

Project No.: 80402  
August 1, 2008

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**Subject: DRAFT Phase II Environmental Site Assessment Work Plan  
Daniels Dry Cleaner's Coal Creek Village – Adjacent Safeway Store  
6911 Coal Creek Parkway SE  
Newcastle, Washington**

Dear Dan:

Kleinfelder is pleased to present this work plan to perform a Phase II Environmental Site Assessment (ESA) at the Safeway store located at 6911 Coal Creek Parkway SE in Newcastle, Washington. The site assessment work is being performed to evaluate the potential migration of contaminants from Daniel's Dry Cleaners located at 6923 Coal Creek Parkway SE to the adjacent Safeway store. The data generated during this site assessment will be used in conjunction with previous environmental studies to evaluate if further environmental assessment and/or remediation is required. This work plan describes the tasks associated with the ESA at the above-referenced site.

## **PROJECT UNDERSTANDING**

### Site Description

The subject property is located at 6911 Coal Creek Parkway SE in a commercial/retail area located in Newcastle, Washington. The Coal Creek Shopping contains a Safeway store and multiple smaller light commercial/retail tenants spaces. The on-site buildings were constructed in approximately 1987. Daniel's Dry Cleaners shares its northern wall with the Safeway store. Daniel's Dry Cleaners has occupied the property since 1987 and operated dry cleaning equipment at the site from 1987 to 1998. Daniel's Dry

Cleaners has continued to be operated as a drop-off dry cleaner since discontinuation of on-site dry cleaning operations in 1998. Daniel's Dry Cleaners is currently managed by JSH Properties for a private property owner, and was formerly owned by RREEF America, LLC (RREEF). Surrounding land use consists of mixed commercial and retail buildings with associated parking lots and single- and multi-family residential structures. The site location is shown on Figure 1 and the site layout is presented on Figure 2.

#### Site Geology and Hydrogeology

Geology at the site consists of approximately 5 feet of unconsolidated fill material that has been described as dense low permeable silty-sand, overlying a very dense, fractured siltstone (the Renton Formation).

Shallow groundwater at the site appears to be locally perched and likely migrates along the contact of the fill material and the underlying low permeable siltstone as well as along bedding plains and discontinuous fractures present in the siltstone. Depth to groundwater, as measured in existing monitoring wells, ranges from approximately 4.5 to 14.5 feet below top of casings. Monitoring well construction varies considerably between monitoring wells. A pump test performed to assess the hydraulic conditions in 1998 revealed that several of the wells may be hydraulically connected; however, the wells are screened at different depth intervals, ranging from 15 to 60 feet below ground surface (bgs). The nearest surface water body to the Site is Boren Lake, which is located approximately ¼-mile south of the site.

#### Previous Environmental Investigations

In 1996, ATC Associates Inc. (ATC) conducted a series of Phase II subsurface investigations that identified the presence of elevated concentrations of tetrachloroethene (PCE) in subsurface soil and shallow localized groundwater beneath Daniel's Dry Cleaners. The PCE concentrations were greater than MTCA Method A cleanup levels for both soil and shallow groundwater. The release of the PCE was concluded to be associated with a dry cleaning machine formerly located in the north-central portion of the tenant space and in close proximity to the neighboring Safeway store property.

In March 1998, Equipoise Corporation (Equipoise) began operation of a groundwater pump and treat system and reported a maximum sustained yield of approximately 0.1 gallon per minute (gpm). No information was available regarding the system design or performance of the pump and treat system. According to the reports provided to Kleinfelder, the pump and treatment system was apparently shut down in November 2001.

In August 2000, Equipoise initiated the placement of sodium permanganate in selected wells and had continued this practice until early 2006 (13 treatments to date). The last treatment was injected on February 2, 2006. Groundwater results indicate that the sodium permanganate injections were successful at reducing the PCE concentrations at the point of injection; however, the effectiveness of the sodium permanganate injections at treating PCE-impacted soil and shallow groundwater at distances from the injection points is not clear due to the lack of independent groundwater monitoring points. In addition, PCE concentrations within groundwater wells used for sodium permanganate injections appear to rebound over time.

On July 9, 2003, PCE-impacted soil was excavated and removed from below the former dry cleaning machine located in the central portion of Daniel's Dry Cleaners. The PCE-impacted soil was removed down to a depth ranging from 4 to 5 feet bgs, where the very dense low permeable siltstone was encountered. According to Equipoise, additional soil removal was not possible due the extremely dense soils and the use of limited-access equipment.

