

August 16, 2025

Mr. Tim Andruss, General Manager
Calhoun County Groundwater Conservation District
131-A N. Virginia St.
P.O. Box 1395
Port Lavaca, Texas 77979

Re: Quarterly Reporting Report –
Operating Permit OPWF-20221114-01 and Waiver and Variance WV-20221114-01
Port O'Connor Improvement District, Calhoun County, Texas

Dear Mr. Andruss:

Legacy Groundwater, LLC (LegacyGW), on behalf of Port O'Connor Improvement District (POID), submits this letter to the Calhoun County Groundwater Conservation District (CCGCD or District) to provide data and information including results of the first **Quarterly Reporting Period** of the **Baseline Monitoring Period** as required and set forth in the subject operating permit and the associated Waiver and Variance (WV-20221114-01) issued by the District.

INTRODUCTION AND BACKGROUND INFORMATION

Pursuant to the District issuing Operating Permit OPWF-20221114-01, POID contracted with Friedel Drilling Company (Friedel), a licensed water well drilling and pump installing company in Texas, to complete six (6) new wells completed in accordance with requirements, regulations, and guidelines of the Texas Commission on Environmental Quality (TCEQ) for public water system (PWS) wells, as set forth in Title 30 Texas Administrative Code, Chapter 290, Subchapter D, *Rules and Regulations For Public Water Systems*. The new wells create the wellfield authorized by permit OPWF-20221114-01. The six (6) new POID wells were intentionally designed and completed to isolate and produce from zones in the Chicot Aquifer that are deeper than the shallower sand intervals that can produce water that is usable for local well owners, which will limit or eliminate impacts to local private wells. The target production interval is generally within the depth interval that occurs between depths of 260 and 420 feet below ground level (BGL). The wells are intended to produce brackish (or slightly saline) groundwater with total dissolved solids (TDS) concentration of greater than 1,000 milligrams per liter (mg/L). Each of the new wells is designed and permitted to pump at a rate of 300 gallons per minute (gpm) and were spaced as feasibly as possible to minimize impacts on the other wells (i.e., interference drawdown). POID continues to operate one existing well (CCGCD ID – GW-00031) as part of its well field. All POID PWS wells are within the POID designated service area. POID has constructed a treatment plant to utilize reverse osmosis (RO) technologies to treat the brackish groundwater so that water provided to its customers complies with all drinking water standards set forth by the TCEQ.



The Waiver and Variance requires POID to establish a monitoring program that continuously monitors water levels and specific conductance (which is directly related to TDS) in monitoring wells across the extent of the new POID well field. Therefore, POID contracted with Friedel to drill and complete three (3) Dedicated Aquifer Monitoring Wells (monitoring wells) at locations designated by the CCGCD.

The monitoring program required under OPWF-20221114-01 and WV-20221114-01 to established specific monitoring periods defined in the Waiver and Variance as follows:

- **Production Period** – “means the 36-month period of time after the Initial Average Water Level Measurement and Initial Average TDS Concentration have been calculated and production of groundwater from any of the Production Wells have begun.”
- **Reporting Period** – “means the 3-month periods, ending on the last day of March, June, September, and December of each year during the Production Period.”
- **Initial Monitoring Period** – “means the period, with a duration of at least 10 days, of suspended groundwater production by the Permitted Entity before the Production Period.”
- **Baseline Monitoring Period** – “means the first 12-month period of the Production Period.”

Additionally, WV-20221114-01 established specific criteria to report for each quarterly **Reporting Period** as follows:

- **Average Water Level Measurement** – “means the average value of all water level depth measurements, collected on a 4-hour basis, from a Dedicated Aquifer Monitoring Well during a reporting period.”
- **Average TDS Concentration** – “means the average value of all temperature-corrected, specific conductivity measurements, collected on a 4-hour basis, from a Dedicated Aquifer Monitoring Well during a reporting period and converted to TDS concentrations by applying a TDS Conversion Factor.”
- **TDS Conversion Factor** – “means the conversion factor derived from lab-measured specific conductivity and total dissolved solids from water samples collected from a Dedicated Aquifer Monitoring Well.”
- **Average Water Level Difference** – “means the difference between the Initial Average Water Level Measurement and the Average Water Level Measurement for a reporting period.
- **Average TDS Difference** – “means the difference between the Initial Average TDS Concentration and the Average TDS Concentration calculated for a reporting period.
- **Produced Groundwater in Acre-Feet** – “means the volume, in acre-feet, of groundwater produced from the wells of the subject well field during a reporting period.
- **Produced Groundwater Year-to-Date in Acre-Feet** – “means the volume, in acre-feet, of groundwater produced from the wells of the subject well field from January 1 of the report year to the end of the report period.



