

Approved:



## MEMO

**To:** Kristopher Byrd, Well Construction and Compliance Section Manager  
**From:** Travis Kelly, Well Construction Compliance Coordinator  
**Subject:** Review of Water Right Application G-19148  
**Date:** February 4, 2022

The attached application was forwarded to the Well Construction and Compliance Section by the Groundwater Section. Mike Thoma reviewed the application. Please see Mike's Groundwater Review and the Well Report.

Applicant's Well #1 (DESC 10001): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

The construction of Applicant's Well #1 may not satisfy hydraulic connection issues.

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

WATER RESOURCES DEPT. (START CARD) #  
SALEM, OREGON

Instructions for completing this report are on the last page of this form.

(1) OWNER:

Well Number \_\_\_\_\_

Name Steve Greer  
Address 64149 Harris Way  
City Bend State Or. Zip 97701

(2) TYPE OF WORK

☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger  
☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation  
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☒ No Depth of Completed Well 840 ft.  
Explosives used ☐ Yes ☒ No Type \_\_\_\_\_ Amount \_\_\_\_\_

HOLE

SEAL

Diameter	From	To	Material	From	To	Sacks or pounds
12"	0	18 1/2	Bentonite	0	18 1/2	10
8"	18 1/2	840				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E  
☐ Other Poured in Dry

Backfill placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Size of gravel \_\_\_\_\_

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 8"	0	18 1/2	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 6"	-10	840	188	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) \_\_\_\_\_

(7) PERFORATIONS/SCREENS:

☒ Perforations Method Factory  
☐ Screens Type \_\_\_\_\_ Material \_\_\_\_\_

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
800	840	5x3	512	6		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

☐ Pump ☐ Bailer ☒ Air ☐ Flowing  
Yield gal/min 25 Drawdown 0 Drill stem at 835 Time 1 hr

Temperature of water 52.0 Depth Artesian Flow Found \_\_\_\_\_

Was a water analysis done? ☐ Yes By whom \_\_\_\_\_

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other \_\_\_\_\_

Depth of strata: \_\_\_\_\_

(9) LOCATION OF WELL by legal description:

County Deschutes Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
Township 17 N or S Range 12 E or W. WM.  
Section 4 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Tax Lot 00510 Lot \_\_\_\_\_ Block \_\_\_\_\_ Subdivision \_\_\_\_\_  
Street Address of Well (or nearest address) 64149 Harris Rd  
Bend, Ore.

(10) STATIC WATER LEVEL:

704 ft. below land surface. Date 7-10-95  
Artesian pressure \_\_\_\_\_ lb. per square inch. Date \_\_\_\_\_

(11) WATER BEARING ZONES:

Depth at which water was first found 761

From	To	Estimated Flow Rate	SWL
761	840	25	704

(12) WELL LOG:

Ground Elevation \_\_\_\_\_

Material	From	To	SWL
Top Soil	0	1	
Boulders & Sand	1	12	
Lava	12	169	
Cinder Congl.	169	178	
Lava	178	224	
Cinder Congl.	224	230	
Lava	230	270	
Brown sand stone	270	305	
Lava	305	354	
Brown Congl.	354	407	
Lava	407	468	
Black Basalt	468	510	
Brown sand stone	510	603	
Lava	603	616	
Brown Congl.	616	628	
Lava	628	659	
Red cinders	659	681	
Lava	681	708	
Brown sand stone	708	761	
W.B. Brown sand sto.	761	840	

Date started 7-4-95 Completed 7-10-95

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, 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.

Signed Jeff Randall WWC Number \_\_\_\_\_ Date 7-10-95

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, 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.

Signed Doug Helm WWC Number 1255 Date 7-10-95

# Groundwater Application Review Summary Form

Application # G- 19148

GW Reviewer M. Thoma Date Review Completed: 11/30/2021

## Summary of GW Availability and Injury Review:

☐ Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

## Summary of Potential for Substantial Interference Review:

☒ There is the potential for substantial interference per Section C of the attached review form.

## Summary of Well Construction Assessment:

☐ The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

*This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).*

**WATER RESOURCES DEPARTMENT**

**MEMO**

**11/30/2021**

**TO: Application G- 19148**

**FROM: GW: M. Thoma**  
(Reviewer's Name)

**SUBJECT: Scenic Waterway Interference & General/Local Surface Water  
Evaluation for Deschutes Ground Water Study Area**

The source of appropriation is within or above the Deschutes Scenic  
Waterway

Use the Scenic Waterway condition (Condition 7J).

