



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

August 3, 2010

Mr. Dee McGonigle
SRMK, LLC
111 N. Post Suite 200
Spokane, Washington 99201

Re: Opinion pursuant to WAC 173-340-515(5) on the *Work Plan for Additional Environmental Services* for the following Hazardous Waste Site:

- **Site Name:** Mowhawk Flush Doors (also - Seattle Door, SEEDORCO, Sauder Door, Premdor)
- **Site Address:** 747, 777, and 787 - 6th Street South (formerly 733 and 815), Kirkland, Washington
- **Facility/Site No.:** 98437118
- **VCP Project No.:** NW 1543

Dear Mr. McGonigle:

Thank you for submitting your work plan for additional investigations at the Mowhawk Flush Doors facility (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of the submitted work plan pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the Site.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your proposed remedial action(s):

1. April 1, 2010 [misabeled as 2009], *Subject: Work Plan for Additional Environmental Services, former Seattle Door Site, Kirkland, Washington, Kleinfelder West, Inc.*



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2. September 10, 2009, *Re: Further Action at the following Site: Site Name: Mowhawk Flush Doors (also, Seattle Door, SEEDORCO, Sauder Door, Premdoor)*, letter from Washington State Department of Ecology.

Those documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact, Sally Perkins, at 425 649-9190.

The Site is defined by the extent of contamination caused by the following release(s):

- Pentachlorophenol, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), petroleum hydrocarbons (diesel/oil-range(TPH-d/TPH-o), ethylbenzene, xylenes), metals (cadmium, mercury), chlorinated solvents (tetrachloroethylene), and painting solvents (methyl ethyl ketone, toluene) into the Soil.

The Site is more particularly described in Enclosure A to this letter, which includes a detailed Site diagram. The description of the Site is based solely on the information contained in the documents listed above.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined:**

A remedial action has occurred at the Site, as described in the September 10, 2009 letter referenced above. The remediation included extensive soil excavation and disposal. Several issues remained following the remedial action, and the work proposed in the April 1, 2010 letter referenced above is intended to address those issues.

The proposed work includes three new monitoring wells to provide a general check on contaminant movement across the Site in the uppermost "aquifer". The uppermost "aquifer" includes ground water perched in fill/loose weathered soils and present as scarce water-bearing zones within the underlying fine-grained lacustrine deposits. The scope of work also includes six soil samples from the "Southern Driveway Area" and three soil samples from the "Exterior Northern Area". Ecology's comments on the proposed work are as follows:

- New Monitoring Well Installation and Sampling:

Two of the proposed new monitoring well locations should be moved as follows. One well should be placed directly west of the "Exterior Northern Area". Another well should be placed directly west of the "Sumps" area. Placing wells at these locations will make them more directly down slope (and presumably down gradient) from known contaminant source areas.

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In designing the wells, consideration should be given to whether a water-bearing sand and gravel noted in borings at the adjacent Western Pneumatic property might be present at the Site and potentially impacted (the water bearing zone begins at about 28 feet below land surface on the adjacent property, and might be shallower at the Site).

There is no need to obtain soil samples for chemical analysis from the monitoring well borings, unless obvious contamination is encountered.

Ground water samples obtained from the wells should also be analyzed for a complete volatiles suite via Method 8240, or equivalent, a complete semi-volatiles suite via Method 8270, and the following metals – arsenic, copper, lead, zinc.

- Southern Driveway Area

The scope of work proposed for this area should include oil-range total petroleum hydrocarbon analysis for all soil samples.

- Exterior Northern Area

The scope of work proposed for this area should include pentachlorophenol analysis for all soil samples, and to reduce the metals analysis to only two (cadmium, mercury).

This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.**

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

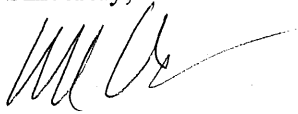
The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

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Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at 425 649-7107.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark Adams', with a long horizontal flourish extending to the right.

Mark Adams
NWRO Toxics Cleanup Program

ma/kp

Enclosures: (1)

cc: Maureen Sanchez, Kleinfelder
Jon Morrow, City of Kirkland

Enclosure A

Description and Diagrams of the Site

Site Description

Site Definition and Location: The Site is associated with a variety of contaminant releases at a door manufacturing facility formerly located at 733 and 815 - 6th Street South in Kirkland, Washington (the Property). The Property is currently occupied by new office buildings with the addresses: 747, 777, and 787 - 6th Street South. Diesel- and oil-range hydrocarbons, ethylbenzene, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), metals (mercury, cadmium), pentachlorophenol, painting solvents (xylenes, toluene, methyl ethyl ketone), and a chlorinated solvent (tetrachloroethylene) were released to soil at the Property and comprise the Site, as shown on the attached figures. A separate site, associated with the release of pentachlorophenol from a specific source (a dip tank), also exists in the extreme southwestern corner of the Property

Area Description: The approximately 7-acre Property is located near downtown Kirkland in an area of mixed industrial, commercial, retail, and residential land use. The businesses are located along 6th St. S., and are backed by residential housing. An elementary school is located about 200 feet southwest of the Property. The area west of 6th St. S. has historically been used for industrial purposes, but is changing. Only a few industrial operations are still present. One of them, Western Pneumatic, adjoins the Property to the south. Western Pneumatic is conducting cleanup actions in the VCP. An active BNRR rail line also bounds the Property to the west. Across the railroad tracks to the west is the former Pace National property, a chemical mixing and packaging business. Pace National is being cleaned up under an Order with Ecology.

