

Geotechnical Engineering





Water Resources





Solid and Hazardous Waste





Ecological/Biological Sciences





Geologic Assessments



Associated Earth Sciences, Inc.

Phase II Environmental Site Assessment

Proposed Jack in the Box Site

Auburn, Washington

Prepared for

Jack in the Box

Project No. KE04045B February 19, 2004

PHASE II ENVIRONMENTAL SITE ASSESSMENT

Proposed Jack in the Box Site Auburn, Washington

Prepared for:

Jack in the Box

Prepared by:

Associated Earth Sciences, Inc.
911 5th Avenue, Suite 100
Kirkland, Washington 98033
425-827-7701
Fax: 425-827-5424

February 19, 2004 Project No. KE04045B

1.0 INTRODUCTION

This report presents the results of a preliminary Phase II Environmental Site Assessment (ESA) of site soils performed and documented by Associated Earth Sciences, Inc. (AESI) at the property located at the northeast corner of the intersection of 6th Street SE and A Street SE in Auburn, Washington. We understand that a portion of the site will be developed into a Jack in the Box restaurant and gasoline station co-brand facility. The remainder of the site will be developed by others.

1.1 Location and Legal Description

The subject property is a semi-rectangular parcel comprised of two tax lots in Auburn, Washington. The address of tax lot 182105-9184 is 524 SE A Street (23,625 square feet). The address of tax lot 182105-9253 is 512 SE A Street (79,661 square feet). The locations of the subject properties are shown in Figure 1 (Vicinity Map). Two dilapidated structures are located on-site. Neither structure was accessible and the inside of these structures was not inspected. It is unknown whether or not the buildings contain hazardous materials or sumps where waste oils may have been dumped.

Our assessment was limited to the areas of the site AESI had access to. The subject property is located in an area of residential and commercial properties, with an operating Union 76 gasoline station located approximately 200 feet southeast of the southeast corner of the site. A Denny's restaurant is located along the eastern boundary of the site.

1.2 Site History

Anecdotal reports indicate that the property was used as an automotive repair and auto wrecking business. According to the owner of an adjacent parcel, the former railroad property to the west dumped waste fluids from tanker cars into a large pit. He also reported that the contents of the pit used to be set on fire, with resulting clouds of thick sooty smoke.

2.0 SITE ASSESSMENT SAMPLING ACTIVITIES

The purpose of this site assessment was to determine if there were environmental impacts to the site from past operations. Selected soil samples were tested for organic and inorganic chemicals. On January 29, 2004, AESI arrived on-site to observe and document the excavation of exploration pits and to collect soil samples. A total of ten exploration pits were dug to depths ranging from 6 to 12 feet below existing grade (fbg). Exploration pit logs are located in Appendix A. A site schematic showing the approximate locations of the test pits is shown in Figure 2 (Site and Exploration Plan). Shallow fill soils were present across the site at

depths ranging from the surface to 3 to 12 inches below existing grade. Soil samples were collected from selected depths based upon field test results or location (for example, near the transmission shop or from a specific soil horizon to characterize existing conditions). The samples were submitted to the analytical laboratory to check for specified organic (petroleum hydrocarbon based compounds) or inorganic compounds (metals).

Site conditions, sample locations, and procedures are detailed in Sections 2.1 through 2.2 below. All samples were collected using AESI's standard sampling and decontamination protocols. Soil samples were collected from the center of the backhoe bucket using clean, stainless steel sampling spoons rinsed with distilled, de-ionized water. Samples collected for analysis were placed in borosilicate glass sample containers with Teflon-lined lids supplied by the laboratory. After the samples were logged in, they were placed in a cooler, chilled with frozen gel packs, and transported by courier under chain-of-custody protocols directly to Friedman & Bruya, Inc. laboratories in Seattle, Washington for analysis. The laboratory chain-of-custody is located in Appendix B.

2.1 Site Soil and Ground Water Conditions

The generalized sequence of sediments encountered in the approximate eastern two-thirds of the property, below the surficial fill soils, was fine-grained sand to a depth of approximately 2 to 3 feet, underlain by sand and gravels to depths of 8 to 9.5 feet. The approximate western one-third of the property was predominantly fine-grained sand and silt. The lateral distribution of the sediments is typical of fluvial deposits laid down by a meandering river, with fine-grained silty, backswamp deposits grading to higher energy, channel deposits. There was no field evidence of environmentally significant levels of petroleum hydrocarbons in the exploration pits below the thin mantle of surficial fill material (averaging 2 to 6 inches). Small pieces of miscellaneous automotive debris were randomly distributed within the surficial fill material.

