



Alpine Environmental Consultants, LLC

12210 Antioch Road
White City, Oregon 97503
541.944.4685
jwilliams@alpine-env-llc.com

March 18, 2025

Oregon State Senators
900 Court Street NE
Salem, Oregon 97301

RE: Preliminary Hydrogeologic Evaluation in Area Associated with Proposed Amendments to Senate Bill 1047; Curry County, Oregon

Dear Oregon State Senators,

The purpose of this letter is to present a preliminary hydrogeologic evaluation for the area associated with proposed amendments to Senate Bill 1047 in Curry County (the Site). This preliminary hydrogeologic evaluation, or conceptual model, is based on data recently collected during the drilling of two water supply wells and subsequent aquifer testing. During the completion of two different constant-discharge aquifer tests that each lasted 8 hours, no drawdown attributable to a pumping response was observed in the observation wells located approximately 1,000 feet away from the pumped wells. This lack of significant drawdown monitored in the observation wells suggests potential impacts to wells proximal to the Site (e.g. residential wells and monitoring wells at the Port Orford Landfill) will not be significant and perhaps not even measurable. Furthermore, the static groundwater elevations in the two water supply wells screened in the pumped aquifer are approximately 60 feet or more lower than the surface water elevations of proximal wetlands. This means it is improbable proximal wetlands will be adversely impacted by future pumping of Site water supply wells. Additional details supporting these statements are provided in the following narrative.

The two water supply wells at the Site were completed in January 2025. Consistent with Oregon Water Resources Department (WRD) regulations, logs for these two wells were submitted to WRD. The two Site wells are identified as the West Well and the East Well and logs for these wells have been identified as CURR 53331 and CURR 53332, respectively. Copies of these well logs are attached.

The land surface topography at the Site is relatively flat with an approximate land surface elevation of 100 feet above mean sea level. One exception is the topography on the western edge of the Site where the bluffs drop steeply down to the Pacific Ocean. The West Well and the

East Well are on an approximately east-west trending line and located approximately 1,000 and 2,000 feet east of the Pacific Ocean, respectively. The West Well has a total depth of 178 feet below ground surface (bgs), a static depth to water of approximately 82 feet bgs, and three screened interval sections at depths ranging from 140 to 170 feet bgs. The East Well has a total depth of 150 feet bgs, a static depth to water of approximately 68 feet bgs, and three screened interval sections at depths ranging from 90 to 141 feet bgs. Based on the locations of the two Site wells, approximate land surface elevations, and the static depth to water data, the direction of groundwater flow is to the west towards the Pacific Ocean

It is also important to note that proximal streams and wetlands within approximately ½-mile of the West and East wells are relatively shallow with stages, or surface elevations, equal to the land surface elevation of approximately 100 feet above mean sea level. However, the static depths to water in the wells are approximately 68 to 82 feet bgs. These data indicate proximal wetlands are perched, or isolated, from the underlying aquifer/s in which the West Well and East Well is screened. These data also suggest there is a lower permeability layer or layers separating the wetlands at land surface from the underlying aquifer/s. This concept of perched water is supported by observations made during the investigation of the Port Orford Landfill located approximately 2,000 feet to the southeast of the East Well. The investigation of the Port Orford Landfill was initiated in 1992 and involved the drilling of six monitoring wells, trench excavations, groundwater elevation monitoring, and groundwater quality monitoring. Well logs and measured groundwater elevation data for the monitoring wells show the presence of low permeability alluvium that generated perched water. Monitoring at the now closed Port Orford Landfill is ongoing and the most recent readily available report is the *2023 Annual Groundwater Monitoring Report* prepared by Critical Areas Consulting for Curry County dated March 7, 2024.

On March 5 and March 6, 2025, Alpine Environmental Consultants, LLC (AEC) oversaw the completion of two separate 8-hour constant discharge tests at the West Well and East Well, respectively. Both of the wells were instrumented with Troll 500 pressure transducers and dataloggers manufactured by In-Situ, Inc. of Fort Collins, Colorado. During the pumping of each well, drawdown in both the pumped well and the unpumped well (i.e. the observation well) were monitored. At the conclusion of pumping, recovery in both the pumped well and the observation well were monitored until at least 95 percent recovery had been achieved, which is the technical standard for most aquifer testing data evaluation methods.

