Approved: 

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager

From: Travis Kelly, Well Construction Program Coordinator

Subject: Review of Water Right Application G-19030

Date: December 7, 2020

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

Applicant's Well #1 (KLAM 55044): 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.

RECEIVED
AUG 31 2005
WATER RESOURCES DEPT
SALEM, OREGON

KLAM 55044

Klam 55044

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

WELL I.D. # L 49646
START CARD # 142766

(1) OWNER: Well Number
Name Pat Gisler
Address 1470 NE First St. #100
City Bend State OR Zip 97701

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD:
[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger
[ ] Other

(4) PROPOSED USE:
[ ] Domestic [X] Community [ ] Industrial [ ] Irrigation
[ ] Thermal [ ] Injection [ ] Livestock [ ] Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [ ] Yes [X] No Depth of Completed Well 46 ft.
Explosives used [ ] Yes [X] No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
12	0	46	Cemt.	0	20	27 sacks

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[ ] Other
Backfill placed from ____ ft. to ____ ft. Material ____
Gravel placed from 20 ft. to 46 ft. Size of gravel 3/8

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8	+2	46	.28	[X]	[ ]	[X]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
[X] Perforations Method Factory
[ ] Screens Type 18 x 3 Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
26	46	18x3	200	8	pipe	[X]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour
[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
35	0	42	1 hr.

Temperature of water 53 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 Klamath Latitude ____ Longitude ____
Township 24 N or [S] Range 7 [E] or W. WM.
Section 18 SE 1/4 SW 1/4
Tax Lot 3800 Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address) Diamond Peaks Subdivision

(10) STATIC WATER LEVEL:
20.5 ft. below land surface. Date 10/17/04
Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found 20.5

From	To	Estimated Flow Rate	SWL
20.5	46	35+	20.5

(12) WELL LOG:
Ground Elevation ____

Material	From	To	SWL
Top Soil	0	3	
Pumice	3	14	
Brown Sandstone	14	20.5	20.5
Sand & gravel	20.5	46	✓

RECEIVED
FEB 01 2006
WATER RESOURCES DEPT
SALEM, OREGON

Date started 09/09/04 Completed 10/17/04

(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 Gale N Brocket WWC Number 1371 Date 10/17/04

(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 Gale N Brocket WWC Number 1371 Date 10/17/04

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

Groundwater Application Review Summary Form

Application # G- _19030_

GW Reviewer _Aurora C Bouchier_ Date Review Completed: _11/12/2020_

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.

Within USGS Groundwater Study Area – as stated in GW review for associated application G-17465, only mitigation applied to Crescent Creek above the location of the proposed POA will offset the impact.

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 November 12, 2020

TO: Application G- 19030

FROM: GW: Aurora C Bouchier
(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 Little 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 11/12/2020
FROM: Groundwater Section Aurora C Bouchier
Reviewer's Name
SUBJECT: Application G- **19030** Supersedes review of na
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: **Diamond Meadows Tract 1384 Homeowners**
County: **Klamath**

A1. Applicant(s) seek(s) 0.078 cfs from 1 well(s) in the Deschutes Basin, Crescent Creek (Little Deschutes ZOI) subbasin

A2. Proposed use Quasi-municipal 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	KLAM 55044	1	Alluvium	0.078	24S/07E-07 SE-NW	400' N, 1070' W fr Center S 7
2						

* 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	4717	20.5	20.5	10/17/2004	46	0-20	-2-46	--	26-46	35	0	A

Use data from application for proposed wells.

A4. **Comments:** This application is the same as G-17465.
The well is constructed into water-bearing zones within alluvium and glacial outwash deposits. Regional groundwater flow is towards the northeast. Local flow paths are likely towards Crescent Creek. The well is located within the USGS Deschutes Groundwater Study Area.

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: Within the USGS Deschutes Groundwater Study Area Boundary and subject to Division 690-505-0500 to 0620.

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, 7J**;

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 nearest State Observation well is KLAM 136, approximately 16.9 miles to the east-northeast. KLAM 136 has been monitored periodically since1993. The groundwater review in 2011 for app G-17465 observed that KLAM 136 appeared to be in dynamic equilibrium with decadal-scale water level fluctuations (approximately 5 feet) coincident with climate cycles.

The well is completed in alluvium that is hydraulically connected to Crescent Creek and located in close proximity to KLAM 339 and KLAM 340 (authorized under Certificates 93334 and 93335 respectively). The pump test analysis for both KLAM 339 and KLAM 340 suggests a recharge boundary was encountered during pumping, supporting the hydraulic connection to Crescent Creek.

Although these wells are in close proximity to one another, the relatively low requested rate and the hydraulic connection to Crescent Creek should prevent well interference issues. However, there is no local zone of impact in the Deschutes Mitigation program for Crescent Creek. Only mitigation applied to Crescent Creek above the location of the proposed POA will offset the impact.

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

The USGS Deschutes groundwater study concludes that groundwater and surface water are directly linked within the DGWSA, with virtually the entire flow of the Deschutes River at Madras supplied by groundwater discharge during the summer and early fall (Gannett et al., 2001). Therefore, the following sections of groundwater reviews are not required to establish surface water groundwater connections.

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Not required to be evaluated within the DGWSA

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? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Not required to be evaluated within the DGWSA

Water Availability Basin the well(s) are located within: Not required to be evaluated within the DGWSA

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 (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, 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?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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?
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: Not required to be evaluated within the DGWSA

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													
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													
(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.