Property History and Current Use: The Property was initially developed in the 1940s, and was reported to have been used variously as a depot for the U.S. Navy or a cabinet factory. In the 1950s, a lumber mill operated at the Property. Seattle Door (SEDORCO) purchased the Property in 1956 and began door manufacturing operations. These operations continued under various names (Sauder Door, Premdoor, and Mowhawk Flush Door) until about 2005. Numerous buildings were constructed on the Property, but the main structures were a large manufacturing facility (the main building) and a much smaller office building (the office). Asphalt pavement surrounded these structures. The buildings were demolished in 2006, as part of constructing new office buildings from 2007 through 2009. The former and new buildings are shown on the attached figures.

Physiographic Setting: The Site is situated on a hillside above the eastern edge of Lake Washington. The land surface at the Property slopes down gently to the west, from about Elevation 195 feet along 6th St. S. to about Elevation 165 feet along the BNRR railroad tracks. The railroad is relatively level with the Property and the former Pace National facility where it passes between the two. Further south, near the elementary school, the land surface drops off steeply down to the school grounds. Above 6th St. S., the hillside continues upward reaching an Elevation of over 500 feet at the crest of an upland separating Lake Washington from the Sammamish River valley

Surface/Storm Water System: Most of the Property and surrounding area is paved or covered with buildings, except for the railroad right-of-way, a wooded area to the southwest, and the

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elementary school grounds. Storm water in these non-covered areas infiltrates or flows down slope. In the covered areas, storm water is captured in storm drains and discharged to Lake Washington via urban creeks.

One of these creeks, Houghton Creek, passes a few hundred feet south of the Property. The upper portion of the creek is mostly buried in pipes, but daylights on the elementary school property. A small tributary to the creek originates at a culvert opening closer to the Property just below the railroad tracks on the eastern edge of the elementary school property. Storm water from Western Pneumatic discharges directly into this culvert.

Storm water runoff from the Property, by contrast, currently enters a different storm drain system further north and discharges separately into Lake Washington. It is not clear where surface water runoff historically discharged from the Property, although a map from 1990 shows at least one drainage ditch at the north end of the main building. The ditch appeared to drain onto railroad right-of-way. Surface water runoff from that point is less clear given the lack of clearly defined drainage channels or ditches in this portion of the right-of-way. Some of the runoff may have drained southward towards Houghton Creek.

Ecological Setting: The City of Kirkland has mapped a small wetland area at the culvert discharge point mentioned above. A small wooded area of about 3-acres in size occurs west of the Property across the railroad tracks. Otherwise the area is developed with buildings or pavement (except for the former Pace property which is currently bare ground and undergoing remediation).

Geology: Shallow geologic conditions at the Property consist of a few feet of fill overlying hard glaciolacustrine deposits – clayey silts and fine sandy silts. These deposits extend to a depth of about 28 feet, and are underlain by sand and gravel glacial outwash deposits (as encountered in deeper borings on the adjoining Western Pneumatic property) These extend to the depth explored, about 38 feet.

Ground Water: The uppermost ground water occurs sporadically perched within the fill on top of the silts. The depth to water in this zone is a few feet or less. Sparse water-bearing zones also occur beneath the fill within sandy layers in the hard silts. These water bearing zones are likely confined, but do not appear to be under much pressure. By contrast, ground water is confined under higher pressure within the sand and gravel deposits, and wells completed in these deposits flow at land surface (flowing artesian wells).

At the extreme southern edge of the Property, year-round ground water seepage was detected in several subsurface drain lines. These lines were installed beneath the former main building, and were likely put there to drain the perched zone.

Release and Extent of Contamination: The Site is defined by diesel- and oil-range hydrocarbons, polycyclic aromatic hydrocarbon (PAHs), metals (mercury, cadmium), and pentachlorophenol releases to soil, as mentioned above. Triphenylphosphine oxide (TPPO) was also detected on the adjoining railroad right-of-way, but is likely not part of the Site.

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The contaminant releases occurred apparently through surface spills/applications and through leaks from underground tank systems. The contaminants were contained mostly in fill and were able to penetrate only a few feet vertically because the Property is underlain at shallow depth by dense low-permeability clayey silts. In the underground tank areas the contamination is deeper, because the fill in the tank excavations was deeper.

Ground water contamination has not been confirmed at the Site, but if present, would also tend to move laterally down slope within the perched water in the fill and in the few water-bearing zones in the clayey silts.

Following are detailed descriptions of contaminant occurrence at the Site:

Interior Central Area - Hydraulic Lift: Oil-contaminated soils were located beneath the southern portion of the main building associated with a hydraulic lift sump. The sump was apparently unlined and opened directly to soil. Up to 29,000 mg/kg of oil-range hydrocarbons were initially detected in soil in this area (testing via Method 418.1). The full nature and extent of contamination had not been determined before the start of remediation.

One ground water monitoring well (MW3) installed in an area generally downgradient from the soil contamination showed no detectable diesel/oil-range hydrocarbons.