Pumping rates were monitored with calibrated flow meters and totalizers. The sustainable and constant pumping rate in the West Well was 211 gallons per minute (gpm) on March 5, 2025. The sustainable and constant pumping rate in the East Well was 137 gpm on March 6, 2025. At both wells, drawdowns generally stabilized within a few hours, though drawdown was still dropping a few hundredths of a foot per hour at the conclusions of the pumping periods of the constant discharge tests. Given the available data and the available drawdown of approximately 10 feet after 8 hours of pumping, it is likely drawdown would become flatline with ample available drawdown even after months or years of continuous pumping. At both wells, approximately 10 feet of drawdown were still available above the tops of the well screens after 8 hours of pumping. During the pumping portions of the tests, no significant drawdown was observed in the opposing

Oregon State Senators
March 18, 2025

observation well suggestive of a hydraulic response to pumping. Water levels in the observation wells went up and down, suggesting the aquifer/s in which the wells are screened may be confined and that water level responses in the observation wells were due to changes in atmospheric pressure and not pumping. The lack of significant drawdown observed in the observation wells after 8 hours of pumping indicates the permeability, or horizontal hydraulic conductivity, of the aquifer/s is relatively high. The lack of significant drawdown observed in the observation wells also suggests impacts to wells proximal to the Site (e.g. residential wells and monitoring wells at the Port Orford Landfill) will not be significant and perhaps not even measurable.

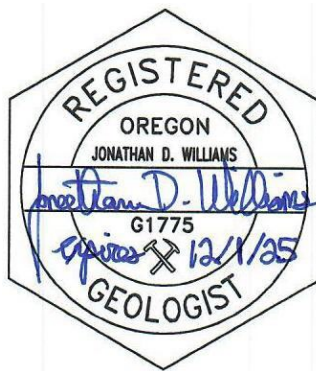
Based on the data collected during the two 8-hour constant-discharge aquifer tests completed in early March 2025, appropriately sized pumps are being purchased and these pumps will be installed in the West and East Wells. After these pumps have been installed, the pressure transducers and dataloggers will be reinstalled in the wells to initiate a long-term groundwater elevation monitoring program. In addition, the two Site wells will be surveyed later this year by an Oregon-licensed surveyor.

I have been a Registered Geologist in the State of Oregon since 1996 and have 33 years of professional experience. I graduated with Honors from Duke University in Geology and completed my Masters coursework and thesis in Geosciences and Hydrogeology at the University of Arizona. I have extensive hydrogeologic experience in managing and conducting hydrogeologic assessment studies involving aquifer testing, groundwater flow and contaminant transport modeling, and water rights. Key clients in this field include Lockheed Martin, J.R. Simplot, Intel, Oregon Cutting Systems, Warn Industries, Weyerhaeuser, International Paper, and others.

Should you have any questions or require additional information, please feel free to contact me.



Jonathan D. Williams, R.G.
Senior Hydrogeologist



Attachments:

Well Logs for CURR 53331 (West Well) and CURR 53332 (East Well)

STATE OF OREGON WATER SUPPLY WELL REPORT

CURR 53331

WELL I.D. LABEL# L

116515

START CARD #

1076288

ORIGINAL LOG #

CURRY 53312

(as required by ORS 537.545 & 537.765 and OAR 690-205-0210)

1/24/2025

(1) LAND OWNER

Owner Well I.D. 2199 (WEST)

First Name KNAPP RANCH INC. Last Name
Company ELK RIVER PROPERTY DEVELOPMENT
Address PO BOX 790
City PORT ORFORD State OR Zip 97465

(2) TYPE OF WORK

New Well Deepening Conversion
Alteration (complete 2a & 10) Abandonment(complete 5a)

(2a) PRE-ALTERATION

Casing: Dia + From To Gauge Stl Plstc Wld Thr
Material From To Amt sacks/lbs
Seal: Bentonite Chips 0 19 14 Sacks

(3) DRILL METHOD

Rotary Air Rotary Mud Cable Auger Cable Mud
Reverse Rotary Other

(4) PROPOSED USE

Domestic Irrigation Community
Industrial/ Commercial Livestock Dewatering
Thermal Injection Other

(5) BORE HOLE CONSTRUCTION

Special Standard (Attach copy)

Depth of Completed Well 178.00 ft.