Basis for impact evaluation: Not required to be evaluated within the DGWSA

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:** The USGS Deschutes groundwater study concludes that groundwater and surface water are directly linked within the DGWSA, with virtually the entire flow of the Deschutes River at Madras supplied by groundwater discharge during the summer and early fall (Gannett et al., 2001). Management rules within the DGWSA (OAR Division 690-505-0500 to 0620) were crafted to allow a limited number of additional groundwater permits to be granted while still maintaining the Deschutes River Oregon Scenic Waterway/Federal Wild and Scenic River.

The well is completed in alluvium that is hydraulically connected to Crescent Creek. The close proximity of the well to Crescent Creek will result in interference with surface water. However, there is no local zone of impact in the Deschutes Mitigation program for Crescent Creek. Only mitigation applied to Crescent Creek above the location of the proposed POA will offset the impact.

References Used: Application file: G-19030 and associated application G-17465.

Gannett, Marshall W., Lite, Kenneth E. Jr., Morgan, David S., and Collins, Charles A., 2001, Ground-Water Hydrology of the Upper Deschutes Basin, Oregon; U.S. Geological Survey Water-Resources Investigations Report 00-4162.

Gannett, Marshall W., Lite, Kenneth E. Jr., Risley, John C., Pischel, Esther M., and La Marche, Jonathan L., 2017, Simulation of groundwater and surface-water flow in the upper Deschutes Basin, Oregon; U.S. Geological Survey Scientific Investigations Report 2017-5097.

Lite, Kenneth E. Jr., and Gannett, Marshall 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 02-4015.

OWRD Well Log database and groundwater-level data.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** 1 **Logid:** KLAM 55044

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

a. ☐ review of the well log;

b. ☐ field inspection by _____;

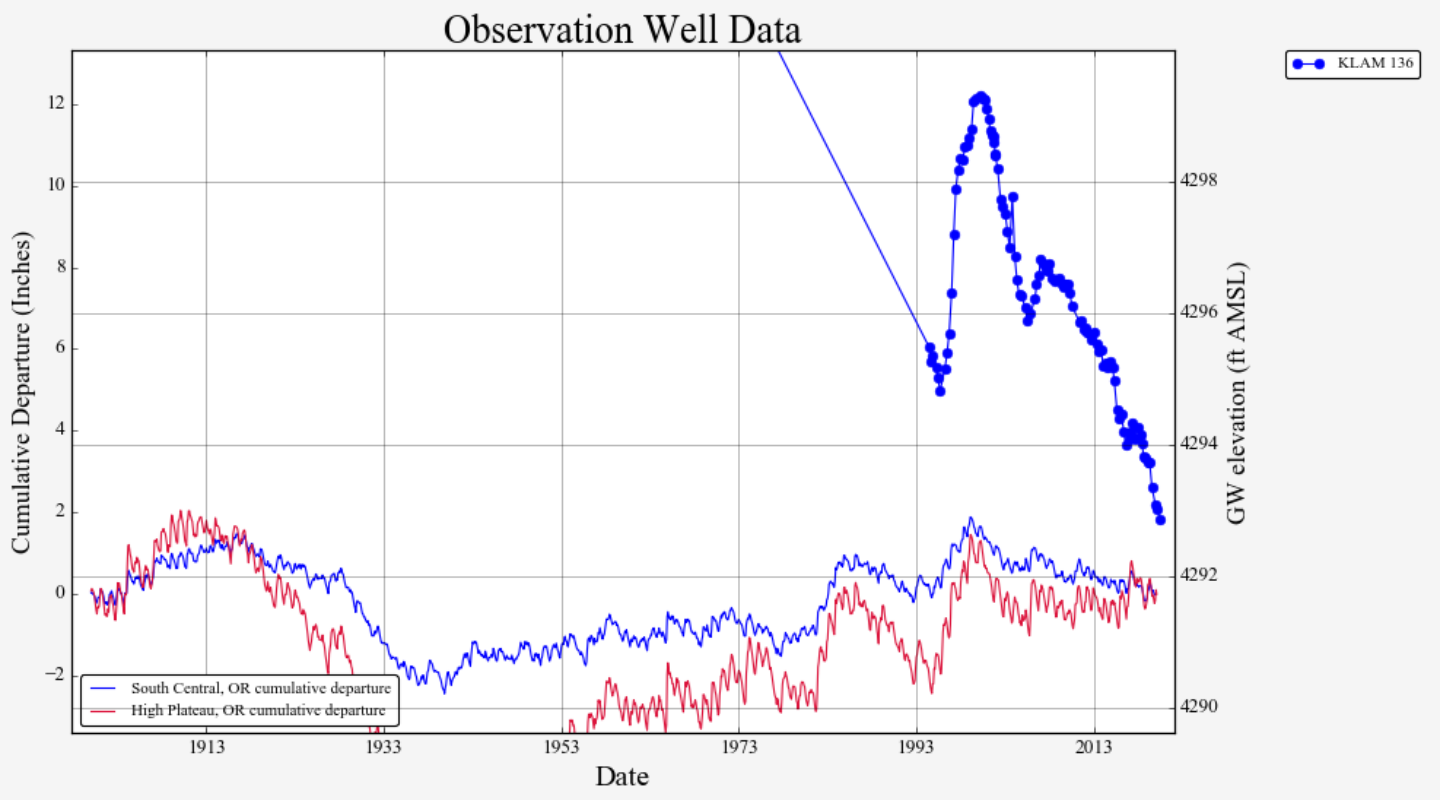
c. ☐ report of CWRE _____;

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-Level Measurements in Nearby Wells



(This portion of the basin appears to be responding to climate signals seen in the South Central climate division – blue line.)

Well Location Map