


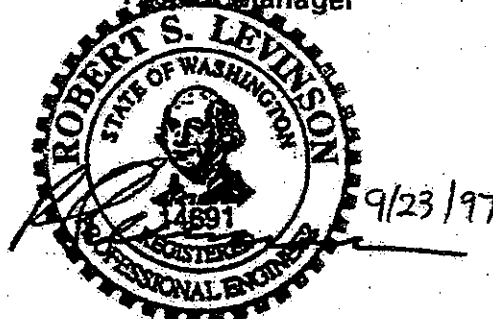
**ENVIRONMENTAL SITE ASSESSMENT
TAVIS PROPERTY
28005 PACIFIC HIGHWAY SOUTH
KING COUNTY, WASHINGTON**

E-7816

September 23, 1997

**PREPARED FOR
GRANVILLE SOUTHERN CORPORATION**


Joe Nessel, REA, REP
Project Manager



EXPIRES 03/07/98

**Robert S. Levinson, P.E.
Principal**

**Earth Consultants, Inc.
1805 - 136th Place Northeast, Suite 201
Bellevue, Washington 98005
(206) 643-3780**

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EXECUTIVE SUMMARY

The following is a summary of our findings and recommendations concerning potential environmental issues identified during our assessment of the subject property. This summary should be used for introductory purposes and the reader should refer to the report for further clarification.

The subject property consists of a rectangular parcel encompassing approximately twelve (12) acres. The subject site property is located at 28005 Pacific Highway South, in King County, Washington. The property was undeveloped until used as a rural farm from the late 1940s until approximately 1995. Farm buildings were removed from the currently vacant subject site in 1995.

The surrounding area is mixed use residential, commercial/retail, parks, and schools.

ECI has performed a Phase I Environmental Assessment (ESA) of the Tavis Property, 28005 Pacific Highway South, King County, Washington, in conformance with the scope and limitations of ASTM Practice E-1527. This assessment has revealed no evidence of Recognized Environmental Conditions in connection with the subject property.

Deminimis conditions include miscellaneous types of refuse and debris scattered and in piles at various locations across the subject site, and abandoned vehicles.

1.0 INTRODUCTION

Earth Consultants, Inc. (ECI) has completed a Phase I Environmental Site Assessment (ESA) of the property located at 28005 Pacific Highway South, King County, Washington. This investigation was performed by ECI for Granville Southern Corporation. The work was performed in accordance with ECI's July 11, 1997 proposal, which was authorized by Mr. Michael Reid, President, on July 23, 1997. This report summarizes the project approach and findings.

1.1 Scope of Services

ECI conducted an ESA to evaluate the potential for contamination on the subject property resulting from past or present activities. The scope of work for this study was limited to the following tasks:

- A review of reasonably ascertainable information from various sources with respect to historical use of the property and its surroundings;
- A visual reconnaissance of the subject property, along with photographic documentation of selected points of interest;
- Reviews of:
 1. U.S. Environmental Protection Agency (EPA) Emergency Response Notification System (ERNS) list - list of EPA responses to sudden or accidental releases of hazardous substances to the environment.
 2. EPA National Priorities List (NPL) -List of Superfund sites;
 3. EPA CERCLIS (CERCLIS information System) List, which documents sites known to be contaminated;
 4. The EPA Resource Conservation Recovery Act (RCRA) Notifiers List, which lists businesses generating, transporting, treating, storing, or disposing of hazardous wastes as part of their operations.
 5. Washington Department of Ecology (Ecology) Toxic Cleanup Program (TCP) Lists, including Site Registers and Contaminants and Confirmed and Suspected Sites (CSCS) Reports, which documents sites in Washington that are currently confirmed or suspected of being contaminated at levels exceeding state regulatory criteria.

6. Ecology's Underground Storage Tank (UST) list.
 7. Ecology's Leaking Underground Storage Tank (LUST) list.
 8. King County active and abandoned landfill and transfer station site information
- Limited subsurface soil investigation.
 - Preparation of this written report.

The scope of the project did not include an audit of environmental regulatory compliance issues or permits.

1.2 Site Description

The subject property is located on the west side of Pacific Highway South in the 27900 and 28000 Blocks, west adjacent to the City of Federal Way, south King County, Washington. The rectangular shaped site encompasses approximately twelve (12) acres. Approximately 9.8 acres of the subject site are located in the northeast quarter of southeast quarter of Section 32, Township 22 North, Range 4 East. Approximately 2.2 acres encompassing the eastern portion of the subject site are located in the northwest quarter of the southwest quarter of Section 33, Township 22 North, Range 4 East.

The approximate location of the subject site is shown on Plate 1, Vicinity Map. A general layout of the site and surrounding properties is presented in Plate 2, Site Plan. Site Photographs are presented in Appendix A.

The eastern and western thirds of the currently vacant subject site is covered with trees and dense vegetation. The central, approximately one-third portion, of the subject site contains a wetland on the north and a grass covered area on the south. Land use in the surrounding area is a mixture of single-family and multiple-family residences, parks, commercial businesses, and schools. Puget Sound is located approximately 0.4 miles west of the subject site.

The subject site is located in an area of rolling hills. The referenced topographic map indicates the east edge of the subject property lies at an elevation of approximately three hundred seventy-five (375) feet, and the west edge at approximately three hundred (300) feet elevation, relative to the National Geodetic Datum of 1929. The site is located on the west side of a hill which crests approximately one-half mile east of the subject site. The eastern third of the subject site is a moderate to steep hillside which drops downward to the west (roughly 1V to 2H) approximately fifty feet in elevation. The remainder of the subject property slopes gently from the base of the hillside toward the west. A wetland area, previously identified by Wetland Resources, Inc., Federal Way, Washington, is located on the north central portion of the subject site. The wetland area encompasses approximately 2.5 acres, includes a small pond, and drains toward the west.

The north, south, and west adjacent properties are at essentially the same contour and elevation as the subject site. East adjacent Pacific Highway South is eight to ten feet higher in elevation than the subject site and properties east of the highway rise steeply twenty to forty feet in elevation. Properties approximately five hundred feet west of the subject site drop steeply downward toward the west and Puget Sound.

The subject property is bordered on the north and northwest by trees and vegetation on single-family residential properties (Photo 1 and 2). The subject property is bordered to the northeast by forestation and underbrush. The subject site is bordered on the east by multi-family residential apartment buildings across Pacific Highway South (Photo 3). The subject property is bordered on the southeast by forestation and underbrush. The subject site is bordered on the remainder of the south edge and the west by single-family residences (Photos 4, 5, and 6).

2.0 SUBSURFACE CONDITIONS

2.1 Geology

The referenced geologic map of Southwestern King County indicates that the site is underlain by the geological unit known as Quaternary Vashon Till. Till is a hard unsorted mixture of clay, silt, sand and gravel, and can be more than 150 feet thick. Although the till is relatively impermeable, thin beds of sand and gravel mapped within the till commonly yield small quantities of perched water.

During the referenced geotechnical study (GES) performed at the subject property by J. Keith Cross, P.E. in March 1997, and subsurface explorations by ECI in August 1997, logs from test pit excavations indicated that site was generally underlain by silty sand with gravel to the maximum explored depth of nineteen feet below ground surface (bgs). Two large areas of concrete and asphalt rubble fill are located on the site, one area in the northeast corner and the other area on the south central part of the subject property.

Beneath up to six feet of rubble fill or topsoil, brown loose silty, gravelly sand was encountered to approximately nine feet bgs. The brown silty sand encountered was medium dense and became gray dense to very dense from three to nine feet bgs, and extended to the maximum explored depth of nineteen feet bgs.

2.2 Groundwater

During the referenced March 1997 GES exploration, groundwater was encountered from 2.5 to twelve (12) feet bgs in test pits excavated on the central and western parts of the subject site. Groundwater was not encountered in test pits excavated on the eastern hillside near Pacific Highway South, or in the southwest and northwest corners of the subject site. During ECI's August 1997 subsurface exploration in some of the same GES locations, groundwater was not encountered to the maximum explored depth of seven feet bgs. A former domestic water well located near the base of the east hillside contains water approximately fifteen feet bgs. The referenced GES reports the well to be approximately 31 feet deep.

A small pond is located in a wetland area on the north central part of the subject site. Both the level and size of the pond tend to fluctuate seasonally during periods of dryer and wetter weather.

Based on topography in the general vicinity of the site and local surface drainage features, the inferred regional groundwater flow direction in the site vicinity is from the east toward the west. Groundwater conditions on the site may vary due to site-specific subsurface conditions and local surface hydrology. Fluctuations in groundwater levels and seepage rates are expected, depending on seasonal variation, amount of rainfall, surface water runoff, and other hydraulic factors.

3.0 SITE RECONNAISSANCE

On July 30, 1997, ECI representative, Mr. Joe Nessel, visited the subject property to look for evidence that the site has been environmentally impacted by past or ongoing activities. The focus of the reconnaissance was to identify obvious visual signs of potential environmental contamination caused by current and/or historical property activities. The site layout is shown on the Site Plan, Plate 2. Photographs of selected features at the site are included in Appendix A.

Our site reconnaissance included identifying the use and storage of hazardous substances, the potential presence of underground storage tanks (USTs), visible building materials potentially containing asbestos (ACMs), signs of stressed vegetation, stained soils, and illegal dumping. The subject site and adjacent properties were photographed. We also walked the perimeter of the property to observe adjacent properties to determine their land use, and how it might potentially affect the subject property.

3.1 Site Observations

The currently undeveloped, rectangular shaped subject site encompasses approximately twelve acres. The eastern and western approximately one-third portions of the subject site are covered with forestation of mixed evergreen and deciduous trees (Photos 1 through 6). Dense brush, small trees, and vines are located beneath the tree canopy. The central third of the subject property is covered by a wetland on the northern portion (Photo 7) and a fill area covered with tall grass and weeds on the southern part (Photo 8). Dense blackberry vines and several fruit trees are located along the east side of the central fill and wetland area.

