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July 6, 2006

Mr. Kipp Eckert  
ConocoPhillips  
P.O. Box 923  
Bothell, Washington 98041

SUBJ: Results of Exploratory Drilling  
ConocoPhillips Station 255353  
600 Westlake Avenue North  
Seattle, Washington

Dear Mr. Eckert:

At the request of ConocoPhillips Company (ConocoPhillips or COP), Delta Environmental Consultants (Delta) performed exploratory drilling activities at the above-referenced site (Figure 1) in conjunction with the Westlake/Mercer Cleanup Project. Drilling activities were performed on the subject ConocoPhillips property and on the City of Seattle right-of-way (ROW) to obtain specific geotechnical data pertaining to subsurface soils at greater depths than previously explored beneath the site.

### **SCOPE OF WORK**

Geotechnical exploration activities included drilling and installing one deep well (DW-1) on the COP property near the northeast corner of the station building, drilling two soil borings along the southern boundary of the COP property (DB-01-06 and DB-02-06), and drilling three soil borings within Westlake Avenue North, west of the COP property (DB-03-06 through DB-05-06). Soil samples were collected from each of the borings for specific geotechnical analyses. The data collected from these exploratory drilling activities supplement existing geotechnical data for shallower soils beneath the site. The data were requested by URS Corporation for use in their evaluation of a design depth for proposed shoring to be installed around the perimeter of a remedial excavation. The boring locations are shown on Figure 2.

### **PRE-FIELD ACTIVITIES**

Prior to drilling the exploratory soil borings, Delta prepared a site-specific Health and Safety Plan in accordance with state and federal requirements for use during the field activities. Additionally, Delta obtained ROW Permit No. 28928 from Seattle Department of Transportation (SDOT) to gain access for drilling activities to be performed in the City of Seattle ROW. Delta personnel visited the site to mark the exploratory drilling locations and contacted Utilities Underground Location Center prior to drilling. Delta personnel also met on site with a private utility locator to clear each proposed boring location. Delta

subcontracted a traffic-control service to provide safe access during field activities in the ROW. Notifications regarding the field activities were made in advance to the City of Seattle as stipulated in the ROW permit.

## **EXPLORATORY DRILLING AND WELL INSTALLATION**

On December 21, 2005, Delta directed Cascade Drilling, Inc. (Cascade) of Woodinville, Washington, to drill one soil boring on the COP property near the northeast corner of the station building. Prior to drilling, the hole was cleared to an approximate depth of five feet below ground surface (bgs) using an air-knife and vactor truck. The boring was advanced to approximately 46 feet bgs using a drill rig equipped with hollow-stem augers. Soil samples were collected continuously from the five-foot depth to the total depth explored using a split-spoon sampler driven ahead of the drill bit into undisturbed formation materials. A Delta geologist examined and described each sample using the Unified Soil Classification System (USCS) and standard geologic techniques. A description of each sample was recorded on a boring log form.

During drilling at approximately 24 feet in depth, water appeared to be bubbling within the auger equipment. At that time, drilling was temporarily discontinued and an explosimeter/multiple gas meter was procured. Field personnel monitored the hole for lower explosive limit (LEL), hydrogen sulfide (H<sub>2</sub>S), and carbon monoxide (CO) levels. All readings were non-detectable, and it was determined that the likely cause of bubbling was due to residual pressure in the subsurface from previous operation of the deep air sparge system at the site (the system had been turned off more than 24 hours prior to drilling). As such, drilling activities recommenced and continued to the total explored depth of 46 feet bgs.

Following drilling, Well DW-1 was installed in the boring using 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen and blank riser pipe. The well was constructed using a five-foot length of 0.020-inch factory slotted PVC well screen placed between 46 and 41 feet bgs. A filter pack of washed silica sand was placed from the bottom of the well to two feet above the top of the screened interval concurrent with removal of the augers. A surface seal of bentonite chips was placed from the top of the filter pack to within approximately 1.5 feet of ground surface. A flush-mount security casing was then cemented in place over the well head. Well construction details were recorded on the boring log form.

On April 3 and 4, 2006, Delta directed Cascade to advance two soil borings along the southern boundary of the COP property (DB-01-06 and DB-02-06) and three soil borings within Westlake Avenue North between Mercer and Valley Streets (DB-03-06, DB-04-06, and DB-05-06). Prior to drilling, each hole was cleared to approximately five feet bgs using an air-knife. During hole clearance, one shallow soil sample was collected from each boring using a hand auger at a depth of approximately 2.5 feet bgs. The soil borings were advanced using hollow-stem auger drilling equipment to total depths ranging from 36 feet to 41.5 feet bgs. Due to close proximity to overhead power lines, Borings DB-01-06 and DB-02-06 were advanced using a limited access drill rig. Borings DB-03-06 through DB-05-06 were advanced using a full-size rig.

Soil samples were collected from the five borings at five-foot intervals from approximately 5 to 20 feet bgs, continuously from approximately 20 to 30 feet bgs, and again at five-foot intervals from approximately 30 to 40 feet bgs. Samples were collected using a split-spoon sampler driven ahead of the drill bit into undisturbed formation materials. Soil samples were logged in the field using the USCS, and all soil samples were field screened for the presence of volatile organic compounds (VOCs) by

headspace analysis using a photo-ionization detector (PID) calibrated to 100 parts per million by volume (ppmv) of isobutylene.

Upon completion, the soil borings were abandoned by backfilling with a bentonite seal to approximately two feet below grade, and finished to surface grade with concrete. Down-hole drilling and sampling equipment was steam cleaned prior to and between each boring to prevent cross-contamination. Boring logs, including well construction details for DW-1, are presented in Appendix A and include PID readings, lithology, and other field observations.

## **WASTE DISPOSAL**

Soil cuttings generated during drilling activities, and rinseate from cleaning of equipment, was placed in Department of Transportation (DOT)-approved 55-gallon drums. The drums were sealed and labeled in accordance with the appropriate protocols, and each drum was identified on a waste inventory manifest. The drums were temporarily stored on the ConocoPhillips station property, pending transport and disposal by a ConocoPhillips-approved waste management contractor. The drill cuttings and rinseate from drilling activities performed in December 2005 were transported to Waste Management's Columbia Ridge Landfill located in Arlington, Oregon. The drill cuttings and rinseate from drilling activities performed in April 2006 were transported to Waste Management's Graham Road Recycling and Disposal Facility located in Spokane, Washington. The non-hazardous waste manifests are included in Appendix B.

## **GEOTECHNICAL SAMPLE COLLECTION AND ANALYSES**

During drilling of DW-1 on December 21, 2005, core soil samples were collected continuously in six-inch stainless steel sample liners, using a split-spoon sampler driven ahead of the drill bit into undisturbed formation materials. A total of 56 core samples were collected from the boring. The liners were capped at each end and labeled with top and bottom depths. The samples were frozen prior to placement in chilled coolers with dry ice for shipment to a geotechnical laboratory.

The samples were submitted to PTS GeoLabs, Inc. located in Santa Fe Springs, California, on behalf of URS Corporation (URS) for core photography and for chemical and geotechnical analyses as determined by URS. Delta understands that analyses were requested to determine the following: vertical extent of hydrocarbons, physical soil characteristics, vertical and horizontal hydraulic conductivities in the saturated zone, air permeability in the unsaturated zone, general corrosion properties, organic carbon content, soil pH, and visual observations on characteristics of wood in the samples. These analyses were requested on behalf of URS Corporation for their evaluation and use. Appropriate chain-of-custody documentation was completed and accompanied the samples. All results were reported directly to URS Corporation by the geotechnical laboratory. Delta did not receive a copy of the results. Copies of chain-of-custody documentation for these samples are included in Appendix C.

During drilling of DB-01-06 through DB-05-06 in April 2006, soil samples were collected at designated intervals from each boring for specific geotechnical analyses, also determined by URS. A total of 11 soil samples were collected from the five borings (from approximate depths of 5, 10, 15, 20, 25, and/or 40 feet bgs) and were placed in laboratory-prepared 16-ounce glass or plastic containers. Additionally, four core soil samples were collected from three of the borings from depths between 32 and 36 feet bgs, of which two samples were collected in 18-inch Shelby tubes, and two samples were collected in 6-inch

stainless steel sample liners. Samples were collected using a split-spoon sampler driven ahead of the drill bit into undisturbed formation materials. The core samples were capped at each end and labeled with top and bottom depths. All samples were placed in chilled coolers for shipment to the geotechnical laboratory.

At the request of URS, the samples were submitted to Analytical Resources, Incorporated (ARI) located in Tukwila, Washington for specific geotechnical analyses. The analyses included moisture content (ASTM D2216), grain size (ASTM D422), specific gravity (ASTM D854), hydraulic conductivity (ASTM D5084), and unconsolidated, undrained triaxial compression testing (ASTM D2850). Appropriate chain-of-custody documentation was completed and accompanied the samples. Copies of chain-of-custody documentation for these samples are included in Appendix C.

## **SUBSURFACE CONDITIONS**

### **Field Observations**

Subsurface soil in the vicinity of DW-1 consisted of intermittent layers of silty sand, sandy silt, sandy clay, clay, silt, and sand. Wood fragments and concrete debris were encountered between approximate depths of 10 and 12 feet bgs. Wood fragments and a log were also encountered between approximately 15 and 22 feet bgs, making drilling and sample recovery difficult between those depths. Native sands, silts, and clays were observed beneath the wood layer in the vicinity of DW-1. At approximately 39 feet bgs, well to poorly graded sand was present to the maximum explored depth of 46 feet bgs. Groundwater was encountered in the well at approximately 13 feet bgs during drilling.

Subsurface soil in the vicinity of DB-01-06 through DB-05-06 consisted primarily of silty clays, sandy silts, silty sands, poorly graded sands, and woody debris and peat to the maximum explored depth of 41.5 feet bgs. This is generally consistent with the soil types previously reported from prior subsurface investigations conducted at this site. Groundwater was encountered at 12 feet bgs during drilling of these borings. Geologic cross-sections in the vicinity of these borings are shown on Figure 2 and depicted in Figures 3 and 4.