**PREPONDERANCE OF EVIDENCE FINDING UNDER ORS 390.835:**

Department has found that there is a preponderance of evidence that the proposed use of groundwater will measurably reduce the surface water flows necessary to maintain the free-flowing character of the Deschutes Scenic Waterway in quantities necessary for recreation, fish and wildlife.

**LOCALIZED IMPACT FINDING**

☒ The proposed use of groundwater will have a localized impact to surface water in the Middle Deschutes River/Creek Subbasin.

If the localized impact box above is checked, then the water use under any right issued pursuant to this application is presumed to have a localized impact on surface water within the identified subbasin. Mitigation of the impact, originating from within the Local Zone of Impact identified by the Department, will be required before a permit may be issued for the proposed use.

If the localized impact box above is not checked, then the water use under any right issued pursuant to this application is presumed to have a general (regional) impact on surface water. Mitigation of the impact, originating anywhere within the Deschutes Basin above the Madras gage, will be required before a permit may be issued for the proposed use.

# PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 11/30/2021  
 FROM: Groundwater Section M. Thoma  
 SUBJECT: Application G- 19148 Reviewer's Name  
 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: Zadoff County: Deschutes

A1. Applicant(s) seek(s) 0.0445 cfs from 1 well(s) in the Deschutes Basin,  
 \_\_\_\_\_ subbasin

A2. Proposed use Nursery (4.96 acres) 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	DESC0010001	1	Bedrock	0.0445	17.00S-12.00E-4-NE SW	1390 FEET NORTH AND 2160 FEET EAST OF SE CORNER, SECTION 4
2						
3						
4						

\* 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	3430	761	704	7/10/95	840	0-18	+1-18	10-840	800-840	25	0	A

Use data from application for proposed wells.

A4. **Comments:** \_\_\_\_\_  
 \_\_\_\_\_

A5. ☒ **Provisions of the Deschutes (OAR 690-505)** 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: The proposed POA is within the Deschutes Groundwater Study Area

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) 7N (Annual SWL); 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): \_\_\_\_\_

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- B3. **Groundwater availability remarks:** The applicant's proposed POA is located in an area of the Deschutes Basin aquifer system that represents a transition across the Sisters Fault Zone, which transects the Deschutes Basin from the northeast to the southwest. Water levels to the southwest (up-gradient) of the SFZ tend to be shallower than to the northeast and typically show long-term trends that reflect short- and mid-term climate cycles. The SFZ acts as a narrow, low-permeable zone where potentiometric head is higher up-gradient and decreases down-gradient. Water levels are much deeper to the northeast of the SFZ and, away from the SFZ, water level trends often show long-term declines (see OWRD Technical Memo "Response to Technical Assistance Request: Groundwater Mitigation Program purpose in relation to observed groundwater level trends" dated August 30, 2021 – available upon request) that have been attributed to lack of natural and artificial recharge as well as increased groundwater pumping (Gannett et al., 2017). There is not sufficient water level data in the area near the proposed POA to determine if the aquifer in the area would be trending similar to wells to the northeast, and thus showing declines and not within the capacity of the resource, or similar to wells to the southwest, and thus trending more-closely with short- and mid-term climate. Therefore, there is not a preponderance of evidence that the proposed use is not within the capacity of the resource and so conditions listed in B1(d) are strongly recommended.

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

Impacts to surface water are addressed by the Deschutes Basin Rules: OAR 690-505

**References Used:**

Gannett, M. W. and K. E. Lite. 2004. Simulation of Regional Ground-Water Flow in the Upper Deschutes Basin, Oregon. USGS Water Resources Investigations Report 2003-4195

Gannett, M. W. and K. E. Lite. 2013. Analysis of 1997-2009 Groundwater Level Changes in the Upper Deschutes Basin, Central Oregon. USGS Scientific Investigations Report 2013-5092

Gannett, M. W., Lite, K. E., Risley, J. C., Pischel, E. M., and J. L. LaMarche. 2017. Simulation of Groundwater and Surface-Water Flow in the Upper Deschutes Basin, Oregon. USGS Scientific Investigations Report 2017-5097

Lite, K. E. and M. W. Gannett. 2002. Geologic Framework of the Regional Ground-Water Flow System in the Upper Deschutes Basin, Oregon. USGS Water-Resources Investigations Report 02-4015

