MAUL FOSTER ALONGI

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August 31, 2011
Project No. 0380.02.01

Steve King, PE
City of Wenatchee
Department of Public Works
PO Box 519
Wenatchee, Washington 98807-0519

Re: Subsurface Evaluation

Dear Mr. King:

At your request, Maul Foster & Alongi, Inc. (MFA) has prepared this letter to summarize the results of a subsurface evaluation performed on the property located at 25 North Worthen Street, Wenatchee, Washington (the Property). During MFA's Phase I environmental site assessment site reconnaissance visit to the Property on October 5, 2010, the following tasks were also completed: 1) installation of three piezometers to assess the potentiometric surface of shallow groundwater at the Property; 2) assessment of combustible gas based on soil gas sampling at the Property; and 3) evaluation of petroleum-hydrocarbon-stained soil located at the Property.

Piezometers PZ1 through PZ3 were installed to assess shallow subsurface groundwater elevations and migration directions at the Property. Soil gas samples obtained were field screened for measurable combustible gas concentrations. Soil samples obtained by the City of Wenatchee Public Works Department (City) in 2009 at areas of surface staining at the Property indicated the presence of heavy-oil-range petroleum hydrocarbons at levels below the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A soil cleanup level; however, the samples were not assessed for other constituents, such as polychlorinated biphenyls (PCBs).

Based on a review of subsurface soil conditions encountered during this evaluation, geophysical findings, and previous environmental subsurface investigations completed at the Property, MFA completed a geologic cross section based on a profile trending from southwest to northeast (W1 to E1) across the central portion of the Property.

PIEZOMETER INSTALLATION AND GROUNDWATER TABLE ASSESSMENT

Three piezometers (PZ1 through PZ3) were installed at the Property on October 5, 2010. Installation locations included: in the east-central portion of the Property adjacent to North Worthen Street (PZ1); in the southeastern corner of the Property adjacent to the access road to the boat launch area (PZ2); and in the northeastern portion of the Property (PZ3) adjacent

to the existing former maintenance building (see Figure 1). These soil boring locations were also used for the combustible gas monitoring, which is described below.

Piezometer well design and construction methods conformed to requirements and specifications outlined in Washington Administrative Code (WAC) 173-160 for "resource protection wells" in the State of Washington. The wells were installed to depths ranging from approximately 28 feet to 35 feet below ground surface (bgs). As-built schematics and descriptions of subsurface conditions encountered during soil boring activities are presented in Attachment A. Water levels were measured in October and November 2010 to aid in the creation of a potentiometric surface map for the shallow subsurface groundwater conditions at the Property. The October and November 2010 potentiometric surface maps are presented in Figures 2 and 3, respectively. The potentiometric surfaces indicate that groundwater flow is to the south-southwest, away from the Columbia River.

COMBUSTIBLE GAS ASSESSMENT

Four soil borings (SG1 through SG4) advanced at the Property were used to field screen for the presence of combustible soil gas in the subsurface. Locations of SG1 through SG3 coincided with piezometers PZ1 through PZ3, while SG4 was advanced in the south-central portion of the Property near the approximate location of the former public works fueling site (refer to Figure 1). Locations SG1 and SG4 were outside the area of the landfill, and locations SG2 and SG3 were within the area of the landfill.

Soil gas was screened using a combustible gas indicator and a photoionization detector (PID). Field parameters measured include carbon dioxide (CO_2) measured in volumetric parts per million (Vppm); the lower explosivity limit (LEL) of the soil gas as a percent (%); oxygen (O_2) as a percent; and hydrogen sulfide (H_2S) measured as Vppm. PID readings are also measured as Vppm. The table below shows the results of the soil gas screening at each sample point:

Table
Soil Gas Measurements

Location	CO_2 (Vppm)	LEL (%)	O_2 (%)	H_2S (Vppm)	PID (Vppm)
SG1	155	8	7.3	0.0	5.3
SG2	385	49-100	2.7	0.0	34.3
SG3	509	>100	8.2	0.0	5.5
SG4	46	1.0	5.8	0.0	2.8
NOTE: >100 = greater than the LEL.					

Based on the Property's historical use as a landfill, results of soil gas monitoring, specifically for combustible gas concentrations, are indicative of decomposition factors. While many volatile organic compounds (VOCs) may be measured directly via PID readings, the presence of semivolatile organic compounds and low-volatility organic compounds is measured indirectly through the presence of other gases created during biogenic processes (O_2, CO_2, and H_2S). Because combustible gases tend to be heavier than air, there may be localized sinks throughout the Property. Gas concentrations were interpreted at their highest levels (i.e., at or above the LEL) in the vicinity of soil gas borings SG2 and SG3, located in the western portion of the Property in an area interpreted to be within the footprint of the historical landfill.

STAINED SOIL ASSESSMENT

Surface soil staining was observed by City employees in 2009; the source of the stained soil is unknown. Five surface soil samples were obtained by the City and submitted for analysis for gasoline-range hydrocarbons (GRO) by Northwest Method NWTPH-Gx; for gasoline-associated VOCs, specifically benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tert-butyl ether (MTBE), by U.S. Environmental Protection Agency (USEPA) Method 8021B; and for diesel- through lube-oil-range hydrocarbons (DRO and ORO, respectively) by Northwest Method NWTPH-Dx. Laboratory analytical results indicated detectable GRO, DRO, and ORO but at concentrations below their respective MTCA Method A soil cleanup levels. BTEX and MTBE were not detected in any of the samples analyzed.