PCE in groundwater has been monitored in select wells since 1996. The greatest reported concentrations have typically been detected in groundwater samples collected from monitoring well B-3, where PCE has been detected at concentrations up to 31,000 micrograms per liter ( $\mu\text{g/l}$ ). Over time, chemical concentrations in B-3 and other wells have varied considerably, presumably as a result of sodium permanganate injections and subsequent rebound.

Since March 2006, groundwater samples have been collected by Kleinfelder to assess groundwater quality. PCE concentrations in groundwater are the highest in groundwater monitoring wells closest to the former dry cleaning machine. Shallow

*Put #4 down gradient*

groundwater water level data is difficult to interpret due to the wide range of screened intervals in the wells at the site and the nature of the underlying soils. For example, groundwater monitoring well B-3 is screened from 17 to 22 feet bgs, groundwater monitoring well B-8 is screened between 5 to 40 feet bgs and groundwater monitoring wells B-14 to B-15 are screened from 10 to 60 feet bgs.

In March 2008, Kleinfelder collected soil samples in conjunction with the installation of a High Vacuum Extraction (HVE) remediation system. Soil samples were collected while installing new groundwater monitoring and HVE wells. PCE was encountered in 2008 soil samples collected from shallow depths within the dry cleaner tenant space at concentrations up to 40 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ).

In summary, the PCE-impacted soil appears to be limited to shallow soils, with the greatest concentrations of PCE-impacted soil removed from beneath the former dry cleaning machine. Residual levels of PCE are still remaining in the unsaturated soil along the north wall of the former excavation and likely down gradient west towards groundwater monitoring well B-3. *AP*

#### **SCOPE OF WORK**

The ESA will be conducted to evaluate soil and groundwater conditions in the southern portion of the Safeway store adjacent to Daniel's Dry Cleaners in Newcastle, Washington. The scope of the ESA will consist of the following activities:

- Site safety and health plan preparation;
- Indoor air and soil vapor sampling;
- Drilling and soil sampling;
- Grab groundwater sample collection;
- Laboratory analysis of indoor air, soil vapor, soil, and grab groundwater samples; data analysis and interpretation; and,
- Report preparation.

Drilling and sampling operations will be directed by a Kleinfelder representative, and field personnel will be OSHA trained in accordance with 29 CFR 1910.120. Prior to subsurface drilling activities, Kleinfelder will notify the Utility Notification Center in accordance with local practices. In addition, a private utility location service will be contracted to provide an additional level of pre-boring clearance. Equipment

decontamination, sample collection, field documentation, sample custody and laboratory analyses will be in general accordance with methods prescribed by the U.S. Environmental Protection Agency (EPA) and the Washington Department of Ecology (Ecology).

Drilling services will be performed by Cascade Drilling inc., of Woodinville, Washington, and laboratory analyses will be performed by Air Toxics LTD., of Folsom, California, and OnSite Environmental Inc., of Redmond, Washington. Investigation derived waste (IDW) from the site will be drummed and either treated onsite through the existing HVE remediation system or left within the remediation system compound. Following receipt of analytical results, IDW will be properly disposed of based on the waste profile. The specific scope of the ESA is described below.

#### **Task 1: Health and Safety Plan**

The purpose of the site-specific health and safety plan (HSP) is to establish policies and procedures to protect employees, workers in the vicinity, and the public from potential hazards posed at the work site. All environmental projects subject to Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements require preparation of a HSP. A HSP will be prepared since it is expected that contaminated or potentially contaminated soil or water may be encountered. The HSP will include a description of the potential hazards (chemical and physical), safety protocol, and emergency procedures in the event of an accident. The plan will be based on a site hazard evaluation to assess safety and health considerations of site operations prior to commencing work and select appropriate hazard mitigation practices. The plan will be prepared prior to the indoor air and soil vapor sample collection and, if necessary, updated to reflect current information and findings.

#### **Task 2: Indoor Air and Soil Vapor Sample Collection**

Kleinfelder proposes to collect <sup>4(1)</sup>two indoor and two exterior ambient air samples from the Safeway store to evaluate background concentrations (exterior) and potential impacts to indoor air. The interior and exterior locations will be selected so they are out of high traffic areas. 5-liter Summa canisters with 8-hour flow-restricting orifices will be used to collect air samples.