The data and information submitted herewith compares the current conditions with the initial conditions, specifically defined in the WV-20221114-01 document as Average Water Level Difference and Average TDS Difference. This letter provides a description of the work conducted and the results from the first quarter Reporting Period. For convenience, additional information is provided in the following attachments:

- Attachment 1 – Figures
- Attachment 2 – Water Level and Water Quality Monitoring Charts

MONITORING WELL LOCATIONS, COMPLETION, AND MONITORING REQUIREMENTS

CCGCD designated three monitoring well locations as the West Monitoring Well, the Central Monitoring Well, and the East Monitoring Well. The three (3) monitoring wells are located near three of the newly completed POID PWS wells. Figure 1 in Attachment 1 illustrates the locations of the new POID PWS wells and the three (3) new monitoring wells. Figure 2, Figure 3, and Figure 4 show the locations of the West Monitoring Well, the Central Monitoring Well, and the East Monitoring Well, respectively, and their distances from the nearest POID PWS wells.

The monitoring wells were constructed with 4-inch Schedule 40 PVC. The screen is mill-slotted with a 0.020-inch slot size and designed to screen the approximate middle of the production interval of the target sands of the production wells. The annular space from about 10 feet above the top of the screen to the total depth of the well was filled with 16/30 filter pack. The remaining annular space was sealed with grout from the top of the filter pack to land surface. Figure 5, Figure 6, and Figure 7 provide diagrams illustrating the construction of each of the monitoring wells and the table below provides a summary of completion details:

	West Monitoring Well	Central Monitoring Well	East Monitoring Well
Latitude	28° 25' 52.43" N	28° 25' 53.82" N	28° 26' 21.66" N
Longitude	96° 27' 42.26" W	96° 27' 20.59" W	96° 26' 55.46" W
Land Surface Elevation	7 ft AMSL	8 ft AMSL	5 ft AMSL
Grout Interval	0 to 255 ft BGL	0 to 270 ft BGL	0 to 260 ft BGL
Screen Interval	255 to 295 ft BGL	270 to 310 ft BGL	260 to 330 ft BGL
Filter-Pack Interval	240 to 323 ft BGL	260 to 340 ft BGL	250 to 360 ft BGL
Total Depth	323 ft BGL	340 ft BGL	360 ft BGL

Note: AMSL is above mean sea level. BGL is below ground level.

After construction and development, each monitoring well was equipped with automatic data recorders (i.e., pressure transducers) capable of continuous measuring and recording of the water level, temperature, and specific conductance within the well. LegacyGW (TGI personnel at the time) installed Aqua TROLL 200® pressure transducers from In-Situ Inc. and programmed the devices to measure and record at 1-minute intervals. Note that the 1-minute interval is much more frequent than the minimum frequency of 4 hours required by CCGCD in the waiver and variance.



QUARTERLY MONITORING PERIOD

POID began producing water from the newly constructed PWS wells to serve to its customers in late-January but was using the wells to test and prime the reverse osmosis treatment system initially in January. POID and BGE, Inc. (the project engineer) used Well No. 2, Well No 3, and Well No. 5 for testing the treatment system and service to the customers. Well No. 4, Well No. 6, and Well No. 7 were not used during this quarterly monitoring period.

The **Initial TDS Conversion Factor** for each Dedicated Monitoring Well was established and reported in the *Initial Monitoring Period Report* and is used during this Quarterly Monitoring Period Report. The following table provides a summary of the laboratory-determined specific conductivity and TDS concentrations, and the calculated Initial TDS Conversion Factor:

	West Monitoring Well	Central Monitoring Well	East Monitoring Well
Specific Conductance (µS/cm)	2,890	3,080	3,670
Total Dissolved Solids (mg/L)	1,590	1,660	1,970
TDS Conversion Factor (Ratio)	0.55	0.54	0.54

Note: µS/cm is micro-Siemens per centimeter. mg/L is milligram per liter.

Note that there was a malfunction with the transducers in the Dedicated Monitoring Wells for the first few days of the monitoring period. It is likely that bubbles formed over the sensor that measures specific conductance for the West Dedicated Monitoring Well. The transducer recording settings in the Central and West Dedicated Monitoring Wells were reprogrammed; however, the transducer within the East Dedicated Monitoring Well continued to malfunction and the data was not recovered from the transducer. New transducers were installed in each Dedicated Monitoring Well on March 22, 2025, and used to monitor the remaining quarterly monitoring period. Attachment 2 provides charts for each dedicated monitoring well depicting the water level, specific conductivity, and calculated TDS using the TDS conversion factor from the initial monitoring period. The following table provides the average measured water level, specific conductivity, and calculated TDS during the initial and quarterly monitoring periods and the difference between the periods.