On October 5, 2010, MFA advanced a soil boring in the area of the City's 2009 investigation where petroleum hydrocarbon detections were greatest to look for other petroleum hydrocarbon constituents, mainly polycyclic aromatic hydrocarbons (PAHs) and PCBs, because the sources of the impacts were unknown. A single subsurface soil sample was obtained from boring GP1 from a depth of 3.5 feet bgs in the area where surface soil staining was observed. This sample was submitted for analysis to Specialty Analytical of Clackamas, Oregon, under standard chain-of-custody procedures, and was analyzed for DRO and ORO by Northwest Method NWTPH-Dx; for PAHs by USEPA 8270C-SIM; and for PCBs by USEPA Method 8082. A copy of the laboratory analytical report can be found in Attachment B. The laboratory analytical results were evaluated according to applicable sections of USEPA procedures and appropriate laboratory and method-specific guidelines. Data-validation procedures were modified, as appropriate, to accommodate quality-control requirements for methods not specifically addressed by the functional guidelines (i.e., NWTPH-Dx method). The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned. Attachment C contains the data validation memorandum.

Soil analytical results indicated detections of DRO (45.5 milligrams per kilogram [mg/kg]) and ORO (115 mg/kg) below the MTCA Method A soil cleanup level for unrestricted land

use of 2,000 mg/kg for these constituents. Analytical results indicated no detections of PCBs in the soil sample submitted. Carcinogenic PAHs (cPAHs) were detected in the soil sample submitted for laboratory analysis. In accordance with WAC 173-340-708(8), mixtures of cPAHs are considered single hazardous substances. For these mixtures, toxicity equivalent concentrations (TEC) are calculated, consistent with MTCA. The toxicity of a particular cPAH is expressed relative to the most toxic cPAH (i.e., benzo[a]pyrene). To be conservative, half of method reporting limits were used in the TEC calculation if the congeners were reported as not detected. A cPAH TEC of 14.66 micrograms per kilogram (µg/kg) was calculated using toxicity equivalency factors recommended by Ecology. The calculated TEC was well below the benzo(a)pyrene Method A soil cleanup level of 100 µg/kg.

GEOLOGIC CROSS SECTION

A generalized geologic cross section of interpreted subsurface soil materials at the Property along profile W1-E1 (refer to Figure 4) is presented in Figure 5. Lithology was interpreted from subsurface investigations completed by Budinger & Associates in 1981, a geophysical investigation completed by Northwest Geophysical Associates, Inc. in 2010, and subsurface investigation activities completed by MFA.

Based on the available information, the area interpreted to be part of the former landfill includes northern and eastern portions of the Property (see Figure 1). Depth to shallow bedrock in these areas interpreted as the historical landfill ranges from approximately 25 to more than 50 feet bgs. Throughout much of the Property the landfill debris is covered with silty sandy gravel and sandy silt interpreted to be imported fill material. In general, field observations indicate that there was less noticeable landfill debris in the southern area of the interpreted landfill (PZ2) than in the north (PZ3) (see Attachment A). The overall thickness of landfill debris in these areas of investigation is difficult to ascertain, based on inconstancies of soil conditions, compaction, and poor soil recovery during probe activities.

CONCLUSIONS

Based on groundwater measurements, the direction of shallow groundwater migration at the Property was to the south-southwest during the months of October and November 2010. It is likely that groundwater at the Property during these months was recharged by surface water (i.e., Columbia River). Annual statistical data from the United States Geologic Survey indicate that the months of lowest river flow rates and surface water elevation at this section of the Columbia River are September/October and March/April. Continued potentiometric surface monitoring is recommended to understand seasonal fluctuations in shallow groundwater migration at the Property.

Field screening of soil gas at the Property indicates the presence of VOCs and combustible gases indicative of active biodegradation of refuse in the vicinity of the historical landfill. The

combustible gas levels are at or above the LEL in the area of the landfill. Passive gas venting and active gas monitoring or engineering controls should be considered during design and implementation phases of redevelopment for the Property.

Soil analytical results indicate that the stained subsurface soil observed by the City at the Property is below the MTCA Method A soil cleanup levels for unrestricted land use.

A generalized geologic cross section at the Property indicates varied thickness of landfill debris and overburden material above shallow basalt, which varies in depth.

Sincerely,

Maul Foster & Alongi, Inc.

Alan R. Hughes, LG
Senior Geologist

Kyle Roslund
Staff Geologist

Attachments: Limitations
Figure 1—Sample Locations
Figure 2—Potentiometric Surface Map, October 2010
Figure 3—Potentiometric Surface Map, November 2010
Figure 4—Geologic Cross Section Location
Figure 5—Generalized West to East Geologic Cross Section
A—Soil boring logs
B—Laboratory analytical results
C—Data validation memorandum

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

The purpose of an environmental assessment is to reasonably evaluate the potential for or actual impact of past practices on a given site area. In performing an environmental assessment, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an exhaustive analysis of each conceivable issue of potential concern. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to exclude the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the assessment, such a finding should not, therefore, be construed as a guarantee of the absence of such materials on the site.

Environmental conditions that cannot be identified by visual observation may exist at the site. Where subsurface work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

Except where there is express concern of our client, or where specific environmental contaminants have been previously reported by others, naturally occurring toxic substances, potential environmental contaminates inside buildings, or contaminate concentrations that are not of current environmental concern may not be reflected in this document.

