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**From:** John Renda <jrenda@anchorqea.com>

**Sent:** Thursday, October 19, 2023 2:21 PM

**To:** THOMAS Wesley \* DEQ <wesley.thomas@deq.oregon.gov>

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**Subject:** Gasco PW-6U Replacement Well Design

Hi Wes!

The replacement of PW-6U with PW-6Ub was recommended with the submittal of the HC&C Operational figures in an August 31, 2023 email due to declined well performance. Replacement extraction well, PW-6Ub is recommended to maintain consistent upward vertical gradients between the Upper and Lower Alluvium WBZs in the area near PW-6U and PW-14U, where DNAPL is present in the Upper Alluvium WBZ.

Proposed replacement well PW-6Ub will be of similar design and installation procedure as the most recently installed extraction wells, using stainless-steel for both the screen and riser pipe. The well screen depths, screen slot size, and filter pack will be consistent with PW-6U. As with the recently installed extraction wells, we propose to use a stainless-steel well screen prepacked with a glass bead filter pack. The estimated well design details are provided below.

PW-6Ub will be installed approximately 50 feet inland from top of slope to be outside the required footprint of the installation equipment for the proposed ISS barrier wall.

After PW-6Ub is installed, extraction well PW-6U will be decommissioned following the same procedures as previous Gasco OU extraction well decommissionings approved by DEQ. Extraction well PW-6U will be decommissioned according to the requirements within Oregon Administrative Rule (OAR) 690-240-0510 by overdrilling with a rotosonic drill rig with a minimum casing diameter of 12 inches to a depth of 48 feet and a minimum casing diameter of 10 inches from 48 to 70 feet

which matches the diameter of the casing used to install PW-6U (see attached boring log for PW-6U).

Once the well is overdrilled to 70 feet below ground surface, a winch line will be attached to the well casing in an attempt to recover the well casing and screen. Following removal of the well casing and screen to the extent practicable, the borehole will be sealed with bentonite grout slurry with 10% organoclay placed from the bottom up using a tremie pipe to avoid segregation or dilution of the sealant. The drill casing will be loaded with bentonite grout while the casing is pulled upward. The grout level will be maintained within the casing during removal.

#### **PW-6Ub Well Design and Installation Depths**

- **0 to 45 feet:** 16-inch borehole with temporary casing (set bentonite seal)
- **45 to 70 feet:** 12-inch borehole with temporary casing
- **+2.5 to 50 feet:** 8-inch-diameter, stainless-steel blank riser pipe
- **50 to 65 feet:** Muni-Pak™ 8x10-inch diameter, 0.01-inch-slot continuous, wire-wrapped, stainless-steel screens prepacked with 30x40 Shur-Pak™ glass bead filter pack
- **65 to 70 feet:** 8-inch-diameter stainless steel sump (w/bentonite/organoclay grout around the sump)
- **0 to 5 feet:** concrete surface seal
- **5 to 48 feet:** bentonite grout with 10% organoclay
- **48 to 65 feet:** 20x40 silica sand
- **65 to 70 feet:** bentonite grout with 10% organoclay

Attached for reference are the following documents:

- Figure 1 – Proposed PW-6Ub location
- Figure 2 – Proposed PW-6Ub design drawing
- Boring log for PW-6U
- Muni-Pak and Shur-Pak Specification sheets

Please let me know if you have any questions or need any additional information to approve this design. Thanks.

**John J. Renda, RG**

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