Interior Central Area - Sumps:

This area has been variously referred to as the marole sumps, hydraulic pits, hydraulic lift pits, hydraulic press sumps, and the press pits. Hydraulic oils and other contaminants were released to soil in this area via cracks and leaks in two concrete sumps within the central portion of the former main building. The two sumps served as the foundation for door fabrication equipment (i.e., the presses), and were about 4.5 feet deep relative to floor slab grade. In an early 1990 investigation, one of the sumps contained spent hydraulic fluid and the other contained some kind of resin.

The soil contamination was concentrated in the upper 10 feet of soil over an area of approximately 70' by 80'. Soil samples in this area were analyzed primarily for diesel- and/or oil-range hydrocarbons, although the earliest investigation (Weston, 1991) also reportedly checked for semi-volatiles, volatiles, PCBs, and metals. The PCBs, volatiles, and semi-volatiles analyses resulted in no reportable detections. Metals may or may not have been analyzed; the report is unclear. TPH, as oil-range hydrocarbons, was detected in the Weston investigation and in later investigations up to a maximum of 25,000 mg/kg.

One ground water monitoring well (MW2) installed in an area generally downgradient from the soil contamination showed no detectable diesel/oil-range hydrocarbons.

Interior Central Area - UST: A 1500-gallon heating oil tank, located within a concrete vault below the main building, was removed in 2007 during construction of the new buildings. There was no release to soil from this tank, based on visual observations and confirmatory sidewall and

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base sampling after the surrounding vault had been removed. Strictly speaking, this area is not part of the Site since no release occurred.

Glue Tank: The 1994 report by Geotech Consultants notes the existence of a 3000-gallon glue tank located somewhere beneath the main building. This tank was reportedly closed in place by filling it with concrete, in consultation with Ecology. Presumably this tank was removed in 2006 during construction of the new buildings, and there must not have been any observed releases given that it was not mentioned in the final 2009 remediation report.

Exterior Area - Underground Storage Tanks: A 2,000-gallon heating oil tank and a 700-gallon diesel tank were removed in 1989 from one excavation in front of the eastern entrance to the main building, and a 2,000-gallon gasoline tank was removed at the same time from the northern end of the building. Confirmatory base and sidewall soil samples contained low or non-detectable concentrations of TPH as described in a 1989 report by Weston (as reported in the 1994 Phase 1 report by Geotech Consultants).

Exterior Northern Area: This area comprises a former drainage ditch at the north end of the property, just outside the former maintenance building. Sediment in the ditch and surrounding surface soils were contaminated with pentachlorophenol, PAHs, fuel hydrocarbons (gasoline- and diesel-range TPH, ethylbenzene, xylenes), metals (cadmium, mercury), chlorinated solvents (tetrachloroethene), and painting solvents (methyl ethyl ketone, and toluene). Of these, only cadmium and mercury exceeded an applicable cleanup level. The vertical and lateral extent of contamination within and off the property had not been fully determined prior to the start of remediation.

Ground water monitoring was not conducted in this area.

Exterior Parking Lot Area: Widespread contamination was detected in surface soils in the parking lots and yard areas surrounding the main building and the office building. Initial sampling showed a variety of contaminants, but mostly PAHs and pentachlorophenol at concentrations below cleanup levels, except possibly at one location at the south driveway where total PAH concentrations were relatively high (3.2 mg/Kg). Anecdotal reports indicated that oil was spread in just a portion of the parking areas - the main parking lot in the central eastern portion of the Property. Additional sampling was therefore undertaken in the main parking lot and showed elevated concentrations of cPAHs and oil-range hydrocarbons in shallow soils. The maximum vertical extent of contamination was about three feet.

No further investigations were undertaken in soil along the south driveway.

Ground water monitoring was not conducted in these areas, although wells MW2 and MW3, and a dewatering well in the railroad right-of-way (see next bullet) are generally down gradient of the former parking lot areas. Samples from MW2 and MW3 were only analyzed for diesel/oil-range hydrocarbons; none were detected. The sample from the dewatering well was analyzed for chlorinated solvents, metals, semi-volatile organics, and TPPO (see next bullet); only

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pentachlorophenol was detected at 3.3 ug/L. Note that the dewatering well was essentially open to surface water, and was not properly constructed for monitoring purposes. The pentachlorophenol detection may therefore not be reflective of ground water conditions.

Off-Property Manhole: A new sanitary sewer manhole was constructed in 2008 in the railroad right-of-way between the Property and the former Pace facility. A City of Kirkland employee working in this manhole in mid-September 2008 became ill. Exposure to an unknown chemical compound was suspected. City personnel proceeded to sample a crystalline solid on the interior of the manhole, and the laboratory reported the detection of triphenylphosphine oxide (TPPO). Additional samples of water and/or sediment were subsequently obtained by the City from a catch basin on Western Pneumatic property, the new storm water detention vault on the Seattle Door property, and a dewatering well next to the sewer manhole. TPPO was also detected in all these samples. Ecology staff from the Manchester Laboratory looked at the raw analytical data for some of the samples and concluded that the detections were possible, but could not be verified or quantified. Resampling by both the City and Geotech Consultants a short time after the initial sampling round showed no TPPO. Ecology therefore concluded that no further investigation into the issue was warranted.

