

Groundwater Application Review Summary Form

Application # G- 18300

GW Reviewer Joe Kemper Date Review Completed: 10/26/2023

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

10/26/2023

TO: Application G- 18300

FROM: GW: Joe Kemper
(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 Lower Crooked River 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 [River Name] 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 10/26/2023
 FROM: Groundwater Section Joe Kemper
Reviewer's Name
 SUBJECT: Application G- 18300 Supersedes review of 8/25/2016
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: Legacy Ranches LLC County: Crook

A1. Applicant(s) seek(s) 1.56 cfs from 2 well(s) in the Deschutes Basin,
Lower Crooked subbasin (Huston Lake quadrangle)

A2. Proposed use Industrial/Commercial 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	CROO 54287	54287	Deschutes Fm	0.445 (200 gpm)	15S/15E-10 SW-NE	1472' S, 1493' W fr NE cor S 10
2	CROO 53361	53361	Deschutes Fm	1.114 (500 gpm)	15S/15E-4 NW-SW	1960' N, 665' E fr SW cor S 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	3276	381	381	9/4/2015	750	0-63	+1-63	2-720	615-715	350		Air
2	3155	372	358	2/6/2007	555	0-18	+2-18	5-555	375-535	190	12	Pump

Use data from application for proposed wells.

POA Well	Land Surface Elevation at Well (ft amsl)	Depth of First Water (ft bls)	SWL (ft bls)	SWL Date	Reference Level (ft bls)	Reference Level Date
1	3276	420	381	9/2/2015	379.95	5/11/2018
2	3155	372	358	2/6/2007	352.95	4/15/2018

A4. **Comments:** The wells are constructed into water-bearing zones within the Deschutes Fm. Regional groundwater flow is towards the northwest. Well 54287 (CROO 54287) is located within WAB 30530507 (Crooked R> Deschutes R- ab Dry R). Well 53361 (CROO 53361) is located within WAB 30530501 (Dry R> Crooked R- at Mouth). Production from the wells has the potential to interfere with Prineville municipal wells. The requested amount may not be within the capacity of the resource at the proposed wells.

A5. **Provisions of the** Deschutes 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 wells are within the USGS 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) 7RLA, 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:** The applicant’s wells access groundwater hosted in lavas and sediment of the eastern extent of the Deschutes Formation, specifically the plateau SW of the city of Prineville. Since the original groundwater review for this application was completed, the City of Prineville commissioned their pilot ASR project just east of the applicant’s wells, which involved extensive groundwater level data collection. A review of these data indicate that water levels in the vicinity have shown 1) positive response to the ASR recharge 2) relatively stable trends despite increased groundwater pumpage in the area and 3) localized wells with declining trends. Two wells on the airport plateau (CROO 53726 and CROO 53878) have shown more than 50 feet of declines since monitoring began. However, multiple lines of evidence suggest these two wells are completed within an intracanyon lava flow that is bounded by mostly low permeability material (Groundwater review for App G-17338) (see hydrograph below). The high magnitude decline appears to be confined to CROO 53726 and CROO 53878, but CROO 54287 and CROO 53956 may show a lower magnitude, diffused response to those local declines.

The hydrogeologic data in the area indicate that there are sharp permeability boundaries that are likely to exacerbate interference and water supply problems. There is also concern that the requested rates are higher than expected yields in the applicant’s wells. Considering water level trends and available water budget estimates for the area, there is not a preponderance of evidence that the target aquifer is over-appropriated. The above permit conditions are recommended to address potential interference or decline issues. See the table in page 1 for reference level information.

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:

Application file: G-18300, and nearby G-16877, G-16900 (including T-11685), and G-17338.

Gannett, M.W. and Lite, K.E., Jr. 2004. Simulation of regional ground-water flow in the Upper Deschutes Basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report WRI 2003-4195.

Gannett, M.W. and Lite, K.E., Jr. 2013. Analysis of 1997-2008 Groundwater Level Changes in the Upper Deschutes Basin, Central Oregon: U.S. Geological Survey Scientific Investigations Report 2013-5092.

Gannett, M.W., Lite, K.E., Jr., Morgan, D.S., and Collins, C.A. 2001. Ground-water hydrology of the upper Deschutes basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report WRI 2000-4162.