(2)

In addition, Kleinfelder proposes collecting 5 sub-slab soil vapor samples. The three initial sub-slab soil vapor locations are shown on Figure 2. Two sub-slab soil vapor samples will be collected in the central and northern portions of the store. Sub-slab soil vapor samples will be collected by drilling 1-1/2 inch diameter holes through the slab, then inserting Teflon tubing into the hole and sealing the annular space with putty. 1-liter Summa canisters with 1/2-hour flow-restricting orifices will be used to collect the sub-slab soil vapor samples. A hand vacuum pump will be used to evacuate the Teflon tubing prior to attaching the tubing end to the Summa canister.

Kleinfelder also proposes collection of approximately 16 soil vapor samples from approximately eight soil probe locations, labeled SSV/SGP-1 through SSV/SGP-8, respectively. The initial three proposed soil vapor sampling locations are shown on Figure 2, attached. If impacted soil vapor is encountered, as noted by field screening with a photoionization detector (PID) and laboratory analytical results, secondary soil borings, located approximately 20 feet north, west, or east of the primary boring locations, will be advanced. This step-out process is intended to maximize the investigative effort by characterizing soil vapor concentrations away from the known source area. The soil vapor samples will be collected to evaluate whether potential impacts to near-surface soil (approximately 3 feet bgs) are present, as well as soil at or above the approximate average soil/groundwater interface. Near-surface and soil vapor samples above the approximate average soil/groundwater interface will be collected by slide hammering gas vapor probe rod to the appropriate depth. Teflon tubing will be inserted into the drive rod and down to the gas vapor probe tip. 1-liter Summa canisters with 1/2-hour flow-restricting orifices will be used to collect the soil vapor samples. A hand vacuum pump will be used to evacuate the Teflon tubing prior to attaching the tubing end to the Summa canister.

All reasonable efforts (which will be defined within an access agreement to be negotiated with Safeway) will be made to reduce impacts to the Safeway store during the performance of this task. Dust generation will be minimized. After each work shift, the work area will be cleaned prior to leaving the site. Following collection of soil vapor samples, the flooring will be temporarily patched and covered to allow for normal traffic.

The flooring will be restored to original condition by a contractor approved by Safeway following the groundwater monitoring well installation task.

### **Task 3: Soil Boring Installation and Soil/Groundwater Sample Collection**

Following evaluation of air and soil vapor sample analytical results, Kleinfelder proposes to advance up to eight soil borings, SSV/SGP-1 through SSV/SGP-8, respectively, to evaluate whether potential impacts to near-surface soil (0 to 3 feet bgs), soil at or above the approximate average soil/groundwater interface, and groundwater are present.

Initially, three primary soil borings, located adjacent to the Safeway/Daniel's Dry Cleaners common wall, will be advanced within the Safeway store. If impacted soils or groundwater are encountered, as noted by field screening with a photoionization detector (PID) and laboratory analytical results, secondary soil borings, located approximately 20 feet north, west, or east of the primary boring locations, will be advanced. The proposed primary soil boring locations are shown on Figure 2, attached, with potential step out directions indicated. To minimize impacts to the existing flooring, the soil boring locations will be located adjacent to the soil vapor sampling locations whenever possible.

The borings will be advanced using direct-push technology. Previous groundwater monitoring data suggests that the depths to near-surface groundwater fluctuate seasonally from approximately 4 to 15 feet bgs at the site. The borings will be advanced into the near-surface water-bearing zone. Two soil samples will be collected from each boring: one at 3 feet bgs or less and the other at a depth determined by PID readings. If impacted soil is not detected, a soil sample will be collected from immediately above the average depth to groundwater (approximately 9 feet bgs).

Groundwater samples will then be collected from the proposed borings. Groundwater samples will be collected from temporary well screens set in borings where groundwater is encountered using a peristaltic pump and dedicated tubing. Groundwater will be purged until the water is observed to run clear. Samples will be decanted into laboratory-supplied glassware and submitted to a State Certified Laboratory for chemical analysis.

All reasonable efforts (which will be defined within an access agreement to be negotiated with Safeway) will be made to reduce impacts to the Safeway store during the performance of this task. Exhaust from equipment will be routed outside the building. Dust generation will be minimized. After each work shift, the work area will be cleaned prior to leaving the site. Following collection of the soil and groundwater samples, the flooring will be restored to original condition by a contractor approved by Safeway.