2.2 Site Assessment Soil Sample Nomenclature

Site assessment samples were collected from each exploration pit. Samples were then selected for analysis based upon field test and observations. The samples collected from the Auburn property (AP) were composited in the laboratory prior to analysis. Sampling nomenclature is described as follows:

- 1) Project: Jack in the Box Auburn Property (JA) or Auburn Property (AP). Auburn property is defined as that portion other than the Jack in the Box portion.
- 2) Exploration Pit Number: EP-1 through EP-10
- 3) Depth: sample depth in fbg or S for surface sample

As an example, sample JA-EP4-S was collected from the Jack in the Box Auburn Property project from the Exploration Pit number 4 from Surface sediments (fill).

3.0 ANALYTICAL RESULTS

Analytical results for samples collected during site assessment activities are given in Tables 1 through 5. Results are discussed in Section 3.1 below. Figure 2 shows the approximate locations of the exploration pits. Complete analytical certificates are located in Appendix B.

Table 1
Site Assessment/Exploration Pit Analytical Results: Soil Samples
NWTPH-Dx – Total Petroleum Hydrocarbons as
Diesel Extended to Include Motor Oil
(Analytical results are in parts per million [ppm])

	Date			
Sample Numbér	Collected	Depth (fbg ¹)	Diesel	Motor Oil
JA-EP4-S	1/29/04	surface	50	130
JA-EP5-S	1/29/04	surface	. 120	500.
JA-EP8-S	1/29/04	surface	810	1,500
JA-EP8-1	1/29/04	1	<10	<50
JA-EP8-6	1/29/04	. 6	<10	< 50
JA-EP9-S	1/29/04	surface	21	83
JA-EP10-S	1/29/04	surface	180	530
JA-EP10-5	1/29/04	5	<10.	<50
AP-EP2,EP3,EP6	1/29/04	surface	1,800	3,000
& EP7-S				
MTCA Method A			2,000	2,000
CL^2				

 $^{^{1}}$ fbg = feet below grade.

² Model Toxics Control Act (MTCA) Method A cleanup levels. Analytical results in bold are above MTCA Method A cleanup levels

Table 1A

Total Petroleum Hydrocarbons as Gasoline/BTEX*

(Analytical results are in parts per million [ppm])

Sample No.	Date Collected	Depth (fbg)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Gasoline
AP-EP1-9	1/29/04	9	< 0.02	< 0.02	< 0.02	< 0.06	<1

^{*}BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes.

Table 2
Site Assessment/Exploration Pit Analytical Results: Soil Samples
Volatile Organic Compounds (VOCs) Using EPA Method 8260B
(Analytical results are in parts per million [ppm])

Compounds	JA-EP5-9.5	JA-EP8-6	MTCA Method A ¹ CL
Dichlorodifluoromethane	<0.5	< 0.5	*
Chloromethane	< 0.5	< 0.5	*
Vinyl chloride	< 0.5	< 0.5	*
Bromomethane	< 0.5	<0.5	*
Chloroethane	< 0.5	< 0.5	*
Trichlorofluoromethane	< 0.5	<0.5	*
Acetone	<0.5	< 0.5	*
1,1-Dichloroethene	< 0.5	<0.5	*
Methylene chloride	<0.5	< 0.5	*
trans-1,2-Dichloroethene	< 0.05	< 0.05	*
1,1-Dichloroethane	< 0.05	< 0.05	*
2,2-Dichloropropane	< 0.05	< 0.05	*
cis-1,2-Dichloroethene	< 0.05	< 0.05	*
Chloroform	< 0.05	< 0.05	*
2-Butanone (MEK)	< 0.5	<0.5	*
1,2-Dichloroethane (EDC)	< 0.05	< 0.05	*
1,1,1-Trichloroethane	< 0.05	< 0.05	2
1,1-Dichloropropene	< 0.05	< 0.05	*
Carbon Tetrachloride	< 0.05	< 0.05	*
Benzene	< 0.03	< 0.03	.03
Trichloroethene	< 0.05	< 0.03	.03
1,2-Dichloropropane	< 0.05	< 0.05	*
Bromodichloromethane	< 0.05	< 0.05	*
Dibromomethane	< 0.05	< 0.05	*
4-Methyl-2-pentanone	< 0.5	< 0.5	*
cis-1,3-Dichloropropene	< 0.05	< 0.05	*