FIGURES

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Figure
Monitoring Well & Soil Gas Sample Locations

City of Wenatchee
Wenatchee, Washington

Legend

- Monitoring Wells
- Soil Gas Samples
- Geoprobe Boring
- Measured Landfill Area

0 25 50
Feet

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

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Figure 2
Potentiometric Surface Map
October 2010

City of Wenatchee
Wenatchee, Washington

Legend

- Monitoring Wells
- Soil Gas Samples
- Geoprobe Boring
- 18' Groundwater Elevation Contour
- Flow Direction

0 25 50
Feet

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

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Figure 3
Potentiometric Surface Map
November 2010

City of Wenatchee
Wenatchee, Washington

PZ-3 SG2
PZ-2 SG3
GP-1
SG4
SG1
PZ-1
618.5'
618.25'
618'
617.75'
North Worthen Street

Legend

- Monitoring Wells
- Soil Gas Samples
- Geoprobe Boring
- 18' Groundwater Elevation Contour
- Flow Direction

0 25 50
Feet

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

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Print Date: 11-29-2010
Approved By: A. Hughes
Produced By: J. Schane
Project: 0380.02.01

COLUMBIA RIVER

E1

620
630
636
640
638
634
632
638
636
634
632
638
636
634
634
636
638

24
25
23

SL1
0
100
220
200
230

SL2
160
110
0

SL3
110
0

EXISTING BUILDING

PZ-2
SG-2
PZ-3
SG-3
SG-4
PZ-1
SG-1

W1

Filepath: G:\0380.02 Wenatchee\01_Landfill Integrated Redevelopment Plan\Cross Section reworked.dwg
Printed by: Jamie Fisher
Date: 12/2/2010 4:58:34 PM

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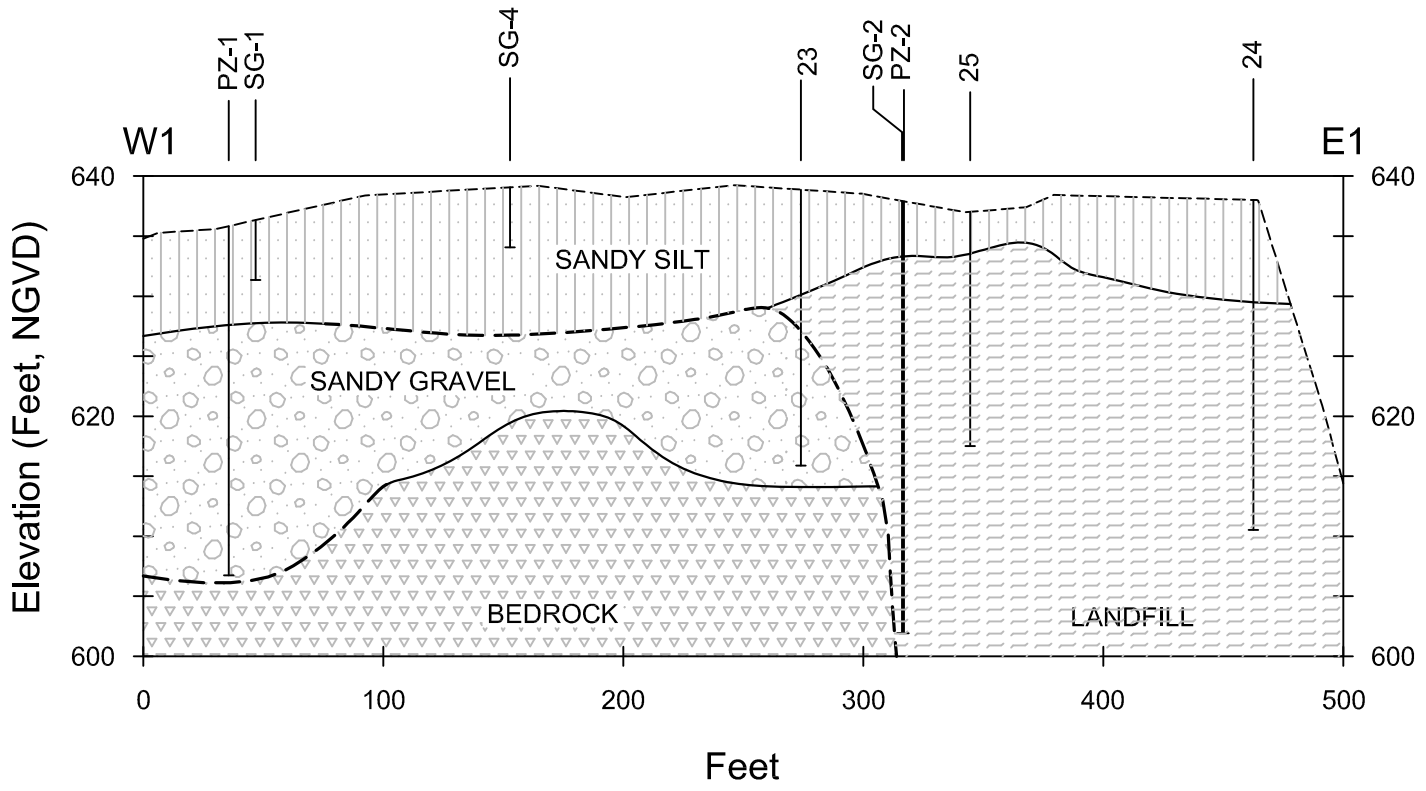
LEGEND:

- Former Building
- Area of Interest
- Boring (from Maul Foster & Alongi, Surveyed 2010)
- Boring (from Budinger & Associates, Soil and Gas Generation Investigation1971, Location Approximate)
- Piezometer (from Maul Foster & Alongi, Surveyed 2010)
- SL2 Geophysical Site Investigation Lines (from Northwest Geophysical Associates, Inc. 2010)
- W1 Cross Section Location

0 80' 160'

Figure 4
Cross Section Location

Wenatchee Landfill
Wenatchee, Washington



CROSS SECTION W1-E1
HORIZONTAL SCALE: 1" = 80' VERTICAL SCALE: 1" = 16'
VERTICAL EXAGGERATION: 5

NOTES:
1. Lithologic contact dashed where inferred.
2. Lithology is based on investigation by MFA in 2010, boring information from Budinger & Associates, and geophysical survey in 2010 by Northwest Geophysical Associates, Inc.