One entry to the subject site is via the northeast corner of the property. A metal tube gate and a cable are located across the entry. Concrete and asphalt rubble (Photo 9), along with silty sand and cobble, have been placed as fill in the northeast corner of the property. The fill is approximately fifteen feet in depth as it slopes steeply downward at the west edge and then moderately downward to the southwest. Several articles of discarded household and other plastic and metal debris were observed on the ground surface in a depressed area near the southwest corner of the fill area.

A collapsed former building is located at the west edge of the fill. Information provided by the property owner, Mr. Don Tavis, indicates that the structure was a former chicken-coop and vehicle storage facility. Rotten wood, metal fencing, metal rails, and other metal debris are located around two abandoned vehicle hulks in this area (Photo 10). Dense vegetation is growing around and through the debris.

A significant amount of metal debris, auto parts, and household debris were observed scattered around the northeast portion of the subject property. Three abandoned vehicle shells were located in the area south of the former chicken-coop (Photo 8). Areas of discarded household rubbish, debris, and yard wastes were observed primarily along the east and south edges of the subject property.

A water well covered by a small, wood-frame structure is located near the base of the east hillside at the east edge of the central property area (Photo 11). Mr. Tavis related in a conversation with ECI that he built the current structure over the well in approximately 1995. The well provided domestic water to the subject site from the late 1940s until approximately ten years ago when the water became non-potable due to an inflow of surface water from east adjacent properties. A large, above-ground, holed, rusted metal tank was observed next to the well house, and reported by Mr. Tavis to have been used for water storage.

A wash-out area from a storm sewer drain is located on the southeast hill side. The surface/storm water sewer system draining properties located east of the subject site and under the jurisdiction of the City of Federal Way Department of Public Works, flows under the east adjacent Pacific Highway South and discharges at two locations onto the east edge of the subject site. Off-site surface water management to the north, south, and west is performed by King County.

The surface/storm waters discharged onto the subject site from the east adjacent properties eventually drain into a wetland area located on the north central portion of the subject site. A small pond area is located at the south end of the wetland area. At the time of our site reconnaissance, the water level of the pond was approximately four feet below the surrounding ground surface. Concrete and wood debris, and an auto tire were located at the pond's east edge.

A second entrance to the subject site is provided near the center on the south edge of the subject property, at the end of 15th Avenue South. The south central area of the subject site is a relatively flat grass, weed, and blackberry covered area. Mr. Tavis reported that fill material had been placed in this area of the subject site in the late 1980s. A gravel/soil berm, three to four feet high and approximately two hundred feet in length, was located at the west edge of the south central area. Referenced documentation reviewed by ECI reveals that fill was placed in this area in the early 1980s.

On August 1, 1997, ECI excavated nine test pits in the fill area on the south central portion of the subject property. The test pits were observed for characteristics and an approximate delineation of fill materials. Soil samples were collected from two test pits of the deepest fill locations and submitted for laboratory analysis of potential pollutants. Air monitoring of the test pits for combustible gas and volatile organic compounds was performed. Discussion of the August 1, 1997 subsurface exploration is presented in Section 6.0 of this report.

There are no utilities currently located on the subject site. A domestic water well and on site septate system were previously utilized on the subject property. The Federal Way Water and Sewer District provides domestic water service and sanitary sewers adjacent to the subject site.

No signs of stained soil, spills, stressed vegetation, or sheens on surface water were observed on the subject property during our site reconnaissance. No indications of any subsurface structures such as vents from an underground storage tank (UST) were observed during our reconnaissance. However, complete observation of the site surface was limited by the presence of dense underbrush.

Mr. Tavis informed ECI that he has no knowledge of any petroleum or hazardous materials spills having occurred on the subject property. He had no knowledge of any environmental liens, or active or pending administrative or legal actions against the property relevant to hazardous substances.

3.1.1 Transformers

ECI did not observe any transformers at the subject site.

3.1.2 Asbestos-Containing Materials (ACM)

ECI did not observe any friable ACM at the subject site.

3.2 Survey of Adjacent Properties

The subject property is bordered on the north and northwest by trees and vegetation located on single-family residence (SFR) land parcels (Photos 1 and 2). The subject property is bordered on the northeast by an approximate one hundred fifty (150) foot deep area of trees and dense vegetation. The Redondo Family Grocery, a convenience store and residence, is located north of the trees. The north adjacent properties follow essentially the same contour and elevations as the subject site.

The east side of the subject property is bordered by Pacific Highway South (aka. Highway 99), a four-lane asphalt paved highway (Photo 3). The highway slopes gently downward in elevation toward the north. Multi-family residential structures are located east of the highway. The east adjacent Pacific Highway South is approximately ten feet higher in elevation than the subject site. Properties located across the highway rise steeply twenty to forty feet higher in elevation.

The south side of the subject property is bordered by a forestation covered parcel to the southeast and SFRs on the remainder of the south edge (Photos 4 and 5). The south adjacent properties follow essentially the same contours and elevations as the subject property. A paved cul-de-sac on 15th Avenue South, located near the center of the south edge is three to four feet lower in elevation than the adjacent filled portion of the subject site.

The subject property is bordered on the west by chain-link fencing on adjacent rural SFRs parcels (Photo 6). The west adjacent properties are at essentially the same elevation as the subject property. The properties located approximately two hundred feet west of the subject site drop steeply downward toward the west and Puget Sound.

No obvious signs of contamination on adjacent properties were observed from the subject site during ECI's site reconnaissance. Based upon observations and information collected during our site reconnaissance, current tenants of adjacent properties are not expected to have environmentally impacted the subject parcel.

4.0 SITE HISTORY RESEARCH

ECl researched the history of land use activities on and immediately surrounding the subject property to identify former land use that may have adversely affected soil and groundwater. For the purposes of this research we reviewed the following:

- Aerial photographs; 1936, 1946, 1960, 1969, 1970, 1974, 1980, 1985, 1990, and 1995.
- Chain-of-Title Documentation prepared by First American Title Insurance Company, Seattle, Washington.
- Historical information from the Puget Sound Branch of the Washington State Division of Archives and Records Management, Seattle, Washington.
- Historical Topographic maps dated 1961, 1968, and 1994.
- Interviews with people knowledgeable with respect to historical land use in the site vicinity.

4.1 Historical Site Use

In 1936, the subject site was composed of parts of adjoining larger parcels of land which extended west from east adjacent Pacific Highway South. A 1936 aerial photograph reveals that the subject property was undeveloped, and covered with low growing vegetation and a sparsely treed. A small wood frame building shell was constructed on the northeast corner of the subject site in the late 1930s and remained unfinished until torn down in 1949.

In the early 1940s, the approximately one and one-half acres of the southeast portion of the subject site was under separate ownership from the remaining 10.5 acres of the subject site. The southeast portion of the site was permitted to revegetate and has remained undeveloped. This area was purchased by Mr. Tavis in 1995.

The 1946 aerial photo reveals that the undeveloped subject site remained covered with low growing vegetation and the wetland on the north central area of the site.

In 1946, the 10.5-acre portion of the subject site was purchased by Alvin Shepard, grandfather of Mr. Don Tavis, the current property owner. Mr. Shepard established a rural farm on the subject site. The farm was entered from Pacific Highway South by a driveway located on the northeast corner of the site. Mr. Shepard constructed a large chicken-coop on the northeast portion of the site in the early 1950s. He also constructed several small portable farm sheds, one which he resided in, on the eastern side of the wetland/pond area. In 1995, Mr. Tavis demolished the buildings, except for the chicken-coop which had collapsed prior to the 1980 aerial photo, and hauled off debris.

The 1969 aerial photograph reveals that the subject site was being excavated and reconfigured south of the wetland area. Mr. Tavis reported during a conversation with ECI, that Mr. Shepard had excavated and sold gravel from the property. The 1970 aerial photo shows the same area was regrowing with vegetation. The 1970 aerial also reveals a small fill and graded area on the northeast corner of the subject site.

The subject property remained essentially unchanged until approximately 1980 when aerial photos reveal that most of the site except south of the wetland was being overgrown with trees and vegetation. The 1980 aerial photos reveal that grading and filling was occurring in the area south of the wetland.

The 1985 aerial photo and grading permit documentation indicate that fill materials were placed both on the northeast part and on the south central part of the subject property at various periods throughout the 1980s. Documentation on the fill material indicated that it was primarily construction excavation soil, and demolition concrete and asphalt rubble. In 1989 the south central fill area was graded and hydroseeded with the grass that fairly well defines that fill area as it currently exists.

The subject site has remained unoccupied since 1994 and in its current undeveloped state since 1995.

4.2 Historical Off-Site Use

In 1936, the area was primarily occupied by rural farms and undeveloped vegetation covered parcels. The 1936 aerial photograph reveals that rural farms were located east across adjacent Pacific Highway South, and south of the subject site. Undeveloped land with trees and vegetation was located north and west of the subject site. The Redondo Grocery store was shown located northeast of the site on the west side of Pacific Highway South in the 1936 aerial photo.

The general vicinity changed little before the 1960s. Some clearing and grading for development occurred in the area west of the subject site by the time of the 1946 aerial photograph which shows SFRS being located in the area along the west side of 13th Avenue South. The 1960 aerial photograph indicates that by that time, development of the area was being intensified with construction of SFRs north and west adjacent to the subject site. In 1960, rural farms were still located east and south of the subject site. The 1969 aerial photo reveals that the farm east of the site was being cleared and graded for the construction of the apartment buildings which are revealed in the 1970 aerial photograph.

By the time of the 1980 aerial photograph, farming activity had ceased on the south adjacent property and the areas further south were being developed with SFRs. Aside from the construction of additional multi-family and single-family residences to the east and south, the 1985 aerial photograph reveals little significant change in the immediate area.

In 1989, construction on the south adjacent Applewood housing development commenced. Other than construction of SFRs in Applewood, the 1990, and 1995 aerial photographs reveal little significant change in the site vicinity since 1989.

