CDM
11811 N.E. 1st Street, Suite 201
Bellevue, Washington 98005
tel: 425 453-8383
fax: 425 646-9523

July 19, 2005

Mr. Byung Maeng
Washington State Department of Ecology
Toxics Cleanup Program
Northwest Regional Office
3190-160th Avenue SE
Bellevue, Washington 98009-5452

Subject: Media Evaluation - Proposed Phase II Environmental Site Assessment
Ellisport Creek Greenspace Project Site
53616 SE 116th
Vashon Island, Washington
Ecology Identifier: 62636476

Dear Mr. Maeng:

This letter responds to a comment resulting from the Washington State Department of Ecology's (Ecology) review of the April 7, 2005 Sampling and Quality Assurance Plan prepared by Camp Dresser & McKee Inc. (CDM) for the above-referenced project. This letter was prepared by CDM on behalf of the King County Solid Waste Division (the County). CDM is under contract with the County to conduct a Phase II environmental site assessment (ESA) planned for the site in the summer of 2005. The ESA is being performed to collect supplemental information to aid in cleanup planning associated with a Bunker C oil release that occurred prior to 1960. The proposed ESA includes excavation of up to 10 shallow test pits. At the completion of each test pit the removed material will be replaced within each respective test pit.

Ecology's comment pertains to the "waste" generated from test pit excavation, specifically whether the excavated material could be considered a dangerous waste. We evaluated the soil to be excavated according to WAC-173-303 Dangerous Waste Regulation, specifically toxicity characteristic, toxicity criteria, and persistence criteria. The evaluation yielded the following results:

- Toxicity Characteristic (WAC 173-303090(8)) – Generated waste is excluded from the toxicity characteristic
- Toxicity criteria (WAC 173-303-100) – Generated waste is not a toxic dangerous waste
- Persistence criteria – (WAC 173-303-100) – Generated waste is not a persistent dangerous waste

The evaluation used polycyclic aromatic hydrocarbon (PAH) data obtained during Phase II investigation work conducted at the site by CDM (formerly AGI Technologies) in 1999. The tabulated data are attached to this letter.

Toxicity Characteristic

WAC 173-303-071(3) (t) exempts petroleum-contaminated media and debris from toxicity characteristic for dangerous waste numbers D018 through D043.

Toxicity Criteria

The Toxic Category or Classification (i.e. A, B, C, D) was obtained using the U.S. Environmental Protection Agency's (EPA) IRIS database (http://www.epa.gov/iris/subst/0455.htm) and information from Safety Data Sheets (http://www.irmm.jrc.be/html/reference_materials_catalogue/catalogue/index.htm).

The Equivalent Concentration was found by entering the percent concentration values (calculated in **Table 1**) in the following formula:

$$EquivalentConcentration(\%) = \frac{\sum X\%}{1} + \frac{\sum A\%}{10} + \frac{\sum B\%}{100} + \frac{\sum C\%}{1000} + \frac{\sum D\%}{10000}$$

PAH	Classification	Equivalent Concentration (%)
Acenaphathene	**A	**0.000032415**
Phenanthrene	D	
Fluoranthene	D	
Pyrene	D	
*Benzo[a]Fluoranthene	**A	
Chrysene	B2	
Benzo(a)Pyrene	B2	
Benzo(g,h,i)Perylene	D	

* Not found on PAH list of concern (WAC 173-303-040)-Used in calculation as worse case scenario.
**Classification could not be found; assumed worse case scenario by assigning classification A.

Since the Equivalent Concentration (%) is less than 0.001%, the soil is not a dangerous waste under the toxicity criteria.

CDM

Persistence Criteria

The total PAH concentration was determined by summing the concentration percentages of each detected PAH (**Table 1**). The total PAH concentration was calculated to be 0.00195%. Since the percent concentration is less than 1.0%, the soil is not a persistent dangerous waste.

Table 1 – PAH Percent Concentration

PAH	ug/kg	Percent Concentration
Acenaphathene	1700	0.00017
Phenanthrene	2100	0.00021
Fluoranthene	1300	0.00013
Pyrene	6800	0.00068
*Benzo[a]Fluoranthene	1000	0.0001
Chrysene	3900	0.00039
Benzo(a)Pyrene	1400	0.00014
Benzo(g,h,i)Perylene	1300	0.00013
	Total %	**0.00195**

*Not found on PAH list of concern (WAC 173-303-040)-Used in calculation as worse case scenario.

In summary, soil generated during proposed test pit excavation is not a dangerous waste based on existing analytical data. It will be appropriate to manage test pit spoils by using them to backfill the excavation following soil sample collection.

Very truly yours,

Lance E. Peterson, LHG
Senior Hydrogeologist
Camp Dresser & McKee Inc.

cc: Louise Bardy, Washington State Department of Ecology
Lucy Sandler Auster, King County

CDM

Attachment

Tabulated analytical data from the following report:

AGI, 1999. *Limited Phase II Environmental Site Assessment, Ellisport Creek Acquisition Site, Vashon Island, Washington*. Prepared for Vashon Park District. September 17, 1999.

Polycyclic Aromatic Hydrocarbon (PAH) data from soil sample S7 were used in the media evaluation.

