STATE OF ALASKA
DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM

SARAH PALIN, GOVERNOR

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File: 102.38.122

March 1, 2007

David Rawson
Bentley Mall LLC
425 California Street, Suite 200
San Francisco, CA 94104

Re: Record of Decision
Bentley Mall East Satellite Building
Tax Lots 217 and 225, Fairbanks, Alaska

Dear Mr. Rawson:

The Alaska Department of Environmental Conservation, Contaminated Sites Program, (ADEC), reviewed the site specific information associated with the Bentley Mall East Satellite Building located in Fairbanks, Alaska. Based on the information presented to date, ADEC has determined that soil and groundwater contamination remains at the site above the most stringent 18 AAC 75 cleanup levels. However, the nature and extent of this contamination does not pose an unacceptable risk to human health or the environment, and, as a result, a conditional closure status will be issued for this property subject to conditions outlined in this document.

Please note the following information that was considered in making the determination on the environmental status of the site.

**Site name and location**
The Bentley Mall East Satellite Building is located on College Road in Fairbanks, Alaska and described as Tax Lots 217 and 225, Section 2, Township 1 South, Range 1 West, Fairbanks Meridian.

*Name and address of owner/operator of the property*

Bentley Mall, LLC
425 California Street, Suite 200
San Francisco, CA 94104

The current owners acquired the property in 2002 from the Bentley Family Charitable Trust.

**Regulatory authority**
18 AAC 75 and 18 AAC 78

**Contaminated Site file number**
Reckey numbers 2003310906201, file number 102.38.122.

The following documents were reviewed in preparation of this decision:

A. AGRA Earth and Environmental, Inc. report titled *Phase I Environmental Site Assessment Tax Lots 217 and 225 Bentley Trust Property Fairbanks, AK* dated July 1999.
B. Alaska Resources and Environmental Services, LLC report titled *Phase II Environmental Site Assessment Bentley Mall Complex Fairbanks, Alaska* dated March 2003
C. Alaska Resources and Environmental Services, LLC report titled *Phase II Environmental Site Assessment Addendum Bentley Mall Complex Fairbanks, Alaska* dated November 2003.
D. Alaska Resources and Environmental Services, LLC report titled *Bentley Mall Soil Sample Results* dated November 2004.
E. Alaska Resources and Environmental Services, LLC report titled *Bentley Mall Groundwater Sample Results Summary* dated February 2005.
F. Alaska Resources and Environmental Services, LLC report titled *Bentley Mall Site Characterization Work Plan* date April 2004
G. Alaska Resources and Environmental Services, LLC report titled *Bentley Mall Site Characterization Report* dated April 2006.
H. Alaska Resources and Environmental Services, LLC report titled *Bentley Mall Corrective Action Plan* dated January 2006.
I. Alaska Resources and Environmental Services, LLC report titled *Remedial Action Work Plan Bentley Mall Fairbanks, Alaska* dated June 2006.
J. Alaska Resources and Environmental Services, LLC report titled *Air-Sparging and Vapor-Extraction System Installation and Start-Up Report* dated January 2007.

## 1.0 Site History

The following is a general summary of the site activities and development based on analysis of historical title information and historical aerial photographs:

The site was part of the Bentley Dairy from approximately 1922 through the 1940s. By 1947 the property had been cleared and was used by the Miller-Bentley Equipment Company as a junkyard. The site ownership was transferred to the Bentley Family Charitable Trust in November 1969. By 1974 the Miller-Bentley Equipment Company was removed from the site and construction of the Bentley Mall began in 1976. Development of the property as a retail shopping mall center continued through approximately 1994.

In 2003, contaminated ground water was discovered along the northern boundary of Tax Lot 221. Tax Lot 221 is the former location of Fred Meyer East store and the tax lot is located south of and across College Road from the Bentley Mall. Since the ground water flow direction is generally from the east to the west in this area, it was possible that the contaminated ground water discovered on Tax Lot 221 originated on the Bentley Mall property (Tax Lots 217 and 225).

Subsequent site investigations on the Bentley Mall confirmed that historic releases of Tetrachloroethene (PCE) had occurred in the vicinity of the Bentley Mall East Satellite building and at several locations along the wastewater line that serves the area. The PCE has contaminated the vadose zone soil (soil from the ground surface to the water table), the upper portion of the saturated zone soil (soil beneath the water table), and the ground water above the ADEC's regulatory levels.

There is a ground water contaminant plume that originates on the Bentley Mall property and extends off the property to the west/southwest. The ground water contaminants include PCE and Trichloroethene (TCE).

The migration of PCE and TCE vapors into the Wells Fargo Bank and the East Satellite building has been identified as a possible area of concern. As a result, active remediation of the contaminated soil and ground water began in August 2006 in accordance with an ADEC approved corrective action plan.

