

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date February 2, 2016

FROM: Groundwater Section Michael J. Thoma
Reviewer's Name

SUBJECT: Application G- 18187 Supersedes review of _____
Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

A. GENERAL INFORMATION: Applicant's Name: Erik Leib County: Josephine

A1. Applicant(s) seek(s) 0.04 cfs from 1 well(s) in the Rogue Basin,
Applegate subbasin

A2. Proposed use Nursery Seasonality: year-round

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	JOSE 2235/2236 ^A	1	Bedrock	0.04	39S/05W-9 NENW	58'S, 2379'E of NE cor S 9
2						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	1600		19	10/19/1985	110	0-20	0-94			7		A

Use data from application for proposed wells.

A4. **Comments:** ^AJOSE 2235 is the original log and JOSE 2236 is the deepening/reconditioning. The original hole was 93 ft and was deepened to 110 ft. Both logs are attached. Neither well log lists a "first water" depth.

A5. **Provisions of the Rogue (OAR 690-515)** Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water **are**, or **are not**, activated by this application. (Not all basin rules contain such provisions.)
 Comments: _____

A6. **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: _____
 Comments: _____

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

- a. is over appropriated, is not over appropriated, or cannot be determined to be over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b. will not or will likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;
- c. will not or will likely to be available within the capacity of the groundwater resource; or
- d. will, if properly conditioned, avoid injury to existing groundwater rights or to the groundwater resource:
 - i. The permit should contain condition #(s) **“Medium” Water-use reporting** _____;
 - ii. The permit should be conditioned as indicated in item 2 below.
 - iii. The permit should contain special condition(s) as indicated in item 3 below;

- B2. a. **Condition** to allow groundwater production from no deeper than _____ ft. below land surface;
- b. **Condition** to allow groundwater production from no shallower than _____ ft. below land surface;
- c. **Condition** to allow groundwater production only from the _____ groundwater reservoir between approximately _____ ft. and _____ ft. below land surface;
- d. **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Groundwater availability remarks:** The applicant proposes groundwater production from a well completed in the plutonic rocks (quartz-diorite and tonalite or “granitic”). This is considered a fractured-rock aquifer that is generally low-yielding, which has limited groundwater development in the area to primarily small acreage irrigation and domestic. There are a few OWRD observation wells located near the proposed wells and data from these wells show stable long-term groundwater levels – which is typical of the region (see attached water levels figure)

Williams Cr. is a heavily appropriated stream and often subject to regulation. To avoid undue injury to surface water users, a medium water-use reporting condition should be attached to the permit to confirm that the user is not exceeding the allowed rate – which is limited by OAR 690-009 in Section C below.

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	Bedrock of Grayback Pluton	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: Neither the original log nor the deepening log lists a depth for a water-bearing zone. However, it is typical of these geologic formations (fractured granitic rock) to show increasingly confined conditions with depth. Additionally, many wells in the vicinity that do list water-bearing zone information express confined conditions.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	W. Fk Williams Cr	1581	1530-1600	2060	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: coincident SWL and GW Elev

Water Availability Basin the well(s) are located within: W Fk Williams Cr > Williams Cr – At Mouth (ID# 70976)

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	<input type="checkbox"/>	<input type="checkbox"/>	IS70976	1.08	<input checked="" type="checkbox"/>	0.80	<input checked="" type="checkbox"/>	*see comments	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: The proposed rate of 0.04 cfs is > 1% of both the lowest monthly natural flow and lowest monthly instream flow requirement.

*Interference @ 30 d could not be estimated because the terrain (high-relief slopes) and geology (fractured bedrock aquifer) do not meet model assumptions of the widely accepted techniques for determining stream depletion (e.g., Hunt 1999, 2003).

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

SW #	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: _____

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

C5. **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:
 i. The permit should contain condition #(s) _____;
 ii. The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** The applicant's well is within 1 mile of and has been determined to be hydraulically connected to the W. Fk Williams Cr. The proposed rate of 0.04 cfs (18 gpm) exceeds 1% of both the minimum perennial stream flow and instream water right and therefore must be considered to have Potential for Substantial Interference under OAR 690-009 Rules.

