



Clearwater Geosciences, LLP
Ground Water Development and Exploration

March 17, 2015

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

RECEIVED
MAR 17 2015
Department of Water Resources
Eastern Region

RE: AQUIFER TEST FOR DALE PRICE WATER RIGHTS APPLICATION

Dear Mr. Cefalo:

A groundwater impact assessment is provided in this letter report for Dale Price Water Right Application. He has approximately 42.5 acres of land southwest of Malad City, Idaho (Figure 1) and his application is for 0.85 cfs. A pumping test was conducted on April 23, 2011 in an existing well about 2.5 miles south of the propose drill site, labeled the Davis Irrigation Well in 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 15S, 35E, 2 NE SE as shown in Figure 2. A search was made for all existing points of diversions (PODs), i.e. water rights near the Price property. In Figures 3 and 4 a blue circle is shown with a ½ mile radius centered on the proposed Price well location. The circle encompasses portions of sections 1 and 2, T15S, R35E and a small portion of the NENE section 11 T15S R35E. Another search was made for all wells in sections 1 and 2, T15S, R35E and section 11 T15S R35E. The results of the water right search are provided in Tables 1 through 3 and the results for the well search are provided in Tables 4-6. It should be noted that there are three surface water rights in sections 2, T15S, R35E and no surface water rights in 1, T15S, R35E or 11 T15S R35E.

Nearby Wells

A search was performed of the IDWR drillers' log database for wells within ½ mile of the proposed well location. Seven representative well logs are provided in Attachment 1 to show the local hydrogeology. The average depth of the wells in sections 1 and 2, T15S, R35E and section 11 T15S R35E is 194 ft and the average depth to water is 25 ft.

Hydrogeology

The lithology in this area is a series of unconsolidated sands, gravels and clays. There is not a marker layer or geologic unit that can be correlated over distances between wells (~ ½ mile), at least as can be discerned by the described lithology on the driller 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 Lake Bonneville. For the purposes of this investigation it is assumed that the aquifer thickness is 200 ft in this area. This is based on driller logs for three irrigations wells in Section 30, T15S, R36E about four miles south, southeast of the proposed POD and regional considerations of the hydrogeology. It should be noted that the aquifer is not one homogenous layer but a sequence of permeable lens of inter connected sand and gravel stringers, which are primarily confined. However, it is anticipated that locally the shallow sequences of the aquifer are unconfined.



Pumping Test

The test well is an irrigation well owned by Mr. Jeff Davis and it is located about 2.5 miles south of the location of the proposed Price POD (see Figure 1). The Davis irrigation well is 140 ft deep, having an open bottom completion in gravel at 140 ft. The well log for the Davis Irrigation well is provided in Attachment 1, Figure 1-1. For the pumping test, the Davis Irrigation Well was equipped with an INSITU brand downhole pressure transducer to collect automated water levels during the pumping test. The pumping test began at 11:20 AM on April 23, 2011 and the well was pumped at a steady rate of 140 gpm for 24 hours. A plot of the data can be found in Attachment 2.

Curve matching methods were conducted using the AQTESOLV aquifer test software. Output plots from the AQTESOLV analyses are presented in Attachment 2. Figure 2-1 shows the match of the early time data to the Theis confined solution corrected for partial penetration. The calculated transmissivity is $9.5 \times 10^4 \text{ ft}^2/\text{day}$ and the storativity is unreliable because there is no observation well. The match of the late time data is presented in Figure 2-2 and the calculated transmissivity is $7.7 \times 10^4 \text{ ft}^2/\text{day}$. A third calculation is performed using the Hantush method for a leaky confined aquifer and the match to the type curve is presented in Figure 2-3. The match to the leaky confined type curve is excellent and the calculated transmissivity is $6.24 \times 10^4 \text{ ft}^2/\text{day}$. Based on the good match to the leaky confined solution the aquifer appears to be leaky confined in the area of the Jeff Davis Well. However, it is known that artesian conditions exist elsewhere due to artesian flow in some wells. For long term pumping calculations it is appropriate to use $6.24 \times 10^4 \text{ ft}^2/\text{day}$ for the transmissivity with a confined solution for predicting drawdown. This transmissivity is consistent with another pumping test conducted in the Davis Stock Well located about 1 mile west of the Davis Irrigation Well (Section 22), which had a measured transmissivity of $5.1 \times 10^4 \text{ ft}^2/\text{day}$. The storativity cannot be measured reliably with a single well pumping test, so an estimated value of 0.01 is used, which is typical for these types of unconsolidated aquifer materials (Freeze and Cherry, 1979).

Impact Assessment

Mr. Price wishes to irrigate 42.5 acres and as per IDWR estimates of usage this should require 0.02 cfs per acre or 381.5 gpm (0.85 cfs). To estimate the long-term drawdown and impact to neighboring wells from pumping of the proposed Price Well, the forward solution capabilities of the AQTESOLV program were employed. The input parameters to the model are listed in Table 3-1 (see Attachment 4).

Boundaries in AQTESOLV were enabled as shown in Figure 3-1 to represent Malad Valley. As depicted in Figure 4-1 and listed in Table 3-2 the model is 32,000 ft wide and 50,000 ft long. Because the Malad Valley is bounded by mountains consisting of Paleozoic and Mesozoic sedimentary rock that do not provide much water compared to the unconsolidated valley fill, the east, west and south boundaries are set as impermeable or "no flow" boundaries. Water is allowed to enter the model domain only through the north boundary.

In the model domain the proposed POD well is located 7,044 ft east of the west boundary and 16,907 ft north of the south boundary. This represents the proximity of the proposed POD to the nearby mountains and the no flow southern boundary, which will have the effect of increasing drawdown.

Figure 3-2 shows the AQTESOLV[®] output plot of the forward calculation for the proposed well pumping at 0.85 cfs (381.5 gpm) constantly for 6 months (April 15 to Oct 15). At the end of the time period the predicted drawdown is estimated to be 2.5 feet in the proposed POD. The calculated drawdown for the nearest neighbors is predicted to be 1.2 ft or less.

Protests

On December 31, 2013, Samaria Water and Irrigation Company filed a protest against Dale Price (Application for Permit #15-7369) with IDWR on the bases that, if approved, the use of Price's water right would deplete Warm Springs water flow. As Figure 7 shows, Price's proposed POD is located 1.2

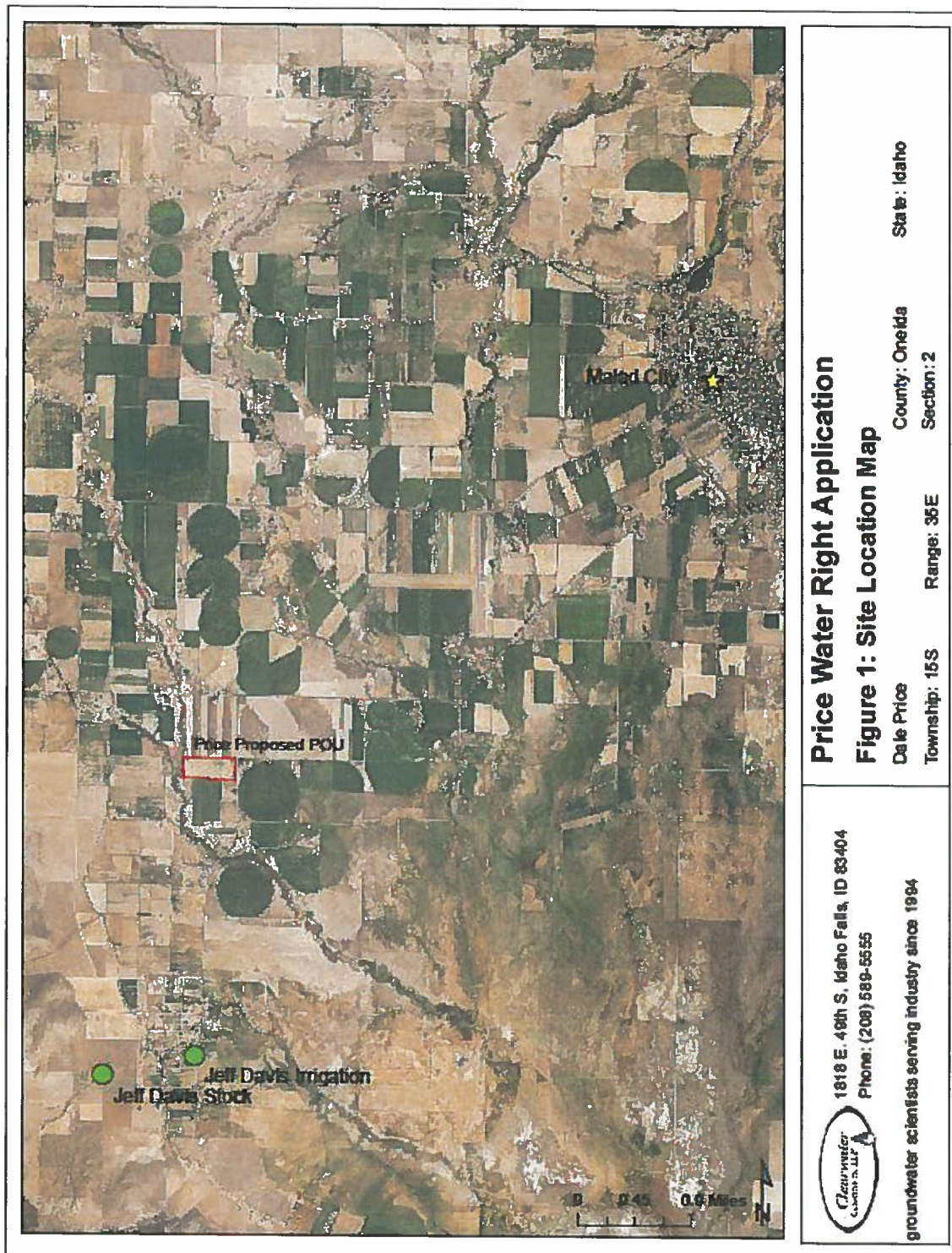


Figure 1. Map showing locations of the Proposed Price well, the Davis Irrigation Well and the Davis Stock Well.

