

Jared Branch

December 9, 2021

Well Drilling Potential at Happy Meadows, 2nd Addition

Warren Geo presents this Well Drilling Potential Memo for property (Site) adjacent to highway 95 and north of Athol in Bonner County, Idaho. The address is 2147 Mineral Ridge Road, Sagle, Idaho. The Site is within the NW Quarter of Section 26, Township 54 North and Range 3 West of the Boise Meridian. This 50-acre parcel is anticipated to be subdivided into 10 lots of 5 acres each. Ten wells are proposed to be drilled and all lots will have individual septic systems. This Memo evaluates if the Sites groundwater can provide sufficient production capability for domestic purposes. Public data was used for this evaluation and is listed under the References section. Based on the Well Drillers Reports, published geologic and hydrogeologic literature, it is Warren Geo's professional opinion that the Site is capable of transmitting enough groundwater to supply up to 10 wells and not likely impact nearby existing domestic wells.

Site Description & Geology

The Site is located in Idaho Administrative Basin 95 of the Coeur d'Alene and Spokane River drainages. The nearest weather station is in Bayview (#100667) with an annual mean precipitation of 24 inches; most of it falling as snow (Western Regional Climate Center, WRCC). The weather station is located 5 miles East of the Site at 2,070 feet above mean sea level (amsl). The southwest corner of the property is about 2,310 feet amsl, while the northern and eastern edges are about 2,360 feet amsl. Site topography slopes gently to the SSW at a 5% grade.

Attachment A shows a surficial geologic map of the Coeur d'Alene Quadrangle (Hunts, 2000). At the Site alluvium is present at the surface and biotite granite is encountered at shallow to moderate depths. Granitic outcrops of granitic bedrock are present in the surrounding area. The abandoned Hoodoo channel of the Lake Missoula flood runs to the southwest of the Site (Lewis et. al., 2002).

Hydrogeology

Well Drillers Reports are accessible from Idaho Department of Water Resources (IDWR), and are provided in **Attachment B.** Nine domestic wells are located within a 0.25 mile radius of the property (**Figure 1**). Well Drillers Reports typically provide information including lithology, well construction, and static water levels. Available hydrogeologic data relevant to this Memo are compiled in **Tables 1 and 2**. Nearby existing wells are located in Sections 26 and 27 of Township 54 North and Range 3 West.

According to Well Drillers Reports, static water levels range from 40 to 380 feet below ground surface (bgs). Water bearing units are first encountered from 15 to 600 feet bgs (**Table 1**). Alluvium thickness ranges from about 10 feet to almost 400 feet before encountering granitic bedrock. Alluvium is comprised of sand and gravel, with isolated clay lenses about 300 feet (bgs). All wells are screened in granodiorite. Granitic bedrock transmits some water through fractures, and generally yields less water than alluvial aquifers in the region (Walker, 1964).

Groundwater flows south towards Rathdrum Prairie. Precise elevations were not available for the domestic wells, so an accurate potentiometric surface (elevation of static water levels) could not be plotted at this time.

Domestic Well Flow Rates

Well Drillers Reports usually provide basic well test data containing flow rate, drawdown, and final pumping levels. Flow rates are not considered sustainable if pumping level drops to the bottom of the well within a several hour period (Walker, 1964). Where this occurs, then Warren Geo estimates a realistic aquifer yield is half the flow rate recorded on the Well Drillers Reports. Due to large water level drawdown, flow rates for



four of the wells are cut in half to calculate more realistic aquifer parameters (**Table 2**). Hence the estimated average flow rate of the 9 wells within a 0.25 mile radius is 7 gallons per minute (gpm), with a median rate of 3 gpm.

Aquifer Properties

In absence of long aquifer tests in the area, data from Well Drillers Reports are used to estimate aquifer properties. Within a 0.25 mile radius of the site there are four wells with sufficient data to make these calculations. Specific Capacity is a function of flow rate and drawdown, and describes how much water a well can produce (**Equation 1**).

Equation 1 : Specific Capacity = (Qx192.5)/s

Where Q = flow rate (gpm)

S = drawdown (feet)

Transmissivity (T) and Hydraulic Conductivity (K) represent rates that groundwater flows through an aquifer. These values are usually estimated using data from long term pumping tests. Unfortunately, long-term tests are not traditionally done for small domestic wells, therefore Specific Capacity is a parameter that can be used to estimate Transmissivity. Huntley et al. (1992) developed an empirical equation used to calculate T from Specific Capacity in fractured bedrock aquifers (**Equation 2**). The domestic wells used for empirical reference are completed and screened in fractured granodiorite.

Equation 2 : Transmissivity (T) = 0.078(Qx192.5/s)^{1.18}

Where Q = flow rate (gpm)

S = drawdown (feet)

Aquifer thickness and T are used to calculate Hydraulic Conductivity (**Equation 3**). For calculations using **Equation 3**, aquifer thickness was determined based on water bearing units recorded in the Well Drillers Reports.

Equation 3 : Hydraulic Conductivity (K) = T/b

Where T = Transmissivity (feet²/day)

B = aquifer thickness (feet)

The Site's proposed wells are expected to be drilled and screened in fractured granodiorite, as is observed in the surrounding wells and identified in geologic publications. The range of hydraulic conductivity typically observed in a fractured bedrock is 0.0002 feet/day to 8 feet/day (Dominico & Schwartz, 1990). Based on **Equation 2** and data from four wells, the Site's estimated aquifer T ranges from 0.008 to 0.14 feet²/day. Estimated Hydraulic Conductivity ranges from 0.00003 to 0.00086 feet/day (**Table 2**), which is within range of values seen in other fractured bedrock aquifers. The aquifer on this Site is likely to transmit a similar amount of groundwater.

Setbacks from Wells

According to requirements set by the Idaho Department of Environmental Quality Rules, IDAPA 58.01.03.007 states that an individual well shall be at least 50 feet from a septic tank (preferably upgradient of the septic system) and 50 feet from an effluent line. IDAPA 58.01.03.08 states that wells shall be at least 100 feet from a drainfield (also preferably upgradient). The proposed lots will have individual septic systems installed. Each lot is 5 acres, so there is plenty of space for appropriate setbacks.

Conclusion



The realistic average rate for nine nearby wells screened in fractured granodiorite is 7 gpm (**Table 1**), and the median rate 3 gpm. Ten homes are expected to be built and 2 gpm per household is generally sufficient for domestic purposes while irrigating less than 0.5 acres. Based on the Well Drillers Reports, published geologic and hydrogeologic literature, and calculated aquifer parameters, it is Warren Geo's professional opinion that the Site is capable of transmitting enough groundwater to supply up to ten wells and not likely impact nearby existing domestic wells. Warren Geo recommends that this information be confirmed after a well is installed on Site with a proper pumping test of at least 4 hours while recording flow rate and drawdown.

Kind Regards,

Haimony War

Harmony Warren, MS, PG





References

- Domenico, P.A. and F. W. Schwartz, 1990. Physical and Chemical Hydrogeology. John Wiley & Sons, New York. Page 824.
- Huntley, et al., 1992. The Use of Specific Capacity to Assess Transmissivity in Fractured-Rock Aquifers. Groundwater, Volume 30, Number 3.
- Hunts, Steven, 2000. Digital Geologic Map of the Coeur d'Alene 1:100,000 Quadrangle, Idaho and Montana. U.S. Geological Survey and Idaho Geological Survey.
- Lewis, R.S., Burmester, R.F., Breckenridge, R.M., McFaddan, M.D., and Kauffman, J.D., 2002. Geologic Map of the Coeur d'Alene 30x60 Quadrangle. Idaho Geologic Survey.

Well Drillers Reports. Idaho Department of Water Resources. www.idwr.idaho.gov/wells/find-a-well-map

Walker, Eugene H. (1964). Groundwater in the Sandpoint Region of Bonner County, Idaho. Idaho Bureau of Mines and Geology, Moscow, Idaho.