### **Results of Geotechnical Analyses**

Results of geotechnical analyses for core samples from DW-1 were reported directly to URS Corporation by PTS GeoLabs. Delta did not receive a copy of the results. Results of geotechnical analyses for core and soil samples from DB-01-06 through DB-05-06 were reported to Delta. The following is a summary of those results.

Analytical results for grain size were obtained by sieve analysis and hydrometer analysis. The analyses reported the percent (%) retained in each size fraction for gravel, coarse sand, medium sand, fine sand, very coarse silt, coarse silt, medium silt, fine silt, very fine silt, and clay. Samples from DB-02-06 and DB-03-06 at 20 feet bgs (DB-02-06-d20 and DB-03-06-20) and DB-04-06 at 5 feet bgs and 10 feet bgs (DB-04-06-5 and DB-04-06-10, respectively) were analyzed by sieve analysis due to the absence of a significant amount of fines, all other samples were analyzed by hydrometer analysis. The results of sieve and hydrometer analyses were compared by evaluating the percent retained in particle size ranges based on measurement, not named size fractions (e.g., 425-75 microns versus fine sand).

From all of the samples analyzed, the percent gravel (greater than 4,750 microns) ranged from 0.0% in the sample collected from DB-03-06 at 34.5 to 36 feet (DB-03-06-34.5-36) to 58.0% in the sample from

DB-03-06 at 20 feet bgs (DB-03-06-20). Samples for percent retained in fine sand (425 to 75 microns) ranged from 1.0% in the sample from DB-03-06 at 34.5 to 36 feet (DB-03-06-34.5-36) to 55.2% in the sample from DB-01-06 at 10 feet bgs (DB-01-06-d10). Percent retained in fine silt (13 and 9 microns) ranged from 2.0% in the sample from DB-03-06 at 34.5 to 36 feet (DB-03-06-34.5-36) to 7.2% in the sample from DB-03-06 at 40 feet bgs (DB-03-06-40). Percent retained in clay (less than 3.2 microns) ranged from 4.0% in the sample from DB-03-06 at 40 feet bgs (DB-03-06-40) to 25.1% in the sample from DB-03-06 at 5 feet bgs (DB-03-06-5).

Moisture content results identified significantly higher moisture content in the soil samples from 20 feet bgs in borings DB-02-06 and DB-03-06. Samples DB-02-06-d20 and DB-03-06-20 had moisture contents of 145.2% and 214.5%, respectively. These soil samples consisted of woody debris and peat. The remaining samples analyzed for moisture content consisted of inorganic soils and the moisture contents ranged from 13.73% in DB-01-06 at 10 feet bgs (DB-01-06-d10) to 35.41% in DB-03-06 at 25 feet bgs (DB-03-06-25).

Specific gravity, flexible-wall hydraulic conductivity, and unconsolidated, undrained triaxial strength were analyzed in core samples from soil borings DB-01-06, DB-03-06, and DB-05-06 from depths ranging between 32.5 feet bgs and 36 feet bgs (DB-01-06-32.5-33, DB-01-06-33-33.5, DB-03-06-34.5-36, and DB-05-06-34-36). Results of specific gravity analyses indicated values ranging from 2.72 to 2.74. Hydraulic conductivity values ranged from  $9.84 \times 10^{-7}$  centimeters per second (cm/s) in the sample from DB-01-06 at 33 to 33.5 feet bgs (DB-01-06-33-33.5) to  $2.06 \times 10^{-3}$  cm/s in the sample from DB-03-06 at 34.5 to 36 feet bgs (DB-03-06-34.5-36). The average hydraulic conductivity in the analyzed samples was  $5.16 \times 10^{-4}$  cm/s. Results for unconsolidated, undrained triaxial strength reported shear failure in samples from DB-01-06 (DB-01-06-d32.5-33 and DB-01-06-d33-33.5) and DB-03-06 (DB-03-06-34.5-36), and bulging failure in the sample from DB-05-06 (DB-05-06-34-36). Additional information regarding hydraulic conductivity testing and triaxial strength analyses is presented in the complete laboratory report from ARI, which is included in Appendix C.

## LIMITATIONS

The findings contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

Delta appreciates the opportunity to provide environmental services for ConocoPhillips Company. Please call (425) 498-7718 if you have any questions regarding the contents of this report.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

*Tena Seeds*

Tena Seeds  
Project Engineer



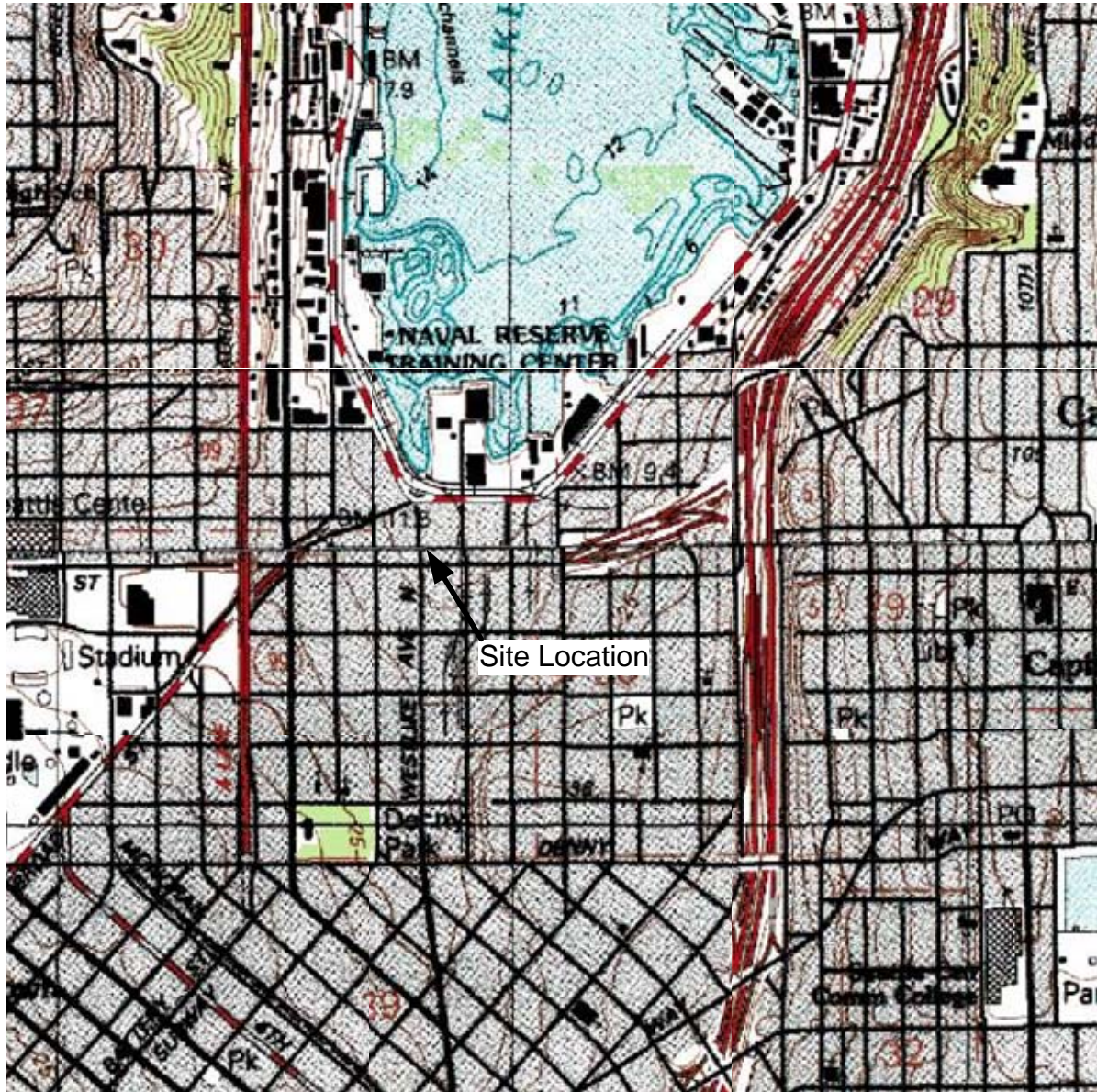
Eric Larsen, L.H.G.  
Senior Project Manager



Eric Bruce Larsen

Enc: Figure 1 – Site Location Map  
Figure 2 – Site Map  
Figure 3 – Geologic Cross-section A-A'  
Figure 4 – Geologic Cross-section B-B'  
Appendix A – Boring Logs and Well Construction Details  
Appendix B – Waste Disposal Documents  
Appendix C – Certified Geotechnical Laboratory Reports and Chain-of-Custody Documentation

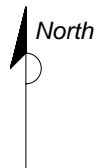
cc: Washington State Department of Ecology – Northwest Regional Office, Bellevue, WA  
Paul McCullough, URS Corporation, 1501 4<sup>th</sup> Avenue, Suite 1400, Seattle, WA 98101



