



BENTLEY MALL EAST SATELLITE BUILDING



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Database Name: Bentley Mall East Satellite

Status: Active

Location: College Road, Fairbanks

Latitude: See database entries

Longitude: See database entries

DEC Contaminated Sites contact: James Fish, Project Manager, (907) 451-2117 (Fairbanks)

Contacts updated: July 18, 2014

PDF Version

Summary updated: June 2008

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Description

The East Satellite is an out-building that is part of the larger Bentley Mall complex on College Road in Fairbanks, Alaska ([see Figure 1](#)). The owners of the mall, Bentley Mall LLC of San Francisco, California have worked cooperatively with the Alaska Department of Environmental Conservation ([DEC](#)) in performing an environmental assessment.

It appears that a historical release of the chlorinated solvent perchloroethylene ([PCE](#)), a common dry cleaning solvent, has contaminated both the soil and groundwater in the vicinity of the East Satellite Building. Apparently the release is associated with the operation of a dry cleaner that occupied a portion of the building in the late 1970s or early 1980s. The PCE was presumably released along a private sewer line that runs west from the building.

Preliminary results from on-site monitoring wells strongly suggest that there is a PCE groundwater [plume](#) that extends off-site to the west-southwest. The length of the plume is unknown at this time. Hydraulically down gradient from the site are small businesses, Noyes Slough, and a residential subdivision. The levels of PCE that were detected in the on-site soils and groundwater necessitate an expanded investigation scheduled for 2004.

Perchloroethylene (PCE) and several of its natural degradation products were detected in 2003 during a routine real estate environmental assessment in several groundwater monitoring wells located on Tax Lot 221 (location of the Fred Meyer store on College Road, [see Figure 1](#)). The detection of the contaminants in the groundwater suggested several possibilities: there has been an historical release of PCE on Tax Lot 221; the contaminated groundwater is coming from a release that is hydraulically up gradient from Tax Lot 221; or a combination of both. To date there is no known evidence documenting a PCE release on Tax Lot 221.

The Bentley Mall East Satellite Building and VIP Cleaners are located hydraulically up gradient from Tax Lot 221. The East Satellite Building housed a dry cleaner operation approximately twenty years ago while the VIP Cleaners is a currently operating dry cleaning facility. The owners of both properties worked cooperatively together to determine if their respective facilities were associated with the contaminated groundwater. Several soil borings were taken and groundwater monitoring wells were installed hydraulically up and down gradient from the facilities. A follow up assessment used passive soil vapor collectors to confirm the initial findings.

Public Health and Environmental Concerns

The following findings are preliminary in nature and should be viewed as a working hypothesis. As additional information becomes available, uncertainties should diminish.

1. PCE was detected above DEC clean up levels in two soil borings (ES-1 and ES-2) that were located in close proximity to the East Satellite

- Building (see Figure 2). The concentrations were 0.242 milligrams per kilograms (mg/kg) and 0.292 mg/kg respectively for ES-1 and ES-2 respectively. The cleanup level is 0.03 mg/kg.
2. PCE was detected above DEC clean up levels in three groundwater monitoring wells that are located either in close proximity to or hydraulically down gradient from the East Satellite Building. Monitoring wells BM-6, BM-5, and MW-2 contained PCE at 55.6 micrograms per liter ($\mu\text{g/l}$), 1540 $\mu\text{g/l}$, and 2910 $\mu\text{g/l}$ respectively. The clean up level is 5 $\mu\text{g/l}$.
 3. Monitoring well BM-4 located hydraulically up gradient from and between the East Satellite Building and VIP Cleaners detected PCE at 3.6 $\mu\text{g/l}$.
 4. Monitoring wells located hydraulically up gradient from VIP Cleaners did not detect PCE.
 5. Elevated levels of PCE were detected in the soil gas samples in close proximity to the East Satellite Building and in several areas along the private sewer line that runs to the west from the building (see Figure 3). The elevated soil gas levels can be caused by PCE in the vadose zone soil (soil between the ground surface and the water table), PCE in the groundwater, or a combination of both.
 6. Trichloroethene (TCE), a chlorinated solvent and a natural degradation product of PCE, was detected slightly above the DEC groundwater clean up level at MW- 3.

Based on these findings, DEC concluded that an expanded assessment is necessary. The concentrations of PCE in the soil and the on-site groundwater strongly suggest the East Satellite Building and its associated sewer line is the probable source. The information also strongly suggests that a PCE groundwater plume extends off site towards the west-southwest in the direction of the regional groundwater flow. Based on DEC's experience with similar chlorinated solvent groundwater plumes in the Fairbanks area, the data also suggests that the East Satellite plume might impact Noyes Slough and extend into a residential area further to the west.

