



THE STATE  
of **ALASKA**  
GOVERNOR SEAN PARNELL

Department of Environmental  
Conservation

DIVISION OF SPILL PREVENTION &  
RESPONSE  
Contaminated Sites Program

43335 Kalfornsky Beach Road, Suite 11  
Soldotna, Alaska 99669  
Main: 907.262.5210  
Fax: 907.262.2294

File No: 2333.38.051

March 17, 2014

Mara Carnahan  
Soldier Creek Corporation  
365 Lingonberry Lane  
Soldotna, Alaska 99669

Re: Decision Document: Cornerstone Market Place  
Cleanup Complete Determination

Dear Ms. Carnahan:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Cornerstone Market Place site, located at 43977 Sterling Highway, Soldotna, Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment and no further remedial action will be required at this time.

This decision is based on the administrative record for the Cornerstone Market Place site, which is located in the offices of the ADEC in Soldotna, Alaska. This letter summarizes the decision process used to determine the environmental status of this site and provides a summary of the regulatory issues considered in this Cleanup Complete Determination.

**Site Name and Location:**

Cornerstone Market Place  
43977 Sterling Highway  
Soldotna, Alaska 99669

**Name and Mailing Address of Contact Party:**

Mara Carnahan  
Soldier Creek Corporation  
365 Lingonberry Lane  
Soldotna, Alaska 99669

**DEC Site Identifiers:**

File No: 2333.38.051  
Hazard ID: 25864

**Regulatory Authority for Determination:**

18 AAC 75

### **Property Legal Description:**

Tract A, Mullen Homestead Subdivision, Addition No. 5, According to Plat No. 2007-12, Kenai Recording District, Third Judicial District, State of Alaska.

### **Site Description and Background**

The Cornerstone Market Place site is located in Soldotna, Alaska. In 2012, during Phase I and Limited Phase II Environmental Site Assessments conducted for the purpose of defining the presence of any environmental concerns for a property transfer, tetrachloroethene and trichloroethene contamination was identified in soil at the site. Release investigations that followed in 2012 and 2013 indicated the surface and subsurface soils had been impacted from the operations of a former laundry/dry cleaning facility. Site characterization efforts included the assessment of the soil, groundwater, and indoor air. During site assessment work, soil and groundwater samples collected at this site were tested for: gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-Dichloroethene (DCE), and vinyl chloride.

During site characterization work, groundwater was first encountered in a shallow unconfined aquifer at depths from 20 to 28 feet below ground surface (bgs). There are known drinking water wells located on this property, and on surrounding properties, as determined through a water well survey, installed at depths from 76 to 163 feet bgs. These water wells are installed into a deeper, confined, flowing artesian aquifer, and are located outside the boundaries of the groundwater contamination associated with this site. City of Soldotna public water and sewer systems are also present in the immediate vicinity, and many surrounding properties are serviced by these systems.

This property is currently served by a drinking water well completed in the deeper artesian aquifer. It has been tested and was determined to be free of the suite of contaminants included in the laboratory analyses.

### **Contaminants of Concern**

'Contaminants of Concern' include any hazardous substances that exceed ADEC's most stringent soil or groundwater cleanup levels. These cleanup levels are designed to be protective of human health exposure pathways in residential settings, where groundwater may be used as a source of drinking water. The following contaminants of concern were identified during the course of the site investigations summarized in the **Site Characterization Activities** section of this decision letter.

- Tetrachloroethene (PCE)
- Trichloroethene (TCE)

PCE was detected at concentrations exceeding the ADEC groundwater cleanup level in 18 AAC 75.345. PCE and TCE were detected at concentrations exceeding the ADEC 'Migration to Groundwater' soil cleanup levels in 18 AAC 75.341.

### Applicable Soil Cleanup Levels

The soil cleanup levels for PCE and TCE at this site are established in 18 AAC 75.341, Method Two, Table B1, Under 40 inch Zone. The applicable cleanup levels in Table B1 are the levels for the “Direct Contact” exposure pathway, as listed below.