Compounds	JA-EP5-9.5	JA-EP8-6	MTCA Method A ¹ CL
Toluene	< 0.05	< 0.05	7
trans-1,3-Dichloropropene	< 0.05	< 0.05	*
1,1,2-Trichloroethane	< 0.05	< 0.05	*
2-Hexanone	< 0.5	< 0.5	* -
1,3-Dichloropropane	< 0.05	< 0.05	*
Tetrachloroethene	< 0.05	< 0.05	.05
Dibromochloromethane	< 0.05	< 0.05	. *
1,2-Dibromoethane (EDB)	< 0.05	< 0.05	0.005
Chlorobenzene	< 0.05	< 0.05	*
Ethyl benzene	< 0.05	< 0.05	6
1,1,1,2-Tetrachloroethane	< 0.05	< 0.05	*
M,p-Xylene	< 0.1	< 0.1	9
o-Xylene	< 0.05	< 0.05	9
Styrene	< 0.05	< 0.05	*
Isopropylbenzene	< 0.05	< 0.05	*
Bromoform	< 0.06	< 0.06	*
n-Propylbenzene	< 0.05	< 0.05	*
Bromobenzene	< 0.05	< 0.05	*
1,3,5-Trimethylbenzene	< 0.05	< 0.05	*
1,1,2,2-Tetrachloroethane	< 0.05	< 0.05	*
1,2,3-Trichloropropane	< 0.05	< 0.05	*
2-Chlorotoluene	< 0.05	< 0.05	*
4-Chlorotoluene	< 0.05	< 0.05	*
tert-Butylbenzene	< 0.05	< 0.05	*
1,2,4-Trimethylbenzene	< 0.05	< 0.05	*
sec-Butylbenzene	< 0.05	< 0.05	*
p-Isopropyltoluene	< 0.05	< 0.05	*
1,3-Dichlorobenzene	< 0.05	< 0.05	*
1,4-Dichlorobenzene	< 0.05	-<0.05	,*
1,2-Dichlorobenzene	< 0.05	< 0.05	*
1,2-Dibromo-3-Chloropropane	< 0.06	< 0.06	*
1,2,4-Trichlorobenzene	< 0.05	< 0.05	·*
Hexachlorobutadiene	< 0.05	< 0.05	*
Naphthalene	< 0.05	< 0.05	5
1,2,3-Trichlorobenzene	< 0.05	< 0.05	*

¹MTCA Method A CL in ppm: Model Toxics Control Act Method A Cleanup Level in parts per million.

²MTBE: a gasoline oxygenate that is often a precursor to an approaching plume of gasoline contamination.

*No cleanup level established.

Table 3
Site Assessment/Exploration Pit Analytical Results: Soil Samples
Total RCRA¹ 8 Metals
(Analytical results are in parts per million [ppm])

Sample ID	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury
JA-EP4-S	<10	. 39	<1.0	13	44	<10	<10	ND
JA-EP8-S	<10	110	11	44	1,100	< 10	< 10	ND
JA-EP9-S	<10	220	3.4	21	360	< 10	< 10	0.46
JA-EP10-S	<10	200	9.1	28	1,000	< 10	< 10	ND
AP- EP2,EP3, EP6, and EP7-S	NA	NA	NA	NA	4,500	NA .	NA	NA
MTCA Method A CL	20	*	2	2,000	250	*	*	2

¹Resource Conservation and Recovery Act

Analytical results in **bold** are above MTCA Method A cleanup levels

NA = not analyzed

Table 4
Site Assessment/Exploration Pit Analytical Results
Total PCBs¹ as Aroclors
(Analytical results are in parts per million [ppm])

Sample ID	Aroclor 1221	Aroclor 1232	Aroclor 1016	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262
JA-EP5-S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	<0.1	< 0.1
JA-EP8-S	< 0.1	< 0.1	< 0.1	<0.1	< 0.1	< 0.1	0.1	< 0.1
MTCA Method A CL			PCB's	as total Aro	clors 1 part	per million		

PCBs: acronym for Polychlorinated Biphenyls (also know as aroclors) which are bioaccumulative compounds used in electrical equipment and other products.

^{*}No numeric cleanup level established

3.1 Discussion of Site Assessment Analytical Results

The only diesel or heavy oil range petroleum hydrocarbons detected in the fill material above MTCA Method A cleanup levels at the exploration pit locations tested on-site was in the composite sample from exploration pits EP2, EP3, EP6, and EP7. The only detectable levels of PCBs in the surface soil tested was in EP8 and it was well below MTCA Method A cleanup levels. Soil samples for VOCs were submitted from exploration pits EP5 at 9.5 fbg and EP8 at 6 fbg. All results for VOCs were below laboratory detection limits. Lead and cadmium were present above MTCA Method A cleanup levels in the surficial fill soil at exploration pit locations EP8, EP9, and EP10 and in the composite sample for EP2, EP3, EP6, and EP7.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon analytical results, surficial soils on the subject property are impacted with the heavy metals cadmium and lead. Surface soils from exploration test pits EP8, EP9, and EP10 and the composite sample from EP2, EP3, EP6, and EP7 all exhibited concentrations of lead and cadmium above MTCA Method A cleanup levels. Additional testing is recommended to further delineate the distribution, both horizontally and vertically, of lead and cadmium on-site. This survey should employ the installation of semi-permanent sample location markers to facilitate future remedial excavation activities.

Based on the testing performed, only the composite sample collected from the eastern portion of the site (EP2, EP3, EP6, and EP7) exhibited concentrations of petroleum hydrocarbons above MTCA Method A cleanup levels. Because these sample locations were furthest from the existing building and the likely point source of contamination, they were composited into a single sample for analysis. No VOCs were encountered above MTCA Method A cleanup levels in the site soils tested during our assessment. Polychlorinated biphenyls (PCBs as aroclors) were detected above laboratory detection limits in one of the two samples tested, but the concentration was below MTCA Method A cleanup levels.

