

Groundwater Application Review Summary Form

Application # G- 18626

GW Reviewer DENNIS ORLOWSKI

Date Review Completed: 10/02/2018

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.

✓ H 10/8/18

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]



MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18626
Date: October 5, 2018

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Dennis Orlowski reviewed the application. Please see Dennis's Groundwater Review and the Well Logs.

Applicant's Well #1 (CLAC 50350 and CLAC 58255): Based on a review of the well reports, Applicant's Well #1 seems to protect the groundwater resource.

The construction of Applicants Well #1 may not satisfy hydraulic connection issues.

OCT 02 2002

CLAC 58255

State of Oregon
WATER RESOURCES DEPT
SALEM, OREGON
WATER WELL REPORT (as required by ORS 537.765)

Page 1 of 1

State Well ID L52962
Start Card # 140112

(1) OWNER: Well No. L52962
Name VAN METER & SON NURSERY
Address 10150 SE 352ND
City BORING St OR Zip 97009

(2) TYPE OF WORK: DEEPEN

(3) DRILL METHOD: ROTARY AIR

(4) PROPOSED USE: IRRIGATION

(5) BORE HOLE CONSTRUCTION:

Special Construction Approval NO		Depth of Compl. Well 500 ft		Explosives used NO		Type		Amount	
HOLE		SEAL							
Diam.	From	To	Material	From	To	Amount			
14	0	65	CEMENT	0	65	75 SACKS			
12	65	260	CEMENT	200	260	35 SACKS			
10	260	500							

Seal placement method C&SET PLUG&PUSH

Backfill: from ___ ft to ___ ft Material
Gravel: from ___ ft to ___ ft Size

(6) CASING/LINER:

	Diam.	From	To	Gauge	Material	Connection
Casing	10	+1	260	.250	STEEL	WELDED
	8	0	330	.250	STEEL	WELDED
Liner	6	260	500	.250	STEEL	WELDED

Final Location of shoe(s) 260' 9.6"/330' 7.6" TUBEX

(7) PERFORATIONS/SCREENS:

[X] Perf. Method TORCH

[] Screens Type

From	To	Slot Size	Number	Diam.	Tele/pipe Size	Casing/liner
380	500	1/8X9	1000			LINER

(8) WELL TESTS: Minimum testing time is 1 hour

Test type PUMP

Yield GPM	Draw-down	Drill stem at	Time
130	5		1 hr.
130	5		4 hr

Temperature of water 51F Depth Artesian Flow Found
Was water analysis done? NO By whom
Reason for water not suitable for use
Depth of strata

(9) LOCATION OF WELL by legal description:

County CLACK Lat. ° ' " Long. ° ' "
Township 1 S Range 4 E WM.
Section 27 NE 1/4 NW 1/4
Tax Lot 801 Lot Block Subdivision
Street Address of Well (or nearest Address)
8934 SE 352ND AVE BORING, OR 97009

(10) STATIC WATER LEVEL:

300 ft. below land surface. Date 09/28/02
Artesian pressure ___ lb per square in. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 40		Est Flow Rate		SWL
From	To			
40	50	+5 GPM		40
360	500	100+ GPM		300

(12) WELL LOG:

Material	Ground elevation		SWL
	From	To	
TOP SOIL	0	2	
RED CLAY	2	10	
BROWN CLAY	10	30	
CLAY & GRAVEL & BOULDERS	30	50	
CEMENTED GRAVEL & BOULDERS	50	286	
FINE BROWN CEMENTED GRAVEL & SAND	286	440	300
FINE BROWN CEMENTED GRAVEL & SAND WITH	440		300
SEAMS OF BLUE CLAY		495	300
BLUE CLAY	495	500	

PULLED OUT 20 FEET OF 10" CASING AND
STARTED WELL OVER.

TED PULLIAM WELL DRILLING

9480 S.E. 172nd

Boring, Oregon 97009

Phone 665-3353

Date started 09/20/02

Completed 09/28/02

(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 my best knowledge and belief.