5.0 REGULATORY AGENCY RECORDS REVIEW

We reviewed the following regulatory agency database lists to obtain environmental information related to the subject property and for off-site properties at location distances from adjacent to the subject property to within one mile of the subject property. The mileage distance after each listing refers to the minimum search distance reviewed for this ESA.

- EPA Emergency Response Notification System (ERNS) - List of EPA responses to sudden or accidental releases of hazardous substances to the environment (subject property);
- EPA National Priorities List (NPL) - List of Superfund sites (1.0 mile);
- EPA Region 10 CERCLIS - List of sites currently being reviewed by the EPA (0.5 mile);
- EPA Region 10 RCRA Treatment, Storage, Disposal (TSD) Facility Notifiers List - List of hazardous waste TSD facilities (1.0 mile);
- EPA Region 10 RCRA Notifiers List - List of generators, transporters, and disposers of hazardous waste (adjacent properties);
- Ecology's Toxics Cleanup Program (TCP) List - List of sites other than leaking underground storage tank sites that are being cleaned up under the Model Toxics Control Act or are currently being investigated by Ecology, including Site Registers and Confirmed and Suspected Contaminated Sites Reports (1.0 mile);
- Ecology's Underground Storage Tank (UST) Registration List - List of underground storage tanks registered in the State of Washington (adjacent properties);
- Ecology's Leaking UST (LUST) Site List - List of registered leaking USTs in the State of Washington (0.5 mile);
- King County active and abandoned landfill documentation (0.5 mile).

Under the currently applicable Federal, state, and local regulations, owners of property contaminated by hazardous or regulated substances may be liable for cleanup actions, even though the substances have migrated onto their property from off-site sources. Furthermore, costly cleanup actions may be required under Washington's Model Toxics Control Act (MTCA) if site soils, sediments, surface water, and/or groundwater contain hazardous or regulated substances at levels that exceed MTCA criteria.

5.1 Subject Property

The subject property was not listed on any of the regulatory agency database lists.

5.2 Surrounding Properties

Refer to Plate 1, Vicinity Map, for street names and approximate locations for the sites listed below.

5.2.1 National Priorities List (NPL)

There is one NPL (superfund) site located within one mile of the subject property.

5.2.2 CERCLIS List

There are no CERCLIS sites listed within one-half mile of the subject site.

5.2.3 RCRA Treatment, Storage and Disposal (TSD) Facility Notifiers List

There are no waste TSD facilities located within one mile of the subject site.

5.2.4 RCRA Notifiers List

There are no generators, transporters, or disposers of hazardous waste listed for adjacent properties.

5.2.5 Toxics Cleanup Program (TCP) List

There are no TCP sites located within one mile of the subject site.

5.2.6 Underground Storage Tank List

No adjacent site is listed on the Ecology list of underground storage tanks (USTs).

5.2.7 Leaking Underground Storage Tank (LUST) List

There are two LUST sites listed located within one-half mile of the subject site.

- | | |
|---------------|----------------------------------|
| 1) Site Name: | Glen's Auto Repair & Tire Center |
| Site Address: | 27606 16th Avenue South |
| | Federal Way, Washington |
| Proximity: | 0.25 mile north |

2) Site Name: Texaco #63-232-1486
Site Address: 28806 Pacific Highway South
Federal Way, Washington
Proximity: 0.4 mile south

Based upon the inferred groundwater flow direction from east toward the west at the subject site, and the individual LUST sites, both LUST sites are located crossgradient to the subject site. Cleanup of soil is in progress at LUST site Number 1. LUST Site Number 2 is reported as cleaned up.

Based upon site distances, remedial actions taken, and inferred groundwater flow directions at these two LUST sites, the subject site is not expected to have been environmentally impacted by either of these LUST Sites.

5.2.8 Landfills

A review of Seattle-King County Active Solid Waste Disposal Facilities and Abandoned Landfill documentation indicated no active solid waste disposal, transfer stations, or abandoned landfills are located within one-half mile of the subject property.

6.0 SOIL SAMPLING AND ANALYSIS

On August 1, 1997, Earth Consultants, Inc. (ECI) and Joe Hall Construction excavated test pits at ten locations, TP-1 through TP-10, on the subject site property. Test pit locations are identified on Plate 2. The locations were selected based on information in the referenced GES report, observed areas for potential contamination, and documentation on areas of fill locations.

The ten test pits were excavated with a backhoe. Subsurface soil samples were collected and screened every approximately 2.5 feet bgs. Four subsurface soil samples collected from three test pits were submitted for laboratory chemical analysis. One sample was collected from TP-1 in a depressed area in fill located on the northeast portion of the property. Three samples were collected from the subject site central fill area, two from TP-2 and one from TP-3, where fill material was indicated to have the greatest depth and contamination potential. Soils in the other six test pits were observed for soil characteristics in an effort to ascertain the areal and vertical extent of fill.

6.1 Field Observations

Tan silty sand generally lies beneath a layer of fill material of brown silty sand mixed with asphalt and concrete rubble, cobbles, and tree roots. Small pockets of light colored, silica like sand were encountered in TP-2 and a sample was submitted for analyses. Groundwater was not encountered to the maximum explored depth of seven feet bgs, consequently no groundwater samples were collected or submitted for analysis.

During the test pit excavations, no combustible gas was detected in or near test pits other than TP-2. A relatively insignificant amount of combustible gas, approximately 75 parts per million (ppm), was detected in the subsurface soil samples collected from TP-2 at five and seven feet bgs. This would equate to less than 0.01% methane, assuming the combustible gas was one hundred percent methane. The measured combustible gas concentration is representative of methane levels expected from the natural degradation of organic materials.

During the test pit excavations no odors were detected or visible staining observed on any surface or subsurface soil. PID readings for organic vapor levels of < 1 ppm to 6 ppm were observed at TP-1 through TP-5.

PID readings, sample identification, and sample locations are identified on test pit logs in Appendix C.

6.2 Analysis and Results

Based upon the review of referenced documents, historical land use, and potential contaminants of concern, the subsurface soil sample collected from TP-1 (TP-1-1), fill soil sample collected from TP-2 (TP-2-5), and fill and underlying soil samples collected from TP-2 (TP-2-7) and TP-3 (TP-3-6), were analyzed by the CCI laboratory for total petroleum hydrocarbons (TPHs), halogenated volatile organic compounds (HVOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and chlorinated pesticides, chlorinated herbicides, and selected RCRA total metals arsenic (As), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), mercury (Hg), Selenium (Se), and Silver (Ag). Soil samples were initially screened for TPH presence and identification utilizing the Washington WTP-HCID procedure. After oil range TPHs were determined to be present in samples collected from TP-1 and TP-2 at levels potentially exceeding MTCA cleanup levels, analysis was performed for quantitation of the specific oil range TPHs.

A summary of analytical results for organic compounds is presented in Table 1. No HVOCs, PCBs, pesticides, or herbicides were detected in any of the samples submitted for analysis. Concentrations of oil-range TPHs detected in samples TP-1-1 (120 mg/kg) and TP-2 (150 mg/kg), are below the Model Toxics Control Act (MTCA) Soil Cleanup Level of 200 mg/kg for oil range TPHs.

SVOCs were detected in the subsurface soil samples collected from TP-1, TP-2, and TP-3. Bis(2-ethylhexyl)phthalate is a common component of plastics that was detected in TP-1-1 at 160 $\mu\text{g}/\text{kg}$ and TP-2-5 at 910 $\mu\text{g}/\text{kg}$, both below the clean-up level of $1.6 \times 10^6 \mu\text{g}/\text{kg}$. PAHs were detected in the subsurface and fill soil samples collected from TP-1, TP-2, and TP-3. Only one PAH in sample TP-1-1, Chrysene (710 $\mu\text{g}/\text{kg}$), exceeded its practical quantitation limit (PQL) of 660 $\mu\text{g}/\text{kg}$. The test pits were located in areas of extensive asphalt roadway fill material. Petroleum residues from asphalt road materials have high levels of PAHs. Asphaltic wastes used for structural or construction purposes, including fill, are excluded from regulation as a dangerous waste when PAHs present would be the only reason for such designation, and the presence of PAHs do not impact surface water or groundwater. The rationale is that asphalt related PAHs are ubiquitous and the asphalt fill material does not present additional human health or environmental risks when compared to previous use as asphalt paving.

Table 1 Organic Compounds					
Sample	TP-1-1	TP-2-5	TP-2-7	TP-3-6	Action Level
Total Petroleum Hydrocarbons Mg/Kg					
HCID-Gas Range	<20	--	<20	<20	--
HCID-Diesel Range	<50	--	<50	<50	--
HCID-Oil Range	>100	--	>100	<100	--
TPH-Diesel Range	26	--	<25	--	200
TPH-Oil Range	120	--	150	--	200
HVOCs-EPA 8260A	ND	ND	ND	ND	--
Semi VOCs-EPA 8270 $\mu\text{g}/\text{kg}$					
Bis(2-Ethylhexyl)Phthalate					
Phenanthrene*	160	910	<100	<100	1.6×10^6
Fluoranthene*	690	<100	210	<100	--
Pyrene*	1400	<100	<100	200	3.2×10^6
Benzo(A)Anthracene*	1100	<100	<100	210	2.4×10^6
Crysene*	460	<100	<100	100	660 PQL
Benzo(B)Fluoranthene*	710	<100	<100	100	660 PQL
Benzo(K)Fluoranthene*	510	<100	<100	<100	660 PQL
Benzo(A)Pyrene*	570	<100	<100	<100	660 PQL
Indeno(1,2,3,-CD)Pyrene*	640	<100	<100	110	660 PQL
	450	<100	<100	<100	660 PQL
PCBs and Chlorinated Pesticides - EPA 8080	ND	ND	ND	ND	ND
Chlorinated Herbicides - EPA 8150 MOD	ND	ND	ND	ND	ND
ND = Not Detected			*PAH Compounds		

Results for RCRA heavy metals detected in the subsurface soil samples collected from TP-1, TP-2, and TP-3 are presented in Table 2. Levels of the metals detected were below MTCA soil cleanup levels.