Western Regional Climate Center, WRCC. www.wrcc.dri.edu

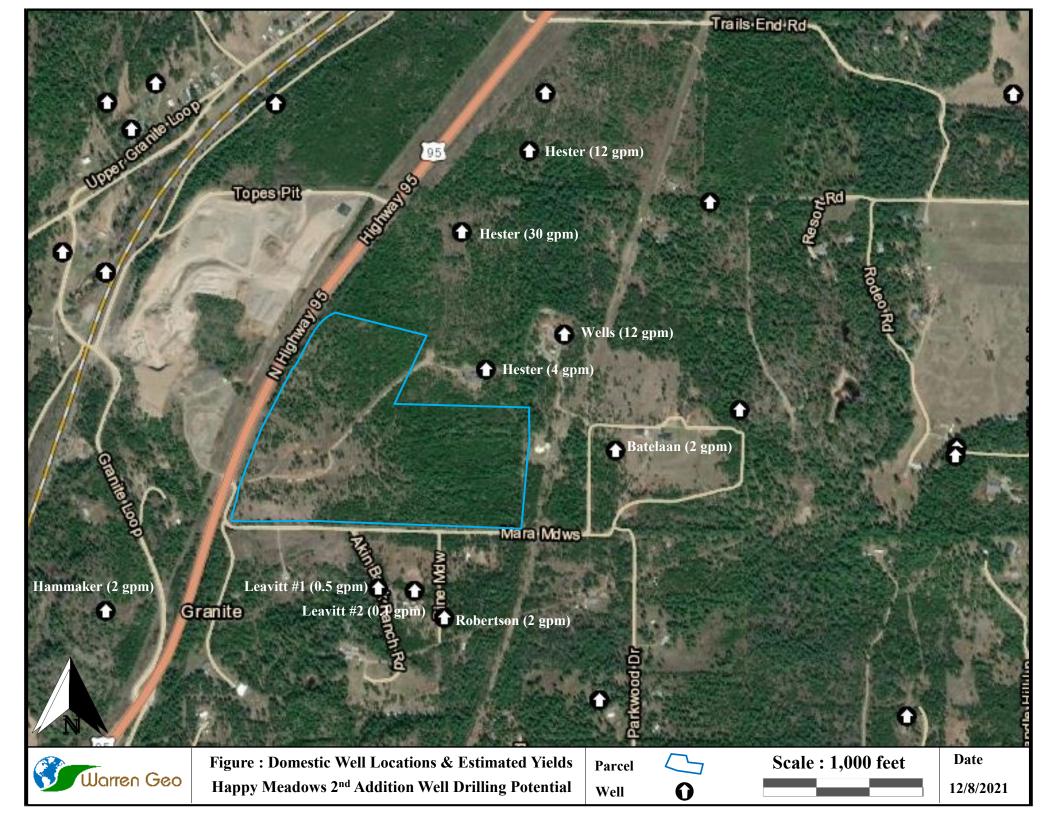


Table 1 Well Descriptions

Well ID	Owner	Static Water Level (feet bgs)	Rate (gpm)	Realistic Rate (gpm)	First Water Encountered (feet)	Total Well Depth (feet)	Screened Lithology	Depth to Bedrock (feet bgs)	Date Completed
3506	Batelaan	40	2	2	?	502	Granodiorite	8	12/6/1974
97274	Hammaker	165	2	2	180	200	Granodiorite	33	12/10/1997
883094	Hester	300	8	4	600	765	Granodiorite	235	8/4/2017
896926	Hester	250	30	30	250	390	Granodiorite	375	12/4/2020
896977	Hester	280	12	12	450	840	Granodiorite	130	12/11/2020
872180	Leavitt #1	380	1	0.5	16	665	Granodiorite	9	6/4/2014
873550	Leavitt #2	40	0.25	0.125	70	200	Granodiorite	52	10/1/2014
812344	Robertson	76	4	2	76	600	Granodiorite	23	4/5/2004
893052	Wells	196	12	12	196	740	Granodiorite	196	2/28/2020

Table 2

Aquifer Properties

Well ID	Owner	Pumping Level (feet)	Drawdown (feet)	Test Duration (hours)	Realistic Rate (gpm)	Aquifer Thickness (feet)	Specific Capacity (ft ² /day)	Transmissivity (ft ² /day)	Hydraulic Conductivity (feet/day)
3506	Batelaan	?	?	?	2	460			
97274	Hammaker	?	?	?	2	20			
883094	Hester	765	465	2	4	165	1.66	0.141	0.00086
896926	Hester	?	?	4	30	150			
896977	Hester	?	?	4	12	390			
872180	Leavitt #1	660	280	1	0.5	650	0.34	0.022	3.40367E-05
873550	Leavitt #2	200	160	0.17	0.125	230	0.15	0.008	3.62650E-05
812344	Robertson	600	524	1	2	524	0.73	0.054	1.03466E-04
893052	Wells	?	?	4	12	544			

Average Median

7.2

3

Attachment A

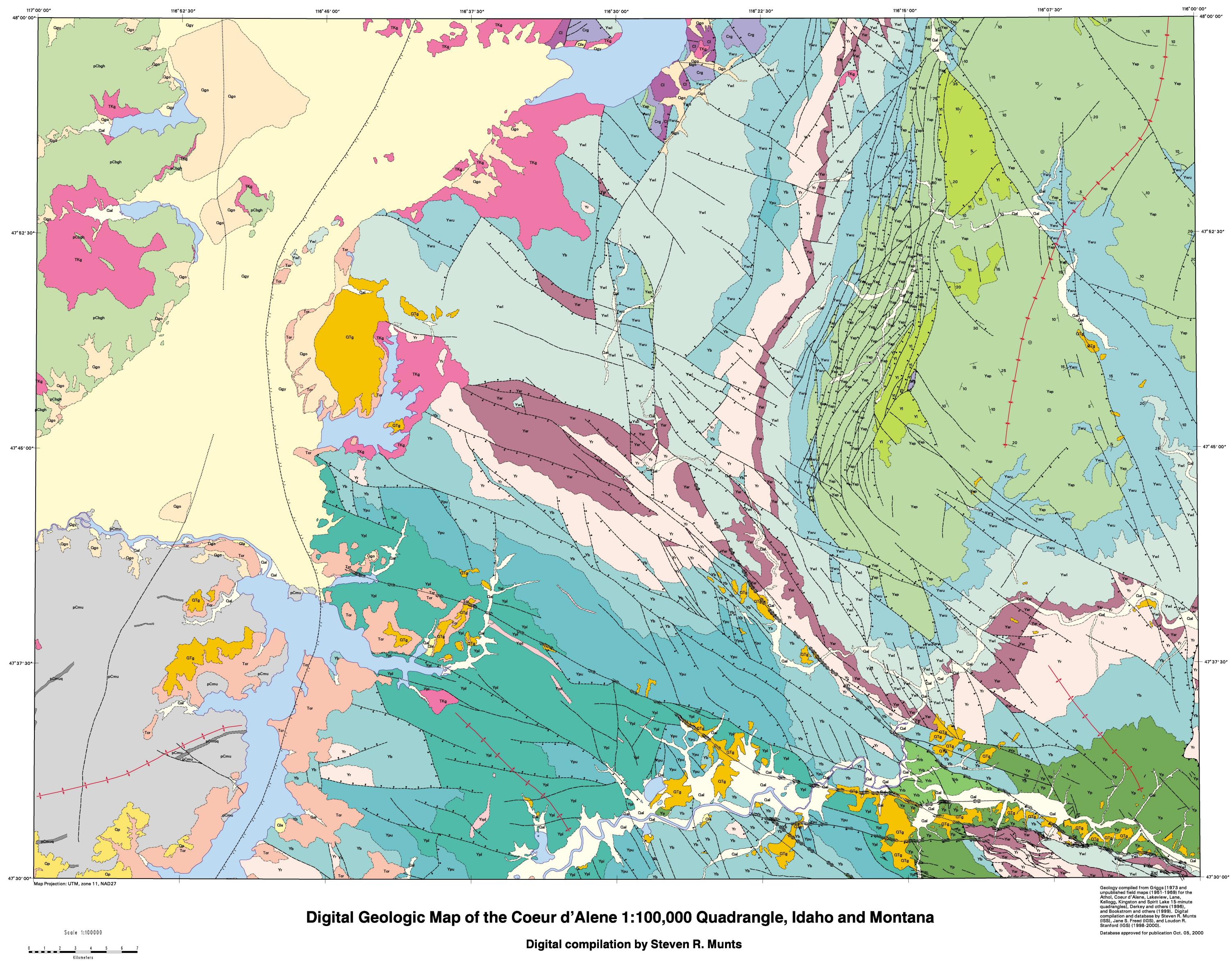
Geologic Map of the Couer d'Alene Quadrangle





Miles

U.S. DEPARTMENT OF THE INTERIOR U.S. GEOLOGICAL SURVEY



Prepared in cooperation with the Idaho Geological Survey

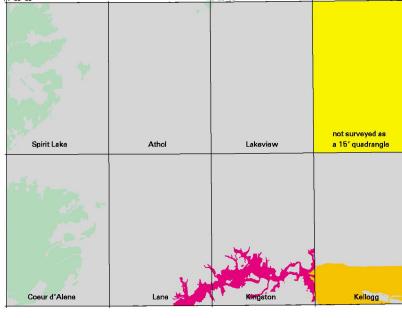
2000

Open-File Report 00-135 Version 1.0, (Sheet 1)

Explanation Ywu - Upper part of the Wallace Formation Qal - Alluvium Qgy - Younger glacial deposits Ywl - Lower part of the Wallace Formation Ysr - St. Regis Formation Qls - Landslide deposits Yr - Revett Formation Qgo - Older glacial deposits Yrb - Revett and Burke Qp - Palouse Formation Formations, undivided QTg - Older gravel deposits Yb - Burke Formation Tcr - Columbia River Group Yp - Prichard Formation, and Latah Formation undivided Ypu - Upper part of the TKg - Granitic rocks Prichard Formation Ypl - Lower part of the Prichard Formation CI - Lakeview Limestone Crg - Rennie Shale and Gold Creek Quartzite Other Precambrian Units Yqd - Quartz diorite Belt Supergroup pCbgh - Hauser Lake Gneiss YI - Libby Formation Ysp - Striped Peak Formation pCmuq - Quartzite in undivided metamorphic rocks Yws - Wallace and Striped Peak Formations, undivided Contacts; dashed where approximate; dotted where concealed. Fault, unknown offset; dashed where approximate; dotted where concealed. -Normal fault; dashed where approximate; dotted where concealed. Bar and ball on downthrown side.