**REFERENCES**

USGS 7.5 Minute Topographic Map  
 Name: Seattle South  
 Year Created: 1983


SCALE: 1: 12,000

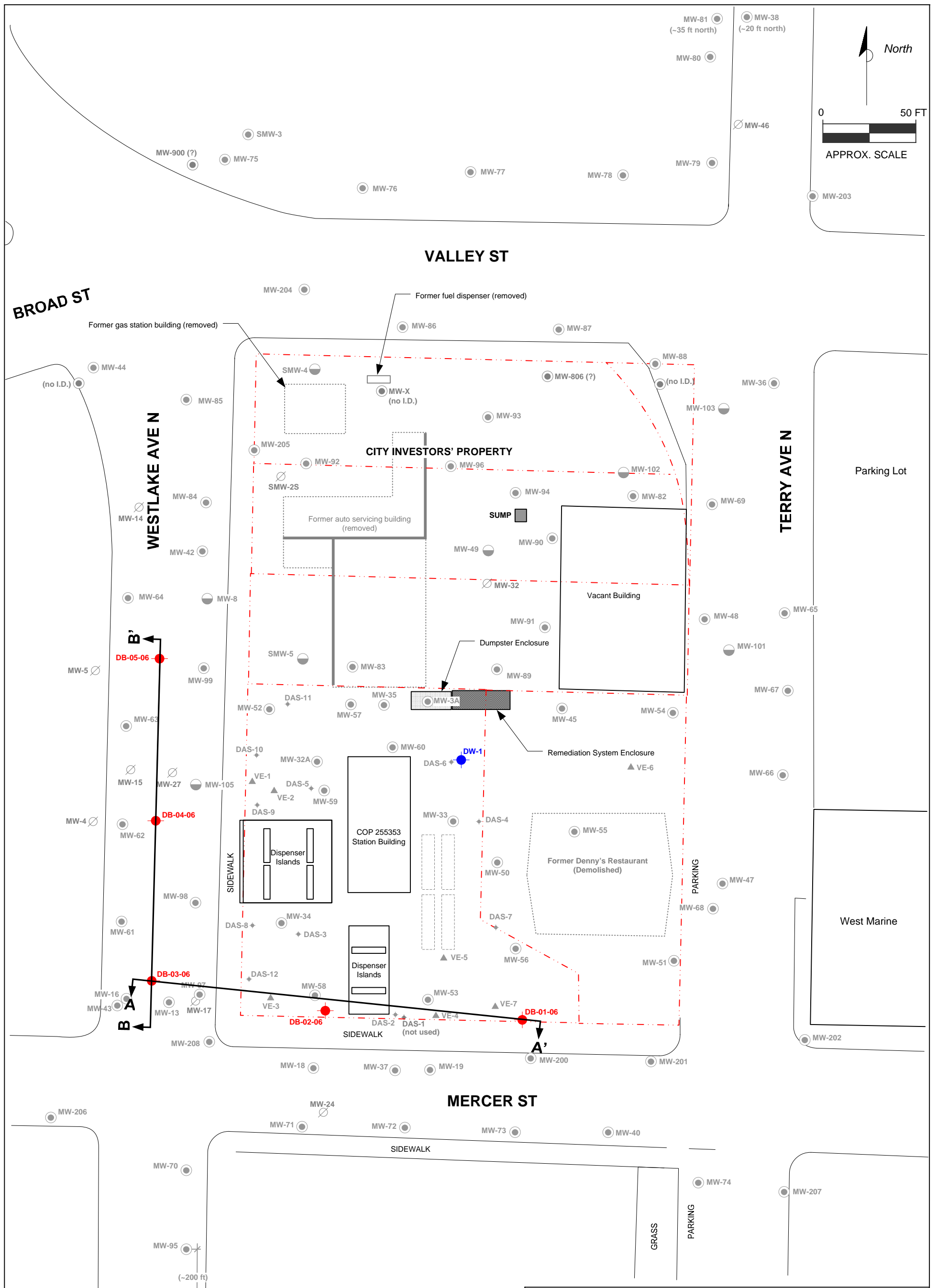


**FIGURE 1**

**SITE LOCATION MAP**

**CONOCOPHILLIPS SITE NO. 255353  
 600 WESTLAKE AVENUE NORTH  
 SEATTLE, WASHINGTON**

PROJECT NO. WA255-3523-1	DRAWN BY TS 7/5/06	 <b>Delta</b> Environmental Consultants, Inc.
FILE NO. WA255-3523-1	PREPARED BY TS 7/5/06	
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**LEGEND**

- DB-01-06 ● GEOTECHNICAL BORING LOCATION (APRIL 2006)
- DW-1 ● DEEP WELL (DECEMBER 2005)
- MW-37 ● COP GROUNDWATER MONITORING WELL
- MW-105 ● CITY INVESTORS' GROUNDWATER MONITORING WELL
- MW-17 ○ ABANDONED OR DESTROYED WELL
- VE-6 ▲ SOIL VAPOR EXTRACTION WELL LOCATION
- DAS-4 ◆ AIR SPARGING WELL LOCATION

**FIGURE 2**

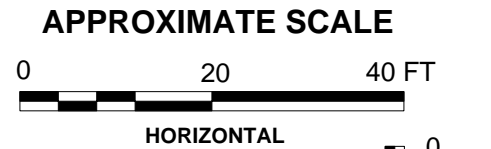
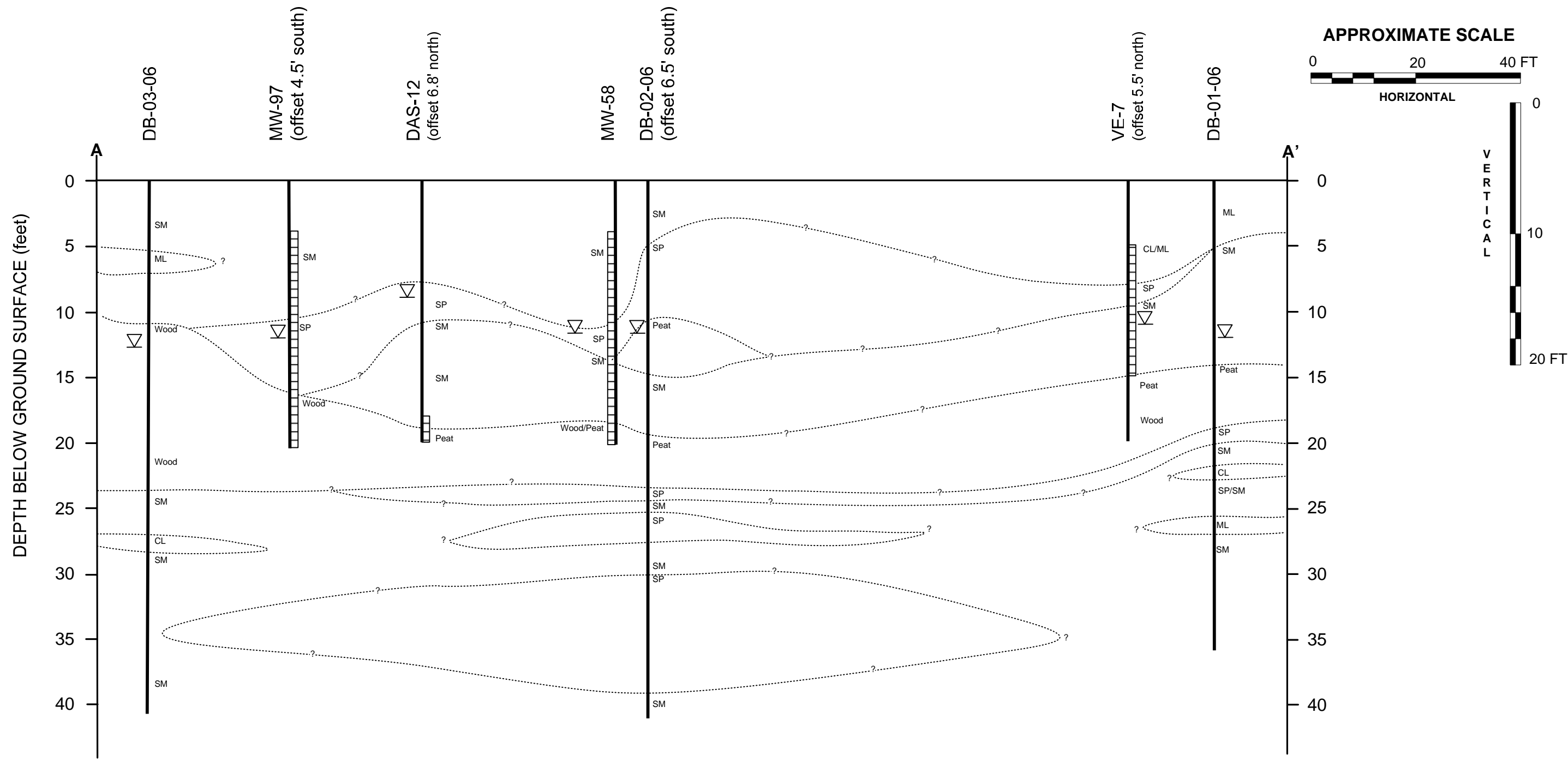
**SITE MAP**