Lite, K.E., Jr. and Gannett, M.W. 2002. Geologic framework of the regional ground-water flow system in the upper Deschutes Basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report WRI 2002-4015.

Well logs and hydrographs for State Observation Well 1314 (CROO 1954), and nearby wells: CROO 498, CROO 532, CROO 1894, CROO 1895, CROO 50802, CROO 50990, CROO 53265, CROO 53361, CROO 53453, CROO 53726, CROO 53878, CROO 53965, CROO 54003, CROO 54191 and CROO 54287.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

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

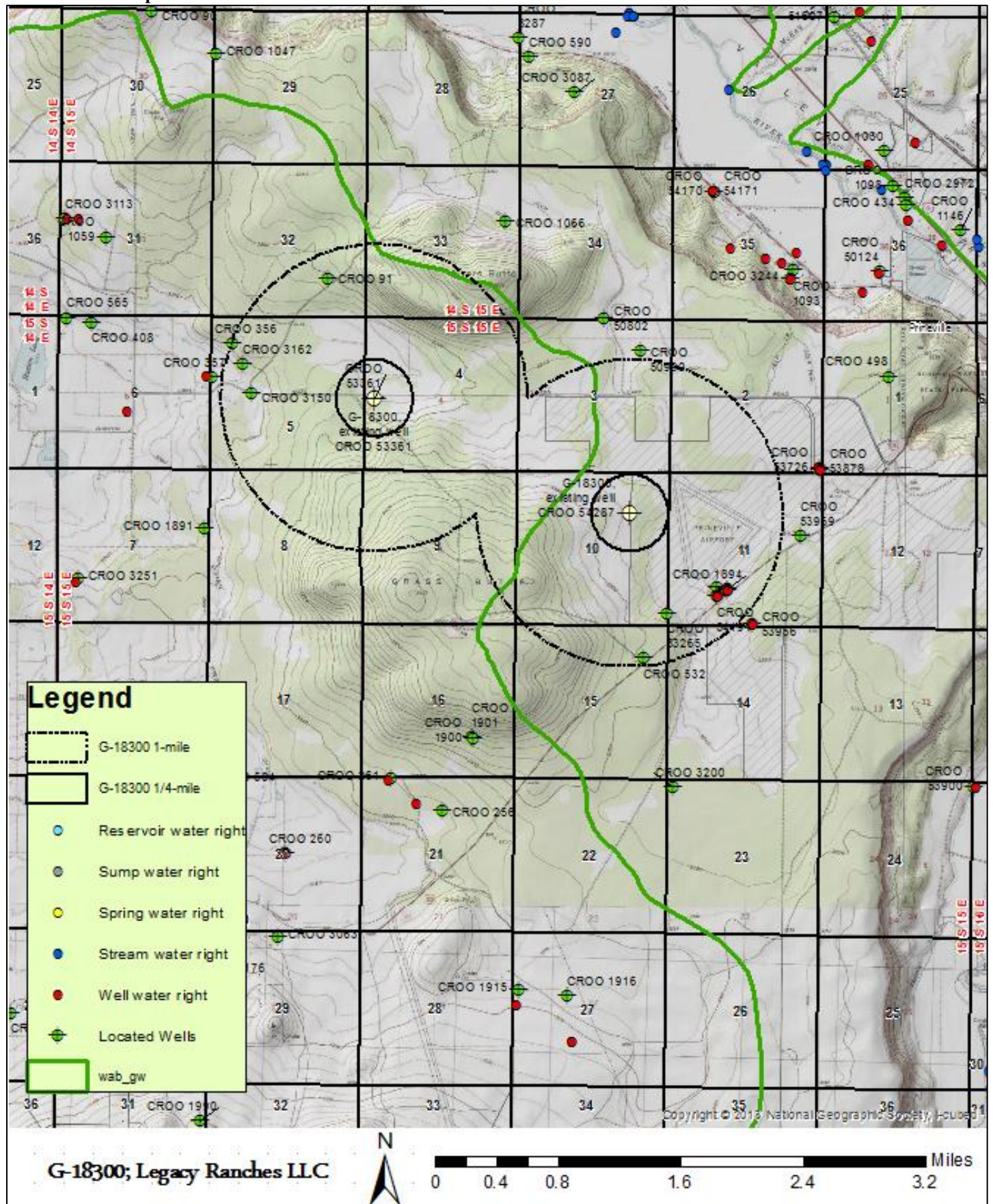
- a. review of the well log;
- b. field inspection by _____;
- c. report of CWRE _____;
- d. other: (specify) _____