## 2.0 Site Characterization Summary

The site characterization of Tax Lots 217 and 225 was consistent with the requirements of 18 AAC 75.335.

The Bentley Mall is a 15 acre retail shopping complex composed of Tax Lots 217 and 225. The complex consists of five buildings: the main mall and four satellite buildings. The parking areas and roadways are asphalted-paved and landscape vegetation is very limited. Please see AGRA Earth and Environmental Figure 2 in the appendix to this Record of Decision (ROD) for a schematic of Bentley Mall.

Tax Lot 217 contains the retail shopping mall and three of the satellite buildings. Tax Lot 225 contains the fourth satellite building, the McDonald's restaurant.

The main mall consists of four contiguous buildings: the 49,000 square foot main mall, the 38,000 square foot Safeway store, the 28,000 square foot Michael's store, and the 25,000 square foot Office Max store. There are two 9,500 square foot satellite buildings, the East and West buildings. The other two satellite buildings are the 5,000 square foot McDonald's restaurant, and the 1,600 square foot Wells Fargo Bank.

The East Satellite building was operated as a dry cleaner facility from 1979 through 1983. Several floor drains in the building are tied into the community wastewater system.

Contaminated Soil

The primary contaminant of concern in soil is PCE and it was detected above the 18 AAC 75.341 Table B1 Method 2 migration-to-ground water concentration of 0.03 milligrams per kilogram (mg/kg) during the Phase II Environmental Assessment. The maximum PCE concentration is 0.590 mg/kg which is below the ingestion and inhalation values in Table B1 Method 2.

TCE is a secondary contaminant of concern in soil. Although it has not been detected above the migration-to-ground water concentration of 0.02 mg/kg in the vadose zone soil, ground water concentrations of TCE above its maximum contaminant level in ground water infer that TCE exists

in the saturation zone above its migration-to-ground water concentration. See below for a summary of ground water contaminants.

The horizontal extent of the soil contamination can be estimated by using the results of a passive soil gas survey for PCE. The survey area with the highest mass of PCE in the soil gas approximates the areas of soil contamination. Please see ARES Figure 4 in the ROD appendix for the soil gas survey results.

Ground Water Contamination

Both PCE and TCE are primary contaminants of concern in ground water. Maximum concentrations of PCE and TCE were 4,600 micrograms per liter (µg/L) and 210 µg/L respectively and were detected east of the East Satellite building. The ground water cleanup level for both PCE and TCE is 5µg/L.

The ground water contaminant plume extends from the East Satellite Building westerly into the Charles Slater Subdivision. Please see ARES figure titled PCE Distribution – January 2005 in the ROD appendix for the extent of the ground water contaminant plume. There are no known potable drinking water wells within the plume but there are two seasonal irrigation wells identified. The Bentley Mall offered to pay for the closure of the two irrigation wells but the owners did not respond to the offer. The Charles Slater Subdivision is provided drinking water by Golden Heart Utilities and a City of Fairbanks ordinance does not allow private drinking water wells when drinking water is provided by the Utility.

Vapor Intrusion

Both PCE and TCE are primary contaminants of concern with respect to potential vapor intrusion into buildings and indoor air quality. Indoor air samples were collected from March through July 2005 and PCE and TCE were detected above the Environmental Protection Agency (EPA) target levels in the East Satellite Building and Wells Fargo Bank. The highest concentration was detected in the Wells Fargo Bank with PCE at 290 micrograms per cubic meter (µg/m$^3$) and TCE at 6.8 µg/m$^3$.

The EPA has established a target level for PCE at 8.1 µg/m$^3$ and TCE is 0.22 µg/m$^3$. The levels are based on both the prescribed risk level and the target hazard index, as shown in Table 2b of the EPA Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils. It should be noted, however, that the EPA draft guidance is designed to assess human health risks for residential use property (24-hour occupancy) and not for settings that are primarily commercial in nature.

Outdoor air samples were not collected as part of the investigation so there is not a baseline to be used for comparison purposes. An inspection of the Wells Fargo Bank building did not reveal any source(s) of contamination that could contribute to the indoor air levels of PCE and TCE. However, the East Satellite building has a nail salon business in addition to a wedding and tuxedo rental business that may be a contributing source of contamination.

The Wells Fargo Bank building had the highest level of PCE (at 290 µg/m$^3$) whereas the East Satellite building had the highest level of TCE. In response, the heating ventilation and air conditioning controls were adjusted to maintain a positive building pressure in March 2005. The

buildings were re-sampled in July 2005 and PCE and TCE levels decreased significantly in both buildings. The decrease in PCE and TCE levels from March to July is likely the result of maintaining a positive pressure in the buildings and the seasonal temperature variation which results in a lower pressure differential between the ground and the building during the warmer summer months.

