

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 08/04/2020
 FROM: Groundwater Section Phillip I. Marcy
Reviewer's Name
 SUBJECT: Application G- 18845 Supersedes review of 12/03/2019
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: Sinn Farms Inc./ c/o Tom Sinn County: Marion

A1. Applicant(s) seek(s) 0.47 cfs from 1 well(s) in the Willamette Basin,
 subbasin

A2. Proposed use Irrigation (37.94 acres) Seasonality: March 1st – October 31st (245 days)

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	Proposed	"Well 2"	Basalt	0.47	6S/1W-28 NW-NE	1010' S, 70' E fr N ¼ cor S 28
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	195	NA	NA	NA	550	0-320	0-355	TBD	TBD	NA	NA	NA

Use data from application for proposed wells.

A4. **Comments:** The applicant intends to cancel a portion of the POU authorized under permit G-13186 that coincides with the POU proposed under this application. In addition, the applicant intends to diminish a portion of the primary right under GR-3729 to supplemental irrigation where it underlies the proposed POU in this application.

The applicant intends to produce from basalt, with site-specific conditions leaving well construction details to be determined.

The purpose of this amended review is to place appropriate permit conditions on the proposed use. Despite the negative finding that the proposed use is "not within the capacity of the resource" in section B1(c) of this review, the applicants have secured the partial cancellation of groundwater right G-13186, on which "Well 1" produces from CRB, and similarly affects the Mt. Angel GWLA. This cancellation totals 73.8 AF between March 1st and October 31st of primary irrigation, and therefore the new allocation will be limited to that total over the irrigation season (see attached memos).

A5. **Provisions of the Willamette 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: _____

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 declines in the Mt. Angel Area began as early as the 1980's

Regarding the injury finding in B1(b), the proposed use is not anticipated to result in seasonal drawdown that will, in the short term, limit the ability of nearby senior groundwater right holders to produce the water to which they are legally entitled. However, long-term sustainability would likely be negatively impacted by increased pumping from the local basalt aquifer system. It is for this reason that the finding under B1(c) is that the proposed use will not be within the capacity of the resource.

In the local basalt aquifer system near Mt. Angel, declines were observed as early as the 1980's (Wozniak, 2015), resulting in the establishment of two Groundwater Limited Areas (GWLAs), for Mt. Angel and Glad Tidings in the early 1990's. While the proposed POA does not reside within either of these areas, the potential groundwater source here has in the past experienced declines that were only mitigated by a reduction in groundwater pumping. An analysis of groundwater trends in the area strongly suggests that wells completed in basalts in either side of the fault behave quite differently from one another, and thus can be considered separate aquifer systems (see attached hydrograph). Beginning in the year 2004, the City of Mt. Angel shifted the balance of municipal groundwater pumping away from "Well 6" (MARI 50456), which lies to the south of the Mt. Angel fault zone, to its other wells, which lie to the north of the fault zone, in addition to reducing overall pumping (see attached). This reduction in use, in addition to the expiration of several limited duration permits in the area, has led to a relative stabilization of water levels in the basalt aquifer system. The proposed POA well lies to the south of the Mt. Angel Fault Zone, and additional pumping appears likely to exacerbate declines documented before a reduction of use from this aquifer system.

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: This section does not apply, as the proposed POA is not hydraulically connected to surface waters.

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: 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 a permit is issued, condition 7i and "medium water use reporting" conditions are recommended in order to track any changes in rates of decline related to increased use of the target aquifer.

Special Conditions:

- 1. The wells shall be constructed to produce only from the CRBG aquifer beneath the valley-fill alluvium, the top of which typically occurs at a depth of 280-320 feet below land surface in this area.
- 2. Each well shall be continuously cased and continuously sealed at least 10 feet into competent volcanic (CRBG) rock.
- 3. The open interval below the casing shall extend no more than 200 feet into the CRBG aquifer. However, a larger open interval may be approved by the Department if the applicant can demonstrate to the satisfaction of the Department that each well is only open to a single aquifer. Substantial evidence of a single aquifer completion may be collected by video log, downhole flowmeter, water chemistry and temperature, or other downhole geophysical methods approved by the Department. These methods shall characterize the nature of the basalt rock and assess whether water is moving in the borehole. Any discernable movement of water within the well bore when the well is not being pumped shall be assumed as evidence of the presence of multiple aquifers in the open interval.
- 4. Drill cuttings shall be collected at 10-foot intervals and at changes in formation in the well and a split of each sampled interval shall be provided to the Department.

References Used: Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005. Ground-Water Hydrology of the Willamette Basin, Oregon; U.S. Geological Survey Scientific Report 2005-5168.

Woodward, D.G., Gannett, M.G., and Vaccaro, J.J., 1998., Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B.

Wozniak, K.C., 2015. Interoffice Memorandum: Groundwater Conditions Near the Mt. Angel and Glad Tidings Groundwater Limited Areas.