Table with columns: Dia, From, To, Material, From, To, Amt, lbs. Rows include Bentonite Chips and Calculated values.

Seal placement method: A B C D E Other: POUR FROM SURFACE

Backfill placed from 178 ft. to 240 ft. Material Native

Filter pack from 58 ft. to 178 ft. Material SAND Size 6/9

Explosives used: Type Amount

Seal Placement Begin Date 12/20/2024 Begin Time 15 00

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Table with columns: C/L, Dia, +, From, To, Gauge, Mat. Type, Wld, Thr, Shoe, Location. Rows include Casing types C, ST, PL.

Temp casing Yes Dia From+ To

(7) PERFORATIONS/SCREENS

Perforations Method

Screens Type Johnson V-Wire Material Stainless Steel

Table with columns: Perf/ Screen, Casing/ Screen, Dia, From, To, Scrn/slot width, Slot length, # of slots, Tele/ Pipe size.

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

Table with columns: Type of Test, Yield (gal/min), Drawdown, Drill Stem/ Pump Depth, Duration (hr). Row for Pump test.

Temperature 54 °F Lab analysis Yes By

Water quality concerns? Yes (describe below) TDS amount 63 ppm

Table with columns: From, To, Description, Amount, Units.

(9) LOCATION OF WELL (legal description)

County CURRY Twp 32.00 S N/S Range 15.00 W E/W WM

Sec 30 SE 1/4 of the NE 1/4 Tax Lot 4400

Tax Map Number Lot

Lat " or 42.77464000 DMS or DD

Long " or -124.51688000 DMS or DD

Street address of well Nearest address

92361 KNAPP RD., PORT ORFORD

(10) STATIC WATER LEVEL

Table with columns: Existing Well / Pre-Alteration, Date, SWL(psi), SWL(ft). Rows for 12/17/2024 and 1/17/2025.

Flowing Artesian? Dry Hole?

WATER BEARING ZONES

Depth water was first found 82.00

SWL Date From To Est Flow SWL(psi) + SWL(ft)

Table with columns: SWL Date, From, To, Est Flow, SWL(psi), + SWL(ft). Row for 12/18/2024.

(11) WELL LOG

Ground Elevation 99.68 FT

Table with columns: Material, From, To. Rows include Sandy clay w/cemented sand brown orange, Gravel m-f w/sand c-f gray tan, etc.

Construction

Begin Date 12/12/2024 Begin Time 10 00 End Date 1/17/2025

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards.

License Number 2068 Date 1/23/2025

Signed JAMES MACK JR (E-filed)

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above.

License Number 1493 Date 1/24/2025

Signed JAMES MACK SR (E-filed)

Drilling Company: Bandon Well & Pump Co. (541) 347-7867 J

STATE OF OREGON WATER SUPPLY WELL REPORT

CURR 53332

WELL I.D. LABEL# L

116519
START CARD # 1076289
ORIGINAL LOG # CURRY 53313

2/3/2025

(as required by ORS 537.545 & 537.765 and OAR 690-205-0210)

(1) LAND OWNER
Owner Well I.D. 2200 (EAST)
First Name KNAPP RANCH INC. Last Name
Company ELK RIVER PROPERTY DEVELOPMENT
Address PO BOX 790
City PORT ORFORD State OR Zip 97465

(2) TYPE OF WORK
New Well Deepening Conversion
Alteration (complete 2a & 10) Abandonment(complete 5a)

(2a) PRE-ALTERATION
Dia + From To Gauge Stl Plstc Wld Thrd
Casing: 6 1 19 0.250
Material From To Amt sacks/lbs
Seal: Bentonite 0 19 15 Sacks

(3) DRILL METHOD
Rotary Air Rotary Mud Cable Auger Cable Mud
Reverse Rotary Other

(4) PROPOSED USE
Domestic Irrigation Community
Industrial/ Commercial Livestock Dewatering
Thermal Injection Other

(5) BORE HOLE CONSTRUCTION
Special Standard (Attach copy)
Depth of Completed Well 150.00 ft.
BORE HOLE
Dia From To Material From To Amt sacks/lbs