	West Monitoring Well			Central Monitoring Well			East Monitoring Well		
	Initial Avg.	Quarterly Period Avg.	Avg. Difference	Initial Avg.	Quarterly Period Avg.	Avg. Difference	Initial Avg.	Quarterly Period Avg.	Avg. Difference
Specific Conductance (µS/cm)	2,816	2,775	41.39	3,062	3,042	20.63	3,399	3,373	26.27
Total Dissolved Solids (mg/L)	1,549	1,526	22.76	1,654	1,642	11.14	1,835	1,855	-19.54
Depth to Water (ft BGL)	16.60	43.14	-26.55	17.82	33.97	-16.15	14.97	25.82	-10.84



As expected, the water level in the Dedicated Monitoring Wells have lowered due the production from the POID wellfield, but the average difference in water level for each Dedicated Monitoring Well is less than 50 feet. Additionally, the average total dissolved solids for the West and Central Dedicated Monitoring Wells decreased since the initial monitoring period while the East Dedicated Monitoring Well has slightly increased.

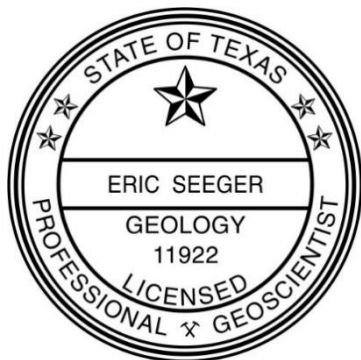
POID began production from the wellfield in late January to produce water for service to its customers. The table below shows the production from each Production Well for the current reporting period and year-to-date.

Production (ac-ft)	Well No. 2	Well No. 3	Well No. 4	Well No. 5	Well No. 6	Well No. 7	Wellfield
Quarterly	22.5	28.5	0	23.1	0	0	74.1
Year-to-Date	22.5	28.5	0	23.1	0	0	74.1

Note: Reported production is in acre-feet.

LegacyGW and POID continue to monitor aquifer conditions within each dedicated monitoring wells as POID continues to production from the wellfield for service to its customers. LegacyGW, on behalf of POID, will continue to provide to CCGCD quarterly reports summarizing the aquifer conditions. LegacyGW will assess and compare the current aquifer conditions to the Initial Monitoring Period and provide comments as to POID’s effects on the local aquifer, if any.

If you have any questions, please call me or e-mail me at eseeger@legacygroundwater.com.



Sincerely,
LEGACY GROUNDWATER

Eric Seeger, P.G.
Senior Hydrogeologist

The seal appearing on this document was authorized by Eric Seeger, P.G. on August 16, 2025.

