

**PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS**

TO: Water Rights Section Date 3/31/2017  
 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) up to 1.43\* cfs from 3 well(s) in the Umatilla Basin,  
 Subbasin

\*March 30, 2017- December 31, 2017: 0.79 cfs (354 gpm) up to 432 acre-feet for dairy operations  
 May 1, 2017- November 30, 2017: 0.00078 cfs (35 gpm) up to 33 acre-feet for construction  
 January 1, 2018- December 31, 2018: 1.10 cfs (496 gpm) up to 800 acre-feet for dairy operations  
 January 1, 2019- December 31, 2021: 1.43 cfs (644 gpm) up to 1037 acre-feet per year for dairy operations

A2. Proposed use construct and operate a dairy Seasonality: year-round, for five years

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 52393	POA #1	CRB	1.43	T3N/R26E-16 SE ¼ NE ¼	2390' S, 360' W fr NE cor S 16
2	MORR 52351	POA #2	CRB	1.43	T3N/R26E-22 NW ¼ NW ¼	290'S, 10'E fr NW cor S 22
3	MORR 52314/52392	POA #3	CRB	1.43	T3N/R26E-16 SW ¼ SW ¼	130' N, 950' E fr SW 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	595	30	341	12/12/2016	793	0-400	0-400	N/A	N/A	600	unknown	AIR
2	655	55	384	07/28/2016	900	0-702	0-702	N/A	N/A	200	unknown	AIR
3	618	248	346	12/12/2016	773	0-380	0-380	N/A	N/A	600	unknown	AIR

Use data from application for proposed wells.

A4. **Comments:** Well logs are not tied to POA's in the application. Ties made based on GPS data from the Department staff site visits.

A5.  **Provisions of the Umatilla** 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) # 1, 2, 3, \_\_\_\_\_, \_\_\_\_\_, tap(s) an aquifer limited by an administrative restriction. Name of administrative area: Ordinance Basalt Critical Groundwater Area (690-507-0070)  
 Comments: All three basalt wells are located in aquifers that are limited by the Ordinance Basalt Critical Groundwater Area Order (Special Order Volume 27, pp 40-86). Further appropriation is not allowable per the CGWA order within its boundaries. However, the applicant proposes mitigation which is addressed in Section B3.

**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) Large Water Use Measurement and Reporting 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 a single aquifer within the Columbia River Basalt Group 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 subject site has about 175 feet of fine-grained catastrophic flood deposits overlying greater than 1000 feet of the Columbia River Basalt Group (CRBG). The basalt is characterized by extensive horizontal flood basalt layers, where the flow interiors are generally dense and brecciated flow tops, sedimentary layers deposited in the time between lava flow emplacements and/or vesicular flow bottoms represent thin permeable "interflow" zones. These interflow zones commonly represent individual aquifers within the CRBG, and are characterized by unique head, water temperature and/or chemistry.

Hydrogeologic investigations by McCall (1975) found that at least two CRBG aquifers extend through the Ordance Basalt CGWA within 800 feet below land surface, each with a distinct head. Water level data collected since 1975 support that finding (see Figure 2). The new wells drilled at the subject site access a water-bearing zone below 400 feet, and have static water levels similar to other nearby basalt wells of similar depth.

The Ordance Basalt CGWA Order (1976) describes long-term groundwater declines in the deep basalt aquifers and prohibits new allocation. Declines within the deep basalt aquifers continue currently (see Figure 2) and indicate that withdrawal from the groundwater system exceeds recharge. These factors lead to the findings that the resource is over-allocated, and that new allocations are not available within the capacity of the basalt groundwater resource or without injury to senior users.



[REDACTED]

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Observation well requirement. A minimum of one observation well shall be constructed to a similar bottom elevation as the production wells, and with a similar open interval. The observation well shall be at least 500 feet from all production wells, and shall be constructed by the applicant and maintained as a dedicated observation well for the duration of groundwater use on this property. The licensee shall obtain approval from a Department Hydrogeologist regarding well location and well completion details before and during well construction. The licensee shall grant Department staff access to install water level recording equipment and periodically measure water levels at the observation well. The Department shall evaluate groundwater level data for interference with other wells in the area and any changes to long-term water level trends.

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LARGE TFM

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

- A. Before water use may begin under this permit, the permittee shall install a totalizing flow meter at each point of [REDACTED]. The permittee shall maintain the device in good working order.
- B. The permittee 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 permittee 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 the Department: one to the Pendleton Office and one to the Salem water-use reporting section. Further, the Director may require the permittee to report general water-use information, including the place and nature of use of water under the permit.
- D. The Director may provide an opportunity for the permittee to submit alternative measuring and reporting procedures for review and approval.