**CONOCOPHILLIPS SITE NO. 255353  
600 WESTLAKE AVENUE NORTH  
SEATTLE, WASHINGTON**

PROJECT NO. WA255-3523-1	DRAWN BY AF 05/17/06
FILE NO. WA255-3523-1	PREPARED BY TS 7/5/06
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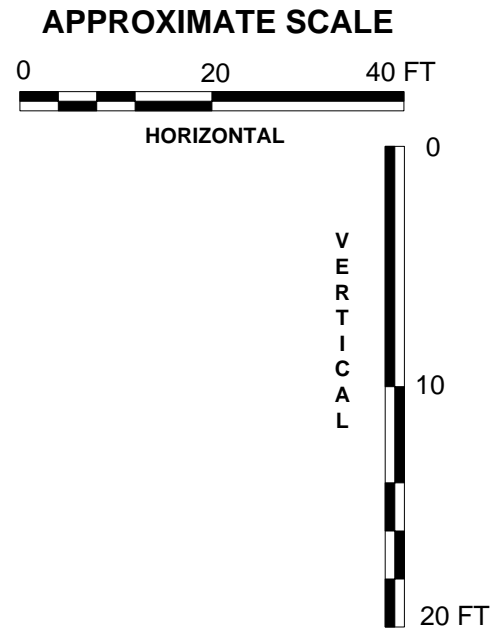
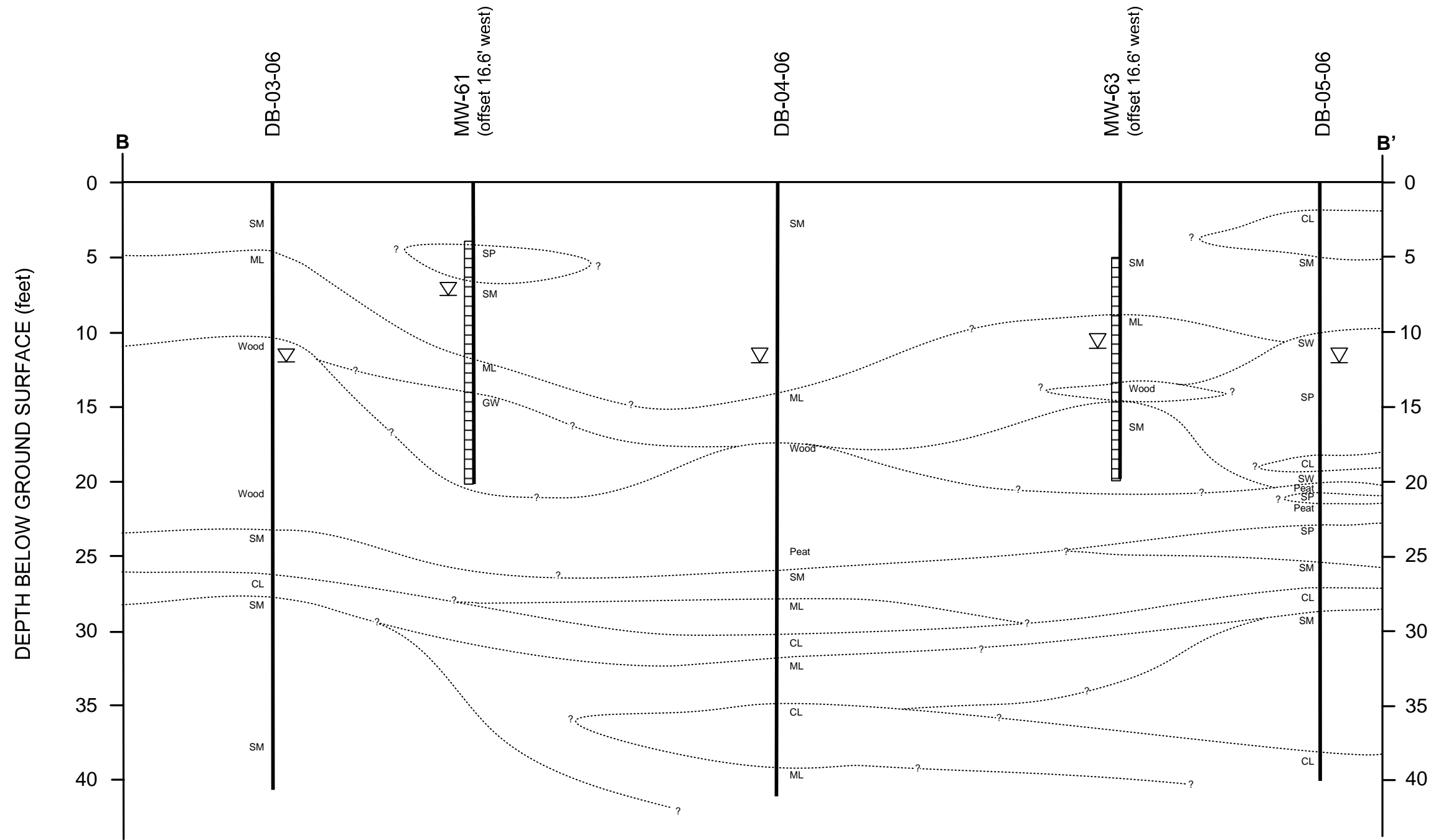
- CL Clay, with or without Silt
- ML Sandy Silt or Clayey Silt, with or without Gravel
- SC Sand with Clay
- SM Silty Sand, with or without Gravel
- SW Well Graded Sand, with or without Gravel
- SP Poorly Graded Sand, with or without Gravel
- Approximate First Encountered Groundwater Level
- Monitoring Well
- Soil Boring

**FIGURE 3**

**GENERALIZED GEOLOGIC CROSS-SECTION A-A'**

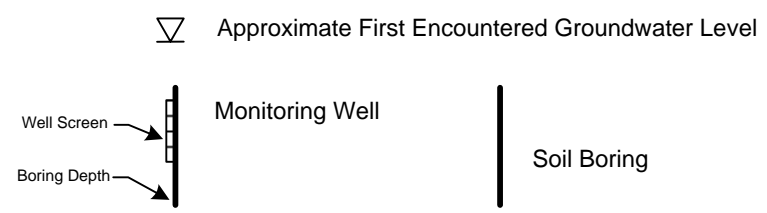
**CONOCOPHILLIPS SITE NO. 255353**  
**600 WESTLAKE AVENUE NORTH**  
**SEATTLE, WASHINGTON**

PROJECT NO. WA255-3523-1	DRAWN BY AF 05/17/06
FILE NO. WA255-3523-1	PREPARED BY TS 7/5/06
REVISION NO. 0	REVIEWED BY EL



**LEGEND**

- CL Clay, with or without Silt
- ML Sandy Silt or Clayey Silt, with or without Gravel
- SC Sand with Clay
- SM Silty Sand, with or without Gravel
- SW Well Graded Sand, with or without Gravel
- SP Poorly Graded Sand, with or without Gravel



**FIGURE 4**

**GENERALIZED GEOLOGIC CROSS-SECTION B-B'**

**CONOCOPHILLIPS SITE NO. 255353**  
**600 WESTLAKE AVENUE NORTH**  
**SEATTLE, WASHINGTON**






















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REVISION NO. 0	REVIEWED BY EL

**APPENDIX A**

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**BORING LOGS AND WELL CONSTRUCTION DETAILS**

# SOIL CLASSIFICATION GRAPHIC SYMBOLS

MAJOR DIVISIONS	SYMBOLS	TYPICAL SOIL DESCRIPTIONS
<b>GRAVELS</b>	GW 	Well graded gravels or gravel-sand mixtures, little or no fines
	GP 	Poorly graded gravels or gravel-sand mixtures, little or no fines
	GM 	Silty gravels, gravel-sand-silt mixtures
	GC 	Clayey gravels, gravel-sand-clay mixtures
<b>SANDS</b>	SW 	Well graded sands or gravelly sands, little or no fines
	SP 	Poorly graded sands or gravelly sands, little or no fines
	SM 	Silty sands, sand-silt mixtures
	SC/SM 	Clayey sands with a touch of gravel
	SC 	Clayey sands, sand-clay mixtures
<b>SILTS &amp; CLAYS LL&lt;50</b>	ML 	Inorganic silts and very fine sands, rock flour, silty or clayey sands or clayey silts with slight plasticity
	CL 	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL 	Organic silts and organic silty clays of low plasticity
<b>SILTS &amp; CLAYS LL&gt;50</b>	MH 	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils elastic silts
	CH 	Inorganic clays of high plasticity, fat clays
	OH 	Organic clays of medium to high plasticity, organic silty clays, organic silts
<b>HIGHLY ORGANIC SOILS</b>	PT	Peat and other highly organic soils
<b>FILL MATERIAL</b>	FILL 	
<b>ASPHALT/Concrete</b>		
<b>BENTONITE</b>		
<b>SAND</b>		
		Water Level - First Encounter
		Static Water Level

# Delta

Environmental Consultants, Inc.

PROJECT NO: WA255-3519-1	CLIENT: ConocoPhillips	BORING/WELL NO: DW-1
LOGGED BY: L. Brock	LOCATION: 600 Westlake Ave N, Seattle, WA	PAGE 1 OF 3
DRILLER: CDI	DATE DRILLED: 12/21/2005	
DRILLING METHOD: HSA	HOLE DIAMETER: 8"	
SAMPLING METHOD: SS	HOLE DEPTH: 46'	
CASING TYPE: PVC	WELL DIAMETER: 2"	
SLOT SIZE: 0.020	WELL DEPTH: 46'	
GRAVEL PACK: 2-12	CASING STICKUP: Flush	

ELEVATION	NORTHING	EASTING
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Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing								
Conc.									Asphalt (3")
						1			
						2			Air-knifed/vac-cleared to 5'
						3			
						4			(Encountered old building foundation at 4'. Moved hole east by 8")
			Moist		2	5		SM	Silty SAND; light gray mottled with dark gray and brown, medium-coarse sand with large gravel, ~10% silt, loose
					2	6			
					3	6			
			Moist		2	7			(As above, changes to gravel at 8')
					2	7			
					2	8			
			Moist		3	8		ML	Sandy SILT; gray, coarse-grained sand, brick fragments, loose
					2	9			
					3	9			
			Moist		11	10			Sandy SILT; gray mottled with white, 10-15% sand, medium- to fine-grained, gravel fragments, loose, wood chips at 11'
					2	10			
					3	11		WDFill	(Encountered concrete; concrete fragments with 5% sand, medium-grained, gray, loose)
			Moist			11			
					104	12			
					1	13		CL	Sandy CLAY; gray, ~10% sand, medium- to fine-grained, <5% gravel, dense
			Wet		1	13			
					1	14			
			Wet		2	14		CH	CLAY; gray, high plasticity, dense, wood fragments at 15.5'
					2	15			
					5	15			
			Wet		3	16		WDFill	Wood Fragments; dark brown, 10% gravel, ~5% sand
					3	16			
					2	17			
			Wet			17			(Drilled through log; wood fragments, dark brown, loose)
					100	18			(No sample due to log)
						19			
					16	20			(No recovery)
					9	21			
			Wet		8	21			
					13	22			Wood Fragments; 10-15% silt
					9	22			



# Delta

Environmental  
Consultants, Inc.