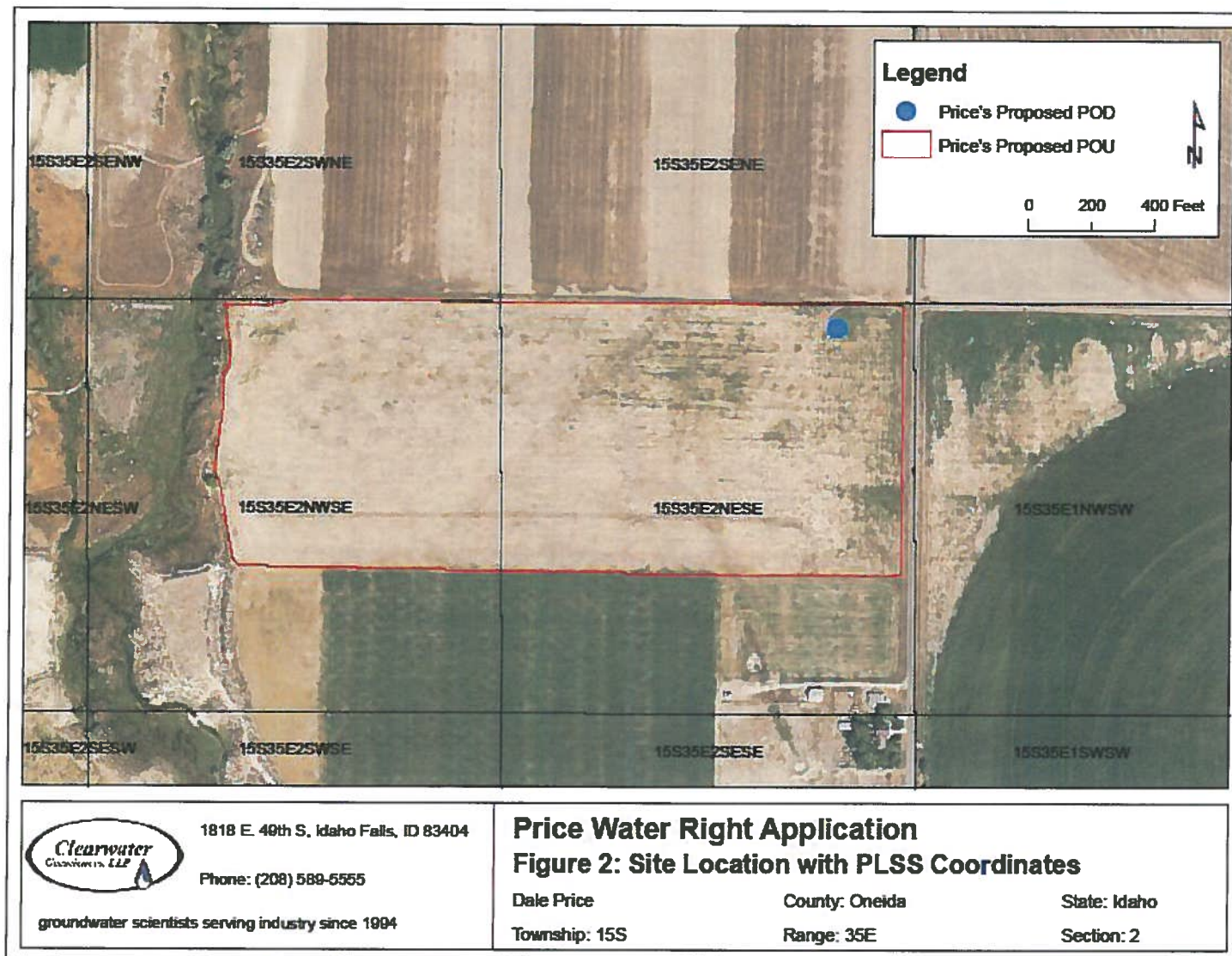


Figure 2 IDWR map area showing the township range section coordinates and the proposed well location as a blue dot.

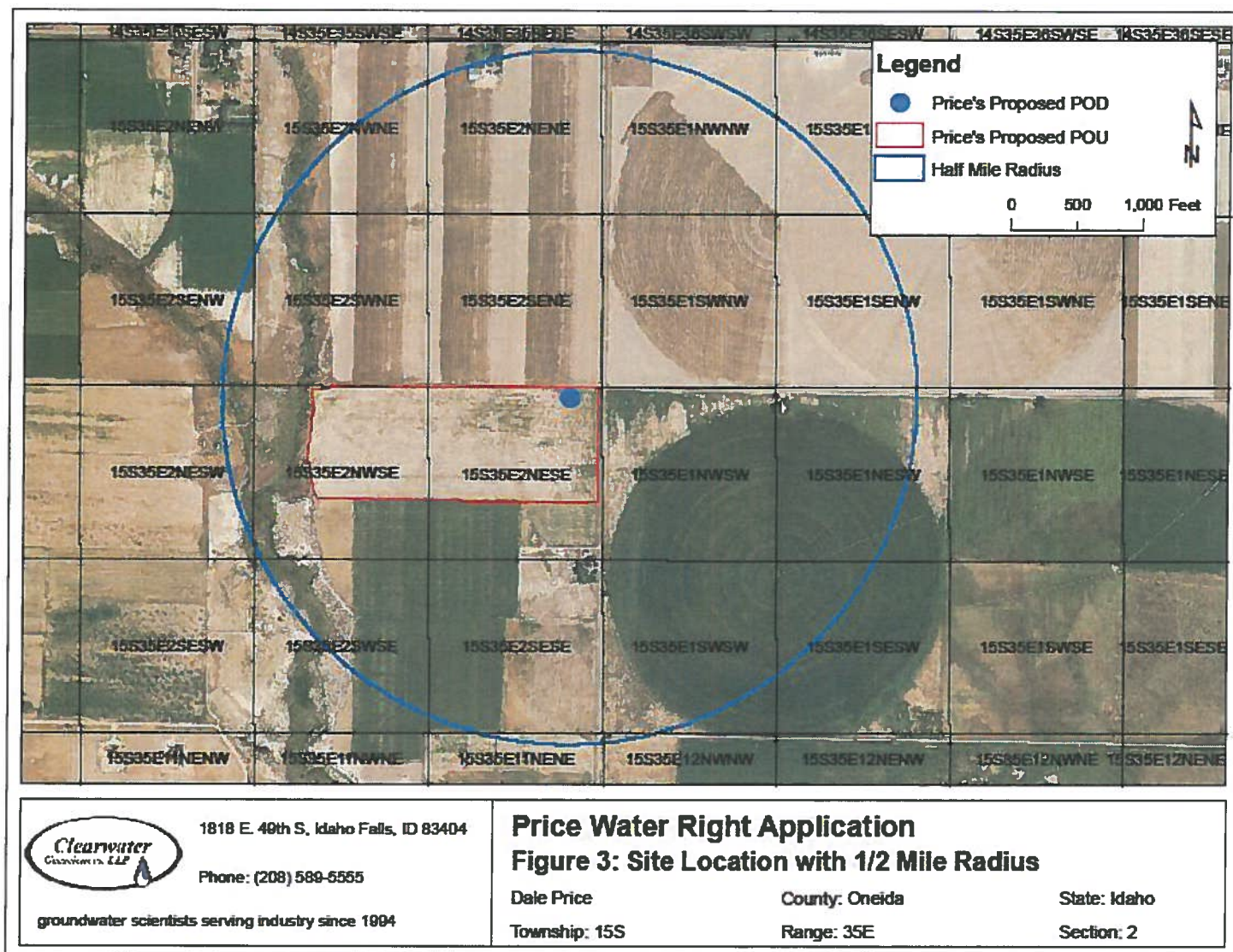


Figure 3 Price property with blue circle showing approximate 1/2 mile radius.

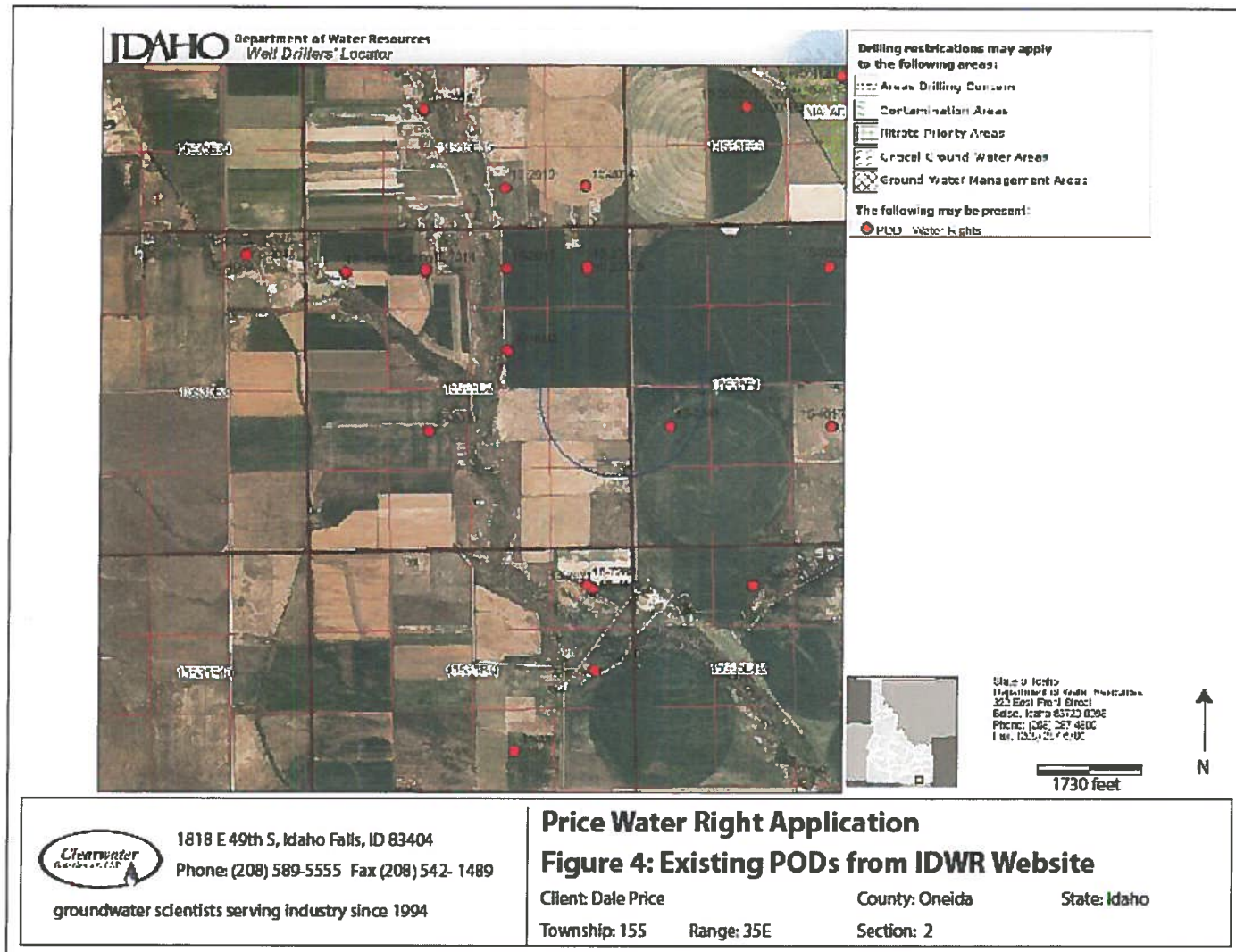


Figure 4 Existing PODs; from IDWR website and blue circle 1/2 mile diameter.