Surface Water Contamination

Noyes Slough is a small tributary to the Chena River and is located approximately 150 meters southwest of the subject property. Surface water samples were collected in July 2005 as part of the investigation to determine the potential for discharge of chlorinated volatile organic chemicals (VOCs) in ground water to Noyes Slough. Please see ARES figure titled Noyes Slough Sampling – June 2005 and Table G.1 in the ROD appendix for the sampling results.

Groundwater elevations from a monitoring well located next to Noyes Slough and surface water elevation data indicated Noyes Slough was neither gaining from nor discharging to the groundwater table. Surface water samples using Passive Diffusion Bag Samplers detected PCE and TCE were present in Noyes Slough at levels slightly above ADEC cleanup level (5.0 µg/L) at 6.9 µg/L and 6.8 µg/L respectively.

Conceptual Site Model Summary

The following is a conceptual site model narrative from the Alaska Resources and Environmental Services, LLC (ARES) Site Characterization report:

The groundwater bearing unit consists of the sands and gravels of the approximately 400 foot thick Chena formation. The water bearing unit is a single aquifer.

The soil lithology consists of unconsolidated sediments to depth of 70 feet below ground surface (bgs). Sediments consist primarily of course-grained silty and sandy gravels interspersed with layers of well-graded clean sands. Fine-grained sediment (silt) was encountered 7 to 8 feet bgs; however, soil borings indicated no confining layers or aquitard down to the sampling depth of 70 feet bgs.

Soil samples collected in the vicinity of the East Satellite building and along the wastewater line detected only PCE above regulatory limits. The levels of PCE generally increased in depth near the wastewater line.

The groundwater table is approximately 16 to17 feet bgs and has a gradient orientated in a westerly direction at a magnitude of approximately 0.0019 feet per foot.

The former dry cleaning operation located in the East Satellite Building appears to be the source of chlorinated VOCs in the soil gas, soil, and groundwater. This was confirmed by soil-gas, soil, and groundwater samples collected both up-gradient and down-gradient from the East Satellite building. Furthermore, the wastewater sewer line serving the East Satellite building and located adjacent to the north side of College Road, also appears to be a source of chlorinated VOCs to soil and groundwater.

The PCE in groundwater originates from the East Satellite building and the lateral extent of chlorinated VOCs in groundwater has been delineated from the former dry cleaning operation and properties located hydraulically down-gradient from the Site. The longitudinal axis of the distribution of chlorinated VOCs in groundwater coincides with the generalized groundwater flow direction towards the west.

The leading edge of the contaminant plume has been delineated and is located in Charles Slater Subdivision, approximately 2,000 feet (0.37 miles) west of the East Satellite building and south of Noyes Slough. The vertical distribution of chlorinated VOCs in groundwater has been delineated to 70 feet bgs within the core area of the plume with PCE above cleanup levels detected at 40 feet bgs.

Receptors to chlorinated VOCs in groundwater include the migration into Noyes Slough.

Potential receptors to chlorinated VOCs in groundwater include two wells located in Charles Slater Subdivision used on a seasonal basis for lawn irrigation purposes only. There were no drinking water wells identified within the plume zone.

Potential receptors to soil gas vapors include buildings overlying chlorinated VOCs in groundwater. Based on environmental screening levels for or chlorinated VOCs in groundwater, the East Satellite, Wells Fargo Bank, and McDonalds buildings were evaluated for indoor vapor intrusion. Indoor air samples indicated that PCE and TCE were present in the East Satellite and Wells Fargo Bank buildings above recommended EPA limits for indoor air (based on target levels for residential structures).

## 3.0 Cleanup Levels

### Soil

The soil cleanup levels established for this site are the 18 AAC 75.341 Tables B1 and B2, migration to groundwater for the under 40 inch zone.

### Groundwater

The groundwater cleanup levels established for this site are the 18 AAC 75.345 Tables C levels

## 4.0 ADEC Decision

The Bentley Mall East Satellite Building site has been adequately characterized to define the nature and extent of contamination. Based on information provided to date, ADEC has determined that contamination remains above the soil and groundwater cleanup levels established for this site but it does not pose an unacceptable risk to human health or the environment provided the owners and/or operators of the site comply with the following site specific conditions. This site is issued conditional closure status subject to the following:

1. Bentley Mall shall prohibit use of ground water and the transport of contaminated soil and/or groundwater off site without prior ADEC approval.
2. The groundwater contamination shall be treated by monitored natural attenuation in accordance ADEC guidance *The Selection of Natural Attenuation as a Cleanup Alternative for the Restoration of Soil and Ground Water at Contaminated Sites* dated January 2000 upon termination of the current active remediation system.

