s) _____

8. CASING/LINER:

Diameter (nominal) _____ From (ft) _____ To (ft) _____

Gauge _____ Material _____

Casing Line _____ Type _____ Weight _____

Was drive shoe used? ☒ Yes ☐ No Shoe Depth(s) 320

9. PERFORATIONS/SCREENS:

Perforations ☒ Y ☐ N Method torch

Manufactured screen ☐ Y ☐ N Type _____

Method of installation _____

From (ft) _____ To (ft) _____ Slot size _____

Material _____ Diameter (nominal) _____

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☐ N Type _____

10. FILTER PACK:

Filter Material _____ From (ft) _____ To (ft) _____

Quantity (lb or ft) _____ 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) 208 Static water level (ft) 170

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

Describe access port 1/2" O.D.

Well test: _____ Test method: _____

Duration (hr) _____ Discharge (gpm) _____ Test duration (min) _____

Water quality test or comments: good

13. LITHOLOGIC LOG and/or repairs or abandonment:

Depth (ft) From (ft) To (ft) Remarks (lithology or description of repairs or abandonment, water tests, etc.)

5 200 210 Gravel ☒ Y ☐ N

5 210 213 Brn clay ☐ Y ☒ N

5 213 216 Gravel ☐ Y ☒ N

5 216 233 Brn clay ☐ Y ☒ N

5 233 243 Gravel ☒ Y ☐ N

5 243 260 Gravel ☒ Y ☐ N

5 260 270 Brn clay ☐ Y ☒ N

5 270 275 Gravel ☐ Y ☒ N

5 275 280 Brn clay ☐ Y ☒ N

5 280 310 Gravel ☐ Y ☒ N

5 310 320 Brn clay ☐ Y ☒ N

5 320 320 Gravel ☐ Y ☒ N

Completed Depth (Measurable): 320

Date Started: 8-28-12 Date Completed: 8-28-12

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 McKee Drilling No. 543

*Principal Driller Michael P. McKee Date 8-21-12

*Driller Philips P. McKee Date 8-21-12

*Operator II _____ Date _____

Operator I _____ Date _____

*Signature of Principal Driller and rig operator are required.

Figure 1-12 Well log for Steve Dredge Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 259-7
6/02 IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

1. WELL TAG NO. D 0045857
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Ramond Evans
Address 1950 N 3000 W
City Meridian State ID Zip 83452

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub or Directions to well
Twp 1S North E or South W
Rge 35 East 14 or West 14
Sec 13 1/4 14 1/4 15 1/4
Gov'l Lot _____ County Camden
Lat: _____ Long: _____
Address of Well Site 3000 W City _____
Li. _____ Blk. _____ Sub Number _____

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

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

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

7. SEALING PROCEDURES
Seal Material _____ From _____ To _____ Weight/Volume _____ Seal Placement Method _____

Was drive pipe used? ☒ Yes ☒ No Shoe Depth: _____
Was drive shoe used? ☒ Yes ☒ No How? _____

8. CASING/LINER:
Casing From _____ To _____ Size _____ Material _____ Casing Liner Weight/Volume _____ Threading _____
Length of Pipe/Line _____ Length of Pipe/Line _____
Packer ☒ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method machine
Screen Type & Method of Installation
From _____ To _____ Size _____ Material _____ Casing Liner _____
From _____ To _____ Size _____ Material _____ Casing Liner _____

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

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
22.7 ft below ground Artesian pressure _____ ft
Depth how encountered _____ ft Describe (pump or other) devices: _____

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

12. WELL TESTS:
Pump ☐ Bail ☒ Air ☐ Flowing Artesian ☐
Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Depth	From	To	Remarks: (All logs, Water Quality & Temperature)	Water
6-2800	2800	2805	Gravel clay gravel	X
6-2805	2805	2810	Gravel clay	X
6-2810	2810	2815	Gravel clay & gravel	X
6-2815	2815	2820	Gravel clay	X
6-2820	2820	2825	Gravel clay & gravel	X
6-2825	2825	2830	Gravel clay	X
6-2830	2830	2835	Gravel clay	X
6-2835	2835	2840	Gravel clay	X
6-2840	2840	2845	Gravel clay	X
6-2845	2845	2850	Gravel clay	X
6-2850	2850	2855	Gravel clay	X
6-2855	2855	2860	Gravel clay	X
6-2860	2860	2865	Gravel clay	X
6-2865	2865	2870	Gravel clay	X
6-2870	2870	2875	Gravel clay	X
6-2875	2875	2880	Gravel clay	X
6-2880	2880	2885	Gravel clay	X
6-2885	2885	2890	Gravel clay	X
6-2890	2890	2895	Gravel clay	X
6-2895	2895	2900	Gravel clay	X
6-2900	2900	2905	Gravel clay	X
6-2905	2905	2910	Gravel clay	X
6-2910	2910	2915	Gravel clay	X
6-2915	2915	2920	Gravel clay	X
6-2920	2920	2925	Gravel clay	X
6-2925	2925	2930	Gravel clay	X
6-2930	2930	2935	Gravel clay	X
6-2935	2935	2940	Gravel clay	X
6-2940	2940	2945	Gravel clay	X
6-2945	2945	2950	Gravel clay	X
6-2950	2950	2955	Gravel clay	X
6-2955	2955	2960	Gravel clay	X
6-2960	2960	2965	Gravel clay	X
6-2965	2965	2970	Gravel clay	X
6-2970	2970	2975	Gravel clay	X
6-2975	2975	2980	Gravel clay	X
6-2980	2980	2985	Gravel clay	X
6-2985	2985	2990	Gravel clay	X
6-2990	2990	2995	Gravel clay	X
6-2995	2995	3000	Gravel clay	X

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SEP 27 2007

Department of Water Resources
Bureau of Reclamation

Completed Depth 2955 (Minimum depth)
Date Started 6-28-07 Completed 6-29-07

14. DRILLER'S CERTIFICATION
We certify that all minimum well construction standards were complied with at the time the log was removed.

Company Name Michael Evans Drilling Firm No. 543
Principal Driller Michael Evans Date 7-15-07
Driller or Operator II Michael Evans Date 7-9-07

Operator _____ Date _____
Principal Driller and P.g. Operator Required
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-13 Well log for Ramond Evans Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 208-7

IDaho DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Well ID No. _____			
Inspected by _____			
Twp _____	Rge _____	Sec _____	
Lat _____	Long _____	Flowing Artesian _____	

1. WELL TAG NO. CCB20020
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

12. WELL TESTS:

Pump	10 Bar	100 Bar	Flowing Artesian	Time
40				

Water Temp 60 Bottom hole temp 60
Water Quality test or down hole _____

2. OWNER:

Name Steve Finner
Address 3500 W. Second
City Malden State ID Zip 83404

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub, or Directions to well.
Twp 14 North 1 East X South X
Rge 3 East X West X
Sec 13 NE 14 SE 14 SW 14
Govt Lot _____
County Conrad
Lat _____ Long _____
Address of Well Site same City _____

LL _____ Sub Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Mining ☐ Irrigation
☐ Industrial ☐ 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	Depth (feet)	Seal (feet) (feet)
<u>Benckite</u>	<u>0</u>	<u>10</u>	<u>10</u>	<u>10</u>

Was drive shoe used? Yes ☒ No ☐ Shot Depth(s) 295
Was drive shoe used under? ☒ Yes ☐ No ☐ How? _____

8. CASING/LINER:

Material	From	To	Depth (feet)	Weight (lb/ft)	Notes
<u>4" Galv Steel</u>	<u>0</u>	<u>295</u>	<u>295</u>	<u>10</u>	<u>X</u>

Length of Holepipe _____ Length of Tailpipe _____
Packer ☒ Y ☐ N Type _____

9. PERFORATIONS/SCREENS (PACKER TYPE)

Perforation Method None
Screen Type & Method of installation _____

From	To	Screen Size	Material	Weight	Notes

10. FILTER PACK

From	To	Material	Weight	Notes

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

23 ft. below ground ☒ Artesian pressure ☐
Depth now encountered _____ ft. Describe screen port or control device: _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Depth (ft)	Remarks: Lithology, Water Quality & Temperature	Y	N
0-30	Gravelly clay		
30-50	Gravelly clay		
50-75	Gravelly clay		
75-100	Gravelly clay		
100-125	Gravelly clay		
125-150	Gravelly clay		
150-175	Gravelly clay		
175-200	Gravelly clay		
200-225	Gravelly clay		
225-250	Gravelly clay		
250-275	Gravelly clay		
275-300	Gravelly clay		

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JUL 14 2004

Completed depth 295 (feet)
Date Started 6-15-04 Complete 6-16-04

14. DRILLER'S CERTIFICATION

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

Company Name Whitehill Drilling Permit No. 543

Principal Officer Michael Finner Date 6-20-04

Driller or Operator _____ Date _____

Operator _____ Date _____

Printed Driller and Rig Operator Required.
Operator must have signature of Under Officer or II.