Table 2 RCRA Heavy Metal Results (Mg/Kg)

Sample No.	Location	Depth (ft.bgs)	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
TP1-1	Test Pit 1	1	2.1	63	0.3	17	60	<0.025	<1	<0.4
TP2-5	Test Pit 2	5	2.2	56	0.5	36	140	<0.025	<1	<0.4
TP2-7	Test Pit 2	7	3.4	61	0.3	72	<8	<0.025	<1	<0.4
TP3-6	Test Pit 3	6	2.9	85	<0.2	13	7.1	<0.025	<1	<0.4
MTCA Soil Cleanup Level			20 ^A	5600 ^A	2.0 ^A	100 ^A	250 ^A	1.0 ^A	400 ^B	400 ^B

A: Method A
B: Method B

7.0 FINDINGS and CONCLUSIONS

ECI has performed a Phase I ESA for the Tavis Property located in the 28000 Block Pacific Highway South, King County, Washington, in conformance with the scope and limitations of ASTM Practice 1527-94. ECI has reviewed reasonably ascertainable historical records, environmental records, and regulatory databases. This assessment has revealed no evidence of Recognized Environmental Conditions in connection with the property.

Deminimis conditions include miscellaneous types of refuse and debris scattered and in piles at various locations across the subject site, and abandoned vehicles.

Subsurface exploration and sampling indicated that only PAHs associated with asphalt fill material were above MTCA soil cleanup standards. The PAHs associated with the asphalt are not currently regulated. Placing the asphalt fill material beneath roadways during site development would further reduce potential exposure and impact from PAHs.

8.0 STANDARD LIMITATIONS

In preparing this report, ECI has reviewed reasonably ascertainable historical records and regulatory agency files/databases. ECI has interviewed public and private individuals as indicated in this document, and observed the subject property and surrounding property conditions. ECI has examined and relied on written documents, and oral statements made by others. ECI has not conducted an independent examination of facts contained in referenced materials and statements. ECI has assumed the genuineness of the documents and the information provided in the documents or statements is true and accurate.

ECI has conducted this project and prepared this report in accordance with generally accepted professional practices for the nature and conditions of the work complete in the same or similar localities, at the time the work was performed. ECI shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time this work was performed. ECI recognizes that facts or conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions described in this report at this time. Conclusions and recommendations were made within the operative constraints of the scope of work, budget, and schedule for this project. This report is not meant to represent a legal opinion. No other warranty, expressed or implied, is made.

This report is intended for the exclusive use of Granville Southern Corporation and its representatives for specific application to the subject property. Any future consultations or other services to third parties related to this project requires written authorization from Granville Southern Corporation. Any such ECI provided services to third parties is new work requiring formal agreement with the third party and will be performed in accordance with that formal agreement.

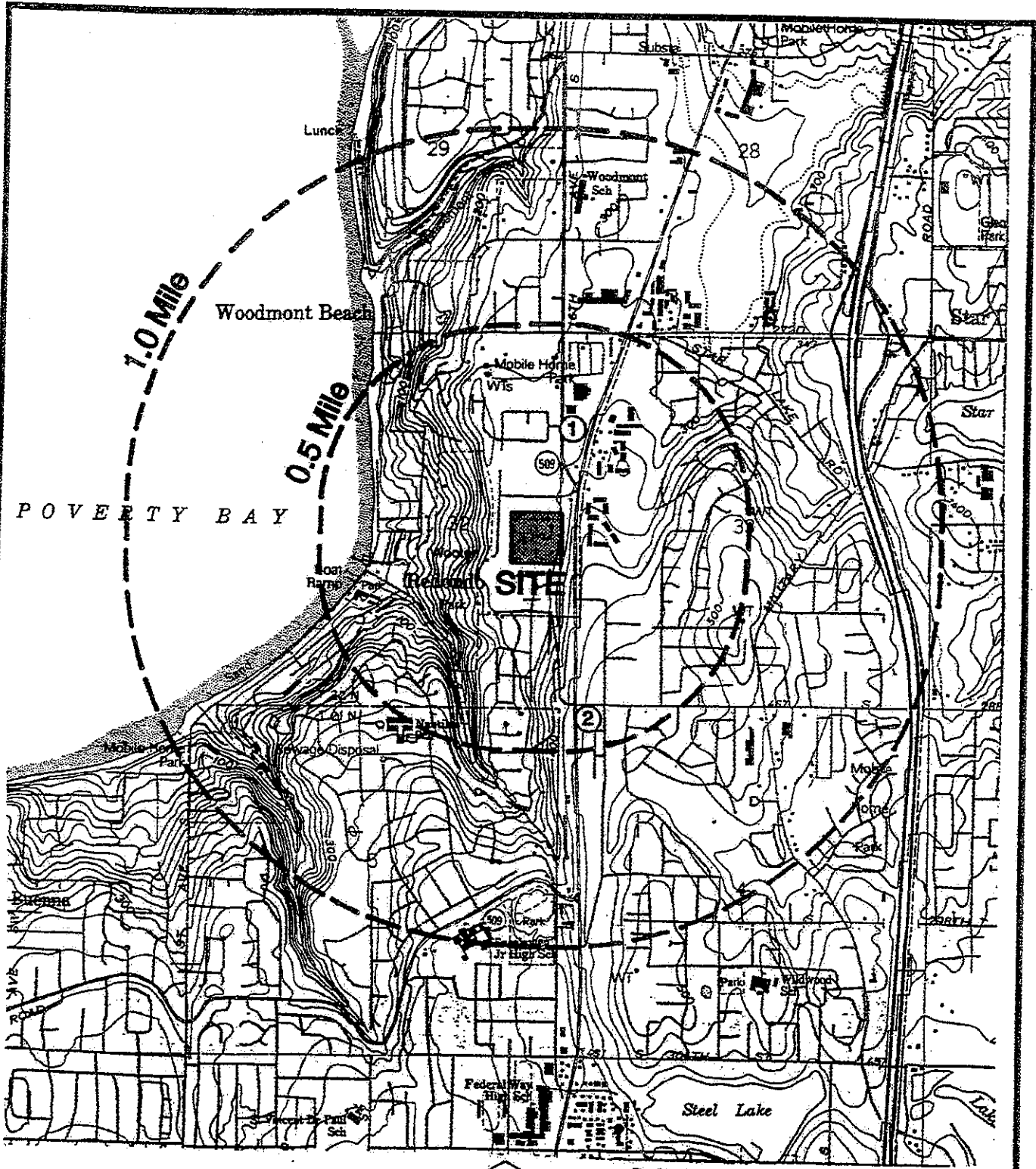
Our work did not include sampling and testing of groundwater, surface water, drinking water, radon gas, or air quality.

9.0 LIST OF REFERENCES

- 1) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process; American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103; Designation: E1527-94, June 1994.
- 2) Emergency Response Notification System (ERNS) Spills Report, October 1987 through December, 1996; U.S. EPA, Region 10, Seattle, Washington.
- 3) U.S. Environmental Protection Agency Region 10, Superfund Sites in the Pacific Northwest, April 1, 1997.
- 4) U.S. Environmental Protection Agency Superfund Program, CERCLIS, Region 10, Site Event Listing, 05/06/97.
- 5) U.S. Environmental Protection Agency RCRA Notifiers List, Region 10, 04/30/97.
- 6) Washington State Department of Ecology Toxic Cleanup Program - Hazardous Sites List 01/17/97; and Confirmed and Suspected Contaminated Sites list, 02/18/97.
- 7) Washington State Department of Ecology, Listing of Registered Underground Storage Tanks, 05/01/97.
- 8) Washington State Department of Ecology, Leaking Underground Storage Tank Sites, 05/01/97.
- 9) Seattle/King County Department of Public Health, "Abandoned Landfill Study in King County", 04/30/85
- 10) King County Department of Public Works, Solid Waste Division, Transfer Stations and Rural Landfill Locations List, 1995.
- 11) Aerial photographs dated 1960, 1970, 1980, and 1985; ECI in-house files.
- 12) Aerial photographs dated 1936, 1946, 1960, 1969, 1974, 1980, 1985, 1990, and 1995; Walker and Associates Photogrammetric Engineers, 12652 Interurban Avenue South, Seattle, Washington.
- 13) First American Title Insurance Company, 2101 Fourth Avenue, Seattle, Washington, 98121.

LIST OF REFERENCES, Continued

- 14) Historical Records, Puget Sound Regional Branch Washington Department of Archives and Records Management, 1809 South 140th, Seattle, Washington; Tax parcel numbers 322204-9009, 332204-9044, 332204-9045, and 332204-9052.
- 15) US Topographical Map; Poverty Bay Quadrangle, Washington, 7.5X15 Minute Series; U.S. Geological Survey; 1961, photo revised 1968, and revised 1994.
- 16) Plate 1-Geologic Map of Southwestern King County, Washington, State of Washington Water Supply Bulletin 28.
- 17) Telephone communication with Mr. Michael Reid, President, Granville Southern Corporation, Kirkland Washington; July 29, 1997.
- 18) Telephone communication with Mr. Don Tavis, subject property owner, Bellingham, Washington, August 4, 1997.
- 19) Telephone communication with Mr. Kevin Peterson, Surface Water Technician, City of Federal Way Department of Public Works, 33530 1st Way South, Federal Way, Washington; August 4, 1997.
- 20) Topography Map, Tavis Property; Eastside Consultants, Inc., 415 Rainier Boulevard North, Issaquah, Washington; July 1997.
- 21) King County Building and Land Development Division, 3600-136th Place Southeast, Bellevue, Washington; File C 8902613.
- 22) Telephone communication with Mr. Daniel R. Cargill, Toxics Cleanup Program, Department of Ecology, Northwest Regional Office, 3190 160th Avenue Southeast, Bellevue, Washington; August 28, 1997.
- 23) Fundamentals of Environmental Chemistry, Stanley E. Manahan, Lewis Publishers, Chelsea, Michigan; 1993.
- 24) Washington State Department of Ecology, Dangerous Waste Regulations, Chapter 173-303 WAC; Amended November 1995.