3. Bentley Mall shall submit and implement a long-term ground water monitoring plan consistent with ADEC guidance *The Selection of Natural Attenuation as a Cleanup Alternative for the Restoration of Soil and Ground Water at Contaminated Sites* dated January 2000.
4. Bentley Mall shall operate the ADEC approved air-sparging and soil vapor extraction system until established cleanup levels are attained or ADEC approves modification or termination of the system. ADEC shall consider modification or termination of the remediation system based on a technical analysis of the operation efficiency of the system. The analysis shall include a review of quarterly field screen vapor samples, system performance monitoring, collection of periodic vapor samples at vapor extraction wellheads and influent ports, collection of seasonal (winter/summer) indoor air samples, results of periodic and final rebound tests, and collection of periodic soil and ground water samples.
5. In the event that Bentley Mall and ADEC determine that the approved remediation system will not attain the soil and vapor intrusion cleanup standards after the remediation system has been optimized and operated for a reasonable time, Bentley Mall shall submit within 60 days of the determination, an alternate cleanup plan in accordance 18 AAC 75. This alternate cleanup plan shall be an ADEC approved modified remediation system or an ADEC approved risk assessment for the remaining on-site contamination.
6. Bentley Mall shall prepare a Notice of Environmental Contamination (NEC) that provides notice of the contamination issues associated with this property (Tax Lots 217 and 225) and establishes the land use restrictions and/or institutional control applicable to the site. The NEC shall include all conditions established within this decision document for which the owners/operators are responsible for. The NEC shall be submitted to ADEC for review and approval prior to its recordation with the State Recorder's Office.

Site closure (without conditions) can be achieved when:

1. Soil sampling confirms that all soil on Tax Lots 217 and 225 meets the 18 AAC 75.341 'migration to groundwater' cleanup levels for the Under 40 inch zone,
2. All ground water on Tax Lots 217 and 225 and off-property (within the extended ground water plume and Noyes Slough sediment water) meets 18 AAC 75.345 Table C cleanup levels, and
3. Indoor air concentrations of contaminants of concern that are directly attributable to the vapor intrusion pathway result in a cumulative risk of less than $10^{-5}$ for a commercial occupational setting. The cumulative risk calculation shall use exposure duration of 25 years, an exposure frequency of 250 days per year, an exposure time of 8 hours per day, and ADEC approved toxicity criteria for the contaminants of concern.

In accordance with 18 AAC 75.380(d), ADEC may require additional cleanup action if new information is discovered which indicates this determination is not protective of human health, safety, and welfare or the environment.

In accordance with 18 AAC 15.185, any person who disagrees with this decision may request an informal agency review by the director of the department's division of Spill Prevention and Response. A request for informal review must be made within 15 days after receiving the department's decision reviewable under this section, and should be addressed to Larry Dietrick, Department of Environmental Conservation, 410 Willoughby Avenue, Suite 105, Juneau, Alaska,

99801-1795. In addition, any person who is aggrieved by this decision may request an adjudicatory hearing under 18 AAC 15.195 – 18 AAC 15.920. If any person wishes to request an adjudicatory hearing, the request should be submitted to the Commissioner, Department of Environmental Conservation, 410 Willoughby Avenue, Suite 105, Juneau, Alaska 99801-1795, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a review is not requested within 15 days, or if a hearing is not requested within 30 days, the right to appeal is waived, and the decision becomes final.