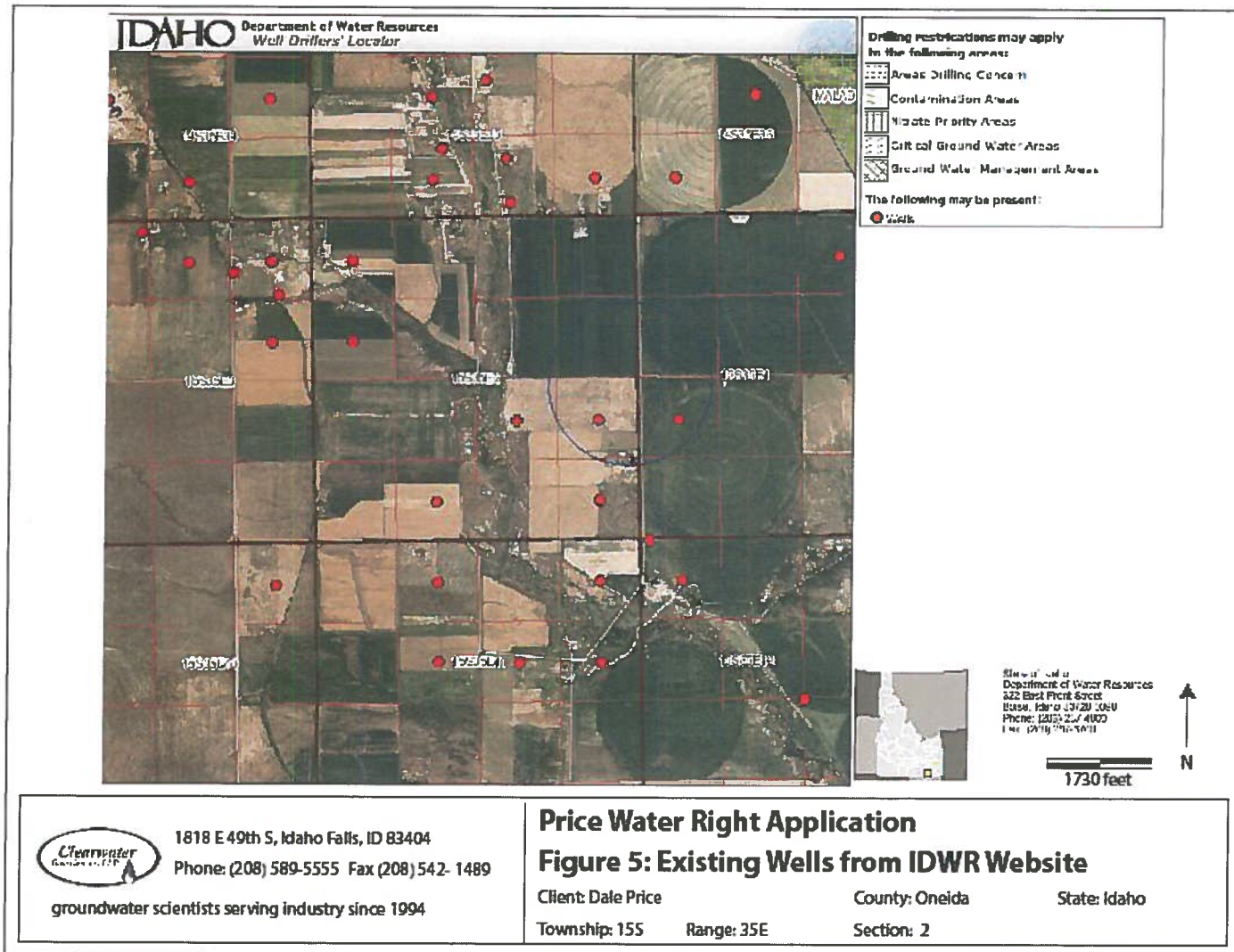


Figure 5 Existing wells from IDWR website and blue circle 1/2 mile diameter.

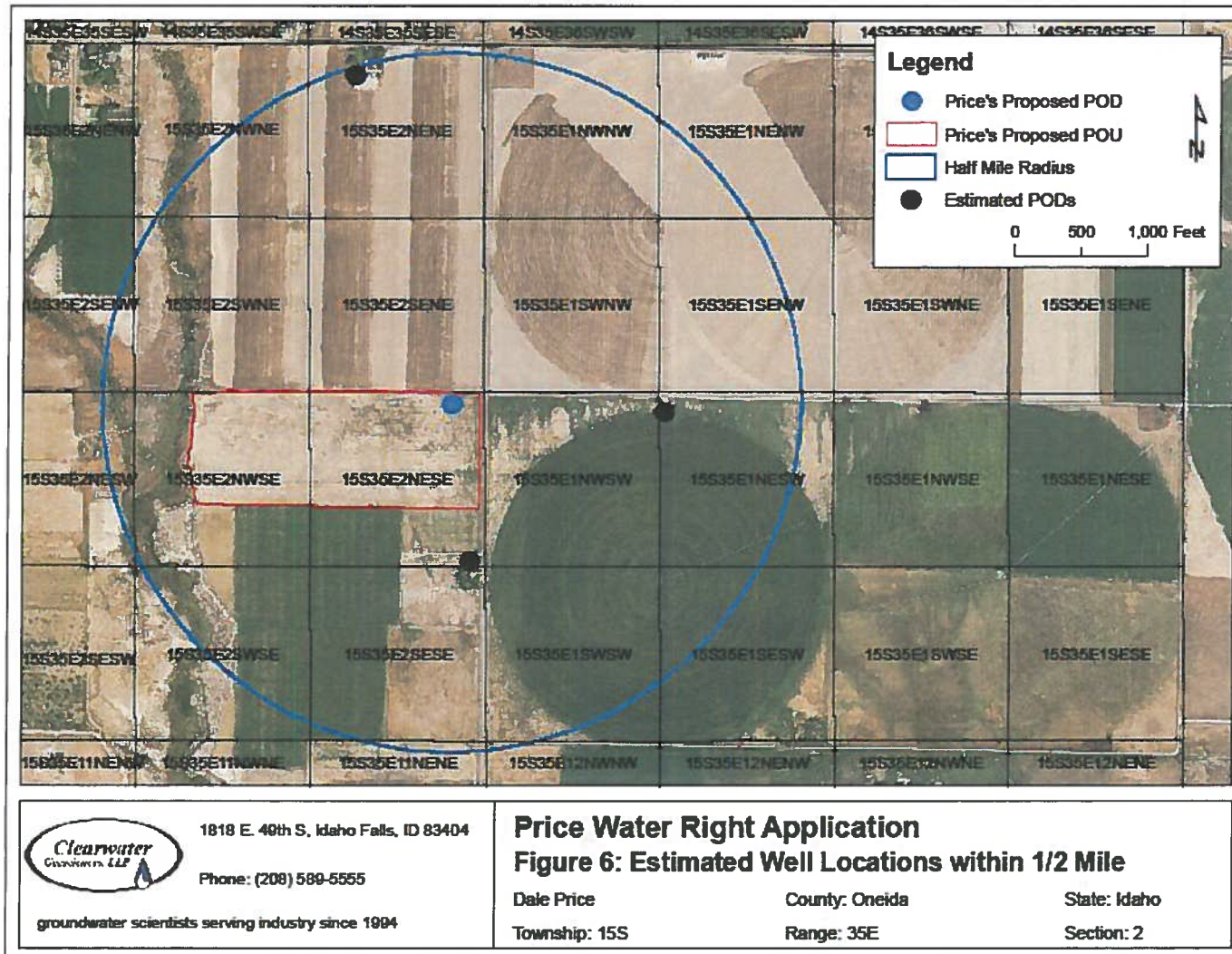


Figure 6 Estimated well locations within 1/2 mile of Price's proposed location. Price's POD is shown as a blue dot and estimated locations are shown as black dots.