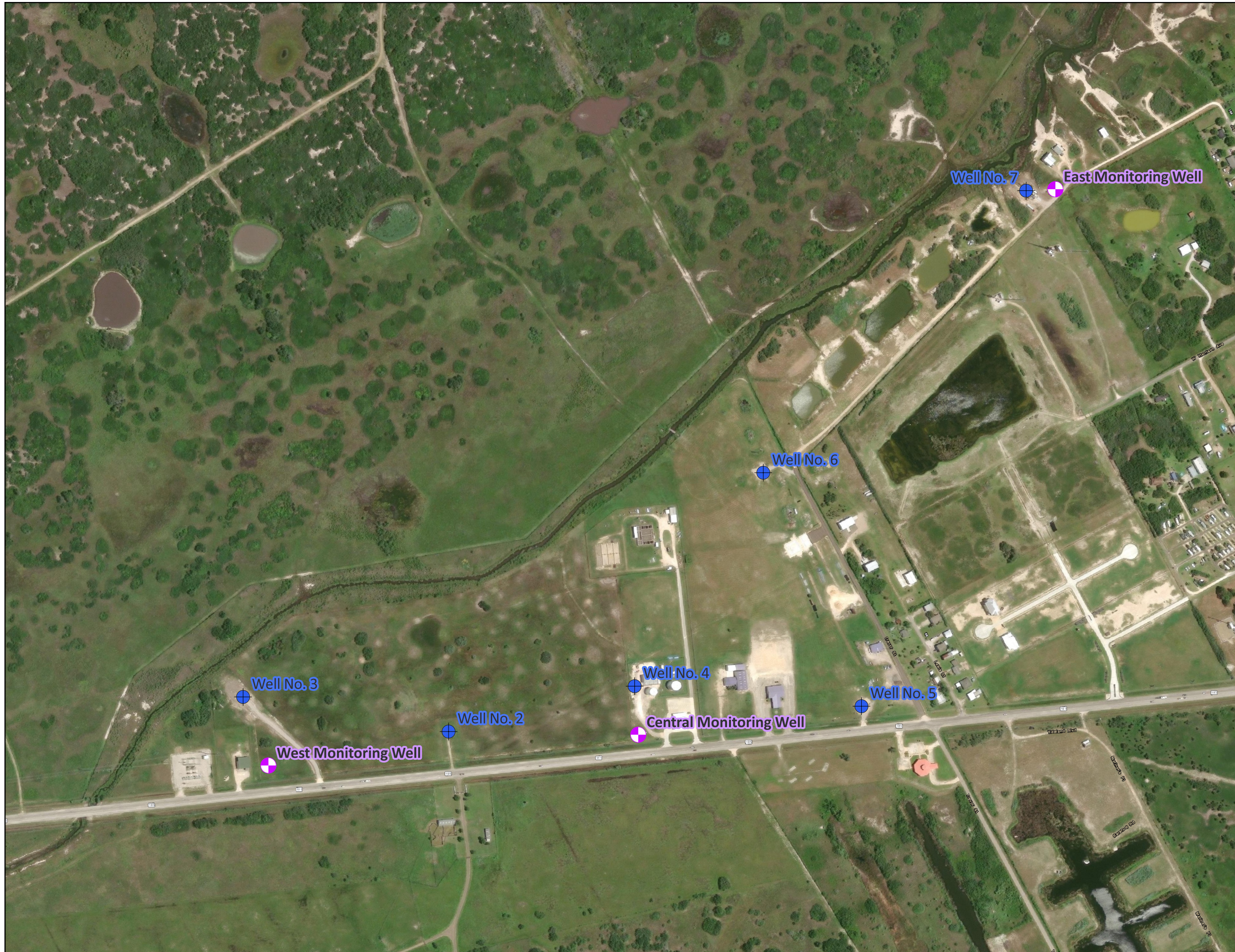
Attachments

- cc: Mr. Danny McGuire, President, Port O’Connor Improvement District
- Mr. Oscar Pena, District Manager, Port O’Connor Improvement District
- Mr. Matt Froehlich, P.E., BGE
- Mr. Michael Barrette, P.E., BGE



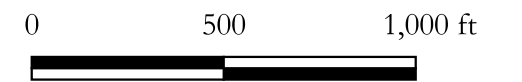
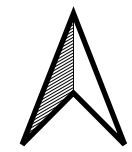
**Attachment 1 –
Figures**





Explanation

- POCID Production Well
- Dedicated Monitoring Well



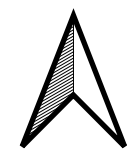
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Figure 1 - Production Well and
Monitoring Well Location Map



Explanation

- POCID Production Well
- Dedicated Monitoring Well



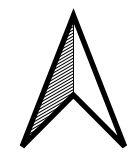
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Figure 2 - West Dedicated
Monitoring Well Location Map



Explanation

- POCID Production Well
- Dedicated Monitoring Well



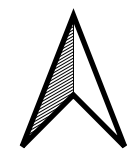
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Figure 3 - Central Dedicated
Monitoring Well Location Map



