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Air/Soil/Water Analysis

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Industrial Hygiene

Remedial Investigation

December 31, 1993

Rick McAbee F.R. MCABEE, INC. 9737 Holman Road NW Seattle, Washington 98117

RE: PHASE II ENVIRONMENTAL SITE ASSESSMENT PLAZA SHOPPING CENTER PROJECT NO. 9057.0103

Mr. McAbee:

Attached is the Phase II Environmental Site Assessment for the above-referenced facility. Included in this Environmental Site Assessment are an executive summary, sampling and analysis results, conclusions, plans, boring logs and laboratory analysis data.

If you have any questions regarding this report, please call this office.

Sincerely,

Neil R.Gilham Project Manager

Attachment

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I. EXECUTIVE SUMMARY

At the request of F.R. McAbee, Inc., ATC/Diagnostic Environmental Inc. (DEI) performed a Phase II Environmental Site Assessment at the Plaza Shopping Center located at Holman Road NW, in Seattle, Washington (project area). The assessment consisted of soil sampling in the project area adjacent to a former gas station site (currently Key Bank) adjoining the project area. The presence of the former gas station was determined during a Phase I Audit performed by DEI in August, 1993. The purpose of the Phase II investigation was to determine if a potential release of petroleum product at the former gas station had impacted the project area.

Four soil borings were drilled using truck-mounted hollow stem auger equipment. Soil samples were collected from selected depth intervals in each boring. Selected samples were analyzed for total petroleum hydrocarbons to determine the type of petroleum product present and if regulatory cleanup levels had been exceeded.

The results of soil sample analysis revealed no detectable levels of petroleum hydrocarbons. Therefore, it does not appear that any potential release of petroleum product at the former gas station has impacted the project area. DEI recommends no further investigation with respect to the former gas station adjoining the project area.

II. INTRODUCTION

ATC/Diagnostic Environmental Inc. (DEI) performed a Phase II Environmental Site Assessment at the Plaza Shopping Center located at Holman Road NW, Seattle, Washington (project area). Specifically, the investigation was conducted adjacent to the Key Bank building located at 9737 Holman Road NW within the Plaza Shopping Center.

The Phase II Environmental Site Assessment was performed in response to the findings of a Phase I Environmental Audit conducted in the project area in August, 1993 (reference Phase I Environmental Audit, August 17, 1993, Project No. 9057.0101). The Phase I investigation determined that the Key Bank building was constructed on the site of a former gasoline service station which operated from 1956 to 1984. There was no evidence that soils were sampled when in 1984 the station was demolished and the underground storage tanks (UST's) were removed. Therefore, DEI recommended in the Phase I that a subsurface investigation be performed to determine if a release had occurred which would impact the project area. It should be noted that the Key Bank site is not within the project area. However, the boundaries of the project area are sufficiently near the Key Bank site such that a significant release of petroleum product at the former gas station could potentially impact the project area (refer to Site Plan).

The Phase II Environmental Site Assessment field investigation was conducted on December 16, 1993. The investigation consisted of the following:

- 1. Drilling of four borings using truck-mounted hollow stem auger drilling equipment. The borings were drilled in the project area near the boundary between the project area and the Key Bank site. All four borings were drilled to a total depth of approximately 23 feet below ground surface.
- 2. Collection of soil samples at selected intervals from each of the borings (generally at 5 foot intervals beginning at 7.5 feet below ground surface).

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4. Laboratory analysis of selected soil samples using the WTPH-HCID method (reference Washington State Department of Ecology - Total Petroleum Hydrocarbon Analytical Methods for Soil).

Plans include a topographic map plan showing surrounding areas (Figure 1), a site plan showing Plaza Shopping Center and the area of investigation (Figure 2), and a sample location plan showing boring and sample locations (Figure 3). Boring logs and laboratory reports are included in the Appendices.

III. BACKGROUND

Site Description

The project area is located at the Plaza Shopping Center, Holman Road NW, Seattle, Washington. Plaza Shopping Center includes a large supermarket building (Art's) and two retail buildings that include retail shops, services, and restaurants. The field investigation of this Phase II Environmental Site Assessment was performed in the parking lot adjacent to the Key Bank building in the southwest portion of the Plaza Shopping Center.

The Plaza Shopping Center was initially developed as a shopping center in 1955. The property was undeveloped prior to 1955. A gasoline service station operated at the existing Key Bank site from 1956 to 1984.