Seal placement method: A B C D E Other: POUR FROM SURFACE
Backfill placed from 150 ft. to 181 ft. Material HOLE COLLAPSED
Filter pack from 55 ft. to 105 ft. Material SAND Size 6/9
Explosives used: Type Amount
Seal Placement Begin Date 1/20/2025 Begin Time 14 00

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount Actual Amount

(6) CASING/LINER
C/L Dia + From To Gauge Mat. Type Wld Thrd Shoe Location
Temp casing Yes Dia From+ To

(7) PERFORATIONS/SCREENS
Perforations Method
Screens Type Johnson V-Wire Material Stainless Steel
Perf/ Casing/ Screen Dia From To Scrn/slot Slot # of Tele/ Screen Liner Dia From To width length slots Pipe size

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

Table with 5 columns: Type of Test, Yield (gal/min), Drawdown, Drill Stem/ Pump Depth, Duration (hr). Row 1: Pump, 79.3, 9, 140, 1.6

Temperature 54 °F Lab analysis Yes By
Water quality concerns? Yes (describe below) TDS amount 58 ppm
From To Description Amount Units

(9) LOCATION OF WELL (legal description)
County CURRY Twp 32.00 S N/S Range 15.00 W E/W WM
Sec 30 NE 1/4 of the SE 1/4 Tax Lot 4400
Tax Map Number Lot
Lat " or 42.77444444 DMS or DD
Long " or -124.51222222 DMS or DD
Street address of well Nearest address
92361 KNAPP RD, PORT ORFORD

(10) STATIC WATER LEVEL
Date SWL(psi) + SWL(ft)
Existing Well / Pre-Alteration 1/17/2025 67.66
Completed Well 1/30/2025 67.66
Flowing Artesian? Dry Hole?

WATER BEARING ZONES
Depth water was first found 67.66
SWL Date From To Est Flow SWL(psi) + SWL(ft)
1/23/2025 67.66 144 197 67.66

(11) WELL LOG
Ground Elevation 71.24 FT
Material From To
Cemented sand brown 0 4
Sand c-f w/gravel c-f brown 4 5
Gravel f-m w/sand c-f brown 5 7
Sand f-c w/gravel c-f gray 7 8
Gravel f-c w/sand f-c & clay gray 8 10
Gravel c-f w/sand c-f brown 10 25
Gravel c-f w/sand c-f brown black 25 47
Gravel c-f w/sand & sandy clay orange brown 47 50
Gravel f-m w/sand c-f orange brown 50 59
Sandy clay tan 59 61
Sandy clay tan w/peat 61 63
Peat 63 64
Sandy clay tan 64 65
Gravel f w/sand f-c brown 65 70
Sandy clay orange 70 71
Sandy clay tan 71 74
Gravel c-f w/sand c-f brown black 74 75
Sandy clay tan 75 77
Gravel c-f w/sand c-f brown black & orange 77 81
Construction
Begin Date 1/20/2025 Begin Time 10 00 End Date 1/30/2025

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, 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 the best of my knowledge and belief.
License Number 2068 Date 2/3/2025
Signed JAMES MACK JR (E-filed)


(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, 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.
License Number 1493 Date 2/3/2025
Signed JAMES MACK SR (E-filed)
Drilling Company: Bandon Well & Pump Co. (541) 347-7867 J

WATER SUPPLY WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

CURR 53332

2/3/2025

Map of Hole

<p>STATE OF OREGON WELL LOCATION MAP</p>	<p>Oregon Water Resources Department 725 Summer St NE, Salem OR 97301 (503)986-0900</p>	
<p>This map is supplemental to the WATER SUPPLY WELL REPORT</p>		
<p>LOCATION OF WELL</p>	<p>Well Label: 116519</p>	
<p>Latitude: 42.77444444 Datum: WGS84</p>	<p>Printed: February 3, 2025</p>	
<p>Longitude: -124.51222222</p>	<p>DISCLAIMER: This map is intended to represent the approximate location the well. It is not intended to be construed as survey accurate in any manner.</p>	
<p>Township/Range/Section/Quarter-Quarter Section: WM32.00S15.00W30NESE</p>	<p>Provided by well constructor</p>	
<p>Address of Well: 92361 KNAPP RD, PORT ORFORD</p>		