POVERTY BAY

1.0 Mile

0.5 Mile

SITE

LEGEND

○ LUST Site



Reference:
 Poverty Bay Quadrangle - Washington
 7.5 Minute Series (Topographic)
 By U.S. Geological Survey
 Dated 1961 (Revised 1994)



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Vicinity Map
 Tavis Property
 King County, Washington

Proj. No. 7816

Drwn. GLS

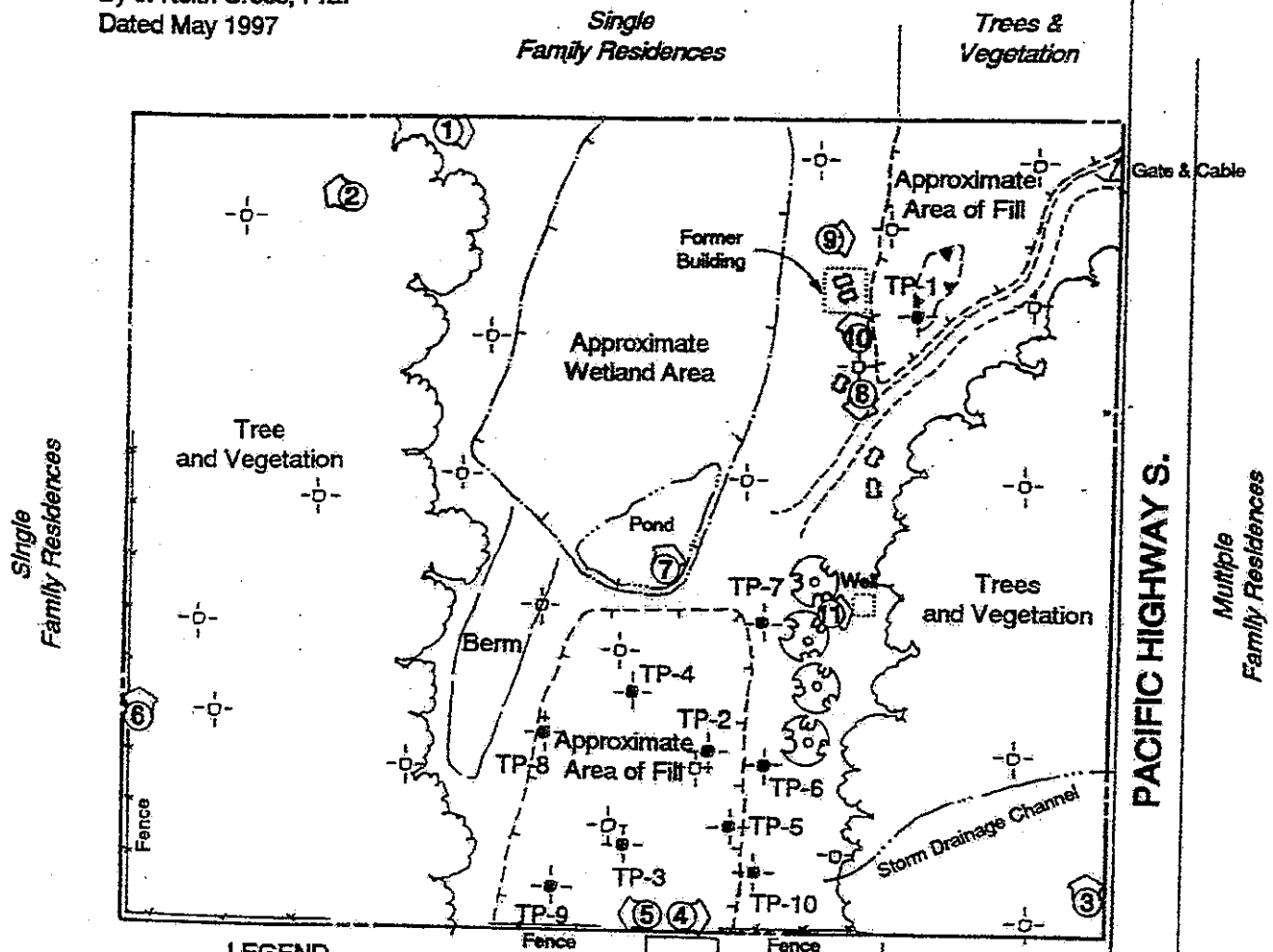
Date Aug. '97

Checked JN

Date 8/19/97

Plate 1

Reference:
 Site Sketch
 Figure 1
 By J. Keith Cross, P.E.
 Dated May 1997

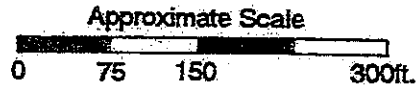


LEGEND

- TP-1 Approximate Location of ECI Test Pit, Proj. No. E-7816, Aug. 1997
- Approximate Location of Exploration Pit By J. Keith Cross, P.E., Dated May 1997
- Abandoned Vehicles
- Existing / Former Building
- Fruit Trees
- Photo Number and Direction of View

15th AVE. S.

SFRs
 Single Family Residence
 Trees & Vegetation



Single Family Residences

Single Family Residences

Trees & Vegetation

PACIFIC HIGHWAY S.

Multiple Family Residences



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Site Plan
 Tavis Property
 King County, Washington

Proj. No. 7816

Drwn. GLS

Date Aug. '97

Checked JN

Date 8/19/97

Plate 2

Appendix A

Site Photographs

E-7816

E-7816



Photo 1 North edge of Subject Site and north adjacent properties.
Viewed west to east.

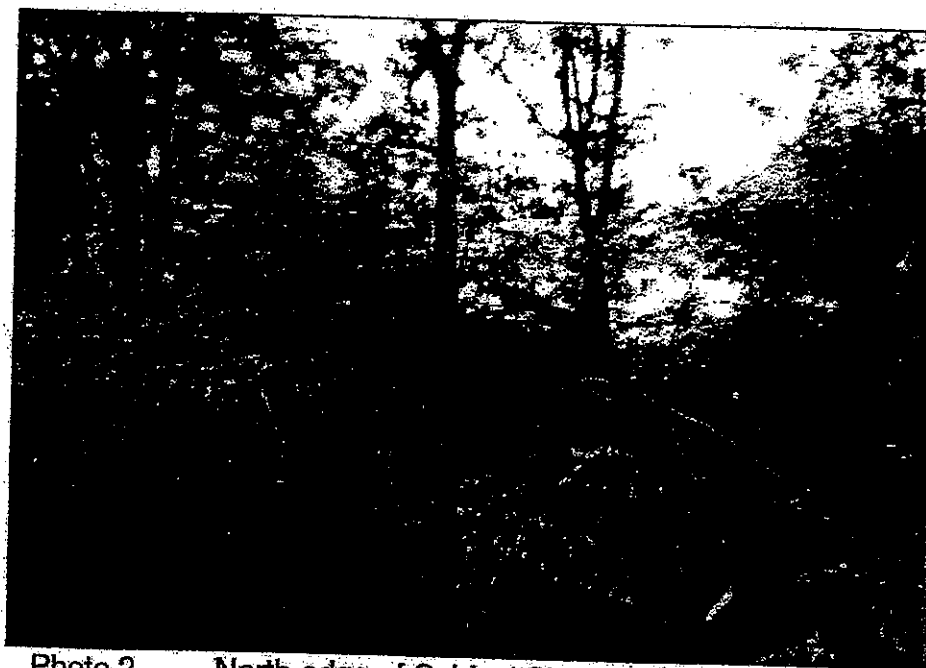


Photo 2 North edge of Subject Site and northwest adjacent
properties. Viewed southeast to northwest.

Photos Dated 7/30/97

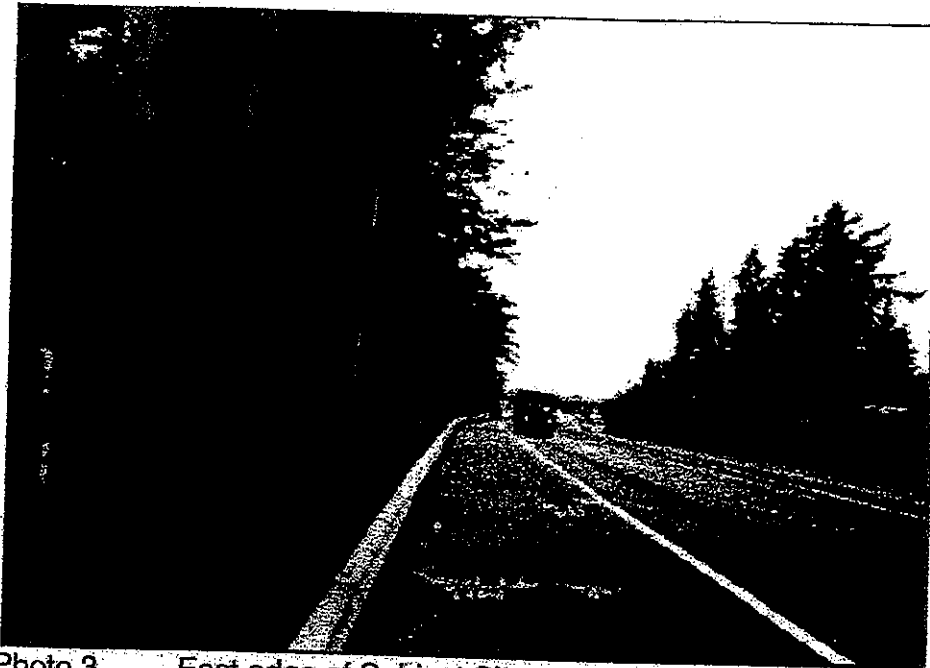


Photo 3 East edge of Subject Site and east adjacent properties.
Viewed south to north.



Photo 4 South edge of Subject Site and southeast adjacent
properties. Viewed west to east.