Based upon our experience with this type of property and past usage, there may be additional areas of petroleum hydrocarbon contamination related to specific areas on-site where heavy oil or gasoline leaked from wrecked cars as they were processed or temporarily stored. These areas are anticipated to be limited in extent. Additional testing would be required in order to attempt to delineate these areas and determine the horizontal and vertical extent of the contamination.

5.0 LIMITATIONS

This report is for the exclusive use of the Jack in the Box, Inc. and their agents. The report is based upon data and information collected by AESI. The findings in this report are representative of the specific areas tested during our site visit. The recommendations and conclusions contained in this report represent our professional opinions. These opinions were derived in accordance with currently accepted environmental practices at this time and location. Other than this, no warranty is implied or intended.

Gary A. Flowers, P.G., P.E.G.

Principal

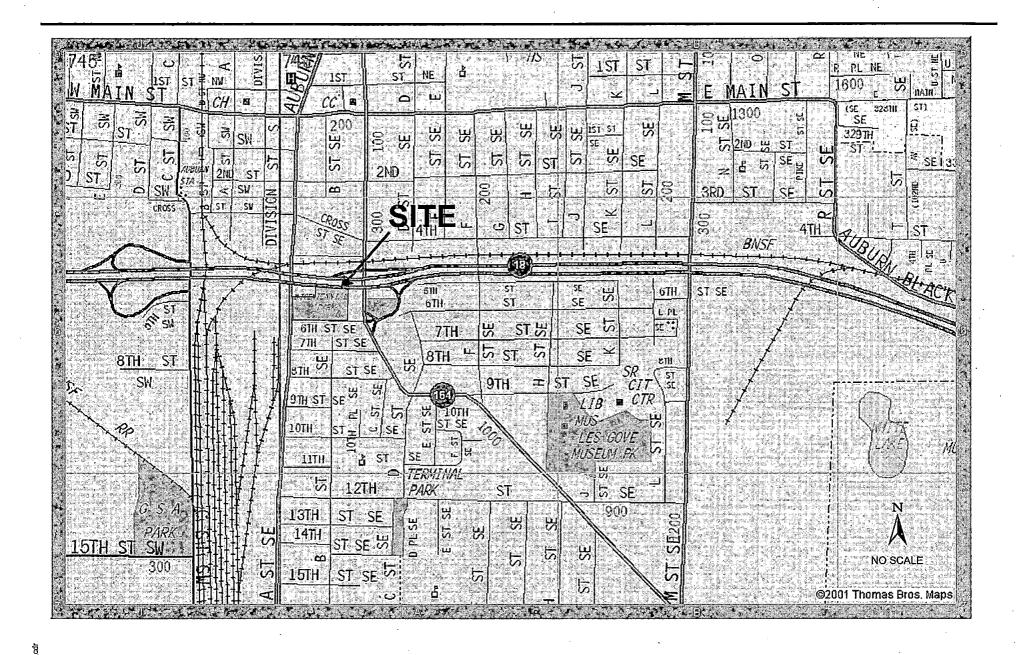
Richard N. Simpson, P.G

Project Geologist

Attachments: Figure 1: Vicinity Map

Figure 2: Site and Exploration Plan Appendix A: Exploration Pit Logs

Appendix B: Laboratory Analytical Results



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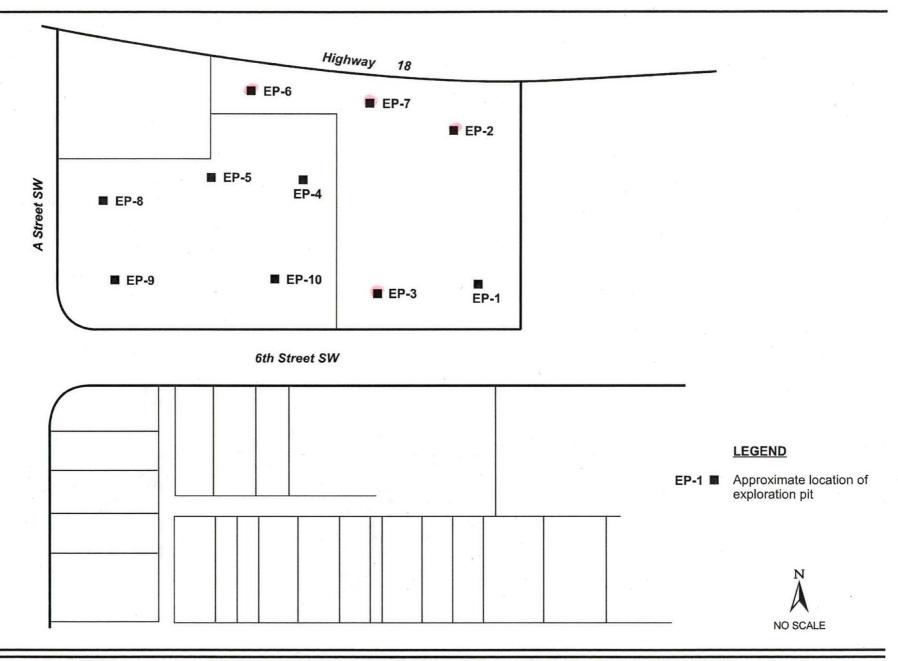