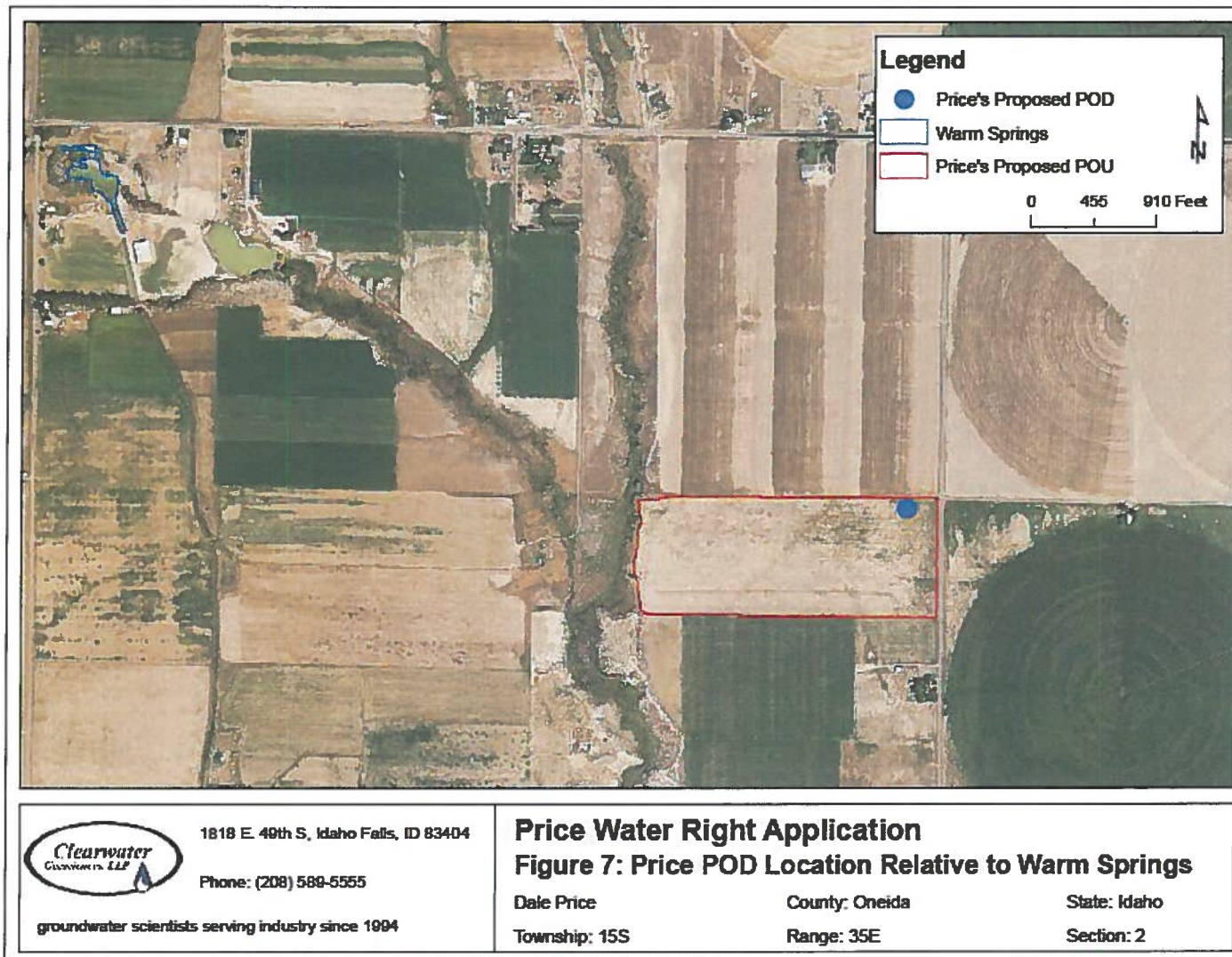


Figure 7 Price's Proposed POD Location Relative to Warm Springs. Price's proposed POD is located approximately 1.2 miles southeast of Warm Springs.



Table 1 IDWR Search results for point of diversions in T15S, R35E, Section 1

Type	Basin	Sequence	Suffix	Application Number	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
Water Right	15	2037	B		Active	4/13/53	0.88	GROUND WATER	IRRIGATION	TUBBS, CARLEAN C; TUBBS, DON W
Water Right	15	2043			Active	9/10/54	2.67	GROUND WATER	IRRIGATION	ATKINSON, ANDREW ; CHUGG, CLYDE; JOSEPHSON, J H; WALDRON, LEWIS R
Water Right	15	4015			Active	7/1/12	0.07	GROUND WATER	DOMESTIC, STOCK WATER	CHUGG, CLYDE
Water Right	15	7022			Active	8/7/74	1.85	GROUND WATER	IRRIGATION	EVANS, BONNIE B; EVANS, JOHN J
Water Application	15	7385		79615	Active	10/10/14	5	GROUND WATER	IRRIGATION	RICHES JR, LAWRENCE VICTOR

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

Type	Basin	Sequence	Suffix	Application Number	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
Water Right	15	2010			Active	9/10/17	4	MALAD RIVER	IRRIGATION	JONES, DAN E
Water Right	15	2016			Active	12/19/35	1.2	GROUND WATER	DOMESTIC, IRRIGATION	BROWN, MRS HENRY C
Water Right	15	2017			Active	12/19/35	0.1	GROUND WATER	DOMESTIC, IRRIGATION	JONES, MARGARET M
Water Right	15	2052	B		Active	5/28/59	1.36	GROUND WATER	IRRIGATION	BROWN, JEANNE; BROWN, ROY A
Water Right	15	4042			Active	7/13/1883	3	MALAD RIVER	IRRIGATION	RICHES JR, LAWRENCE VICTOR
Water Right	15	4160			Active	4/1/14	0.1	GROUND WATER	DOMESTIC, IRRIGATION	CORP OF THE PRESIDING BISHOP
Water	15	4208			Active	1/1/14	0.04	SPRING	STOCKWATER	WILLIAMS, MARCENE L;



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Right									R	WILLIAMS, THOMAS C
Water Right	15	7014			Active	4/18/73	2.21	GROUND WATER	IRRIGATION	PLEASANT VIEW SPRINKLER CO
Water Permit	15	7229			Active	7/18/02	1.68	GROUND WATER	IRRIGATION	BYBEE, ANDREW
Water Permit	15	7264			Active	8/16/04	1.2	GROUND WATER	IRRIGATION	SEAMONS, SETH D
Water Application	15	7369		78931	Active	10/19/13	0.85	GROUND WATER	DOMESTIC, IRRIGATION, STOCKWATER	PRICE, DALE W

Table 3 IDWR Search results for point of diversions in T15S, R35E, Section 11

Type	Basin	Sequence	Suffix	Application Number	Status	Priority Date	Div. Rate (cfs)	Source	Water Use	Owner
Water Right	15	2021			Active	1/12/37	0.48	GROUND WATER	DOMESTIC, IRRIGATION	WRIGHT, LYNN A; WRIGHT, SHAUNA
Water Right	15	2072			Active	5/10/67	2.4	GROUND WATER	IRRIGATION	WALDRON, L R; WALDRON, REX P
Water Right	15	4000			Active	6/1/38	0.03	GROUND WATER	DOMESTIC, STOCKWATER	PRICE, EVAN P; PRICE, MRS EVAN PLATT
Water Right	15	4185			Active	1/1/30	0.5	GROUND WATER	IRRIGATION, STOCKWATER	WRIGHT, LYNN A; WRIGHT, SHAUNA
Water Right	15	7288			Active	6/20/07	0.07	GROUND WATER	STOCKWATER	WRIGHT, LYNN A
Water Permit	15	7365			Active	1/24/14	1.8	GROUND WATER	IRRIGATION, STOCKWATER	EVANS, DANIEL



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Table 4 IDWR Search results for wells in T14S, R35E, Section 1

Contact	Use	TWP	RNG	Sec	Tract	Gallons Per Minute	Static Water Level	Total Depth	CSG Dia.	Construction Date
QWENFORD IRRIGATION PUMP ASSOC(Applicant)		15S	35E	1	NWSW	1350	13	372		10/1/54
JOHN EVENS(Owner/Operator)		15S	35E	1	NWNE			300		2/14/75
LAVERN SMITH(Owner/Operator)		15S	35E	1	NENE	30	38	210	6	5/6/97
EARL TUPPS(Owner/Operator)		15S	35E	1	NENE	50	18	100	6	5/13/99

Table 5 IDWR Search results for wells in T15S, R35E, Section 2

Contact	Use	TWP	RNG	Sec	Tract	Gallons Per Minute	Static Water Level	Total Depth	CSG Dia.	Construction Date
ANDREW CHAD BYBEE(Owner/Operator)	Irrigation	15S	35E	2	NWSE	150	6	180	18	4/17/06
STEPHEN C JOHNSON(Owner/Operator), SHERRIE JOHNSON(Owner/Operator)	Irrigation	15S	35E	2	SESE	500	40	295	10	12/16/03
STEPHEN C JOHNSON(Owner/Operator)		15S	35E	2	SESE	20	68	220	8	5/29/98
DALE W PRICE(Owner/Operator)	Irrigation	15S	35E	2	NESE	300	53	134	12	6/12/00
EVAN P PRICE(Owner/Operator)		15S	35E	2	NESE	0	0	0		
EVAN P PRICE(Owner/Operator)		15S	35E	2	NESE	150	14	150	5	9/21/98
JERRY RHODES(Owner/Operator)		15S	35E	2	SESW	120	40	140	6	8/3/96
SETH D SEAMONS(Owner/Operator)	Irrigation	15S	35E	2	SWNW	50	0	375	10	12/30/07
LYNN A WRIGHT(Owner/Operator)		15S	35E	2	NWNW	100	25	87	6	3/4/97



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Table 6 IDWR Search results for wells in T15S, R35E, Section 11

Contact	Use	TWP	RNG	Sec	Tract	Gallons Per Minute	Static Water Level	Total Depth	CSG Dia.	Construction Date
DANNY BATES(Owner/Operator)	Domestic- Single Residence	15S	35E	11	SENW		10	170	6	4/5/12
HEIDI BISHOP(Owner/Operator)	Domestic- Single Residence	15S	35E	11	SWNE	50	25	157	6	9/24/04
VICKEY GARIEK(Owner/Operator)	Domestic- Single Residence	15S	35E	11	SENE		25	184	6	11/18/14
EVAN P PRICE(Owner/Operator)		15S	35E	11	SESE	3	3	120	5	11/11/96
ROBERT STOKES(Owner/Operator)	Domestic	15S	35E	11	NENW		60	180	6	8/2/11
SID STRONBERG(Owner/Operator)		15S	35E	11	NENE	100	7	167	6	8/29/97
BRYAN VANBEBBER(Owner/Operator)	Domestic- Single Residence	15S	35E	11	NENW	40	25	180	6	4/23/08
REX P WALDRON(Owner/Operator)		15S	35E	11	SENE	1100	11	338		5/20/67
KEVIN WANGSGARD(Owner/Operator)	Domestic- Single Residence	15S	35E	11	SWNE	20	62	240	6	7/5/04
LYNN A WRIGHT(Owner/Operator)	Irrigation	15S	35E	11	NENE		3	155	8	4/10/09



Attachment 1

REPRESENTATIVE WELL LOGS



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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 D0011944
DRILLING PERMIT NO. 764121
Other IDWR No. _____

2. OWNER:
Name M. J. McVernon Ltd Partnership
Address 8525 Himsley Rd
City Colerado Springs Colorado Zip 80914

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

North ☐ or South ☒
East ☒ or West ☐
Twp. 15 Rge. 35 Sec. 14
Gov't Lot _____ County ONEIDA
Lat _____ Long _____
Address of Well Site 130 South Main
City SAMARIA

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
☒ Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK	AMOUNT	METHOD
Material	From To Sacks or Pounds	
Bentonite	0 20	OVER BORE

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8	1	140	20	Steel	☒	☒	☒	☒

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
NONE							

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

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

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10	0	20	CLAY		
8	20	40	CLAY		
4	40	50	CLAY & GRAVEL		
4	50	100	GRAVEL		
4	100	110	SAND GRAVEL		
4	110	120	LARGE GRAVEL		
4	120	140	" "		

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SEP 18 2000

Department of Water Resources

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SEP 06 2000

Department of Water Resources
Eastern Region

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

13. DRILLER'S CERTIFICATION

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

Company Name Lundstrom Well Drilling Firm No. 118

Firm Official Donald Lundstrom Date 6-29-00

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

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-1 Well log for Jeff Davis Irrigation Well