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

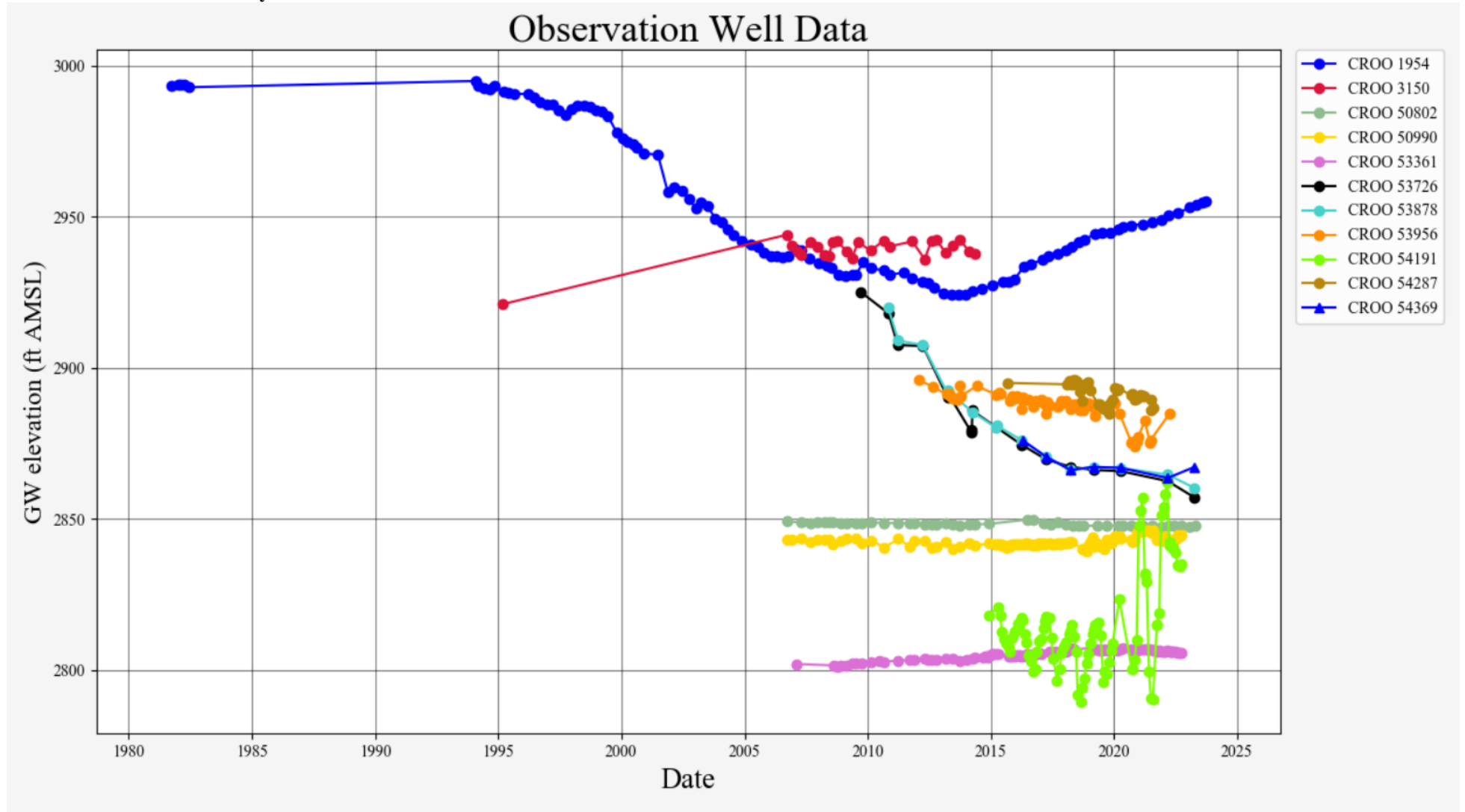
D4. **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

Well Location Map



Water-Level Trends in Nearby Wells



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