PROJECT NO: WA255-3519-1	CLIENT: ConocoPhillips	BORING/WELL NO: DW-1
LOGGED BY: L. Brock	LOCATION: 600 Westlake Ave N, Seattle, WA	PAGE 3 OF 3
DRILLER: CDI	DATE DRILLED: 12/21/2005	
DRILLING METHOD: HSA	HOLE DIAMETER: 8"	
SAMPLING METHOD: SS	HOLE DEPTH: 46'	
CASING TYPE: PVC	WELL DIAMETER: 2"	
SLOT SIZE: 0.020	WELL DEPTH: 46'	
GRAVEL PACK: 2-12	CASING STICKUP: Flush	

ELEVATION	NORTHING	EASTING
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Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample		Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing						Recovery	Interval		
<b>SAND</b>		Wet			20	45			SW	(As above, changes to silt at 46')
					50/6"	46				
						47				<b>BOTTOM OF HOLE @ 46'</b>
						48				
						49				
						50				
						51				
						52				
						53				
						54				
						55				
						56				
						57				
						58				
						59				
						60				
						61				
						62				
						63				
						64				
						65				
						66				

# Delta

Environmental Consultants, Inc.

PROJECT NO: WA255-3523	CLIENT: ConocoPhillips	BORING/WELL NO: DB-01-06
LOGGED BY: Aric Frohman	LOCATION: 600 Westlake Ave N, Seattle, WA	PAGE 1 OF 2
DRILLER: CDI	DATE DRILLED: 4/3/2006	
DRILLING METHOD: HSA	HOLE DIAMETER: 8"	
SAMPLING METHOD: SS	HOLE DEPTH: 36'	
CASING TYPE:	WELL DIAMETER:	
SLOT SIZE:	WELL DEPTH:	
GRAVEL PACK:	CASING STICKUP:	

ELEVATION	NORTHING	EASTING
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Well Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION	
									Backfill
BENTONITE	▽	Damp	0.0	9	1			Asphalt (4")	
					2		ML	Silty CLAY; poorly graded, gray, low strength and plasticity, streaks, 55% clay, 45% silt	
		Damp	0.8	12	3				
					4				
		Moist	40.1	13	5		SM	Silty SAND; poorly graded, gray, very fine to fine, low strength and toughness, little silt ~20% silt	
					6				
		Wet	0.0	17	7				(As Above)
					8				
		Wet	0.0	50/3"	9				
					10		PT	Wood Debris; dark brown, organic soil, some PEAT	
		Wet	0.0	17	11				
					12				
		Wet	0.0	50/4"	13				
					14		SP	SAND; poorly graded, gray, very fine to medium, low strength and toughness	
		Wet	0.0	11	15				Silty SAND; poorly graded, gray, very fine to fine, low strength and plasticity, 55% sand, 45% silt, trace wood debris
					16		SM	Silty SAND; poorly graded, gray, very fine to medium, low strength and toughness, silt ~20%	
		Wet	0.0	7	17				Silty CLAY; poorly graded, gray, low strength and plasticity
					18				

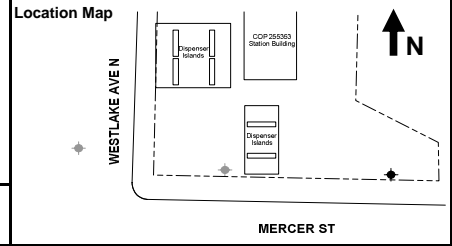


# Delta

Environmental  
Consultants, Inc.

PROJECT NO: WA255-3523      CLIENT: ConocoPhillips  
 LOGGED BY: Aric Frohman      LOCATION: 600 Westlake Ave N, Seattle, WA  
 DRILLER: CDI      DATE DRILLED: 4/3/2006  
 DRILLING METHOD: HSA      HOLE DIAMETER: 8"  
 SAMPLING METHOD: SS      HOLE DEPTH: 36'  
 CASING TYPE:      WELL DIAMETER:  
 SLOT SIZE:      WELL DEPTH:  
 GRAVEL PACK:      CASING STICKUP:

BORING/WELL NO: DB-01-06  
PAGE 2 OF 2



ELEVATION      NORTHING      EASTING

Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing								
BENTONITE			wet	0.0	6 7 20 32	23 24 24 25		SP	SAND; poorly graded, gray, very fine to fine, low strength and toughness (As above, trace gravel, subrounded to subangular, pitted, trace silt ~10%) (As above, trace wood debris)
			wet	0.0	6 18 30	25 26		ML	Silty CLAY; poorly graded, gray, low strength and plasticity, streaks, 55% clay, 45% silt
			wet	0.0	17 50/6"	27		SC	Sandy SILT; poorly graded, gray, 60% silt, 40% sand
			wet	0.0	8 11 11	28 29		SM	Silty SAND; poorly graded, gray, very fine to fine, low strength and toughness, 60% sand, 40% silt Sandy SILT; poorly graded, gray, very fine to fine, trace clay ~5%
			wet	0.0	4 50/5"	30 31			Silty SAND; poorly graded, gray, very fine to fine, low strength and toughness, dense, 60% sand, 40% silt
						32			
						33			(As Above)
						34			
						35			
						36			(Auger refusal)
						37			<b>BOTTOM OF HOLE @ 36'</b>
						38			
						39			
						40			
						41			
						42			
						43			
						44			

# Delta

Environmental Consultants, Inc.

PROJECT NO: WA255-3523	CLIENT: ConocoPhillips	BORING/WELL NO: DB-02-06
LOGGED BY: Aric Frohman	LOCATION: 600 Westlake Ave N, Seattle, WA	PAGE 1 OF 2
DRILLER: CDI	DATE DRILLED: 4/3/2006	
DRILLING METHOD: HSA	HOLE DIAMETER: 8"	
SAMPLING METHOD: SS	HOLE DEPTH: 41.5'	
CASING TYPE:	WELL DIAMETER:	
SLOT SIZE:	WELL DEPTH:	
GRAVEL PACK:	CASING STICKUP:	

Well Completion		Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION	
Backfill	Casing								
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">BENTONITE</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Conc.</p>	wet	0.0	5	1			Asphalt (4")	
					2		SM	Silty SAND; light gray, poorly graded, non-plastic, trace light gray silt (wet)	
		Damp	0.0	6	3				
					4				
					5		SP	SAND; poorly graded, gray, very fine to fine, low strength and toughness, trace silt ~ 5%	
					6				
		Moist	0.0	7	7				
					8				
					9				
					10				
		Wet	111	10	10				SAND; poorly graded; gray, very fine to medium, low strength, little gravel ~ 20%, subrounded to subangular
					11		PT	Wood Debris/PEAT; dark brown, organic soil	
					12				
					13				
		moist	0.0	6	14				
					15		SM	Silty SAND; poorly graded, gray, very fine to fine, low strength and toughness, 55% sand, 40% silt, trace gravel and wood debris ~ 5%, subrounded to subangular, pitted	
					16				
					17				
		moist	0.0	8	18				
					19				
					20		PT	PEAT; dark brown, organic soil	
					21				
moist	0.0	8	22				(As above)		
			12						

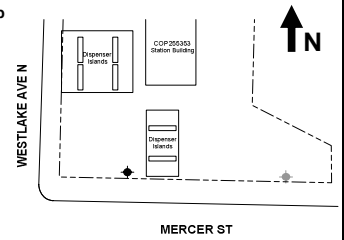
# Delta

Environmental Consultants, Inc.

PROJECT NO: WA255-3523 CLIENT: ConocoPhillips  
 LOGGED BY: Aric Frohman LOCATION: 600 Westlake Ave N, Seattle, WA  
 DRILLER: CDI DATE DRILLED: 4/3/2006  
 DRILLING METHOD: HSA HOLE DIAMETER: 8"  
 SAMPLING METHOD: SS HOLE DEPTH: 41.5'  
 CASING TYPE: WELL DIAMETER:  
 SLOT SIZE: WELL DEPTH:  
 GRAVEL PACK: CASING STICKUP:

BORING/WELL NO: DB-02-06  
 PAGE 2 OF 2

Location Map

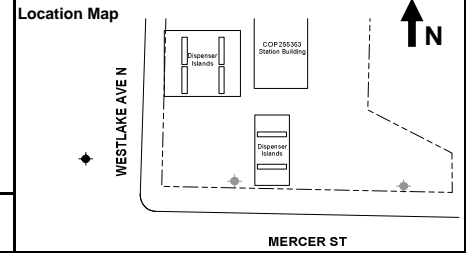


ELEVATION                      NORTHING                      EASTING

Well Completion		Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill Casing	Static Water Level							
BENTONITE		wet	0.0	10 21 50/6"	23		PT	Wood Debris/PEAT; dark brown, organic soil
		wet	0.0	11 12 17	24 25 26		SP SM SP	SAND; poorly graded, gray, very fine to fine, low strength and toughness Sandy SILT; poorly graded, gray, low strength and plasticity SAND; gray, poorly graded, very fine to medium, low strength and toughness, trace silt ~10%
		wet	0.0	14 16	27			(As above, very fine to fine, ~20% silt)
		wet	0.0	10 11 14 15	28 29			(As Above)
		wet	0.0	11 12 14	30 31		SM SP	Sandy SILT; poorly graded, gray, very fine to fine, low strength and plasticity, 55% silt, 45% sand SAND; poorly graded, gray, very fine to medium, low strength and toughness, trace silt ~5%
		wet	0.0	50/6"	35 36			SAND; poorly graded, gray, very fine to medium, low strength and toughness, silt ~20%
		wet	0.0	50/6"	40 41		SM	Silty SAND; poorly graded, gray, very fine to fine, low strength and toughness, 60% sand, 40% silt
						42		<b>BOTTOM OF HOLE @ 41.5'</b>
						43		
						44		

PROJECT NO: WA255-3523      CLIENT: ConocoPhillips  
 LOGGED BY: Jamey Peterson      LOCATION: 600 Westlake Ave N, Seattle, WA  
 DRILLER: CDI      DATE DRILLED: 4/3/2006  
 DRILLING METHOD: HSA      HOLE DIAMETER: 8"  
 SAMPLING METHOD: SS      HOLE DEPTH: 40'  
 CASING TYPE:      WELL DIAMETER:  
 SLOT SIZE:      WELL DEPTH:  
 GRAVEL PACK:      CASING STICKUP:

BORING/WELL NO: DB-03-06  
 PAGE 1 OF 2



ELEVATION	NORTHING	EASTING
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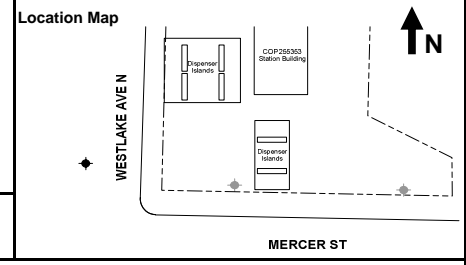
Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6')	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing								
Conc.						1			Asphalt/Concrete (~24") (Encountered railroad tie at 1')
			wet	0.2		2		SM	Silty SAND; coarse sand with dark gray silty clay (wet), <10% clay, <20% gravels, subrounded (Encountered wood piling at 3.5')
						3			
						4			
			wet	12	5	5		ML	Sandy SILT; dark gray, <20% dark clay, medium plasticity, dense
					6	6			
					7	7			
						8			
			wet	95	50/6"	9			(As above, increasing sand and gravel)
						10			
						11		Wood	Wood Debris; with trace sand and fines
						12			
						13			
						14			(No recovery)
						15			
						16			
						17			
						18			
			wet		12	20			
					15	21		Wood	Wood Debris; with trace sand and fines
					17				
			wet		12	22			(As above)
					18				

# Delta

Environmental Consultants, Inc.