IV. GEOLOGY AND HYDROGEOLOGY

Topography

The project area was observed to be relatively flat, with somewhat of a gentle slope downward towards the north. The project area is found in broad valley which trends in a north-south direction. Towards the north, approximately 300 feet, the valley becomes a steep-sided ravine through which flows Pipers Creek. Pipers Creek drains northward then westward, emptying into Puget Sound approximately 1 mile north-south forming the sides of the valley in which the project area is found. The project area is found at an elevation of approximately 75 meters (National Geodetic Vertical Datum of 1929). Source: USGS 1993.

Geology

The project area is located in the Puget Sound Basin lying between the Cascade Range on the east and the Olympic Mountains on the west. The regional topography and geology has been influenced by the glacial incursions which occurred during the Pleistocene epoch. The project area is underlain by the Vashon Till which ranges from a gravelly, sandy silt to silty sand with varied quantities of clay and feet. The Vashon Till is underlain by the Esperance Sand and Lawton Clay. Source: Galster and Laprade, Geology of Seattle, Washington, Bulletin of the Association of Engineering Geologists, August, 1991.

Soils encountered during drilling consisted generally of dense to very dense silty fine to medium sands becoming gravelly in places. These soils would correspond to SM (GM in places) on the Unified Soil Classification System (USCS).

Hydrogeology

Groundwater was encountered at 17 feet below ground surface in Boring Nos. B-1 and B-2. Groundwater was encountered at 12 feet below ground surface in Boring No. B-3 and not encountered again below 17 feet. Groundwater was not encountered in Boring No. B-4. It appears that groundwater occurs in discontinuous layers in the area of investigation. Groundwater flow direction is expected to flow northward in response to topography and flow direction of Pipers Creek.

V. SAMPLING AND ANALYSIS

Drilling and Soil Sample Collection

The field investigation for this Phase II Environmental Site Assessment was conducted on December 16, 1993. A total of four soil borings were drilled using truck-mounted hollow stem auger drilling equipment. The borings were drilled in the project area near the boundary between the project area and the Key Bank site. All four borings were drilled to a total depth of approximately 23 feet below ground surface.

Soil samples were collected at selected intervals from each of the borings generally at 5 foot intervals beginning at 7.5 feet below ground surface (i.e. at 7.5, 12.5, 17.5, and 22.5 feet below ground surface). Soil samples were collected using a split-spoon sampler fitted with brass sleeves. The split-spoon sampler was driven into undisturbed soils with blows from a 140-pound hammer. Blow counts were recorded to determine relative soil density. The samples were retained undisturbed in the brass sleeves and capped with plastic end caps.

All soil samples collected were labelled with sample number, sample location, sample collector's name and date of collection. The samples were then placed into a chilled field ice chest. A chain-of-custody form was maintained with the samples at all times until relinquished to the analyzing laboratory. Each sample was designated with a unique sample number based on boring number and sampling depth (i.e. Sample No. B-1-17.5 is from Boring No. 1 collected from 17.5 feet below ground surface).

The sampling equipment was washed prior to each soil sample collection using a three bucket system, with the first bucket containing an Alconox and tap water wash, the second bucket containing tap water for rinse, and the third bucket containing a distilled water rinse.

No petroleum odors, sheens, or stained soil were observed during drilling or in any of the soil samples or drill cuttings. There were no signs of a petroleum product release observed during drilling and sample collection.

At the conclusion of drilling each boring was backfilled with bentonite chips. The asphalt parking lot pavement was patched with concrete in each boring location. Drill cuttings and rinsate water from equipment decontamination were drummed in 55-gallon DOT drum and left on-site in a location designated by F.R. McAbee, Inc.

Soil Sample Analysis

The collected soil samples were relinquished to Columbia Analytical Services, Inc. located in Bothell, Washington, for analysis. Selected soil samples were analyzed using the following method:

DOE Method WTPH-HCID for qualitative screening to determine the type and presence of petroleum hydrocarbons (reference Washington State Department of Ecology - Total Petroleum Hydrocarbon Analytical Methods for Soil).

The DOE Method WTPH-HCID was selected since this method can determine the type of petroleum product present (i.e. gasoline, diesel, or oil) and also if such product exceeds DOE regulatory cleanup levels. If a petroleum product was determined to be present in a sample further analysis by appropriate methods (e.g. WTPH-G for gasoline) could determine specifically the concentration of a given petroleum product. Additionally, the WTPH-HCID method is the DOE recommended method for use at leaking underground storage tank sites where the exact nature of a suspected release is unknown as in the case of this investigation.

The samples selected for analysis were from the 12.5, 17.5, and 22.5 foot intervals in each boring. These samples were selected for analysis based on their presence at or near the water table (for Boring Nos. B-1, B-2, and B-3). Typically, a release of petroleum product will concentrate at the water table based on the relative density and solubility of petroleum hydrocarbons compared to water. A vapor fraction will be present in the vadose zone above the water table and a dissolved fraction will be present in groundwater. The 7.5 foot interval samples were held by the lab but not analyzed pending the outcome of the results from the deeper samples.