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-14 Well log for Steve Finner Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-102
IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0034937
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER: Rone Gamble
Name _____
Address 1470 N. 3400 W
City Malad State ID Zip 83255

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. 35 East ☒ or West ☐
Sec. 13 1/4 1/4 1/4 1/4
Gov't Lot _____
County Blaine
Lat: _____ Long: _____
Address of Well Site same City _____
LL _____ 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 Part 0 To 50 Weight Volume Seal Placement Method overbit
Was drive shoe used? ☒ Y ☐ N Liner Shoe Depth(s) 290
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:
Diameter From To Gauge Material Group Line Valved Threaded
6" 0 290 28 Steel A 1 1 1 1
Length of Headpipe _____ Length of Tailpipe _____
Packer C Y N Type _____

9. PERFORATIONS/SCREENS/PACKER TYPE
Perforation Method for ch
Screen Type & Method of Installation
From To Screen Size Number Denom Material Conn. Type Line
25 290 1/4" 35 1" Steel 1 1 1 1

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

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
☒ 2 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe source point or control device: _____

12. WELL TESTS:
☐ Pump ☐ Baker ☐ Air ☐ Flowing Artesian
Yield gal/min _____ Drawdown _____ Pumping Level _____ Time _____
Water Temp cold Bottom hole temp 54.8
Water Quality test or comments: good

13. LITHOLOGIC LOG: (Describe repairs or abandonment)
Depth First Water Encounter 30
Remarks: Lithology, Water Quality & Temperature
Y N
1" 0 20 Sandy, clay, brown X
1" 20 40 Sand, clay, brown X
1" 40 60 Blue clay X
1" 60 80 Gravel, clay, brown X
1" 80 100 Gravel, brown clay X
1" 100 120 Bottom clay X
1" 120 140 Coarse sand, clay X
1" 140 160 Coarse sand, clay X
1" 160 180 Coarse sand, clay X
1" 180 200 Coarse sand, clay X
1" 200 220 Coarse sand, clay X
1" 220 240 Coarse sand, clay X
1" 240 260 Coarse sand, clay X
1" 260 280 Coarse sand, clay X
1" 280 300 Coarse sand, clay X
1" 300 320 Coarse sand, clay X
1" 320 340 Coarse sand, clay X
1" 340 360 Coarse sand, clay X
1" 360 380 Coarse sand, clay X
1" 380 400 Coarse sand, clay X
1" 400 420 Coarse sand, clay X
1" 420 440 Coarse sand, clay X
1" 440 460 Coarse sand, clay X
1" 460 480 Coarse sand, clay X
1" 480 500 Coarse sand, clay X
1" 500 520 Coarse sand, clay X
1" 520 540 Coarse sand, clay X
1" 540 560 Coarse sand, clay X
1" 560 580 Coarse sand, clay X
1" 580 600 Coarse sand, clay X
1" 600 620 Coarse sand, clay X
1" 620 640 Coarse sand, clay X
1" 640 660 Coarse sand, clay X
1" 660 680 Coarse sand, clay X
1" 680 700 Coarse sand, clay X
1" 700 720 Coarse sand, clay X
1" 720 740 Coarse sand, clay X
1" 740 760 Coarse sand, clay X
1" 760 780 Coarse sand, clay X
1" 780 800 Coarse sand, clay X
1" 800 820 Coarse sand, clay X
1" 820 840 Coarse sand, clay X
1" 840 860 Coarse sand, clay X
1" 860 880 Coarse sand, clay X
1" 880 900 Coarse sand, clay X
1" 900 920 Coarse sand, clay X
1" 920 940 Coarse sand, clay X
1" 940 960 Coarse sand, clay X
1" 960 980 Coarse sand, clay X
1" 980 1000 Coarse sand, clay X
1" 1000 1020 Coarse sand, clay X
1" 1020 1040 Coarse sand, clay X
1" 1040 1060 Coarse sand, clay X
1" 1060 1080 Coarse sand, clay X
1" 1080 1100 Coarse sand, clay X
1" 1100 1120 Coarse sand, clay X
1" 1120 1140 Coarse sand, clay X
1" 1140 1160 Coarse sand, clay X
1" 1160 1180 Coarse sand, clay X
1" 1180 1200 Coarse sand, clay X
1" 1200 1220 Coarse sand, clay X
1" 1220 1240 Coarse sand, clay X
1" 1240 1260 Coarse sand, clay X
1" 1260 1280 Coarse sand, clay X
1" 1280 1300 Coarse sand, clay X
1" 1300 1320 Coarse sand, clay X
1" 1320 1340 Coarse sand, clay X
1" 1340 1360 Coarse sand, clay X
1" 1360 1380 Coarse sand, clay X
1" 1380 1400 Coarse sand, clay X
1" 1400 1420 Coarse sand, clay X
1" 1420 1440 Coarse sand, clay X
1" 1440 1460 Coarse sand, clay X
1" 1460 1480 Coarse sand, clay X
1" 1480 1500 Coarse sand, clay X
1" 1500 1520 Coarse sand, clay X
1" 1520 1540 Coarse sand, clay X
1" 1540 1560 Coarse sand, clay X
1" 1560 1580 Coarse sand, clay X
1" 1580 1600 Coarse sand, clay X
1" 1600 1620 Coarse sand, clay X
1" 1620 1640 Coarse sand, clay X
1" 1640 1660 Coarse sand, clay X
1" 1660 1680 Coarse sand, clay X
1" 1680 1700 Coarse sand, clay X
1" 1700 1720 Coarse sand, clay X
1" 1720 1740 Coarse sand, clay X
1" 1740 1760 Coarse sand, clay X
1" 1760 1780 Coarse sand, clay X
1" 1780 1800 Coarse sand, clay X
1" 1800 1820 Coarse sand, clay X
1" 1820 1840 Coarse sand, clay X
1" 1840 1860 Coarse sand, clay X
1" 1860 1880 Coarse sand, clay X
1" 1880 1900 Coarse sand, clay X
1" 1900 1920 Coarse sand, clay X
1" 1920 1940 Coarse sand, clay X
1" 1940 1960 Coarse sand, clay X
1" 1960 1980 Coarse sand, clay X
1" 1980 2000 Coarse sand, clay X
1" 2000 2020 Coarse sand, clay X
1" 2020 2040 Coarse sand, clay X
1" 2040 2060 Coarse sand, clay X
1" 2060 2080 Coarse sand, clay X
1" 2080 2100 Coarse sand, clay X
1" 2100 2120 Coarse sand, clay X
1" 2120 2140 Coarse sand, clay X
1" 2140 2160 Coarse sand, clay X
1" 2160 2180 Coarse sand, clay X
1" 2180 2200 Coarse sand, clay X
1" 2200 2220 Coarse sand, clay X
1" 2220 2240 Coarse sand, clay X
1" 2240 2260 Coarse sand, clay X
1" 2260 2280 Coarse sand, clay X
1" 2280 2300 Coarse sand, clay X
1" 2300 2320 Coarse sand, clay X
1" 2320 2340 Coarse sand, clay X
1" 2340 2360 Coarse sand, clay X
1" 2360 2380 Coarse sand, clay X
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1" 2420 2440 Coarse sand, clay X
1" 2440 2460 Coarse sand, clay X
1" 2460 2480 Coarse sand, clay X
1" 2480 2500 Coarse sand, clay X
1" 2500 2520 Coarse sand, clay X
1" 2520 2540 Coarse sand, clay X
1" 2540 2560 Coarse sand, clay X
1" 2560 2580 Coarse sand, clay X
1" 2580 2600 Coarse sand, clay X
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1" 2880 2900 Coarse sand, clay X
1" 2900 2920 Coarse sand, clay X
1" 2920 2940 Coarse sand, clay X
1" 2940 2960 Coarse sand, clay X
1" 2960 2980 Coarse sand, clay X
1" 2980 3000 Coarse sand, clay X
1" 3000 3020 Coarse sand, clay X
1" 3020 3040 Coarse sand, clay X
1" 3040 3060 Coarse sand, clay X
1" 3060 3080 Coarse sand, clay X
1" 3080 3100 Coarse sand, clay X
1" 3100 3120 Coarse sand, clay X
1" 3120 3140 Coarse sand, clay X
1" 3140 3160 Coarse sand, clay X
1" 3160 3180 Coarse sand, clay X
1" 3180 3200 Coarse sand, clay X
1" 3200 3220 Coarse sand, clay X
1" 3220 3240 Coarse sand, clay X
1" 3240 3260 Coarse sand, clay X
1" 3260 3280 Coarse sand, clay X
1" 3280 3300 Coarse sand, clay X
1" 3300 3320 Coarse sand, clay X
1" 3320 3340 Coarse sand, clay X
1" 3340 3360 Coarse sand, clay X
1" 3360 3380 Coarse sand, clay X
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1" 3980 4000 Coarse sand, clay X
1" 4000 4020 Coarse sand, clay X
1" 4020 4040 Coarse sand, clay X
1" 4040 4060 Coarse sand, clay X
1" 4060 4080 Coarse sand, clay X
1" 4080 4100 Coarse sand, clay X
1" 4100 4120 Coarse sand, clay X
1" 4120 4140 Coarse sand, clay X
1" 4140 4160 Coarse sand, clay X
1" 4160 4180 Coarse sand, clay X
1" 4180 4200 Coarse sand, clay X
1" 4200 4220 Coarse sand, clay X
1" 4220 4240 Coarse sand, clay X
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1" 4280 4300 Coarse sand, clay X
1" 4300 4320 Coarse sand, clay X
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1" 4960 4980 Coarse sand, clay X
1" 4980 5000 Coarse sand, clay X
1" 5000 5020 Coarse sand, clay X
1" 5020 5040 Coarse sand, clay X
1" 5040 5060 Coarse sand, clay X
1" 5060 5080 Coarse sand, clay X
1" 5080 5100 Coarse sand, clay X
1" 5100 5120 Coarse sand, clay X
1" 5120 5140 Coarse sand, clay X
1" 5140 5160 Coarse sand, clay X
1" 5160 5180 Coarse sand, clay X
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1" 6080 6100 Coarse sand, clay X
1" 6100 6120 Coarse sand, clay X
1" 6120 6140 Coarse sand, clay X
1" 6140 6160 Coarse sand, clay X
1" 6160 6180 Coarse sand, clay X
1" 6180 6200 Coarse sand, clay X
1" 6200 6220 Coarse sand, clay X
1" 6220 6240 Coarse sand, clay X
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Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