<u>-___</u>___ Reverse fault, approximate; open teeth on downthrown side. Strike-slip fault with indeterminate lateral motion; dotted where concealed. Strike-slip fault with indeterminate lateral motion and normal offset, approximate; dotted where concealed. Bar and ball on downthrown side. -----Right-lateral strike-slip fault, approximate; dotted where concealed. ____**∓_**` Right-lateral strike-slip fault with normal offset; dashed where approximate; dotted where concealed. Bar and ball on downthrown side. **---**Thrust fault, approximate. Teeth on upper plate. Detachment fault, concealed. Teeth on upper plate. _____X Horizontal symcline; dotted where concealed. Horizontal anticline. Strike and dip of beds: inclined, showing dip vertical horizonta

---===



Index map showing geology data sources and 15-minute quadrangle names within the Coeur d'Alene 1:100,000 quadrangle.



Index map showing Coeur d'Alene 1:100,000 quadrangle

References

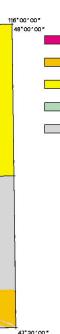
Bookstrom, A.A., Box, S.E., Jackson, B.L., Brandt, T.R., Derkey, P.D., and Munts, S.R., 1999, Digital map of surficial geology, wetlands, and deepwater habitats, Coeur d'Alene River valley, Idaho: U.S. Geological Survey Open-File Report 99-548, 186 p. and 11 digital plates. URL = http://geopubs.wr.usgs.gov/open-file/ofr99-548/ Derkey, P.D., Johnson, B.R., and Carver, Michael, 1996, Digital

geologic map of the Coeur d'Alene District, Idaho and Montana: U.S. Geological Survey Open-File Report OF 96-299. 6 p. and 1 digital plate (scale 1:62,500). URL = http://geopubs.wr.usgs.gov/open-file/of96-299/ Griggs, A.B., 1973, Geologic map of the Spokane quadrangle, Washington, Idaho, and Montana: U.S. Geological Survey Map I-768, scale 1:250,000.

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government. This map was printed on an electronic plotter directly from digital files. Dimensional calibration may vary between electronic plotters and between X and Y directions on the same plotter, and paper may change size due to atmospheric conditions; therefore, scale and proportions may not be true on plots of this map. Color also varies between plotters and may need to be adjusted. Digital files are available on World Wide Web at

http://geopubs.wr.usgs.gov/open-file/of00-135 The digital database is not meant to be used or displayed at any scale larger than 1:100,000 (e.g., 1:62,500 or 1:24,000).

pCmu - metamorphic rocks, undivided



Data Sources Bookstrom and others (1999) Derkey and others (1996) Griggs (1973) Munts and others (2000)

A. B. Griggs (written communications)

Attachment B

Well Drillers Reports



USE TYPEWRITER OR	
BALL POINT PEN	

State **State** daho Department of Water Administration

R P	E	V	E	D
-----	---	---	---	---

WELL DRILLI State law requires that this report be filed with the Dir days after the completion of	ector, [Departm	nent of V	Vater Administration within A	PR 1 1975	ل لا م کسر ذ
1. WELL OWNER	T				+ •• W	<i>f</i>
Name Moldon BateLAAN			LEVEL	Νοπηε	it of Water Reso An District Office face	
Address Rt1 Box 7 C.D.D. Dda.	T I	empera	ature <u>C</u>	el <u>40</u> feet below land sur (es @ No G.P.M. flow_ chd ° F. Quality <u>Cred</u> ,		
Owner's Permit No				in pressurep.s.i, □ Valve □ Cap □] Plug	
2. NATURE OF WORK 96-74-N-78	8. 1	ELL T	EST DA	ATA Hic		
🛱 New well 🛛 Deepened 🔲 Replacement] Pump	G.P.M.	Bailer Down	Hours Pun	nped
Abandoned (describe method of abandoning)		2				
3. PROPOSED USE	 					
🔀 Domestic 🔲 Irrigation 💭 Test 🔲 Other (specify type)	9. L	.ітноі	LOGIC I	LOG		
C. Municipal 🗌 Industrial 🛄 Stock 🔲 Waste Disposal or Injection	Hole Diam.	De From	apth To	Material		Water Yes No
4. METHOD DRILLED	8	0	5	tipsoil		
□ Cable	8	5 9	9 21	M. H. Corner	te	
				C \$510 6"= 20'		
5. WELL CONSTRUCTION	6	20	502		1 Anies	-
Diameter of hole inches Total depthfeet			<u></u>	<u> </u>		
Casing schedule: 🖉 Steel 🗆 Concrete Thickness Diameter From To						
-1023D inches $-1/2$ inches + 1 feet 20 feet				1		
inches inches feet feet feet						
inches inches feet feet				2gd @ 45		
inches inches feet feet						
Was a packer or seal used? 🗆 Yes 🛛 🖓 o				······································		
Perforated?			┣━━━			
How perforated? Factory Knife Torch Size of perforation inches by inches			· · ·	<u>_</u>		
Number From To						
perforations feet feet					<u> </u>	
perforations feet feet feet			<u> </u>			
Well screen installed?		-				
Type Model No.						
Diameter Slot size Set from feet to feet Diameter Slot size Set from feet to feet						
				<u>coar</u> úl	>	
Gravel packed? Yes Provide Size of gravel Placed from feet to						
· · · · ·						
Surface seal depth_20 Material used in seat 🔲 Cement grout				· · · · · · · · · · · · · · · · · · ·		
Breading clay DWell cuttings Secting procedure used DSturry pit DTemporary surface casing						
I sharry print is the starring and the starring is and the starring is a starring in the starring is a starring is	1				<u> </u>	
6 LOCATION OF WELL	10. W/	ark star	ted /	<u> </u>	10 6 .	74
stretch map location must agree with written location.		-				
	H. D	RILLER	S CERTI	FICATION		\bigwedge
Subdivision Name	Fi	rm Nor	na AL	ua Drilling + Der	SAIC NO	163
E Subdivision Name			n	pap chu An	rum 190.4	
Lot No Block No	A	idress 🖌	<u>90/ / (</u>	002 CPH Da.	, Date	-13 A
	Si	gned by	(Firm (Official) E Onw	Jus	
County BONNEY			or			
SW 33			(Оре	rator)		—
	HEW		OPV TO			