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LEGEND:

Sandy Silt = 60-80% fines

Sandy Gravel = gravels with sand and some fines. In some areas well sorted sand is present.

Landfill = highly variable refuse material, gravel, sand, silt and clay are present. In some areas wood debris is present.

Bedrock = basalt

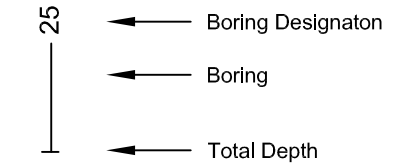

Figure 5
Generalized West to East Geologic Cross Section

Wenatchee Landfill
Wenatchee, Washington

ATTACHMENT A

SOIL BORING LOGS

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0380.02.01	**PZ1**	**1 of 2**

Project Name	**City of Wenatchee**	TOC Elevation (feet)	**641.42**
Project Location	**25 North Worthen St**	Surface Elevation (feet)	**641.6**
Start/End Date	**10/6/2010 to 10/6/2010**	Northing	**156037.3**
Driller/Equipment	**Frank S/6600 truck mounted Geoprope**	Easting	**1770236.0**
Geologist/Engineer	**Justin Pounds**	Hole Depth	**29.2-feet**
Sample Method	**Geoprobe**	Outer Hole Diam	**3.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			**100**	**GP**	**1**				*0.0 to 0.3 feet: ASPHALT; black.*
									0.3 to 0.6 feet: SANDY GRAVEL; dark gray; loose; dry.
									0.6 to 3.0 feet: SANDY SILT; dark gray; 60% fines; 40% sand, fine to medium; moist.
4			**100**	**GP**	**2**				
									6.2 to 7.1 feet: SANDY SILT; dark gray; 80% fines; 20% sand, fine; dense; moist.
									7.1 to 8.0 feet: SILTY SANDY GRAVEL; brown; 10% fines; 30% sand, fine to medium; 60% gravel, rounded, fine to medium; dry.
8			**100**	**GP**	**3**				*8.0 to 12.5 feet: SANDY GRAVEL; dark gray; 30% sand, medium to coarse; 70% gravel, medium to coarse; dry.*
12			**50**	**GP**	**4**				
									12.5 to 14.1 feet: SAND; brown; 100% sand, medium to coarse; dry.
									14.1 to 16.0 feet: No Recovery.
16			**100**	**GP**	**5**				*16.0 to 25.5 feet: SANDY GRAVEL; brownish gray; 40% sand, fine to coarse; 60% gravel, fine to cobbles, dense.*
20									

NOTES:

▽ ***Observed Water Level during drilling.***

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0380.02.01	**PZ1**	**2 of 2**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21			**100**	**GP**	**6**				
22									
23									
24			**100**	**GP**	**7**				
25									
26	▽								*25.5 to 25.8 feet: GRANITE; white.*
27									*25.8 to 29.16 feel: SANDY GRAVEL; dark gray; 50% sand, fine to coarse; 50% gravel, fine to medium; wet.*
28			**25**	**GP**	**8**				
29									

Refusal: 29.16 feet below ground surface.

NOTES:

▽ ***Observed Water Level during drilling.***

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0380.02.01	**PZ2**	**1 of 2**

Project Name	**City of Wenatchee**	TOC Elevation (feet)	**641.22**
Project Location	**25 North Worthen St**	Surface Elevation (feet)	**641.3**
Start/End Date	**10/6/2010 to 10/6/2010**	Northing	**156080.4**
Driller/Equipment	**Frank S/6600 truck mounted Geoprope**	Easting	**1770540.0**
Geologist/Engineer	**Justin Pounds**	Hole Depth	**36.0-feet**
Sample Method	**Geoprobe**	Outer Hole Diam	**3.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			75	GP	1				0.0 to 0.3 feet: ASPHALT; black. 0.3 to 2.5 feet: SILTY SANDY GRAVEL; dark gray; 15% fines; 25% sand, fine to medium; 60% gravel, fine to coarse, angular; dry.
2									
3									2.5 to 3.0 feet: SANDY SILT; dark brown; 70% fines; 30% sand; damp. 3.0 to 4.0 feet: No Recovery.
4			25	GP	2				4.0 to 5.0 feet: SANDY SILT; dark brown; 70% fines; 30% sand; damp. 5.0 to 24.0 feet: No Recovery.
5									
6									
7									
8			0	GP	3				
9									
10									
11									
12			0	GP	4				@ 12.0 feet: Trash (paper products).
13									
14									
15									
16			0	GP	5				
17									
18									
19									
20									

NOTES:

▽ **Observed Water Level during drilling.**

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0380.02.01	**PZ2**	**2 of 2**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21			**0**	**GP**	**6**				
22									
23									
24	▽		**100**	**GP**	**7**				*24.0 to 27.0 feet: CLAY; light gray; dense; wet.*
25									
26									
27									*27.0 to 28.8 feet: SILT; damp.*
28			**20**	**GP**	**8**				
29									*28.0 to 32.0 feet: No Recovery.*
30									
31									
32			**55**	**GP**	**9**				*32.0 to 34.3 feet: SANDY SILT; brown; 60% fines; 40 % sand, fine to medium; wet.*
33									
34									
35									*34.3 to 36.0 feet: SILT; dark gray; dense; wet.*
36									

Total depth: 36.0 feet below ground surface.

