

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date September 22, 2008

FROM: Ground Water/Hydrology Section Josh Hackett
Reviewer's Name

SUBJECT: Application G- 17099 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 ground water 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:** Highland Meadow Nursery **County:** Clackamas

A1. Applicant(s) seek(s) 0.59 cfs from 2 well(s) in the Willamette Basin,
_____ subbasin Quad Map: Yoder

A2. Proposed use: nursery irrigation 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 60032	3	alluvium	0.59	5S/1E-2 SE-NE	1380' S, 720' W fr N ¼ cor S 2
2	PROPOSED	4	alluvium	0.59	5S/1E-2 NE-NE	280' S, 760' W fr N ¼ cor S 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	250	73	44	4/21/2004	290	0-108	+1-205	188-208 215-231 266-287	208-215 231-266	550	120	P
2	252				280	0-110	0-280		205-260			

Use data from application for proposed wells.

A4. **Comments:** _____

A5. ☒ **Provisions of the** Willamette Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water ☐ **are**, or ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)
Comments: The applicant's wells produce from a confined aquifer, so the pertinent basin rules do not apply.

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
Name of administrative area: _____
Comments: _____

B. GROUND WATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that ground water* 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 ground water 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 ground water 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 ground water resource; or
- d. ☒ **will, if properly conditioned**, avoid injury to existing ground water rights or to the ground water resource:
 - i. ☒ The permit should contain condition #(s) 7B, 7C, 7P_____;
 - 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 ground water production from no deeper than _____ ft. below land surface;
 - b. ☒ **Condition** to allow ground water production from no shallower than 100 ft. below land surface;
 - c. ☒ **Condition** to allow ground water production only from the alluvial ground water 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 Ground Water 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. **Ground water availability remarks:** _____

The applicant's wells are located in an area that contains fine grained alluvial sediments from land surface to a depth of approximately 20-40 feet. A 100 feet thick package of sands and gravels underlies the fine grained sediments. Underlying the sands and gravels is a >800 feet thick sequence of mostly fine grained alluvial sediments. Thin beds of sands and gravels are found within this sequence, but their aerial extent is limited.

One of the POAs listed on this application (CLAC 60032) has been reporting annual water level measurements since 2005. Water levels in the well appear to be stable. Water levels in other nearby alluvial wells also show no obvious signs of declines (see attached hydrograph). Therefore, the aquifer system should be capable of supporting the use requested on this application.

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040**C1. 690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	alluvium	☒	☐
2	alluvium	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Water bearing zones in the wells are confined by 20-40 feet of fine grained sediment. Additionally, static water levels in nearby wells rise above the elevation of water bearing zones. These factors suggest the wells produce from a confined aquifer.

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	Bear Creek	212	170-230	2100	☒	☐	☐	☐	☒
1	2	Unnamed trib to Bear Creek	212	190-230	2400	☒	☐	☐	☐	☒
1	3	Unnamed trib to Bear Creek	212	190-240	3900	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
2	1	Bear Creek	212	170-230	3100	☒	☐	☐	☐	☒
2	2	Unnamed trib to Bear Creek	212	190-230	1340	☒	☐	☐	☐	☒
2	3	Unnamed trib to Bear Creek	212	190-240	2900	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Water levels in nearby wells are coincident with local stream reaches. Water table maps in the area indicate that ground water discharges to nearby streams. These factors suggest a hydraulic connection between ground water and local stream reaches. However, the presence of 20-40 feet of fine grained sediment overlying the aquifer results in an inefficient hydraulic connection.

Water Availability Basin the well(s) are located within: 151 PUDDING R > MOLALLA R – AB MILL CR

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	☐	☐	N/A		☐	67.30	☐	<<25%	☐
1	2	☐	☐	N/A		☐	67.30	☐	<<25%	☐
1	3	☐	☐	N/A		☐	67.30	☐	<<25%	☐
		☐	☐			☐		☐		☐
2	1	☐	☐	N/A		☐	67.30	☐	<<25%	☐
2	2	☐	☐	N/A		☐	67.30	☐	<<25%	☐
2	3	☐	☐	N/A		☐	67.30	☐	<<25%	☐
		☐	☐			☐		☐		☐

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: Modeling in similar circumstances suggests interference with local streams is expected to much less than 25% of the pumping rate after 30 days of pumping.

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													
		%	%	%	%	%	%	%	%	%	%	%	%
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: _____

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

D2. **THE WELL does not 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:**

- a. ☐ constitutes a health threat under Division 200 rules;
b. ☐ commingles water from more than one ground water reservoir;
c. ☐ permits the loss of artesian head;
d. ☐ permits the de-watering of one or more ground water reservoirs;
e. ☐ other: (specify) _____

D4. **THE WELL construction deficiency is described as follows:** _____

D5. **THE WELL** a. ☐ **was, or** ☐ **was not** constructed according to the standards in effect at the time of original construction or most recent modification.b. ☐ I don't know if it met standards at the time of construction.D6. ☐ **Route to the Enforcement Section.** I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.

THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNELD7. ☐ Well construction deficiency has been corrected by the following actions: _____

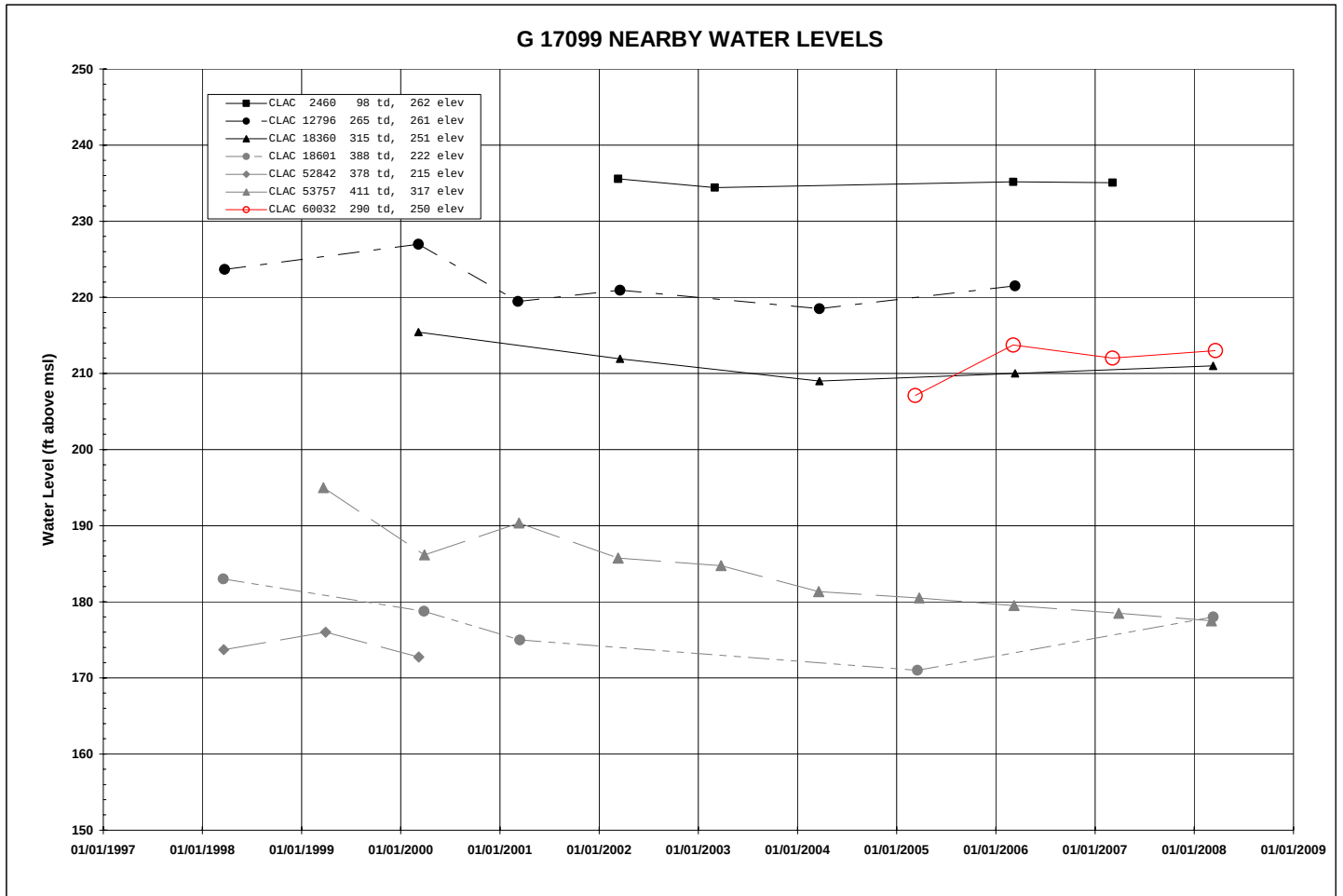
_____, 200____.
(Enforcement Section Signature)

D8. ☐ **Route to Water Rights Section (attach well reconstruction logs to this page).**

Water Availability Tables**PUDDING R> MOLALLA R- AB MILL CR WILLAMETTE BASIN Water Availability as of 9/22/2008****Water Availability Calculation**

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	1,040.00	76.70	963.00	0.00	36.00	927.00
Feb	1,180.00	74.30	1,110.00	0.00	36.00	1,070.00
Mar	1,010.00	50.90	959.00	0.00	36.00	923.00
Apr	787.00	46.40	741.00	0.00	36.00	705.00
May	425.00	56.60	368.00	0.00	36.00	332.00
Jun	224.00	76.50	148.00	0.00	36.00	112.00
Jul	109.00	117.00	-8.33	0.00	36.00	-44.30
Aug	71.00	97.50	-26.50	0.00	36.00	-62.50
Sep	67.30	58.50	8.83	0.00	36.00	-27.20
Oct	91.60	17.90	73.70	0.00	36.00	37.70
Nov	363.00	42.70	320.00	0.00	36.00	284.00
Dec	957.00	75.90	881.00	0.00	36.00	845.00

Water Levels in Nearby Wells



G 17099, Highland Meadows Nursery