	AMIT NO.	TAG#D00034	164			,	,		A = 4	
her IDWR No. OWNER		16-71-	N - 2-36 Well Number:) L. Dra		Air Flowing Pumping Level T		isia
me HAMMAK	ER, VERN		640		yai./mi ว					-
dress 1806 GF	RANITË LO	OP RD			<u> </u>					
y ATHOL		State <u>ID</u> Z	·							
LOCATION OI sketch map loca	F WELL by ition must ag	r legal descri gree with writte	i ption In location			y test (or comme			
	Twp. <u>5</u> 4		orth or 🗌 South					ater encountered_ cribe repairs or abai	ıdon	n)
×	Rge. 0		ast or 🗹 West						Wa	
	_ _E Sec. <u>2</u>		4 <u>95</u> 1/4 <u>HVV</u> 1/4 NE SE	Bore			P	Water Churlity Temperature		T
┟┈┼╴┠──┼	Gov't Lo	otCo		<u>Diam</u>	From	To	TOPSOIL	hology, Water Quality, Temperature		
	Lat:	: : Lor	ng: : :	8	3	32		el Brown Clay		
S	Address of		SAME AS ABOVE	6	33		Granite Gr	ay Medium		ļ
		Cit	y <u>ATHOL</u>	6	130		Granite Gr			
Give at least name of roa				<u>6</u>	<u>140</u> 180		Granite Gr Granite Gr	av Medium av Small Fractures		<u>Г</u>
Blk.	s	Sub. Name		<u> </u>	0	(6" well Ca			Ī
Domestic Thermal TYPE OF WO New Well New Well Air Rotary	Injection RK check Modify D Cable	n 🗆 Ott ck all that apply Abandonmen Mud Rotary	ner	_						
Thermal TYPE OF WO New Well New Well New Well Naterial SEAL/FILTEF Material Air Rotary SEAL/FILTEF Material Air Rotary Attrial Attrial Air Rotary Attrial Attrial Air Rotary Attrial At	□ Injection RK check Modify □ / DD Cable □ Cable □ OCEDURE R PACK rom To 0 33 □ ed? ♥ Y al tested? □ ER:	n Ott ck all that apply Abandonmen Mud Rotary S AMOUNT Sacks or Pounds 10 SACKS N Shoe Y N N	<pre>ner</pre>	_				· · ·		
Domestic Thermal TYPE OF WO New Well New Well DRILL METHONIC SEAL/FILTER Material F Material F Materia	□ Injection RK check Modify □ / DD Cable □ Ca	n Ott ck all that apply Abandonmen Mud Rotary S AMOUNT Sacks or Pounds 10 SACKS 10 SACKS N Shoe Y N N	ing Liner Welded Threaded	_						
Domestic Thermal TYPE OF WO New Well Air Rotary SEALING PR SEAL/FILTEF Material F ENTONITE as drive shoe use as drive shoe use as drive shoe sea CASING/LINE ameter From T 6 +2 3 ength of Headpipe	□ Injection RK check Modify □ / DD Cable □ OCEDURE R PACK rom To 0 33 ed? ✔ Y al tested? □ ER: 0 Gauge 3 .250 e DNS/SCRE	n Ott ck all that apply Abandonmen Mud Rotary S AMOUNT Sacks or Pounds 10 SACKS 10 SACKS N Shoe N Shoe Y N N Material STEEL Length of	ing Liner Welded Threaded			Depth	200'	<u>(Mea</u>		
Domestic Thermal TYPE OF WO New Well DRILL METH Air Rotary SEAL/FILTER Material F ENTONITE as drive shoe use as drive shoe use	□ Injection RK check Modify □ / DD Cable □ Cable □ OCEDURE RPACK rom To 0 33 ed? ✔ Y al tested? □ ER: o Gauge 3 .250 e DNS/SCRE Method	n Ott ck all that apply Abandonmen Mud Rotary S AMOUNT Sacks or Pounds 10 SACKS 10 SACKS N Shoe Y N K Material STEEL Length of ENS	ing Liner Welded Threaded	Com	pleted I Starte		_200' 12/10/97		asura 12/1	
Domestic Thermal TYPE OF WO New Well DRILL METH Air Rotary SEAL/FILTER Material F ENTONITE as drive shoe use as drive shoe use	□ Injection RK check Modify □ / DD Cable □ Cable □	n Ott ck all that apply Abandonmen Mud Rotary S AMOUNT Sacks or Pounds 10 SACKS 10 SACKS N Shoe Y N K Material STEEL Length of ENS	rer	Com Date 13. DI	Starte	d R'S CE nat all	12/10/97 RTIFICA	_ Completed	<u>12/1</u> Indar ed.	<u>0/9</u> ds

Form 238-7 6/07

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

72711	
1. WELL TAG NO. D	12. STATIC
Drilling Permit No.	Depth first v
Water right or injection well #	Water temp
2. OWNER:	Describe ac
Name Joe Hester	Well test:
Address 1611 W. Praire	Drawdown (
City Post Falls State ID Zip 83854	4105
3.WELL LOCATION:	
Twp. 54N North & or South Rge. 3W East or West &	Water qualit
Sec. 26 1/4 SE 1/4 NW 1/4	13. LITHOL
	Bore Fro Dia. (ft)
Goy't Lot County Bounter	
yet. N 48 0 00.136 (Deg. and Decimal minutes)	
VLong W116 40.009 (Deg. and Decimal minutes)	8" 0 4
Address of Well Site 13 Mara Rd off Hwy 95	55
(Crive al least name of road + Datance to Road or Landmark) City Careparat	23
Lot Blk Sub. Name	53
4. USE:	57
Comestic Municipal Monitor Irrigation Thermal Injection	60
Other	60
5. TYPE OF WORK:	65
6. DRILL METHOD:	
Air Rotary 🗌 Mud Rotary 📋 Cable 🔲 Other	
7. SEALING PROCEDURES:	
Seal material From (ft) To (ft) Quantity (lbs or ft ¹) Placement method/procedure	
Bentente Chip D 18 8 bg S Temp Casing	
B. CASING/LINER:	
(normital) (II) Scheoule	20
16 +1 235 250 Steel X V X	Mai
4"+20 765 5ch40 PUC	Rot
	<u> </u>
	- N
Was drive shoe used? X IN Shoe Depth(s) 235'	Du
9. PERFORATIONS/SCREENS:	
Perforations XY IN Method Saw Cart	
Manufactured screen Y X N Type	
Method of installation Lowered in	
Drameler	1
	Completed De
-21 764 48" 60 4" AC Sch 40	Date Started:
	14. DRILLE
	I/We certify t
Length of Headpipe Length of Tailpipe	the time the
Packer TY KN Type	Company Na
10.FILTER PACK:	Principal Dr
Filter Matenal From (ft) To (ft) Quantity (lbs or ft ³) Placement method	
	*Driller
	*Operator II
11. FLOWING ARTESIAN:	Operator I
Flowing Artesian?	and the latest
	* Signature

Describe control device

Depth				PELL TEST	tic water level (if)	10x 3	ω'
Vater	temp. (⁰	F) <u>4</u>	4		temp. (°F)44	L	
Descr	ibe acces	ss port _	Well (af.			
Vell t	est:			,	Test method:		
Draw	down (feet			est duration	Pump Bailer A		lowing
-	1121	yie A	ld (gpm)	(minutes)		~ ª	rtesian
	1051	Hope	20 0	LHVS		2	
			GAM]	•	
Vater	quality t	est or co	mments:	rear			
. Пт	HOLOG		and/or repai	rs or aband	ionment:		
Bore	From					144	ater
Dia.	(ft)	To (ft)		lology or desc andonment, wi	ription of repairs or		1
(in)						Y	IN_
<u> </u>	0	18	Goal M	the.			
5"	0	4	TODSOUL	has m	ix.		
	4	55	Shad C	6/200	Dudy		 -
	00	020	June -	Grave	Pive		+ -
	22-	22	Cemen	199 0	quel, (Day de	7	+
	235	539	Soft Gu	ante u	Pintzona	>	
	579	599	Hard I	Slace +	Ulife Consta		T
	cro	12	6450	D. N	WP. LO.		<u>├-<u></u></u>
	211	00	2017 27	Canante	7 Marying		┼-┱
	17.00	1.0		1	1-2014		
	605	630	Hards	FY Gre	and in		
	430	650	Soft 5	4P Gra	to Red Dut	N	
	160	-11 6	11.10	201	ap recount		N
	1620	1.62	Haras	<u>61 G.VO</u>	unite		K
						_	
				CI:	711 1 110		
			100 mV	191	all-phal		
	+		TUIVA	200	- Dup		
				RECI	IVED		
							1
				000			
	t			- SEP 9	0 2017		
					V LU11		
	k - 1	l i					
	200	262	074	DWR/	NODTLL		
1016	200-	·263-	0974	~	NUNIN	10	-
	Mark	Ditte	-		_ /6		
_			A	AAA			
	Robin	PIπs	C - 1 - 1 - 1			P	
	0	inte				A	
	Se	rving the Idaho				Ja.	
	Nort	h Idano				R	1 -
_	1401 -	20 year			TYA	F	
	Over	20 Year					
				-01	-07 6	-	-
		DBI		DC - MATE	RTREATMENT		
		Comple		-S WATE	RIREAIMENT		_
		Comple	te Systems •	From the \	Nell To The House		
			435 Woodview	Rd + Sandor	nint ID 93964	TE	a —
				nu. · Ganupe	Mill, ID 03004		2 -
	1	1					
mole	ted Dept	h /Maaeu	rable): 7/	5			
лпри		II (IVIGASU		/			
ale Si	larted: 🚽	1-31	-17	Date Comp	latadi 8-4-	-17	
				Date Comp	icieu.)
I. DF	RILLER'S	S CERT	FICATION:				
Ve ce	ertify that	all minir	num well const	ruction stand	dards were complied	l with a	it
e tim	e the rig	was rem	oved.	10	1 Tin		
	AAA	5.1	after la	Pail	binc a	59	
ompa	ny Name	Jul	Elan	IEV VV	1 Co. No. 20	1	
		MII	1. Dir	4 ' -	6	20-	17
rinci	bal Dnller	- Ma	u fille	-	'Date	<i>w</i> -	17
-	1<	-	CE			20	1-
riller	_	2	25		Date 5	H-	-19
			1. Sources				
	tor II				Date		
pera							_

Signature of Principal Driller and rig operator are required.