Signed _____ WWC Number _____
Date _____

(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 *Ted Pulliam* WWC Number 616
Date 09/28/02

CLACK 50350

(1) OWNER: Well No. 03071996
Name MORRIS VAN METER
Address 10150 SE 352ND
City BORING St OR Zip 97009

(2) TYPE OF WORK: NEW WELL / Temporary Abandonment

(3) DRILL METHOD: ROTARY AIR

(4) PROPOSED USE: IRRIGATION

(5) BORE HOLE CONSTRUCTION:
Special Construction Approval NO Depth of Compl. Well 18 ft
Explosives used NO Type Amount
HOLE SEAL
Diam. From To Material From To Amount
14 0 18 BENTONITE 0 18 21 SACKS

Seal placement method POURED IN
Backfill: from ft to ft Material
Gravel: from ft to ft Size

(6) CASING/LINER:
Diam. From To Gauge Material Connection
Casing 10 +1 19 .250 STEEL WELDED
Liner
Final Location of shoe(s) 0

(7) PERFORATIONS/SCREENS:
[] Perf. Method
[] Screens Type Material
Slot Tele/pipe
From To Size Number Diam. Size Casing/liner

(8) WELL TESTS: Minimum testing time is 1 hour
Test type
Yield GPM Draw-down Drill stem at Time 1 hr.
Temperature of water Depth Artesian Flow Found
Was water analysis done? NO By whom
Reason for water not suitable for use
Depth of strata

(9) LOCATION OF WELL by legal description:
County CLACK Lat. ° ' " Long. ° ' "
Township 1 S Range 4 E WM.
Section 27 NE 1/4 NW 1/4
Tax Lot 00801 Lot Block Subdivision
Street Address of Well (or nearest Address)
347TH AVE BORING, OR 97009

(10) STATIC WATER LEVEL:
0 ft. below land surface. Date 03/07/96
Artesian pressure lb per square in. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 0
From To Est Flow Rate SWL

(12) WELL LOG:
Ground elevation
Material From To SWL
TOP SOIL 0 2
RED CLAY 2 10
BROWN CLAY 10 18
TEMPORARY ABANDONMENT OF WELL, DUE TO
WET WEATHER AND LACK OF ACCESS. WILL
START BACK UP IN LATE MAY OR JUNE '96.
PERMIT #G11978

RECEIVED

MAR 15 1996

WATER RESOURCES DEPT.
SALEM, OREGON

Date started 03/07/96 Completed 03/07/96

(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 my best knowledge and belief.

Signed WWC Number
Date

(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 Date 03/07/96 WWC Number 616

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section
 FROM: Groundwater Section _____
 SUBJECT: Application G- 18626 _____

Date 10/02/2018
 Dennis Orłowski
 Reviewer's Name
 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: Morris Van Meter County: Clackamas

A1. Applicant(s) seek(s) 0.243 cfs from one well(s) in the Willamette Basin,
Johnson Creek subbasin

A2. Proposed use Irrigation and Nursery Seasonality: March 1 – October 31

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 50350/58255*	1	Alluvium (Deep Troutdale)	0.243	T1S/R4E-27 NE-NW	640' S & 1220' W fr N ¼ cnr, S 27

* 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	660	40	300	9/28/2002	500	0-260	+1-330	260-500	380-500	130	5	Pump (4-hr)

Use data from application for proposed wells.

A4. **Comments:** *The well log submitted with this application, CLAC 58255, is a deepening log. OWRD records show CLAC 50350 as being the original log for this location. CLAC 50350 notes that drilling began in spring 1996, but because of excessively wet ground conditions at that time, drilling was suspended and the log was noted as a "temporary abandonment". Apparently this well was not completed until September 2002, the date shown on CLAC 58255.

CLAC 58255, proposed Well 1, obtains groundwater from the Deep Troutdale aquifer, a hydrostratigraphic distinction made specifically in the Sandy-Boring Groundwater Limited Area (OAR 690-502-0170 & 690-503-050).

A5. ☒ **Provisions of the** Willamette/Sandy 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: OAR 690-503-0050 Groundwater Classification: the groundwater resources of the Sandy Basin are classified for commercial, group domestic, industrial, irrigation, mining, municipal, and statutorily exempt groundwater uses. Groundwater hydraulically connected to, and within 1/4 mile of, surface water shall be classified for the same uses as the surface water source and for uses exempted by ORS 537.545. The proposed well is greater than 1/4 mile from the Sandy River, so this feature of the Basin rules is not activated.