Application file G-18845; OWRD water level database; OWRD well log database

G. Clark memo on scrivener's error for permit G-13186, G. Kupillas email 08/03/2020.

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) _____

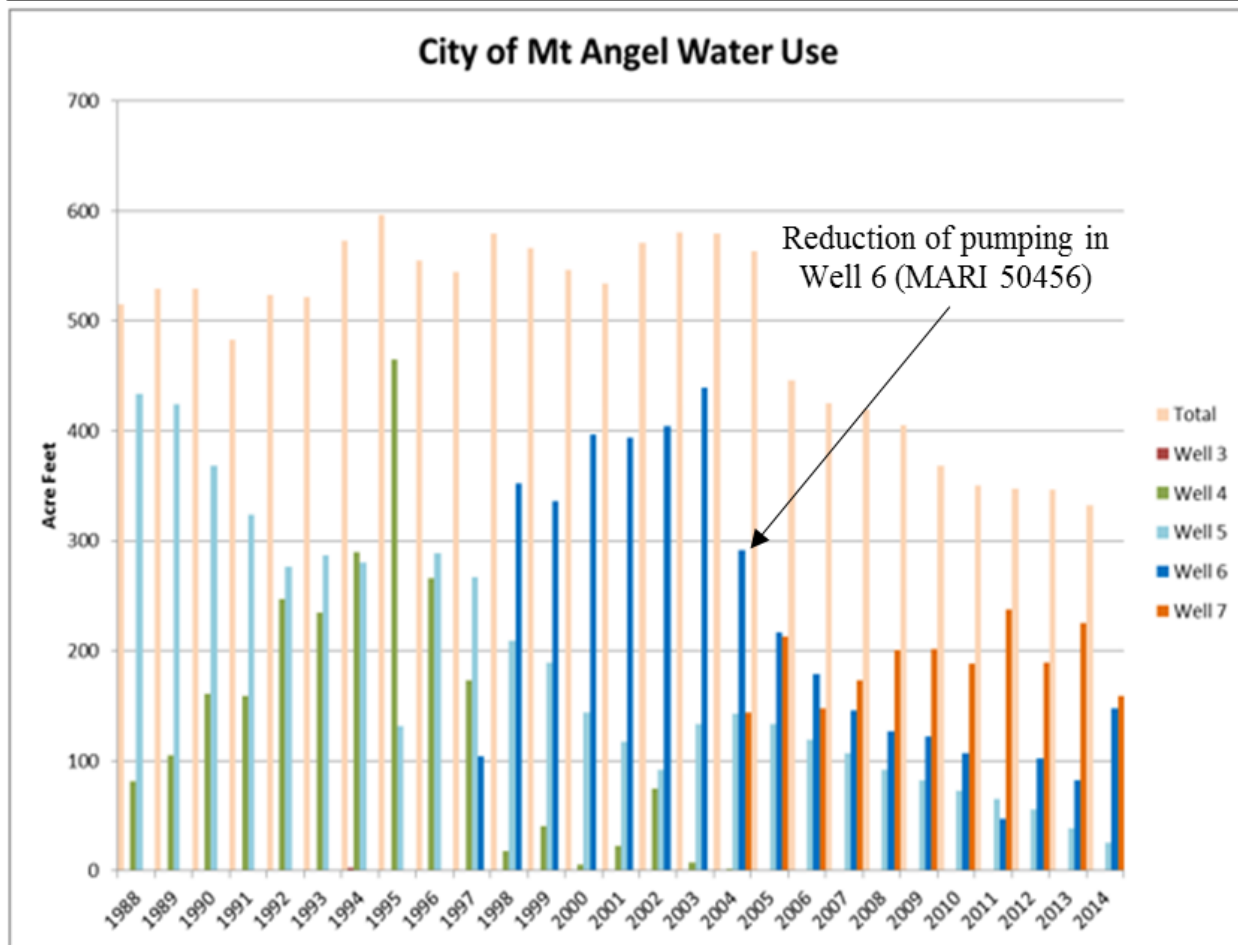
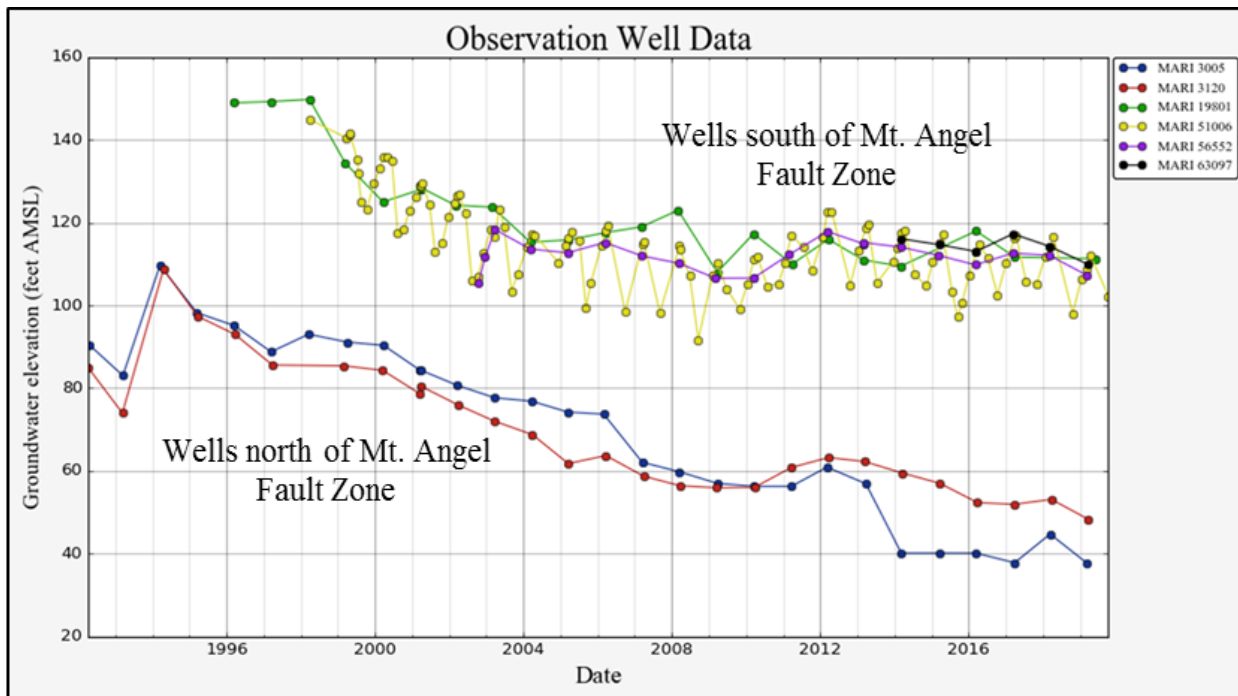
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

