

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 03/29/2017
 FROM: Groundwater Section Jen Woody
 Reviewer's Name
 SUBJECT: Application [REDACTED] Supersedes review of n/a
 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: Willow Creek Dairy c/o Greg te Velde County: Morrow

- A1. Applicant(s) seek(s) 0.79 cfs, up to 147 Acre-Feet in 2017 from 3 well(s) in the Umatilla Basin, _____ subbasin
- A2. Proposed use Dairy Construction and Operation Seasonality: through November 30, 2017
- 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	MORR 52389	1	Alluvium	0.79	T3N/R26E-16 NW ¼ SE ¼	3150' S, 2550' W fr NE cor S 16
2	Proposed	2	Alluvium	0.79	T3N/R26E-16 NW ¼ SW ¼	2760' S, 1070' E fr NW cor S 16
3	Proposed	3	Alluvium	0.79	T3N/R26E-16 SE ¼ NW ¼	1440' S, 1400' E fr NW cor S 16
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	600	22	22	11/01/2016	33	0-23	0-33	0	*	300	unkno wn	unkno wn
2	590											
3	595											

Use data from application for proposed wells.

- A4. **Comments:** *This well has 2- 1600' horizontal collector arms connected to the vertical casing. It was constructed under OWRD supervision and Special Standards. Wells 2 & 3 are not yet constructed, and are proposed to be built similarly.
- A5. Provisions of the _____ 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: Ordinance Gravel Critical Groundwater Area (CGWA)
 Comments: The three proposed POA's are located less than a mile west of the CGWA boundary. Water used from the proposed wells is expected to be hydraulically connected to the Ordinance Gravel CGWA. No new allocations are allowable within the CGWA boundaries. Use outside the administrative boundaries but in the same aquifer is allowable by rule but should be limited to protect senior water rights.

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) Water Measurement and Reporting Large TFM (see Section B3) ;
 - 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 alluvial 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:**

Water used from the proposed wells is expected to be hydraulically connected to the Ordinance Gravel CGWA. The groundwater system in the applicant's vicinity consists of unconfined catastrophic flood deposits overlying basalt of the Ordinance Basalt Critical Groundwater Area (CGWA). The sediments include gravel, sand, silts and clays. Saturated sands and gravels produce the highest yields to wells, while locally silts and silty sands produce low to moderate yields. The wells at the subject site will use groundwater from fine-grained sediments that are interlayered with thin lenses of sand and gravel (Wozniak et al., 1995). The sedimentary deposits are on the order of 175 feet thick at this location, and their predominantly fine-grained nature limits the potential yield to wells. This has been demonstrated over the last year, when two 150 to 175 foot wells were drilled for groundwater production on the order of 400 gpm, but yields were inadequate (MORR 52293 showed 85 gpm by air test, pump tests were about 10 gpm; MORR 52314 reported 3 gpm by pump test). Onsite pumping shows that a shallow well (30 feet deep) with two 1600 foot long horizontal collector arms provides higher yields (see MORR 52389).

The proposed POAs are located less than one mile outside the Ordinance Gravel CGWA, and the groundwater level elevation at sedimentary wells on the subject site are above that of gravel Critical Area wells. More distant water level data (5-6 miles to the northeast) show Ordinance Gravel CGWA trends are relatively stable at current levels of use and artificial groundwater recharge (see Figure 2). The stability of the groundwater resource depends on artificial groundwater recharge conducted annually by the County Line Water Improvement District. The sedimentary aquifer is sensitive to overdraft and fully appropriated within the boundaries of the CGWA. The proposed use will likely intercept groundwater that would otherwise flow into the critical area, so new long-term uses are not likely feasible without injury to other users.

[REDACTED]

[REDACTED]

LARGE TFM

Measurement devices, and recording/reporting of annual monthly water [REDACTED] conditions:

- A. Before water use may begin under this permit, the licensee shall install a totalizing flow meter at each point of [REDACTED]. The licensee shall maintain the device in good working order.
- B. The licensee shall allow the watermaster access to the device; provided however, where any device is located within a private structure, the watermaster shall request access upon reasonable notice.
- C. The licensee shall keep a complete record of the volume of water [REDACTED] each month, and shall submit a report which includes [REDACTED] measurements to the Department monthly ~~annually or more frequently as may be required by the Director~~. Two copies shall be provided to be Department: one to the Pendleton Office and one to the Salem water-use reporting section. Further, the Director may require the licensee to report general water-use information, including the place and nature of water use under the license.
- D. The Director may provide an opportunity for the permittee to submit alternative measuring and reporting procedures for review and approval.