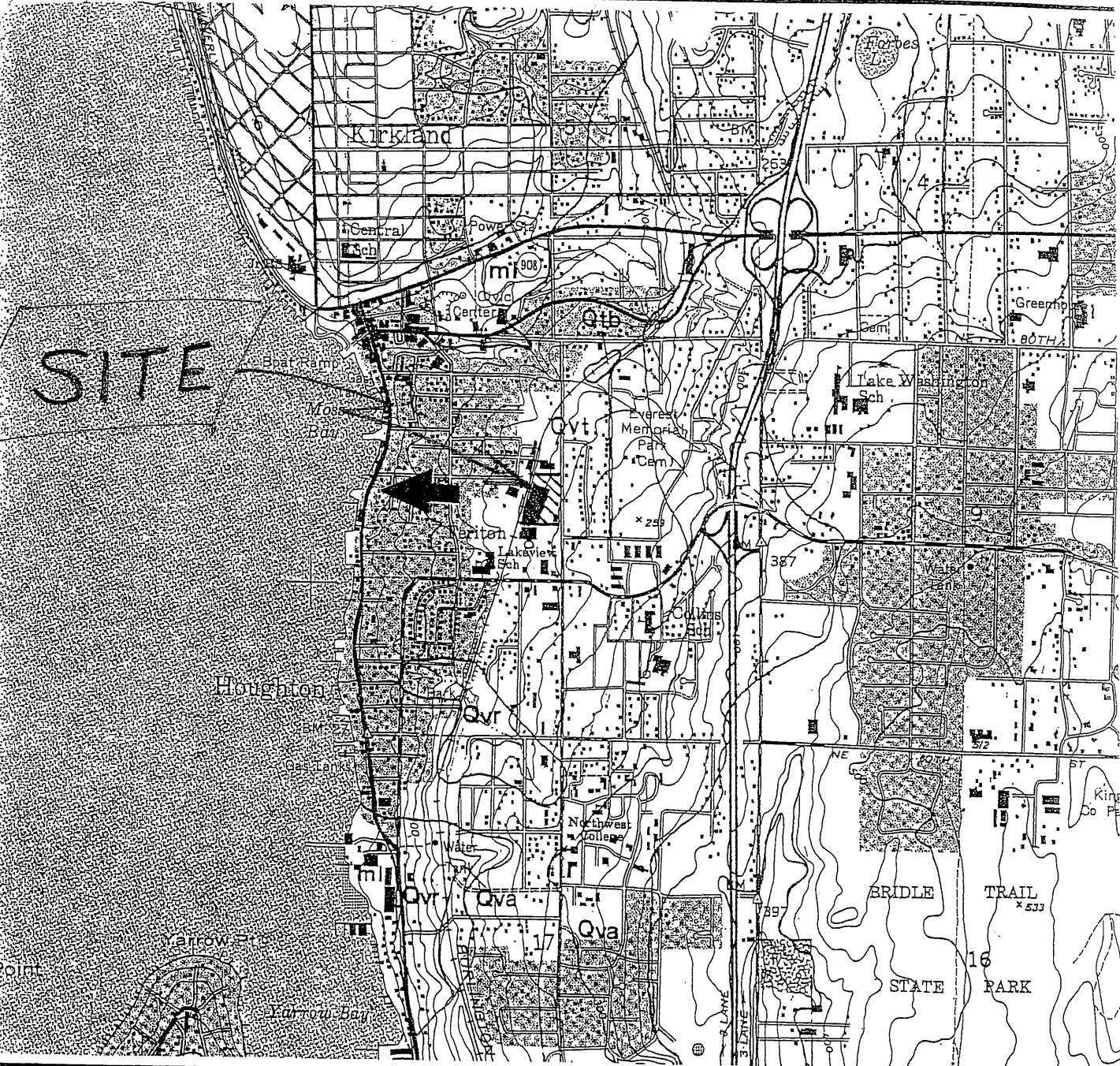
The City of Kirkland several months later retained an environmental consultant to conduct another round of sampling following strict field and laboratory protocols. This more rigorous study did confirm TPPO presence in the crystalline solid in the sewer manhole, but not in the other locations where TPPO had previously been detected. The consultant reported that the crystalline solid appeared to have been derived from ground water seepage into the manhole. Ecology also viewed the manhole and does not agree with this observation.

TPPO is an industrial chemical used in fire retardants, epoxy cure catalysts, and polymer bases. It does not have sufficient human health toxicity data or ecological toxicity data to readily establish cleanup levels under MTCA, according to Ecology toxicologists. However, Material Safety Data Sheets for TPPO indicate it can be irritating to the eyes, skin, respiratory system, and gastrointestinal tract, among other potential hazards.

No source for the TPPO has been established, although there are anecdotal reports of fire retardant use in the former door manufacturing process. Other possible sources in the area include accidental releases associated with railroad operations and the Pace facility.

Ecology has concluded the TPPO detection is not part of the Site based the lack of any plausible transport pathway between the Property and the sewer manhole, and on the lack of any direct evidence that the door manufacturing facility used TPPO.