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Ground Water Development and Exploration

Form 238-7
8/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

15

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

1. WELL TAG NO. D 00043839
DRILLING PERMIT NO. 15-7229
Water Right or Injection Well No. _____

2. OWNER:

Name Andrew Chad Bybee
Address 1750 Ludovick Rd.
City Soda Springs State ID Zip 83276

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk. Sub. or Directions to well.
Twp 15 North ☐ or South 25
Rge 25 East ☒ or West ☐
Sec 2 NE 1/4 NW 1/4 SE 1/4
Gov't Lot _____ County Carleton

Lat: _____ Long: _____
Address of Well Site 1/2 mile south of Bensenville
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	Weight / Volume	Seal Placement Method
Cement	0	60	2 yds	Pressure grout

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 179.5
Was drive shoe seal tested? ☒ Y ☐ N How? pressure

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Wellhead	Threatened
18"	#1	19'	1.250	Steel	☒	☐	☐	☐
16"	#2.5	179.5	1.250	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	Liner
125	160'	3/8	375	1 1/2"	Steel	☒	☐

10. FILTER PACK

Pack Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

12. WELL TESTS:

☐ Pump	☐ Baker	☐ Air	☒ Flowing Artesian
Yield gal/min.	Drawdown	Pumping Level	Time
150			

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

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Base	Feet	To	Remarks: Lithology, Water Quality & Temperature	Water
5'	0	8'	Soil	X
76'	8	55'	Brown clay	X
11'	55	56'	Rock	X
1'	56	74'	White clay	X
1'	74	86'	Gravel & clay	X
1'	86	104'	Brown clay	X
1'	104	109'	Gravel & clay	X
1'	109	122'	Clay Brown	X
1'	122	140'	Gravel	X
1'	140	172'	Brown Sandy clay	X
1'	172	174'	Gravel	X
1'	174	180'	Brown clay	X

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APR 24 2006

Department of Water Resources
Eastern Region

Completed Depth 180 (Measurable)
Dz: Scam 3-25-06 Completed 4-17-06

14. DRILLER'S CERTIFICATION

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

Company Name Volmer Well Drilling Firm No. 385

Principal Driller [Signature] Date 4-19-06

Driller or Operator [Signature] Date 4-20-06

Operator _____ Date _____

Principal Driller and Rig Operator Required
Operator I must have signature of Driller/Operator 1

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-2 Well log for Andrew Bybee



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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 06011997
DRILLING PERMIT NO. 764307
Other IDWR No. 15-07160

2. OWNER:
Name Dale Price
Address 4991 W. 4100 S
City Malad State ID Zip 83252

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location

North ☐ or South ☒
Rge. 35 East ☐ or West ☐
Sec. 2 NE 1/4 SE 1/4
Gov't Lot _____ County _____
Lat: _____ Long: _____

Address of Well Site Rural Rd City _____
(Give at least name of road & distance to road or landmark)

LL _____ Bk. _____ Sub. _____ Name _____

4. USE:

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

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

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☐ Air Rotary ☐ Cable ☒ Solid Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/PLUG PACK	AMOUNT	METHOD
Material From To	Backs of Pounds	
Ben seal 0 21 1100		grout & mix gel

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

8. CASING/LINER:

Depth	From	To	Gauge	Material	Casing	Liner	Welded Threads
12	0	134	3/4	DN ma	☒	☐	☒

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

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

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gpm.	Drawdown	Pumping Level	Time
250-300	27	71	3 hr.

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

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

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
16	0	3	FS		
	3	21	white clay		
12	21	33	Tan clay		
	33	55	grey clay		
	55	68	Black clay		
	68	98	gravel		
	98	102	clay		
	102	134	gravel & calcite		
	134	140	clay		

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SEP 08 2000

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Department of Water Resources
Eastern Region

SEP 21 2000

Department of Water Resources

Cased @ 134.
Drilled Depth 140
Completed Depth 134 (Measurable)
Date: Started 5-12-00 Completed 6-12-00

13. DRILLER'S CERTIFICATION

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

Company Name Gardner Dully, Inc Firm No. 454
Firm Official JC Gardner Date Sept 8-00
and John C. Gardner
Driller or Operator _____ Date _____
(Sign name if Firm Official & Operator)

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Figure 1-2 Well log for Dale Price



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
11/97

DMD

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

95376

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

1. WELL TAG NO. D 0006608
DRILLING PERMIT NO. 15-99-E-0012
Other IDWR No. _____

2. OWNER:
Name Earl Tubb
Address HWY 38
City Malad State ID Zip _____

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

Map grid showing location:
Twp. 15 North ☐ or South ☒
Rge. 31 East ☒ or West ☐
Sec. 1 1/4 NE 1/4 NE 1/4
Gov't Lot _____ County ONEIDA Long. _____
Lat. _____
Address of Well Site SAM 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/FILTER PACK	AMOUNT	METHOD
Material	From To	Sacks or Pounds
<u> Bentonite </u>	<u> 0 </u> <u> 30 </u>	<u> OVER BORE </u>

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u> 6 </u>	<u> 1 </u>	<u> 100 </u>	<u> 2 1/2 </u>	<u> Steel </u>	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations		Method		MICROFILM			
Screens		Screen Type		AUG 25 19			
From	To	Net Size	Number	Diameter	Material	Casing	Liner
None						☐	☐
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal/min	Discharge	Pumping Level	Time
<u> 2050 </u>		<u> 100 </u>	<u> 10 </u>

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Start	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u> 0 </u>	<u> 0 </u>	<u> 30 </u>	<u> LAY CLAY </u>		
<u> 6 </u>	<u> 30 </u>	<u> 80 </u>	<u> BLUE CLAY </u>		
<u> 6 </u>	<u> 80 </u>	<u> 95 </u>	<u> LAY CLAY </u>		
<u> 6 </u>	<u> 95 </u>	<u> 100 </u>	<u> GRAVEL </u>		

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MAY 24 1999
Department of Water Resources

RECEIVED
MAY 19 1999
Department of Water Resources
Eastern Region

Completed _____ Depth 100 (Measurable)
Date: Started 5-10-99 Completed 5-13-99

13. 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 Co. 118

Firm Official Bruce Lundstrom 5-13-99

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

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-4 Well log for Earl Tubb.



FORWARD WHITE COPY TO WATER RESOURCES

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



Clearwater Geosciences, LLP
Ground Water Development and Exploration

USE TYPEWRITER OR
BALL POINT PEN

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.

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FEB 25 1975

1. WELL OWNER Name <u>John Evans</u> Address <u>RT 1 Box 42 Molad, Idaho</u> Owner's Permit No. _____		7. WATER LEVEL Static water level <u>Flowing</u> feet below land surface Flowing? ☒ Yes ☐ No G.P.M. flow _____ Temperature <u>Cold</u> F. Quality _____ Artesian closed-in pressure _____ p.s.i. Controlled by ☐ Valve ☐ Cap ☐ Plug																																																																									
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____		8. WELL TEST DATA ☐ Pump ☐ Bailor ☐ Other Discharge G.P.M. _____ Draw Down _____ Hours Pumped _____																																																																									
3. PROPOSED USE ☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type) _____ ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection		9. LITHOLOGIC LOG <u>4724A</u> <table border="1"><thead><tr><th>Hole Diam.</th><th>Depth From</th><th>To</th><th>Material</th><th>Water Yes</th><th>No</th></tr></thead><tbody><tr><td>16"</td><td>0</td><td>30</td><td>BROWN CLAY</td><td></td><td></td></tr><tr><td></td><td>30</td><td>85</td><td>BLUE CLAY & GRAVEL</td><td></td><td></td></tr><tr><td></td><td>85</td><td>112</td><td>Muddy Brown Clay & Gravel</td><td></td><td></td></tr><tr><td></td><td>112</td><td>175</td><td>Brown Clay & Gravel</td><td></td><td></td></tr><tr><td></td><td>175</td><td>200</td><td>SOFT BROWN CLAY</td><td></td><td></td></tr><tr><td></td><td>200</td><td>235</td><td>Brown Clay & Gravel</td><td></td><td></td></tr><tr><td></td><td>235</td><td>245</td><td>White Clay</td><td></td><td></td></tr><tr><td></td><td>245</td><td>260</td><td>Brown Clay</td><td></td><td></td></tr><tr><td></td><td>260</td><td>285</td><td>Brown Clay & Gravel</td><td></td><td></td></tr><tr><td></td><td>285</td><td>295</td><td>Very coarse sand & gravel</td><td></td><td></td></tr><tr><td></td><td>295</td><td>300</td><td>Sticky Brown Clay</td><td></td><td></td></tr></tbody></table>		Hole Diam.	Depth From	To	Material	Water Yes	No	16"	0	30	BROWN CLAY				30	85	BLUE CLAY & GRAVEL				85	112	Muddy Brown Clay & Gravel				112	175	Brown Clay & Gravel				175	200	SOFT BROWN CLAY				200	235	Brown Clay & Gravel				235	245	White Clay				245	260	Brown Clay				260	285	Brown Clay & Gravel				285	295	Very coarse sand & gravel				295	300	Sticky Brown Clay		
Hole Diam.	Depth From	To	Material	Water Yes	No																																																																						
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	200	235	Brown Clay & Gravel																																																																								
	235	245	White Clay																																																																								
	245	260	Brown Clay																																																																								
	260	285	Brown Clay & Gravel																																																																								
	285	295	Very coarse sand & gravel																																																																								
	295	300	Sticky Brown Clay																																																																								
4. METHOD DRILLED ☒ Cable ☐ Rotary ☐ Dug ☐ Other																																																																											
5. WELL CONSTRUCTION Diameter of hole <u>16</u> inches Total depth <u>300</u> feet Casing schedule: ☒ Steel ☐ Concrete <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>16"</u> inches</td><td><u>1</u> feet</td><td><u>299</u> feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ 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>12</u> inches by <u>14</u> inches <table border="1"><thead><tr><th>Number</th><th>From</th><th>To</th></tr></thead><tbody><tr><td><u>168</u> perforations</td><td><u>135</u> feet</td><td><u>298</u> feet</td></tr><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr></tbody></table> 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>18</u> Material used in seal ☐ Cement grout ☒ Pudding clay ☐ Well cuttings Sealing procedure used ☐ Sherry pit ☐ Temporary surface casing ☒ Overbore to seal depth		Thickness	Diameter	From	To	<u>250</u> inches	<u>16"</u> inches	<u>1</u> feet	<u>299</u> feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	Number	From	To	<u>168</u> perforations	<u>135</u> feet	<u>298</u> feet	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet																																										
Thickness	Diameter	From	To																																																																								
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_____ perforations	_____ feet	_____ feet																																																																									
_____ perforations	_____ feet	_____ feet																																																																									
6. LOCATION OF WELL Sketch map location must agree with written location. Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Orinda</u> NW 1/4 NE 1/4 Sec. <u>1</u> T. <u>15</u> S. R. <u>35</u> E. <u>20</u> M.		10. Work started <u>2-5-75</u> finished <u>2-14-75</u>																																																																									
		11. DRILLER'S CERTIFICATION Firm Name <u>White Mt Drilling</u> Firm No. <u>106</u> Address <u>Box 747 Lava Hot Springs</u> Date <u>2-15-75</u> Signed by (Firm Official) <u>Charles F. Anderson</u> and (Operator) <u>Charles F. Anderson</u>																																																																									

Figure 1-6 Well log for John Evans.