NOTES:

▽ ***Observed Water Level during drilling.***

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0380.02.01	**PZ3**	**1 of 2**

Project Name	**City of Wenatchee**	TOC Elevation (feet)	**642.48**
Project Location	**25 North Worthen St**	Surface Elevation (feet)	**642.4**
Start/End Date	**10/6/2010 to 10/6/2010**	Northing	**156344.7**
Driller/Equipment	**Frank S/6600 truck mounted Geoprope**	Easting	**1770318.0**
Geologist/Engineer	**Justin Pounds**	Hole Depth	**32.0-feet**
Sample Method	**Geoprobe**	Outer Hole Diam	**3.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			**50**	**GP**	**1**				*0.0 to 0.2 feet: ASPHALT: black.*
									0.2 to 1.8 feet: SANDY GRAVEL; dark gray; 10% fines; 30% sand, medium to coarse, angular; 60% gravel, rounded, fine to medium; dry.
2									*1.8 to 2.3 feet: GRAVELLY SILT; dark brown; 75% fines; 25% gravel, rounded; dry.*
3									*2.3 to 4.0 feet: No Recovery.*
4			**20**	**GP**	**2**				*4.0 to 4.8 feet: SILTY SANDY GRAVEL; dark brown; with organics (wood); 20% fines; 20% sand, fine to medium; 60% gravel; dry.*
5									*4.8 to 12.0 feet: No Recovery.*
6									
7									
8			**0**	**GP**	**3**				
9									
10									
11									
12			**60**	**GP**	**4**				*12.0 to 13.8 feet: SILTY SANDY GRAVEL; dark gray; fill; dry.*
13									
14									*13.8 to 14.4 feet: WOODY DEBRIS; black; damp.*
15									*14.4 to 16.0 feet: No recovery.*
16			**0.15**	**GP**	**5**				*16.0 to 16.4 feet: FILL. dark gray.*
17									*16.4 to 16.5 feet: RUBBER; black.*
									16.5 to 16.6 feet: WOODY DEBRIS; moist.
18									*16.6 to 20.0 feet: No Recovery.*
19									
20									

NOTES:

▽ ***Observed Water Level during drilling.***

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0380.02.01	**PZ3**	**2 of 2**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21			**30**	**GP**	**6**				*20.0 to 21.2 feet: SILTY SANDY GRAVEL; dark gray; 10% fines; 30% sand, fine to medium; 60% gravel, coarse; moist.*
22									*21.2 to 24.0 feet: No Recovery.*
23									
24	▽		**57**	**GP**	**7**				*24.0 to 26.3 feet: SILTY SANDY GRAVEL; dark gray; 10% fines; 30% sand, fine to medium; 60% gravel, coarse; wet.*
25									
26									*26.3 to 28.0 feet: No Recovery.*
27									
28			**100**	**GP**	**8**				*28.0 to 29.1 feet: SILTY SANDY GRAVEL; dark gray; 10% fines; 30% sand; 60% gravel, fine to medium; wet.*
29									*29.1 to 31.4 feet: SILT; brown; stiff; damp.*
30									
31									
32									*31.4 to 32.0 feet: SANDY SILT; brown; 30% sand, fine to medium; 70% fines; wet.*

Total depth: 32.0 feet below ground surface.

NOTES:

▽ ***Observed Water Level during drilling.***

ATTACHMENT B

LABORATORY ANALYTICAL RESULTS

Specialty Analytical

11711 SE Capps Road
Clackamas, OR 97015
(503) 607-1331
Fax (503) 607-1336

October 13, 2010

Alan Hughes
Maul, Foster & Alongi
7223 NE Hazel Dell Avenue
Suite B
Vancouver, WA 98665

TEL: (360) 694-2691
FAX: (360) 906-1958

RE: City of Wenatchee / 0380.02.01

Dear Alan Hughes:

Order No.: 1010052

Specialty Analytical received 1 sample on 10/7/2010 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Cindy Hillyard
Project Manager

Technical Review

Specialty Analytical

Date: *13-Oct-10*

CLIENT: Maul, Foster & Alongi
Project: City of Wenatchee / 0380.02.01
Lab Order: 1010052

Lab ID: 1010052-01
Collection Date: 10/5/2010 3:00:00 PM
Client Sample ID: GP1-S-3.0
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		**NWTPH-DX**				Analyst: **jrp**
Diesel	45.5	17.2		mg/Kg-dry	1	10/8/2010
Lube Oil	115	57.3		mg/Kg-dry	1	10/8/2010
Surr: o-Terphenyl	123	50-150		%REC	1	10/8/2010
PAH'S BY GC/MS-OARSIM (8270C)		**8270SIM**				Analyst: **bda**
Acenaphthene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Acenaphthylene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Anthracene	22.1	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benz(a)anthracene	14.5	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benzo(a)pyrene	11.5	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benzo(b)fluoranthene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benzo(g,h,i)perylene	13.0	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benzo(k)fluoranthene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Chrysene	18.3	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Dibenz(a,h)anthracene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Fluoranthene	9.93	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Fluorene	8.40	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Indeno(1,2,3-cd)pyrene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Naphthalene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Phenanthrene	77.9	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Pyrene	59.6	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Surr: 2-Fluorobiphenyl	56.9	42.6-128		%REC	1	10/13/2010 9:40:00 AM
Surr: Nitrobenzene-d5	39.4	21.7-155		%REC	1	10/13/2010 9:40:00 AM
Surr: p-Terphenyl-d14	84.3	44.9-155		%REC	1	10/13/2010 9:40:00 AM
PCB'S IN SOIL		**SW8082**				Analyst: **jrp**
Aroclor 1016	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1221	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1232	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1242	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1248	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1254	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1260	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1262	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1268	ND	1.53		µg/Kg-dry	1	10/11/2010
Surr: Decachlorobiphenyl	103	56.5-130		%REC	1	10/11/2010

