

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-19074
Date: January 6, 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 #2E (CROO 50431): Based on a review of the Well Report, Applicant's Well #2E seems to protect the groundwater resource.

The construction of Applicant's Well #2E may not satisfy hydraulic connection issues.

Applicant's Well #5 (Proposed Well): Applicant's Well #5 is a proposed well, therefore it cannot be reviewed for construction. Construction of this proposed well shall be completed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240. During construction of this well, specific attention should be paid to ensure sealing requirements are met and that the well does not commingle aquifers.

The construction of applicant's proposed Well #5 may not satisfy hydraulic connection issues.

Applicant's Well #6 (Proposed Well): Applicant's Well #6 is a proposed well, therefore it cannot be reviewed for construction. Construction of this proposed well shall be completed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240. During construction of this well, specific attention should be paid to ensure sealing requirements are met and that the well does not commingle aquifers.

The construction of applicant's proposed Well #6 may not satisfy hydraulic connection issues.

CROO
S0431

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

WELL I.D. # L 20390
START CARD # 109973

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

(1) OWNER: Well Number 4E
Name MARTIN TISTHAMMER
Address 112 HIGHLAND AVENUE
City VACAVILLE State CA Zip 95688

(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 402 ft.
Explosives used Yes No Type - Amount -

HOLE			SEAL			Sacks or pounds
Diameter	From	To	Material	From	To	
21	0	19	BENTONITE	0	19	30 SACKS
16	19	408				

How was seal placed: Method A B C D E
 Other POURED DOWN 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:	16	+1	19	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:	12	2	402	188	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) NO SHOE USED

(7) PERFORATIONS/SCREENS:

Perforations Method MACHINE CUT
 Screens Type SLOT Material STEEL

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
302	322	1/8 x 3	912	12	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>
342	362	1/8 x 3	912	12	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>
382	402	1/8 x 3	912	12	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min 500 Drawdown 0 Drill stem at 408 Time 1 hr.

Temperature of water 54° 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 CROOK Latitude Longitude
Township 14 N or S Range 14 E or W. WM.
Section 34 N W 1/4 N W 1/4
Tax Lot 1803 Lot Block Subdivision
Street Address of Well (or nearest address) 14555 SW CORNET LOOP

(10) STATIC WATER LEVEL:
265 ft. below land surface. Date 12-5-97
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 285

From	To	Estimated Flow Rate	SWL
275	285	50+ GPM	265
345	375	500+ GPM	265

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
SANDY SOIL	0	8	
GREY LAVA	8	15	
RED LAVA CONG	15	20	
BROWN SS CONG	20	80	
BROKEN LAVA CONG	80	105	
BROWN SS	105	185	
TAN SS CONG	185	225	
BROKEN LAVA	225	275	
TAN GRAVEL CONG	275	285	265
BROKEN LAVA	285	295	
BROWN GRAVEL CONG	295	345	
TAN VESICULAR CONG	345	360	265
BROWN VESICULAR CONG	360	375	265
GREY BASALT	375	385	
BROWN SS CONG	385	408	

Date started 11-24-97 Completed 12-5-97

(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.
WWC Number
Signed Date

(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.
WWC Number 1556
Signed Date 12-9-97

Groundwater Application Review Summary Form

Application # G- 19074

GW Reviewer M. Thoma Date Review Completed: 11/29/2021

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

11/29/2021

TO: Application G- 19074

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 Crooked 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 11/29/2021
 FROM: Groundwater Section
 SUBJECT: Application G- 19074 Supersedes review of _____
 Reviewer's Name _____
 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: Red Rock Water LLC County: Crook

A1. Applicant(s) seek(s) 0.4 cfs from 3 well(s) in the Deschutes Basin,
Crooked River subbasin

A2. Proposed use Quasi-Muni Seasonality: Year-Round (96 AF annual)

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	CROO0050431	2E	Bedrock	0.4	14.00S-14.00E-34-SENW	2140 FEET SOUTH AND 1900 FEET EAST FROM NW CORNER, SECTION 34
2	PROPOSED	5	Bedrock	0.4	14.00S-14.00E-34-SWNE	1980 FEET SOUTH AND 1930 FEET WEST FROM NE CORNER, SECTION 34
3	PROPOSED	6	Bedrock	0.4	14.00S-14.00E-34-NWNW	720 FEET SOUTH AND 480 FEET EAST FROM THE NW CORNER, SECTION 34
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	3000	285	265	12/5/97	402	0-19	+1-19	2-402	302-402 (discontinuous)	500		A
2	3000				600							
3	2990				600							

Use data from application for proposed wells.