065570

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

1. DRILLING PERMIT NO. 15-48 E-0039
Other IDWR No. D0006174

2. OWNER:
Name: TIM MORRIS
Address: 1950 N 3400W
City: MARIAB State: ID

3. LOCATION OF WELL by legal description:

Sketch map locator must agree with written location

N		Twp. <u>14S</u> North ☐ or South ☐	
E		High <u>35E</u> East ☐ or West ☐	
S		Sec. <u>13</u> NE 1/4 NE 1/4 1/4	
W		Cont. Lnt. _____ County _____	
E		Lat. _____ Long. _____	
S		Address of Well Site: <u>SAME AS ABOVE</u>	
W		City, _____	

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

SEALING PACK	AMOUNT	METHOD
Material From To	Sacks or Pounds	
<u>Bentonite</u> <u>0</u> <u>20</u>	<u>6 shks</u>	<u>POURED</u>

Was drive shoe used? ☒ N Shoe Depth(s) 200-25
Was drive shoe seal tested? ☒ N How? _____

8. CASING/LINER:
Discharge From To Grout Material Casing J-Box We-Box Threaded
<u>6"</u> <u>1</u> <u>200</u> <u>25</u> _____ <u>7</u> <u>U</u> <u>U</u> <u>U</u>

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method _____
☐ Screens Screen Type _____

Form	To	Slot Size	Number	Material	Setting	Line

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Vertical Test	Drawdown	Pumping Level	Time
<u>20</u>	<u>25"</u>	<u>170</u>	<u>2 hrs.</u>

Water Temp. 40 Bottom hole temp 30

Water Quality test or comments _____

Depth first Water Encountered 30

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Depth	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>0-20</u>	<u>TOP SOIL - SANDY</u>	☒	☒
<u>20-30</u>	<u>SAND BROWN</u>	☒	☒
<u>30-50</u>	<u>SAND - WATER</u>	☒	☒
<u>50-61</u>	<u>SAND - BROWN</u>	☒	☒
<u>61-70</u>	<u>BLUE SAND</u>	☒	☒
<u>70-110</u>	<u>BLUE SANDY CLAY</u>	☒	☒
<u>110-135</u>	<u>BLUE SANDY CLAY</u>	☒	☒
<u>135-138</u>	<u>CLAY</u>	☒	☒
<u>138-150</u>	<u>DARK CLAY</u>	☒	☒
<u>150-155</u>	<u>DARK SANDY CLAY</u>	☒	☒
<u>155-165</u>	<u>DARK CLAY</u>	☒	☒
<u>165-180</u>	<u>BLUE SANDY CLAY</u>	☒	☒
<u>180-190</u>	<u>GRAVEL - WATER</u>	☒	☒
<u>190-300</u>	<u>GRAVEL</u>	☒	☒

RECEIVED

SEP 22 1998

Department of Water Resources
Eastern Region

RECEIVED

OCT 19 1998

Department of Water Resources

Completed Depth 200 yds (Measurable)
Date Started 9/15/98 Completed 9/21/98

13. DRILLER'S CERTIFICATION

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

Firm Name A&I Well Drilling Firm No. 285

Firm Official Lance Adams Date 9/21/98

and Supervisor or Operator Tony Adams Date 9/21/98

(Sign once if Firm Licensed & Operating)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-16 Well log for Tim Morris Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
1-177

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only		
Inspected by	Twp	Age
	1/4	1/4
	Long	

1. WELL TAG NO. D 0014719
DRILLING PERMIT NO. 7627679
Other IDWR No. _____

2. OWNER:
Name Steven + Jackie Stayner
Address 3130 W 2000 N
City Meridian State ID Zip 83252

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

Twp. <u>14</u>	North <u>-</u> or South <u>S</u>
Rgs. <u>35</u>	East <u>E</u> or West <u>-</u>
Sec. <u>13</u>	<u>NE</u> 1/4 <u>NE</u> 1/4 <u>NE</u> 1/4
Gov't Lot _____	COUNTY <u>Cassia</u>
Lat. _____	Long. _____
Address of Well Site _____	
City _____	

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

SEALING PACK	AMOUNT	METHOD
Material	From To	Shots or Pounds
<u>Bentonite</u>	<u>0</u> <u>30</u>	<u>8</u>
		<u>Cement Grout</u>

Was drive shoe used? ☒ Yes ☐ No Shoe Depth(s) 290
Was drive shoe seal tested? ☐ Yes ☐ No How? _____

8. CASING/LINER:

Casing	From	To	Gauge	Material	Casing	Welder	Threaded
<u>6"</u>	<u>0</u>	<u>290</u>	<u>250</u>	<u>Steel</u>	☒	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method _____
Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Thread
<u>280</u>	<u>290</u>	<u>7x6</u>	<u>20</u>	<u>6"</u>	<u>Steel</u>	☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Pump	Bailer	Flowing Artesian
☒	☐	☐

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Depth	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>0</u>	<u>30</u>		<u>Brown clay & sand</u>	☒	☐
<u>30</u>	<u>140</u>		<u>Gray clay</u>	☐	☒
<u>140</u>	<u>150</u>		<u>Gray clay & gravel</u>	☐	☒
<u>150</u>	<u>190</u>		<u>Clay & gravel</u>	☐	☒
<u>190</u>	<u>191</u>		<u>Clay & gravel</u>	☒	☐
<u>191</u>	<u>200</u>		<u>Clay & gravel</u>	☐	☒
<u>200</u>	<u>230</u>		<u>Gravel & sandstone</u>	☐	☒
<u>230</u>	<u>240</u>		<u>Gravel & clay</u>	☐	☒
<u>240</u>	<u>250</u>		<u>Gravel</u>	☐	☒
<u>250</u>	<u>255</u>		<u>Clay & gravel</u>	☐	☒
<u>255</u>	<u>260</u>		<u>Gravel</u>	☒	☐
<u>260</u>	<u>270</u>		<u>Brown clay</u>	☐	☒
<u>270</u>	<u>290</u>		<u>Gravel</u>	☒	☐

RECEIVED

FEB 27 2001

Department of Water Resources
Eastern Region

Completed Depth 290 (Measurable)
Date: Started 12-12-00 Completed 12-20-00

13. DRILLER'S CERTIFICATION

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

Company Name Mountain Well Drilling Firm No. 543

Firm Official Michael T. Anderson Date 12-20-00

Driller or Operator _____ Date _____

(Signature of Firm Official & Cooperator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-17 Well log for Steven Stayner Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 728 7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

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.

USE TYPEWRITER OR
BULEPOINT PEN

1. WELL OWNER Name <u>Grant Weeks</u> Address <u>Madad Idaho</u> Owner's Permit No. <u>15 7029</u>		7. WATER LEVEL Static water level <u>12</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Arterial closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality _____																																																																							
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____		8. WELL TEST DATA ☐ Pump ☐ Bailers ☐ Air ☐ Other _____																																																																							
3. PROPOSED USE ☐ Domestic ☒ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or injection ☐ Other _____ (specify type)		<table border="1"><thead><tr><th>Discharge G.P.M.</th><th>Pumping Level</th><th>Hours Pumped</th></tr></thead><tbody><tr><td><u>616</u></td><td><u>2.45'</u></td><td><u>10 1/2</u></td></tr></tbody></table>		Discharge G.P.M.	Pumping Level	Hours Pumped	<u>616</u>	<u>2.45'</u>	<u>10 1/2</u>																																																																
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4. METHOD DRILLED ☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary ☒ Cable ☐ Plug ☐ Other _____		9. LITHOLOGIC LOG <u>88793</u> <table border="1"><thead><tr><th>Hole Diam.</th><th>Depth From</th><th>To</th><th>Material</th><th>Water Yes/No</th></tr></thead><tbody><tr><td>14"</td><td>0</td><td>5'</td><td>Sand</td><td>X</td></tr><tr><td>14"</td><td>5</td><td>20</td><td>ASH</td><td>X</td></tr><tr><td>12"</td><td>20</td><td>150</td><td>Volcanic ash</td><td></td></tr><tr><td>12"</td><td>150</td><td>195</td><td>ASH, sand, gravel consolidated</td><td></td></tr><tr><td>12"</td><td>195</td><td>223</td><td>Brown clay + gravel</td><td>X</td></tr><tr><td>12"</td><td>223</td><td>238</td><td>Gravel</td><td></td></tr><tr><td>12"</td><td>238</td><td>278</td><td>Brown clay + gravel</td><td></td></tr><tr><td></td><td>278</td><td>278</td><td>Sandstone</td><td></td></tr><tr><td></td><td>278</td><td>283</td><td>Sand & clay</td><td>X</td></tr><tr><td></td><td>283</td><td>288</td><td>Gravel</td><td></td></tr><tr><td></td><td>288</td><td>298</td><td>Brandy sticky clay</td><td></td></tr><tr><td></td><td>298</td><td>313</td><td>Hard sandstone</td><td></td></tr><tr><td></td><td>313</td><td>320</td><td>Soft sand + gravel</td><td></td></tr></tbody></table>		Hole Diam.	Depth From	To	Material	Water Yes/No	14"	0	5'	Sand	X	14"	5	20	ASH	X	12"	20	150	Volcanic ash		12"	150	195	ASH, sand, gravel consolidated		12"	195	223	Brown clay + gravel	X	12"	223	238	Gravel		12"	238	278	Brown clay + gravel			278	278	Sandstone			278	283	Sand & clay	X		283	288	Gravel			288	298	Brandy sticky clay			298	313	Hard sandstone			313	320	Soft sand + gravel	
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	298	313	Hard sandstone																																																																						
	313	320	Soft sand + gravel																																																																						
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ <table border="1"><thead><tr><th>Thickness</th><th>Diameter</th><th>From</th><th>To</th></tr></thead><tbody><tr><td><u>250</u> inches</td><td><u>14</u> inches</td><td><u>0</u> feet</td><td><u>20</u> feet</td></tr><tr><td><u>250</u> inches</td><td><u>12</u> inches</td><td><u>0</u> feet</td><td><u>223</u> feet</td></tr><tr><td><u>250</u> inches</td><td><u>10</u> inches</td><td><u>210</u> feet</td><td><u>320</u> feet</td></tr></tbody></table> Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☒ Yes ☐ No How perforated? ☒ Factory ☐ Knife ☐ Torch Size of perforation <u>3/8</u> inches by <u>3 1/2</u> inches Number of perforations <u>20</u> feet <u>223</u> feet <u>1238</u> perforations <u>210</u> feet <u>223</u> feet <u>210</u> perforations <u>210</u> feet <u>320</u> feet Well screen installed? ☐ Yes ☐ No Manufacturer's name _____ Type _____ 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 _____ Placed from _____ feet to _____ feet Surface seal depth <u>20</u> Material used in seal: ☐ Cement grout ☒ Pudding clay ☐ Well cuttings Sealing procedure used: ☒ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port <u>PUMP BASE</u>		Thickness	Diameter	From	To	<u>250</u> inches	<u>14</u> inches	<u>0</u> feet	<u>20</u> feet	<u>250</u> inches	<u>12</u> inches	<u>0</u> feet	<u>223</u> feet	<u>250</u> inches	<u>10</u> inches	<u>210</u> feet	<u>320</u> feet																																																								
Thickness	Diameter	From	To																																																																						
<u>250</u> inches	<u>14</u> inches	<u>0</u> feet	<u>20</u> feet																																																																						
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<u>250</u> inches	<u>10</u> inches	<u>210</u> feet	<u>320</u> feet																																																																						
6. LOCATION OF WELL Sketch of location must agree with written location.  Subdivision Name _____ Lot No. _____ Block No. _____ County <u>ONEIDA</u> <u>NW 1/4 NE 1/4 Sec. 13 T. 14S R. 35E W. 8N.</u>		10. Work started <u>July 20</u> finished <u>Aug 20-81</u>																																																																							
11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Stan Lloyd Drilling</u> Firm No. <u>294</u> Address <u>ELBA, Idaho</u> <u>PO Box 294</u> Signed by (Firm Official) <u>Stan Lloyd</u> and <u>Tom Lloyd</u> (Operator)																																																																									