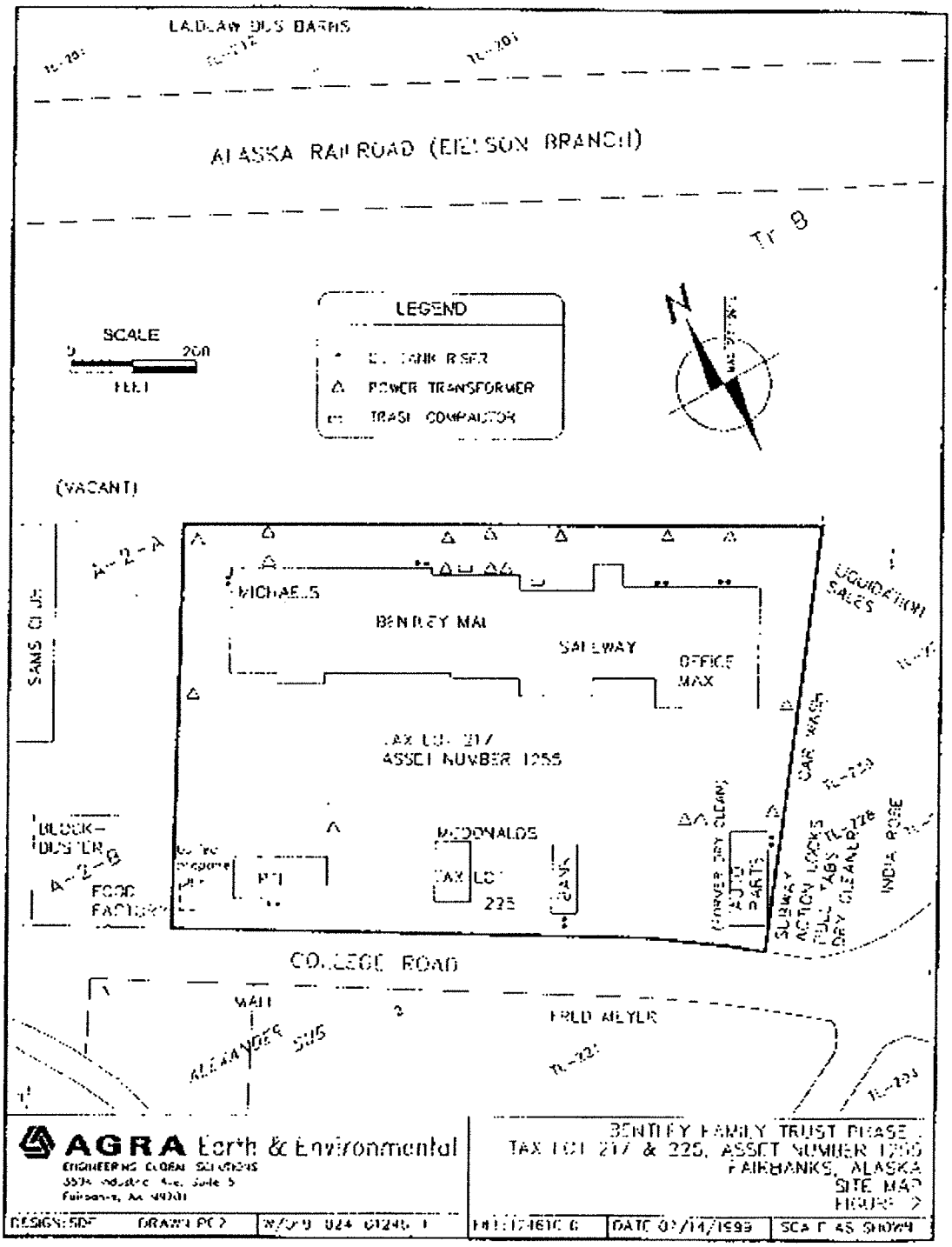
Recommended by:

Douglas Bauer
Environmental Engineer Associate

Approved by:

Douglas Bauer for
Jim Frechione
State/Private Cleanup Program Manager

# ROD Appendix




**AGRA Earth and Environmental Figure 2**

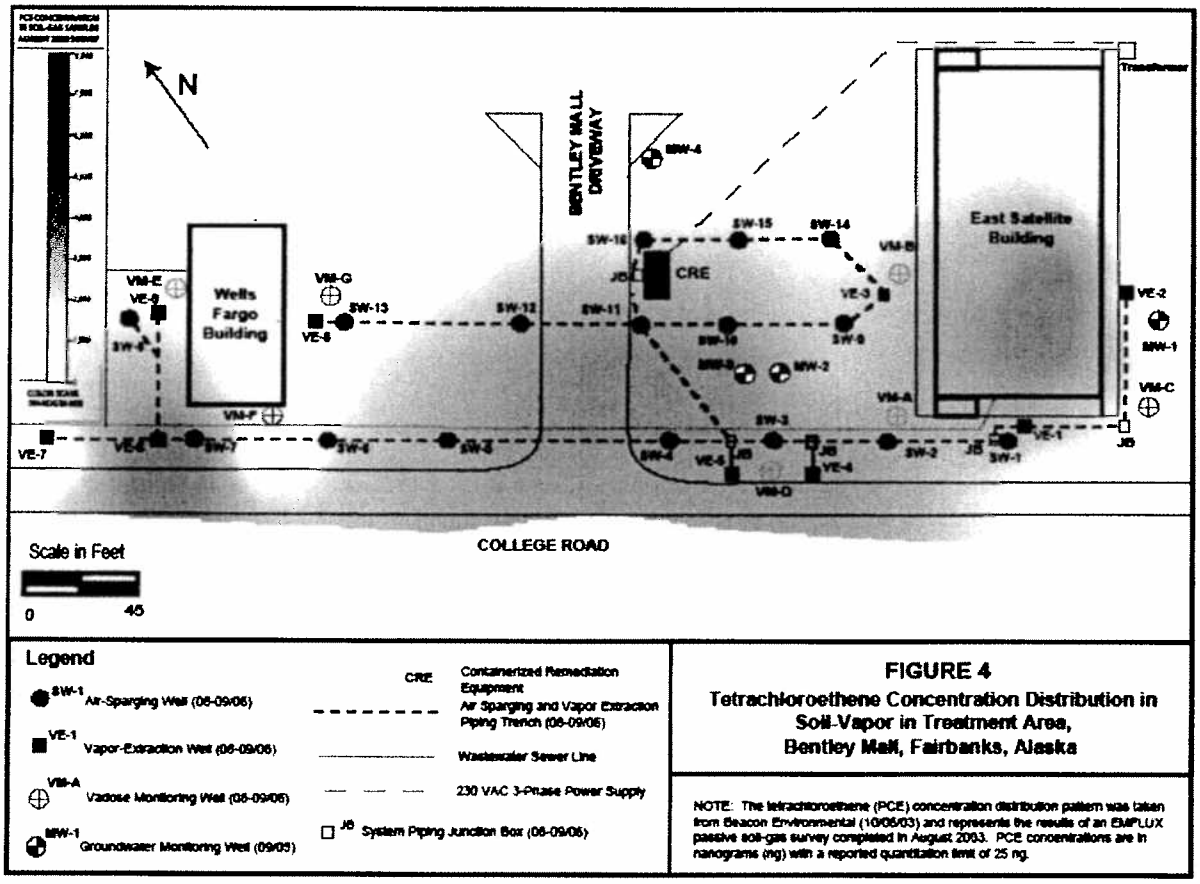
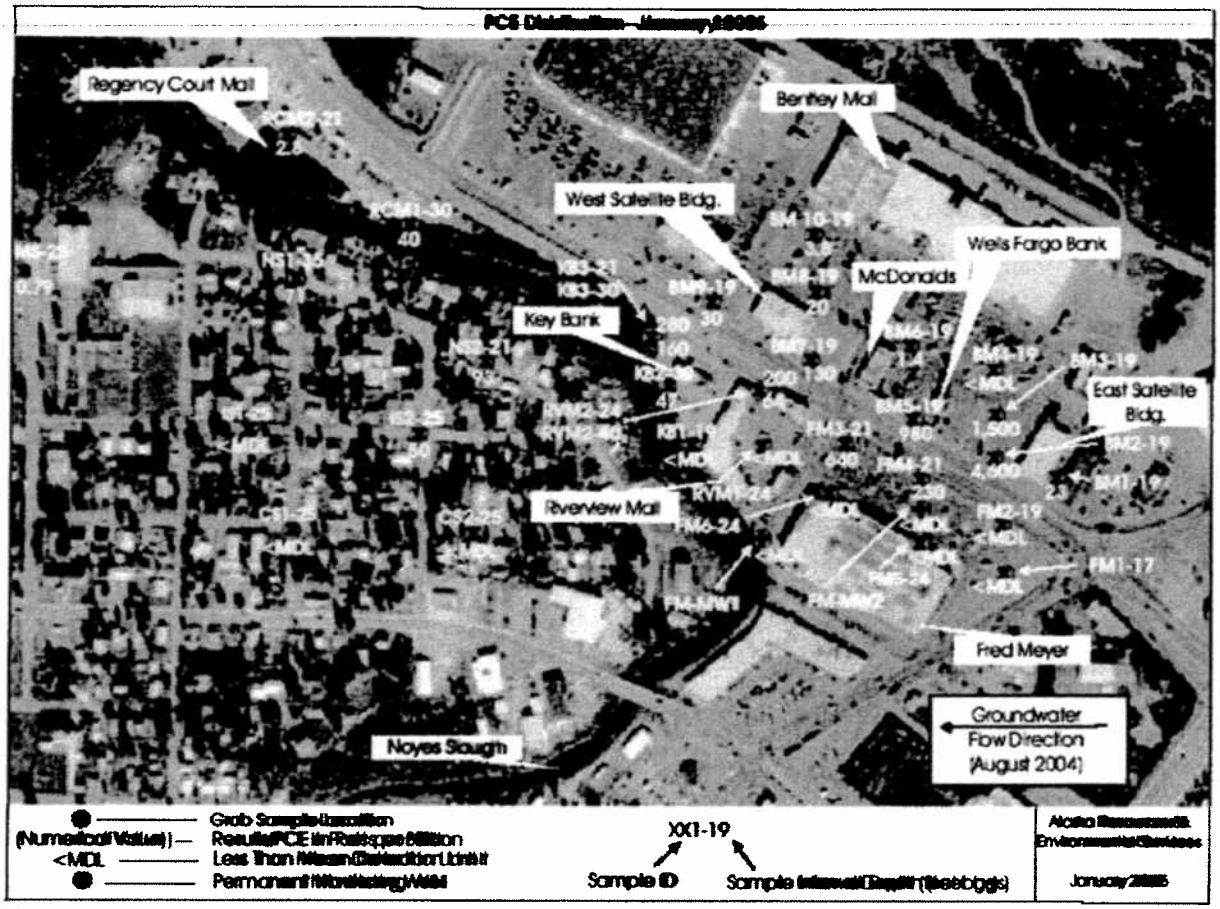