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

60228

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

1. DRILLING PERMIT NO. D 577
Other IDWR No. 15-9AE-004-000

2. OWNER: Stephen Johnson
Name _____
Address 2750 S 4100 W
City Malad Idaho State Id Zip 83252

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp <u>15</u> North ☐ or South <u>2</u>	
E		Rge <u>35</u> East ☐ or West ☐	
S		Sec. <u>2</u> NW 1/4 SW 1/4	
Gov't Lot _____		County <u>ANDERSON</u>	
Lat. _____		Long. _____	
Address of Well Site _____ 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/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or	Pounds	
Bentonite	0	20	9		Overbore

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	Line	Welded	Threaded
8"	1	25	33	Steel	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Line
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal/min.	Drawdown	Pumping Level	Time
20-20	220	220	1 hr

Water Temp _____ Bottom hole temp. _____

Water Quality test or comments: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Depth	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10	0	20	Tan clay		
20	20	26	" "		
26	26	27	Blue clay		
27	27	35	GRAVEL SAND		
35	35	40	Blue clay		
40	40	160	SAND & GRAVEL		
160	160	180	GREEN SAND STONE		
180	180	175	" "		
175	175	200	GREEN SAND STONE		
200	200	220	" "		

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JUN 01 1998

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JUN 19 1998

Department of Water Resources

Completed Depth 220 (Measurable)
Date Started 5-2-98 Completed 5-24-98

13. DRILLER'S CERTIFICATION

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

Firm Name Anderson Well Drilling Firm No. 118

Firm Official James Anderson Date 5-24-98

and
Supervisor or Operator _____ Date _____

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-7 Well log for Stephen Johnson.



Clearwater Geosciences, LLP
Ground Water Development and Exploration

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

WELL TAG NO. 0027859
DRILLING PERMIT NO. 15-02244
WELLER NAME Stephen Johnson
WELLER ADDRESS 2750 S. 41st W.
CITY Meridian STATE ID ZIP 83452

2. WELL TESTS
☐ Pump ☐ Bore ☐ Flowmeter

3. LOCATION OF WELL by legal description
Ac. tract, section, township & range of Lot, Sec. 34, S. 34 or 35, T. 34 N. R. 34 E.
Twp 35 N. R. 34 E. S. 34 S. 34 or 35
Sec. 34 S. 34 or 35
T. 35 N. R. 34 E. S. 34 S. 34 or 35
City Meridian State ID
Lot 1
Section 34 S. 34 or 35
T. 35 N. R. 34 E. S. 34 S. 34 or 35
City Meridian State ID

4. USE
☐ Domestic ☐ Irrigation ☐ Industrial ☐ Other ☒ Other Water

5. TYPE OF WELL (check all that apply) (Post-holes, etc.)
☒ New Well ☐ Abandoned ☐ Other

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

7. SEALING PROCEDURES

Seal Material	From	To	Depth (feet)	Notes
Bentonite	0	5	5	Seal

Has it been sealed? ☒ Yes ☐ No (If No, Seal it)
Has it been sealed? ☒ Yes ☐ No (If No, Seal it)

8. CASING/PIPE:

Outer	Inner	Size	Depth	Notes
10	0	2 1/2	5	Seal

Length of casing 5 feet
Packer ☐ Y ☐ N Type

9. PERFORATION/SCREENS/PACKER TYPE:
Perforation Method Machine
Screen Type & Method of Installation

From	To	Depth (feet)	Notes
10	200	10	Seal
200	550	10	Seal
550	700	10	Seal
700	800	10	Seal
800	1000	10	Seal

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
Depth to water level 10 ft. below ground surface
Depth to water level 10 ft. below ground surface
Depth to water level 10 ft. below ground surface

11. DRILLER'S CERTIFICATION
I, the undersigned, do hereby certify that all information and data furnished herein were obtained by me or by a person acting under my direct supervision and control.

Company Name Stephen Johnson Date 12-13-03
Principal Driller Stephen Johnson Date 12-13-03
Operator Stephen Johnson Date 12-13-03

FORWARD WHITE COPY TO WATER RESOURCES

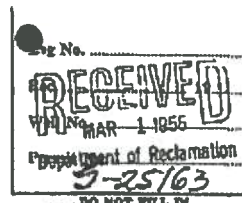
Figure 1-8 Well log for Stephen Johnson



Clearwater Geosciences, LLP
Ground Water Development and Exploration

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

048771



Owner Qwenford Irrigation Pump Association Driller Charles R. Gardner
Address Malden, Idaho Address Malden, Idaho Loc. No. 63
Location of Well: NW 1/4 Sec. 1, T. 15 N, R. 35 E, 1/4 Quad County.
and _____ feet N/S, and _____ feet E/W from _____ corner of _____ Sec. _____
Water will be used for Irrigation Total depth of well 372
Size of drilled hole 14" Weight of casing per linear foot 45
Thickness of casing 1/4" Casing Material Steel
Diameter, length and location of casing 14" to 372 ft
(Casing 12" in diameter and under give inside diameter; casing over 12" in diameter give outside diameter.)
Number and size of perforations 3/4" x 3/4" x 7 ft located 70 feet to 372 feet
from surface of ground.
Other Perforations: All gravel strata perforated from 70' to 372
If flowing well, give flow in c.f.s. _____ or g.p.m. _____ and shut in pressure _____
If nonflowing well, give depth of standing water from surface 13 ft
If flowing well, describe control works _____
On pumping test delivery was 1352 g.p.m. or _____ c.f.s. Drawdown was 22 feet
(Type and size of valve, etc.)
Length of time pumped during check was 24 hr. 5 min. Water temp. 57 Fahrenheit.
Date of commencement of well September 27 Date of Completion of well October 1958
Type of well rig Cable tool

CASING RECORD

Diam. Casing	From Foot	To Foot	Length	Remarks - Sack, Graveling, Etc.
14"	0	372	372	

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

Discharge 2.67 gpm
153-35E-1 NWSW

15

Figure 1-9 Well log for Qwenford



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
DMD

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

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

1. DRILLING PERMIT NO. 15-91-E-0035-000
Other IDWR No. _____

2. OWNER: Sid Strongburg
Name _____
Address 3400 S. HAWK
City Malad State ID Zip 83352

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

Map grid showing location. Twp 15 North ☐ or South ☒
Rge 35E East ☒ or West ☐
Sec 11 1/4 NE 1/4 N1E 1/4
Gov't Lot _____ County Oneida
Lat: _____ Long: _____
Address of Well Site _____ City _____

LL _____ Bld _____ Sub Name _____
(Circle if nearest name of road or distance to house or landmark)

4. USE: ☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____
5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____
6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Feet	Pounds	
Bentonite	0	20	4		Over-Pack

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 167
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Inner	Welded	Threaded
6"	0	167	30	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Testpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Inner
None							

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

11. WELL TESTS:

Yield gal/min	Drawdown	Pumping Level	Time
100			

Water Temp. cold Bottom hole temp. cold

Water Quality test or comments: _____

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

Depth	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
0	0	20	Brown clay		X
20	20	45	Blue clay		X
45	45	65	Brown clay		X
65	65	75	Gravel	Salty	X
75	75	110	Brown clay		X
110	110	125	Gravel	Salty	X
125	125	130	Gravel	Salty	X
130	130	135	Blue clay		X
135	135	138	Brown clay		X
138	138	150	Gravel & Sand	Salty	X
150	150	162	Brown clay		X
162	162	167	Gravel	good	X

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SEP 30 1997

Department of Water Resources
Eastern Region

RECEIVED

OCT 02 1997

Department of Water Resources

Completed Depth 167 (Measurable)
Date Started 8-22-97 Completed 8-29-97

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 Frandson Date 9-15-97

and
Supervisor or Operator _____ Date _____

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-9 Well log for Strongburg



Attachment 2

FIELD TEST RESULTS - BASIS FOR CALCULATED IMPACTS

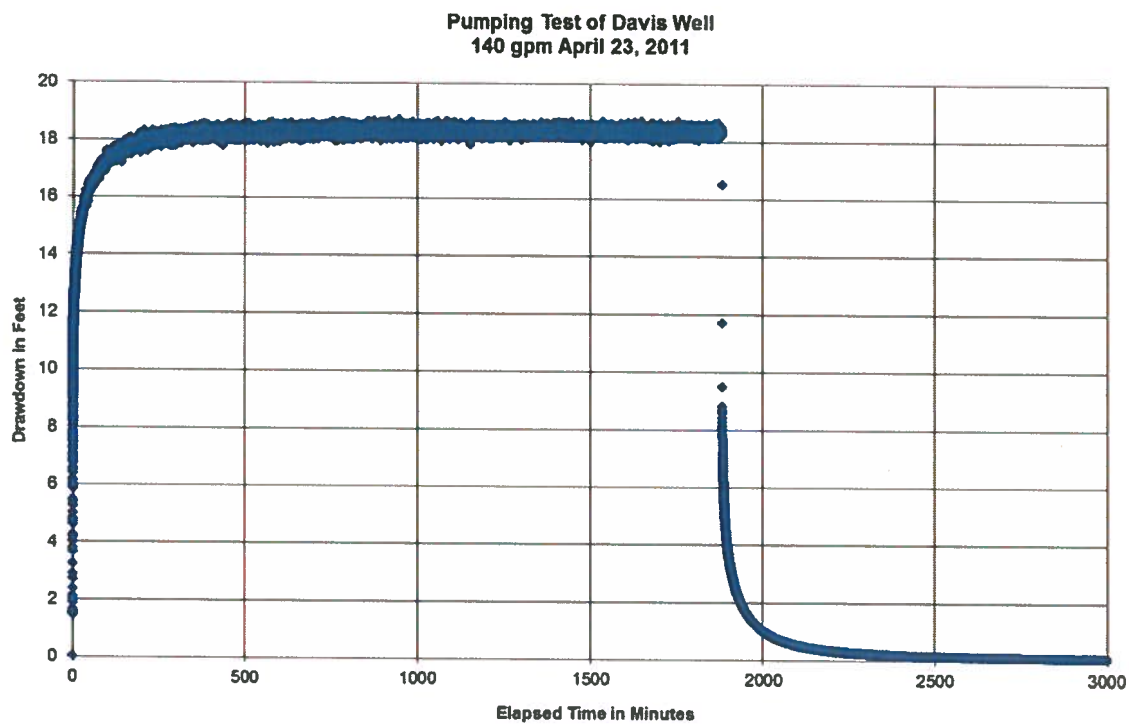


Figure 2-1. Plot of entire data set for pumping test of the Jeff Davis Irrigation well.