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

Figure 1-19 Well log for Grant Weeks Irrigation Well



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 D0014723
DRILLING PERMIT NO. 768047
Other IDWR No. _____

2. OWNER:
Name Sid Williams
Address 4514 Country Lane RD.
City Salt Lake City State UT Zip 84117

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

Two: 14S North ☐ or South 38
Rge 35E East DC or West ☐
Sec. 13 1/4 NE 1/4 NE 1/4
Gov't Lot _____ County _____
Lat: _____ Long: _____
Address of Well Site 3250W 2000W
City MAHARD

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

SEA-FLYER PACK	AMOUNT	METHOD
Materials From To Sacks or Pounds		
<u>Benlate</u> <u>0</u> <u>50</u> <u>5</u>		<u>On site</u>

Was drive shoe used? ☒ N ☐ S Shoe Depth(s) 290
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Disaster	From	To	Gauge	Use at	Casing	Line	Welded	Treaded
<u>6"</u>	<u>0</u>	<u>290</u>	<u>128</u>	<u>Steel</u>	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method _____
Screens Screen Type _____

From	To	Shot Size	Number	Material	Casing	Line
				<u>None</u>	☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal/hr	Drawdown	Pumping Loss	Time
<u>35</u>			

Water Temp. cold Bottom hole temp. cold
Water Quality test or comments good
Depth first Water Encounter 194'

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

Bore	From	To	Remarks: Lithology Water Quality & Temperature	Y	h
<u>32"</u>	<u>0</u>	<u>20</u>	<u>Brown clay</u>		☒
<u>6"</u>	<u>20</u>	<u>40</u>	<u>Brown clay</u>		☒
<u>6"</u>	<u>40</u>	<u>124</u>	<u>Blue clay</u>		☒
<u>6"</u>	<u>124</u>	<u>200</u>	<u>Gravel</u>		☒
<u>6"</u>	<u>200</u>	<u>230</u>	<u>Brown clay & Gravel</u>		☒
<u>6"</u>	<u>230</u>	<u>250</u>	<u>Brown clay</u>		☒
<u>6"</u>	<u>250</u>	<u>285</u>	<u>Gravel & Brown clay</u>		☒
<u>6"</u>	<u>285</u>	<u>300</u>	<u>Brown clay</u>		☒
<u>6"</u>	<u>300</u>	<u>320</u>	<u>Gravel</u>		☒

RECEIVED

2-23-01

Completed Depth 290' (Measurable)
Date Started 2-23-01 Completed 2-28-01

13. DRILLER'S CERTIFICATION

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

Company Name Mountain View Drilling Co. No. 5413

Firm Official Michael Zander Date 2-28-01

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

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-20 Well log for Sidney Williams Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. WELL TAG NO. D 00032023
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER: Kevin Degen
Name _____
Address 2075 W 1000 N
City Malden State ID Zip 83450

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp 14 North 14 or South 14
Rgo 26 East 26 or West 26
Sec. 13 1/4 SE 1/4 86 1/4
Gov. Lot _____ County Oneida
Lat. _____ Long. _____
Address of Well Site Lower St John Rd
City Malden

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 Water to _____ In _____ In _____
Weight Volume _____ Seal Material/Sealant
Bentonite 0 20 8 bags overbore
Was drive shoe used? ☒ Y ☐ N Drive Depth (ft) 257
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:
Junction _____ From _____ To _____ Gauge _____ Material _____ Casing _____ Liner _____
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 _____ Size (in) _____ Material _____ Casing _____ Liner _____

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

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

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)

Base (ft.)	From (ft.)	To (ft.)	Remarks: Lithology, Water Quality & Temperature	Water
				Y N
10	0	20	Brown clay	X
6	20	65	Brown clay	X
6	65	70	grey clay	X
6	70	95	grey clay gravel	X
6	95	100	gravel	
6	100	108	Brown clay	X
6	108	135	gravel Brown clay	X
6	135	140	gravel	X
6	140	165	Brown clay	X
6	165	180	Gravel cleft Brown	X
6	180	220	Brown clay	X
6	220	232	gravel Brown clay	X
6	232	257	Brown clay	X
6	257	260	gravel	X

Completed Depth 257 (Measured)
Date Started 11-11-03 Completed 11-12-03

14. DRILLER'S CERTIFICATION
We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Mike West Well Drilling Firm No. 543
Principal Driller Michael Franzen Date 11-16-03
and Driller or Operator II Mike Franzen Date 11-15-03
Operator _____ Date _____
Principal Driller and Rig Operator Required
Operator I must have a grade of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-21 Well log for Kevin Degen Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 2387
0/02 **DMD**

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

15

Office Use Only
Well ID No. _____
Inspected by _____
Twp 14S Rge 36E Sec 18
Lat: 1/4 SE 1/4 SW 1/4
Long: _____

1. WELL TAG NO. D 000-27890
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER: KHALIL MONSON
Name _____
Address 2555 1000 NORTH
City MAIA State ID

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk. Sub. or Directions to well.
Twp. 36 North 11 or South 1
Rge. 14 East 2 or West 1
Sec. 18 1/4 SE 1/4 SW 1/4
Gov't Lot _____
County BENTON
Lat: _____ Long: _____
Address of Well Site SAME
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	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	50	12	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	Threads
8	1	136	120	Steel	☒	☐	☐	☐
6	136	150	120	Steel	☐	☐	☐	☐

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	Inner
<u>None</u>							

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
<u>None</u>				

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

12. WELL TESTS:

Well ga/Lm/s	Drawdown	Pumping Level	Time
10-15		180	2 hrs.

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

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

Well Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
12.0	50	136	CLAY		
8.5	136	150	CLAY		
12.0	150	160	CLAY & ROCK		
6.0	160	180	CLAY		
15.0	180	190	SAND GRAVEL		

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NOV 29 2004
Department of Water Resources
Eastern Region

SCANNED
DEC 20 2004

Completed Depth 190 (Measurable)
Date: Started 6-25-04 Completed 11-01-04

14. DRILLER'S CERTIFICATION

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

Company Name Lundstrom well drilling
Principal Driller Arne Lundstrom Date 11-1-04
and _____
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 1-22 Well log for Khalil Monson Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Firm No. 106
095
BMD

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

057166

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

1. DRILLING PERMIT NO. 15-96-E-1026 QQQ
Other IDWR No. _____

2. OWNER:
Name Sylvester Reed
Address 1905 W 1500 N
City MALAD State WY Zip 83252

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

N		Twp. <u>14</u> North <u> </u> or South <u>X</u>	
E		Rge. <u>36</u> East <u>X</u> or West <u> </u>	
S		Sec. <u>18</u> 1/4 <u>SW</u> 1/4 <u>NW</u> 1/4	
W		Govt Lot _____ County <u>ONEIDA</u> 100 acres	
		Long. _____	
Address of Well Site _____			
City _____			

(Draw at least 1/4 inch = 1 mile - Distance to Road 0.125 miles)

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		REMARKS
Meters	From	To	Backs or 27-700s	
<u>RAKITIC</u>	<u>0</u>	<u>30</u>	<u>32</u>	<u>RAIS AROUND</u> <u>OUTLET HOLE</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 179'
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Inner	Weight	Thickness
<u>6"</u>	<u>1</u>	<u>179</u>	<u>250</u>	<u>STEEL</u>	<u>X</u>	☐	<u>X</u>	<u> </u>