References Used:

Hunt, B. 1999. *Unsteady Stream Depletion from Ground Water Pumping*. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19
Hunt, B. 2003. *Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer*. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19
Wiley, T. J. 2006. *Preliminary Geologic Map of the Sexton Mountain, Murphy, Applegate, and Mount Isabelle 7.5' Quadrangles, Jackson and Josephine Counties, Oregon*. Oregon Dept. of Geology and Mineral Industries. OFR O-06-11

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: 1 Logid: JOSE 2235/2236

D2. **THE WELL does not appear to meet current well construction standards based upon:**
 a. review of the well log;
 b. field inspection by _____;
 c. report of CWRE _____;
 d. other: (specify) _____

D3. **THE WELL construction deficiency or other comment is described as follows:** The well log lists that 2 sacks of bentonite were used to seal from 0 to 20 ft. This is an insufficient amount of bentonite to properly seal to that depth.

D4. **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

W FK WILLIAMS CR > WILLIAMS CR - AT MOUTH
 ROGUE BASIN

Water Availability as of 2/2/2016

Watershed ID #: 70976 ([Map](#)) Exceedance Level:
 Date: 2/2/2016 Time: 10:01 AM

Water Availability Calculation
Consumptive Uses and Storages
Instream Flow Requirements
Reservations