Explanation

- POCID Production Well
- Dedicated Monitoring Well



0 50 100 ft



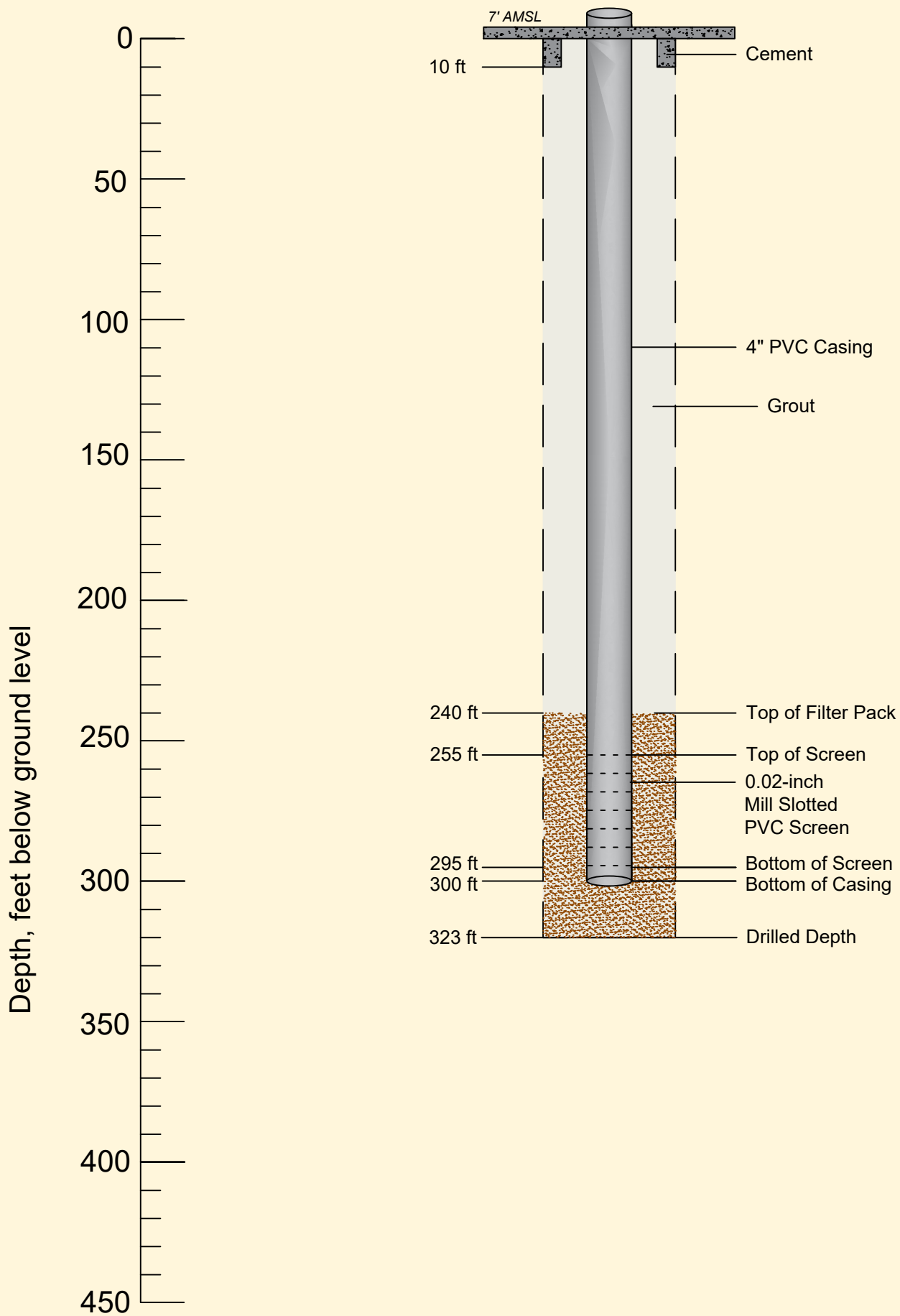
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Figure 4 - East Dedicated
Monitoring Well Location Map



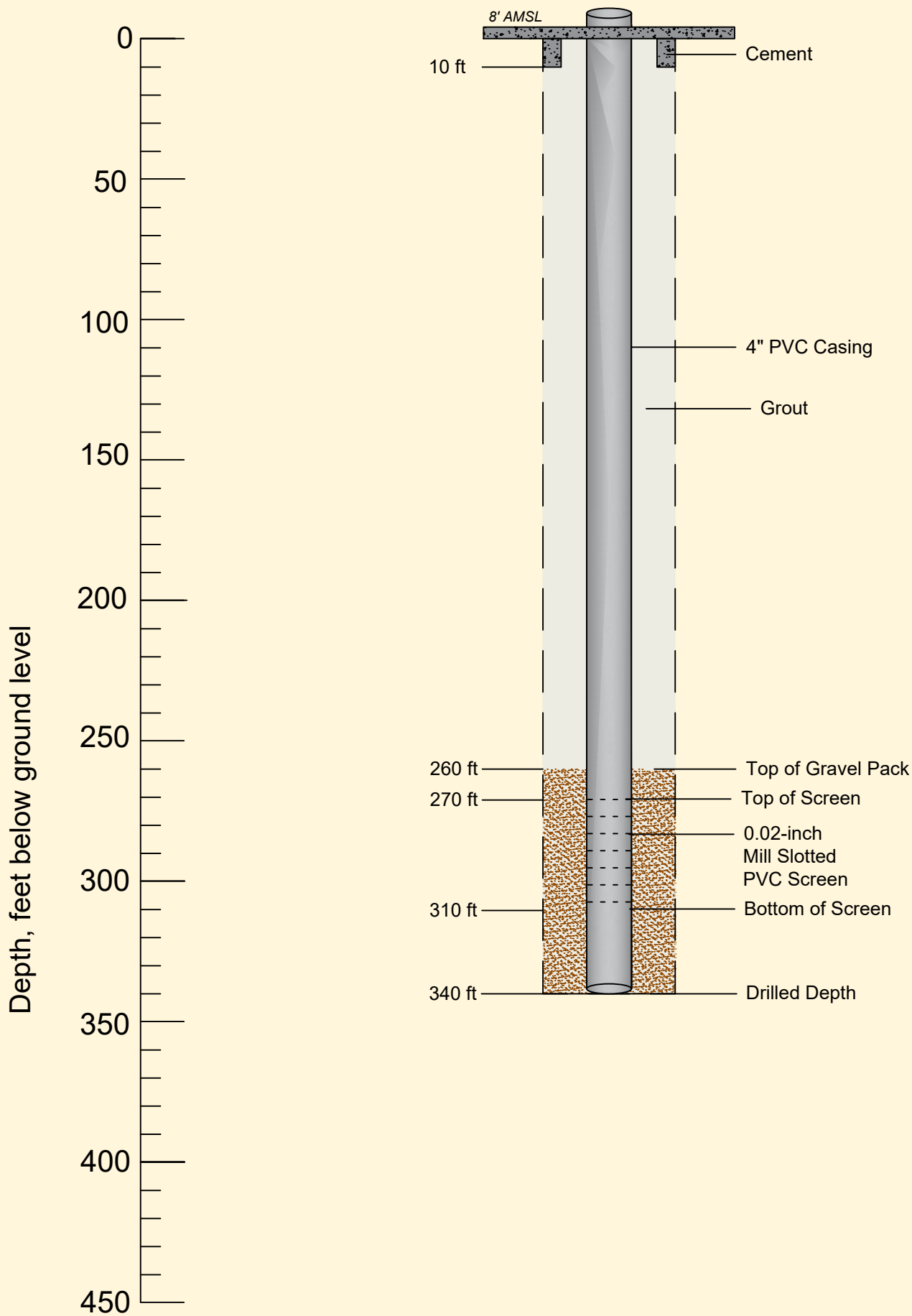
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Figure 5 – Well Diagram West Dedicated Monitoring Well (Near PWS Well No. 3)