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations		Screens		Casing	Inner
Method	Screen Type	Method	Screen Type		
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

146 ft below ground Artesian pressure 10'
Depth flow encountered 179' Describe access port or control devices: _____

11. WELL TESTS:

Yield gal/min	Drawdown	Pumping Level	Time
<u>30</u>	<u> </u>	<u>180</u>	<u>2 HRS</u>

Water Temp COLD Bottom hole temp COLD
Water Quality test or comments Good

Depth first Water Encountered 27'
12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>0</u>	<u>20</u>	<u>BROWN CLAY</u>	<u> </u>	<u> </u>
<u>20</u>	<u>32</u>	<u>BLUE CLAY GRAVEL</u>	<u>X</u>	<u> </u>
<u>32</u>	<u>71</u>	<u>BROWN & BLUE CLAY GRAVEL</u>	<u>X</u>	<u> </u>
<u>71</u>	<u>92</u>	<u>COLORED GRAVEL</u>	<u>X</u>	<u> </u>
<u>92</u>	<u>96</u>	<u>BROWN CLAY</u>	<u>X</u>	<u> </u>
<u>96</u>	<u>109</u>	<u>BLUE CLAY GRAVEL</u>	<u>X</u>	<u> </u>
<u>109</u>	<u>120</u>	<u>BLUE CLAY</u>	<u>X</u>	<u> </u>
<u>120</u>	<u>138</u>	<u>BROWN SANDSTONE</u>	<u>X</u>	<u> </u>
<u>138</u>	<u>150</u>	<u>MUDDY GRAVEL</u>	<u>X</u>	<u> </u>
<u>150</u>	<u>168</u>	<u>COLORAD GRAVEL FILM</u>	<u>X</u>	<u> </u>
<u>168</u>	<u>180</u>	<u>LARGE GRAVEL SAND</u>	<u>X</u>	<u> </u>
<u>180</u>	<u>200</u>	<u>CORAL ROCK GRAVEL</u>	<u>X</u>	<u> </u>

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NOV 01 1996

RECEIVED

Department of Water Resources

OCT 24 1996

Department of Water Resources
Eastern Region

MICROFILMED

DEC 06 1996

Completed Depth 180' (Measurable)
Date Started 10-15-96 Completed 10-22-96

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 INTEL-MT. DRILL Firm No. 106
Without Signature UCC 1-207

Firm Official Steve Fennell Date 10-23-96
and Without Signature UCC 1-207

Supervisor or Operator _____ Date _____

(Sign name & Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-23 Well log for Sylvester Reed Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 133-7
1/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT
Use Typewriter or Ballpoint Pen

058445

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

1. DRILLING PERMIT NO. 15-97-E-0001-000
Other IDWR No _____

2. OWNER:

Name Roy & Cindy Johnson
Address 3255 100 W.
City Malad City State IDAHO

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location

N W E S	1 2 3 4	Twp. <u>14</u>	North <u>L</u> or South <u>S</u>
		Rge. <u>36</u>	East <u>1/4</u> or West <u>1/4</u>
		Sec. <u>7</u>	1/4 <u>NE</u> 1/4 <u>NE</u> 1/4
		Govt Lot _____	County <u>Owyhee</u>
Lat: _____ Long: _____		Address of Well Site <u>3100 W</u>	
(0 is at back corner of road - Distance to Road or Landmark)		City <u>Malad</u>	

Lt. _____ Dik. _____ Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Mining ☐ 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/LT/ER PACK			AMOUNT Bags or Pounds	METHOD
Material	From	To		
<u>Bentonite</u>	<u>0</u>	<u>20</u>	<u>4</u>	<u>Over Bore</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 200'

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Inner	We had	Two spec
<u>6"</u>	<u>0</u>	<u>200</u>	<u>25</u>	<u>Steel</u>	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	U-Anchor	Material	Casing	Inner
<u>None</u>							

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal./hr.	Uplift down	Pumping Load	Time
<u>40</u>			

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

Depth first Water Encountered 20'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>0</u>	<u>5</u>	<u>Top Soil</u>		☒
<u>5</u>	<u>10</u>	<u>Clay + sand</u>	☒	
<u>10</u>	<u>20</u>	<u>Blue clay + Quick sand</u>	☒	
<u>20</u>	<u>180</u>	<u>Blue clay + Coal</u>	☒	
<u>180</u>	<u>195</u>	<u>White Shell</u>		☒
<u>195</u>	<u>205</u>	<u>Gravel</u>	☒	

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FEB 11 1997

Department of Water Resources
Eastern Region

RECEIVED

FEB 21 1997

Department of Water Resources

Completed Depth 200' (Measurable)
Date: Started 1-7-97 Completed 1-11-97

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 Frouden Date 1-13-97

Supervisor or Operator _____ Date _____

(Sign Once for Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-24 Well log for Roy Johnson Domestic Well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 239-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D0004759
DRILLING PERMIT NO. 15-98 E 0034
Other IDWR No. _____

2. OWNER:
Name Jerry & Diane Rose
Address 3090 W 2400 N
City Malad State ID Zip 83252

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

Map grid showing well location. Township: 14 North ☐ or South 8 East 8 or West ☐ Range: 36 Section: 7 1/4 NW 1/4 4th 1/4 Gov't Lot _____ County Oneida Lat: _____ Long: _____ Address of Well Site Same as above City _____

LI. _____ BIL. _____ 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

SEALER	PACK	AMOUNT	METHOD
Material	From	To	Depth of Placement
Bentonite	0	20	4
			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
6"	0	100	120	Steel	☒	☒	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Alt. Size	Number	Clearance	Material	Casing	Inner
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

065573

11. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
20			

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
8 1/2"	0	20	Brown clay		X
6"	20	22	Blue clay + Quick Sand	X	
6"	22	120	Blue clay + Gravel		X
6"	120	195	Brown clay		X
6"	195	205	Gravel	X	

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Eastern Region

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OCT 13 1998

Department of Water Resources
MICROFILMED

Completed _____ Depth 200' (Measurable)
Date Started 8-19-98 Completed 8-20-98

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 Firm No. 543

Term Official Mike Enderlin Date 8-21-98

Driller or Operator _____ Date _____

(Sign once 2 Term Official & Operator)

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Figure 1-25 Well log for Jerry Rose Domestic Well



Figure 1-26 Well log for Nathan Ruff Domestic Well



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Ground Water Development and Exploration

Form 238-7
1/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0037801

DRILLING PERMIT NO.

Water Right or Injection Well No.

2. OWNER:

Name Lawrence Schow
Address 2639 N 300 W
City Malden State CA Zip 93252

3. LOCATION OF WELL by legal description:

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

Twp 14S North ☐ or South ☒
Rge 30E East ☒ or West ☐
Sec 7 1/4 1/4 1/4 1/4
Gov't Lot _____
County Merced
Lat: _____ Long: _____
Address of Well Site St John's Lane
City Malden

LL _____ 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	Depth / Volume	Seal Placement Method
Bentonite	0	20		Grout

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 240
Was drive shoe seal tested? ☐ Y ☐ N How?

8. CASING/LINER:

Diameter	From	To	Depth	Material	Casing	Line	Working	Through
6"	0	240	240	Steel	X	U	X	

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☐ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method Grout

Screen Type & Method of Installation

From	To	Size of Slot	Material	Diameter	Material	Casing	Line	Working	Through
240	240	1/2"	25	6"	Steel	X	U	X	

10. FILTER PACK

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

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

14.5' below ground Artesian pressure _____ ft.
Depth flow discontinued _____ ft. Occurs at vertical part or corner curves _____

12. WELL TESTS:

☐ Pump ☐ Ballo ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
35			

Water Temp. Cold Bottom hole temp. Cold

Water Quality test or comments: Grout

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
6"	0	20	Sandy clay w/ gravel	X	
6"	20	30	Sandy clay w/ gravel	X	
6"	30	120	Gravel clay		X
6"	120	205	Gravel clay		X
6"	205	240	Gravel w/ grey	X	
6"	240	245	Gravel w/ black clay	X	
6"	245	245	Brown clay		X
6"	245	245	Gravel Bentonite	X	

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Department of Water Resources
Eastern Region

Completed Depth 240 (Measure in)

Date Started 10-16-05 Completed 10-17-05

14. DRILLER'S CERTIFICATION

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

Company Name Mid West Well Drilling Firm No. 543

Principal Driller Michael Farden Date 10-17-05

Driller or Operator II Michael Farden Date 10-17-05

Operator I _____ Date _____

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

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Figure 1-27 Well log for Lawrence Schow Domestic Well