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082LL_S

Sample ID: **MB-26765**	SampType: **MBLK**	TestCode: **8082LL_S**	Units: **µg/Kg**	Prep Date: **10/8/2010**	Run ID: **GCK_101011A**
Client ID: **ZZZZZ**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.33									
Aroclor 1221	ND	1.33									
Aroclor 1232	ND	1.33									
Aroclor 1242	ND	1.33									
Aroclor 1248	ND	1.33									
Aroclor 1254	ND	1.33									
Aroclor 1260	ND	1.33									
Aroclor 1262	ND	1.33									
Aroclor 1268	ND	1.33									
Surr: Decachlorobiphenyl	12510	0	13330	0	93.8	56.5	130	0	0		

Sample ID: **LCS-26765**	SampType: **LCS**	TestCode: **8082LL_S**	Units: **µg/Kg**	Prep Date: **10/8/2010**	Run ID: **GCK_101011A**
Client ID: **ZZZZZ**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	116	1.33	133.3	0	87	44.3	137	0	0		

Sample ID: **1010052-01AMS**	SampType: **MS**	TestCode: **8082LL_S**	Units: **µg/Kg-dry**	Prep Date: **10/8/2010**	Run ID: **GCK_101011A**
Client ID: **GP1-S-3.0**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	149.7	1.53	152.7	0	98	56.6	123	0	0		

Sample ID: **1010052-01AMSD**	SampType: **MSD**	TestCode: **8082LL_S**	Units: **µg/Kg-dry**	Prep Date: **10/8/2010**	Run ID: **GCK_101011A**
Client ID: **GP1-S-3.0**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	152.7	1.53	152.7	0	100	56.6	123	149.7	2.02	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082LL_S

Sample ID: **CCV**	SampType: **CCV**	TestCode: **8082LL_S**	Units: **µg/Kg**	Prep Date:	Run ID: **GCK_101011A**
Client ID: **ZZZZZ**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	124	1.33	133.3	0	93	85	115	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **8082LL_S**	Units: **µg/Kg**	Prep Date:	Run ID: **GCK_101011A**
Client ID: **ZZZZZ**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	125.3	1.33	133.3	0	94	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID: **MB-26762**	SampType: **MBLK**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date: **10/8/2010**	Run ID: **GC-M_101008A**
Client ID: **ZZZZZ**	Batch ID: **26762**	TestNo: **NWTPH-Dx**		Analysis Date: **10/8/2010**	SeqNo: **701939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									
Surr: o-Terphenyl	37.12	0	33.33	0	111	50	150	0	0		

Sample ID: **LCS-26762**	SampType: **LCS**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date: **10/8/2010**	Run ID: **GC-M_101008A**
Client ID: **ZZZZZ**	Batch ID: **26762**	TestNo: **NWTPH-Dx**		Analysis Date: **10/8/2010**	SeqNo: **701940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	181.9	15.0	166.6	0	109	76.3	125	0	0		
Lube Oil	160.2	50.0	166.6	0	96.1	69.9	127	0	0		

Sample ID: **1010050-02ADUP**	SampType: **DUP**	TestCode: **NWTPHDX_S**	Units: **mg/Kg-dry**	Prep Date: **10/8/2010**	Run ID: **GC-M_101008A**
Client ID: **ZZZZZ**	Batch ID: **26762**	TestNo: **NWTPH-Dx**		Analysis Date: **10/8/2010**	SeqNo: **701942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	101.9	27.8	0	0	0	0	0	105.1	3.11	20	A1
Lube Oil	444.3	92.8	0	0	0	0	0	457.8	3.00	20	A2

Sample ID: **CCV**	SampType: **CCV**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date:	Run ID: **GC-M_101008A**
Client ID: **ZZZZZ**	Batch ID: **26762**	TestNo: **NWTPH-Dx**		Analysis Date: **10/8/2010**	SeqNo: **701938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1127	15.0	1019	0	111	85	115	0	0		
Lube Oil	491.7	50.0	514.9	0	95.5	85	115	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date:	Run ID: **GC-M_101008A**
Client ID: **ZZZZZ**	Batch ID: **26762**	TestNo: **NWTPH-Dx**		Analysis Date: **10/8/2010**	SeqNo: **701944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1500	15.0	1359	0	110	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID: **CCV** SampType: **CCV** TestCode: **NWTPHDX_S** Units: **mg/Kg** Prep Date: Run ID: **GC-M_101008A**
Client ID: **ZZZZZ** Batch ID: **26762** TestNo: **NWTPH-Dx** Analysis Date: **10/8/2010** SeqNo: **701944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil	657.6	50.0	686.6	0	95.8	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID: **MB-26766**	SampType: **MBLK**	TestCode: **PAHLL_S**	Units: **µg/Kg**	Prep Date: **10/8/2010**	Run ID: **5973G_101013A**
Client ID: **ZZZZZ**	Batch ID: **26766**	TestNo: **8270SIM**		Analysis Date: **10/13/2010**	SeqNo: **702496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	6.67									
Acenaphthylene	ND	6.67									
Anthracene	0.6667	6.67									J
Benz(a)anthracene	1.333	6.67									J
Benzo(a)pyrene	0.6667	6.67									J
Benzo(b)fluoranthene	0.6667	6.67									J
Benzo(g,h,i)perylene	2.667	6.67									J
Benzo(k)fluoranthene	0.6667	6.67									J
Chrysene	0.6667	6.67									J
Dibenz(a,h)anthracene	2	6.67									J
Fluoranthene	0.6667	6.67									J
Fluorene	ND	6.67									
Indeno(1,2,3-cd)pyrene	2	6.67									J
Naphthalene	2	6.67									J
Phenanthrene	1.333	6.67									J
Pyrene	0.6667	6.67									J
Surr: 2-Fluorobiphenyl	3553	0	6667	0	53.3	42.6	128	0	0		
Surr: Nitrobenzene-d5	3094	0	6667	0	46.4	21.7	155	0	0		
Surr: p-Terphenyl-d14	5837	0	6667	0	87.6	44.9	155	0	0		