Date

Describe control device

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WEL	LTAG	ю. D 0	086647	,	-		12 5				d WELL TEST	с.				
Drilling	ı Permit I			89	10924						<u>250'</u> Sta			250	ı	
											Bottom hole					_
2. OWN	IER:										Bottom hole Steel Cap	temp. (°	F) <u>Cold</u>		_	_
	Joe He								ss port	welueu .	Steel Cap	_	_			_
			rairie A	Ve			Well t		Dis	scharge or	Test duration	ຸ Test m			Flor	wing
						zip 83854		vdown (feel	u yie	eld (gpm)	(minutes)	Pump	Bailer	Air	arte	sian
			_	Sta	te <u>ID</u> 4	2ip 03034	NA		30+	gpm	240			\mathbf{X}		2
									_			J			L	
						ast 🔲 or West 🗵				omments: _					_	
Sec. 26	i		10 00100	1/4 <u>NE</u>	1/4 NW	1/4	13. LIT Bore	1			epairs or aband		_			
					cres 160 ac	es	Dia.	From (ft)	To (ft)	Remark	s, lithology or desci abandonment, wa		repairs or	-	Wate	
Gov't Lo	ot	C	ounty BC	nner			(in) 12"	0		Soil Sar	nd and Gravel		_	_	T	N
Lat. 48	1.0	<u>° 0</u>	0.3121		(De	and Decimal minutes)	8"	18		Sand an					-	X
			0.0540		(De	and Decimal minutes)	8"	250		Sand an				<u> </u>	x	Х
				iviead	OWS (RP 54	N03W262402A)	8"	270		Clay					^+	х
				City	Athol		8"	290	-	Sand				-	x	^
[Give at least	name of road	 Distance to 3 	toad or Landm	ark)			8"	310		Sand an	d Gravel			_	x	-
		<u> </u>	_ Sub. N	ame			8"	315		Fine Sar				_	x	
4. USE:		Mustala					8"	320			ravel and Clay	/		_	x	
	estic L		а Ци	onitor L	Irrigation	Thermal 🔲 Injection	8"	335		Clay					~	х
-9							8"	338			nd Gravel			,	x	
			ment we	ПМ	odify existing w	الم	8"	370		Gravel				_	x	
Aban	donment	Oti	ner		confy existing w		8"	375	380	Weather	ed Granite					х
6. DRIL	LMETH	OD:					8"	380	400	Granite						х
🗙 Air R	otary	Mud F	Rotary	Cable	Other											
7. SEAL	LING PF	OCEDU	RES:													
Seal	material	From (ft) To (ft)	Quantity	(Ibs or ft ³) Place	ement method/procedure										
Bentor	nite Chi	os O	18	550	Ibs. Dry F	Pour										
								-					`			
8. CASI	NG/LIN	ER:						-			RECE	VEL				
Diameter (nominal)	From (ft)	To (ft)	Gauge/	Mate	rial Casing	Liner Threaded Welded										
6"	+2	400	Schedule	Steel			-				DEC 08	2020				
0	72	400	.250	Steel							DLU					_
											IDWR/NG	ORTH	1	_		_
							-				ID WI WING				_	
												33			_	
Was driv	e shoe i	sed? IX	Y IN	Shoe D	epth(s) Ring	Bit @ 400'						B	_	_		
9. PERF												1	_	_	-	
					forator						ININ/				-	
					forator										-	_
Manufac	tured sc	reen 🗖	Y 🗙 N	Туре			-				Local Sector and					
Method of	of installa	tion									Marster Will	lite			-	
	To (ft)	Slot size	Number/ft	Diameter		Gauge or Schedule				40	01	100 E			_	
From (ft)	<u> </u>			(nominal)			Comple	eted Depi	th (Meas	urable): 40				_	_	
From (ft)		1/4x1	8	6"	Steel	.250	Date S	tarted: 12	2/2/20	20	Date Com	oleted: 12	2/4/202	20		
From (ft) 373	390									TIFICATIO						
L	390						l/We c	ertify tha	it all mini	imum well o	construction stan	dards we	ere comp	lied w	ith at	
L	390					1.0		ne the rig								
373		_{pe} NA		Lenc	th of Tailoine N	A										
373	f Headpi			LLeng	th of ⊤ailpipe <u></u>		Comp	any Nam	Hors	lev Drilli	na. Inc.	C	- No 6	32		
373 Length o Packer	f Headpi	N ⊤уре	5	Leng	th of Tailpipe <u>►</u>					ley Drilli			co. No. <u>6</u>			_
373 Length o Packer 10.FILT	f Headpi	N Type K:	-				*Princi	pal Drille	er_C.	Mark	Howley		Co. No. <u>6</u> Date <u>12/</u> 4		20	_
373 Length o Packer 10.FILT	f Headpi	N ⊤уре	-		th of Tailpipe <u>N</u> nanlity (Ibs or ft ³)	Placement method	*Princi	pal Drille	er_C.	Mark	Howley	C	Date 12/4	4/202		_
373 Length o Packer	f Headpi	N Type K:	-				*Princi *Driller	ipal Drille	er_C.		Howley	C	50 street	4/202		
373 Length o Packer	f Headpi TYX ER PAC	N Type K:	-				*Princi	ipal Drille	er <u>C.</u> usty	Mark	Howley		Date 12/4	4/202		-

* Signature of Principal Driller and rig operator are required.

Describe control device

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

Flowing artesian

Water Y Ν х х х х х

х

х

1. WELL ТАБ NO. D 0086651	12	STATIC	NATER	I EVEL a	nd WELL TEST	c.			
Drilling Permit No					450' Sta		wol (ft)	280'	
Water right or injection well #		er temp. (¹		1 1	Bottom hole	temn (⁰ E)	Cold		
2. OWNER:		cribe acce	ss port	Nelded	Steel Cap	tomp _e (1)			-
Name Joe Hester		I test:				Test met	hod:		-
Address 11611 W. Prairie Ave		awdown (fee		scharge or eld (gpm)	Test duration (minutes)	1	Bailer		=lo
City Post Falls State D Zip 83854	NA		12 g		240		_	X	arte C
3.WELL LOCATION:				•					
Twp. 54 North 🗵 or South 🗋 Rge. 03 East 🗍 or	VVest 🔼			omments:					_
Sec. 23 1/4 SE 1/4 SW 1/4	13. L Bor		SIC LOC	and/or r	epairs or aband	donment:			_
	Dia	From (ft)	To (ft)	Remark	ks, lithology or desc abandonment, wa	ription of rep ater temp	oairs or	W	at
Gov't Lot County Bonner	(in) 12			Soil Sa	nd and Gravel			Y	╀
Lat. 48 00.4152N (Deg. and Decima Long. 116 39.9258W (Deg. and Decima	al minutes) 8"		-		nd Gravel			+	ł
Long. 110 039.9236VV (Deg. and Decima	I minutes) 8"	130	-	Granite					t
Address of Well Site RP013870000040A		135	150	Granite)				t
(Give at least name of road + Distance to Road or Landmark) City Athol	5.5			Granite					
Lot. <u>4</u> Blk Sub. Name Happy Trails	5.5				ed Granite 2 gr	om		x	Ļ
4. USE:	5.5		-	Granite	d Cremite 10 a				Ļ
⊠ Domestic □ Municipal □ Monitor □ Irrigation □ Thermal	Injection			Granite	ed Granite 10 g	gpm		X	╀
5. TYPE OF WORK:			040	Granite			_	1	ł
New well Replacement well Modify existing well									t
Abandonment Other									t
6. DRILL METHOD:									
🛛 Air Rotary 🔲 Mud Rotary 🔲 Cable 🔲 Other		_					_		L
7. SEALING PROCEDURES: Seal material From (fit) To (fit) Quantity (lbs or fit ³) Placement method.	/procedure			REC	EIVED				╞
Bentonite Chips 0 18 600 lbs. Dry Pour	procedure			· · • •	LIVED			-	┝
				DEC	1 7 0000				ł
8. CASING/LINER:				UEL	17 2020				t
Diameter From (ft) To (ft) Gauge/	ded Welded			En La con	da i da mana				t
(nominal) 10(1) 10(1) Schedule Material Casing Liner Inteact 6" +2 150 .250 Steel Image: Casing Liner Inteact				DWH	/NORTH				
4" 20 840 40 PVC		_							L
		-							┝
		-							┝
	-					and the second s		1	F
Was drive shoe used? X Y IN Shoe Depth(s) Ring Bit @ 15	0'								Γ
9. PERFORATIONS/SCREENS:		_				0			
Perforations X Y IN Method Saw Cut									
Manufactured screen 🔲 Y 🗵 N Type								-	-
Method of installation					Repaired Drill	lna			H
From (ft) To (ft) Slot size Number/ft Diameter Material Gauge or	r Schedule				0'	1.14			-
740' 840' 1/8x6 2 4" PVC 40	Com			urable):840		101			
		Started: 12				pleted: 12/	1/202	20	
					DN: construction stan	d			
Length of Headpipe NA Length of Tailpipe NA	the t	me the rig	was ren	noved.	construction stan	uarus were	complie	ea with a	36
Packer I Y IN Type	Com	nany Nam	Hors	lev Drilli	ing, Jnc.	Co.	N= 63	2	
10.FILTER PACK:		pany Nam	1	no le	Huster	Co.	NO. 00	<u> </u>	-
	*Prin	cipal Drille	er_ <u>C.</u>	Maur	HUNT	Dat	e <u>12/14</u>	\$/2020	
Fitter Material From (ft) To (ft) Quantity (lbs or ft') Placemen NA <t< td=""><td>*Drill</td><td>er</td><td>Du</td><td>stin</td><td>Howley Miles</td><td> Da</td><td>e <u>12/1</u>4</td><td>4/2020</td><td></td></t<>	*Drill	er	Du	stin	Howley Miles	Da	e <u>12/1</u> 4	4/2020	
	*Ope	rator II				Dat	e		_
11. FLOWING ARTESIAN:		ator I				Dat	e	_	
Flowing Artesian? TY XN Artesian Pressure (PSIG)	* Sig	nature of	Principa	al Driller a	nd rig operator a	are require	ed.		

