

**PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS**

TO: Water Rights Section Date 06/17/2015  
 FROM: Groundwater Section Phillip I. Marcy / Ivan K. Gall  
Reviewer's Name  
 SUBJECT: Application G- 18004 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: Scott R. Gressley County: Malheur

A1. Applicant(s) seek(s) 0.998 cfs from 2 well(s) in the Malheur Basin,  
 \_\_\_\_\_ subbasin

A2. Proposed use: Supplemental Irrigation (238 acres) Seasonality: March 1<sup>st</sup> – October 31<sup>st</sup> (245 days)

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	MALH 54121	1	Alluvium	0.436	18S/43E-7 NE-SW	2535'N, 1386'E fr SW cor S 7
2	MALH 54198	2	Alluvium	0.55	18S/43E-7 NE-SW	2605'N, 1848'E fr SW cor S 7
3						
4						
5						

\* 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	2276	48	41	03/24/2014	76	0-18	+1-65	None	58-65	200	20	Pump
2	2277	55	43	02/16/2015	85	0-26	+2-62	None	55-62	250	7	Pump

Use data from application for proposed wells.

A4. **Comments:** Both of the proposed POAs on the application are constructed to develop water from Quaternary alluvium (Qal) of Brooks and others (1976) overlying the Glens Ferry Formation. Well specific rates proposed on the application correspond with yields achieved on pump tests noted on the driller's logs for both wells.

A5.  **Provisions of the Malheur (690-510)** 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) 7T-measuring tube condition, "Large 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:** Groundwater elevation have been stable in nearby State Observation Well 576 (MALH 1222), located about 2.25 miles south of the proposed POAs (see attached hydrograph). Water level measurements from the applicant's well 1 (MALH 54121) in 2014 show less than 1 foot of decline in July from the elevation reported on the driller's report in March. Recharge to the shallow sand and gravel aquifer from canal losses and surplus irrigation water are likely responsible for minimal drawdown observed during the irrigation season (Gannett, 1990) as this unit is poorly confined beneath 20-30 feet of semi-permeable silt.

Due to the lack of thickness of the sand and gravel aquifer in this area, nearby senior right holders may be injured if significant declines occur. Therefore, if a permit is issued, the following special condition should apply:

**Modified Condition 7N** – The water user shall discontinue the use of, or reduce the rate or volume of withdrawal from, the well(s) if any of the following events occur:

- A. Annual water-level measurements reveal an average water-level decline of **two or more feet per year for three consecutive years**; or
- B. Annual water-level measurements reveal a water level decline of **6 or more feet** in fewer than five consecutive years;  
or
- C. Annual water-level measurements reveal a water-level decline of **10 or more feet**; or
- D. Hydraulic interference leads to a decline of **10 or more feet** in any neighboring well with senior priority.

**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	Sand and Gravel overlying Glenns Ferry Formation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Sand and Gravel overlying Glenns Ferry Formation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** Groundwater Report #34 describes this shallow aquifer as unconfined to poorly confined, with downward percolation of surface water occurring with relative ease (Gannett, 1990).

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	Malheur River	2235	2194	4885	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Malheur River	2234	2194	5025	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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"/>	<input type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** The shallow sand and gravel aquifer system here is in efficient connection to the Malheur River, which incises the confining silt layer at or near the land surface. Groundwater is discharged through the Glenns Ferry Formation upward through the sand and gravels towards the river to the south, in addition to contributions from the downward percolation of irrigation water (Gannett, 1990).

**Water Availability Basin the well(s) are located within:** Malheur R > Snake R – At Mouth (31011701)

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"/>	None	None	<input type="checkbox"/>	83.80	<input type="checkbox"/>	0.06	<input type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	None	None	<input type="checkbox"/>	83.80	<input type="checkbox"/>	0.05	<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"/>		<input type="checkbox"/>		<input type="checkbox"/>

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?
	1	<input type="checkbox"/>	None	None	<input type="checkbox"/>	83.80	<input checked="" type="checkbox"/>	0.11	<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"/>

**Comments:** The full proposed pumping rate from both wells on the application calculates to 0.986 cfs, based on the well-specific rates of 198 gpm (0.436 cfs) for well 1 and 250 gpm (0.550 cfs) for well 2. 1 percent of 80 percent of natural flow in the Malheur River during the month of September is 0.838 cfs.

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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
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:** Wells are located within 1 mile of the Malheur River, so this section does not apply.

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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:** Due to the proposed pumping rate exceeding 1 percent of 80 percent of minimum streamflow in the Malheur River, potential for Substantial Interference (PSI) has been triggered. **The applicant could lower the total requested rate to less than 0.838 cfs to avoid triggering PSI.**

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**References Used:**

Gannett, M. W. 1990. Hydrogeology of the Ontario Area Malheur County, Oregon. Oregon Water Resources Dept. Ground Water Report No. 34. 39p.