SITE



LEGEND:

SITE

PROBABLE DIRECTION OF REGIONAL SHALLOW GROUNDWATER FLOW

Qvr

Quaternary Vashon Recessional Outwash

Qvt

Quaternary Vashon Till

Qtb

Quaternary Transitional Beds

N

CONTOUR INTERVAL: 25 FEET
SCALE: 1" = 2,000'

(SOURCE: USGS GEOLOGIC MAP, KIRKLAND, WA. QUADRANGLE 1983)



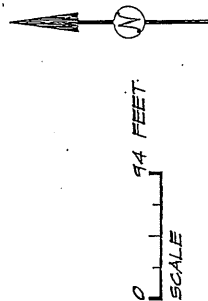
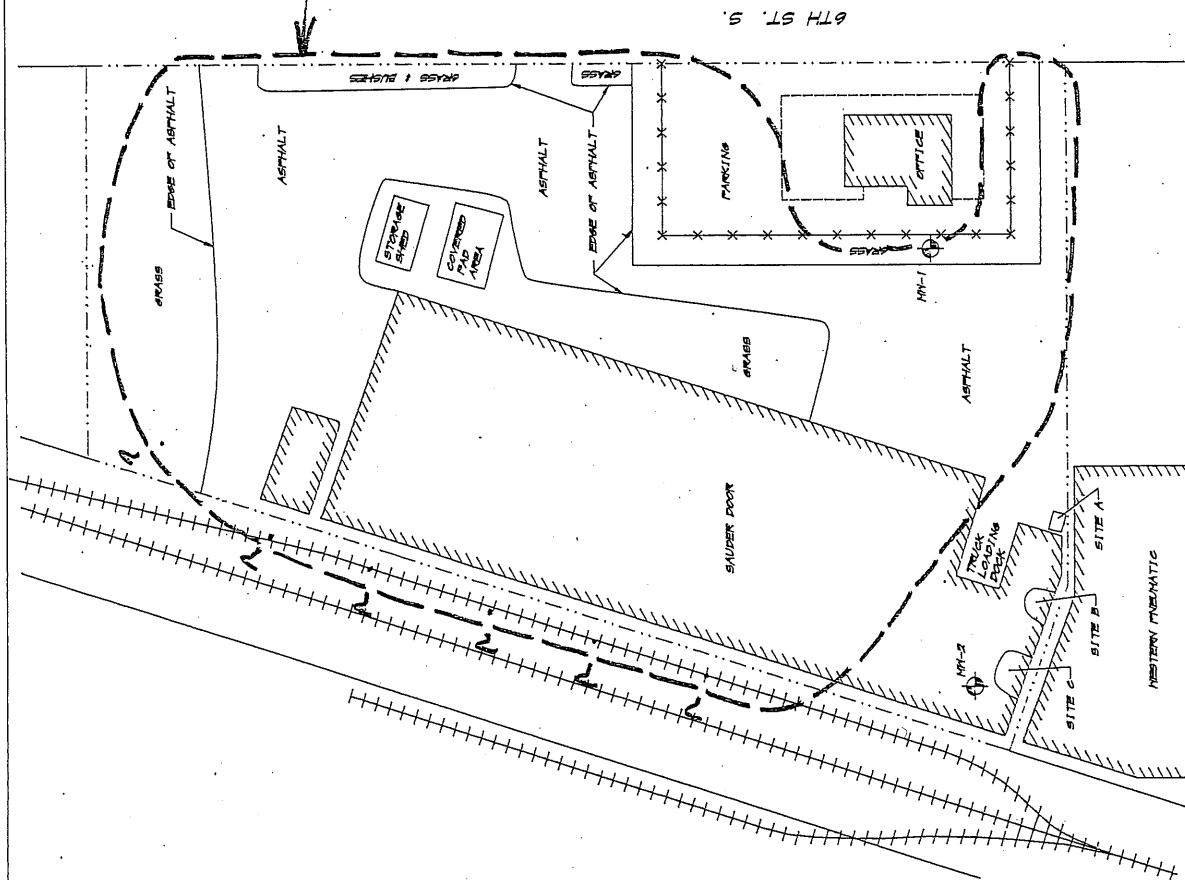
GEOTECH
CONSULTANTS, INC.

SITE VICINITY MAP
SAUDER DOOR PROPERTY
815 - 6th STREET SOUTH
KIRKLAND, WASHINGTON

Job No: 96415E	Date: July 1997	Plate: 1	
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LEGEND	
STREET	EXPLANATION
---	PROPERTY BOUNDARY
x-x-x-x	FENCE LINE
MM-1	MONITORING WELL LOCATION

