**Tri-Valley Groundwater Management District Well Monitoring Proposal**

**Date:** March 20, 2022

**Composed by:** Andy Puhvel, TVGWMD Advisory Board Member

**Overview:** The purpose of this proposal is to outline the current available data for static well water levels in the communities of Chalfant, Hammil Valley, and Benton, and to present a plan for future well water level measuring.

**Goals:** The goals of this plan are-

1. To present a thorough description of all the current publicly available data from previous and current reliable monitoring sources.
2. To present a plan for future groundwater data monitoring of 4 domestic wells in the communities of Chalfant, Hammil Valley, and Benton on a quarterly schedule.
3. To organize and present all the data on one website where residents, the board, and all interested parties can clearly see what is going on with the groundwater levels in the Tri-Valley area.

**Summary:**

 In order to make this process of data collection efficient and cost-effective, it seems to make sense to utilize any data previously documented by reliable sources over the years, and to integrate this data with current and future monitoring data. We have good data on the Chalfant landfill and the Benton landfill which both have 4 wells each designated specifically for water level measurement. There is also data from many LADWP wells in Chalfant Valley. The geographical areas which seem to need more wells for data collection are Hammil Valley and Benton.

 It should be mentioned that the data collection in this plan is based around the goals set by the TVGWMD Strategic Plan which seeks to eventually produce a Groundwater Model of the Tri-Valley Area. Such a groundwater model will depend on reliable data collected from a large geographical area over a long period of time. Without this data it is difficult to establish a quality Groundwater Model and therefore the time to begin filling in data gaps is now.

 This proposal includes

1. Links to current monitoring data for the Chalfant Landfill well and the Benton Landfill well.
2. Links to maps of locations of LADWP Wells and data from these wells.
3. Proposed bid from TEAM Environmental for monitoring of 4 additional domestic wells.

**Current Available Data:**

1. **Chalfant Landfill and Benton Landfill Wells**

Mono County has been measuring and keeping very thorough data on the groundwater levels at the Benton and Chalfant Landfill wells since 1990. This data collection has been contracted by the county to a few different professional monitoring firms including TEAM Engineering from 2012-2017, and since 2018 has been performed by McGinley and Associates, a Reno based company. These reports are done twice a year, once in the spring and once in the fall and are roughly 80 pages in length. They have very thorough documentation of groundwater level measurements in 3-4 different wells around the Chalfant Landfill, and 2-3 wells at the Benton Landfill (Each Landfill site has 4 monitoring wells located on the four corners of the landfill parcel in order to have thorough monitoring). The reports also include detailed hydrographs which display the pattern and amount of groundwater level dropping in both areas based on data from 2-3 wells per landfill. Roughly speaking the groundwater level in Chalfant is dropping 1 foot/year, and the groundwater level in Benton is dropping .5 feet/year. According to Justin Nadler the Superintendent of Mono County Public Waste Department, this level of monitoring will be reported and documented until at least 2038 and most likely beyond. Based on the thoroughness and amount of funding Mono county is investing in having these reports produced by McGinley and Associates it seems reasonable to say that the TVGWMD does not need to perform their own well measurements at these two locations, nor does it need to hire another firm to perform more measurements. This will save the district money and time by taking advantage of the Mono County program already in place. This data can all be found by following the links below:

1. Copy and paste this into your browser- www.Geotracker.waterboards.ca.gov
2. In the Search Bar type in Chalfant (or Benton), both will pull up the landfill well sites.
3. In the top horizontal menu select Site Maps/Documents
4. Scroll down to Monitoring Reports. Select a Detection Monitoring Report (DMR) from the year you want to look at. Each year has a spring (First half) report and a Fall (Second Half) report.
5. Table 1 in the reports show a summary of current and historical groundwater elevation data beginning in 1990 and going through 2021 for 3-4 different wells in both landfill locations.
6. Appendix E is a Hydrograph showing the steady drop in groundwater level documented over thirty years.
7. **LADWP Wells**

There are approximately 10 LADWP wells in the Chalfant Valley which are monitored for levels by the DWP. The data and hydrographs for these wells can be found by following the link on the OVGA database below.