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

Flowing artesian

Water Y

N

X

Х

Х

Х

X

х

x

х

х

х

	1. WELL TAG NO	D. D D006	61976					12 S	TATIC V	NATER	LEVEL a	nd WELL TEST	ç.			
	Drilling Permit No). 	272		KO							16' Sta		, avol (ft) s	380'	
	Water right or inject	tion well #	-					Water	temn / ⁰	_F Col	d	Bottom hole	tomp (⁰ E			_
	2. OWNER: Lan	ry & Kat	hryn Le	avitt			_	Descr	ihe arre	• / <u></u> ss nort	Welded	Steel Cap	temp. ()	/		-
	Namo							Well t		so port_		•	Test me	thod		-
	Address P.O. E	3ox 694							down (fee		charge or	Test duration	Pump	Bailer		Flo
	City Athol			State	, ID	Zip 8380	1	66	•	<u>'' ya</u>	ald (gpm) 1	(minutes) 1 hr.			×	arte 1
	3.WELL LOCATI	ON:														ī
	Twp. 54 North	N X or	South 🗖	R	_{oe} 03 _F	East 🗖 or	West	Water	quality t	est or co	omments:					
	Twp. <u>54</u> North Sec. <u>26</u>	NV NV	V 1/4	NE	1/4 SW	1/4			HOLOG	IC LOG	and/or r	epairs or aband	lonment:			
					8 160 m	1100		Bore Dia.	From (ft)	To (ft)	Remari	ks, lithology or descu abandonment, wa		pairs or		Vat
	Gov't Lot	Count	y Bonn	er				(in) 10	0		Sand &	•	ter temp.		Y	+
į	Lat. 47 Long. 116	<u>• 59 :</u>	856		(De	g and Decim	al minutes)	10	9			Pepper Granite		_	×	╀
/	Long. 116	• 40 :	215		(De	g. and Decim	al minutes)	6	38			Pepper Granite			 ^	╀
	Address of Well Sit	_{te} _129 A	kin Bac	k Ra	inch Rd.			6	53			ranite w/red &			x	$^{+}$
	(Give at least name of road + D	school of David		City_	Athol							a wet spot				t
	Lot Blk.							6	127			Pepper Granite	3			Ť
	4. USE:	0.					,	6	200			ranite - Med.				Ι
	⊠ Domestic □ N	Aunicipal	Monito		Irrigation] Thermal	Injection	6	233			anite w/ Gray	<u>s Gm</u>		X	
	Other					_		6	240		1 gpm 2				-	╇
	5. TYPE OF WOR							6	342			anite - Med. anite w/ Pink				∔
	New well		nt well] Moo	dify existing w	ell		6	369	£	Gray Gr					╀
	Abandonment	_						6	435			anite w/ Pink &	& Green	1		╀
	6. DRILL METHO			ablo	🗆 Other			6	635			ed Granite	x oreen			╋
			-	1016				6	636		Ŧ	anite w/ Pink				$^{+}$
	7. SEALING PRO Seal material	From (ft)		intity (lb	s or ft') Plac	ement metho	d/procedure									t
	Casing Seal	0		200		Pour										t
	Hole Plug	6	38 0	550 I	bs Dry	Pour										t
	8. CASING/LINER	<u>, </u>														Ι
	Diameter (nominal) From (ft) T			Materia	Casing	Uner Threa	ded Welded									
		38 .25		steel	×					<u> </u>		ECEIV				Ļ
		65 .20		VC						<u> </u>		- CEIV	'En-			╀
	4 -0 0	.20		<u>vc</u>			·					1111 0				┢
											<u> </u>	. 07 21	115			┢
i											10				+	┢
	Was drive shoe use	ed? 🛛 Y	🗖 N Sho	e Dep	oth(s) 38'							WR/NOR				t
	9. PERFORATION	NS/SCREE	INS:										111			t
	Perforations XY	N Me	_{thod} Ski	ilsaw	1											T
	Manufactured scree															Γ
	Method of installatio															╞
	· · · · · ·	lot size Num	i Dian	neter		1.0										1.
			non) mileu	ninal)	Material		r Schedule	Comple	ted Dept	h (Meası	rable): 66	5				
	645 665 1	/8x6 4	8 4	."	PVC	.200		Date St	arted: M	ay 30, 1	2014	Date Comp	leted: Jun	4, 201	4	
				-+				414. DF		S CERT	IFICATIO					
												construction stand	lards were	e complie	ed with	at
	Length of Headpipe		L	ength.	of Tailpipe _				e the rig							
	Packer 🗌 Y 💌 N	Туре						Compa	ny Nam	e H2O	vvell Se	rvice Inc.	Co.	No	48	
	10.FILTER PACK:	:						*Princi	oal Drille	1	Du 1	Rulal	Da	te Jun 8	5, 2014	4
	Filter Material	From (fl)	To (fl)	Quan	tity (ibs or ft ³)	Placemer	nt method	*Driller	-	10						
								*Driller	X	~			Da	te <u>Jun </u> t	J, 201	*
		1						*Opera	for II	<u> </u>			Dat	te		
	11. FLOWING AR	TESIAN:		•				Operat	or i				'Def	۵		
	Flowing Artesian? [Artesian	Press	ure (PSIG)											_
								* Signa	ture of l	Princlpa	li Driller a	nd rig operator a	re requir	ed.		