VICINITY MAP JACK IN THE BOX AUBURN, WASHINGTON FIGURE 1

DATE 02/04

PROJ. NO. KV04045A



Associated Earth Sciences, Inc.









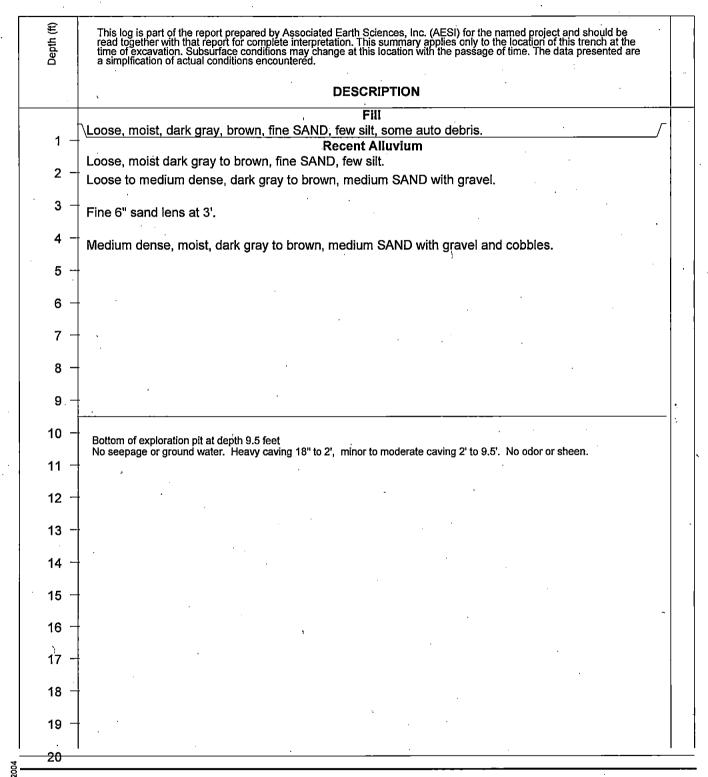


FIGURE 2

DATE 02/04

PROJ. NO. KV04045A

APPENDIX A Exploration Pit Logs



Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

Associated Earth Sciences, Inc.



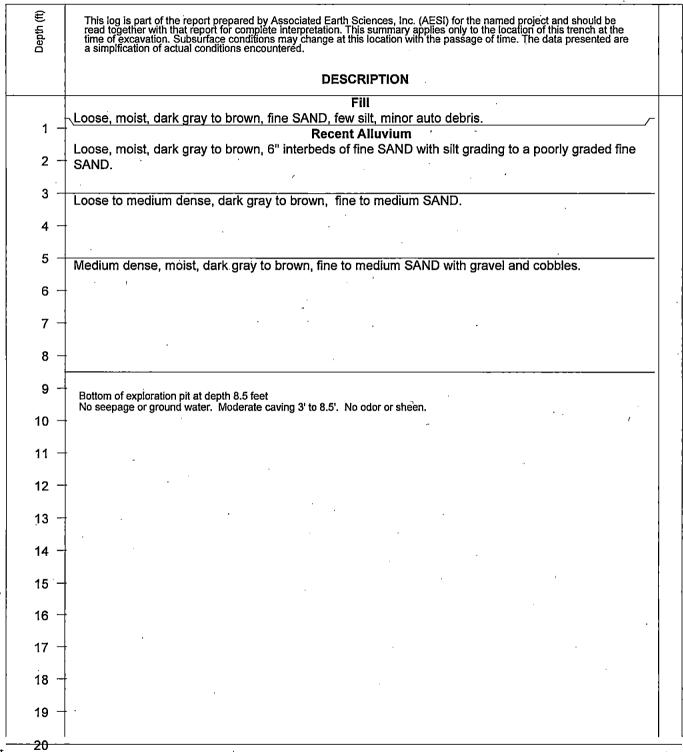




Project No. KE04045A February 2004

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Logged by: RNS Approved by:



Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

Associated Earth Sciences, Inc.





