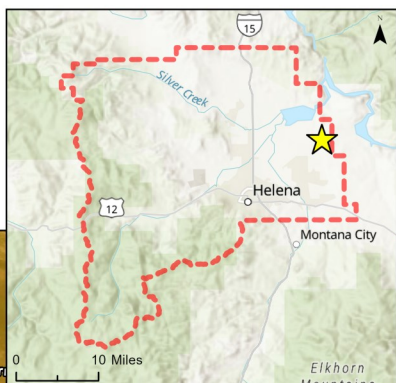




EMERALD RIDGE AND FOX VIEW ESTATES:

On-Going Groundwater Depletion Study

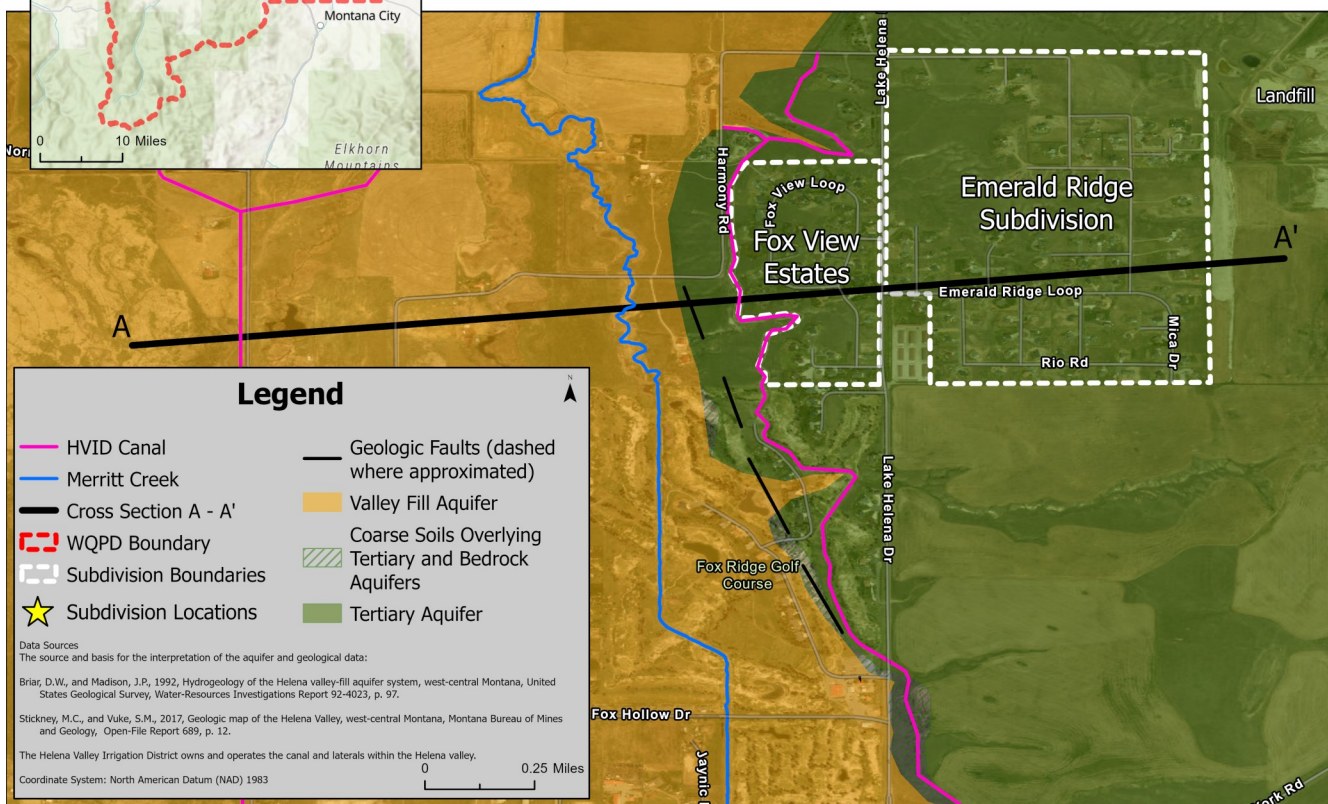
SUMMARY



The Emerald Ridge subdivision began development in 2005 and now includes approximately 100 homes. Over time, residents began noticing the groundwater level was dropping which prompted many residents to install additional wells at deeper and deeper depths. The newest wells often exceed 700 feet. Beginning in 2012, the Water

Quality Protection District (WQPD) began monitoring the groundwater levels across the subdivision and relaying the data to the residents. This is an update on the on-going work.

As of 2025, the groundwater levels continue to slowly drop.



What is under our feet?

Valley-Fill Aquifer

- ⇒ Underlies most of the Helena Valley
- ⇒ Clay with extensive sands and gravels.
- ⇒ Sands and gravels are interconnected and act as a single aquifer body.
- ⇒ Allows for faster groundwater movement, but more susceptible to contamination.

Fault

- ⇒ North-south running fault (dashed black line on map)
- ⇒ Likely prevents groundwater from the Valley-Fill Aquifer from recharging the groundwater under the subdivisions.
- ⇒ Groundwater from deep in the valley could be moving upward along the fault to help recharge the aquifer.

Tertiary Aquifer

- ⇒ Underlies both Emerald Ridge and Fox View Estates subdivisions.
- ⇒ Thick layers of clay and silt slow down the movement of groundwater
- ⇒ Small lenses of sands and gravels within the clay allow for faster groundwater movement, but cannot sustain long-term pumping.