1. Copy and paste this into your browser- https://owens.gladata.com/default.asp#
2. If you hit the droplet on the left side a Map Layers bar will expand.
3. Under “monitoring Points” click “Filter by Other”, “Contains Water Level Data” and then the blue dots or green circles will be the wells with DTW data.
4. Click on the one you are interested in, click “View extended details” and then the “Levels” tab

**TVGWMD Data Collection from Domestic Wells**

There has been a sizable amount of residents volunteering their wells for measurement. In order for this data to be collected accurately, reliably, and safely from a liability point of view, it makes sense to have it done by professional hydrologists. I have contacted Naomi Jensen who owns TEAM Engineering in Bishop. She grew up in Chalfant and is very knowledgeable about the wells and groundwater situation in our area. Her firm had the contract for measuring the Chalfant Landfill and Benton Landfill wells for a period of time.

 Naomi and her colleagues at TEAM Environmental have submitted a proposal for quarterly monitoring of 4 domestic wells in the Tri-Valey Area. The proposal is attached to this email and a summary is presented below.. The proposal has two separate quotes which deal with two different types of monitoring procedures and equipment. The first is manual water level measurement, and the second is data collection from pressure transducers. The use of pressure transducers is a more complicated and involved method of monitoring and should be ignored in this Tri-Valley Data collection plan and perhaps deliberated upon in the future. A quick summary of their proposal is below:

 TEAM Environmental will provide third-party, objective groundwater level monitoring at 4 privately-domestic wells in the TVGWMD on a quarterly basis and to provide a tabular summary of water level data collected as requested. The initial process of determining well suitability and start up costs are included in this estimate, but once the measuring program is active the costs for the following years should be less assuming there are no new wells added to the monitoring program.

Estimated Yearly Cost- $6500.00

**Which wells would be included in monitoring program**

Currently 4 members of the Advisory Board have volunteered their wells for monitoring. Their names and well locations are listed below. One of these wells is adjacent to the northwest corner of Chalfant and pretty much as close as you can get to the Northeast spring of Fish Slough which is an area in need of more monitoring. Two of these wells are in Hammil Valley which has the least data available. It would be wise to brainstorm other property owners in Hammil who would be willing to participate in the program. Finally, one of these wells is in Benton on the south side of town and the west side of the highway. All but the Benton well have original well reports filed with Mono County Dept. of Health which include baseline data for static water level at the time of drilling.

**Proposed List of wells which the TVGWMD would contract with TEAM Environmental for monitoring on a quarterly basis**

1. Hammil Valley- Andy Puhvel’s Well – 445 Hammil Rd. APN- 25-200-76. Well depth 300 feet. Original well drilling report available. Drilled on 2/26/03. Water Level at time of install- 123’. Current water level- 166’.
2. Hammil Valley- Dennis Murphy’s Well- First Light Ranch 260 Hammil Valley Road Bishop, 93514. APN# 025-200-066-000. Original well drilling report available.
3. West Chalfant- Betsy and Harold McDonald’s Well- 217 Buena Vista Drive

APN # 026-390-010. On the far west side of Chalfant. Looks good to go for equipment installation. Original well drilling report available.

1. Benton- Michael Cooke’s Well. 24417 Highway 6, Benton, CA  93512

Primary well: APN # 025-030-002-000

 Secondary well APN # 025-030-031-000

 No well reports available.

**Criteria for what wells are suitable for monitoring**

1. Well owner compliance for quarterly monitoring. The owner must agree to sign the liability waiver provided by the TVGWD and the consulting firm hired to do the monitoring.
2. A well which is situated not too close to another well in the monitoring program in order for the data to better represent a wider geographical area.
3. A well which has a fairly predictable schedule for pumping so that data measurement can be coordinated when the well has not been recently pumped and therefore gives an accurate measurement of the static water level.
4. A well which has some known evidence of its internal pumping system and how the electrical and plumbing has been set-up in order to insure the measurement device does not entangle or interfere with the well’s internal components.

**Data Presentation**

The eventual goal would be to establish a place on the web, perhaps on the TVGWB website where all the data could be organized and easily viewed by residents and the public. This portion of the plan needs to be discussed and figured out.