Describe control device

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

	L TAG	NO. D	D006	57798	3					
Drilling	Permit	No.	8	73	55	50				
					~					
2. OWN	right or in NER: _L	arry 8	Kathr	yn Le	avi	t		#	2	
Name										
Addres	P.O	. Box	694							
City A	thol				Sta	te ID		Zip_8	3801	
3.WELI							~			
Sec2(6		NW	1/4	NE	1/4	SW	1/-	or V 4	
Gov't Lo Lat. <u>47</u> Long. <u>1</u> Address	ot		County	Bon	ner					
Lat. 47		o	59 : Ē	353			(De	eg, and (- Decimal mil	nutes)
Long. 1	16	0	40:1	45			(De	g. and D	Decimal mir	nutes)
Address	of Well	Site 1	29 Aki	n Bac	<u>k</u> R	anch	Rd.			
(Give at least	name of road	+ Distance I	o Road or Lar	vimark)	City					
Lot.	BI	k	Sub.	Name						
4. USE:										
Dom					r [] Irrigati	on [] Theri	mal 🔲	Injectior
5. TYPE					-	a alth a s	atta	- H		
New V										
6. DRIL										
🗙 Air R	otary	🗌 Mud	Rotary	□c	able	Πo	ther _			
7. SEAL					- 64 - 4	1				
	ng Sea					$ bs or \pi^{\circ}\rangle$		y Po	nethod/proc	ceaure
								,		
8 049	NG/LIN	ER:								
J. JA31			Gauge/ Schedule		Mate	rial	1			
Diameter	From (ft)	To (ft)				101	Casing	Liner	Threaded	Welded
Diameter (nominal) 6"	From (ft) +2	To (ft)	.250		Stee		Casing	_	Threaded	Welded
Diameter (nominal)	t				Stee			_	_	_
Diameter (nominal)	t				Stee		X		_	_
Diameter (nominal)	t				Stee				_	_
Diameter (nominal) 6''	+2	56	.250						_	_
Diameter (nominal) 6'' Was driv	+2 e shoe L	56 used? [.250 X Y	N Sho					_	_
Diameter (nominal) 6" Was driv 9. PERF	+2 e shoe L	56 used? [.250	N Sho	be De	epth(s)_	56'			_
Diameter (nominal) 6'' Was driv 9. PERF Perforatio	+2 e shoe L ORATIO	56 ised? [ONS/S Y X N	.250	N Sho S:	be De	epth(s)_	⊠ □ □ 56'			_
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufacl	+2 e shoe L ORATIO	56 ised? [ONS/S Y X N reen	.250	N Sho S:	be De	epth(s)_	⊠ □ □ 56'			_
Diameter (nominal) 6'' Was driv 9. PERF Perforatio	+2 e shoe L ORATIO	56 ised? [ONS/S Y X N reen	.250	N Sho S: N Type	be De	epth(s)_	⊠ □ □ 56'			_
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufacl	+2 e shoe L ORATIO	56 used? [ONS/S Y X N reen _	.250	N Sho S: N Type	be De	epth(s)_	⊠ □ □ 56'			
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufacl	+2 e shoe L ORATIO	56 used? [ONS/S Y X N reen _	.250	N Sho S: N Type	De De	epth(s)_	56'			
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufacl	+2 e shoe L ORATIO	56 used? [ONS/S Y X N reen _	.250	N Sho S: N Type	De De	epth(s)_	56'			
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufacl	+2 e shoe L ORATIO	56 used? [ONS/S Y X N reen _	.250	N Sho S: N Type	De De	epth(s)_	56'			
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufacl	+2 e shoe L cORATIO ons 1 tured scr of installa To (ft)	56 Ised? [ONS/So Y X N reen Slot size	.250	N Sho S: od N Type	De De	epth(s) _ Mat	56'	Ga	uge or Sch	
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufaci Method co	+2 e shoe L cORATIO ons 1 tured scr of installa To (ft)	56 Ised? [ONS/SC Y X N een Slot size	.250	N Sho S: od /ftt Diar	De De	epth(s) _ Mat	56'	Ga	uge or Sch	
Diameter (nominal) 6" Was driv 9. PERF Perforation Manufacl Method co From (tt)	+2 e shoe L cORATIO ons 1 tured scr of installa To (ft) f Headpi] Y X	56 Ised? [ONS/SC Y X N reen C ation Slot size	.250	N Sho S: od /ftt Diar	De De	epth(s) _ Mat	56'	Ga	uge or Sch	
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufact Manufact From (ft) Length of Packer [10.FILTE	+2 e shoe L cORATIO ons 1 tured scr of installa To (ft) f Headpi] Y X	56 Ised? [ONS/S Y [X] N reen [ation Slot size N Typ K:	.250	N Sho S: od /ftt Diar	De De	epth(s) _ Mat	⊠i □		uge or Sch	
Diameter (nominal) 6" Was driv 9. PERF Perforatio Manufact Manufact From (ft) Length of Packer [10.FILTE	+2 e shoe L cORATIO ons 1 tured scr of installa To (ft) f Headpi f Headpi g Y X ER PAC	56 Ised? [ONS/S Y [X] N reen [ation Slot size N Typ K:	.250	N Sho S: od N Type	De De	epth(s) _ 	⊠i □		uge or Sch	

Flowing Artesian? TY X N Artesian Pressure (PSIG)

Describe control device ____

12. STATIC WATER LEVEL an	d WELL	TESTS:
Depth first water an equatored (A)	70'	Ctotio unter lou

Depth first water	encountered (ft)	Sta	itic water	level (ft	, 40'	
Water temp (⁰ F)	Cold	Bottom hole	temp. (⁰	F) Col	d	
Describe access	port_Welded	Steel Cap				
Well test:			Test m	ethod:		
Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesiar
200	1/4	10 min.			×	

Nater ou	ality test	07	comments:	

3. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Wa Y	ater
10	0	3	Top Soil	<u> </u>	
10	3	38	Gravel, Cobbles & Boulders		
8	38	52	Gravel & Cobbles		-;
8	52	56	Decomposed Granite		
6	56	61	Soft Gray Granite		
6	61	116	Gry,Peach & Grn Granite 1/4gpm	x	-
6	116	124	Gray Granite		
6	124	125	Gray & Peach Granite		
6	125	181	Gray Granite		
6	181	183	Fractures w/ Clay		3
6	183	204	Gray & Peach Granite		;
			RECEIVED		
			NOV 2 6 2014		
			1404 2.0 2011		
			DWR / NORTH		
Comple	ted Depti	h (Meası	urable):204'		
Date St	_{arted:} Se	p 26, 2	2014 Date Completed: Oct 1, 2014		

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

Company Name H2O Well Service Inc	Co. No. <u>448</u>
*Principal Driller The Kult	Date 10/7/14
*Driller_JAn	Date 10- 7-14
*Operator II	Date
Operator 1	Date

* Signature of Principal Driller and rig operator are required.

Form 238-7	⁸⁻⁷ IDAHO DEPARTMENT OF WATER RESOURCES Office Use Only									
11/97	1271				pected by					
				· — · · ·			Iwp	PRgeSec_		
		RE	CEIVED			_	l at	_1/41/41/4 :: Long: ::		
1. WELL TAG N	O. D003354	14		11. WI						
DRILLING PERMIT N	10 8123	544 AP	R 26 2004	L	Pump		Bailer 🗹 A			
			WE/North	Yield	gal./min		Drawdown	Pump Level	Time	
Other IDWR No	ydrofract	-ure - # 8140	007 700		4		100%	500	1 hours	
Name Janet Rol										
Address 8449 Stone										
City Hayden		State ID	Zip 83835	Water T			Cold	Bottom hole tem		d
3. LOCATION O	F WELL by	legal descript	ion:	Water C	Quality te	st or co	mments: (below) Depth first Water Encour	itered	76
N	Twp	54N North		Cold, C	lear, and	No Sm	nell			
	Rge	03W East	or West 🗹	12. LI	THOLO	OGIC	LOG (Descri	be repairs or abando	onment))
┝━┼━┼╾┼╸	Sec -	26 1/4	NE 1/4 SW 1/4	Bore	<u> </u>			Remarks:	W	ater
	E	10 Ac	40 Ac 160 Ac	Diam	From	То	Lithology, W	Vater Quality and Temperate	ILE Y	N
w X		_ot County	Bonner	8	0	6	Clay: Brown wi	th gravel		
	Lat		Long	8	6	23	Gravel: 3/4" to	1"		
				8	23	34	Granite: Gray S	Soft		
S	Addre	ss of Well Site: (se		6	34	76	Granite: Gray S	Soft		
100 Mara Meadows Road			Athol	6	76	77	Granite: Broke	n (2 gpm)		
Lot	Blk	Sub. N	lame (see next line)	6	77	133	Granite: Salt a	nd Pepper Medium		
				6	133	135	Granite: Broke	n		
4. USE:				6	135	141	Granite: Pink S	Soft		
Domestic 🗌 N	· · ·			6	141	195	Granite: Salt a	nd Pepper Medium		
Thermal	njection 🗌 Oth	er		6	195	206	Granite: Pink S	Soft		
5. TYPE OF WO)RK check a	all that apply	(Replacement etc.)	6	206	365	Granite: Salt a	nd Pepper		
🗹 New Well 🗔 I	Modify 🗌 Aban	donment 🗹 Other	w/Hydrofracture	6	365	385	Granite: Pink S	Soft		
6. DRILL METH				6	385	420	Granite: Salt a	nd Pepper Hard		
Air Rotary		Rotany		6	420	433	Granite: Pink a	and Green Hard		
-			<u> </u>	6	433	459	Granite: Salt a	ind Pepper Hard		
7. SEALING PR			Method	6	459	461	Granite: Broke	en (1 gpm)		
SEAL/FILT		Amount Sacks/Lbs	Method	6	461	466	Granite: Pink	Soft		
Material	From To		dry pour	6	466	483	1	and Pepper Hard	Ľ	
Bentonite Grans	0 34	10 300%3		6	483	500	Granite: Pink	Soft (1 gpm)	⊻	
	├───┼───			6	500	600	Granite: Salt a	and Pepper Hard		
Drive Shoe Used?			34	6						
Drive Shoe Used?						1		hydrofracured and a four		
		• HOW?					hour test was	made but the results are		
8. CASING/LIN							not reflected of	on this well log.		
	Fo Gauge		Liner Weld Thrded							
		Steel								
4 20 6	00 0.165	PVC								
Length Headpipe 3	5	Length Tailpi	pe <u>580</u>							
9. PERFORAT	ONS/SCRE	ENS							() (
Perforations?	Method				pleted D			600	(Measura	abie)
Screens?	Screen Type	PVC		Date	: Started	: 	3/30/04	Completed 4	/5/04]
From To	Slot Nmb	r Diam Mate	rial Casng Liner	42 F			ERTIFICATI	<u>ON</u>		
560 600	.040	4" PVC						nstruction standards were co	mnlied wi	ith at
							emoved.			
	+	+				-		-		
				Firm N	Name_U	nited D	rilling Inc.		irm No	414
10. STATIC W				Eiren (Official	-	. ni	all's pres. [Date	4/6/04
76 ft. below g		sian pressure	lb.	and		12	$n \ell(0)$	mor pres.		
Depth flow encoun			escribe access port or		visor or	Operato	or Curtis S. Ha	immond E	Date	4/6/04
control devices: S	steel Cap Welde	ed		. Cupei						<u></u>