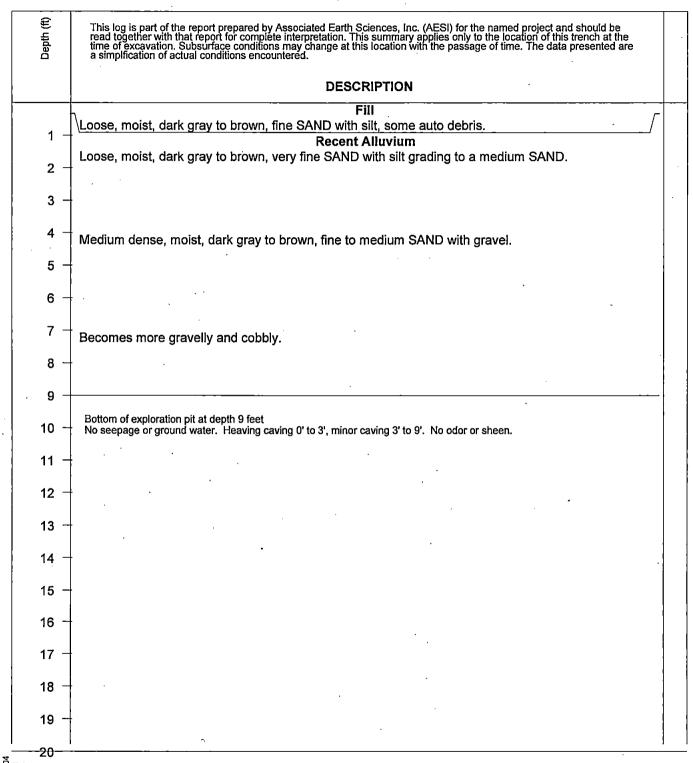




Project No. KE04045A February 2004

TP3 04045A-1.GPJ March 5, 200

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Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

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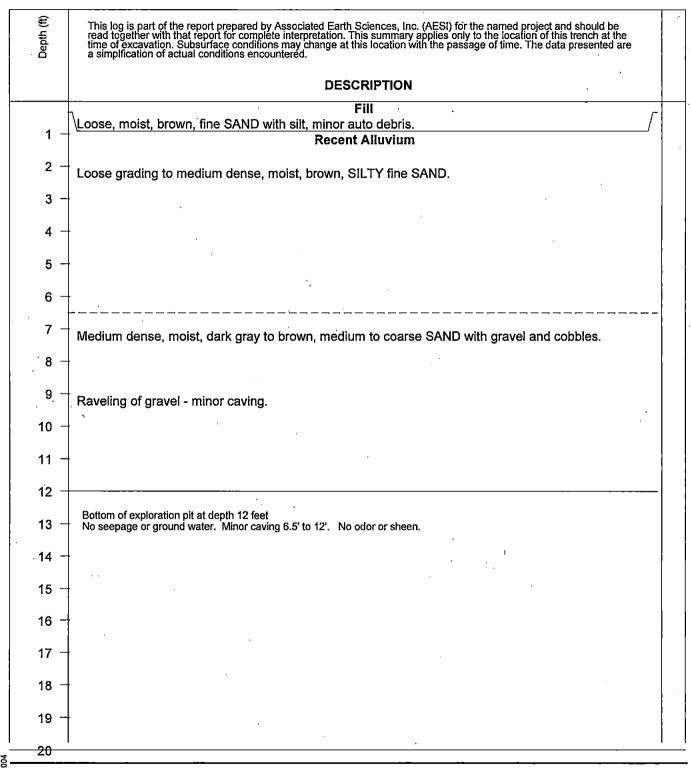






Associated Earth Sciences, Inc.





Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

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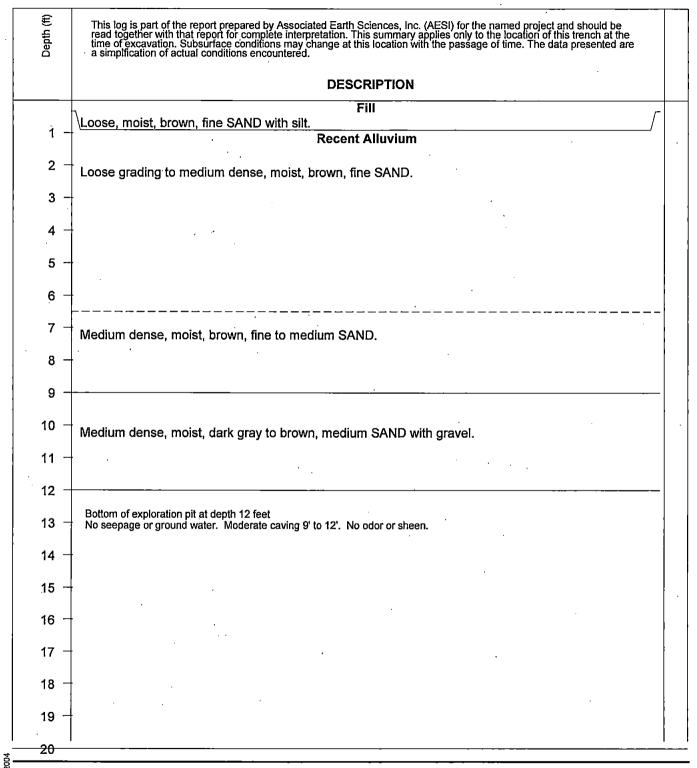






Associated Earth Sciences, Inc.





Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

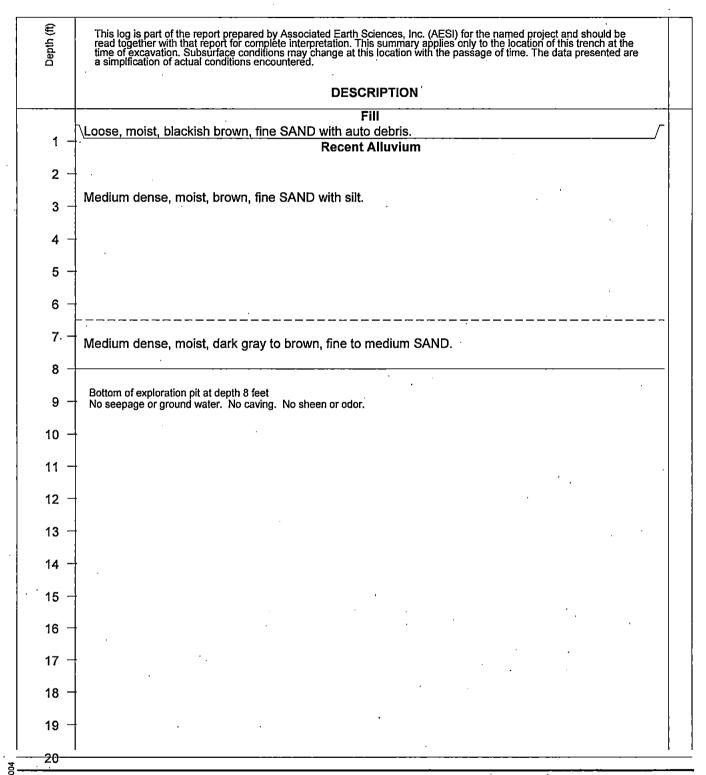
Associated Earth Sciences, Inc.











Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

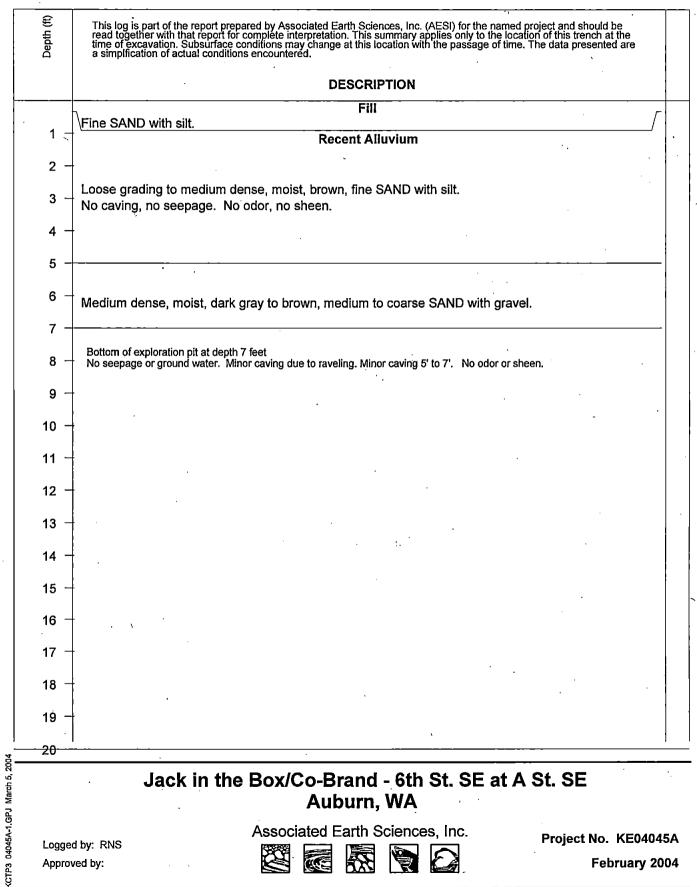
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Associated Earth Sciences, Inc.









Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

Associated Earth Sciences, Inc.