OWRD Well Log Database, Accessed 11/30/2021 [[https://apps.wrd.state.or.us/apps/gw/well\\_log/Default.aspx](https://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx)]

OWRD Groundwater Information System Database, Accessed 11/30/2021 [[https://apps.wrd.state.or.us/apps/gw/gw\\_info/gw\\_info\\_report/gw\\_search.aspx](https://apps.wrd.state.or.us/apps/gw/gw_info/gw_info_report/gw_search.aspx)]

Sherrod, D. R., Taylor, E. M., Ferns, M. L., Scott, W. E., Conrey, R. M., and G. A. Smith. 2004. Geologic Map of the Bend 30- X 60-Minute Quadrangle, Central Oregon. USGS Geologic Investigations Series Map I-2683

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

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

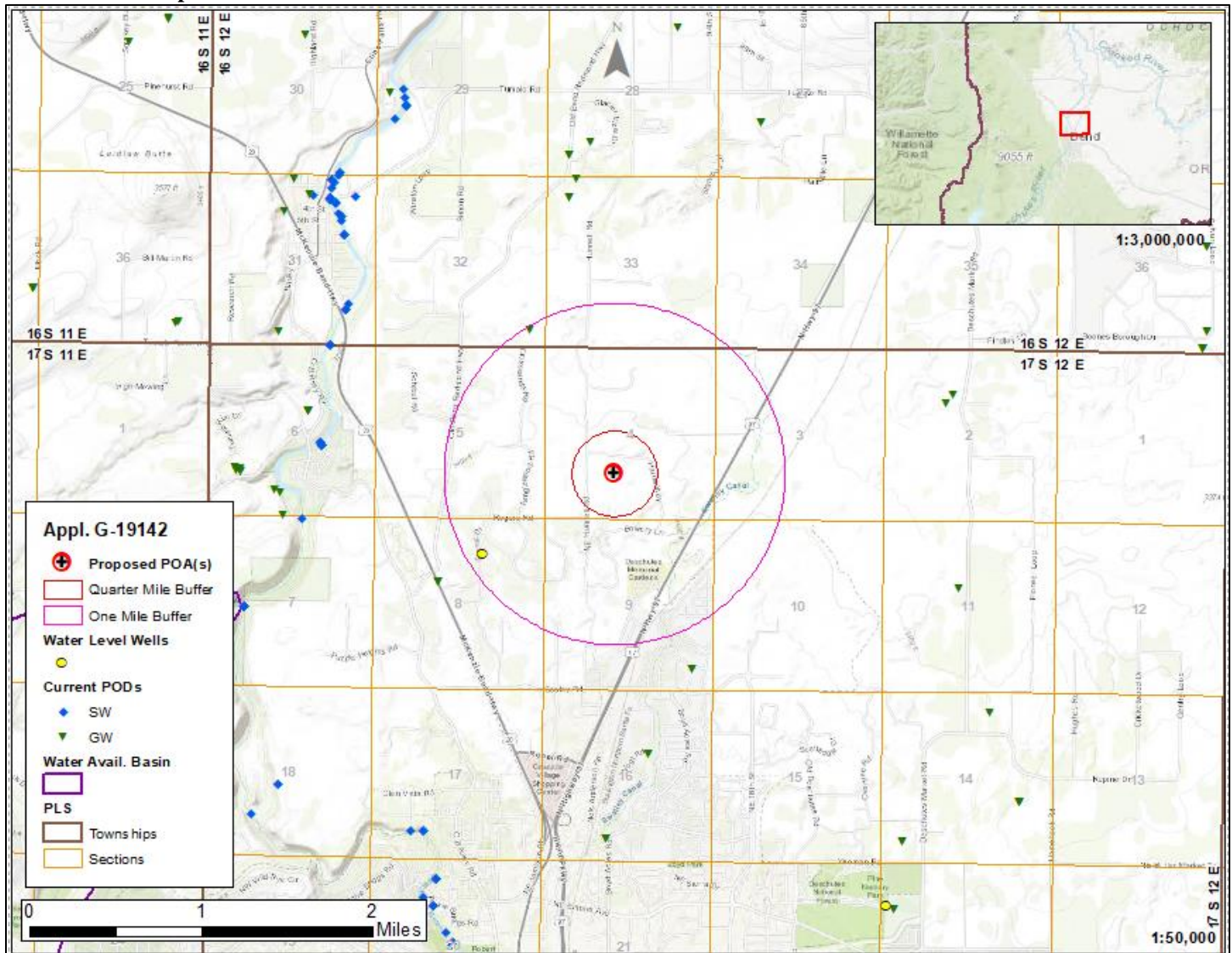
D2. **THE WELL does not appear to meet current well construction standards based upon:**