Sample ID: **LCS-26766**	SampType: **LCS**	TestCode: **PAHLL_S**	Units: **µg/Kg**	Prep Date: **10/8/2010**	Run ID: **5973G_101013A**
Client ID: **ZZZZZ**	Batch ID: **26766**	TestNo: **8270SIM**		Analysis Date: **10/13/2010**	SeqNo: **702498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	214.7	6.67	333.3	0	64.4	39.6	107	0	0		
Benzo(g,h,i)perylene	218.7	6.67	333.3	0	65.6	49.7	135	0	0		
Chrysene	278	6.67	333.3	0	83.4	57.1	130	0	0		
Naphthalene	222.7	6.67	333.3	0	66.8	29.1	109	0	0		
Phenanthrene	218.7	6.67	333.3	0	65.6	48.4	115	0	0		
Pyrene	278	6.67	333.3	0	83.4	47.2	134	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID: **1010052-01AMS**	SampType: **MS**	TestCode: **PAHLL_S**	Units: **µg/Kg-dry**	Prep Date: **10/8/2010**	Run ID: **5973G_101013A**
Client ID: **GP1-S-3.0**	Batch ID: **26766**	TestNo: **8270SIM**		Analysis Date: **10/13/2010**	SeqNo: **702500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	337.5	7.64	381.8	5.346	87	33.7	111	0	0		
Benzo(g,h,i)perylene	290.2	7.64	381.8	12.98	72.6	15	128	0	0		
Chrysene	342.9	7.64	381.8	18.33	85	37.5	125	0	0		
Naphthalene	272.6	7.64	381.8	0	71.4	27.7	108	0	0		
Phenanthrene	399.4	7.64	381.8	77.89	84.2	20.2	139	0	0		
Pyrene	414.7	7.64	381.8	59.56	93	26.8	142	0	0		

Sample ID: **1010052-01AMSD**	SampType: **MSD**	TestCode: **PAHLL_S**	Units: **µg/Kg-dry**	Prep Date: **10/8/2010**	Run ID: **5973G_101013A**
Client ID: **GP1-S-3.0**	Batch ID: **26766**	TestNo: **8270SIM**		Analysis Date: **10/13/2010**	SeqNo: **702499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	287.9	7.64	381.8	5.346	74	33.7	111	337.5	15.9	20	
Benzo(g,h,i)perylene	264.2	7.64	381.8	12.98	65.8	15	128	290.2	9.37	20	
Chrysene	294.8	7.64	381.8	18.33	72.4	37.5	125	342.9	15.1	20	
Naphthalene	225.3	7.64	381.8	0	59	27.7	108	272.6	19.0	20	
Phenanthrene	377.2	7.64	381.8	77.89	78.4	20.2	139	399.4	5.70	20	
Pyrene	398.6	7.64	381.8	59.56	88.8	26.8	142	414.7	3.94	20	

Sample ID: **CCV-26766**	SampType: **CCV**	TestCode: **PAHLL_S**	Units: **µg/Kg**	Prep Date:	Run ID: **5973G_101013A**
Client ID: **ZZZZZ**	Batch ID: **26766**	TestNo: **8270SIM**		Analysis Date: **10/13/2010**	SeqNo: **702495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	69.33	6.67	66.67	0	104	70	130	0	0		
Acenaphthylene	76	6.67	66.67	0	114	70	130	0	0		
Anthracene	74	6.67	66.67	0	111	70	130	0	0		
Benz(a)anthracene	54.67	6.67	66.67	0	82	70	130	0	0		
Benzo(a)pyrene	57.33	6.67	66.67	0	86	70	130	0	0		
Benzo(b)fluoranthene	53.33	6.67	66.67	0	80	70	130	0	0		
Benzo(g,h,i)perylene	57.33	6.67	66.67	0	86	70	130	0	0		
Benzo(k)fluoranthene	70	6.67	66.67	0	105	70	130	0	0		
Chrysene	64	6.67	66.67	0	96	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID: **CCV-26766** SampType: **CCV** TestCode: **PAHLL_S** Units: **µg/Kg** Prep Date: Run ID: **5973G_101013A**
Client ID: **ZZZZZ** Batch ID: **26766** TestNo: **8270SIM** Analysis Date: **10/13/2010** SeqNo: **702495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	58.67	6.67	66.67	0	88	70	130	0	0		
Fluoranthene	66	6.67	66.67	0	99	70	130	0	0		
Fluorene	67.33	6.67	66.67	0	101	70	130	0	0		
Indeno(1,2,3-cd)pyrene	56	6.67	66.67	0	84	70	130	0	0		
Naphthalene	67.33	6.67	66.67	0	101	70	130	0	0		
Phenanthrene	64.67	6.67	66.67	0	97	70	130	0	0		
Pyrene	69.33	6.67	66.67	0	104	70	130	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