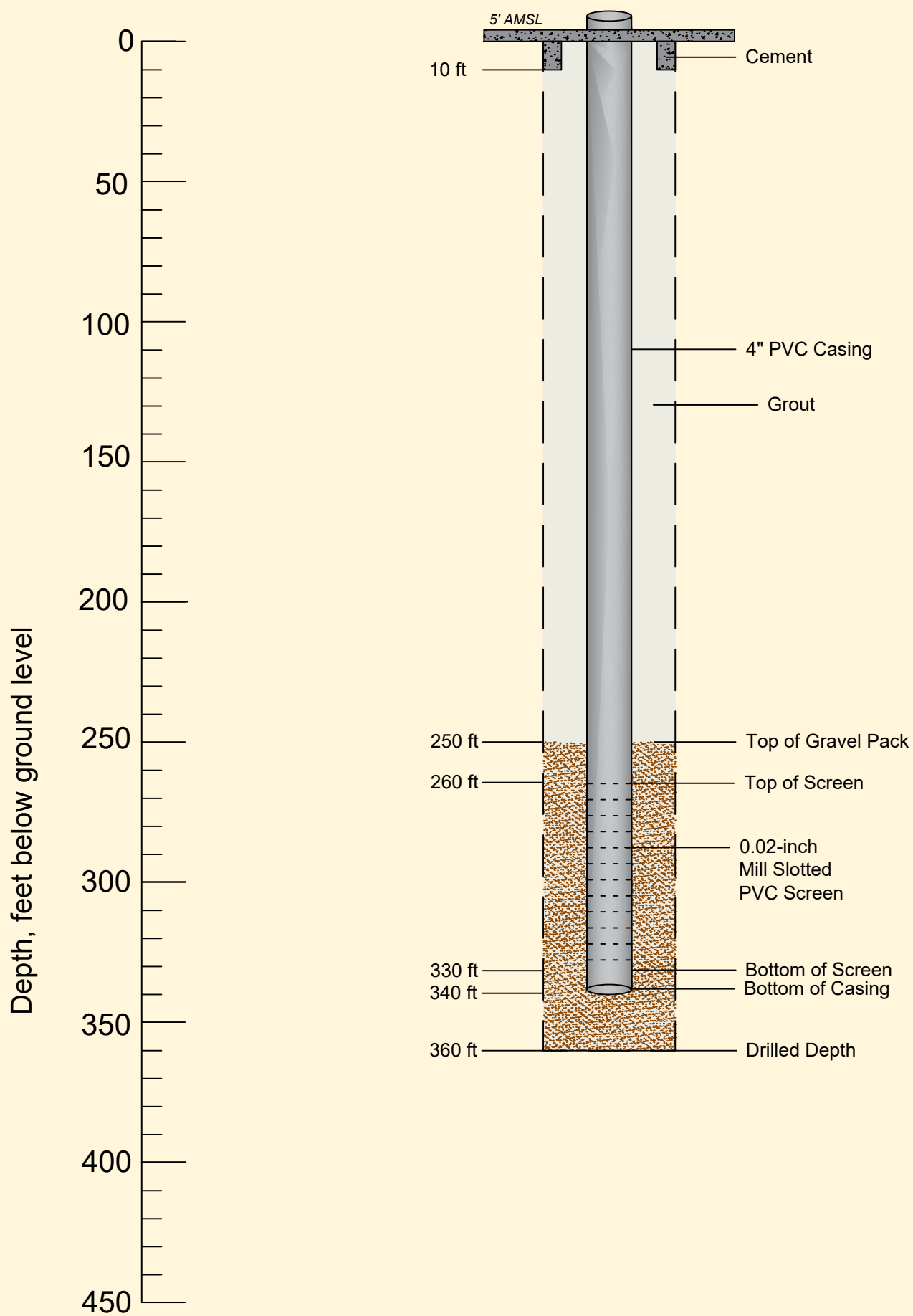
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Figure 6 – Well Diagram Central Dedicated Monitoring Well (Near PWS Well No. 4)