PROJECT NO: WA255-3523 CLIENT: ConocoPhillips  
 LOGGED BY: Jamey Peterson LOCATION: 600 Westlake Ave N, Seattle, WA  
 DRILLER: CDI DATE DRILLED: 4/3/2006  
 DRILLING METHOD: HSA HOLE DIAMETER: 8"  
 SAMPLING METHOD: SS HOLE DEPTH: 40'  
 CASING TYPE: WELL DIAMETER:  
 SLOT SIZE: WELL DEPTH:  
 GRAVEL PACK: CASING STICKUP:

BORING/WELL NO: DB-03-06  
 PAGE 2 OF 2

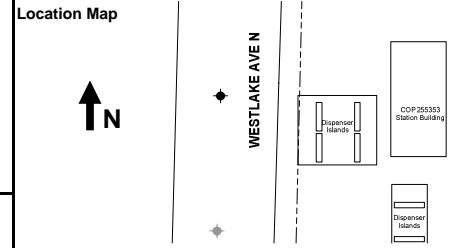


ELEVATION	NORTHING	EASTING
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Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing								
			wet	0.0	17	23		Wood	(As above)
			wet	0.0	4	24		SM	Sandy SILT; dark brown, trace dark brown clay, <15% clay, medium plasticity, <30% well sorted sand, rounded
			wet	0.0	6	25			(As above)
			wet	0.0	7	26			
			wet	0.0	4	27		CL	CLAY; dark gray, trace sands, high strength and plasticity, dense, <15% sand, rounded
			wet	0.0	7	28		SM	SILT with Sand; dark gray, dense, medium to high plasticity, <30% fine to medium sand, rounded
			wet	0.0	6	29			(As above)
			wet	0.0	6	30			
			wet	0.0	7	31			
			wet	0.0	14	32			
			wet	0.0	14	33			
			wet	0.0	1	34			
			wet	0.0	7	35			(Collected Shelby tube sample for analysis)
			wet	0.0	8	36			
			wet	0.0	12	37			
			wet	0.0	15	38		SM	SILT with Sand; dark gray, dense, medium to high plasticity, <30% fine to medium sand, rounded
					17	39			
						40			
						41			<b>BOTTOM OF HOLE @ 40'</b>
						42			
						43			
						44			

BENTONITE

PROJECT NO: WA255-3523      CLIENT: ConocoPhillips      BORING/WELL NO: DB-04-06  
 LOGGED BY: Jamey Peterson      LOCATION: 600 Westlake Ave N, Seattle, WA      PAGE 1 OF 2  
 DRILLER: CDI      DATE DRILLED: 4/3/2006  
 DRILLING METHOD: HSA      HOLE DIAMETER: 8"  
 SAMPLING METHOD: SS      HOLE DEPTH: 41'  
 CASING TYPE:      WELL DIAMETER:  
 SLOT SIZE:      WELL DEPTH:  
 GRAVEL PACK:      CASING STICKUP:

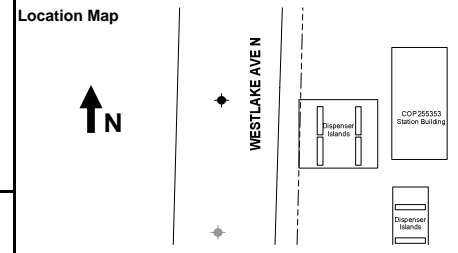


ELEVATION      NORTHING      EASTING

Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6')	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing								
Conc.						1			Asphalt/Concrete (~24") (Encountered railroad tie at 1')
			wet	0.0		2		SM	Silty SAND; dark gray, trace dark gray clay, <15% gravel, rounded
			wet	0.0	4	5			(As above, change in color to dark brown)
			wet	1.4	2 2 3	10			(As above, gravel increasing)
		▽	wet	1.2	3 4 4	14		ML	Sandy SILT; dark gray, trace gray clay, medium strength and plasticity, <10% gravel
						17			(Auger encountered wood debris)
			wet		3	20		Wood	Wood Debris; brown, with trace sand and fines
			wet		2	22			(As Above)

PROJECT NO: WA255-3523 CLIENT: ConocoPhillips  
 LOGGED BY: Jamey Peterson LOCATION: 600 Westlake Ave N, Seattle, WA  
 DRILLER: CDI DATE DRILLED: 4/3/2006  
 DRILLING METHOD: HSA HOLE DIAMETER: 8"  
 SAMPLING METHOD: SS HOLE DEPTH: 41'  
 CASING TYPE: WELL DIAMETER:  
 SLOT SIZE: WELL DEPTH:  
 GRAVEL PACK: CASING STICKUP:

BORING/WELL NO: DB-04-06  
 PAGE 2 OF 2



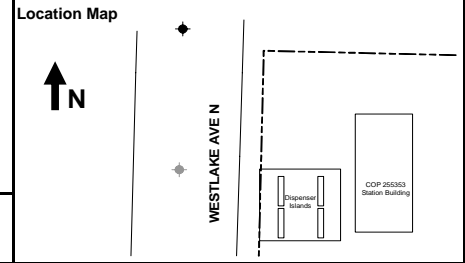
ELEVATION NORTHING EASTING

Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing								
BENTONITE			wet	0.0	3	23		Wood	(As above)
					5	24			
			wet	0.0	2	25		PT	PEAT; with increasing sand and fines, gray
					4	26			
			wet	0	2	27		SM	Silty SAND; poorly graded, dark gray, low strength, medium to coarse sand
					5	28			
			wet	0.0	2	29		ML	SILT with Sand; increasing clay, dark gray, low strength
					3	30			
			wet	0.0	5	31		CL	CLAY; dark gray, high strength and plasticity
					6	32			
			wet	0.0	4	33		ML	SILT with Sand and Clay; dark gray, dense, medium to high plasticity, fine to medium, rounded
					4	34			
					5	35			
			wet	0.0	7	36		CL	Silty CLAY; dark gray, high strength and plasticity, sand ~15%, fine to medium, rounded
					8	37			
					9	38			
						39			
			wet	0.0	10	40		ML	Silty CLAY; dark gray, high strength and plasticity, sand <40%, fine to medium, rounded
					14	41			
					9	42			<b>BOTTOM OF HOLE @ 41'</b>
						43			
						44			

# Delta

Environmental Consultants, Inc.

PROJECT NO: WA255-3523      CLIENT: ConocoPhillips      BORING/WELL NO: DB-05-06  
 LOGGED BY: Jamey Peterson      LOCATION: 600 Westlake Ave N, Seattle, WA      PAGE 1 OF 2  
 DRILLER: CDI      DATE DRILLED: 4/4/2006  
 DRILLING METHOD: HSA      HOLE DIAMETER: 8"  
 SAMPLING METHOD: SS      HOLE DEPTH: 40'  
 CASING TYPE:      WELL DIAMETER:  
 SLOT SIZE:      WELL DEPTH:  
 GRAVEL PACK:      CASING STICKUP:



ELEVATION	NORTHING	EASTING
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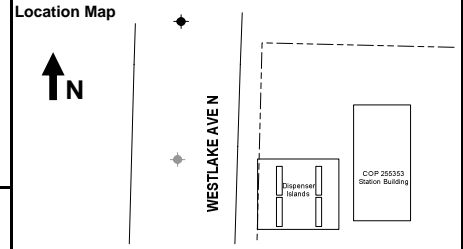
Well Completion Backfill Casing	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION	
BENTONITE	▽							Asphalt/Concrete (~30")	
					1				
				moist	0.0		2		CL Silty CLAY; dark gray, low strength, medium plasticity and density, trace sand ~5%, very fine to fine
							3		
							4		
				moist	0.0	5	5		SM Silty SAND; well graded, dark gray, low strength, clay ~20%, gravel ~5%, subrounded to subangular, pitted
						5	6		
						4	7		
							8		
							9		
				moist	0.0	2	10		
						2	11		SW (Poor recovery, large cobble within sampler, subrounded, pitted)
						3	12		
							13		
				wet	0.0	2	14		SP SAND; poorly graded, dark gray, fine to medium, low strength and toughness, trace silt ~5%
						2	15		
						2	16		
							17		
							18		
				wet	0.0	5	19		CL CLAY; poorly graded, dark gray, trace gravel ~5%
						3	20		SW SAND; well graded, dark gray, trace silt ~5%
				wet	0.0	3	21		PT Wood Debris/PEAT; trace sands and fines
				1	21		SP SAND; poorly graded, dark gray, very fine to fine		
				1	21		PT PEAT; with wood fibers, dark brown		
		wet	0.0	2	22		(As above)		
				2					



# Delta

Environmental Consultants, Inc.