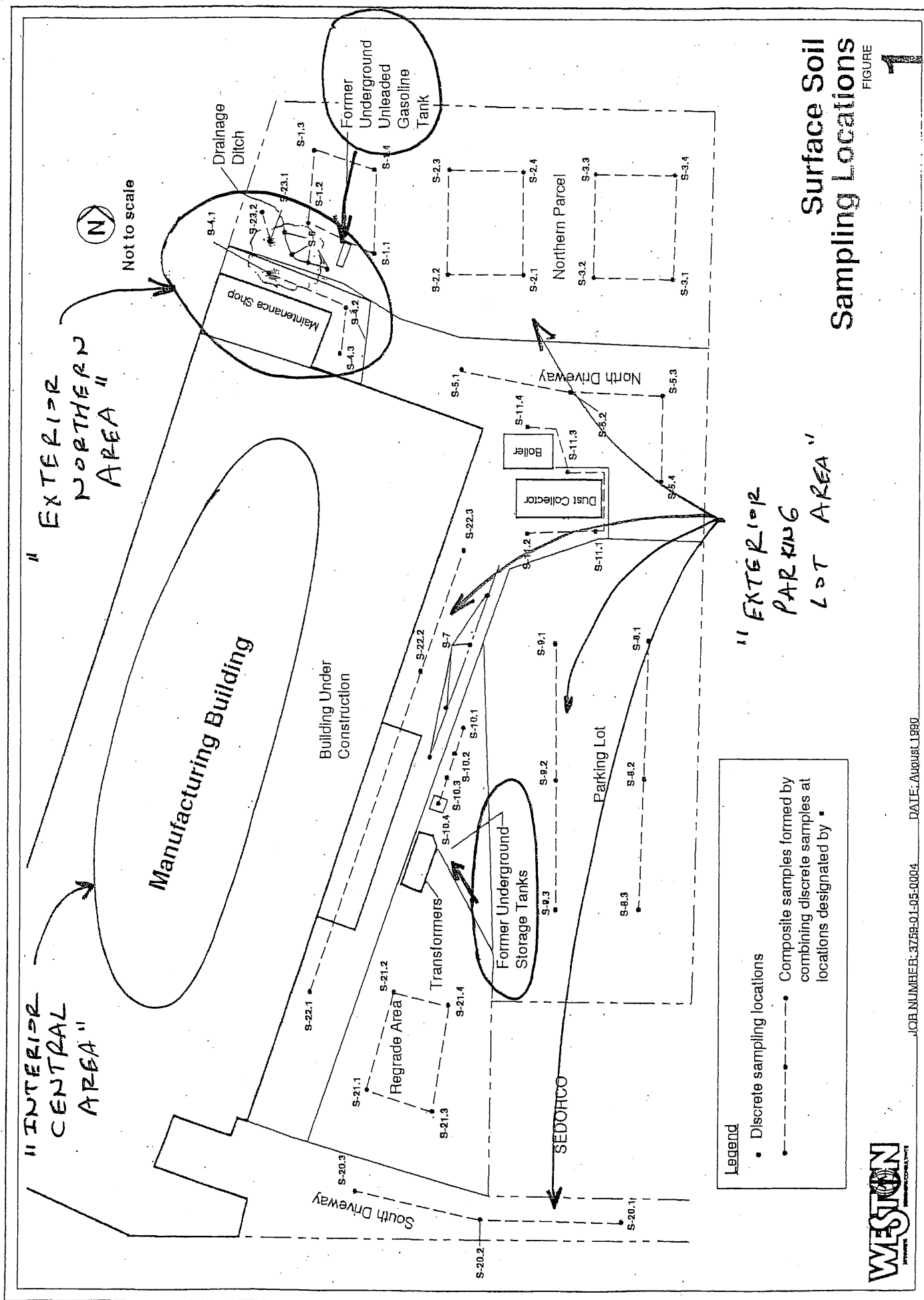
APPROXIMATE BOUNDARY
OF SITE
M. ADAMS, ECOLOGY
SEPT, 2009



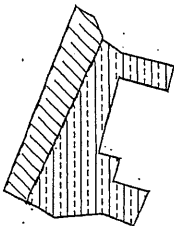
SAUDER DOOR COMPANY
815 6TH. ST. S.
KIRKLAND, WASH.

BASE MAP

DATE	PROJECT NO.	FIG. #
11-19-91	8-91-7104	2
SCALE	DWG. NO.	SHEET
1"=94'	SD01B--	B
DRAWN BY	APPROVED BY	REV.
M. ADAMS	J. BAILEY	-



Approximate location of patched concrete floor from Geotech Consultants limited cleanup December 1996 January 1997



Approximate limits of excavated soil from Geotech Consultants cleanup September - October 2006

Approximate limits of excavated soil from Geotech Consultants cleanup September 2006

Approximate limits of additional excavated soil from Geotech Consultants cleanup October 2006

Approximate location of heating oil underground storage tank discovered June 2007

Approximate Location of Geotech Consultants Boring/Monitoring Well April 1998

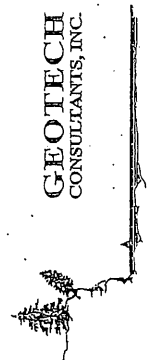
Approximate Location of Geotech Consultants Geoprobe Boring August 2007



Scale



GEOTECH
CONSULTANTS, INC.



TP1E Approximate location of test pit excavated September 2006.