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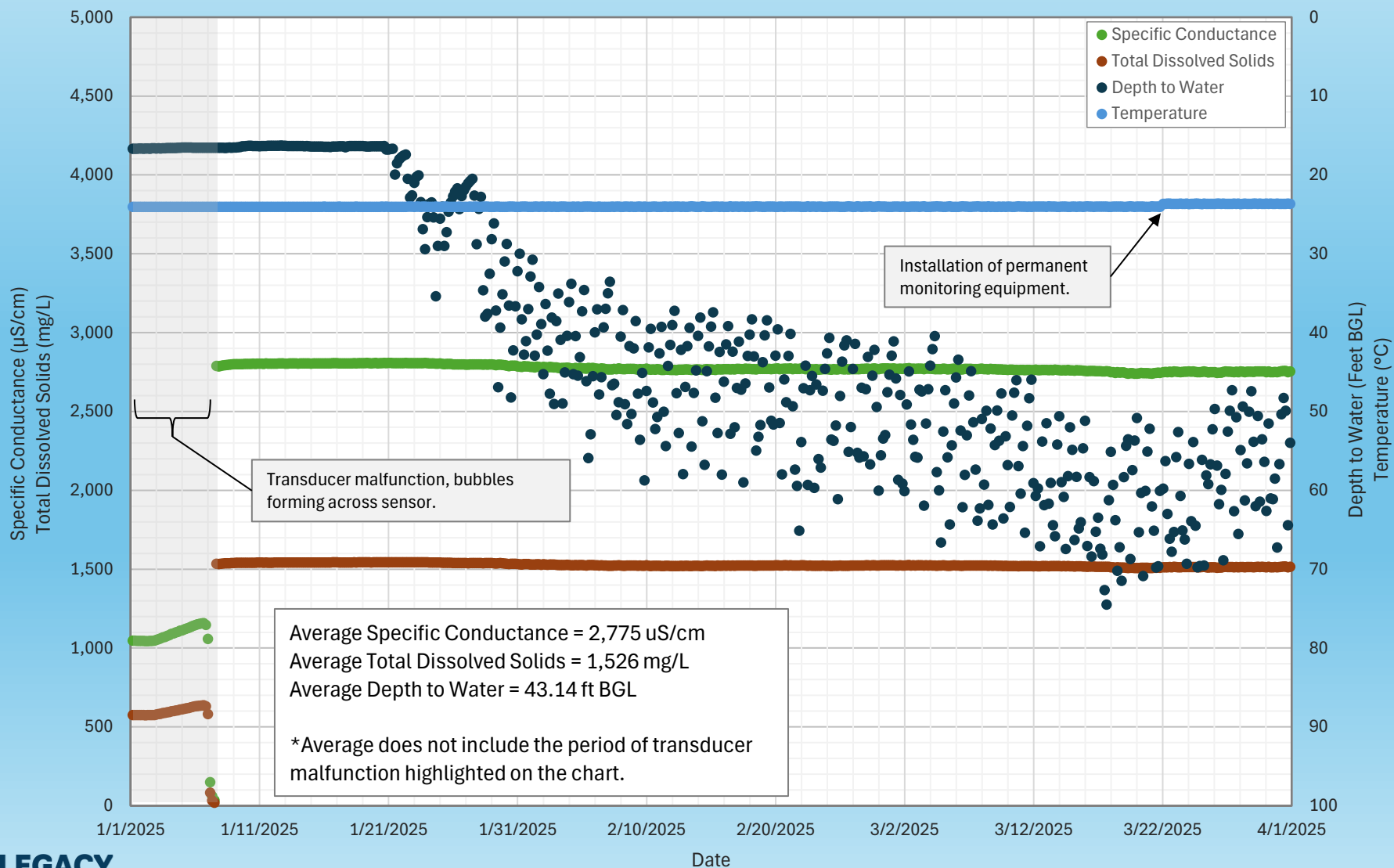
Figure 7 – Well Diagram East Dedicated Monitoring Well (Near PWS No. 7)