Photos Dated 7/30/97

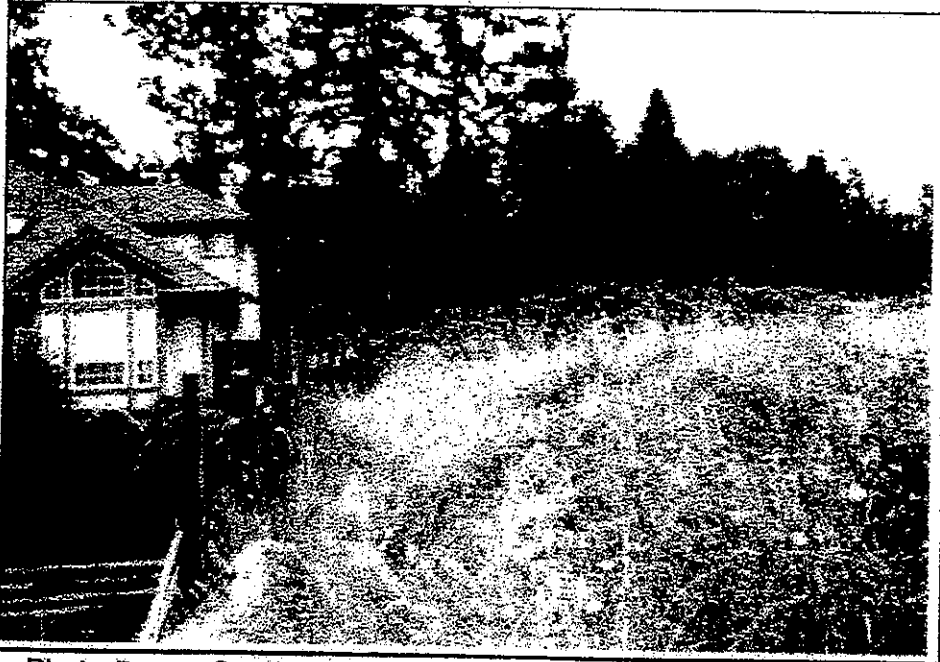


Photo 5 South edge of Subject Site and southwest adjacent properties. Viewed east to west.



Photo 6 West edge of Subject Site and northwest adjacent properties. Viewed south to north.

Photos Dated 7/30/97



Photo 7 Debris in Wetland Area in central portion of Subject Site.



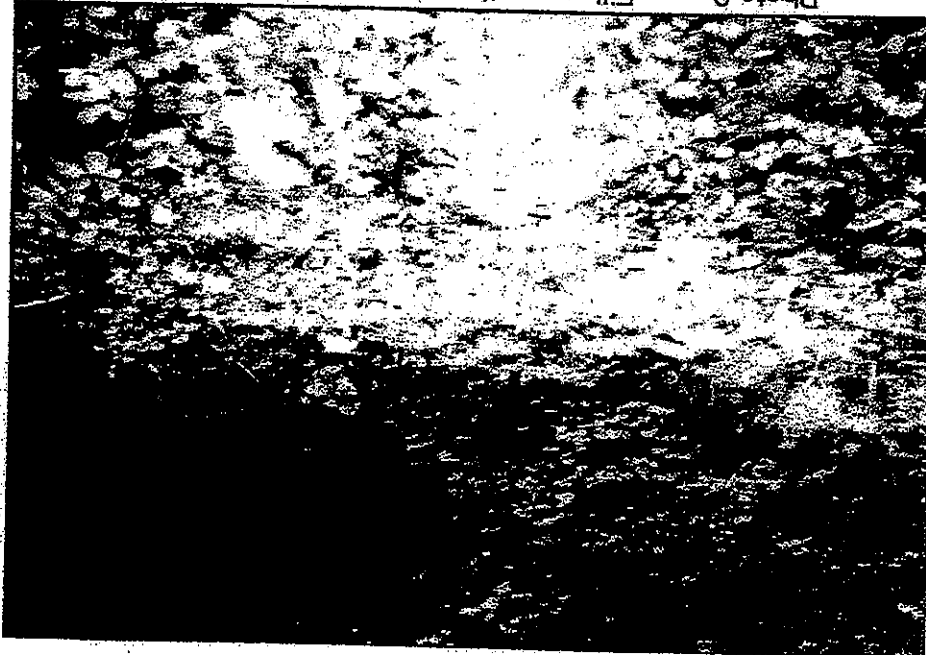
Photo 8 South central area of Subject Site. Viewed north to south. Fruit trees and abandoned vehicles along east side of central area. Photos Dated 7/30/97

Photos Dated 7/30/97

Photo 10 Former Building collapsed in northeast area of Subject Site.



Photo 9 Fill on northeast area of Subject Site.



E-7816

E-7816

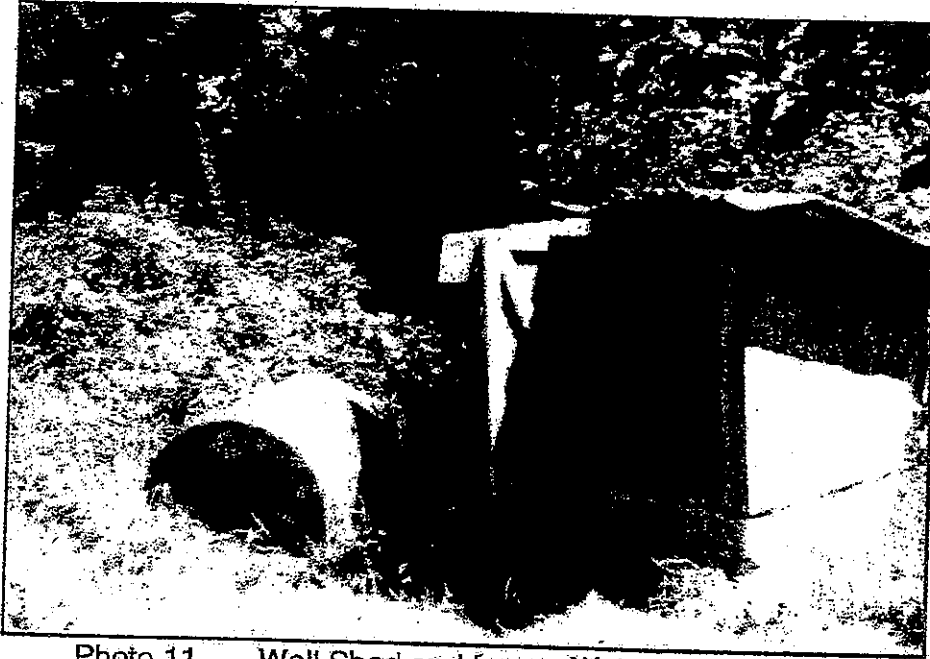


Photo 11 Well Shed and former Water Storage Tank.

Photo Dated 7/30/97

Appendix B

Chain-of-Title Summary

E-7816

Appendix C

Qualifications of Environmental Professionals

E-7816

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

ROBERT S. LEVINSON, P.E. President/Principal

Mr. Levinson has managed comprehensive projects world-wide, with overall management and technical control. Projects include port and industrial facilities, commercial high- and medium-rise buildings, shoring, transmission lines, soil stabilization, slopes & embankments, landfills, and sewage treatment facilities. Mr. Levinson, as owner and president, has represented ECI for the past 19 years and is recognized for his contributions in both the engineering and civic community. He has authored technical papers on stabilization, tropically weathered soils, and expansive soils.

DEBORAH J. KRISTOF Project Manager

Ms. Kristof is an experienced environmental professional with broad range of corporate, management, and technical skills. She has twelve years of diverse experience in environmental assessments and remediation. Ms. Kristof has a B.S. degree in Geology, graduated with honors, and is a Registered Site Assessor. Ms. Kristof has served as project manager, field supervisor or field personnel on greater than fifty industrial, service station, fuel bulk plant, pipeline, and landfill sites. Her diverse experience includes site evaluation and assessments, developing exploration, sampling and analytical plans, directing monitoring well installation, and conducting soil and water sampling and field measurements. Ms. Kristof's skills also include designing remedial activities, computer compilation of field data, and report writing.

JOE NESSEL, REP, REA Project Manager

Mr. Nessel is a Senior Environmental Scientist and Consultant with over 20 years experience in the environmental, hazardous materials, and analytical chemistry fields. He has performed and supervised projects involving environmental investigations and remediations; Environmental Site Assessments; and hazardous wastes/substance cleanups. Areas of expertise include environmental investigations/assessments, laboratory testing and data assessment, transportation, and materials handling and disposal. Mr. Nessel has worked closely with the regulatory community and also has extensive experience in project planning. Mr. Nessel has successfully completed ASTM courses in Environmental Site Assessments for Commercial Real Estate.

DALE D. TALTY Environmental Scientist

Mr. Talty is an experienced environmental professional and registered geologist. He has eight years of experience managing and conducting Phase I and Phase II environmental site assessments, including over 150 Phase I assessments on sites ranging from apartment complexes to industrial facilities. His experience also includes monitoring well installation and development, soil vapor analysis programs, UST assessments, and geophysical surveys.

Appendix D

Exploration Procedures and Test Pit Logs

E-7816

Exploration Procedures and Test Pit Logs

E-7816

Test pits were excavated using a backhoe. Test pit lithology was logged in accordance with the Unified Soil Classification System (USCS). The environmental test pit logs are included in this Appendix.

Soil samples were collected, from the bottom of the excavation, with a clean stainless steel hand scoop or with the excavator bucket. The hand scoop was cleaned in a solution of Liquinox and water, then rinsed with distilled water between each sample collection to prevent cross-contamination between samples. Samples were collected directly from the excavation base or from the center of the excavation bucket. Clean disposal gloves were used during the collection and handling of each soil sample. All soil samples were immediately packed in laboratory grade glass jars, sealed, labelled and packed in a cooler with ice for delivery under chain-of-custody to CCI Analytical Laboratories, Inc., in Everett, Washington for analyses.

Field screening using a Photovac Microtip photoionization detector (PID) and a Model 1238 Gastech Hydrocarbon Surveyor (Gastech) was performed on soil samples collected during the excavation procedures. The PID instrument was used to measure volatile organic compound vapors, which provides an indication of the presence of hydrocarbons. The Gastech was used to monitor for and measure the presence of methane gas in the test pit excavations and samples collected. The PID was calibrated with 97 ppm Isobutylene and the Gastech was calibrated with 2.5% (25,000 ppm) methane prior to field use.