AGI TECHNOLOGIES

Table 1
NWTPH-HCID and WTPH-D (extended) Soil and Groundwater Sample Testing Results
Vashon Park District/Ellisport Phase II Site Assessment
Vashon, Washington

Soil Samples

Sample No.	Date Sampled	Washington State Test Method				
		NWTPH - HCID			WTPH-D (extended)	
		Gasoline	Diesel	Oil	Diesel	Oil
		mg/kg			mg/kg	
S1	07/13/99	ND	ND	D	ND	52
S2	07/13/99	ND	ND	D	ND	ND
S3	07/13/99	ND	ND	D	ND	110
S4	07/13/99	ND	ND	D	380	4,400
S5	07/13/99	ND	ND	ND	NA	NA
S6	07/13/99	ND	ND	D	120	420
S7	07/13/99	ND	ND	D	64,000	90,000
S8	07/13/99	ND	ND	D	ND	370
S9	07/13/99	ND	ND	ND	NA	NA
S10	07/13/99	ND	ND	ND	NA	NA
S11	07/13/99	ND	ND	D	32	310
S12	07/13/99	ND	ND	ND	NA	NA
S13	07/13/99	ND	ND	ND	NA	NA
S14	07/13/99	ND	ND	ND	NA	NA
S15	07/13/99	ND	ND	ND	NA	NA
S16	07/13/99	ND	ND	ND	NA	NA
S17	07/13/99	ND	ND	ND	NA	NA
Laboratory Detedtion Limit		20	50	100	25	50
Cleanup Level [a]		--	--	--	200	200

Groundwater Sample

Sample No.	Date Sampled	Washington State Test Method				
		NWTPH - HCID			WTPH-D (extended)	
		Gasoline	Diesel	Oil	Diesel	Oil
		µg/L			µg/L	
W1	07/14/99	NA	NA	NA	57,000	100,000
Cleanup Level [b]		--	--	--	1,000	1,000

Notes:

Shaded value indicates that concentration exceeds cleanup level.
a) Washington Administrative Code Chapter 173-340 Model Toxics Control Act Cleanup Regulation Method A suggested cleanup level for residual soil.
b) Washington Administrative Code Chapter 173-340 Model Toxics Control Act Cleanup Regulation Method A suggested cleanup level for groundwater.
HCID - Ecology Hydrocarbon Identification Method.
WTPH-D (extended) – total petroleum hydrocarbons quantified as diesel and oil.
D - detected above laboratory detection limit.
NA - not analyzed.
ND – not detected at or above laboratory detection limit.
mg/kg – milligram per kilogram.
µg/L - microgram per liter.

AGI TECHNOLOGIES

Table 2
BETX, PCB, and PAH Soil and Groundwater Sample Testing Results
Vashon Park District/Ellisport Phase II Site Assessment
Vashon, Washington

Analyte	Laboratory Detection Limit Soil	Cleanup Level Soil	Sample I.D. S7	Laboratory Detection Limit Groundwater	Cleanup Level Groundwater	Sample I.D. W1
EPA Test Method 8021	mg/kg	mg/kg	mg/kg	µg/L	µg/L	µg/L
Benzene	0.4	0.5	ND	1	5	ND
Ethylbenzene	0.4	20	ND	1	30	ND
Toluene	0.4	40	ND	1	40	ND
Xylenes	1.2	20	ND	5	20	ND
EPA Test Method 8082M	mg/kg	mg/kg	mg/kg			
PCB-1016	0.1	1	ND	N/A	N/A	NA
PCB-1221	0.1	1	ND	N/A	N/A	NA
PCB-1232	0.1	1	ND	N/A	N/A	NA
PCB-1242	0.1	1	ND	N/A	N/A	NA
PCB-1248	0.1	1	ND	N/A	N/A	NA
PCB-1254	0.1	1	ND	N/A	N/A	NA
PCB1260	0.1	1	ND	N/A	N/A	NA
Polyaromatic Hydrocarbons (PAHs)						
EPA Test Method 8270	µg/kg	µg/kg	µg/kg	µg/L	µg/L	µg/L
Napthalene	1,000		ND	0.5		34
Acenaphthylene	1,000		ND	0.5		0.5
Acenaphathene	1,000		1,700	0.5		8.2
Fluorine	1,000		ND	0.5		10
Phenanthrene	1,000		2,100	0.5		37
Anthracene	1,000		ND	0.5		8.1
Fluoranthene	1,000		1,300	0.5		9.4
Pyrene	1,000		6,800	0.5		14
Benzo [a] Fluoranthene	1,000		1,000	0.5		3.6
Chrysene	1,000		3,900	0.5		7.2
Benzo (b) Fluoranthene	1,000		ND	0.5		5.3
Benzo (k) Fluoranthene	1,000		ND	0.5		5.3
Benzo (a) Pyrene	1,000		1,400	0.5		2.7
Indeno (1,2,3-cd) Pyrene	1,000		ND	0.5		ND
Dibenz (a,h) Anthracene	1,000		ND	0.5		ND
Benzo (g,h,i) Perylene	1,000		1,300	0.5		1.3

Notes:
mg/kg – milligram per kilogram.
µg/kg - microgram per kilogram.
ug/L - micrograms per liter
N/A - not applicable.
NA - not analyzed.
ND – not detected