PROJECT NO: WA255-3523 CLIENT: ConocoPhillips BORING/WELL NO: DB-05-06  
 LOGGED BY: Jamey Peterson LOCATION: 600 Westlake Ave N, Seattle, WA PAGE 2 OF 2  
 DRILLER: CDI DATE DRILLED: 4/4/2006  
 DRILLING METHOD: HSA HOLE DIAMETER: 8"  
 SAMPLING METHOD: SS HOLE DEPTH: 40'  
 CASING TYPE: WELL DIAMETER:  
 SLOT SIZE: WELL DEPTH:  
 GRAVEL PACK: CASING STICKUP:



ELEVATION	NORTHING	EASTING
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Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing								
BENTONITE					1			PT	PEAT; with wood fibers, dark brown
					1	23		SP	SAND; poorly graded; dark gray, low strength, very fine to fine, trace silt ~10% and organics ~5%
			wet	0.0	4	24			(As above)
					2	24			
			wet	0.0	4	25			(As above)
					3	25			
			wet	0.0	4	26		SM	Silty SAND; poorly graded, dark gray, low strength and toughness
					2	26			
			wet	0.0	4	27		CL	CLAY; dark gray, low strength and plasticity, trace sand ~5%
					5	27			
			wet	0.0	4	28			(As above)
					7	28			
			wet	0.0	4	29		SM	Silty SAND; poorly graded, dark gray, low strength and toughness, 60% sand, 40% silt
					6	29			
			wet	0.0	4	30			
					5	30			
					6	31			
						32			
						33			
			wet	0.0		34			(Collected Shelby tube sample for analysis)
						35			
						36			
						37			
						38			
			wet	0.0	10	39		CL	Silty CLAY; poorly graded, dark gray, low strength and plasticity
					10	39			
					10	40			
						41			<b>BOTTOM OF HOLE @ 40'</b>
						42			
						43			
						44			

**APPENDIX B**

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WASTE DISPOSAL DOCUMENTS

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No. **WAH000015288** Manifest Doc. No. **47320** 2. Page 1 of 1

3. Generator's Name and Mailing Address  
**CONOCO PHILLIPS CO,  
PO BOX 522  
BOTHELL, WA 98041  
425 482-9271**  
SITE ADDRESS:  
**609 28288  
500 WESTLAKE AVENUE NORTH  
SEATTLE, WA 98109  
ATTN:**

5. Transporter 1 Company Name **ENVIROTECH SYSTEMS, INC.** B. US EPA ID Number **WAH000015288** A. Transporter's Phone **(206) 878-8000**

7. Transporter 2 Company Name . . . . . A. US EPA ID Number . . . . . B. Transporter's Phone . . . . .

8. Designated Facility Name and Site Address  
**GRAHAM ROAD RECYCLING & DISPOSAL FACIL  
1820 S GRAHAM RD.  
METSIC LAKE, WA 98043**  
10. US EPA ID Number . . . . . C. Facility's Phone **800-244-0181**

11. Waste Shipping Name and Description	12. Containers		13. Total Quantity	14. Unit Weights
	No.	Type		
a. <b>MATERIAL NOT REGULATED BY DOT (DWB01)</b>	<b>010</b>	<b>DMO7.000 P</b>		
b. . . . .				
c. . . . .				
d. . . . .				

D. Additional Descriptions for Materials Listed Above  
**A #, ERM 05-187-17-SOIL, 1289**  
E. Handling Codes for Waste Listed Above

16. Special Handling Instructions and Additional Information  
**EMERGENCY INFORMATION CONTACT (206) 888-8000 OR (425) 771-0452.  
"Shipper's Certification per 49CFR 172.204 - This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Signature in box 16 of this manifest constitutes certification of this statement by the shipper."**

18. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal provisions for reporting proper disposal of hazardous waste.

Printed/Typed Name **ED RALSTON** Signature **[Signature]** Month Day Year **10/4/05/06**

17. Transporter 1 Acknowledgment of Receipt of Materials  
Printed/Typed Name **Robert E Mann** Signature **[Signature]** Month Day Year **10/4/05/06**

18. Transporter 2 Acknowledgment of Receipt of Materials  
Printed/Typed Name . . . . . Signature . . . . . Month Day Year . . . . .

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name . . . . . Signature **[Signature]** Month Day Year **10/11/06**

ORIGINAL - RETURN TO GENERATOR

**STRAIGHT BILL OF LADING - SHORT FORM - Original - Not Negotiable**

Shipper's No. \_\_\_\_\_

(Name of Carrier)

**ENVIROTECH SYSTEMS, INC.**

SCAC

Carrier's No. **47721**

Accepted, subject to individual conditions of carriage, that have been agreed upon in writing between the carrier and the shipper, and applicable to the goods, except as otherwise stated hereon, which have been contracted by the carrier and are available in the office of the carrier at the place of origin and destination.

at **DOVER AIRPORT, SEATTLE, WA** date **3/29/06** from **DOV 25553**

Consigned to **EMERALD PETROLEUM SERVICES** 1600 AIRPORT WAY SOUTH (ADD or street address of consignee - For purposes of notification only)

Destination **SEATTLE** State **WA** County \_\_\_\_\_ Zip **98184** Railway Address \_\_\_\_\_

Route \_\_\_\_\_ (To be filled in only when shipper desires and consignee consents to delivery thereat)

Delivering Carrier		Carrier Vehicle Initials			No.
Number of Packages	Description of articles, special marks, and exceptions	Weight (Sub. to consignor)	Class of rate	Check column	
<b>6</b>	<b>65 GALS OMS MATERIAL NOT REGULATED BY DOT (DOW WATER) #502206</b>	<b>330</b>	<b>G</b>		<i>[Signature]</i> 4/12/06
	<b>ROAD EMERALD PETROLEUM SERVICES</b>				
	<b>DATE:</b>				
Collect On Delivery	and remit to _____	C.O.D. Charge to be paid by	Shipper <input type="checkbox"/>	Consignee <input type="checkbox"/>	

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. For

Shipper: **CONOCO PHILLIPS CO.** Carrier: **ENVIROTECH SYSTEMS, INC.**  
 Per: *[Signature]* Date: \_\_\_\_\_ Per: *[Signature]* Date: **4-5-06**

Permitting publication address of shipper  
 FORM NO. 1 BLO-93 B (Rev. 11/84)

**1**

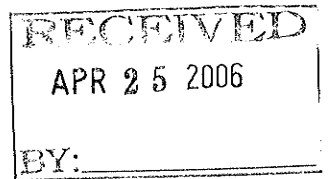
**APPENDIX C**

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CERTIFIED GEOTECHNICAL LABORATORY REPORTS AND  
CHAIN-OF-CUSTODY DOCUMENTATION



**Analytical Resources, Incorporated**  
Analytical Chemists and Consultants



April 20, 2006

Eric Larson  
Delta Environmental Consultants, Inc.  
4006 148<sup>th</sup> Avenue NE  
Redmond, WA 98052

**RE: Project: 1396DEL023 / COP 255353 Westlake  
ARI Job Nos: JF53 & JF58**

Dear Mr. Larson:

Please find enclosed the original chain of custody documentation and the final data report for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

A handwritten signature in black ink, appearing to read "Susan Dunning".

Susan Dunning  
Client Service Manager  
sue@arilabs.com  
206/695-6207

Enclosures

cc: eFile JF53

SD/sdrd



Client: Delta Environmental Consultants

Project No.: JF53, JF58

Client Project: COP 255353 Westlake

### Case Narrative

1. The samples were submitted for moisture content, grain size, specific gravity, hydraulic conductivity, and unconsolidated, undrained triaxial compression testing.
2. The hydraulic conductivity was measured according to ASTM D5084.
3. The unconsolidated, undrained triaxial compression tests were run according to ASTM D2850. For samples DB-01-06-d32.5-33 and DB-01-06-d33-33.5, the strength test was run on the same specimen as was used for hydraulic conductivity. These two samples were very wet and soft when set up for conductivity, and were much firmer following consolidation and draining during the conductivity test. The conductivity test probably consolidated the specimens to field conditions.
4. The grain size tests were run according to ASTM D422. The samples with a lot of fines were set up for full sieve and hydrometer testing and those with few fines were run for sieve only. All samples were washed prior to sieving.
5. The specific gravity was measured according to ASTM D854.
6. The moisture contents were measured according to ASTM D2216.
7. The data is provided in summary tables and plots.
8. There were no other noted anomalies in the samples or methods on this project.

Approved by:   
Title: Geotechnical Division Manager

Date: 4/29/06

## Sample Delivery Group 1



# Hydrometer Analysis

ASTM D422

Percent Finer (Passing) Than the Indicated Size

Sieve Size (microns)	2"	1"	3/4"	1/2"	3/8"	#4 (4750)	#10 (2000)	#20 (850)	#40 (425)	#60 (250)	#100 (150)	#200 (75)	32	22	13	9	7	3.2	1.3
DB-01-06-d10	100.0	100.0	100.0	100.0	99.3	98.9	97.9	96.5	88.4	66.5	48.0	33.3	26.0	19.3	15.7	13.0	10.8	9.4	7.6
DB-03-06-5	100.0	100.0	100.0	100.0	100.0	94.5	90.1	86.2	80.0	69.1	61.1	55.3	52.9	50.2	45.3	41.4	36.5	25.1	15.8
DB-03-06-10	100.0	96.9	96.9	93.4	90.0	81.8	74.3	67.6	58.8	46.7	38.6	29.1	25.8	23.4	20.1	17.8	15.9	11.7	8.9
DB-03-06-25	100.0	100.0	100.0	100.0	100.0	99.9	99.1	97.1	92.7	86.2	76.7	63.1	41.3	32.1	21.6	17.9	15.4	12.3	9.2
DB-03-06-34.5-36	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.9	99.0	60.4	40.3	19.4	12.2	7.9	5.0	4.3
DB-03-06-40	100.0	100.0	100.0	100.0	100.0	99.1	98.7	98.2	97.7	95.1	86.5	50.0	16.5	11.0	7.5	5.5	5.0	4.0	3.5
DB-04-06-15	100.0	100.0	100.0	100.0	99.0	98.5	97.4	95.6	88.1	69.9	56.6	48.6	44.2	42.2	35.5	32.2	27.5	20.1	14.1
DB-01-06-d32.5-33	100.0	100.0	100.0	100.0	100.0	99.2	98.4	97.4	94.1	84.9	70.6	46.1	30.2	24.8	19.9	17.2	14.0	11.3	8.1
DB-01-06-d33-33.5	100.0	100.0	100.0	100.0	100.0	99.9	99.4	98.3	95.3	85.3	69.4	50.3	37.0	31.0	26.4	23.1	19.8	13.9	9.9