TP2E Approximate location of wall confirmation sample



10 Approximate location of bottom confirmation sample



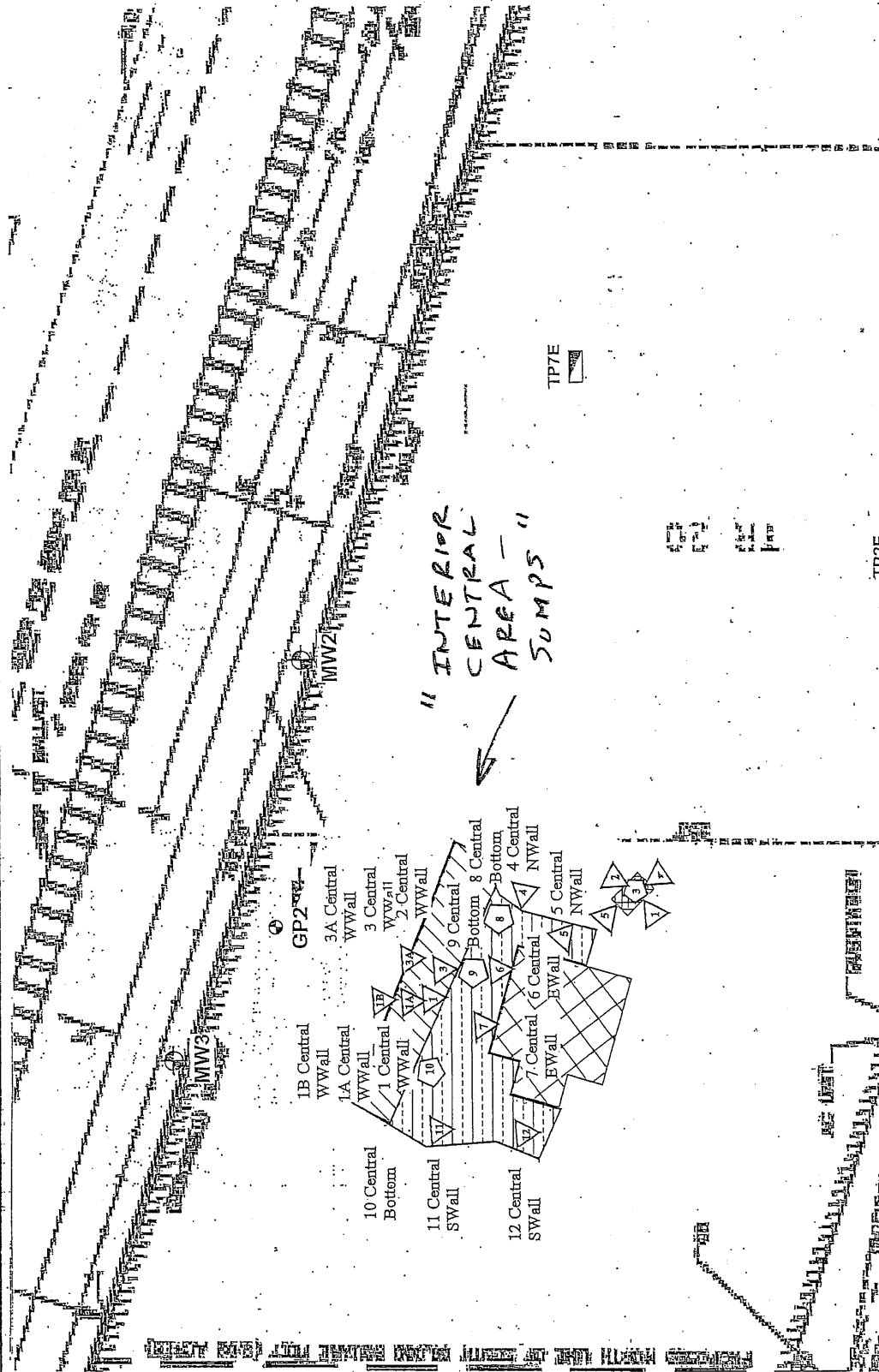
INTERIOR CENTRAL CONFIRMATION
FORMER SEATTLE DOOR PROPERTY
733 - 6TH STREET SOUTH
KIRKLAND, WASHINGTON