A6. ☐ **Well(s) #** 1, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction. Name of administrative area: Sandy-Boring Groundwater Limited Area (OAR 690-502-0170 & 690-503-050)
 Comments: Within the Sandy-Boring GWLA, groundwater from the Shallow Troutdale aquifer and the specially-designated portion of the Deep Troutdale aquifer in the Sandy-Boring area is classified for exempt uses only. The proposed POA, CLAC 50350/58255, is located within this GWLA and is completed within the deep Troutdale aquifer, but is not within the specially-designated area. Therefore, the proposed POA is in compliance with the Sandy-Boring GWLA rules.

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 (annual measurements), medium water-use reporting;
 - 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 Deep Troutdale groundwater reservoir between approximately 250 ft. and 500 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:** A thick sequence of water-bearing sands and gravels are present beneath the proposed POA location to depths of about 500-600 feet. The shallow portion of these sediments has been designated as the Shallow Troutdale aquifer; the deeper portion has been designated as the Deep Troutdale aquifer (OWRD, 1991, 1992; these are equivalent to the Troutdale Gravel and the Troutdale Sandstone Aquifers, respectively, that have been defined by the USGS for the Portland Basin (Swanson and others, 1993 and McFarland and Morgan, 1996)). Groundwater heads in the Deep Troutdale Aquifer are generally at least 50 feet, and commonly greater than 100 feet, deeper than heads in the Shallow Troutdale Aquifer.

The Deep Troutdale aquifer is underlain by a thick, widespread sequence of fine-grained sediments, Confining Unit 2 (CU2) (the Sandy River Mudstone of Trimble, 1963). CU2 is exposed in the Sandy River valley below elevations of about 200 feet and beneath the bed of the river in the area to the northeast of the proposed POA. These relationships indicate that the two aquifers are truncated by erosion in the hillsides of the Sandy River drainage in the area immediately northeast of the proposed POA (the proposed POA location is at elevation of about 660 feet and the Sandy River occurs at an elevation of about 150 feet). These lateral boundaries place some limits on the capacity of the aquifer since recharge zones and capture zones from wells cannot extend beyond the northeast boundaries of the aquifer in the Sandy River drainage.

Over the past 20 years, trends in groundwater level data from Deep Troutdale aquifer wells have ranged from slightly- to moderately-strongly declining (see attached hydrographs) (note that MULT 2594 is indeed associated with a well in this area, despite this being Clackamas county). From 2014 through 2018, nearby wells, including the proposed POA, exhibited moderately-strong declines of about 6-8 feet. Water year 2015 was an exceptionally hot and dry period, with corresponding increases in irrigation demands on local groundwater sources (although not shown on the hydrographs, water year 2018 was similarly dry).

It is likely that the recent 3-4 year declining trend in Deep Troutdale groundwater levels in this area is attributable to climatic factors. Prior to that period, water years exceeding historic mean precipitation levels resulting in stabilized, or even increasing, groundwater levels in the Deep Troutdale (e.g., 2010-2012). However, the aquifers within the Sandy-Boring

GWLA are sensitive to overdraft. Furthermore, in this area the Sandy River valley to the east has truncated the lateral extent of both Troutdale aquifers, further limiting the capacity of the groundwater system. **For these reasons, the above-noted permit conditions are strongly recommended to protect the existing resource and groundwater users.**

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	Deep Troutdale	☒	☐

Basis for aquifer confinement evaluation: Static groundwater levels in area wells rise above the principal water-bearing zones, indicating confined aquifer conditions.

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	Sandy River	350	140-150	5500	☐	☒	☐	☐	☒
1	2	Bear Creek (tributary to Sandy River)	350	500	7000	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: Though the POA is located near the headwaters of Johnson Creek, the USGS 7.5 minute topographic quadrangle map (Sandy, Oregon) shows that Johnson Creek and its tributaries in this area are ephemeral, with the nearest mapped perennial reach located several miles to the west. A comparison of groundwater levels (both Shallow and Deep Troutdale) with the elevations of local reaches of Johnson Creek confirms that the creek has not incised to the level of the water table in the area near the proposed POA. Similarly, other than the Sandy River, all other streams within at least 1.5 miles of the POA location are also shown by the USGS as being ephemeral, and thus are not hydraulically connected.