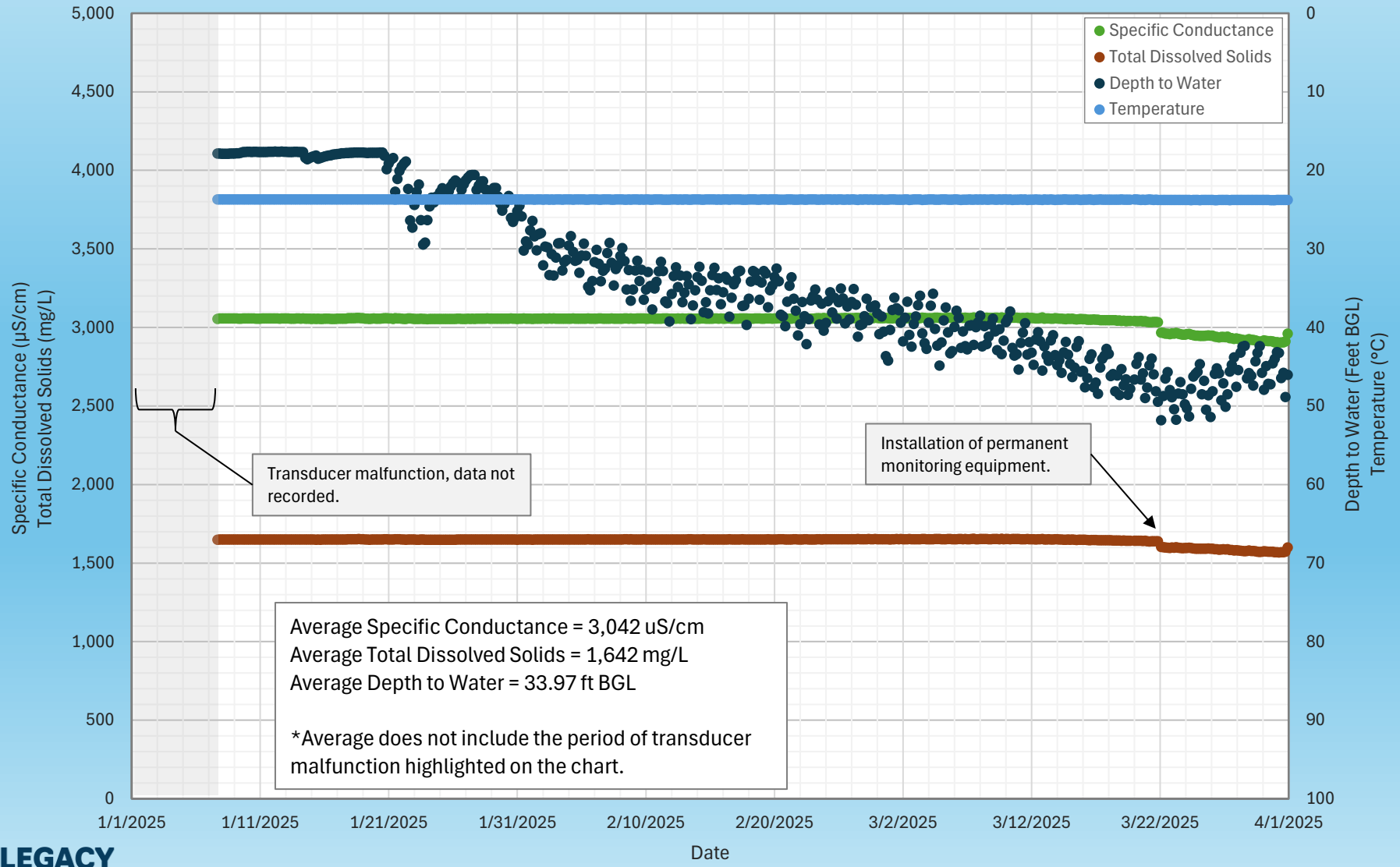
**Attachment 2 –
Charts: Water Levels, Specific Conductance, TDS and
Temperature**



Port O'Connor Improvement District West Monitoring Well (near Well 3) 1st Quarter 2025 Reporting Period



Port O'Connor Improvement District Central Monitoring Well (near Well 4) 1st Quarter 2025 Reporting Period



Port O'Connor Improvement District East Monitoring Well (near Well 7) 1st Quarter 2025 Reporting Period