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Forbearance agreement requirement. This review defers to the Department's Water Rights Section regarding language requiring a written forbearance agreement between the owner of Certificates 49726, 19727, 55316, 55317 and the applicant associated with LL 1692. Because the proposed use is from an aquifer affected by the Ordinance Basalt CGWA Order, LL 1692 cannot be issued without a Department-accepted mitigation strategy. The forbearance agreement will need to represent non-use under the relevant certificates of at least as much water as is authorized under this LL each year.

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This review defers to the Department's Water Rights Section regarding language related to T-12248, which is also in process with the Department. In the event T-12248 is approved, this LL should be negated.

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**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	Columbia River Basalt Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Columbia River Basalt Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Columbia River Basalt Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** Static water levels in the subject wells are above water-bearing zones, indicating the aquifer is confined.

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
						<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"/>	<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"/>	<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:** There is no perennial surface water within several miles of the proposed wells.

**Water Availability Basin the well(s) are located within:** N/A

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?
		<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"/>	<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"/>			<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?
		<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

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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.

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

(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: N/A

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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:** N/A

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**References Used:**

McCall, William B., 1975, Ground-Water Conditions and Declining Water Levels in the Ordnance Area, Morrow and Umatilla Counties Oregon, State of Oregon Water Resources Department Groundwater Report No. 23, 134 p.

Oregon Water Resources Department, 1976, Special Order Volume 27, On the Determination of the Critical Ground Water Area in the Ordnance Area, Morrow and Umatilla Counties, Oregon, pp. 40-86.

OWRD well log and water level databases, accessed 03/27/2017.

USGS topographic maps for Clarke, Ordnance, Strawberry Canyon NE and Service Buttes NW Quadrangles.