Bear Creek is completely incised through the Shallow and Deep Troutdale aquifers as it drops down to the Sandy River. However, it probably does not intersect the water table at elevations above 500 feet (at a location about 7000 feet from the proposed wells). The USGS indicates that Bear Creek is ephemeral throughout its entire length. However, certificate 11123, with a priority date of 8/8/1934 and a rate of 1.0 cfs, lists a POD on the creek at an elevation of about 500 feet. This indicates that groundwater discharges from the aquifer system to the Bear Creek at levels at or above this elevation. Additional discharge to the creek is likely to occur below this level as the creek cuts through the aquifer system at levels below the water table. Several smaller water rights list PODs at higher elevations in the Bear Creek drainage but these are likely to capture surface water drainage only because the available data indicate that the creek is perched above the water table at elevations above 500 feet. Therefore, Bear Creek is hydraulically connected to the aquifer system at elevations below about 500 feet, at a distance of about 7000 feet from the proposed POA.

Because the Sandy River is incised into Confining Unit 2, below the base of the Deep Troutdale aquifer, the river is not in physical contact with the aquifer along reaches within several miles of the proposed POA. Therefore, the river is not hydraulically connected to the aquifer in nearby reaches. However, seepage (as springs or as diffuse seepage) from the truncated margins of the aquifer may contribute tributary water to the flow of the Sandy River. If so, nearby pumping from the aquifer is likely to reduce any such tributary flow. However, no specific data is available that documents the existence of tributary flow from springs or seeps into the Sandy River in the vicinity of the proposed POA.

Water Availability Basin the well(s) are located within: WID 72145: Sandy River > Columbia River – above unnamed stream (although the proposed POA is located within the Johnson Creek drainage, available data indicate that the nearest hydrologic boundary that will be impacted by pumping is Bear Creek, which is tributary to the Sandy River).

- 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?
		☐	☐			☐		☐		☐

- 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: C3a and C3b: not applicable because SW2, Bear Creek, is >1 mile from Well 1.

- 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													
(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 applicable: although the hydraulically-connected portion of Bear Creek is estimated to be about 1.3 miles from the proposed POA, there is insufficient information to be able to make sound, quantifiable estimates of potential impacts to Bear Creek. More relevant is the fact that the minimum 80% exceedance flow for the Sandy River is 493 cfs, 1% of which is 4.93 cfs, far greater than the allocation requested with this application (0.243 cfs).

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 G-18626 file.

McFarland, W.D. and D.S. Morgan, 1996. Description of the Ground-Water Flow System in the Portland Basin, Oregon and Washington. USGS Water Supply Paper 2470-A.

OWRD, 1991, Sandy Basin Report

OWRD, 1992, Willamette Basin Report

Swanson and others, 1993. A Description of Hydrogeologic Units in the Portland Basin, Oregon and Washington. USGS Water Resources Investigations Report 90-4196.

Trimble, 1963, Geology of Portland, Oregon and Adjacent Areas: U.S. Geological Survey Bulletin 1119, 119p.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