#### **Task 4: Groundwater Monitoring Well Installation and Groundwater Sample Collection**

Following evaluation of soil and grab groundwater sample analytical results, Kleinfelder proposes to install three groundwater monitoring wells to evaluate potential impacts to groundwater. To minimize impacts to the existing flooring, the groundwater monitoring well locations will be located adjacent to the soil vapor/soil boring sampling locations whenever possible.

The groundwater monitoring wells will be constructed in accordance with Washington Administrative Code (WAC) 173-160 (WRD, 1998). The locations and total depths of the groundwater monitoring wells will be determined based on the results of the soil vapor survey, and soil and groundwater analytical results from the direct-push borings. The groundwater monitoring wells will be constructed with 2-inch diameter, 0.020-inch factory-slotted, schedule 40 polyvinyl chloride (PVC) well screen that will not extend above 5 feet bgs. The remainder of each well (to just below the ground surface) will be constructed of 2-inch diameter, non-slotted (blank) schedule 40 PVC casing equipped with a pressure cap to minimize vapor migration into the store. A filter pack consisting of 8/12 silica sand will be placed in the annular space between the well casing and the borehole wall to 1 foot above the screened portion of the casing. The remainder of the annular space, to approximately 0.5 feet bgs, will be filled with dry bentonite chips and hydrated with clean water. The surface of the well will be completed with a concrete seal and a flush-mount monument. Following installation activities, the groundwater monitoring wells will be developed and sampled. A well vault or patch in the floor will be necessary to maintain access to the wells after all the work is complete. Final monument/flooring requirements will be negotiated with Safeway prior to completing this

work, and the remaining flooring will be restored to original condition by a contractor approved by Safeway.

#### **Task 5: Analytical Program**

Air and soil vapor samples submitted for laboratory analysis will be analyzed for volatile organic compounds (VOCs) by Modified EPA Method TO-15. Soil samples submitted for laboratory analysis will be collected and analyzed for VOCs by EPA Method 5035/8260. Groundwater samples submitted for laboratory analysis will be analyzed for VOCs by EPA Method SW8260B.

#### **Task 6: Phase II ESA Report Preparation**

A report of our findings will be prepared and three hard copies of the final report will be provided. The Phase II ESA Report will include a description of the assessment rationale and scope of work, field activities, analytical results, findings, and conclusions and recommendations for additional investigation, if warranted. ESAs may result in development of information that may place an obligation upon the site owner or operator to provide reporting to a regulatory agency or other third party. Kleinfelder will not provide reporting to regulatory agencies or other third parties unless RREEF expressly requests such reporting to be performed or law requires it.

#### **SCHEDULE**

We anticipate that the ESA field activities will be completed in approximately 3 to 4 weeks. Following preparation of the HSP, the indoor air/ soil vapor sampling event will be conducted. We anticipate that the air/ soil vapor sampling activities will be completed in approximately 3 days. Based on evaluation of analytical results from the indoor air/ soil vapor sampling event, soil borings will be advanced and soil and groundwater samples will be collected. We anticipate that the soil/groundwater sampling activities will be completed in approximately 3 days. Based on evaluation of analytical results from the soil/grab groundwater sampling event, groundwater monitoring wells will be installed and groundwater samples will be collected. We anticipate that the groundwater monitoring well installation/ sampling activities will be

completed in approximately 4 days. The laboratory analytical results will be incorporated into the Phase II ESA Report for the site.

Work inside the Safeway store will have to be performed outside of normal store hours. Shift times will be coordinated with Safeway to reduce impacts to normal operations. Sufficient cleanup time will be incorporated into each daily work shift. Floor restoration will occur as quickly as possible after completion of the work.

Kleinfelder proposes to initiate the field investigation immediately upon receiving written approval of this work plan.

**CLOSING**

Kleinfelder appreciates this opportunity to submit our proposed work plan to you. If you have any question regarding this work plan or the project, please feel free to contact our office.

