

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date January 27, 2016

FROM: Groundwater Section Aurora C Bouchier
Reviewer's Name

SUBJECT: Application G- 18175 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: Elite Soil, LLC County: Deschutes

A1. Applicant(s) seek(s) 0.5 cfs from 1 well(s) in the Deschutes Basin,
Lower Crooked subbasin (Alfalfa quad)

A2. Proposed use nursery, 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 | DESC 60299 | WELL | Deschutes Fm | 0.5 | 17S/14E-23 SW-SW | 900' N, 790' E fr SW cor S 23 |
| 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 | 3360 | 740 | 640 | 6/5/2015 | 796 | 0-100 | +2-100 | 0-796 | 776-796 | 50 | | A |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Use data from application for proposed wells.

A4. **Comments:** The well is constructed into water bearing zones within the Deschutes Formation. Groundwater flow is towards the north-northwest. The water level in the well is below river level at the nearest reach. Nearest probable discharge area is the Crooked River, above Lake Billy Chinook.

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: Well is located 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) 7B, 7N;
 - 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:** _____

There are no nearby State Observation wells. The nearest State Observation Wells with a likely similar response are Obs Well 1315 (CROO 24, located approximately 11.8 miles to the north), and Obs Well 1365 (DESC 5045, located approximately 11.9 miles to the west). These wells have been monitored periodically since at least the mid 1990's. Both wells show a decline from the start of measurement until present. This trend is coincident with climate cycles. Since the mid 1990's, the water levels have dropped ~21-23 feet, likely mostly as a result of decreased recharge.

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 |
|------|-----------------------------|--------------------------|--------------------------|
| | | <input type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> |

Basis for aquifer confinement evaluation: _____

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 |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Basis for aquifer hydraulic connection evaluation: _____

Water Availability Basin the well(s) are located within: _____

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? |
|------|------|--------------------------|--------------------------|-------------------------|------------------------------|--------------------------|------------------------|------------------------------|----------------------------|---|
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |

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? |
|--|------|--------------------------|-------------------------|------------------------------|--------------------------|------------------------|------------------------------|----------------------------|---|
| | | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |

Comments: _____

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 | | | | | | | | | | | | | |
| (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: _____

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:** _____

References Used: _____
 Application file: G-18175, and nearby G-16863.

Gannett, M.W., Lite, K.E., 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 00-4162.

Lite, K.E., 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 02-4015.

 OWRD well logs and water level data: CROO 24, DESC 3949, DESC 58035, and DESC 60299.

 Quadrangle Map: Alfalfa.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

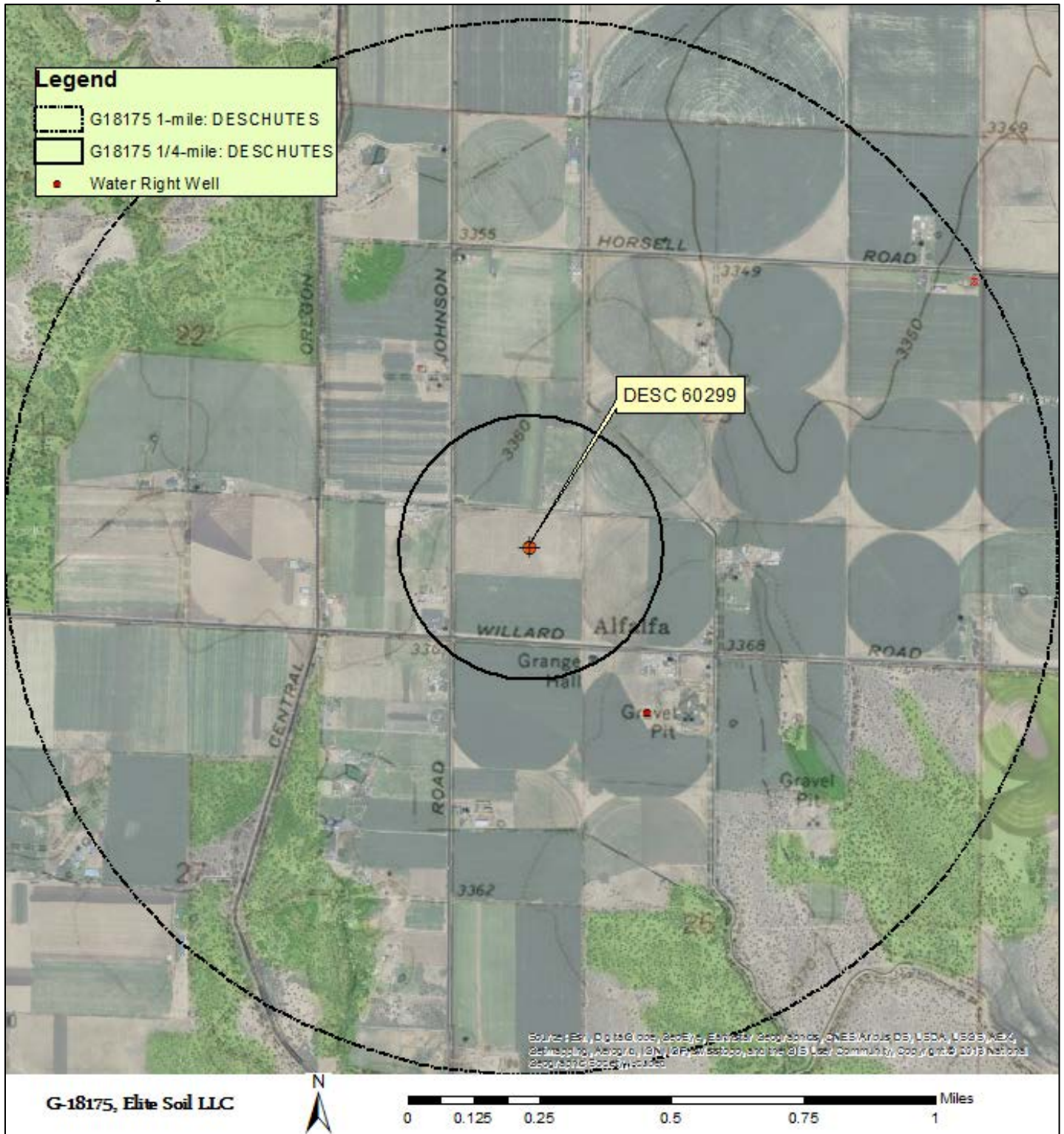
D2. **THE WELL does not appear to meet current well construction standards based upon:**

- 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 Trends in Nearby Wells