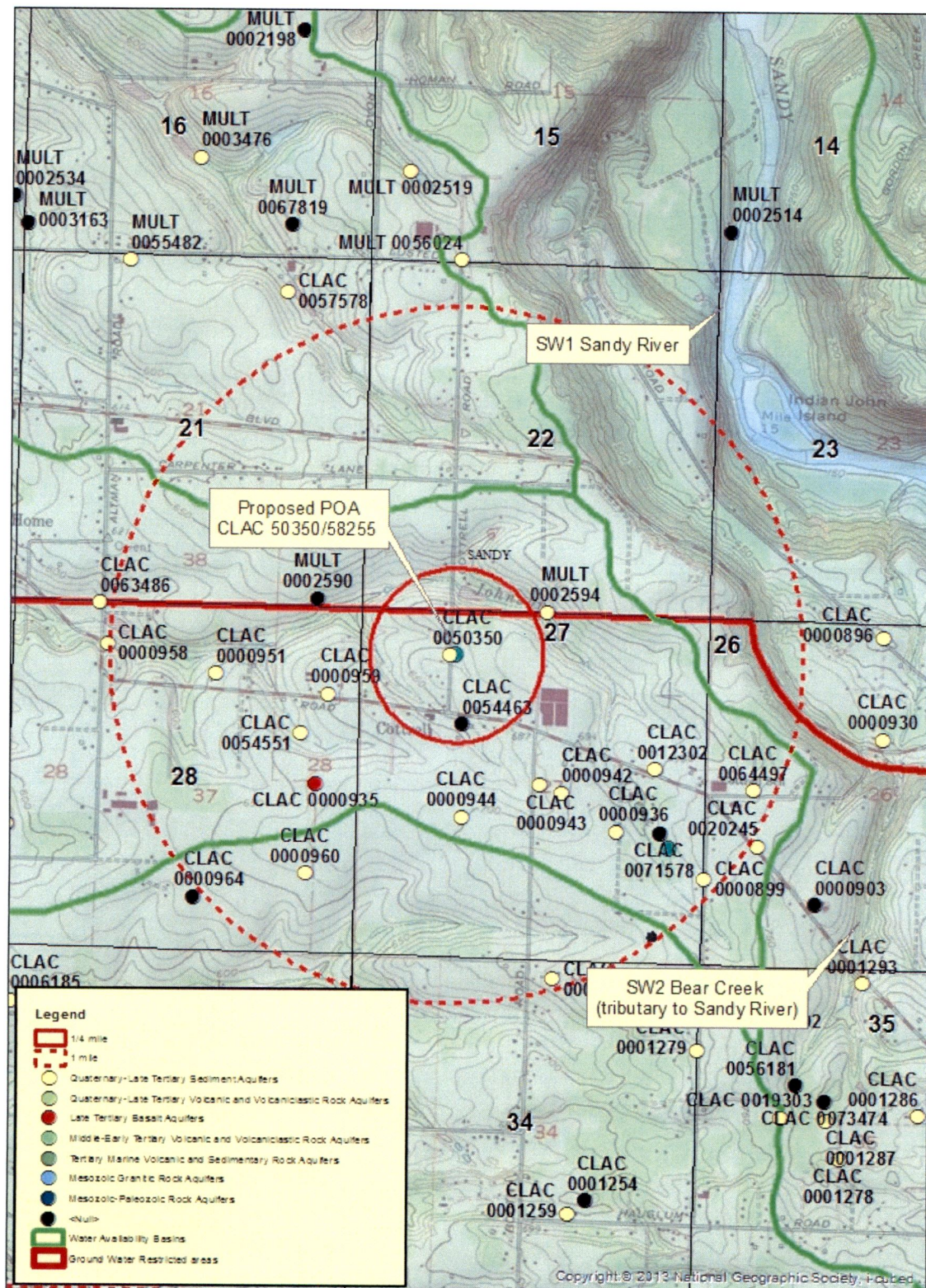
D2. **THE WELL does not appear to meet current well construction standards based upon:**

- 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.**

Application G-18626 Morris Van Meter
T1S, R4E - Section 27



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Water Availability Table



Oregon Water Resources Department

Water Availability Analysis

Water Availability Calculation

Water Rights

Consumptive Uses and Storages

Watershed Characteristics

Instream Flow Requirements

Reservations

Water Availability Analysis

Detailed Reports

Watershed ID# Z145 (Map)