- Tetrachloroethene (PCE) 15 mg/kg
- Trichloroethene (TCE) 21 mg/kg

The Table B1 ‘Migration to Groundwater’ soil cleanup levels are not applicable because the ‘Migration to Groundwater’ soil cleanup level is established to protect groundwater for use as drinking water. Groundwater in the shallow unconfined aquifer at this site is not considered to be a source of drinking water.

### Applicable Groundwater Cleanup Levels

ADEC 18 AAC 75.345, Table C groundwater cleanup levels apply at a site if the current use, or the reasonably expected potential future use, of the groundwater is drinking water. Since the shallow unconfined aquifer within this site is not considered to be a current or potential future source of drinking water, the ADEC Table C groundwater cleanup levels are not applicable.

### Indoor Air Target Levels

The contaminants of concern at this site are volatile chlorinated organic compounds that have the potential to impact indoor air quality through the vapor intrusion exposure pathway. Although the ADEC does not directly regulate concentrations of hazardous substances in indoor air, ADEC has published target levels for indoor air to assist in screening sites for unacceptable human health risk. The indoor air target levels were used to evaluate indoor air quality risk, following the collection and laboratory analysis of indoor air samples from within the Cornerstone Market Place building. ADEC has also provided target levels for groundwater to assist in screening for unacceptable risk posed by groundwater through the vapor intrusion exposure pathway. The groundwater target levels were also used in the evaluation of this site to assess the potential vapor intrusion risk to both on-site and off-site structures. The applicable ADEC indoor air and groundwater target levels for commercial land use are listed below.

	<u>Indoor Air</u> <sup>(a)</sup>	<u>Groundwater</u> <sup>(b)</sup>
• Tetrachloroethene	180 ug/m <sup>3</sup>	240 ug/L
• Trichloroethene	8.8 ug/m <sup>3</sup>	22 ug/L
• cis-1,2-Dichloroethene	31 ug/m <sup>3</sup>	180 ug/L

(a) Appendix D, ADEC “Vapor Intrusion Guidance for Contaminated Sites” (October 2012)

(b) Appendix G, ADEC “Vapor Intrusion Guidance for Contaminated Sites” (October 2012)

### Site Characterization Activities

Site characterization activities performed under 18 AAC 75.335 began in February of 2012 during a Phase II environmental site assessment. PCE contamination was identified in the soil adjacent to the Cornerstone Market Place building. PCE was detected at 0.150 mg/kg at 8 to 8.7 feet below ground surface (bgs) south of the location of the former laundry/dry cleaning facility, and at 0.574 mg/kg at 0 to 2.5 feet (bgs) in the area of the Mullen Court cul-de-sac, as referenced on FIG. 1, Shannon & Wilson, January 2014, SITE PLAN, SOIL ANALYTICAL RESULTS (see attachment).

In July and August of 2012, additional site characterization was conducted to identify the extent of the near-surface PCE contamination detected in the area of the Mullen Court cul-de-sac. PCE was detected in one soil sample collected at 0.3 to 1.3 feet bgs at 0.0414 mg/kg, however the additional characterization work demonstrated that the PCE contamination in this area appeared to be limited to within the Mullen Court cul-de-sac.

In August of 2012, a site characterization was conducted to identify the extent of subsurface PCE soil contamination identified in the area south of the location of the former laundry/dry cleaning facility, in areas adjacent to formerly utilized wastewater disposal pits/log cribs, and a former drum storage area. PCE was detected at 0.0396 to 1.20 mg/kg at depths of 0.3 to 20 feet bgs, and TCE at 0.0213 mg/kg at 0.3 to 1.5 feet bgs.