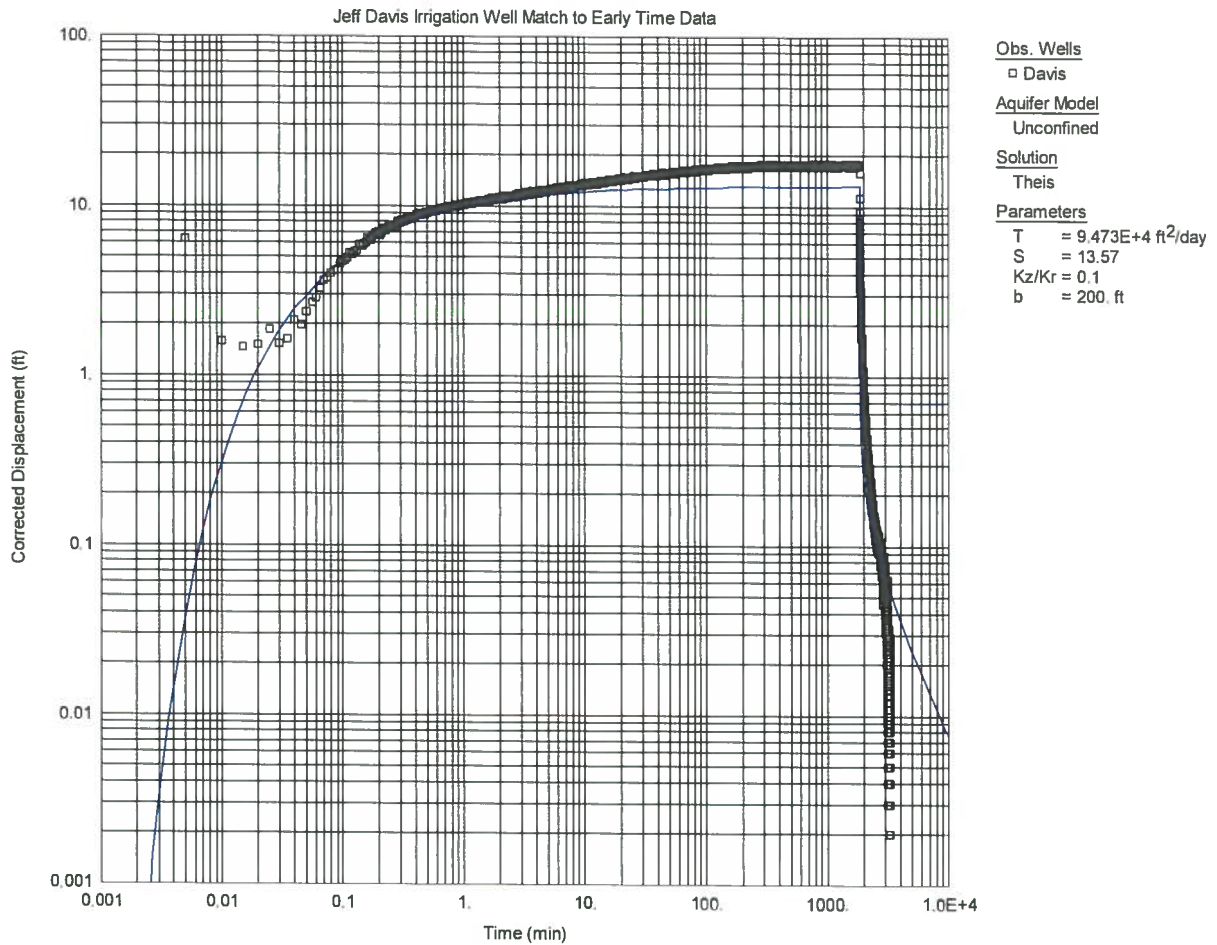


Figure 2-2 Theis unconfined solution matched to early time well data in Jeff Davis Test.

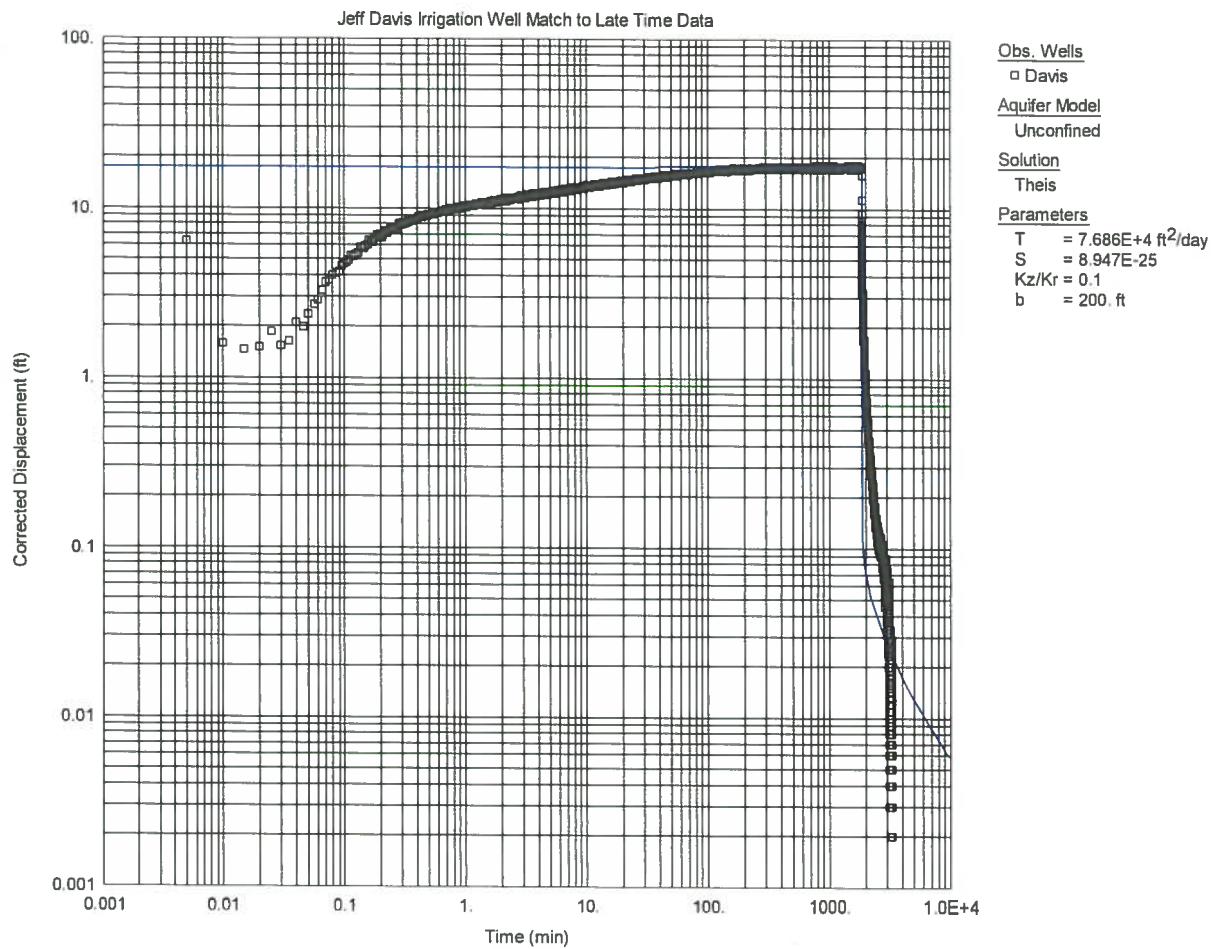


Figure 2-3 Theis unconfined solution matched to late time well data in Jeff Davis Test.