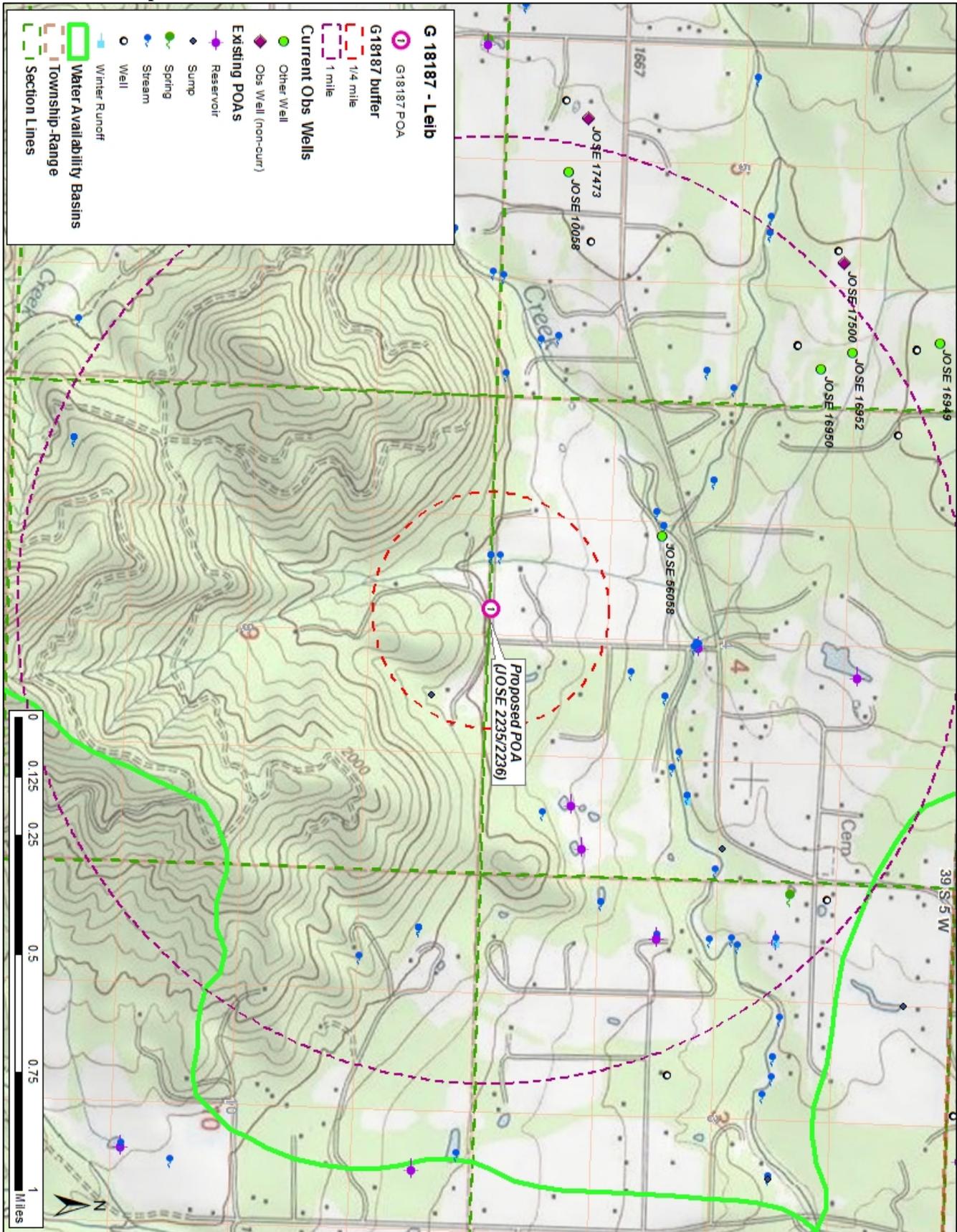
Water Rights
Watershed Characteristics

Water Availability Calculation

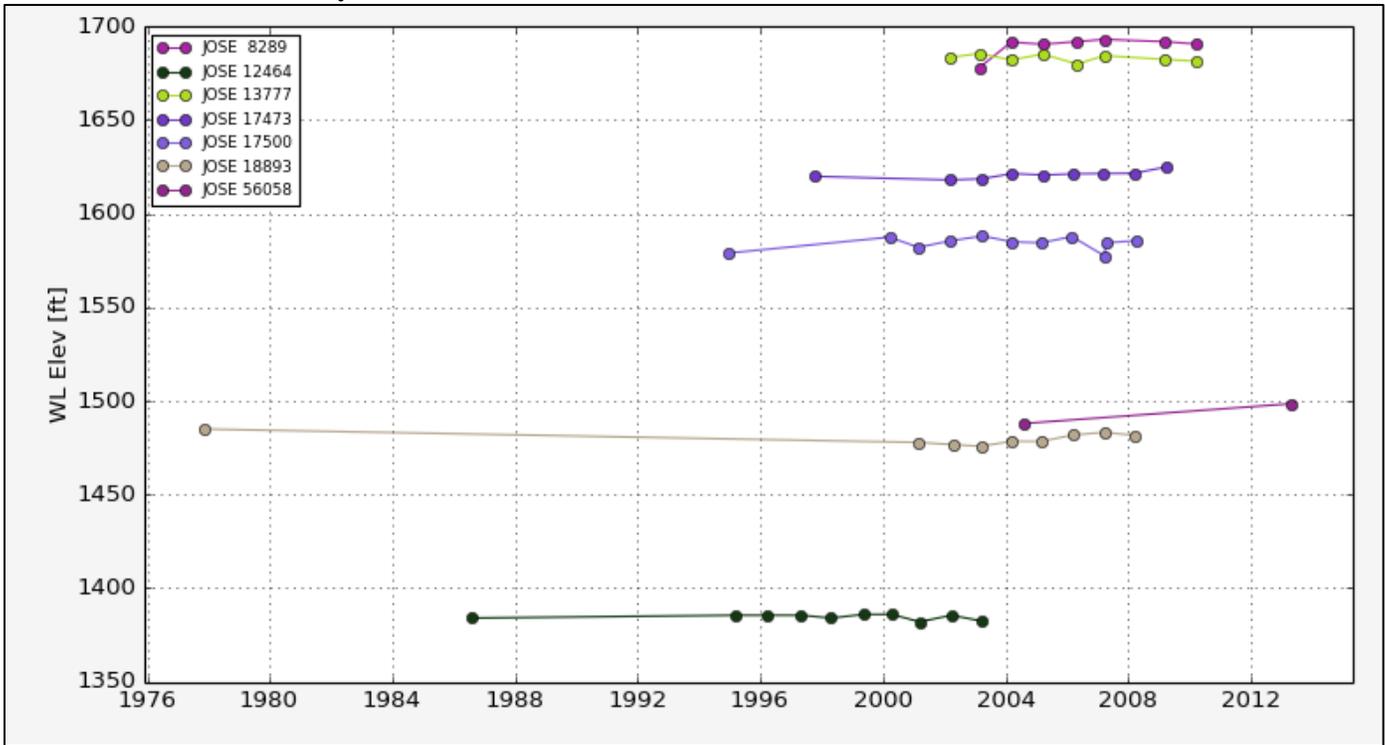
Monthly Streamflow in Cubic Feet per Second
 Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	31.70	0.26	31.40	0.00	42.00	-10.60
FEB	52.40	0.31	52.10	0.00	42.00	10.10
MAR	51.60	0.27	51.30	0.00	42.00	9.33
APR	30.20	1.20	29.00	0.00	42.00	-13.00
MAY	14.10	1.84	12.30	0.00	25.00	-12.70
JUN	5.01	2.55	2.46	0.00	8.85	-6.39
JUL	1.93	3.38	-1.45	0.00	2.88	-4.33
AUG	1.14	2.81	-1.67	0.00	1.40	-3.07
SEP	0.80	1.87	-1.07	0.00	1.08	-2.15
OCT	1.06	0.68	0.38	0.00	1.89	-1.51
NOV	3.46	0.15	3.31	0.00	12.10	-8.79
DEC	16.10	0.21	15.90	0.00	42.00	-26.10
ANN	26,500.00	942.00	25,700.00	0.00	15,800.00	10,600.00