KEY TO FLAGS

Rev. May 12, 2010

A	This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
A1	This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
A2	This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
A3	The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
A4	The product appears to be aged or degraded diesel.
B	The blank exhibited a positive result great than the reporting limit for this compound.
CN	See Case Narrative.
D	Result is based from a dilution.
E	Result exceeds the calibration range for this compound. The result should be considered as estimate.
F	The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
G	Result may be biased high due to biogenic interferences. Clean up is recommended.
H	Sample was analyzed outside recommended holding time.
HT	At clients request, samples was analyzed outside of recommended holding time.
J	The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
K	Diesel result is biased high due to amount of Oil contained in the sample.
L	Diesel result is biased high due to amount of Gasoline contained in the sample.
M	Oil result is biased high due to amount of Diesel contained in the sample.
MC	Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
MI	Result is outside control limits due to matrix interference.
MSA	Value determined by Method of Standard Addition.
O	Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
Q	Detection levels elevated due to sample matrix.
R	RPD control limits were exceeded.
RF	Duplicate failed due to result being at or near the method-reporting limit.
RP	Matrix spike values exceed established QC limits; post digestion spike is in control.
S	Recovery is outside control limits.
SC	Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
*	The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Page 1 of 1

Specialty Analytical
11711 SE Capps Road
Clackamas, OR 97015
Phone: 503-607-1331
Fax: 503-607-1336

Contact Person/Project Manager: Alan Hughes
Company: MFA
Address: 2001 NW 19TH Ave
Portland, OR
Phone: _____ Fax: _____
Project No. 0350.02.01 Project Name: City of Wenatchee
Project Site Location OR: _____ WA: X Other: _____
Invoice To: MFA P.O. No.: _____

Collected By:
Signature: [signature]
Printed: Justin Pounds

Signature: _____
Printed: _____

Turn Around Time
- ☑ Normal 5-7 Business Days
- ☐ Rush _____ Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

For Laboratory Use
Lab Job No. 1010052
Shipped Via: Specialty
Air Bill No.: —
Temperature On Receipt: 0 °C
Specialty Analytical Containers? Y / N
Specialty Analytical Trip Blanks? Y / N

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses: NW TPH-Dx	Analyses: PAHs 8270SIM	Analyses: PCBs 8082A	Comments	Lab I.D.
10/5/10	1500	GP1-S-3.0	S	3	X	X	X	hold extra soil for additional analysis - pending results	

Relinquished By: / Company:	Date	Time	Received By: / Company:	Relinquished By: / Company:	Date	Time
[signature] MFA	10/7/10	1300	Nikki Bappes Specialty	—	10/7/10	1510

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
Samples held beyond 60 days subject to storage fee(s)

Received For Lab By: Nikki Bappes — Date: 10/7/10 — Time: 1510

Copies: White-Original Yellow-Project File Pink-Customer Copy

ATTACHMENT C

DATA VALIDATION MEMORANDUM

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 0380.02.01 | DECEMBER 1, 2010 | CITY OF WENATCHEE
DEPARTMENT OF PUBLIC WORKS

This report reviews the analytical results for samples collected by the Maul Foster & Alongi, Inc. project team at the site at 25 North Worthen Street, Wenatchee, Washington. The samples were collected in October 2010.

Specialty Analytical (SA), in Clackamas, Oregon, performed the analyses. SA report number 1010052 was reviewed. The analyses performed are listed below.

Analysis	Reference
Polycyclic aromatic hydrocarbons	USEPA 8270SIM
Polychlorinated biphenyls	USEPA 8082
Diesel and lube oil	NWTPH-Dx

NWTPH = Northwest Total Petroleum Hydrocarbons.
SIM = selective ion monitoring.
USEPA = U.S. Environmental Protection Agency.

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 2004, 2008), and appropriate laboratory and method-specific guidelines (SA, 2010; USEPA, 1986).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. No target analytes were detected above the reporting limits (RLs) in the method blanks.

Trip Blanks

Trip blanks were not submitted for this sampling event.

Equipment Rinsate Blanks

Equipment rinsate blanks were not required for this sampling event, as all samples were collected using dedicated, single-use equipment.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogate recoveries were within acceptance limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

MS/MSD results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. All recoveries were within acceptance limits for percent recovery and relative percent differences (RPDs).

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. All RPDs were within acceptance limits.

LABORATORY CONTROL SAMPLE RESULTS

An LCS is spiked with target analytes to provide information on laboratory accuracy. The LCS samples were extracted and analyzed at the required frequency. All LCS analytes were within acceptance limits for percent recovery.

REPORTING LIMITS

SA used routine RLs for non-detect results.

DATA PACKAGE

The data package was reviewed for transcription errors, omissions, and anomalies. None were found.

SA. 2010. Quality assurance manual. Specialty Analytical, Clackamas, Oregon.

USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. EPA-530/SW-846. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September (revision 6, February 2007).

USEPA. 2004. USEPA contract laboratory program, national functional guidelines for inorganics data review. EPA 540/R-94/013. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. October.

USEPA. 2008. USEPA contract laboratory program, national functional guidelines for organics data review. EPA 540/R-08/01. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. June.