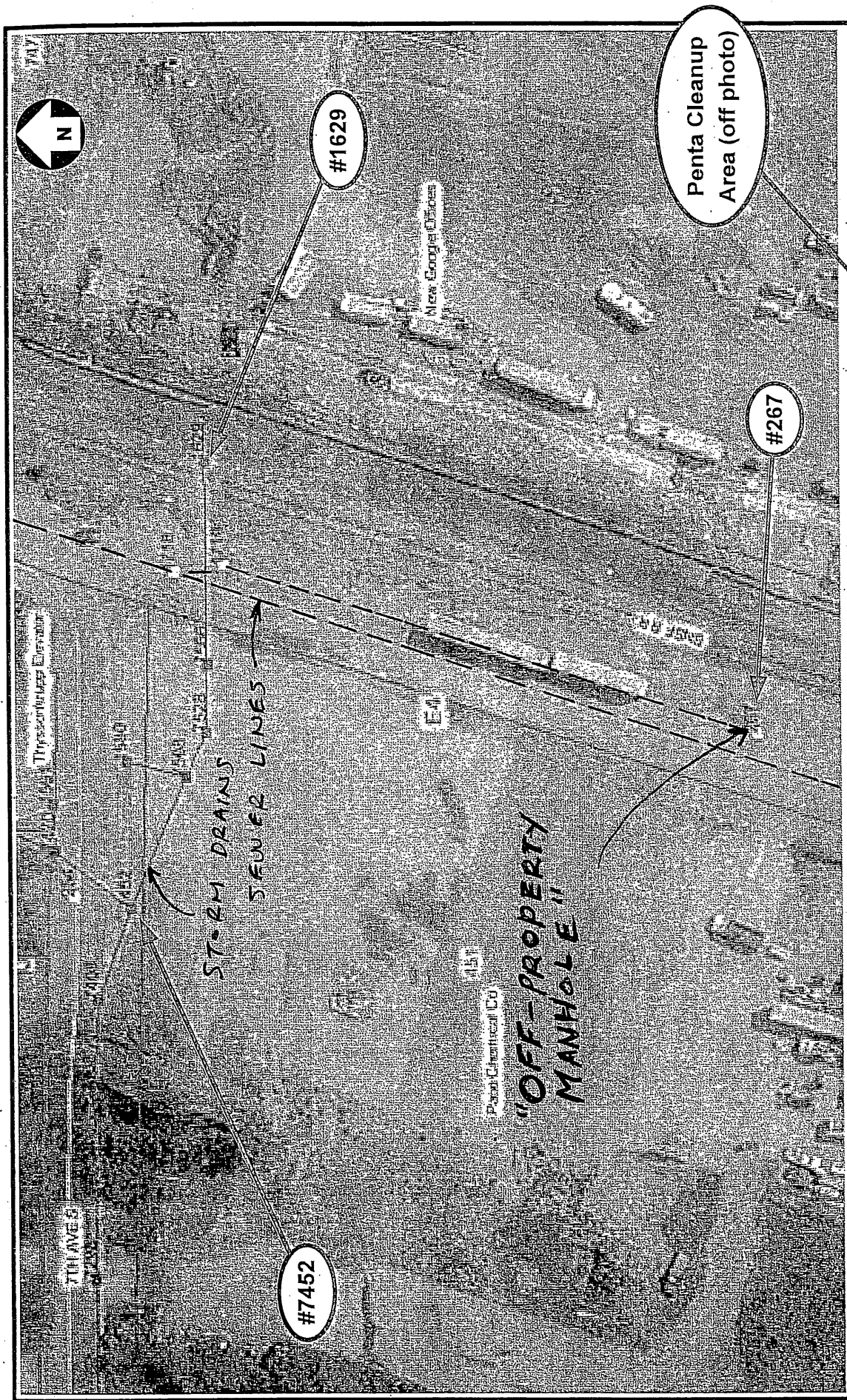
Job No: 05192E

Date: Revised Sept. 2009

Page: 5

Adapted: DR Strong Campus at UHland Record Drawings





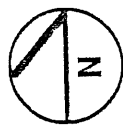
Mapping Reference:
City of Kirkland, No
Scale

g_elogics

Sampling Locations
City of Kirkland Utilities
5th Place South and 7th Ave. South
Kirkland, Washington

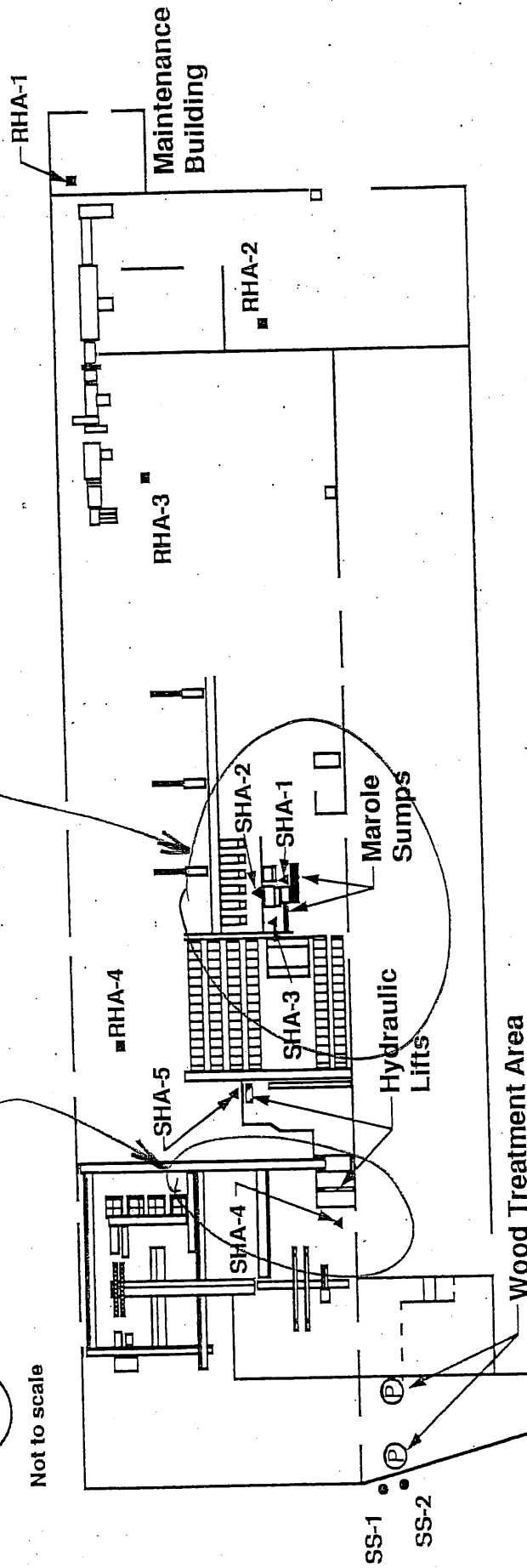
Figure
2

" INTERIOR CENTRAL AREA - SUMPS "



Not to scale

HYDRAULIC
LIFT "



Explanation

- RHA-3 ■ Random Hand Auger Number and Location
- SHA-3 ▲ Sump Hand Auger Number and Location
- SS-1 ● Soil Sample Number and Location

Exploration and Sampling Plan for Sauder Door Company

Figure 1