5	4	\sim	30	26
	1	, -		

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 008				12. STATIC WATER LEVEL and WELL TESTS:						
Drilling Permit No.	893	5052					untered (ft) <u>196'</u> Stati	5.	196'	
Water right or injection well #				Water	temp (^c		Bottom hole t		1	
							Nelded Steel Cap			
_{Name} Brian Wells				Well (ss port		Test method:		
Address PO Box 1098					down (fee		scharge or Test duration	Pump Bailer	Air	Flowing
City Athol		State ID	zip 83801	NA		12 g	pm 240		X	artesian
3.WELL LOCATION:						12.9				Ē
Twp. 54 North 🛛 or	South 🗖	Roe 3	Fast Cor West X	Water	quality t	est or co	omments:			
Sec. 26					HOLOG		and/or repairs or abando	onment:		
			icres I/ T	Bore Dia.	From	To	Remarks, lithology or descri		v	Nater
Gov't Lot Cou	nty Koote	nai		(in)	(ft)	(ft)	abandonment, wate	ar temp.	Y	N
Lat. <u>48 º 00</u> .	180	(D	eg. and Decimal minutes)	10"	0		Topsoil		_	X
Long. 116 039.	358	(De	eg, and Decimal minutes)	8"	18		Sand and Gravel Sand, Gravel and Cobb		_	X
Address of Well Site 601 N	lara Mea	adows		8"	140		Boulder	nes		X
741	Give at least name of road + Distance to Read or Landmark) City Athol						Sand and Gravel			X
(Give at least name of road + Distance to Road	(Give at least name of road + Distance to Read or Landmark) Lot Blk Sub. Name						Decomposed Granite			x
	Sub. Name			8"	235		Soft Granite			X
4. USE: Domestic Dunicipal	Monitor			8"	292		Granite			X
Other				6"	300		Granite			X
5. TYPE OF WORK:				6"	655	657	Fractured Granite 3 g	Jpm	x	
New well Replacem	ent well	Modify existing w	vell	6"	657		Granite			X
Abandonment Other				6"	682		Fractured Granite 9 gpr	n	x	
6. DRILL METHOD:				6"	685	740	Granite			X
X Air Rotary D Mud Rot		able U Other		1						
7. SEALING PROCEDUR Seal material From (ft)		ptity (lbs or 6 ³) Dia	coment method/procedure							
Bentonite Chips 0			Pour							
		Joo Ibo. Dry							_	-
8. CASING/LINER:						-	RECEIVED)	_	-
Diameter From (ft) To (ft) Ga	uge/	Material Casin	Liner Threaded Welded					-	_	-
	equie	10000	-				MAR 0 2 2020			
22	50 Stee	······					MAN U Z ZUZU			
4" 20 740 4	0 PVC						DUNDALOPTI			
							IDWR/NORTH			
				_						-
Was drive shoe used? X Y	IN Sho	e Depth(s) Rina	@ 300'						_	-
9. PERFORATIONS/SCR			<u> </u>							
Perforations X Y N N		v Cut								+
					-				-	+
Manufactured screen TY	X N ⊺ype								_	+
Method of installation										
From (ft) To (ft) Slot size Nu	mber/ft Dian	neter Material	Gauge or Schedule	Comple	eted Dent	h (Meas	urable): 740'			
640' 740' 1/4x6		" PVC	40		tarted: 02			02/20/20	20	
								eted:02/28/20	120	_
							TIFICATION: mum well construction standa	ards wore comr	lind with	a t
Length of Headpipe		ength of Tailaina			e the rig			arus were comp	neu WIII)	dl
				Come	www.Nam	Hors	ley Drilling, Inc.	0 H 6	32	
Packer Y X N Type				Compa	iny warn	1013	no le Maraline	Co. No. <u>6</u>		
10.FILTER PACK:			1	*Princi	pal Drille	r_ <u>C.</u>	Mark Howing	Date 03/0)2/2020)
Filter Material From (ft	To (ft)	Quantity (lbs or ft ³)	Placement method	*Driller	Nic	k V	Male Howley Notcalf	Date 03/	02/2020	0
NA										
				*Opera	itor II			Date		
11. FLOWING ARTESIAN				Operat	or I			Date		
Flowing Artesian? 🔲 Y 🛛 🗙	N Artesian	Pressure (PSIG)					al Driller and rig operator ar			
		12		Signa	arme of	rancipa	a crimer and rig operator ar	e required.		

Describe control device

RECEIVED					
IDAHO DEPARTMENT OF WAT		RCES 178002	Office Use O]
NORTHERN REGION Use Typewriter or Ballpo		78002	TwpRge 1/41/4	_Sec	
1. DRILLING PERMIT NO. 96-98-N-95	11. WELL TE	STS:	Lat: : Long: XAir □ Flowing A		
2. OWNER: Gary white provident	Yield gal./min.	Drawdown	Pumping Level	4 Hou	<i>נ</i> ו
City Athol Id State Id Zip 83801	Water Temp.		Bottom h	<u> </u> iole temp	
B. LOCATION OF WELL by legal description:	Water Quality tes	st or comments: _	Depth first Water Enc	ountered 4	8
Sketch map location <u>must</u> agree with written location.	12. LITHOLO	GIC LOG: (De	escribe repairs or abando		ater
Twp. 54 North or South Rge. 3 East or West	Bore Dia. From To 800 [3 8 [3] [8	Soil	ology, Water Quality & Temp and Grayel		×∣≥
$ \begin{array}{c c} & & \\ \hline \\ \\ & \\ \hline \\ & \\ \hline \\ \\ \\ \\$	8 18 20	GRANit	posed Gran	ite	<u></u>
S Address of Well Site Rodco Rod	6 20 23		red Granit	-7	X
(Give at least name of road + Distance to Road or Landmark)	6 46 48	Fracti	wred Granity		
tBlkSub. Name	6 75 76	Fractu	red Geanite		1 X
USE:	6 90 97	Fractu	red Carnite	5	Ť.
🕱 Domestic 📋 Municipal 🗇 Monitor 🛛 Irrigation	6 92 105	[GRANI	<u>+c</u>		ال ا
Thermal Injection Other TYPE OF WORK check all that apply (Replacement etc.)	6 175 170	Fractu	red Granite	4	
X New Well D Modify D Abandonment D Other	6 276 22		d GLANITE	3	X
XAir Rotary Cable I Mud Rotary Other	6 256 25	7 CLANIT	ie with Qual		Ŷ
	6 257 30	D GRANIT	٠ <u>ــــــــــــــــــــــــــــــــــــ</u>		y
SEAL/FILTER PACK AMOUNT METHOD Material From To Sactoor Pounds					
Bentonite O 20 5 Overbored					+
					\perp
Nas drive shoe used? ØY 🗭N Shoe Depth(s) Nas drive shoe seal tested? ∷Y 🔊 How?					-
B. CASING/LINER:		·			
Diameter From To Gauge Material Casing Liner Welded Threaded 6 411/2 20 250 5+cc1 IX □ □					
4 -6 300 423 PUC - 4 -					+
I I I I I I I I I I I I I I I					+
PERFORATIONS/SCREENS	<u> </u>				
Perforations Method <u>JAW Cut</u> Screens Screen Type	Completed Dep		300'	(Measural	uble)
	Date: Started _		9-98 Completed 4		
300 180 49×10 50 4 PVC ×	13. DRILLER	all minimum well	ATION construction standards we	re complied v	with at
	•.		I drilling Inc.	Firm No 57	28
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:		2/2/	d ka		29
20ft. below ground Artesian pressureIb. Depth flow encounteredft. Describe access port or	Firm Officia	K JUTA	k black Date		- 70
control devices:	Supervisor or Or	perator (.Me	& Huplus Date	6-10-	-98

•				
10		14 17	011-1-1-0	Operator)
- (8	ion once	in Firm		Derator)

54 N 3W 576 FORWARD WHITE COPY TO WATER RESOURCES