Brooks, H.C., McIntyre, J.R., Walker, G.W., 1976. Geology of the Oregon Part of the Baker 1<sup>0</sup> by 2<sup>0</sup> Quadrangle. Oregon Department of Geology and Mineral Industries Geological Map Series 7.

Local well logs, application file G-18004.

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**D. WELL CONSTRUCTION, OAR 690-200**

D1. Well #: \_\_\_\_\_ Logid: \_\_\_\_\_

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:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

**Water Availability Tables**

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

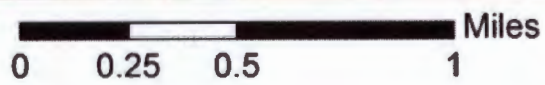
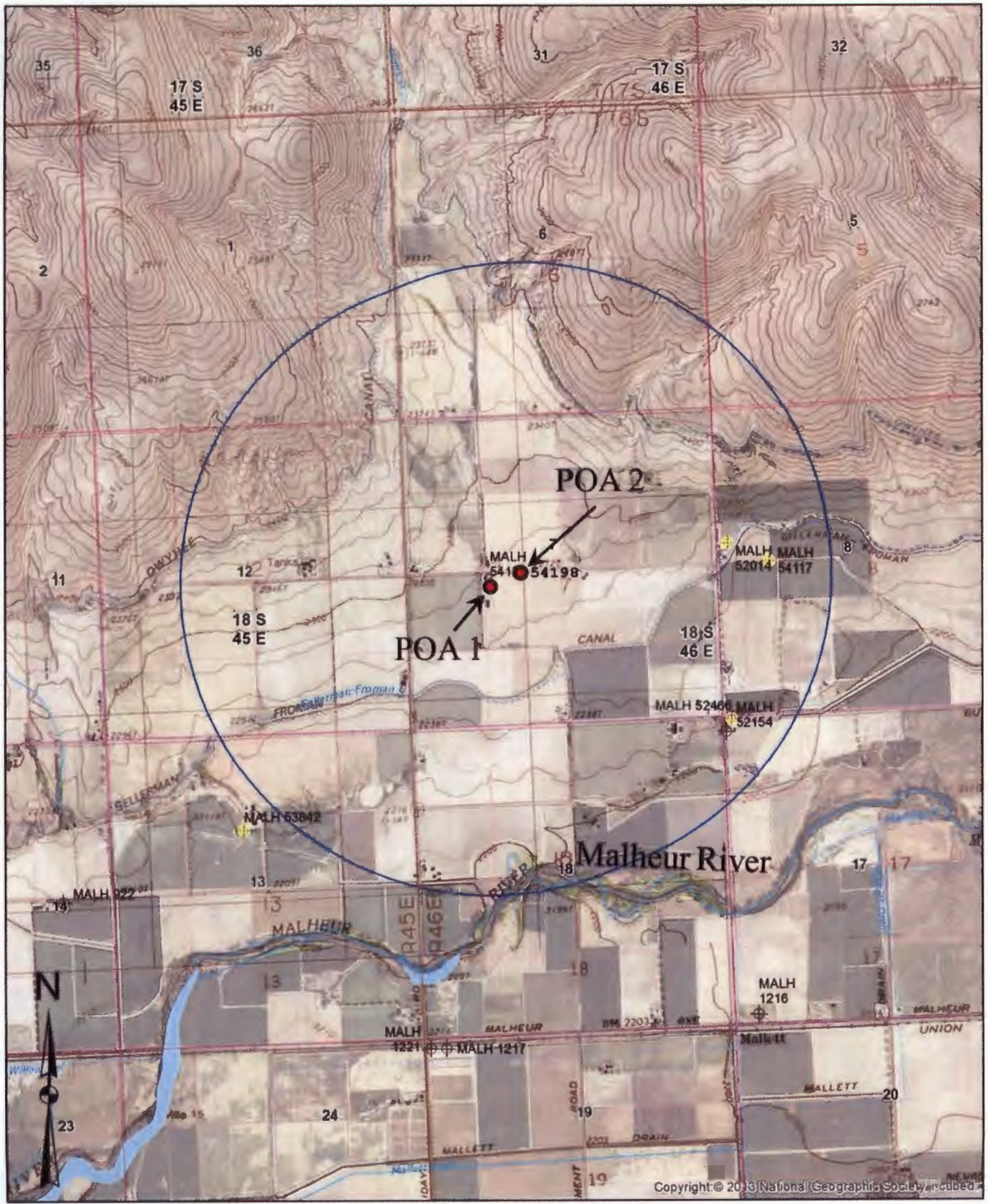
watershed ID #: 31011701  
Time: 11:25 AM

