

Groundwater Review Summary Form

Application # G- 18318

GW Reviewer Phillip Marcy Date Review Completed: 12/5/2016

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).

[illegible]

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 12/05/2016

FROM: Groundwater Section Phillip I. Marcy
Reviewer's Name

SUBJECT: Application G- 18318 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: Noble Farms County: Clackamas

A1. Applicant(s) seek(s) 0.075 cfs from 1 well(s) in the Willamette Basin,
Clackamas – Eagle Creek subbasin

A2. Proposed use Nursery 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	CLAC 18492	1	Alluvium	0.075	3S/4E-10 SW-SW	260'N, 1090'E fr NW cor, S 15
2						
3						
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	858	43	24	05/06/1993	80	0-18	0-74	60-80	54-74	30	"total"	Bailer

Use data from application for proposed wells.

A4. **Comments:** This application proposes to use existing well CLAC 18492 to provide year-round groundwater for nursery uses. When originally constructed, the yield of the proposed POA well was rated at <30 GPM, and will not likely produce groundwater at the proposed rate for sustained periods of time. The well log reports production from "Gravel and Boulders", from 43-80' BLS, likely Troutdale Formation deposits, based local geologic mapping (Madin, 2004).

A5. ☒ **Provisions of the** Willamette (690-502-0140 (5d)) 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: Groundwater is not specifically addressed in the Willamette Basin rules for this area, but restrictions to surface water may limit the ability to produce groundwater from a source that is hydraulically connected to local surface water sources: "(5) The following streams and tributaries are classified year-round for domestic, commercial use for customarily domestic purposes not to exceed 0.01 cfs, livestock and public instream uses: (d) Eagle Creek tributary to Clackamas River;"

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:** Very little water level data is available for the local alluvial aquifer system, though use of this aquifer is also quite limited. The proposed POA well location is positioned near the top of a ridge, with a limited lateral distribution of surficial sediments, thus constituting a small volume of groundwater storage capacity. Due to this small potential for groundwater storage, even minor increases in local groundwater pumping have the potential to significantly affect local gradients, leading to possible reduction in spring flow and/or injury to nearby groundwater users. Several local streams begin as springs at elevations similar to that of the water-bearing zone within the proposed POA well.

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	Troutdale Formation	☐	☒
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: No laterally continuous barrier to vertical groundwater flow exists, given that the POA well location resides at the top of a narrow ridge. Nearby springs have elevations coincident with that of the water-bearing zone within the well, likely representing surface discharge of groundwater in the proposed aquifer that is exposed on the margins of the ridge.

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
1	1	Saling Creek	834	834	1230	☒	☐	☐	☒	☐
1	2	Eagle Creek	834	438	1800	☒	☐	☐	☐	☒
1	3	Unnamed trib to Currin Ck.	834	826	785	☒	☐	☐	☒	☐
1	4	Unnamed trib to Eagle Ck.	834	800	1100	☒	☐	☐	☒	☐

Basis for aquifer hydraulic connection evaluation: Saling Creek and the nearby unnamed tributary to Currin Creek incise the water-bearing zone within the proposed POA well, with headwaters of the unnamed tributary likely developing at the same elevation as the static water level within the well. National Hydrologic Dataset (NHD) mapping shows the upper 40' of this stream reach to be intermittent, likely due to seasonal fluctuation of the groundwater elevation within the alluvial aquifer here. Eagle Creek defines the NE side of the ridge, receiving flow from several small tributary streams, including two that have their headwaters within ¼ mile of the proposed POA location, and at similar elevations to the reported water-bearing zone.

Water Availability Basin the well(s) are located within: Eagle Creek > Clackamas River – At Mouth (96)

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?
1	1	☒	☐			☐	16.20	☐		☒
1	2	☐	☐			☐	16.20	☐		☐
1	3	☒	☐			☐	16.20	☐		☒
1	4	☒	☐			☐	16.20	☐		☒
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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: The potential to substantially interfere with surface waters is assumed under OAR 690-009-0040 (4a), for three of the four nearby streams listed, due to the fact that they are hydraulically connected and less than ¼ mile from the point of appropriation.

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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
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: This section does not apply.

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:** If this permit is approved, condition 7C is recommended.

References Used:

Madin, I.P., Murray, R.B. Hladky, F.R., 2006, Preliminary geologic map of the Coburg 7.5E quad., Lane & Linn Counties, OR, Open-File Report O-06-06, Oregon Department of Geology and Mineral Industries, Portland, OR., map scale 1:24,000.

Application file G-18318, Local well logs.