Samples collected for field screening were placed in a clean plastic bag, sealed, and gently shaken to release organic vapors into the bag's headspace. The PID and/or Gastech probe was inserted into the plastic bag, withdrawing vapors from the bag's headspace, and the reading was recorded.

Headspace vapor field screening results are site-specific and vary according to contaminant type, atmospheric conditions, and soil moisture content.

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTION
Coarse Grained Soils	Gravel And Gravelly Soils	Clean Gravels (little or no fines)		GW / gw	Well-Graded Gravels, Gravel-Sand Mixtures, Little Or No Fines
				GP / gp	Poorly-Graded Gravels, Gravel-Sand Mixtures, Little Or No Fines
	More Than 50% Coarse Fraction Retained On No. 4 Sieve	Gravels With Fines (appreciable amount of fines)		GM / gm	Silty Gravels, Gravel-Sand-Silt Mixtures
				GC / gc	Clayey Gravels, Gravel-Sand-Clay Mixtures
	Sand And Sandy Soils	Clean Sand (little or no fines)		SW / sw	Well-Graded Sands, Gravelly Sands, Little Or No Fines
				SP / sp	Poorly-Graded Sands, Gravelly Sands, Little Or No Fines
More Than 50% Material Larger Than No. 200 Sieve Size	More Than 50% Coarse Fraction Passing No. 4 Sieve	Sands With Fines (appreciable amount of fines)		SM / sm	Silty Sands, Sand-Silt Mixtures
				SC / sc	Clayey Sands, Sand-Clay Mixtures
Fine Grained Soils	Silt And Clays	Liquid Limit Less Than 50		ML / ml	Inorganic Silts & Very Fine Sands, Rock Flour, Silty-Clayey Fine Sands; Clayey Silts w/ Slight Plasticity
				CL / ci	Inorganic Clays Of Low To Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean
				OL / ol	Organic Silts And Organic Silty Clays Of Low Plasticity
	Silt And Clays	Liquid Limit Greater Than 50		MH / mh	Inorganic Silts, Micaceous Or Diatomaceous Fine Sand Or Silty Soils
				CH / ch	Inorganic Clays Of High Plasticity, Fat Clays
				OH / oh	Organic Clays Of Medium To High Plasticity, Organic Silts
Highly Organic Soils				PT / pt	Peat, Humus, Swamp Soils With High Organic Contents

Topsoil		Humus And Duff Layer
Fill		Highly Variable Constituents

The discussion in the text of this report is necessary for a proper understanding of the nature of the material presented in the attached logs.

DUAL SYMBOLS are used to indicate borderline soil classification.

C TORVANE READING, tsf
qu PENETROMETER READING, tsf
W MOISTURE, % dry weight
P SAMPLER PUSHED
* SAMPLE NOT RECOVERED
pcf DRY DENSITY, lbs. per cubic ft.
LL LIQUID LIMIT, %
PI PLASTIC INDEX

I 2" O.D. SPLIT SPOON SAMPLER
II 24" I.D. RING OR SHELBY TUBE SAMPLER
| WATER OBSERVATION WELL
Σ DEPTH OF ENCOUNTERED GROUNDWATER DURING EXCAVATION
▽ SUBSEQUENT GROUNDWATER LEVEL W/ DATE



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LEGEND

Proj. No. 7816

Date Aug. '97

Plate D1

Test Pit Log

Project Name: Tavis Property			Sheet 1	of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-1	
Excavation Contractor: Joe Hall			Ground Surface Elevation:	

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions:
PID ppm <1		[Cross-hatched pattern]	1 2 3		SM	FILL: Tan silty SAND with cobbles, loose, moist, concrete and asphalt rubble
TP-1-1 1		[Vertical line pattern]	4 5 6	X	ML	Gray sandy SILT with gravel, till, dense, moist (CH ₄ = 0)
Test pit terminated at 6.0 feet below existing grade. No groundwater encountered during excavation.						

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Test Pit Log
 Tavis Property
 King County, Washington

Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked JN	Date 8/20/97	Plate D2
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Test Pit Log

Project Name: Tavis Property			Sheet 1	of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-2	
Excavation Contactor: Joe Hall			Ground Surface Elevation:	

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Sod 1"-3"
PID ppm			1		SM	<u>FILL</u> : Tan silty SAND with gravel, loose, moist
6			2			(CH4 = 0)
TP-2-5			3		SM	<u>FILL</u> : Brown silty SAND with cobble, concrete and asphalt rubble, loose, moist
4			4			-small pockets of light granular substance (CH4 = 75ppm)
TP-2-7			5		OL	Brown silty SAND with organic silt, tree roots, soft, moist
2			6			(CH4 = 75ppm)
			7			Test pit terminated at 7.0 feet below existing grade. No groundwater encountered during excavation.

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Test Pit Log
 Tavis Property
 King County, Washington

Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked JN	Date 8/20/97	Plate D3
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Test Pit Log

Project Name: Tavis Property			Sheet 1 of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-3
Excavation Contactor: Joe Hall			Ground Surface Elevation:
Notes:			

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Sod 1"-3"
PID ppm		[Cross-hatched pattern]	1		SM	FILL: Silty SAND with gravel and cobbles, loose, moist (CH4 = 0) -small amount of concrete and asphalt chunks (CH4 = 0)
3			2			
			3			
3			4			
			5			
TP-3-6		[Vertical line pattern]	6	X	SM	Gray silty SAND with gravel, dense, moist (CH4 = 0)
3.5			7			Test pit terminated at 7.0 below existing grade. No groundwater encountered during excavation.

TPL 7816 B/20/97



Test Pit Log
 Tavis Property
 King County, Washington

Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked JN	Date 8/20/97	Plate D4
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Test Pit Log

Project Name: Tavis Property			Sheet 1	of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-4	
Excavation Contractor: Joe Hall			Ground Surface Elevation:	

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Sod 1" - 4"
PTD ppm		[Cross-hatched pattern]	1		SM	<u>FILL</u> : Silty SAND with concrete rubble, loose, moist
			2		SM	<u>FILL</u> : Tan silty SAND with cobbles, loose, moist (CH4 = 0)
	3		3		SM	<u>FILL</u> : Tan silty SAND
	2		4			(CH4 = 0)
TP-4-6		[Vertical lines pattern]	5		ML	Brown to gray sandy SILT, dense, moist
			6			
	1		7			(CH4 = 0)
			8			Test pit terminated at 8.0 feet below existing grade. No groundwater encountered during excavation.

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Test Pit Log
Tavis Property
King County, Washington

Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked JN	Date 8/20/97	Plate D5
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Test Pit Log

Project Name: Tavis Property			Sheet 1 of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-5
Excavation Contactor: Joe Hall			Ground Surface Elevation:

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Sod 3"- 4"
PID ppm 2			1		SM	<u>FILL</u> - Silty SAND with cobbles, loose, moist (CH4 = 0)
			2		SP	Tan SAND
			3			Test pit terminated at 3.0 feet below existing grade. No groundwater encountered during excavation.

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Test Pit Log
Tavis Property
King County, Washington

Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked 8/20/97	Date 8/20/97	Plate D6
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Test Pit Log

Project Name: Tavis Property			Sheet 1	of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-6	
Excavation Contactor: Joe Hall			Ground Surface Elevation:	

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Sod 2" - 4": blackberries
PID ppm					OL	(Concrete rubble scattered on surface) Loose silty SAND, organic topsoil
ND			1		SM	Tan silty SAND, dense, moist
			2			
Test pit terminated at 2.5 feet below existing grade. No groundwater encountered during excavation.						

TPL 7816 8/20/97



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Test Pit Log
Tavis Property
King County, Washington

Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked JN	Date 8/20/97	Plate D7
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.


Test Pit Log

Project Name: Tavis Property			Sheet 1	of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-7	
Excavation Contactor: Joe Hall			Ground Surface Elevation:	

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Sod 6"
PID ppm ND			1 2 3		SM	Tan silty SAND with gravel, dense
						Test pit terminated at 3.0 feet below existing grade. No groundwater encountered during excavation.

TPL 7816 8/20/97

 Earth Consultants Inc. <small>Geotechnical Engineers, Geologists & Environmental Scientists</small>			Test Pit Log Tavis Property King County, Washington		
Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked JN	Date 8/20/97	Plate D8

Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Test Pit Log

Project Name: Tavis Property			Sheet 1	of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-8	
Excavation Contractor: Joe Hall			Ground Surface Elevation:	

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Sod 0"- 2"
PID ppm			1		SM	<u>FILL</u> : Tan silty SAND, loose, moist
ND			2		SM	Tan silty SAND, dense, moist
			3			Test pit terminated at 3.0 feet below existing grade. No groundwater encountered during excavation.

TPL 7816 8/20/97



Earth Consultants Inc.
Geotechnical Engineers, Geologists & Environmental Scientists

Test Pit Log
Tavis Property
King County, Washington

Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked JN	Date 8/20/97	Plate D9
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Test Pit Log

Project Name: Tavis Property			Sheet 1 of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-9
Excavation Contractor: Joe Hall			Ground Surface Elevation:

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions
PID ppm			1		SM	FILL: Silty SAND with brick and rocks, loose, moist
ND			2		SM	Tan organic SILT and silty SAND
			3			
Test pit terminated at 3.5 feet below existing grade. No groundwater encountered during excavation.						

TPL 7816 8/20/97



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Test Pit Log
Tavis Property
King County, Washington



Proj. No. 7816	Dwn. GLS	Date Aug '97	Checked JN	Date 8/20/97	Plate D10
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Test Pit Log

Project Name: Tavis Property			Sheet 1	of 1
Job No. 7816	Logged by: JN	Date: 8/1/97	Test Pit No.: TP-10	
Excavation Contactor: Joe Hall			Ground Surface Elevation:	

Notes:

	W (%)	Graphic Symbol	Depth Ft.	Sample	USCS Symbol	Surface Conditions: Depth of Sod 2" - 4"
PID ppm			1		SM	<u>FILL</u> : Silty SAND, loose, moist
ND			2		SM	Silty SAND
Test pit terminated at 2.5 feet below existing grade. No groundwater encountered during excavation.						