MALHEUR R > SNAKE R - AT MOUTH  
Basin: MALHEUR

Exceedance Level: 80  
Date: 06/17/2015

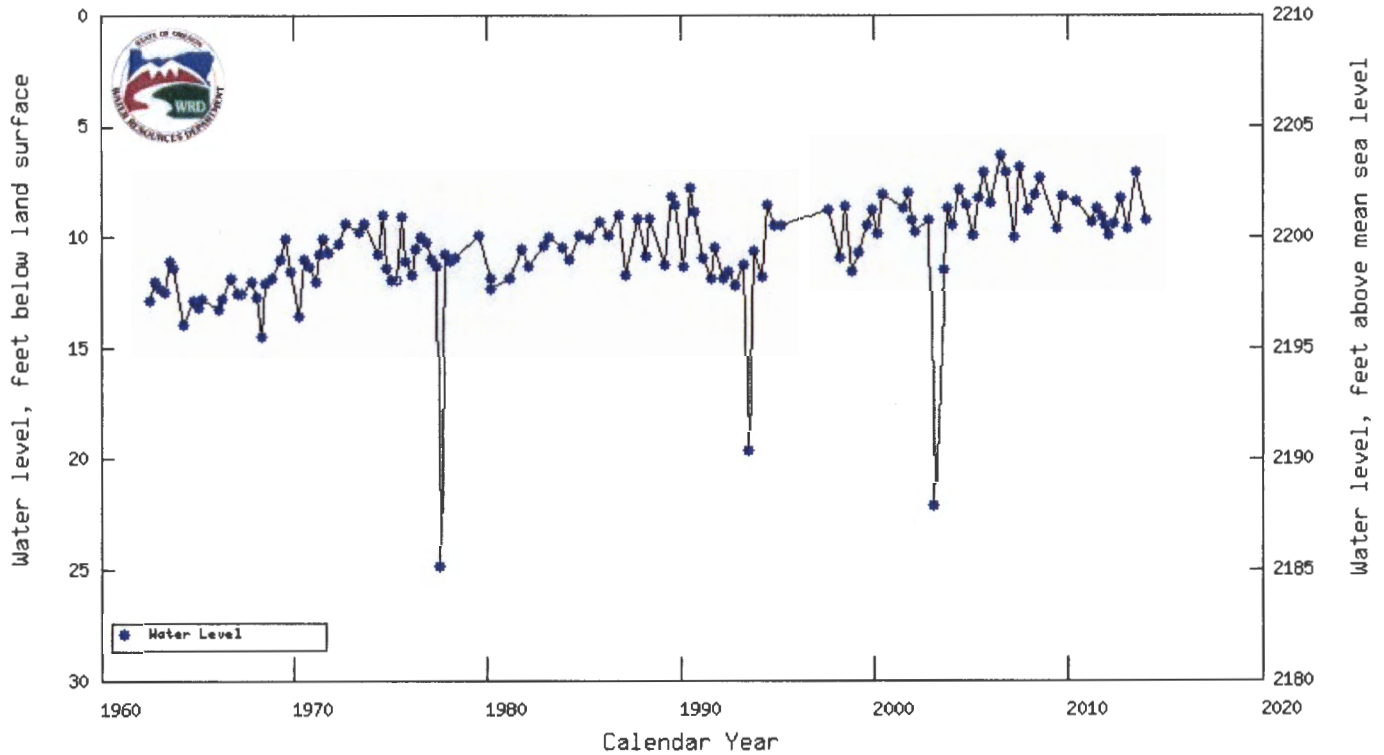
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	154.00	427.00	-273.00	0.00	0.00	-273.00
FEB	267.00	626.00	-359.00	0.00	0.00	-359.00
MAR	467.00	911.00	-444.00	329.00	0.00	-773.00
APR	780.00	1,060.00	-278.00	470.00	0.00	-748.00
MAY	524.00	957.00	-433.00	0.00	0.00	-433.00
JUN	324.00	857.00	-533.00	0.00	0.00	-533.00
JUL	150.00	686.00	-536.00	0.00	0.00	-536.00
AUG	99.90	540.00	-440.00	0.00	0.00	-440.00
SEP	83.80	376.00	-292.00	0.00	0.00	-292.00
OCT	106.00	209.00	-103.00	0.00	0.00	-103.00
NOV	135.00	223.00	-87.90	0.00	0.00	-87.90
DEC	132.00	297.00	-165.00	0.00	0.00	-165.00
ANN	338,000	432,000	29,500	48,200	0	0