Sincerely,

**KLEINFELDER WEST, INC.**

**DRAFT**

Peter J. Shingledecker, PE  
Senior Engineer

Attachments: Figures 1 and 2

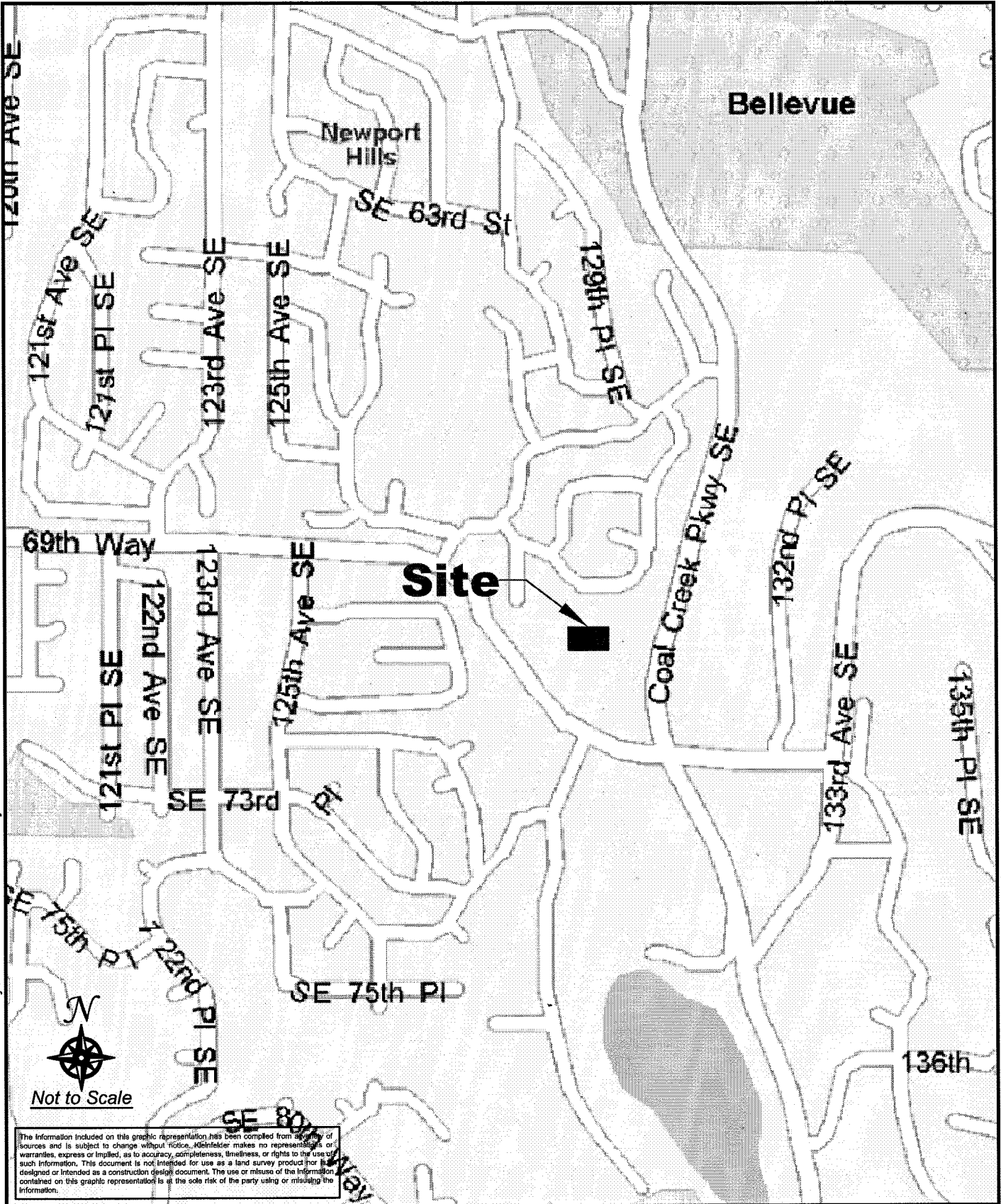
**DRAFT**

Maureen Sanchez, LHG  
Senior Project Manager


PLOTTED: 01 Aug 2008, 10:04am, jstewart

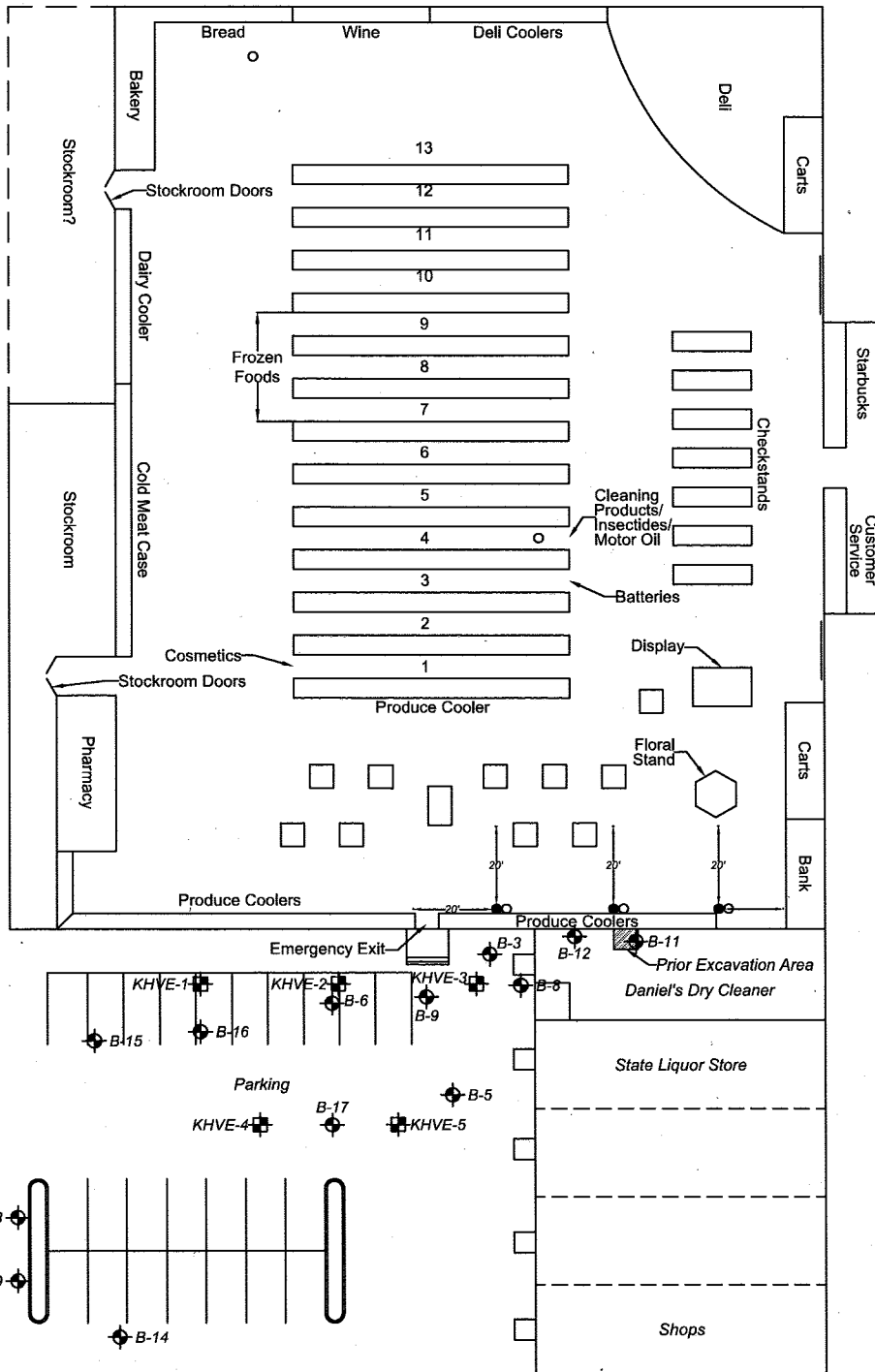
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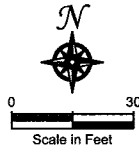


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|  <p><b>KLEINFELDER</b><br/>Bright People. Right Solutions.<br/>www.kleinfelder.com</p> | PROJECT NO. 80402 | <b>Site Vicinity</b>   | FIGURE<br><br><b>1</b> |
|   | DRAWN: July 2008  |  |                        |
|   | DRAWN BY: J.S.    | Daniels Dry Cleaner<br>6923 Coal Creek Parkway SE<br>Newcastle, Washington |                        |
|   | CHECKED BY: M.S.  |  |                        |
| FILE NAME: 80402-Figures-July08.dwg   |                   |  |                        |



- Legend**
- ⊕ Monitoring Well
  - ⊕ High Vacuum Extraction Well
  - Subslab Soil Vapor Sample Locations
  - Soil Vapor/Soil/Groundwater Sample Locations
  - 20'— Potential Soil Vapor/Soil/Groundwater Step Out Sample Locations



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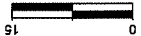
**Site Plan**