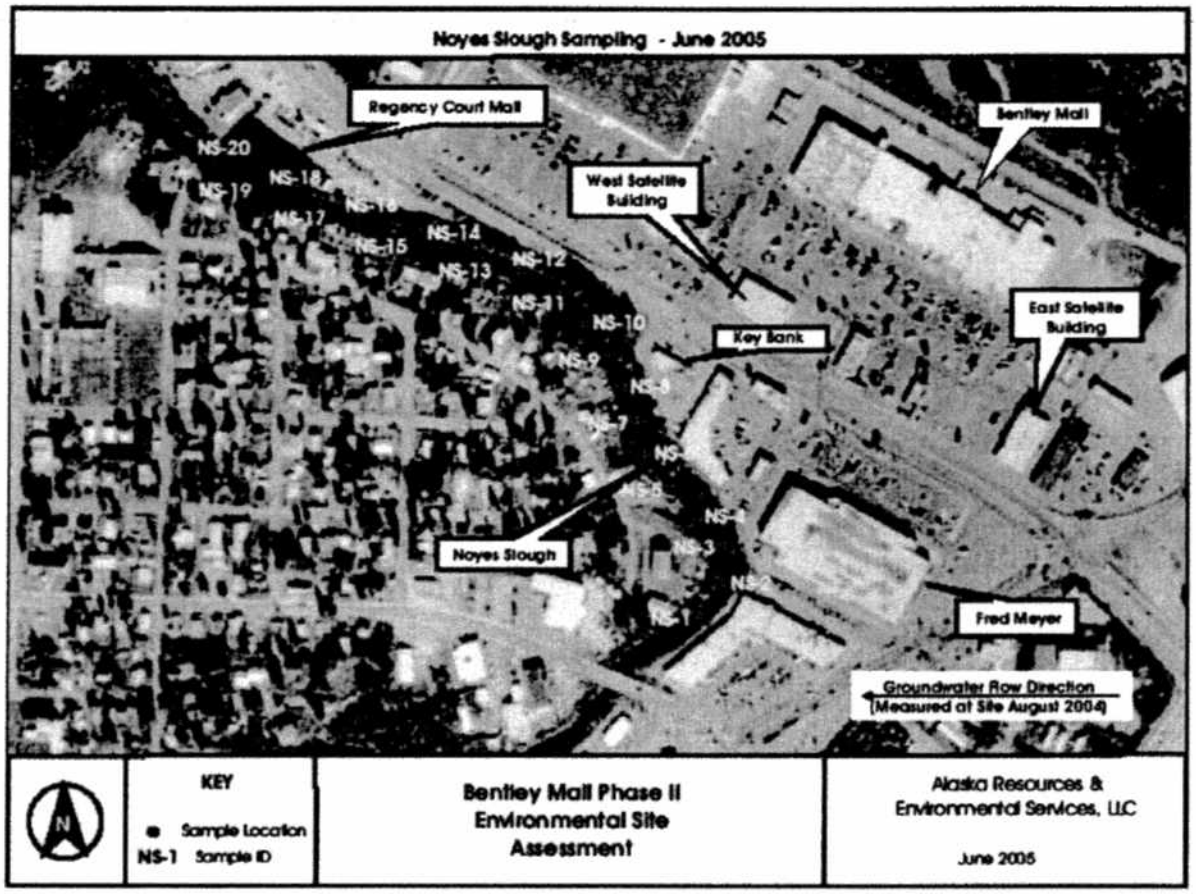

**FIGURE 4**
**Tetrachloroethene Concentration Distribution in Soil-Vapor in Treatment Area, Bentley Mall, Fairbanks, Alaska**

NOTE: The tetrachloroethene (PCE) concentration distribution pattern was taken from Beacon Environmental (10/05/03) and represents the results of an EMFLUX passive soil-gas survey completed in August 2003. PCE concentrations are in nanograms (ng) with a reported quantitation limit of 25 ng.