Well Location Map



### Water-Level Trends in Nearby Wells

Oregon Water Resources Department (OWRD) Well Location	18.00S/46.00E-19CCX
OWRD Logid	MALH 1222
OWRD Well Tag (Well ID)	----
OWRD State Observation Well Number	576
Total well depth (feet below land surface)	435
Land surface elevation (feet above mean sea level)	2210
Primary use of well	----
Primary aquifer system	----



**Well logs attached:**  
MALH 54121 (Well 1)  
MALH 54198 (Well 2)



MALH 54121

MALH 54121

STATE OF OREGON  
WATER SUPPLY WELL REPORT  
(as required by ORS 537.765 & OAR 690-205-0210)

APR 18 2014

WELL LABEL # L 11636

START CARD # 209632

SALEM, OR

**(1) LAND OWNER** Owner Well I.D. \_\_\_\_\_

First Name Sage Last Name Nishihara

Company Nishihara Farms

Address 1175 Hillcrest Drive

City Vale State OR Zip 97918

**(2) TYPE OF WORK**  New Well  Deepening  Conversion  
 Alteration (repair/recondition)  Abandonment

**(3) DRILL METHOD**  
 Rotary Air  Rotary Mud  Cable  Auger  Cable Mud  
 Reverse Rotary  Other

**(4) PROPOSED USE**  Domestic  Irrigation  Community  
 Industrial/Commercial  Livestock  Dewatering  
 Thermal  Injection  Other

**(5) BORE HOLE CONSTRUCTION** Special Standard  Attach copy \_\_\_\_\_  
 Depth of Completed Well 76 ft.

BORE HOLE			SEAL			socks/
Dis	From	To	Material	From	To	ft.
18	0	18	Bentonite	0	18	1,950 P
18	18	65				
10	65	76				

How was seal placed Method  A  B  C  D  E

Backfill placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material \_\_\_\_\_  
 Filter pack from 18 ft. to 74 ft. Material 1/2 minus Sand pea gravel

Explosives used:  Yes Type \_\_\_\_\_ Amount 100018 40255

**(6) CASING/LINER**

Casing/Liner	Dis	From	To	Gauge	Std	Plastic	Wld	Thrd
<input checked="" type="checkbox"/>	10	1	65	250	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Shoe  Inside  Outside  Other Location of shoe(s) 76  
 Temp casing  Yes Dia \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_

**(7) PERFORATIONS/SCREENS**

Perf	Casing/Screen	Dis	From	To	Screen/slot width	Slot length	# of slots	Tele/page size
		10	38	63	5	188	322	10

**(8) WELL TESTS: Minimum testing time is 1 hour**

Pump  Bailor  Air  Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
200	20		4
120		75	4

Pump Air

Temperature 61 °F Lab analysis  Yes By \_\_\_\_\_  
 Water quality concerns?  Yes (describe below)

From	To	Description	Amount	Units

**(9) LOCATION OF WELL (legal description)**

County MALHEUR Twp 18 S N/S Range 46 E E/W W/M  
 Sec 7 NW 1/4 of the SE 1/4 Tax Lot 3100  
 Tax Map Number \_\_\_\_\_ Lot \_\_\_\_\_  
 Lat \_\_\_\_\_ or \_\_\_\_\_ DMS or DD  
 Long \_\_\_\_\_ or \_\_\_\_\_ DMS or DD  
 Street address of well  Nearest address  
1175 Hillcrest Drive Vale Oregon

**(10) STATIC WATER LEVEL** Date \_\_\_\_\_ SWL (psi) \_\_\_\_\_ + SWL (ft) \_\_\_\_\_  
 Existing Well / Predeepening 03-24-2014 \_\_\_\_\_ 41  
 Completed Well \_\_\_\_\_ \_\_\_\_\_  
 Flowing Artesian?  Dry Hole?

WATER BEARING ZONES Depth water was first found 48

SWL Date	From	To	Est Flow	SWL (psi)	+ SWL (ft)
03-24-2014	48	64	200		41

**(11) WELL LOG** Ground Elevation \_\_\_\_\_

Material	From	To
Brown Clay	0	22
Pea Gravel	22	25
Hard Sand	25	38
Brown Silty Clay	38	48
Sand and Gravel	48	61
Silt and Gravel	61	64
Blue Clay	64	76

RECEIVED BY OWRD  
 MAY 27 2014  
 SALEM, OR

Date Started 03-24-2014 Completed 03-26-2014

**(unbonded) Water Well Constructor Certification**  
 I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.  
 License Number \_\_\_\_\_ Date \_\_\_\_\_  
 Password (if filing electronically) \_\_\_\_\_  
 Signed \_\_\_\_\_

**(bonded) Water Well Constructor Certification**  
 I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.  
 License Number 682 Date \_\_\_\_\_  
 Password (if filing electronically) \_\_\_\_\_  
 Signed [Signature]  
 Contact info (optional) \_\_\_\_\_