[REDACTED]

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"/>
		<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: N/A

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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
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.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: 2 & 3 Logid: Proposed Trench Wells

D2. **THE WELL does not appear to meet current well construction standards based upon:**

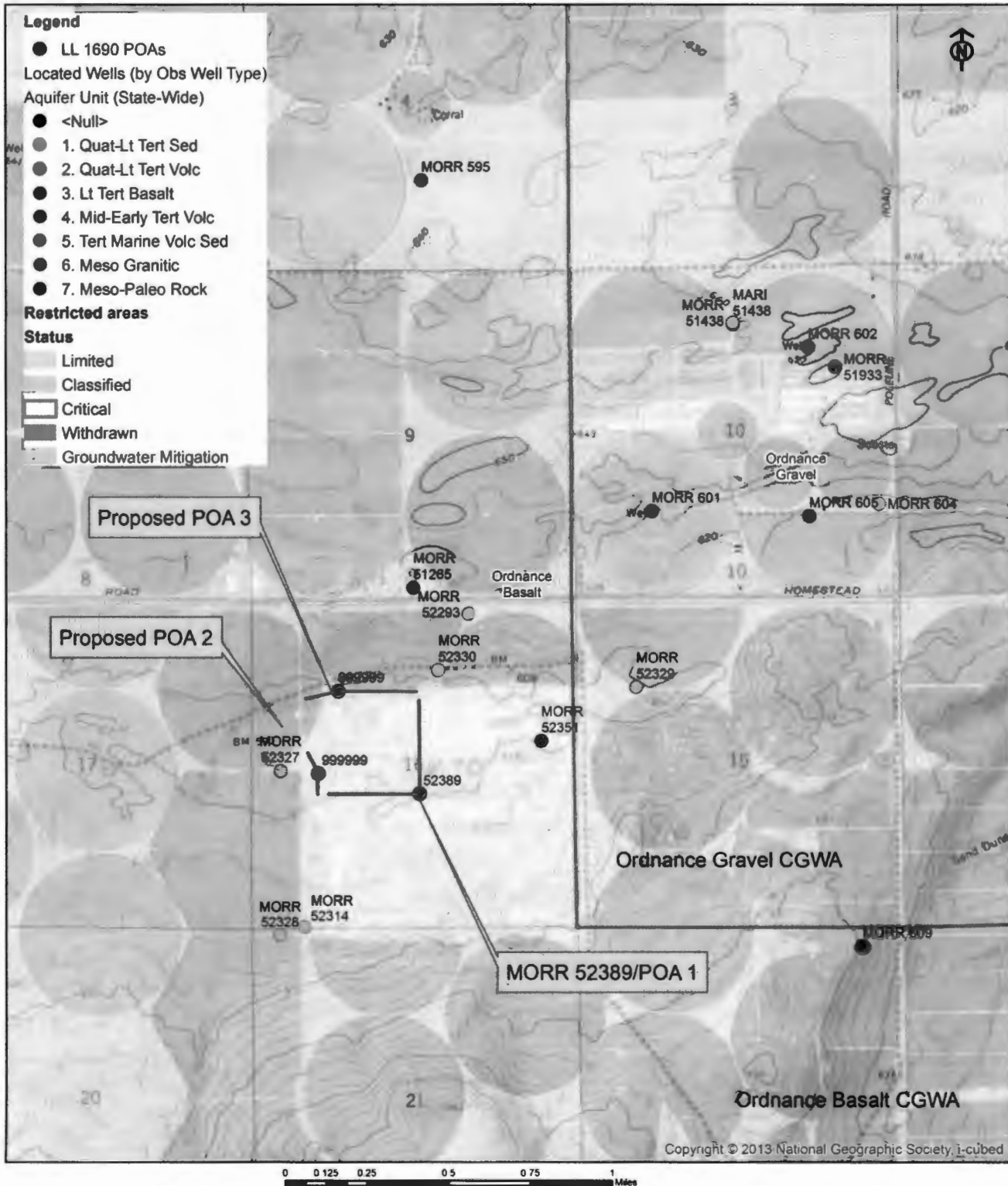
- a. review of the well log;
- b. field inspection by _____;
- c. report of CWRE _____;
- d. other: (specify) _____

