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Vermont Department of Health Ranking Indices

This summary highlights the resources and methods the health department used to identify towns with low water quality and high well use to prioritize communities for a private well testing outreach campaign. The rankings help focus outreach efforts where they can have the greatest impact on public health.

This method uses multiple factors and their groundwater chemistry database, which contains 12 years of information. Vermont's top eight contaminants are arsenic, manganese, uranium, nitrate/nitrite, fluoride, gross alpha radiation, radon, and chloride.

Supporting references: 2020-2023 U.S. Census, Vermont Well Completion Report database, Vermont Community Resilience index, list of municipalities, groundwater chemistry database.

1. **Calculate the Water Quality Index.** Summarize exceedances, mean, and 95th percentiles for each groundwater contaminant of interest for each town. Then complete the following actions:
 - Calculate the exceedance rate for each contaminant by municipality.
 - Present the information in a map.
 - Rank all municipalities within the 25th percentile of lowest (worst) water quality and combine exceedance rates.
2. **Estimate the Private Water Index.** Use U.S. Census population data, number of wells, testing rates, and water quality data to rank populations using private wells.
 - Estimate the number of private water users in each municipality.

- Take top 40th percentile of communities with high well use, low testing rates, and low water quality.
 - Use community resilience indicators and select factors that could contribute to low testing rates in each community (access to broadband internet, vehicle ownership, employment status).
 - Use ranked list to identify the health districts for the top 10 communities.
3. **Develop tailored factsheets for each community.** Look at specific contaminants in each town, exposure through drinking water, and health effects.
 4. **Partner with local health offices and develop a specific outreach strategy.** Meet with local officials to conduct the outreach.
 5. **Obtain feedback from local health and community partners.**