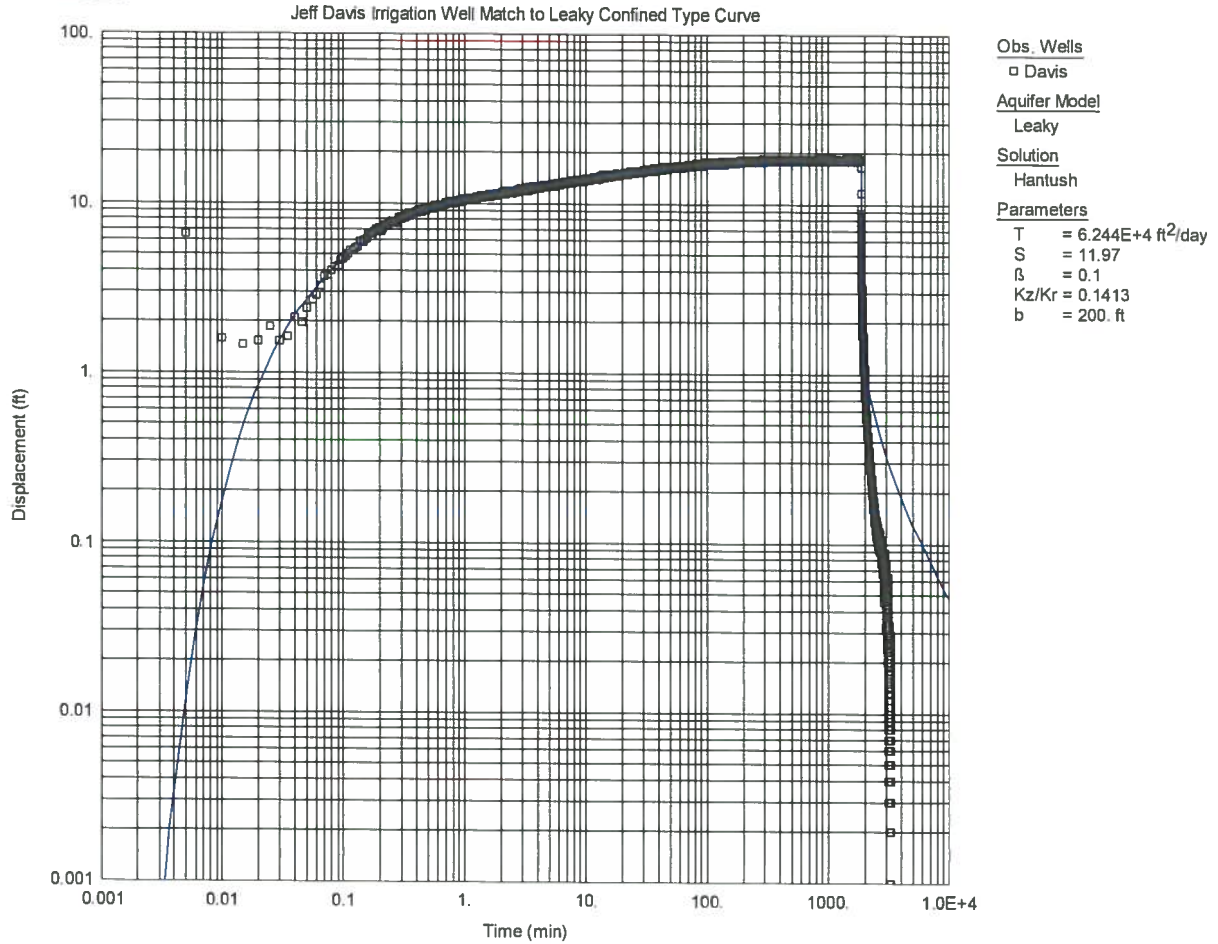


Figure 3-4 Hantush leaky confined solution matched to well data Jeff Davis Test.



Attachment 3

AQUIFER IMPACT ANALYSIS



Table 3-1 Table of values used in AQTESOLV simulation.

Parameter	Value	Unit
Transmissivity	62,400	ft ² /d
Storativity	0.01	unitless
Flow Rate	381.5	gpm
Duration	259,200	min
Total volume	303	ac-ft
aquifer thickness (b)	200	ft
kz/Kr	0.1	na

Table 3-2 Table of locations for various boundary corners and wells used in the AQESOLV simulation.

Location	x	y
NW Corner	0	50000
NE Corner	32000	50000
SW Corner	0	0
SE Corner	32000	0
Price POD	7044	16907
Well 0.48 mile NW	6287	19333
Well 0.3 mile E	8648	16777
Well 0.2 mile SSE	7157	15682
Location 1.2 mile NW	3716	23243

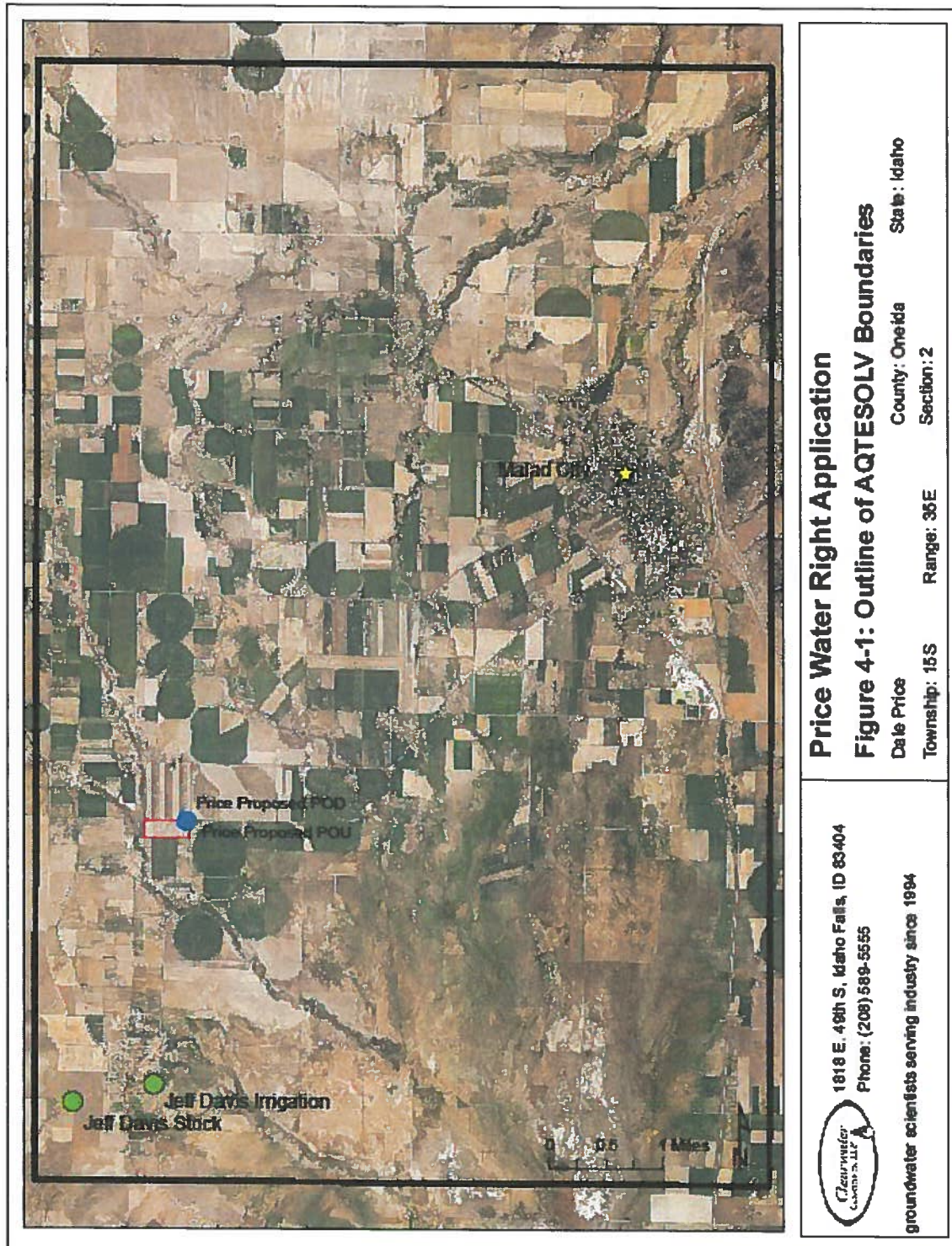


Figure 3-1 Outline of the boundaries used in the AQTESOLV forward solution calculation.

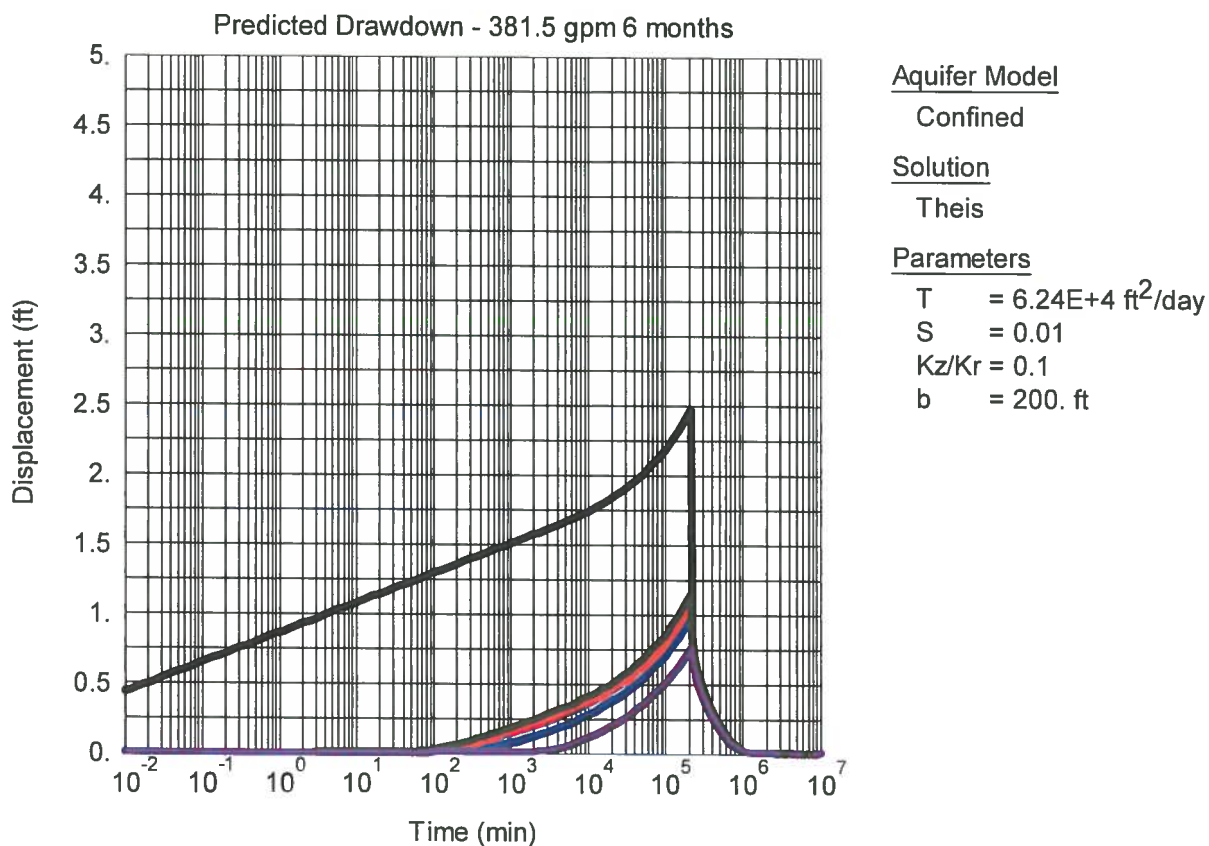


Figure 3-2 Predictive plot of drawdown at **381.5 gpm or 0.85 cfs for 180 days**. The colored lines represented drawdown for the POD and four idealized locations as specified below.

Key to line colors

- Purple Imaginary well 1.2 mile northwest of the proposed POD
- Blue Imaginary well 0.48 mile northwest of the proposed POD
- Red Imaginary well 0.3 mile north of the proposed POD
- Green Imaginary well 0.2 mile north of the proposed POD
- Black Proposed POD for Price