A4. **Comments:** Wells #2 and #3 are proposed but will likely encounter similar hydrologic and geologic conditions as Well #1

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 POAs are 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) _____;
 - 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:** Water level data from CROO0050431 (POA #1) and a nearby well CROO0000576 track similarly to a long-term observation well CROO0000024 which, although slightly over 4 miles from POA #1, is interpreted to be representing the same aquifer as the proposed POAs. CROO0000024 displays a long-term groundwater level decline of approximately 30 ft since 1995. This trend is similar to trends observed west of Redmond and has been attributed to reduced natural recharge due to long-term climate change and reduced artificial recharge due to canal lining, but also to groundwater pumping (Gannett et al., 2017; Also see memo “Response to Technical Assistance Request: Groundwater Mitigation Program purpose in relation to observed groundwater level trends”, dated August 30, 2021 – available on request). The attribution of this trend, even only partly, to groundwater pumping implies that the groundwater resource in the area is not in equilibrium and that the current rate of groundwater appropriation will not sustain a balance of uses without significantly impairing the function of the aquifer. Therefore, new use in the area, which will contribute to the observed declines, will further impair the function of the aquifer and so is not within the Capacity of the Resource as defined in OAR 690-400-0010

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

Impacts to surface water are evaluated through 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

McClaghry, J. D., Ferns, M. L., and C. L. Gordon. 2021. Geology of the North Half of the Lower Crooked River Basin, Crook, Deschutes, Jefferson, and Wheeler Counties, Oregon. DOGAMI Bulletin 108.

OWRD Well Log Database, Accessed 11/29/2021 [https://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx]

OWRD Groundwater Information System Database, Accessed 11/29/2021 [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: _____

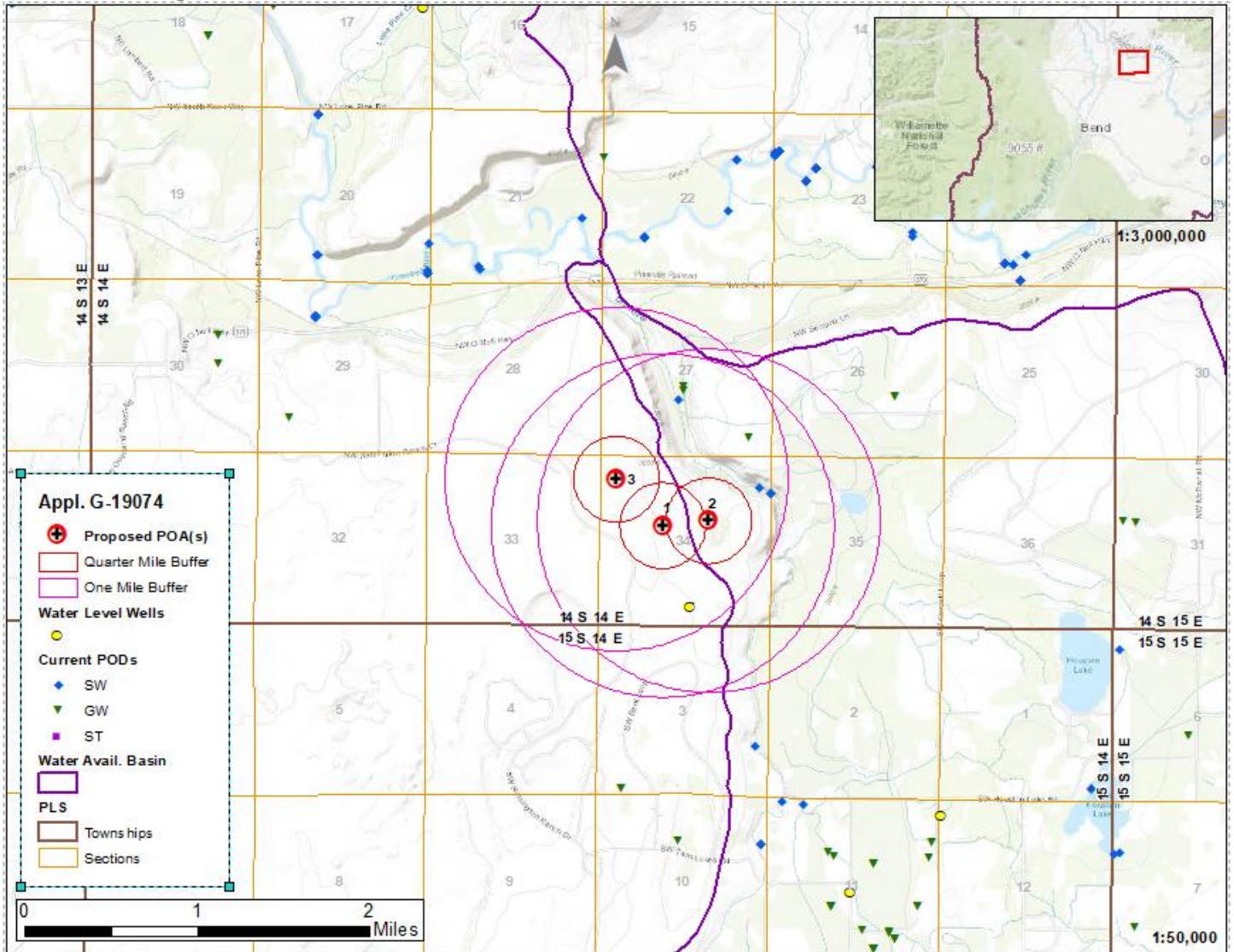
D2. **THE WELL does not appear to meet current well construction standards based upon:**

- 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 of Similar Depth as the Proposed POAs