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 #: 152		PUDDING R > MOLALLA R - AB HOWELL PRAIRIE			Exceedance Level: 80	
Time: 11:20 AM		Basin: WILLAMETTE			Date: 12/03/2019	
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	603.00	69.80	533.00	0.00	10.00	523.00
FEB	649.00	60.90	588.00	0.00	10.00	578.00
MAR	587.00	39.90	547.00	0.00	10.00	537.00
APR	451.00	21.20	430.00	0.00	10.00	420.00
MAY	235.00	14.10	221.00	0.00	10.00	211.00
JUN	111.00	28.80	82.20	0.00	10.00	72.20
JUL	43.60	44.30	-0.68	0.00	10.00	-10.70
AUG	24.70	36.70	-12.00	0.00	10.00	-22.00
SEP	22.70	21.90	0.84	0.00	10.00	-9.16
OCT	38.90	3.96	34.90	0.00	10.00	24.90
NOV	233.00	18.60	214.00	0.00	10.00	204.00
DEC	608.00	63.80	544.00	0.00	10.00	534.00
ANN	385,000	25,600	360,000	0	7,240	353,000

Well Location Map



The reduction of groundwater pumping from the local basalt aquifer system, in this case south of the Mt. Angel Fault Zone, resulted in a stabilization of water levels beginning in the mid-2000's. Well 6 is the only one of the City of Mt. Angel's municipal wells that lies to the south of the fault (Modified from Wozniak, 2015).

MEMORANDUM

TO: FILE G-13676
FROM: GERRY CLARK, CERTIFICATE SECTION
SUBJECT: SCRIVENER'S ERROR IN THE WELL DESIGNATION FOR THE SEASON OF USE UNDER THE PERMIT
DATE: DECEMBER 12, 2018

A review of the file indicates that MARI 3448, with a completed depth of 523 feet, was intended to be the source of water for irrigation under the permit. The season of use for this well was intended to be the March 1 through October 31 (the full irrigation season), as the well was determined to not have the potential for substantial interference of nearby surface water.

The shallow well, the well under GR Certificate 3403, was intended to be the source for the supplemental irrigation. This well was determined to have the potential for substantial interference of nearby surface water and therefore a limited season of March 1 through April 30.

The intention of the permit was to allow the deep well to be used during the period of March 1 through October 31. With this in mind, the permit should be interpreted as allowing MARI 3448 to be used for irrigation during the period of March 1 through October 31.

This memo has been prepared following a discussion with Dwight French, Administrator of the Water Right Services Division.

The permit contains a scrivener's error in the well names (numbers) associated with the "Season of Use". The permit should read:

Period of use: March 1 through October 31 from Well #1 and March 1 through April 30 for Well #2.

Alyssa,

I've reviewed the entire draft. I agree with the highlighted portions and I also have no comments or concerns about the rest of the document. I also concur with your interpretation of how the permit would read if corrected based on Gerry Clark's 2018 memorandum.

Concerning the Permit G-13186 acres available to cancel, we are proposing to cancel the primary acres which are layered with the properties owned by Sinn Farms as follows:

Section 28, T.6S, R.1W.

NE NE 18.19 acres

NW NE 5.05 acres

SW NE 0.4 acres

SE NE 5.9 acres

Total 29.54 acres

These are as shown on the Assignment Map for Sinn Farms for Permit G-13186 stamped as received by the OWRD on September 23, 2019.

Please let me know if you have any questions about how I came up with the acreage.

Regards,

Greg

Email from G. Kupillas summarizing request to cancel primary acreage on permit G-13186.