D3. **THE WELL construction deficiency or other comment is described as follows:** [REDACTED]

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

Figure 1. Well Location Map

LL 1690 Willow Creek Dairy/te Velde T3N/R26E-Section 16



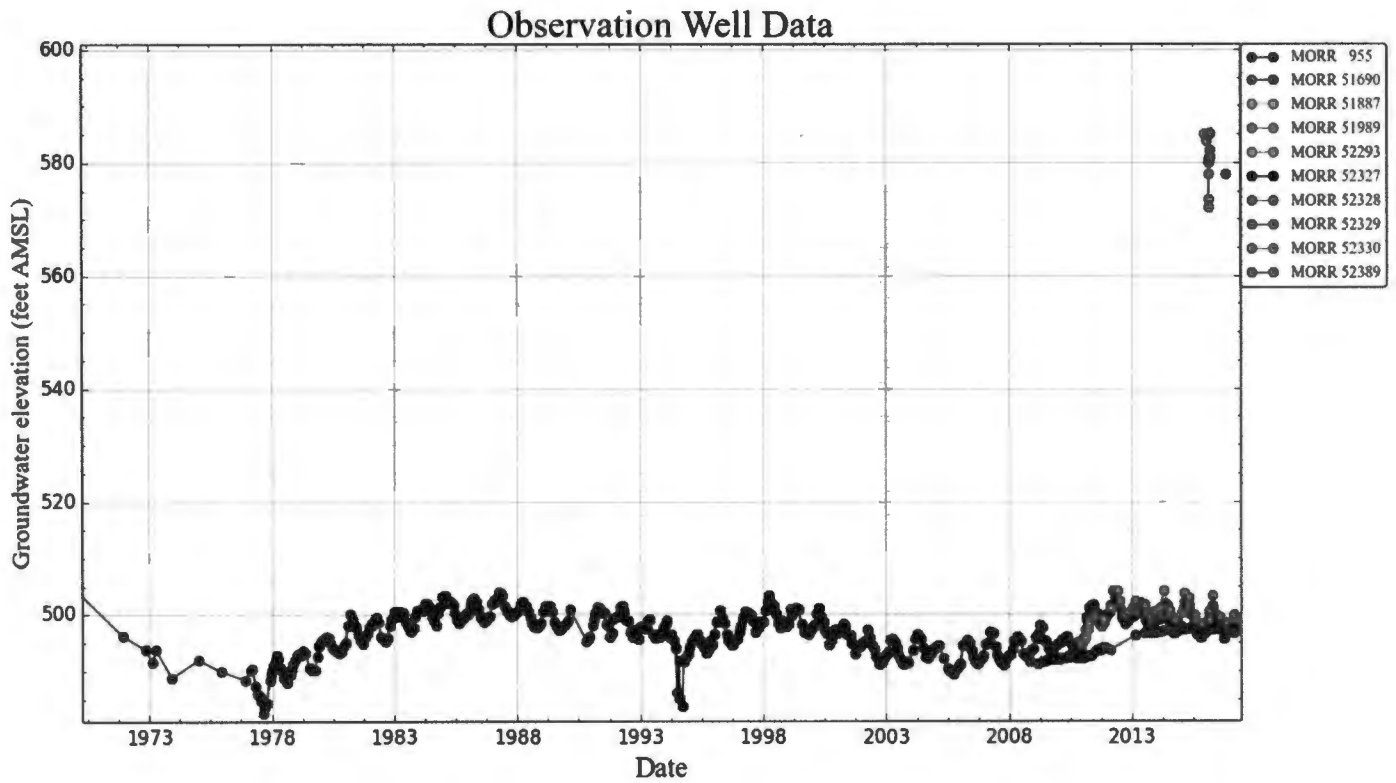


Figure 2. Groundwater level data expressed in feet above mean sea level (ft amsl) show the subject site's alluvial groundwater levels are above those located in the center of the Ordnance Gravel Critical Groundwater Area, approximately 4 miles to the northeast.

