

2023 GROUNDWATER MONITORING AND MANAGEMENT

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| Date | 03/03/2023 |
| To / Contact info | BCWD Board of Managers and Karen Kill, District Administrator |
| From / Contact info | Stu Grubb, PG |
| Regarding | 2023 Groundwater Monitoring and Management Services |

Background

The BCWD has been monitoring groundwater levels in a network of 16 residential wells and 7 golf course wells since 2012. By sponsoring this data collection effort over several years, the BCWD has started to accumulate a significant database of changing groundwater elevations over time in different aquifers and in different parts of the district. This data has been helpful in documenting and understanding the very low baseflow observed in Brown's Creek in 2013 and the extraordinarily high water levels recently observed in the Kimbro Basin. The data has also been useful in calibrating regional groundwater models, such as the model recently produced by consultants for 3M. The key value to this data has been the consistency in data collection and the duration. The data will continue to be useful in the future, but only if BCWD continues to implement its groundwater monitoring program.

Groundwater is a regional resource that requires management on a regional level. Activities outside the watershed can have a significant impact to groundwater resources within the watershed district. State, county, and regional government agencies all have active groundwater management programs that affect the watershed district. In order to effectively manage groundwater within BCWD, watershed district staff and engineers must be engaged in water management activities outside the watershed district. We recommend that a budget be approved for EOR staff to attend meetings and engage with other groundwater management organizations on behalf of BCWD.

Scope of Services

Groundwater Monitoring

We are recommending that the BCWD continue to implement the groundwater monitoring program in 2023. EOR and Washington Conservation District staff will continue to work together on the monitoring and reporting of water levels from the current network.

Expanding the Well Network

In 2022, the BCWD Board of Managers approved the expansion of the well network to include other areas in the district where groundwater data will likely be important in the future. While this work was initiated in 2022, the majority of the work will be completed in 2023. The budget approved in 2022 will be used to complete this expansion of the data set in 2023.

As a reminder, the purpose for this expansion of the well network is to collect groundwater level information in those portions of the watershed that are likely more sensitive to flooding due to groundwater. The BCWD has a long history of dealing with flooding issues in closed basins. Often these basins have a relatively small watershed, and much of the flooding is due to rising groundwater elevations. Addressing these types of flooding issues requires an understanding of past groundwater levels and trends.

The critical monitoring areas were identified using the District’s landlocked basin evaluation. Some areas are covered by the current well network, but others could benefit from additional groundwater data nearby. Four to five additional residential wells will be targeted for monitoring. Acceptable wells are located near the areas of interest, have an existing well log, are completed in an aquifer of interest, and have a willing well owner.

EOR has identified 19 candidate wells for expanding the network. WCD mailed letters to the well owners asking if they would consider being part of the monitoring network. EOR will follow up on the letters and work with the willing well owners to get the necessary information and agreements in place so we can begin collecting data on the four to five additional wells.

Groundwater Management

We are recommending that BCWD approve a budget for EOR staff to attend meetings and participate in regional groundwater management activities on behalf of the watershed district. Most of these activities have not yet been scheduled and are often quickly organized to address new groundwater issues that arise throughout the year. Examples of past BCWD groundwater management activities include:

- Participation in meetings for the North and East Metro Groundwater Management Area sponsored by DNR.
- Contributions to development of the Metro Model groundwater model developed by the Metropolitan Council. This includes gathering information about infiltration and aquifer recharge rates in the watershed. The model is also being used to research the effects of climate change on groundwater resources.
- Engagement with Washington County programs such as the Water Consortium and the Individual Septic Treatment System regulatory program.
- Contributions to development of the 3M groundwater model used to simulate PFAS contamination and cleanup options. Although the contaminated areas are outside the watershed district, the domain of the groundwater model included all of Washington County and BCWD.
- Working with DNR to expand their observation well network in BCWD.

The following table summarizes the cost for EOR to perform these tasks in 2023.

| Tasks | Hours | Cost |
|---|-----------|-----------------|
| Monitoring the existing well network, including coordination with landowners and the WCD and producing a final report | 20 | \$3,127 |
| Expanding the well network to include 4-5 additional wells, including coordination with landowners and the WCD | 36 | \$5,576 |
| Groundwater management | 30 | \$5,940 |
| TOTALS | 86 | \$14,643 |

Requested Action

1. Approve this scope of services in the amount of \$18,072 as follows:
 - \$12,132 from account number 942-0004.
 - \$5,940 from account number 942-0011.