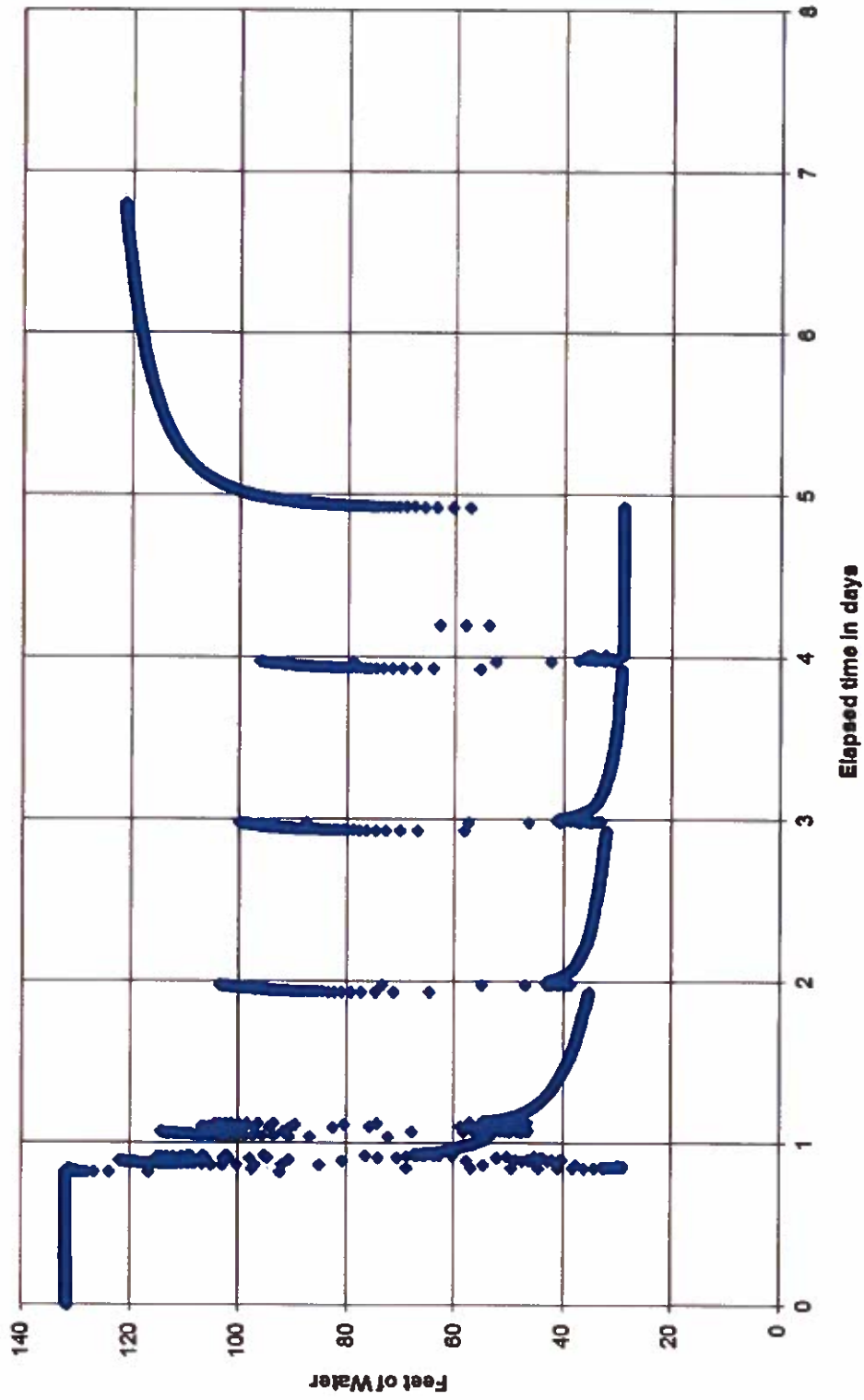
Figure 1-28 Well log for John Thomas Domestic Well



Attachment 2 DATA PLOTS

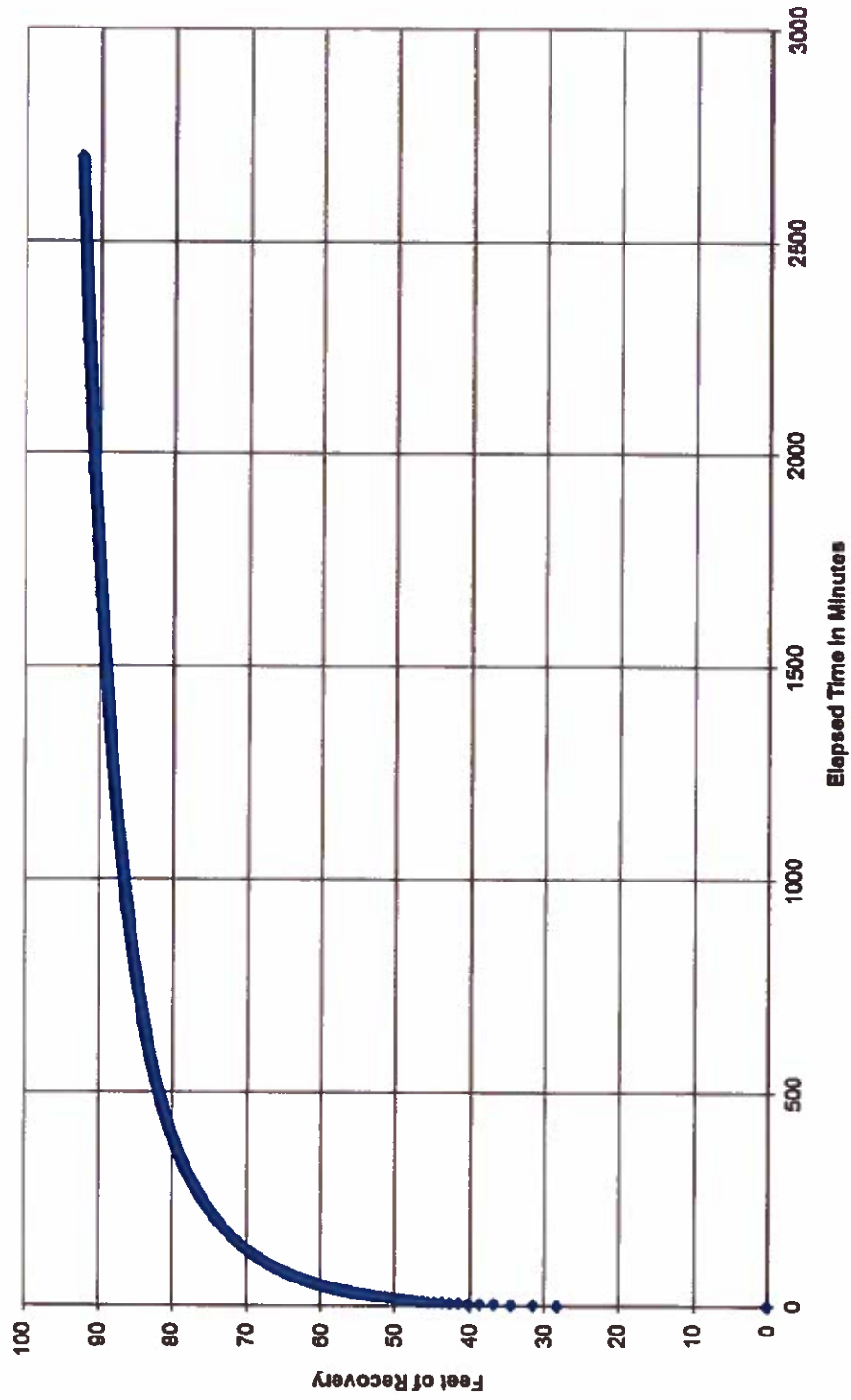


Jeff Thomas 2005 Irrigation Well Response to Pumping at 1000 gpm,
June 18 through June 25, 2005





Recovery Test Jeff Thomas Well 1000 gpm





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Ground Water Development and Exploration

Attachment 3

AQTESOLV PLOTS

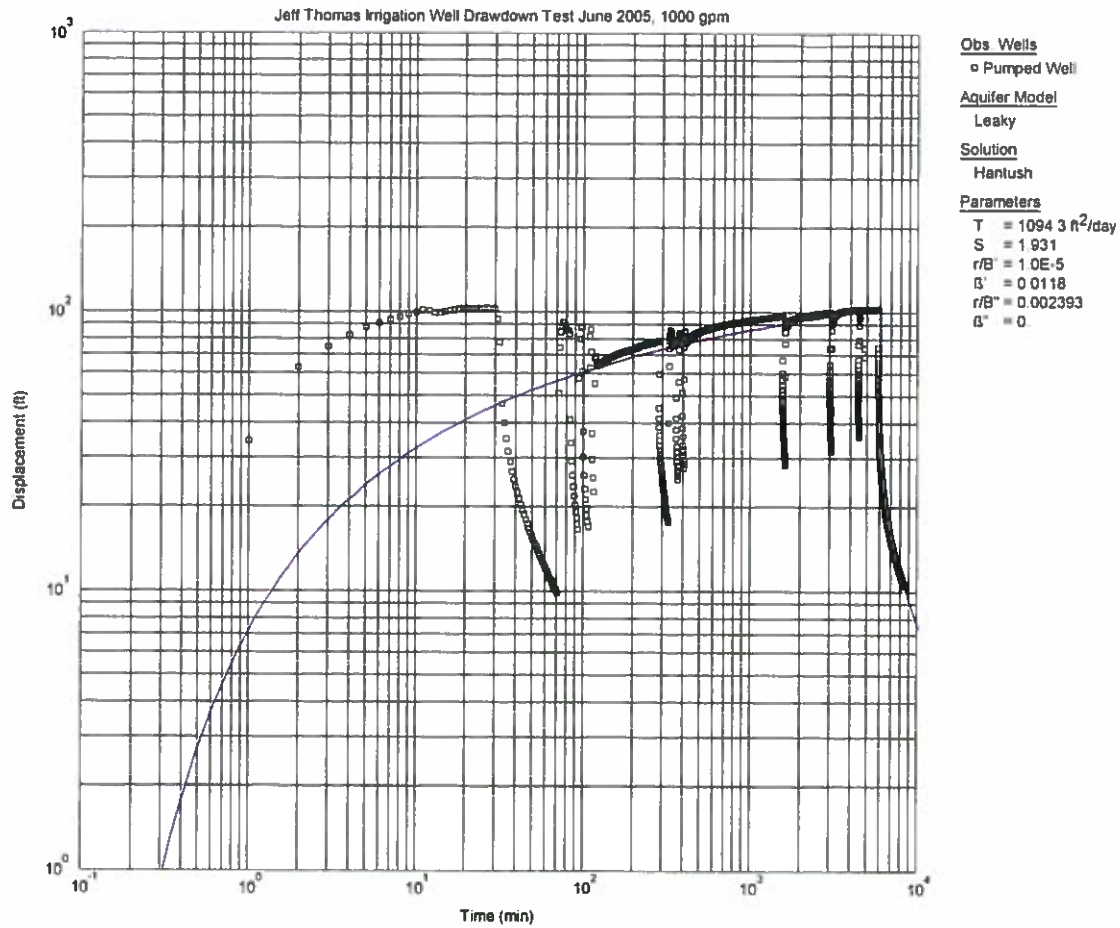


Figure 3-1 leaky confined match to drawdown data.