VI. ANALYTICAL RESULTS

There were no detectable levels of total petroleum hydrocarbons (TPH) in any of the soil samples analyzed. The laboratory reports are found in the Appendix. Therefore, no additional analysis for gasoline, diesel, or heavy oils is recommended or analysis of the samples from the 7.5 foot interval.

VII. CONCLUSIONS

Laboratory analysis results revealed no detectable concentrations of TPH from the samples analyzed. Based on these results there does not appear to be a release of petroleum products at the Key Bank site (former gas station) impacting the project area. Therefore, DEI makes no recommendation for further investigation in the project area related to the former gas station at the Key Bank site adjoining the project area.

VIII. LIMITATIONS

DEI has prepared this Assessment using reasonable efforts in each phase of its work to estimate liabilities associated with environmentally regulated substances in the project area. This report is not definitive and should not be assumed to be a complete or specific definition of all conditions above or below grade.

FIGURES

F.R. MCABEE, INC. PLAZA SHOPPING CENTER SEATTLE, WASHINGTON



FIGURE 1

TOPOGRAPHIC MAP PLAN

NOT TO SCALE FROM USGS 7.5' X 15' TOPOGRAPHIC MAP "SEATTLE NORTH, WASHINGTON"

ATC / DIAGNOSTIC ENVIRONMENTAL INC.

PROJECT NO. 9057.0103



ATC / DIAGNOSTIC ENVIRONMENTAL INC.

PROJECT NO. 9057.0103



ATC / DIAGNOSTIC ENVIRONMENTAL INC.

PROJECT NO. 9057.0103

APPENDICES

APPENDIX A

Boring Logs

DEPTH	SAMPLE	BLOW	LITH/	
(FT)	NO.	COUNT	STRAT	DESCRIPTION
		· · · · · · · · · · · · · · · · · · ·		ASPHALT 4"
	• • • • • • • • • • • • • • • • • •	*		
				LT. GRAY SILTY SAND, LOOSE, DAMP, SM

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- 3	* * * * * * * * * * * * * * * * * * *			LT. GRAY SILTY SAND, SL. CLAYEY, SL. PLASTIC, DAMP, SM
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	B-1-7.5	31-50		
	·····	lor 3***		LT. GRAY SILTY FINE SAND, SL GRAVELLY, DENSE, DAMP, SM
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	8-1-12.5	25-50		T. GRAY SILTY FINE SAND. SL. GRAVELLY, DENSE, MOIST, SM
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	B-1-17.5	• • • • • • • • • • • • • • • • • • • •		•••••
	0-1-17.5	50 for 5.5		T. GRAY SILTY FINE SAND, SL. GRAVELLY, DENSE, WET, SM
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0	• • • • • • • • • • • • • • • • • • • •			
	B-1-22.5	45-50		. GRAY SILTY FINE SAND, SL GRAVELLY, DENSE, WET
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<u>2RIN(</u>	<u>3 NO. B-1</u>			
TAL DEP	ELEVATION: 24 PTH: 23 FEET			LOGGED BY: NEIL GILHAM
TE DRI	LLED: 12/16/9	3		DRILL RIG/DRILLER: MOBILE DRILL B-57, HOLT DRILLING
				DIAMETER OF BORING: 8 INCH WATER ENCOUNTERED AT: 17 FEET
	BEE, INC.			
JECT	NAME: PHA	SE II ESA		ATC/DIAGNOSTIC
JJECT	NO. 9057.01	03		
ATION	:PLAZA SHOP	PING CENTER	R, SEATTLI	E WA
		Constant Constant Constant	AND DESCRIPTION OF THE OWNER OF T	Carrier avenue NW. SEATTLE, WA 98107 12/16/9

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DEPTH (FT)	SAMPLE NO.	BLCW COUNT	LITH/ STRAT	
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<u> </u>				LT. GRAY GRAVELLY SILTY FINE TO MED. SAND. DENSE, DAMP, SM
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<u>bynn</u>	NG NO. B-2	2		

SURFACE ELEVATION: 245 FEET LOGGED BY: NEIL GILHAM TOTAL DEPTH: 23 FEET DRILL RIG/DRILLER: MOBILE DRILL B-57, HOLT DRILLING DATE DRILLED: 12/16/93 DIAMETER OF BORING: 8 INCH WATER ENCOUNTERED AT: 17 FEET F.R. MCABEE, INC. ١CG ATC/DIAGNOSTIC PROJECT NAME: PHASE II ESA 2 **ENVIRONMENTAL** PROJECT NO. 9057.0103 Ħ OF 4 INC. LOCATION: PLAZA SHOPPING CENTER, SEATTLE, WA 6347 SEAVIEW AVENUE NW, SEATTLE, WA 98107 12/16/93