Date: 10/2/2018

SANDY R - COLUMBIAR AB UNM STR

SANDY BASIN

Water Availability as of 10/2/2018

Exceedance Level: 88% <

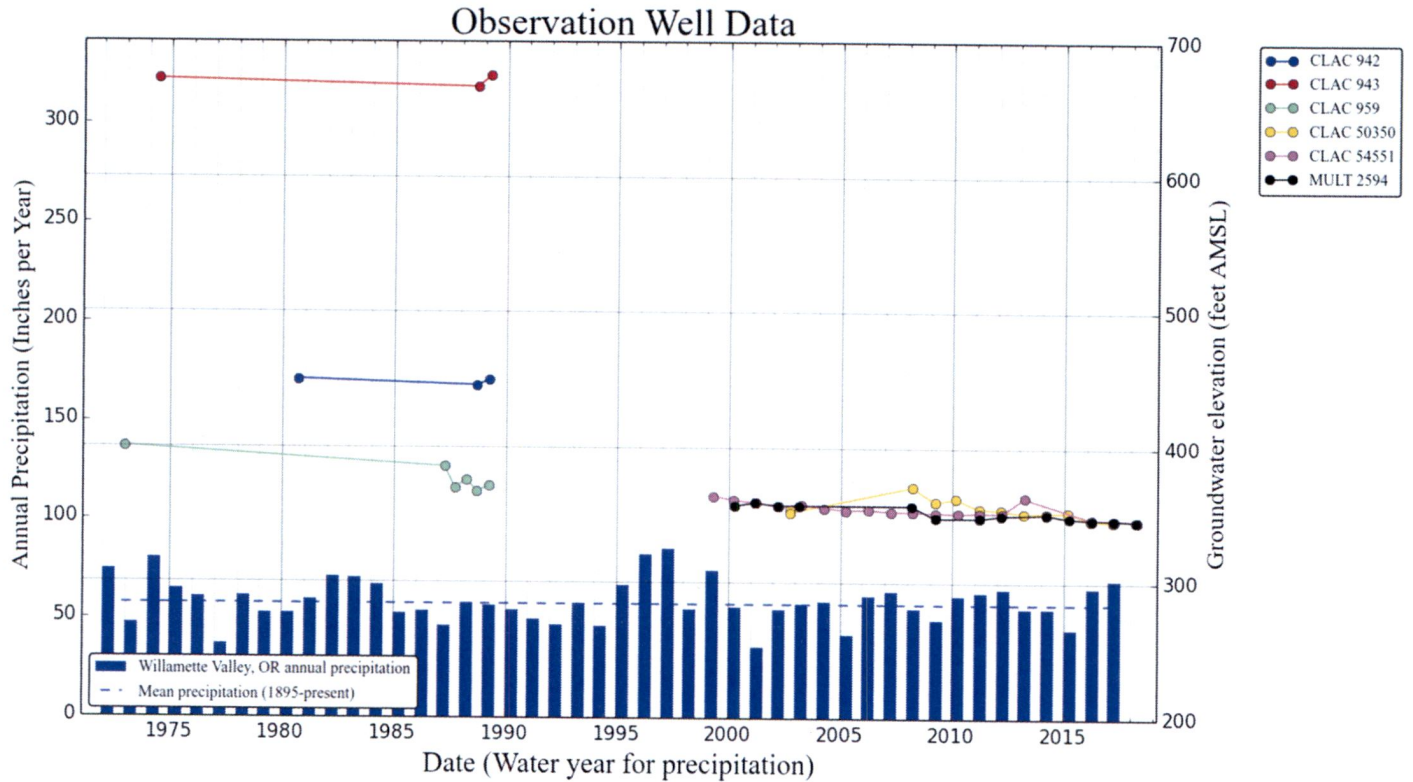
Time: 3:24 PM

Water Availability Calculation

Monthly Streamflow: Cule, Foothills, Seaside

Annual Volume at 50% Exceedance in Acq. Feat

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirements	Net Water Available
JAN	1,780.00	1,100.00	680.00	0.00	1,900.00	-1,240.00
FEB	1,960.00	1,000.00	960.00	0.00	1,900.00	1,000.00
MAR	1,960.00	1,000.00	960.00	0.00	1,900.00	1,000.00
APR	2,140.00	1,150.00	990.00	0.00	2,000.00	-1,010.00
MAY	1,900.00	1,010.00	890.00	0.00	2,000.00	-1,090.00
JUN	1,170.00	520.00	650.00	0.00	1,700.00	-1,000.00
JUL	1,170.00	520.00	650.00	0.00	1,700.00	-1,000.00
AUG	530.00	170.00	360.00	0.00	560.00	-200.00
SEP	460.00	220.00	240.00	0.00	560.00	-280.00
OCT	1,170.00	520.00	650.00	0.00	1,700.00	-1,000.00
NOV	1,130.00	870.00	260.00	0.00	1,700.00	-1,560.00
DEC	1,900.00	1,100.00	800.00	0.00	1,700.00	1,000.00
ANN	1,680,000.00	541,000.00	939,000.00	0.00	1,650,000.00	31,000.00

Water-Level Trends in Nearby Wells (all available date ranges, Shallow and Deep Troutdale wells)**Water-Level Trends in Nearby Wells (post-1999, Deep Troutdale wells only)**