Residual statistics:

Mean = -0.008229

Var. = 134.9

S.E. = 11.61

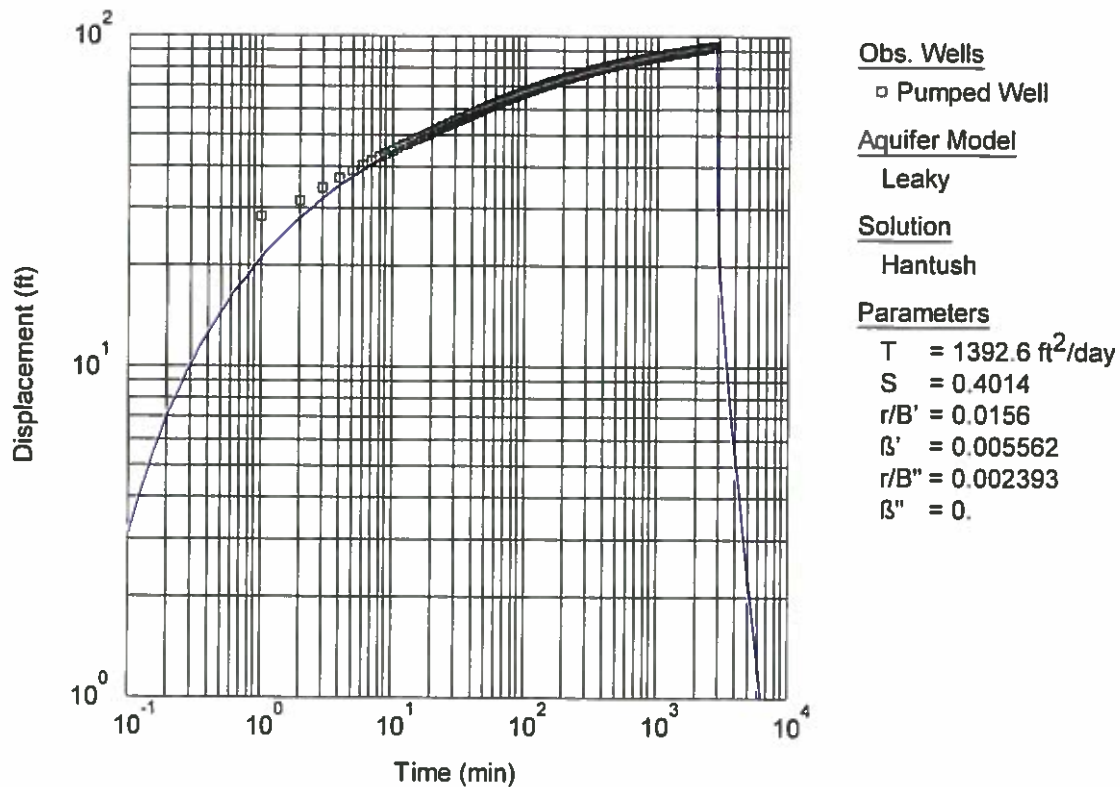


Figure 3-2 leaky confined match to recovery data.

Residual statistics:
Mean = -0.0001279
Var. = 0.08975
S.E. = 0.2996

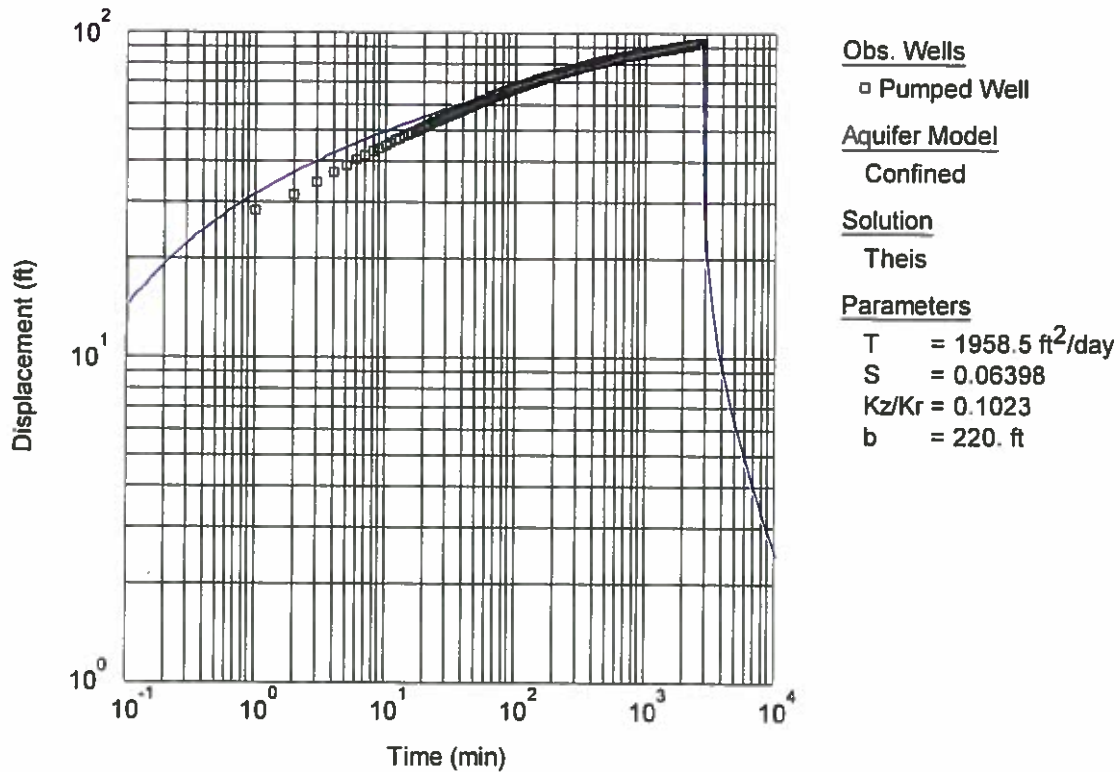


Figure 3-3 Theis confined match to recovery data.

Residual statistics:
Mean = -0.0005663
Var. = 1.046
S.E. = 1.023

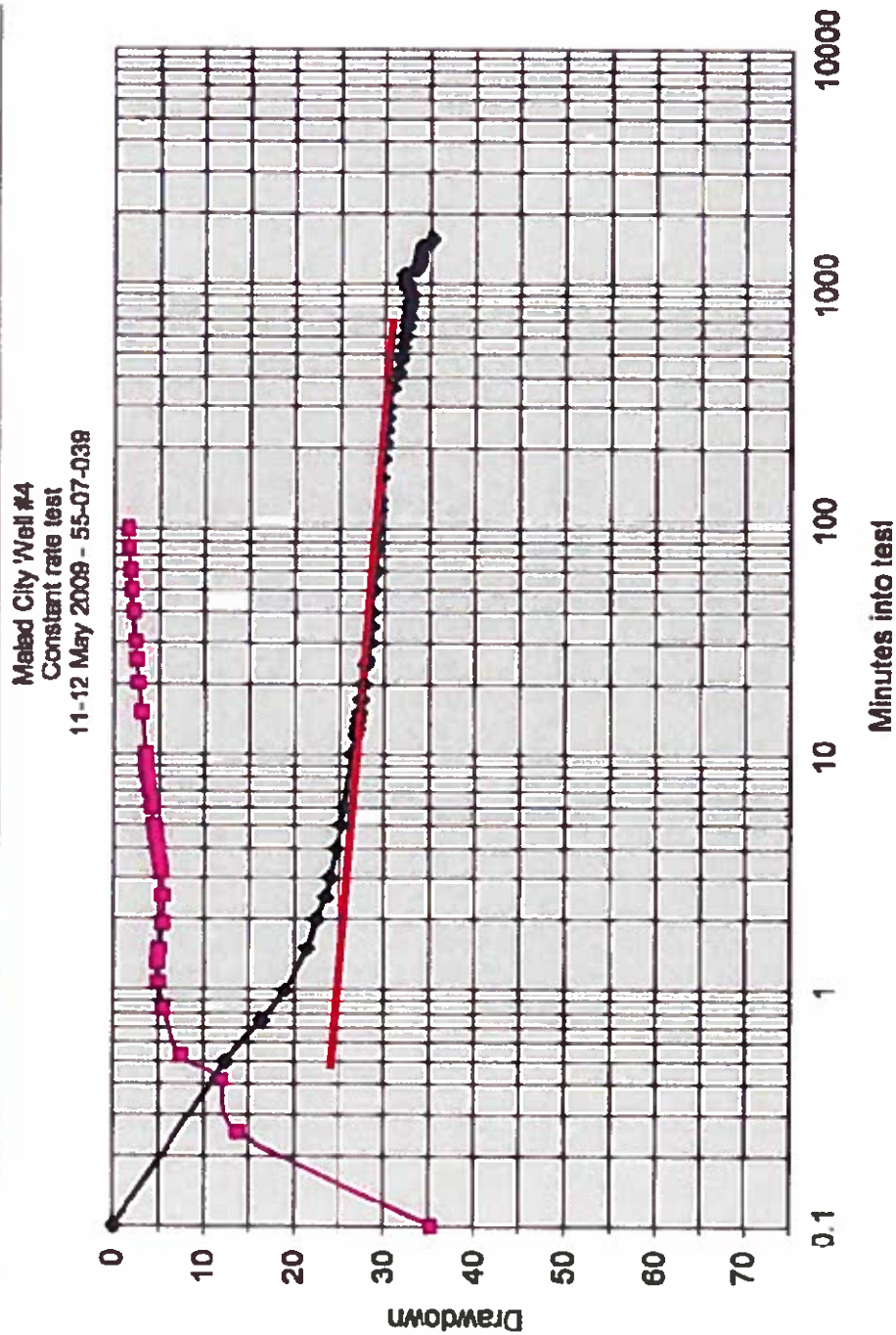


Figure 3-4. Plot of data set for pumping test Malad City Well #4. The red line represents the straight line trend of the data used for calculating transmissivity.