CEPTH (FT)	SAMPLE NO.	BLOW	LITH/ STRAT	DESCRIPTION	-
		1	A	ASPHALT 4"	
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				GRAY BROWN SILTY SAND, LOOSE, DAMP, SM	• • • •
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				DAMETER OF BOHING: 8 INCH	
.R. MCAE	EE INC		******	WATER ENCOUNTERED AT: 12 FEET	
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	50 for 5		GRAYE	ROWN SILTY	FINE TO MED. S	SAND, DENSE, MOIST, S	
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APPENDIX B

Laboratory Reports

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ATC/Diagnostic Environmental, Inc. Project: McAbee PH II Sample Matrix: Soil	Date Collected: Date Received: Date Extracted: Date Analyzed: Work Order No.:	12/16/93 12/16/93 12/17/93 12/17,18/93 8930722
--	---	--

Total Petroleum Hydrocarbons - Hydrocarbon Identification Washington DOE Method WTPH-HCID mg/Kg (ppm) Dry Weight Basis

Committee Mar		Gase	oline	Di	esel	Oi	•
Sample Name	Lab Code	MRL	Result	MRL	Result	MRL	Result
B-1-12.5 B-1-17.5 B-1-22.5 B-2-12.5 B-2-17.5 B-2-22.5 B-3-12.5 B-3-12.5 B-3-17.5 B-3-22.5 B-4-12.5 B-4-17.5 B-4-22.5 Method Blank	B0722-2 B0722-3 B0722-4 B0722-6 B0722-7 B0722-8 B0722-10 B0722-10 B0722-11 B0722-12 B0722-14 B0722-15 B0722-16 B0722-MB	20 20 20 20 20 20 20 20 20 20 20 20 20 2	ND ND ND ND ND ND ND ND ND ND ND	50 50 50 50 50 50 50 50 50 50 50 50		100 100 100 100 100 100 100 100 100 100	ND ND ND ND ND ND ND ND ND ND ND ND
		_ •		50	ND	100	ND

Quantified using 30-weight motor oil as a standard.

MRL Method Reporting Limit

ND None Detected at or above the method reporting limit

D Detected at or above the method reporting limit. Refer to the report(s) immediately following for quantitative results for the detected components.

an Ellast Approved by

Date 12/22/53

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Project: Sample Matrix:	ATC/Diagnostic Environmental, Inc. McAbee PH II Soil	Date Collected: Date Received: Date Extracted: Date Analyzed: Work Order No.:	12/16/93 12/16/93 12/17/93 12/17,18/93 B930722
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Surrogate Recovery Summary Total Petroleum Hydrocarbons - Hydrocarbon Identification Washington DOE Method WTPH-HCID

Sample Name	Lab Code	Percent Recovery <i>p</i> -Terphenyl
B-1-12.5 B-1-17.5 B-1-22.5 B-2-12.5 B-2-17.5 B-2-17.5 B-3-12.5 B-3-17.5 B-3-17.5 B-3-17.5 B-3-22.5 B-4-12.5 B-4-12.5 B-4-22.5 Method Blank	B0722-2 B0722-3 B0722-4 B0722-6 B0722-7 B0722-8 B0722-10 B0722-11 B0722-11Dup B0722-12 B0722-12 B0722-14 B0722-15 B0722-16 B0722-MB	99 102 99 104 105 106 105 104 104 105 106 108 104 104 104 104

State-Specified Acceptance Criteria

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Approved by _____ like Ellist

Constanting of

Silver services

____Date___2/22/52

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Project:	ATC/Diagnostic Environmental, Inc. McAbee PH II Soil	Date Collected: Date Received: Date Extracted:
		Date Extracted:

 Date Collected:
 12/16/93

 Date Received:
 12/16/93

 Date Extracted:
 12/17/93

 Date Analyzed:
 12/17/93

 Work Order No.:
 B930722

Duplicate Summary Total Petroleum Hydrocarbons - Hydrocarbon Identification Washington DOE Method WTPH-HCID mg/Kg (ppm) Dry Weight Basis

Sample Name: Lab Code:

B0722-11

8-3-17.5

Analyte	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference
Gasoline Diesel Oil ⁴	20 50 100	ND ND ND	ND ND ND	-	

MRL Method Reporting Limit

ND None Detected at or above the method reporting limit • Quantified using 30-weight motor oil as a standard.

Cin Ellut Approved by

Date 12/22/43

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