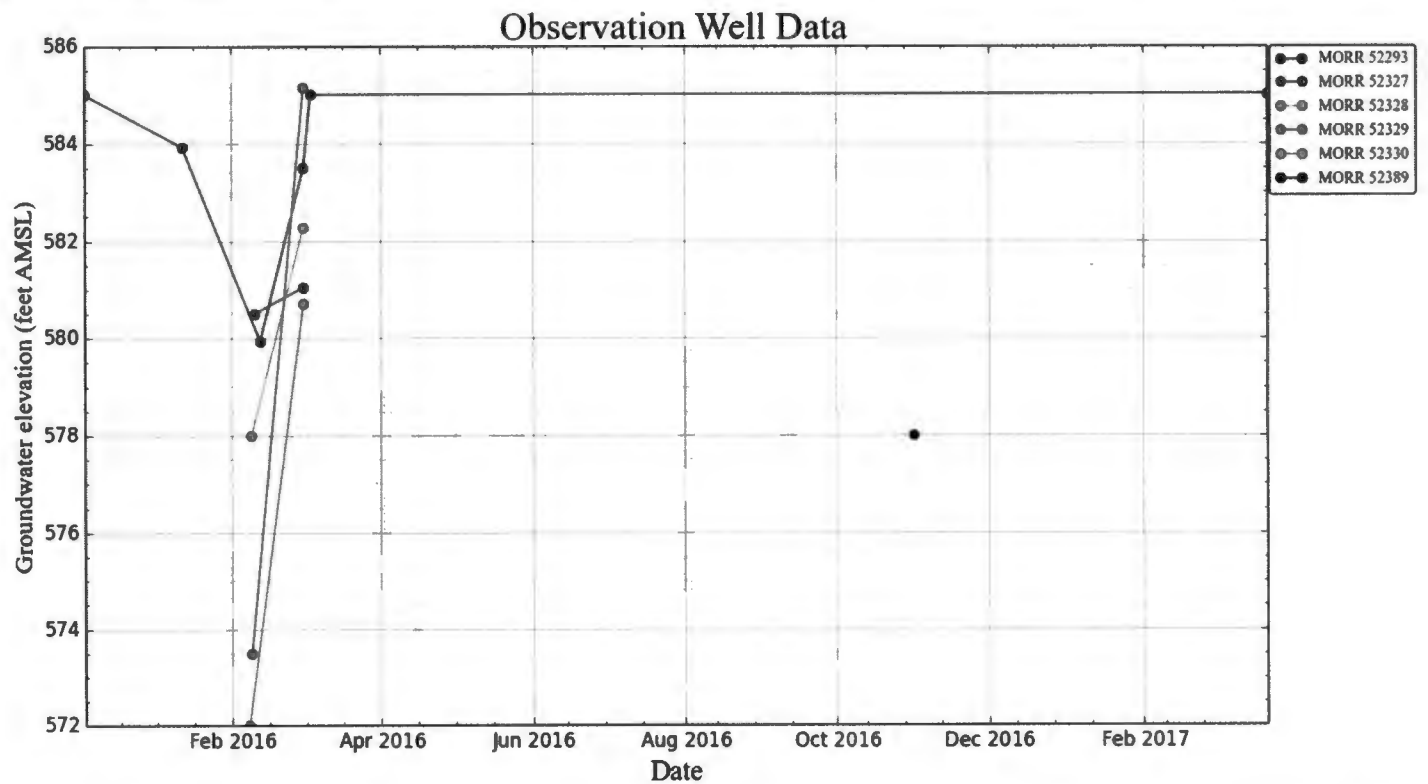


Figure 3. Spring groundwater level data from the subject site's alluvial wells range from 580 to 585 ft amsl. The water level at MORR 52293 remains stable after on-site use of about 10 acre-feet over the last year.

Figure 4. Hydrograph well locations

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