**ARES Figure 4**




**ARES figure titled PCE Distribution – January 2005**




**ARES figure titled Noyes Slough Sampling – June 2005**

**Table G.1**
**Noyes Slough Sampling Results**
**June 2005**

| | Laboratory Analytical Results | | ADEC Target Level | GPS Coordinates | |
|---|---|---|---|---|---|
| Sample ID | PCE(µg/L) | TCE (µg/L) | PCE/TCE(µg/L) | Latitude | Longitude |
| NS1-62005 | <MDL | <MDL | 5 | N64°50.954' | W147 °42.328' |
| NS2-62005 | <MDL | <MDL | 5 | N64°50.958' | W147 °42.319' |
| NS3-62005 | <MDL | <MDL | 5 | N64°50.968' | W147 °42.298' |
| NS4-62005 | <MDL | <MDL | 5 | N64°50.975' | W147 °42.308' |
| NS5-62005 | <MDL | <MDL | 5 | N64°50.992' | W147 °42.333' |
| NS6-62005 | <MDL | <MDL | 5 | N64°51.001' | W147 °42.342' |
| NS7-62005 | <MDL | <MDL | 5 | N64°51.019' | W147 °42.381' |
| NS8-62005 | 1.3 | 1.0 | 5 | N64°51.040' | W147 °42.408' |
| NS9-62005 | 0.95 | 0.50 | 5 | N64°51.070' | W147 °42.330' |
| NS10-62005 | <MDL | <MDL | 5 | N64°51.070' | W147 °42.435' |
| NS1162005 | 1.4 | 0.92 | 5 | N64°51.083' | W147 °42.448' |
| NS12-62005 | 0.78 | <MDL | 5 | N64°51.089' | W147 °42.485' |
| NS13-62005 | <MDL | <MDL | 5 | N64°51.094' | W147 °42.494' |
| NS14-62005 | <MDL | <MDL | 5 | N64°51.095' | W147 °42.502' |
| NS15-62005 | 1.4 | 0.77 | 5 | N64°51.110' | W147 °42.560' |
| NS16-62005 | <MDL | <MDL | 5 | N64°51.106' | W147 °42.609' |
| NS17-62005 | 6.9 | 6.8 | 5 | N64°51.109' | W147 °42.651' |
| NS18-62005 | 5.5 | 4.5 | 5 | N64°51.119' | W147 °42.691' |
| NS19-62005 | 0.76 | <MDL | 5 | N64°51.124' | W147 °42.707' |
| NS20-62005 | 4.8 | 4.0 | 5 | N64°51.140' | W147 °42.812' |
| NSDUP1-62005 | <MDL | <MDL | 5 | N64°50.954' | W147 °42.328' |
| NSDUP2-62005 | 0.36 | 0.75 | 5 | N64°50.954' | W147 °42.328' |
| Travel Blank | <MDL | <MDL | | | |

NSDUP1 is a duplicate sample to NS7-62005
NSDUP2 is a duplicate sample to NS9-62005

Results above ADEC Regulatory Limit

**Table G.1**

## Bauer, Doug

**From:** Frechione, Jim
**Sent:** Friday, March 02, 2007 10:40 AM
**To:** Bauer, Doug
**Subject:** RE: Editorialized Record of Decision Bentley Mall East Satellite 2-8-07 (3)

Doug - please prepare the final version and sign for me.

thanks

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**From:** Bauer, Doug
**Sent:** Thursday, March 01, 2007 3:00 PM
**To:** Frechione, Jim
**Subject:** FW: Editorialized Record of Decision Bentley Mall East Satellite 2-8-07 (3)

Jim:

1. Attached is the final version of the ROD for the Bentley Mall East Satellite building. In item 5, I added the following: "This alternate cleanup plan shall be an ADEC approved modified remediation system or an ADEC approved risk assessment for the remaining on-site contamination." In the event the existing AS/SVE system does not work according to expectations, then Bentley Mall will either modify the remediation system of do a risk assessment for the on-site contamination.
2. I can sign for you or you can sign for me. If you sign, please send a signed copy to Lyle Gresehover at lyle@ak-res.com.
3. Bentley Mall would a signed copy ASAP to complete the sale.

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**From:** Uzzell, Wendy
**Sent:** Thursday, March 01, 2007 2:38 PM
**To:** Bauer, Doug
**Cc:** Uzzell, Wendy
**Subject:** Editorialized Record of Decision Bentley Mall East Satellite 2-8-07 (3)

Doug,
Here is the formatted, spell checked and appendix labeled version of your tome. Let me know who is signing, etc. and I'll get it where it needs to go.
Wendy

<< File: Editorialized Record of Decision Bentley Mall East Satellite 2-8-07 (3).doc >>