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

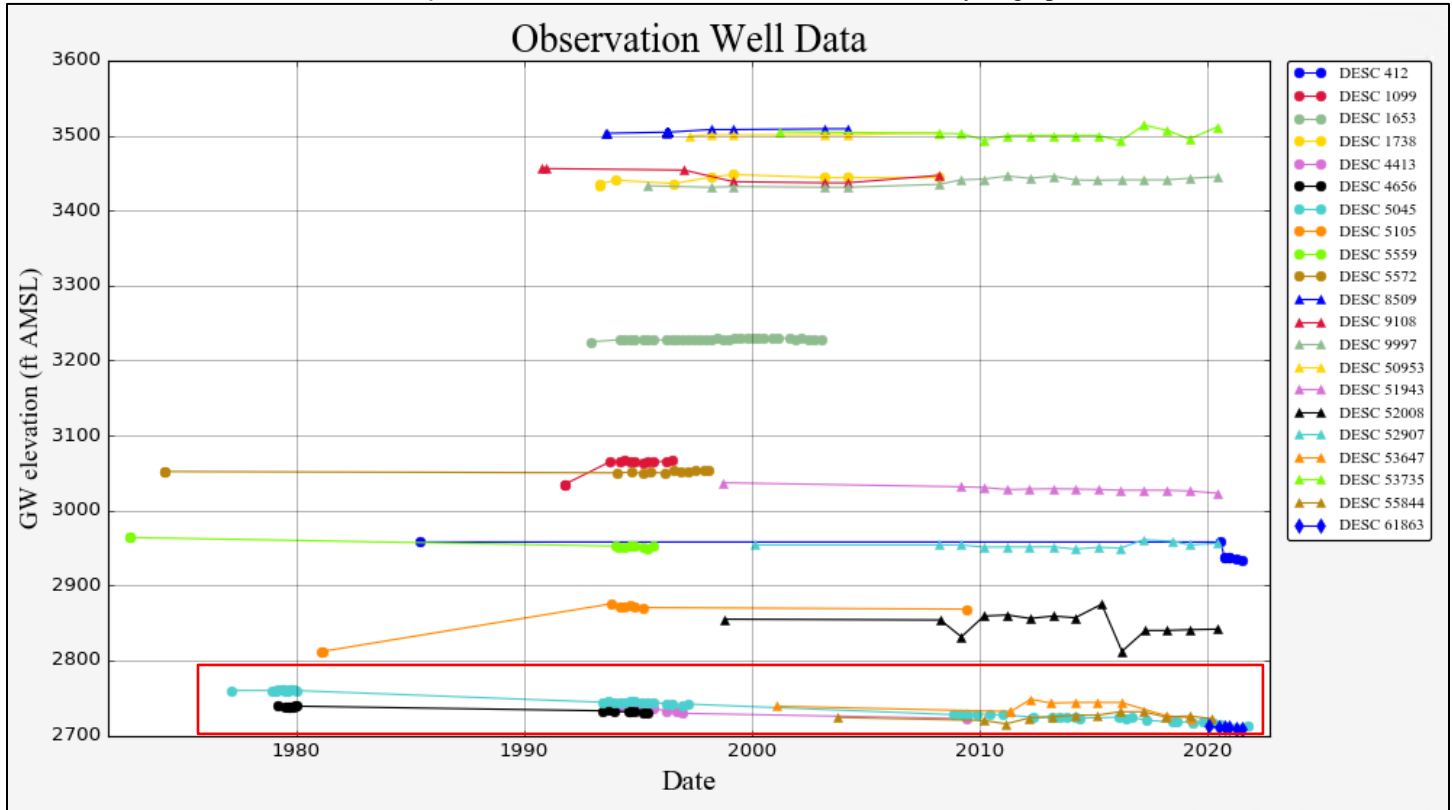
D3. **THE WELL construction deficiency or other comment is described as follows:** \_\_\_\_\_

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

## Well Location Map





**Water-Level Measurements in Nearby Wells – red box covers wells shown in second hydrograph****Water-Level Measurements in Nearby Wells – zoomed to wells showing long-term declines which are generally to the northeast of the proposed POA**