June 9, 2023

Ms. Cindy Koepke
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

RE: May 2023 Well Pump Repairs
Refuse Hideaway Landfill
WDNR License #01953, WDNR Facility #113112010

Dear Ms. Koepke:

This letter summarizes the repairs made to the well pumps at the Refuse Hideaway Landfill (the Landfill) located at 7562 USH 14, Middleton, Wisconsin. The Landfill is located in the southwest quarter of the northwest quarter, Section 8, Township 7 North, Range 8 East, Dane County, Wisconsin.

On March 6, 2023, Cedar Corporation (Cedar) was accompanied by the Wisconsin Department of Natural Resources (WDNR), and Chris Lawn of QED to troubleshoot the issues with dedicated bladder pumps that was observed during the May and November 2022 sampling events.

While purging piezometer, P-31IB, water siphoned back down the well during the November 2022 sampling event, and it was also observed during troubleshooting efforts in March 2023. The siphoning restricted Cedar to collect a sample from the top of the well in November 2022. The pump was removed from the well, and Mr. Lawn brought the pump back to his shop to inspect the pump for any damage. During his inspection and testing, the pump did not demonstrate siphoning, or show any signs of damage. On May 11, 2023, Mr. Lawn and Cedar reinstalled the pump and the siphoning was not observed when tested. During the May 2023 sampling event, some siphoning was observed, however, it was not as significant. No cause for the siphoning could be determined, however, it may be related to a sticking check valve.

During the May 2022 sampling event, water would not come to the surface in wells P-8BR, P-31IA, and P-33D without the packers being removed from the wells. On March 6, 2023, P-31IA was evaluated. Once the packer was removed and water was properly discharging, the packer was returned to the well, and the pump continued to operate normally. No changes were made to this pump system at this time. However, during the May 2023 event, the packer system had to be removed for water to begin to properly discharge. A possible solution to the problem would be to remove the packer during the collection of water elevations, remove the weep hole fitting and replace it with a solid fitting (with no weep hole). After the sample has been collected, the weep hole fitting reinstalled, allowing the freeze protection to operate as intended.

Similar behavior was observed at P-8BR and P-33D. The packers and pump systems were removed from the wells. The pumps were disconnected from each system. Approximately 53 feet and 64 feet of tubing were removed from P-8BR and P-33D, respectively. The pumps were installed at depths of approximately 25 feet below ground surface (approximately 20 and 22

feet below water surface, respectively), new tubing was added to the bottom of the pump, with a stainless-steel drop tube installed within the screened interval of each well.

During the May 2023 sampling event, P-8BR was tested (not included in the sampling plan for this event) to determine the effectiveness of the changes. Water was brought to the surface with the packer still in place during the testing. The problem seems to have been resolved.

While sampling P-33D during the May 2023 sampling event, the packer system had to be removed to get water to properly discharge. Once it was properly discharging, the packer system was reinstalled, and it continued to operate normally. This well is scheduled for sampling during May of each year. A possible solution to the problem would be to remove the packer during the collection of water elevations, remove the weep hole fitting and replace it with a solid fitting (with no weep hole). After the sample has been collected, the weep hole fitting reinstalled, allowing the freeze protection to operate as intended.

Discussion

Issues with pumps were noted in wells P-8BR, P-31IA, P-31IB, and P-33D during the May and/or November 2022 sampling events. Upon inspection, no issues could be found with the pump at P-31IB; therefore no modifications were made. With the packer systems in place, water would not come to the surface at wells P-8BR, P-31IA, and P-33D. During troubleshooting efforts, as water discharged properly after the packer system was replaced, no changes were made to the pump system in P-31IA. Drop tubes were added to P-8BR and P-33D. The modifications appeared to remedy the problem at P-8BR, but not at P-33D. During the May 2024 sampling event, when groundwater elevations are collected, the weep hole fitting will be replaced with a solid fitting in wells P-31IA and P-33D. Once the sampling at these wells is completed, the weep hole fittings will be reinstalled. If this does not remedy the problem, additional troubleshooting efforts may be warranted.

Standard of Care

Please do not hesitate to contact me or Dan O'Connell at (920) 491-9081 should you have any questions regarding this project.

Sincerely,
Cedar Corporation

Ashley Wagner, P.G.
Senior Geologist

Dan O'Connell, P.G., C.P.G.
Environmental Manager