Current Status

The DEC met with owners of the Bentley Mall in December 2003 to outline a course of action for the expanded assessment. The DEC will work over the winter months with the Mall's local environmental consultant to develop a work plan that can be implemented during the 2004 field season. The goals are to determine the extent of the soil and groundwater contamination so that cleanup decision decisions and costs can be determined by fall 2004.

The major activities include:

1. Complete the delineation of on-site soil contamination.
2. Delineate the horizontal and vertical extent of the off-site PCE groundwater plume with sampling of Noyes Slough or private irrigation wells as appropriate.
3. Assess the potential of vapor intrusion in the occupied buildings; measure soil gas and indoor air quality at appropriate locations.
4. Assessment of practical soil and groundwater remedial technologies.

Update

April 2005

A groundwater investigation was conducted over the winter 2004/2005 to delineate the vertical and horizontal boundaries of the PCE groundwater plume. Most of the groundwater plume was delineated. Additional monitoring wells will be installed in the future to locate the end of the plume.

The estimated horizontal extent of the PCE groundwater plume is shown in [Figure 4](#). The figure was generated by the DEC using a mathematical interpolation algorithm. It estimates the location of the groundwater plume. The actual location of the plume may differ somewhat from what is shown.

The red contour line in [Figure 4](#) represents the 5 micrograms per liter ($\mu\text{g/L}$) concentration which is the public safe drinking water standard. The area enclosed by the 5 $\mu\text{g/L}$ contour represents the estimated area where the groundwater is above the public safe drinking water standard. ADEC wants any private wells within this area identified and possibly sampled in the future.

Additional detailed information is provided in [Figure 5](#). PCE concentrations are shown for the individual sampling locations. At some sampling locations, PCE was detected at two different depths at the same location. Please see Figure 5's legend for additional explanation.

The possibility of vapors from either PCE contaminated soil or groundwater migrating into nearby buildings is under investigation. Indoor air was recently sampled at the East Satellite and Wells Fargo buildings (see [Figure 5](#) for locations). The preliminary sampling results are being evaluated.

June 2008

See Record of Decision below

More Information

- ▶ Record of Decision, ([PDF 833K](#)) approved March 2007

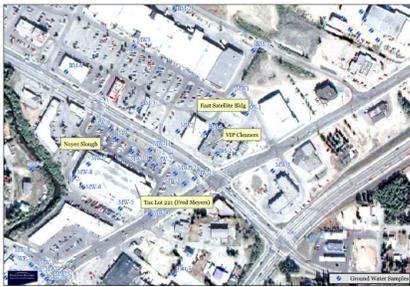


Figure 1: Bentley Mall East Satellite Building



Figure 2: Bentley Mall East Satellite Building

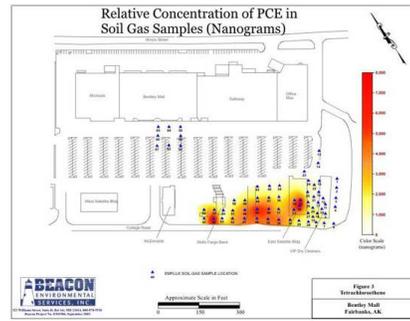


Figure 3: Bentley Mall East Satellite Building

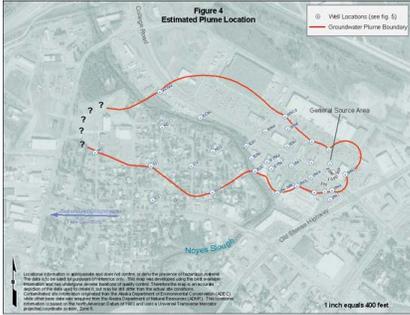


Figure 4

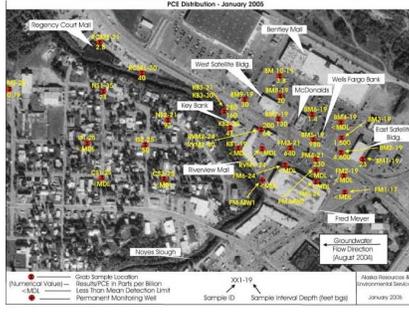


Figure 5

[Glossary/Acronyms](#) [Site Map](#) [Commissioner](#) [Public Notices](#) [External Links](#)

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