National Hydrologic Dataset

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

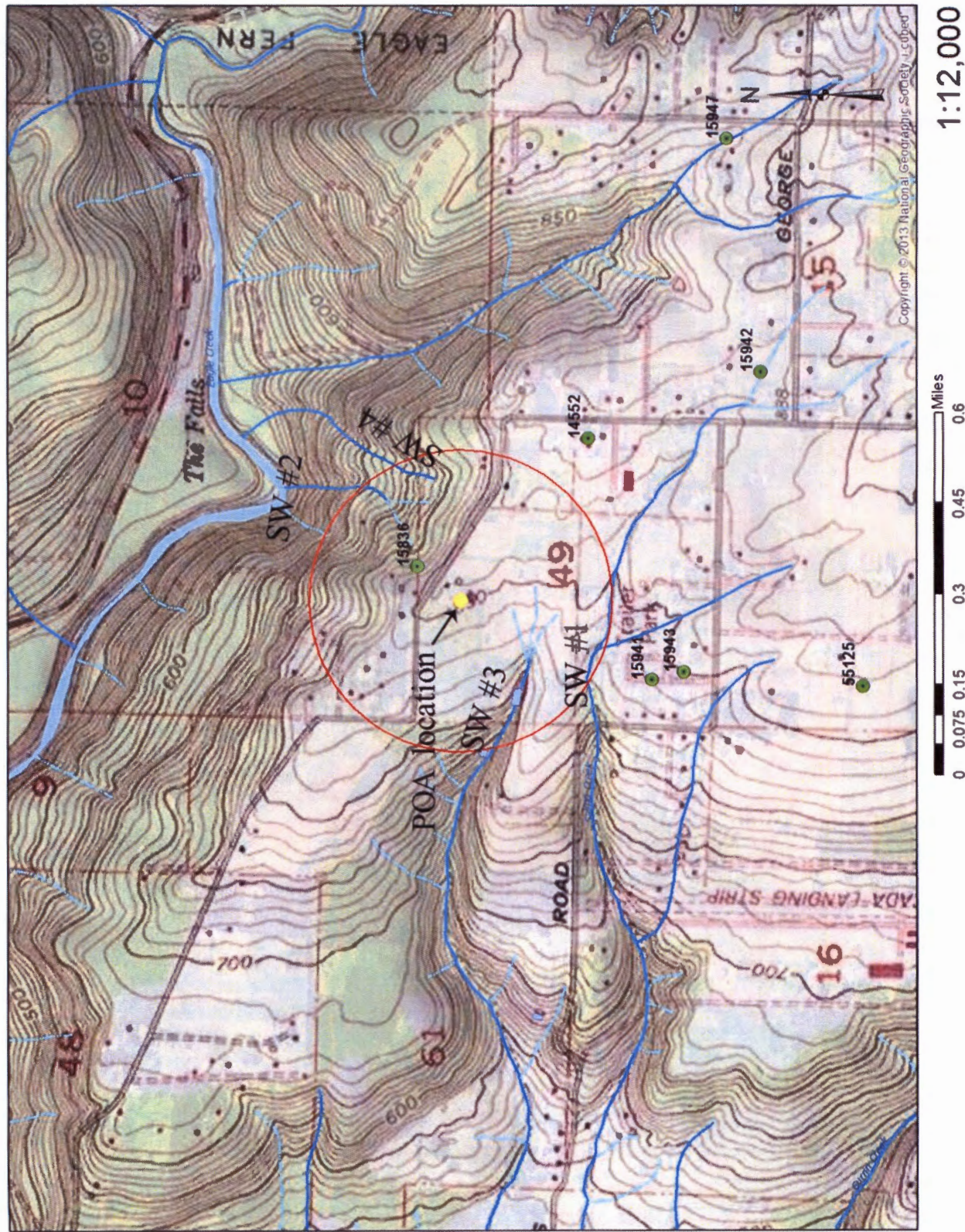
D2. **THE WELL does not appear to meet current well construction standards based upon:**

- 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**

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION						
Watershed ID #: 96		EAGLE CR > CLACKAMAS R - AT MOUTH			Exceedance Level: 80	
Time: 2:21 PM		Basin: WILLAMETTE			Date: 12/05/2016	
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	233.00	0.55	232.00	0.00	125.00	107.00
FEB	235.00	0.52	234.00	0.00	125.00	109.00
MAR	241.00	0.50	241.00	0.00	125.00	116.00
APR	279.00	0.57	278.00	0.00	125.00	153.00
MAY	271.00	1.19	270.00	0.00	125.00	145.00
JUN	132.00	1.66	130.00	0.00	100.00	30.30
JUL	54.50	2.90	51.60	0.00	100.00	-48.40
AUG	22.20	2.19	20.00	0.00	40.00	-20.00
SEP	16.20	0.95	15.30	0.00	40.00	-24.70
OCT	19.60	0.48	19.10	0.00	40.00	-20.90
NOV	74.90	0.49	74.40	0.00	125.00	-50.60
DEC	245.00	0.57	244.00	0.00	125.00	119.00
ANN	197,000	762	196,000	0	72,000	129,000

Well Location Map



Water-Level Trends in Nearby Wells

No representative hydrograph exists for this aquifer/location.