



**SUMMER 2006 FACT SHEET**  
**SIX MILE RICHARDSON HIGHWAY GROUND WATER STATUS**  
**NORTH POLE, ALASKA**

**AUGUST 2006**

---

---

**Background**

Since 1995, the ground water quality in the Six Mile Richardson Highway area has been monitored by the Alaska Department of Environmental Conservation (ADEC). The monitoring consists of sampling a series of permanent monitoring wells and a selected number of private residential wells to track the location and concentration of an area-wide trichloroethene (TCE) ground water plume. Please refer to previous fact sheets that can be found at [http://www.dec.state.ak.us/spar/csp/sites/6mile\\_area.htm](http://www.dec.state.ak.us/spar/csp/sites/6mile_area.htm) for historical background information. The following is a summary of the fall 2005 residential and the spring 2006 monitoring results.

**Executive Summary of What's New**

Natural attenuation (or degradation) of the TCE ground water plume continues to occur on a regional scale and it is not expanding. TCE concentrations in the majority of the monitoring wells continue to decrease, whereas concentrations in a few monitoring wells remain stable, neither increasing nor decreasing. In one monitoring well the TCE has increased but the increase was not significant.

In regards to drinking water wells, only one residential well has TCE concentrations above the maximum contaminant level (MCL) of 5 micrograms per liter ( $\mu\text{g/L}$ ) and there is evidence that the TCE concentrations are decreasing.

There is another residential well that may have increasing TCE concentrations but the levels remain below MCL and there are problems associated with the landowner allowing access to sample the well.

ADEC will continue to sample the residential wells on an annual basis to ensure protection of public health. It should be noted though that the area-wide ground water monitoring will be conducted on a biannual (every two years) basis with the next area-wide sampling scheduled for 2008.

**Background**

In 2001, two permanent monitoring wells were located down gradient from the major TCE source area. One of the monitoring wells, MW-31, was positioned to measure the TCE groundwater concentrations between 60 to 70 feet below the ground surface (bgs) while the second well, MW-32, measures the TCE concentrations between 30 to 40 feet bgs. Previous ground water investigations found the majority of the TCE in this source area is located in the upper part of the aquifer. As a result, MW-32 (the shallower well) was used to estimate the TCE concentrations migrating from the source area.

In order to forecast the duration of this contamination, ADEC used a fate and transport model to estimate the duration of the area-wide TCE ground water plume. Based on the model results, ADEC estimates the TCE contamination in MW-32 could achieve the cleanup level of  $5\mu\text{g/L}$  in 2027. Similarly, other

monitoring wells further from the source area could also attain the TCE cleanup level within the same approximate timeframe. The lower 95% confidence limit predicts cleanup as early as 2020, and the upper 95% confidence limit predicts cleanup late as 2043. ADEC will use the upper 95% confidence limit (2043) for future planning purposes. These estimated times are expected to change somewhat as future data is added.

In 2005, sixteen residential wells were scheduled for sampling but only nine wells have been sampled to date. Some owners would not allow access, other owners could not be contacted, and some wells are not operative.

Only one residence remains slightly above the TCE cleanup level out of nine residences sampled. However, the concentration continues to decrease at this residence.

Overall the concentrations of most contaminants are declining which is consistent with previous sampling events. Slight increases in some contaminant concentrations from year-to-year are within the expected range of the natural variability of the sampling event, and the increases are well below the cleanup levels.

#### **What's in the Future in 2006 and Beyond**

Sampling of residential wells will continue on an annual basis until the TCE concentrations at each well are below the target action level of 3.5 µg/L. Residential wells are scheduled for sampling in 2006.

Since the area-wide ground water plume has remained stable since 1995 and the TCE concentration in most of the monitoring wells can be predicted using models, ADEC will now monitor the area-wide ground water quality every two years. There will be a limited study (in fall 2006) of recently installed monitoring wells for trend analysis but the larger area-wide ground water monitoring is now scheduled for 2008.

If you have any questions or need additional information, please contact the ADEC project manager, Mr. Douglas Bauer, at 907-451-2192 or at [Doug\\_Bauer@dec.state.ak.us](mailto:Doug_Bauer@dec.state.ak.us).