Attachment 4

AQUIFER IMPACT ANALYSIS



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

Parameter	Value	Unit
Transmissivity	1,392	ft ² /d
Storativity	0.01	unitless
Flow Rate	462	gpm
Duration	302,400	min
Total volume	718	ac-ft
aquifer thickness (b)	220	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
Northwest Corner	0	40,200
Northeast Corner	30,700	40,200
Southwest Corner	0	0
Southeast Corner	30,700	0
Keetch POD	16,870	25,260
Well 0.5 mile East	14,250	25,260
Well 0.5 mile West	19,490	25,260
Well 0.5 mile North	16,870	27,880
Well 0.5 mile South	16,870	22,640

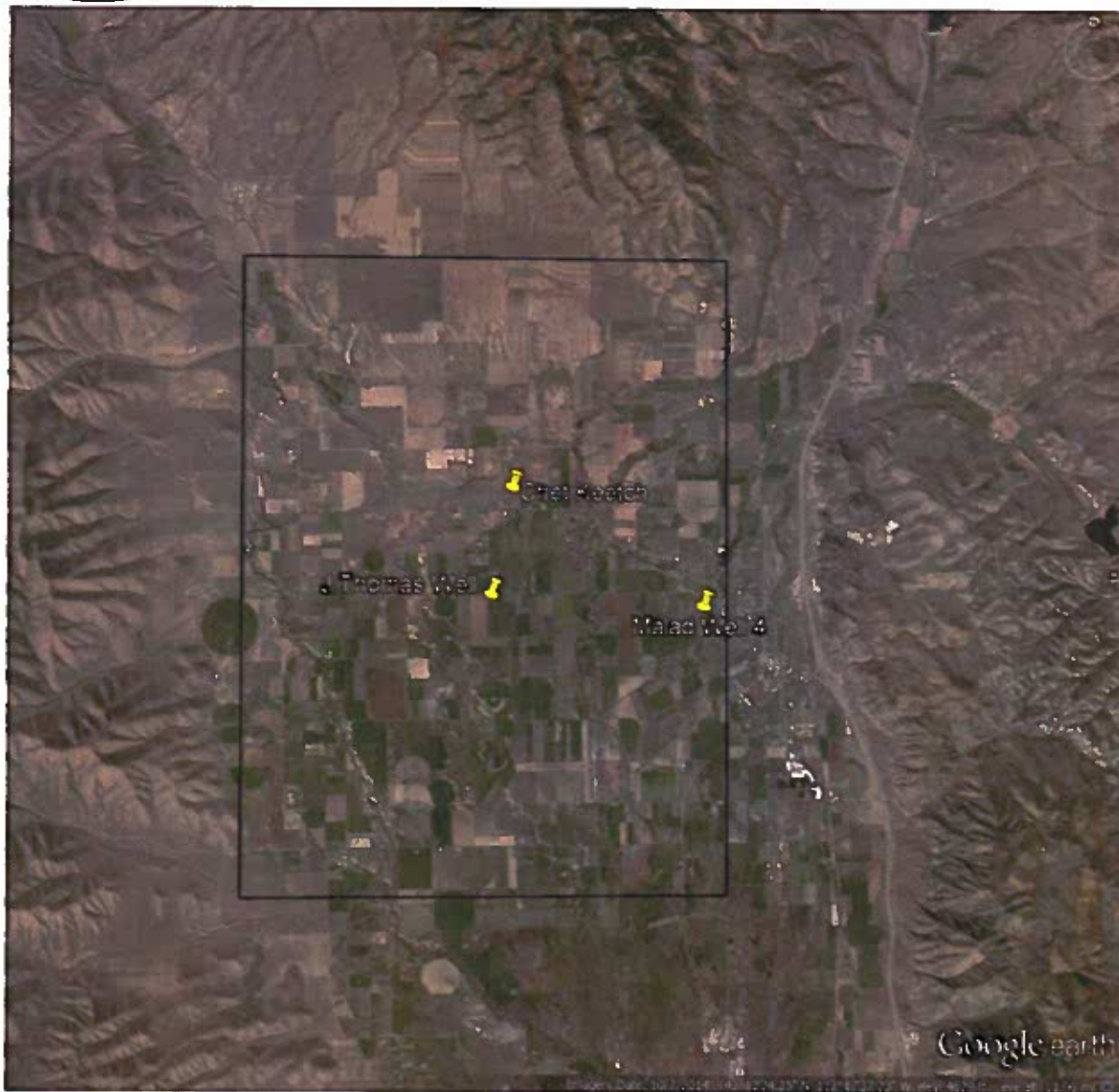


Figure 4-1 Outline of the boundaries used in the AQTESOLV forward solution calculation.

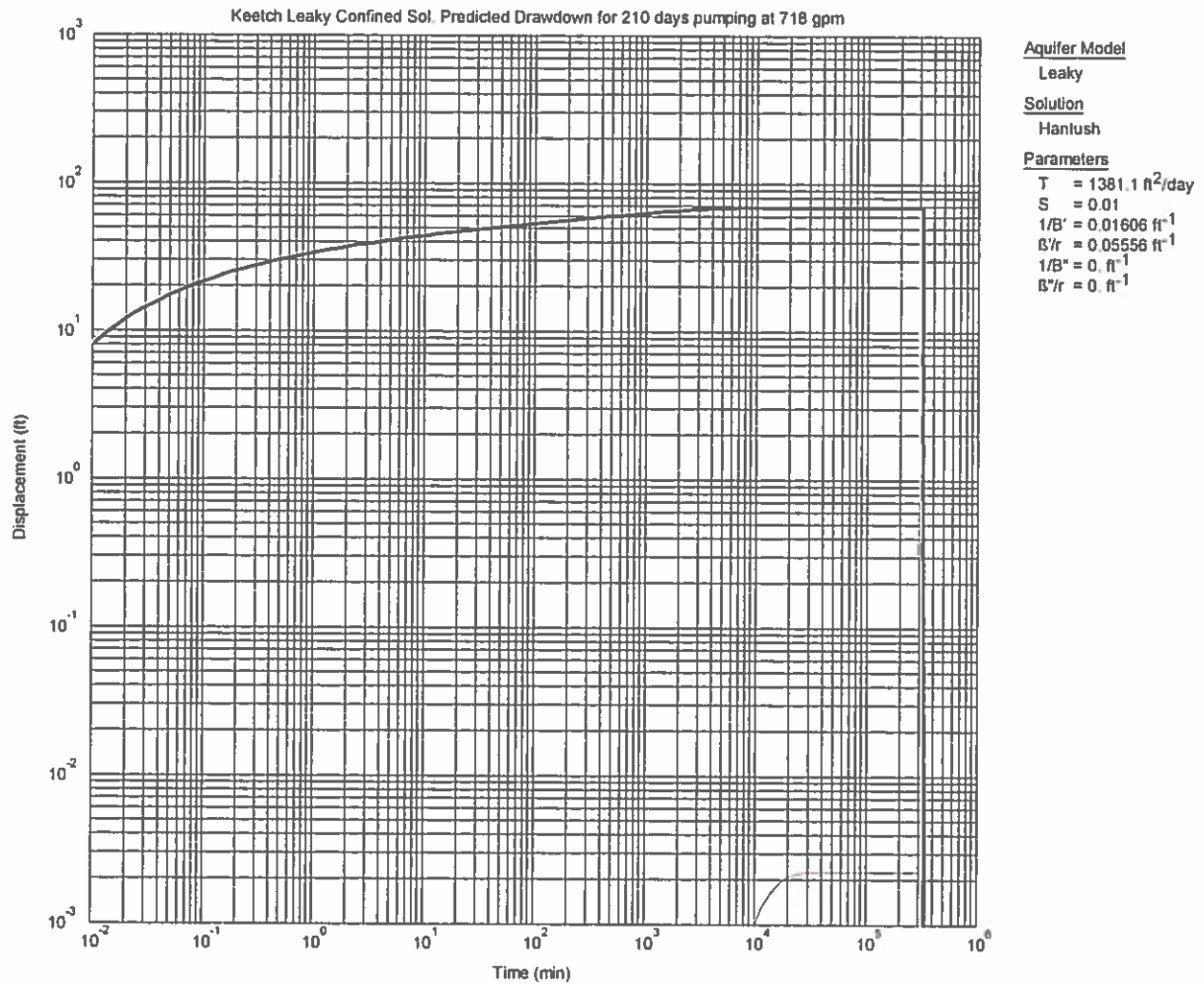


Figure 4-2 Predictive plot of drawdown at 718 gpm or 1.6 cfs for the full period of use 210 days.

Key to line colors

- Blue Proposed POD for Keetch
- Black Imaginary well ½ mile north of the proposed POD
- Green Imaginary well ½ mile west of the proposed POD
- Red Imaginary well ½ mile south of the proposed POD
- Purple Imaginary well ½ mile east of the proposed POD
- Orange Imaginary well 500 ft north of the proposed POD