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SUMMARY

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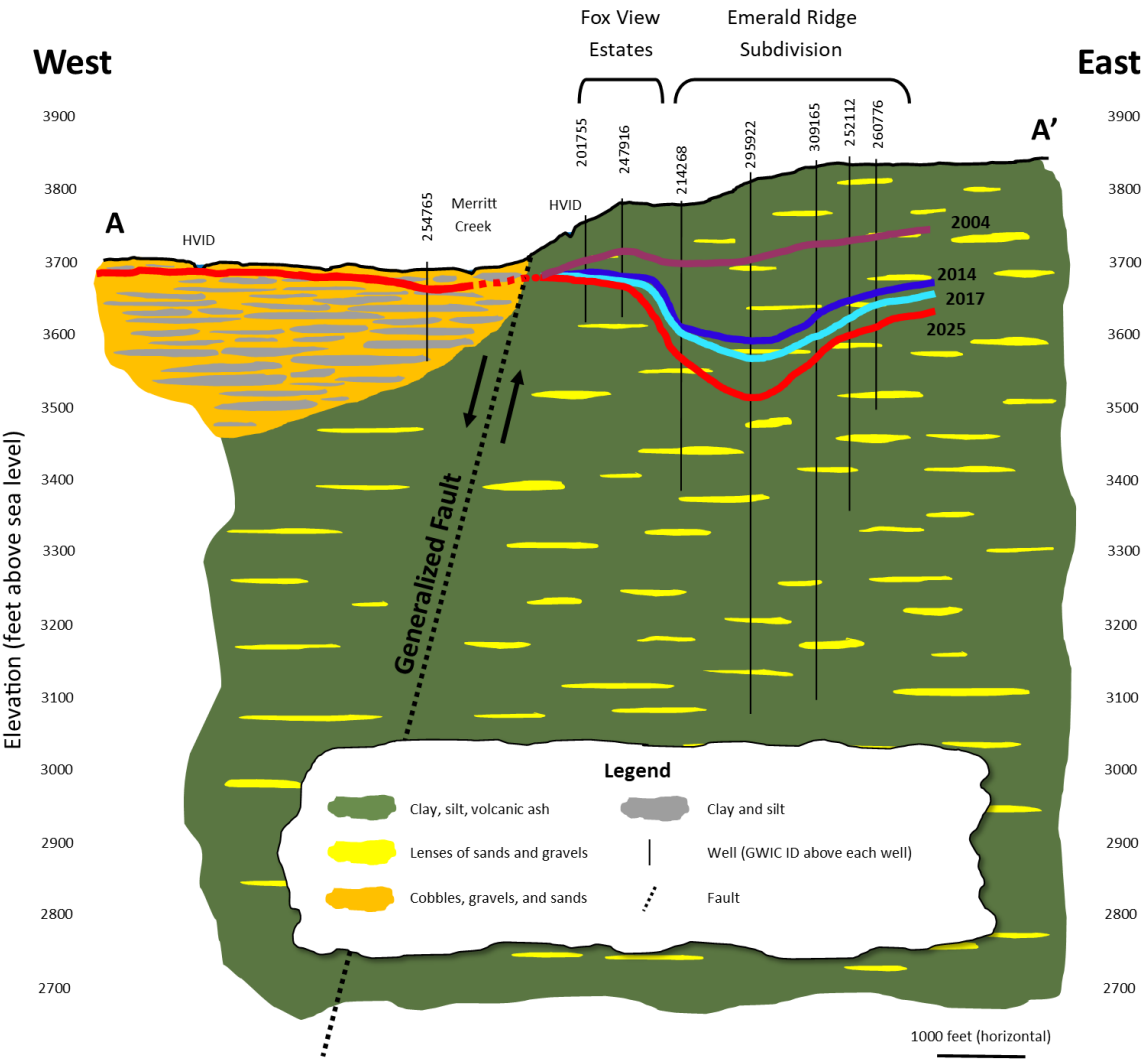
Groundwater Level Over Time

Emerald Ridge

- ⇒ The largest decline in groundwater is in the south-central area where there is the greatest number of wells: 4.8 feet per year on average
- ⇒ The eastern edge of Emerald Ridge, where there are fewer wells, has seen a slower rate of groundwater decline: 1.7 feet per year on average.

Fox View Estates

- ⇒ The groundwater under Fox View Estates has been remaining constant.
- ⇒ The nearby Helena Valley Irrigation District (HVID) canal helped recharge the aquifer each summer.
- ⇒ During the summer of 2025, the HVID installed a clay liner in the nearby canal which may impact the long-term groundwater levels.



What is the WQPD doing?

Continue to monitor groundwater levels.

The WQPD will continue to monitor the groundwater levels in numerous wells across Fox View Estates and Emerald Ridge subdivisions. If there are changes to the groundwater level trends, the WQPD will inform the property owners.

Inform the public and share data

All of our data are free and open to the public through our website. We have an online map that displays the groundwater levels and is updated each month. We also welcome any and all opportunities to attend meetings with the property owners to help them understand their groundwater and how they can work together to minimize the groundwater decline.

Check out our website below or use the QR code to view our groundwater data map!

<https://www.lccountymt.gov/Government/Public-Health/Water-Quality-Protection-District>