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

D1. Well #: \_\_\_\_\_ Logid: N/A \_\_\_\_\_

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.**

\_\_\_\_\_

Figure 1. Well Location Map

### LL 1692 Willow Creek Dairy/te Velde T3N/R26E-Section 16

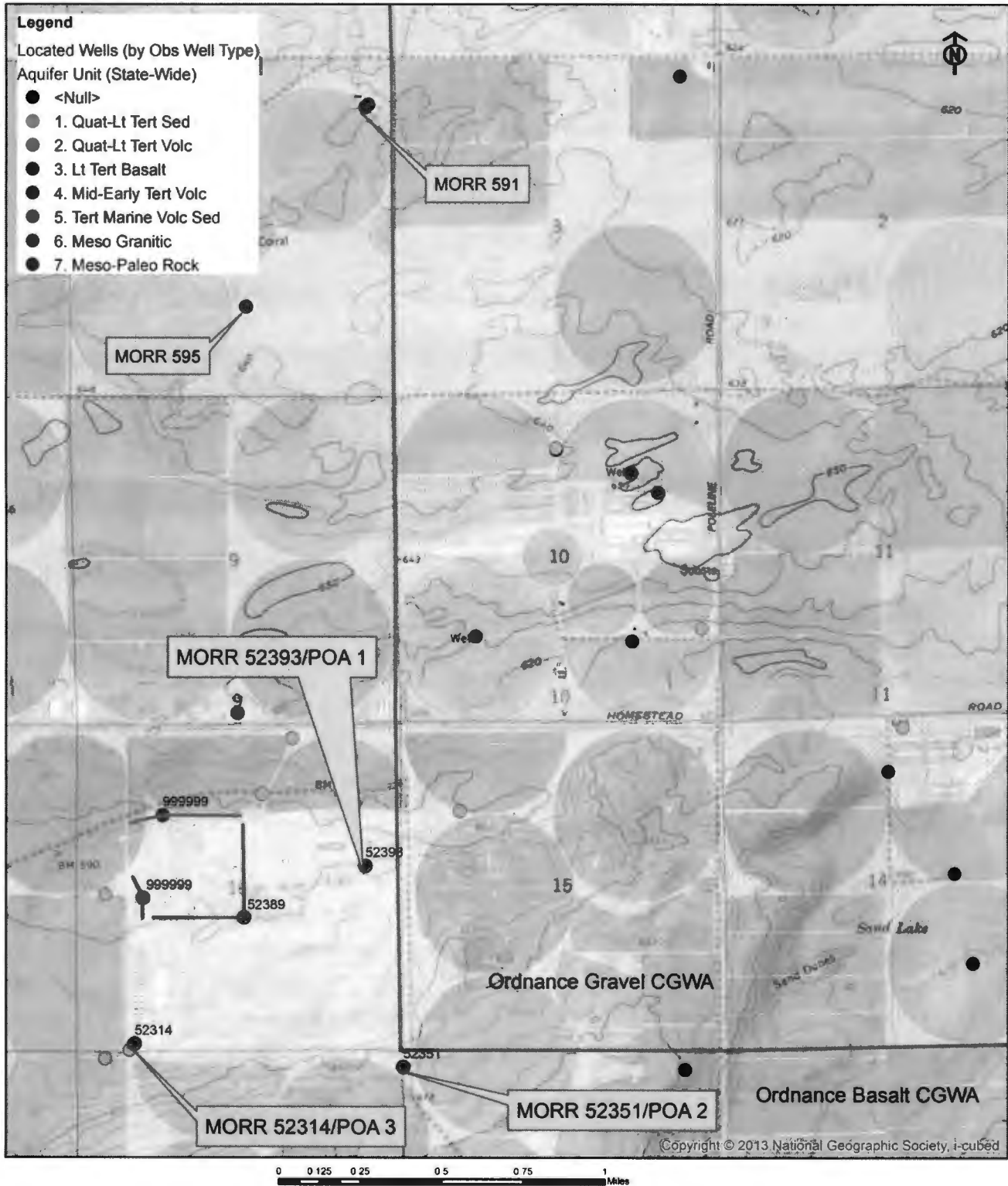




Figure 2. Water-Level Trends in Nearby Wells

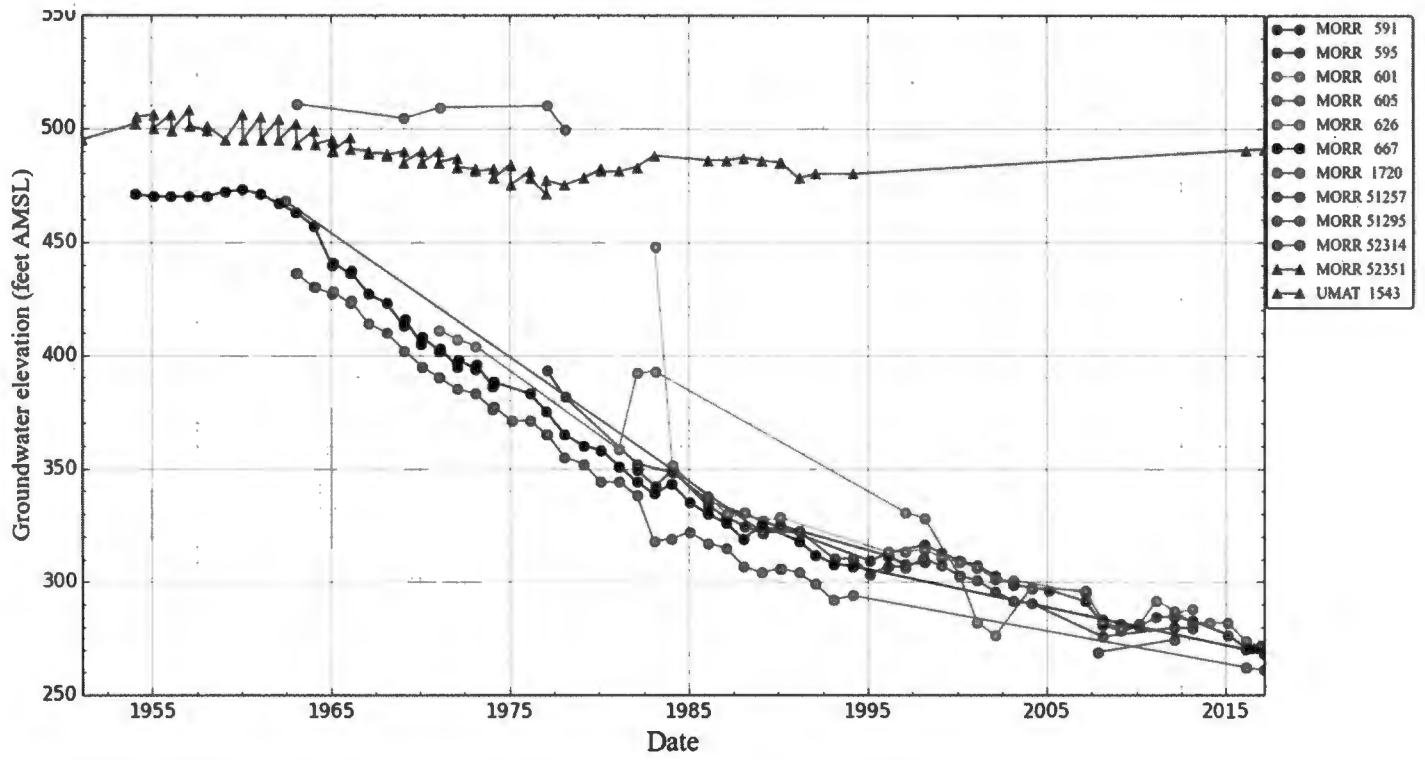


Figure 3. Location of hydrograph wells

# LL 1692 Willow Creek Dairy/te Velde Location of hydrograph wells