In March of 2013, indoor air samples were collected within the breathing zone of each of the suites of the Cornerstone Market Place building, and one in the crawlspace. Concentrations within the breathing zone of the suites of the Cornerstone Market Place detected PCE at 3.0 and 30 ug/m<sup>3</sup>, and cis-1,2-Dichloroethene at 0.71 ug/m<sup>3</sup>, below the ADEC's target levels for indoor air for residential and commercial use. The sample from the crawlspace resulted in the detection of PCE at 130 ug/m<sup>3</sup>, TCE at 3.9 ug/m<sup>3</sup>, and 1,2-Dichloroethene at 5.6 ug/m<sup>3</sup>, above the ADEC's target levels for indoor air for residential use; however, below target levels applicable for commercial use.

In May of 2013, additional site characterization was conducted to delineate the extent of PCE soil and/or groundwater contamination in the area south of the former laundry/dry cleaning facility. Three groundwater monitoring wells were installed. Soil samples collected and analyzed during this work detected PCE at 0.0437 mg/kg to 2.69 mg/kg at 2.5 to 21.2 feet bgs. PCE was detected at 0.0118 mg/L in one of the three monitoring wells.

In October of 2013, two additional groundwater monitoring wells were installed in the shallow unconfined aquifer in an effort to better define the extent of the soil and groundwater impacts. PCE soil contamination was detected at 0.0550 mg/kg at 17.5 to 19.5 feet bgs at one well location. The groundwater samples collected from the groundwater monitoring wells resulted in the detection of PCE at 0.0114 and 0.0318 mg/L in MW-1 and MW-5, respectively.

On November 15, 2013, ADEC issued a determination that the tetrachloroethene impacted soils identified within the Mullen Court road right-of-way constituted a de-minimis quantity/mass of tetrachloroethene, which does not pose an unacceptable risk to human health or the environment.

Therefore, ADEC does not intend to regulate the Mullen Court right-of-way as a hazardous substance contaminated site under the authority of 18 AAC 75, Oil and Hazardous Substances Pollution Control.

In November of 2013, one additional groundwater monitoring well (MW-6) was installed along the west property boundary. Groundwater samples were collected and resulted in the detection of PCE at 0.0508 and 0.0235 mg/L from MW-5 and MW-6, respectively. An additional sample was collected from MW-6 in December of 2013, which detected PCE at 0.0117 mg/L.

Following the completion of site characterization work performed at this site from 2012 to 2014, residual PCE and TCE soil contamination remained in the surface and subsurface soil exceeding the ADEC's Method Two 'Migration to Groundwater' soil cleanup levels within the areas which have been estimated and shown on FIG. 1, Shannon & Wilson, January 2014, SITE PLAN, SOIL ANALYTICAL RESULTS (see attachment).

Groundwater was first encountered in a shallow unconfined aquifer at depths from 20 to 28 feet below ground surface (bgs) during site characterization work, and contaminants of concern were detected in this shallow unconfined aquifer. There are drinking water wells located on the property, and on properties in the vicinity of this site. These drinking water wells are installed into a deeper artesian aquifer, and are also located outside the boundaries of the known groundwater contamination impacts from this site.

Groundwater concentrations for PCE, TCE, and DCE were not detected at concentrations exceeding ADEC's groundwater target levels for indoor vapor intrusion. Therefore, the indoor vapor intrusion pathway from groundwater should not pose an unacceptable risk to human health or the environment.

### **Cumulative Risk Evaluation**

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways, and does not exceed a cumulative non-carcinogenic risk standard at a hazard index of 1 across all exposure pathways.

Based on a review of the environmental data, ADEC has determined that residual contaminant concentrations do not pose an unacceptable cumulative human health risk, provided that the site is in compliance with the condition(s) established in the **ADEC Decision** section of this decision letter.

### **Exposure Pathway Evaluation**

Following site characterization work at the site, exposure to residual Contaminants of Concern was evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to

be one of the following: De-minimis Exposure, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 1.