TPL 7816 8/20/97



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Test Pit Log
Tavis Property
King County, Washington

Proj. No. 7816	Dwn. GLS	Date Aug. '97	Checked JN	Date 8/20/97	Plate D11
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Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgment. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Appendix E
Analytical Laboratory Reports

E-7816



CCI
ANALYTICAL
LABORATORIES, INC.

CERTIFICATE OF ANALYSIS

CLIENT: EARTH CONSULTANTS INC.
1805 136TH PLACE NE
BELLEVUE, WA 98005

DATE: 8/15/97
CCIL JOB #: 708003
CCIL SAMPLE #: 1
DATE RECEIVED: 8/1/97
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: E-7816-1
CLIENT SAMPLE ID: TP1-1 8/1/97 0845

DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
HCID-GAS RANGE	WTPH-HCID	ND(<20)	MG/KG GAS		8/5/97	AMR
HCID-DIESEL RANGE	WTPH-HCID	ND(<50)	MG/KG DSL		8/5/97	AMR
HCID-OIL RANGE	WTPH-HCID	>100	MG/KG OIL		8/6/97	AMR
TPH-DIESEL RANGE	WTPH-D EXT	26	MG/KG	200MG/KG	8/11/97	AMR
TPH-OIL RANGE	WTPH-D EXT	120	MG/KG	200MG/KG	8/11/97	AMR
DICHLORODIFLUOROMETHANE	EPA-8260A	ND(<20)	UG/KG		8/4/97	Lrk
CHLOROMETHANE	EPA-8260A	ND(<20)	UG/KG		8/4/97	Lrk
VINYL CHLORIDE	EPA-8260A	ND(<20)	UG/KG		8/4/97	Lrk
BROMOMETHANE	EPA-8260A	ND(<20)	UG/KG		8/4/97	Lrk
CHLOROETHANE	EPA-8260A	ND(<20)	UG/KG		8/4/97	Lrk
1,1-DICHLOROETHENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
TRICHLOROFLUOROMETHANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
METHYLENE CHLORIDE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
1,1-DICHLOROETHANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
TRANS-1,2-DICHLOROETHENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
CIS-1,2-DICHLOROETHENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
CHLOROFORM	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
1,1,1-TRICHLOROETHANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
CARBON TETRACHLORIDE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
1,2-DICHLOROETHANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
TRICHLOROETHENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
1,2-DICHLOROPROPANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
BROMODICHLOROMETHANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
TRANS-1,3-DICHLOROPROPENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
CIS-1,3-DICHLOROPROPENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
1,1,2-TRICHLOROETHANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
TETRACHLOROETHYLENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
DIBROMOCHLOROMETHANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
BROMOFORM	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
CHLOROBENZENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
1,1,2,2-TETRACHLOROETHANE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
1,2-DICHLOROBENZENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk
1,3-DICHLOROBENZENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	Lrk



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DATE: 8/15/97
CCIL JOB #: 708003
CCIL SAMPLE #: 1
DATE RECEIVED: 8/1/97
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: E-7816-1
CLIENT SAMPLE ID: TP1-1 8/1/97 0845

DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
1,4-DICHLOROBENZENE	EPA-8260A	ND(<10)	UG/KG		8/4/97	LRK
BIS(2-CHLOROETHYL)ETHER	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
PHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2-CHLOROPHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
1,3-DICHLOROBENZENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
1,4-DICHLOROBENZENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
1,2-DICHLOROBENZENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
BENZYL ALCOHOL/2-METHYLPHENOL	EPA-8270	ND(<200)	UG/KG		8/5/97	LRK
BIS(2-CHLOROISOPROPYL)ETHER	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
HEXACHLOROETHANE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
N-NITROSO-DI-N-PROPYLAMINE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
4-METHYLPHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
NITROBENZENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
ISOPHORONE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2-NITROPHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2,4-DIMETHYLPHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
BENZOIC ACID	EPA-8270	ND(<500)	UG/KG		8/5/97	LRK
BIS(2-CHLOROETHOXY)METHANE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2,4-DICHLOROPHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
1,2,4-TRICHLOROBENZENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
NAPHTHALENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
4-CHLOROANILINE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
HEXACHLOROBUTADIENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
4-CHLORO-3-METHYLPHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2-METHYLNAPHTHALENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
HEXACHLOROCYCLOPENTADIENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2,4,6-TRICHLOROPHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2,4,5-TRICHLOROPHENOL	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2-CHLORONAPHTHALENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2-NITROANILINE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
ACENAPHTHYLENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
DIMETHYLPHthalate	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2,6-DINITROTOLUENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
ACENAPHTHENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK



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WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: E-7816-1
CLIENT SAMPLE ID: TP1-1 8/1/97 0845

DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
3-NITROANILINE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2,4-DINITROPHENOL	EPA-8270	ND(<1000)	UG/KG		8/5/97	LRK
DIBENZOFURAN	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
2,4-DINITROTOLUENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
4-NITROPHENOL	EPA-8270	ND(<1000)	UG/KG		8/5/97	LRK
FLUORENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
4-CHLOROPHENYL-PHENYLETHER	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
DIETHYLPHTHALATE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
4-NITROANILINE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
4,6-DINITRO-2-METHYLPHENOL	EPA-8270	ND(<1000)	UG/KG		8/5/97	LRK
N-NITROSODIPHENYLAMINE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
4-BROMOPHENYL-PHENYLETHER	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
HEXACHLOROBENZENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
PENTACHLOROPHENOL	EPA-8270	ND(<1000)	UG/KG		8/5/97	LRK
PHENANTHRENE	EPA-8270	690	UG/KG		8/5/97	LRK
ANTHRACENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
CARBAZOLE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
DI-N-BUTYLPHTHALATE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
FLUORANTHENE	EPA-8270	1400	UG/KG		8/5/97	LRK
PYRENE	EPA-8270	1100	UG/KG		8/5/97	LRK
BUTYL BENZYLPHTHALATE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
3,3'-DICHLOROBENZIDINE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
BENZO[A]ANTHRACENE	EPA-8270	460	UG/KG		8/5/97	LRK
CHRYSENE	EPA-8270	710	UG/KG		8/5/97	LRK
BIS(2-ETHYLHEXYL)PHTHALATE	EPA-8270	160	UG/KG		8/5/97	LRK
DI-N-OCTYLPHTHALATE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
BENZO[B]FLUORANTHENE	EPA-8270	510	UG/KG		8/5/97	LRK
BENZO[K]FLUORANTHENE	EPA-8270	570	UG/KG		8/5/97	LRK
BENZO[A]PYRENE	EPA-8270	640	UG/KG		8/5/97	LRK
INDENO[1,2,3-CD]PYRENE	EPA-8270	450	UG/KG		8/5/97	LRK
DIBENZ[A,H]ANTHRACENE	EPA-8270	ND(<100)	UG/KG		8/5/97	LRK
BENZO[G,H,I]PERYLENE	EPA-8270	510	UG/KG		8/5/97	LRK
a-BHC	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
g-BHC	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR



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CLIENT PROJECT ID: E-7816-1
CLIENT SAMPLE ID: TP1-1 8/1/97 0845

DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
b-BHC	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
HEPTACHLOR	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
d-BHC	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
ALDRIN	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
HEPTACHLOR EPOXIDE	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
CHLORDANE	EPA-8080	ND(<0.04)	MG/KG		8/13/97	AMR
ENDOSULFAN I	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
4,4' DDE	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
DIELDRIN	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
ENDRIN	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
4,4' -DDD	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
ENDOSULFAN II	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
4,4'-DDT	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
ENDRIN ALDEHYDE	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
ENDOSULFAN SULFATE	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
METHOXYCHLOR	EPA-8080	ND(<0.02)	MG/KG		8/13/97	AMR
TOXAPHENE	EPA-8080	ND(<1)	MG/KG		8/13/97	AMR
PCB-1016	EPA-8080	ND(<0.2)	MG/KG		8/13/97	AMR
PCB-1221	EPA-8080	ND(<0.2)	MG/KG		8/13/97	AMR
PCB-1232	EPA-8080	ND(<0.2)	MG/KG		8/13/97	AMR
PCB-1242	EPA-8080	ND(<0.2)	MG/KG		8/13/97	AMR
PCB-1248	EPA-8080	ND(<0.2)	MG/KG		8/13/97	AMR
PCB-1254	EPA-8080	ND(<0.2)	MG/KG		8/13/97	AMR
PCB-1260	EPA-8080	ND(<0.2)	MG/KG		8/13/97	AMR
DALAPON	EPA-8150 MOD	ND(<0.08)	MG/KG		8/8/97	SAS
DICAMBA	EPA-8150 MOD	ND(<0.05)	MG/KG		8/8/97	SAS
DICHLOROPROP	EPA-8150 MOD	ND(<0.05)	MG/KG		8/8/97	SAS
2,4-D	EPA-8150 MOD	ND(<0.04)	MG/KG		8/8/97	SAS
SILVEX(2,4,5-TP)	EPA-8150 MOD	ND(<0.05)	MG/KG		8/8/97	SAS
2,4,5-T	EPA-8150 MOD	ND(<0.07)	MG/KG		8/8/97	SAS
DINOSEB	EPA-8150 MOD	ND(<0.07)	MG/KG		8/8/97	SAS
2,4-DB	EPA-8150 MOD	ND(<0.07)	MG/KG		8/8/97	SAS
MCPP	EPA-8150 MOD	ND(<0.05)	MG/KG		8/8/97	SAS
MCPA	EPA-8150 MOD	ND(<0.05)	MG/KG		8/8/97	SAS