Well Location Map



Water-Level Trends in Nearby Wells



RECEIVED

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

NOV 2 1 1985

WATER RESOURCES DEPT COUNTY PERMIT # 809

Jose 2236
39s/5W-9ca
Dept Recd.

(1) OWNER:

Name Jose & Jacquelin Soto
Address 555 Davidson Rd
City Williams State ORE

(2) TYPE OF WORK (check):

New Well Deepening Reconditioning Abandon
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air Driven
Rotary Mud Dug
Cable Bored

(4) PROPOSED USE (check):

Domestic Industrial Municipal
Irrigation Withdrawal ReInjection
Other: Piezometric Grounding Test

(5) CASING INSTALLED:

Steel Threaded Plastic Welded
6" Diam. from _____ ft. to _____ ft. Gauge _____

LINER INSTALLED:

Steel Threaded Plastic Welded
_____ " Diam. from _____ ft. to _____ ft. Gauge _____

(6) PERFORATIONS:

Size of perforations _____ in. by _____ in. Perforated? Yes No
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(7) SCREENS:

Well screen installed? Yes No
Manufacturer's Name _____ Type _____ Model No. _____
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? Yes No If yes, by whom? _____
_____ gal./min. with _____ ft. drawdown after _____ hrs.
Air test 7 gal./min. with drill stem at 109 ft. / _____ hrs.
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Artesian flow _____ g.p.m.
Temperature of water 54° Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Special standards: Yes No
Well seal—Material used _____
Well sealed from land surface to _____ ft.
Diameter of well bore to bottom of seal _____ in.
Diameter of well bore below seal NA
Amount of sealing material _____ sacks pounds
How was cement grout placed? _____

Was pump installed? yes Type Sub HP 3/4 Depth 103 ft.
Was a drive shoe used? Yes No Plugs _____ Size: location _____ ft.
Did any strata contain unusable water? Yes No
Type of Water? _____ depth of strata _____
Method of sealing strata off _____
Was well gravel packed? Yes No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL by legal description:

County Josephine NE 1/4 NW 1/4 of Section 9
Township 39 Range 5 WM.
(Township is North or South) (Range is East or West)
Tax Lot 301 Lot _____ Block _____ Subdivision _____
MAILING ADDRESS OF WELL (or nearest address): _____

(11) WATER LEVEL OF COMPLETED WELL:

Depth at which water was first found Existing ft.
Static level 19' ft. below land surface. Date 10-19-85
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 83 ft. Depth of completed well 110 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Existing Hole	0	77	19'
Oil-Rock-Bethles etc	77	94	19'
GRAY GREEN ROCK	94	110	19'

Date work started 10-19-85 / completed 10-19-85
Date well drilling machine moved off of well 10-19-85 19

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] _____ Date _____, 19 _____

(bonded) Water Well Constructor Certification:

Bond 63-020-99-74 Issued by US Fidelity Guaranty
(number) (Surety Company Name)
On behalf of Charles K.
(type or print name of Water Well Constructor)

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

(Signed) Charles K. White
(Water Well Constructor)

(Dated) 11-19-85

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*40866-090