**Table 1 – Exposure Pathway Evaluation**

<b>Pathway</b>	<b>Result</b>	<b>Explanation</b>
Surface Soil Contact	De-minimis Exposure	Residual PCE and TCE contamination in surface soil were below ADEC’s ‘Ingestion’ soil cleanup levels.
Sub-Surface Soil Contact	De-minimis Exposure	Residual PCE contamination in subsurface soil was below ADEC’s ‘Ingestion’ soil cleanup level.
Inhalation – Outdoor Air	De-minimis Exposure	Residual contamination in surface and subsurface soil was below ADEC’s outdoor ‘Inhalation’ soil cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De-minimis Exposure	Indoor air was tested and the concentrations detected were less than ADEC target levels. The affected groundwater contaminant concentrations were also below ADEC’s target levels for the indoor air exposure pathway.
Groundwater Ingestion	Pathway Incomplete	The impacted groundwater in the shallow unconfined aquifer, initially encountered at 20-28 feet below ground surface, is not considered to be a source of drinking water.
Surface Water Ingestion	Pathway Incomplete	Residual contamination has no potential to contact surface waters that could be used for drinking water.
Wild Foods Ingestion	Pathway Incomplete	Contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	The residual contamination has no potential to contact ecological receptors.

Notes to Table 1: “De-minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be affected by the minimal volume of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors.

**ADEC Decision**

Based on the characterization work completed at this site, ADEC has determined that the residual contamination doesn’t pose an unacceptable risk to human health or the environment. Therefore, we are issuing this Cleanup Complete determination with the following condition:

1. The most current soil sample data provided to ADEC (2012 and 2013) identified tetrachloroethene (PCE) and trichloroethene (TCE) in soil south/southwest of the Cornerstone Market Place building, along the Sterling Highway and Forty Seventh Street, exceeding the current ADEC 'Migration to Groundwater' soil cleanup levels. This location of PCE and TCE contaminated soil was estimated and shown on FIG. 1, Shannon & Wilson, January 2014, SITE PLAN, SOIL ANALYTICAL RESULTS (see attachment). Any proposal to transport soil or groundwater off-site requires ADEC approval in accordance with 18 AAC 75.325(i). A "site" [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership. The excavation of soil on this property in the south/southwest portions of the property may expose contaminated soil requiring proper management, and disposal practices. Any person(s) excavating soil or moving soil or groundwater at this "site" shall contact ADEC and shall provide for the proper handling, treatment, and disposal of any contaminated media encountered in accordance with all applicable ADEC regulations at that time.

The ADEC Contaminated Sites Database will be updated to reflect the change in site status as '*Cleanup Complete*', and will include a description of the contamination remaining at the site.

This determination is in accordance with 18 AAC 75.380 and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that this site may pose an unacceptable risk to human health or the environment. The Soldier Creek Corporation remains liable for any additional assessment and/or cleanup action(s), should ADEC impose such a requirement.

It should be noted that movement or use of potentially contaminated material in a manner that results in a violation of 18 AAC 70 Water Quality Standards is prohibited.

The dry cleaning solvent impacted media (soil & groundwater) associated with this facility may be considered to contain listed hazardous waste, and may be subject to regulation under the Federal Resource Conservation and Recovery Act (RCRA). Listed waste designation is established by source or generating process, not by concentration of wastes or environmental media. The EPA, Region 10 is responsible for administering the Federal RCRA hazardous waste program in the State of Alaska at this time. Any questions concerning the applicability of Federal RCRA requirements to this site should be directed to EPA Region 10.

## **Appeal**

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 -18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 15 days after receiving the department's

decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, 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 hearing is not requested within 30 days, the right to appeal is waived.

If there are questions about this Cleanup Complete decision document, please contact me at (907) 262-3412, or via e-mail at [peter.campbell@alaska.gov](mailto:peter.campbell@alaska.gov)

Sincerely,



Peter Campbell  
Environmental Program Specialist

Attachment: FIG. 1, Shannon & Wilson, January 2014, SITE PLAN, SOIL ANALYTICAL RESULTS

Cc: Matthew S. Henry, P.E., Shannon & Wilson, Anchorage  
Chad Hagle, Aventine Development Corporation  
Dave Bartus, EPA Region 10