Logged by: RNS Approved by:









Project No. KE04045A

February 2004

	DESCRIPTION
1 -	Fill Bricks, SAND with gravel, bluish gray soil matrix.
2 -	Soft, moist, brown SILT with fine sand.
3 -	Out, moist, brown ore 1 with time saird.
4 -	
5 -	Medium stiff very moist, mottled rust brown-gray brown SILT.
6 -	
7 -	No caving. No sheen or odor.
8 -	,
J	
9 -	Medium dense, moist, dark brown, very fine SAND with silt; some poorly graded 6" thick fine sand interbeds (~6").
9 - 10 -	
9 - 10 - 11 -	
9 - 10 - 11 - 12 -	
9 - 10 - 11 - 12 -	interbeds (~6"). Bottom of exploration pit at depth 12 feet
9 - 10 - 11 - 12 - 13 -	interbeds (~6"). Bottom of exploration pit at depth 12 feet
9 - 10 - 11 - 12 - 13 -	interbeds (~6"). Bottom of exploration pit at depth 12 feet
9 - 110 - 111 - 112 - 113 - 115 - 116 - 11	Interbeds (~6"). Bottom of exploration pit at depth 12 feet No seepage or ground water. No caving. No odor or sheen.
	Bottom of exploration pit at depth 12 feet No seepage or ground water. No caving. No odor or sheen.

Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

Associated Earth Sciences, Inc.

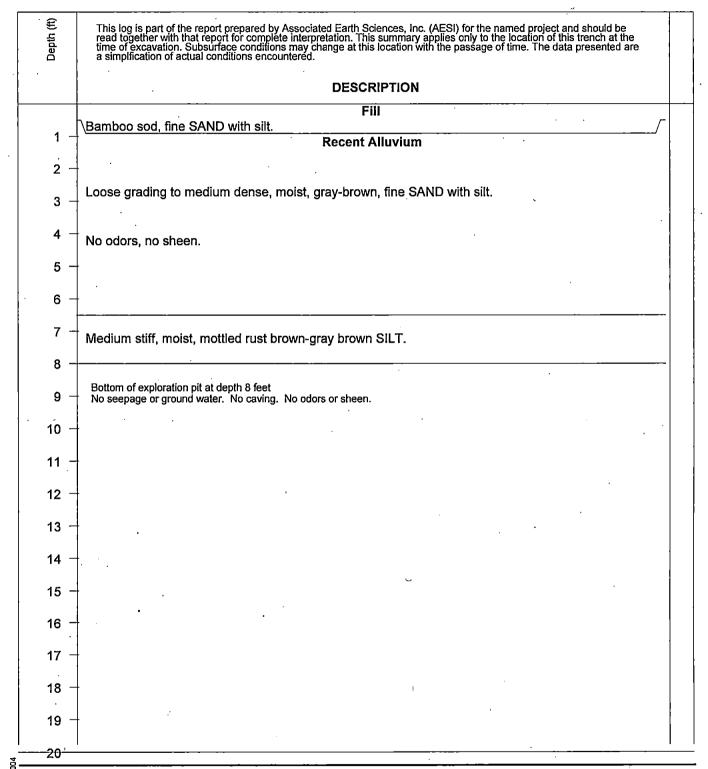
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Approved by:









Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

Associated Earth Sciences, Inc.

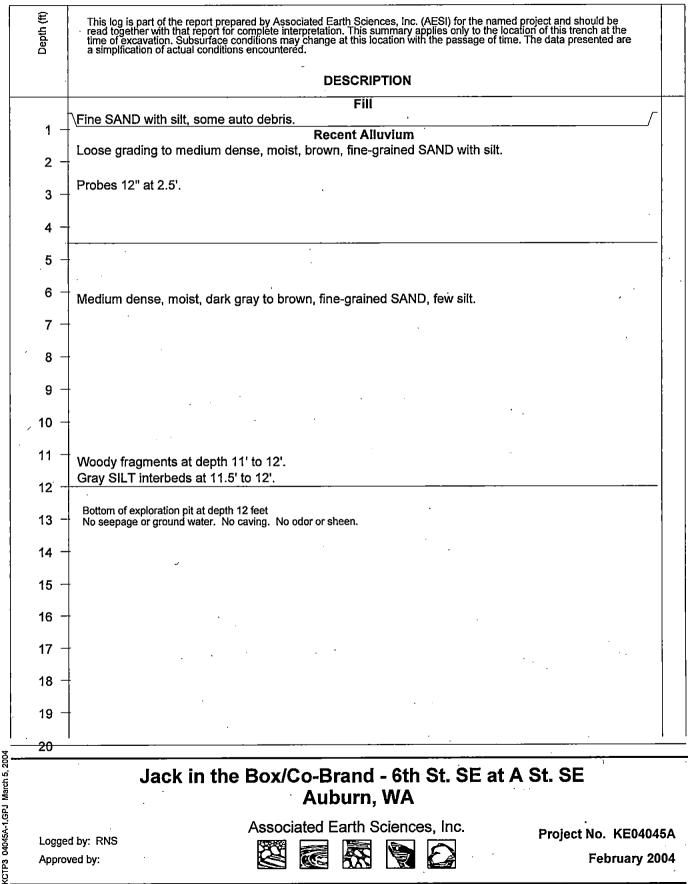
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Jack in the Box/Co-Brand - 6th St. SE at A St. SE Auburn, WA

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Associated Earth Sciences, Inc.









APPENDIX B Laboratory Analytical Results