Daniels Dry Cleaner  
 6923 Coal Creek Parkway SE  
 Newcastle, Washington

FIGURE  
**2**

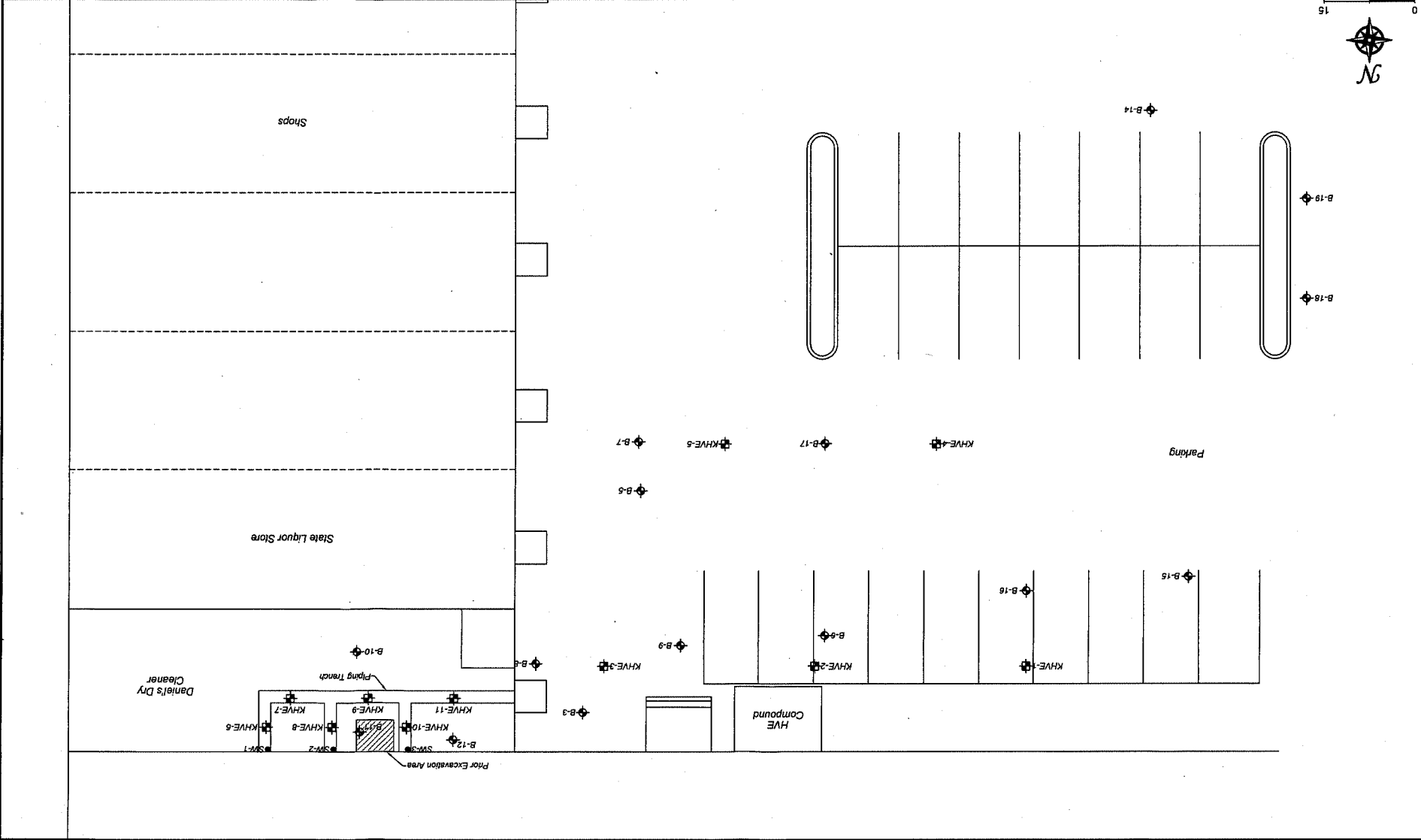
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Scale: 1" = 15'



**Legend**  
 KHXE-5 Vapor Extraction Wells  
 B-8 Soil Boring / Monitoring Well

|          |               |   |                     |
|----------|---------------|---|---------------------|
| <b>2</b> | <b>FIGURE</b> | <b>Site Plan with Monitoring &amp; Remediation Well Locations</b> |                     |
|          |               | PROJECT NO. 80402   | DRAWN: October 2008 |
|          |               | DRAWN BY: J.S.  | CHECKED BY: C.B.    |
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