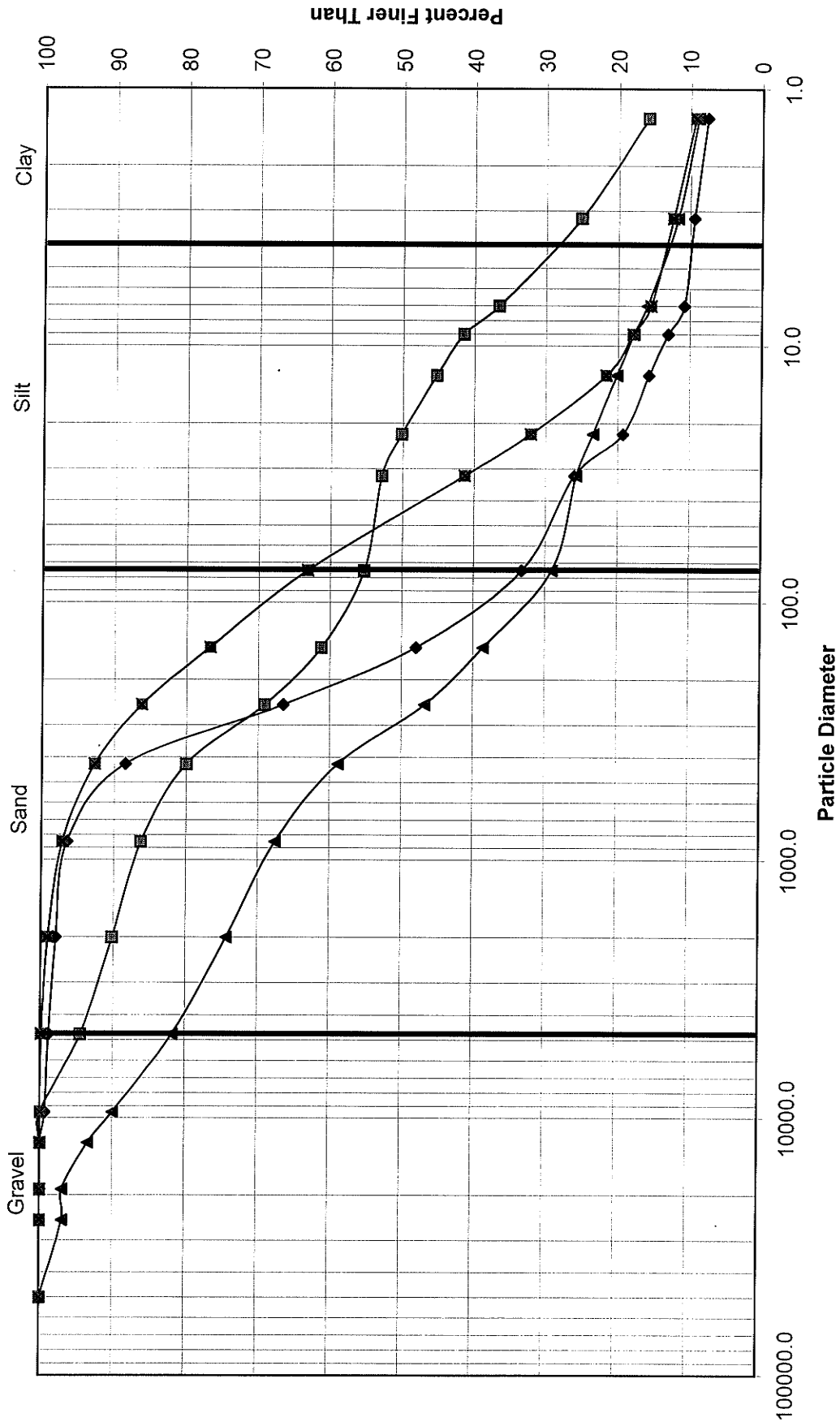
Testing performed according to ASTM D421/D422

Delta Environmental Consultants  
COP 255353 Westlake

Percent Retained in Each Size Fraction

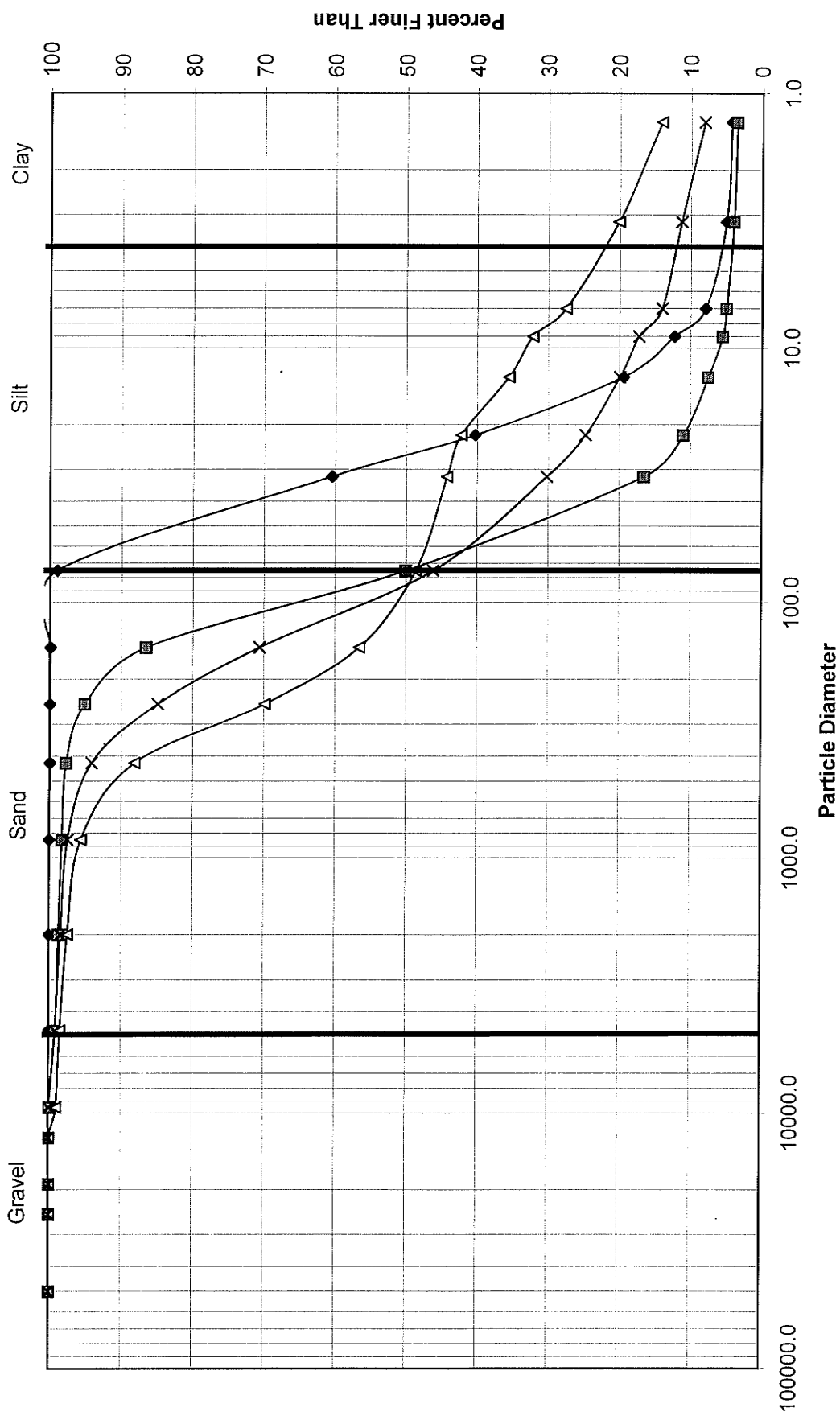
Description	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Very Coarse Silt	% Coarse Silt	% Medium Silt	% Fine Silt	% Very Fine Silt	% Clay	
Particle Size (microns)	> 4750	4750-2000	2000-425	425-75	75-32	32-22	22-13	13-9	9-7	7-3.2	<3.2
DB-01-06-d10	1.1	0.9	9.5	55.2	7.3	6.7	3.6	2.7	2.2	1.3	9.4
DB-03-06-5	5.5	4.3	10.1	24.7	2.4	2.7	4.9	3.8	4.9	11.4	25.1
DB-03-06-10	18.2	7.5	15.5	29.7	3.3	2.3	3.3	2.3	1.9	4.2	11.7
DB-03-06-25	0.1	0.8	6.4	29.5	21.8	9.2	10.5	3.7	2.5	3.1	12.3
DB-03-06-34.5-36	0.0	0.0	0.1	1.0	38.5	20.1	20.9	7.2	4.3	2.9	5.0
DB-03-06-40	0.9	0.4	1.0	47.7	33.5	5.5	3.5	2.0	0.5	1.0	4.0
DB-04-06-15	1.5	1.1	9.3	39.5	4.4	2.0	6.7	3.4	4.7	7.4	20.1
DB-01-06-d32.5-33	0.8	0.8	4.3	48.0	16.0	5.4	4.8	2.7	3.2	2.7	11.3
DB-01-06-d33-33.5	0.1	0.4	4.1	45.1	13.3	5.9	4.6	3.3	3.3	5.9	13.9

### Grain Size Distribution by Hydrometer



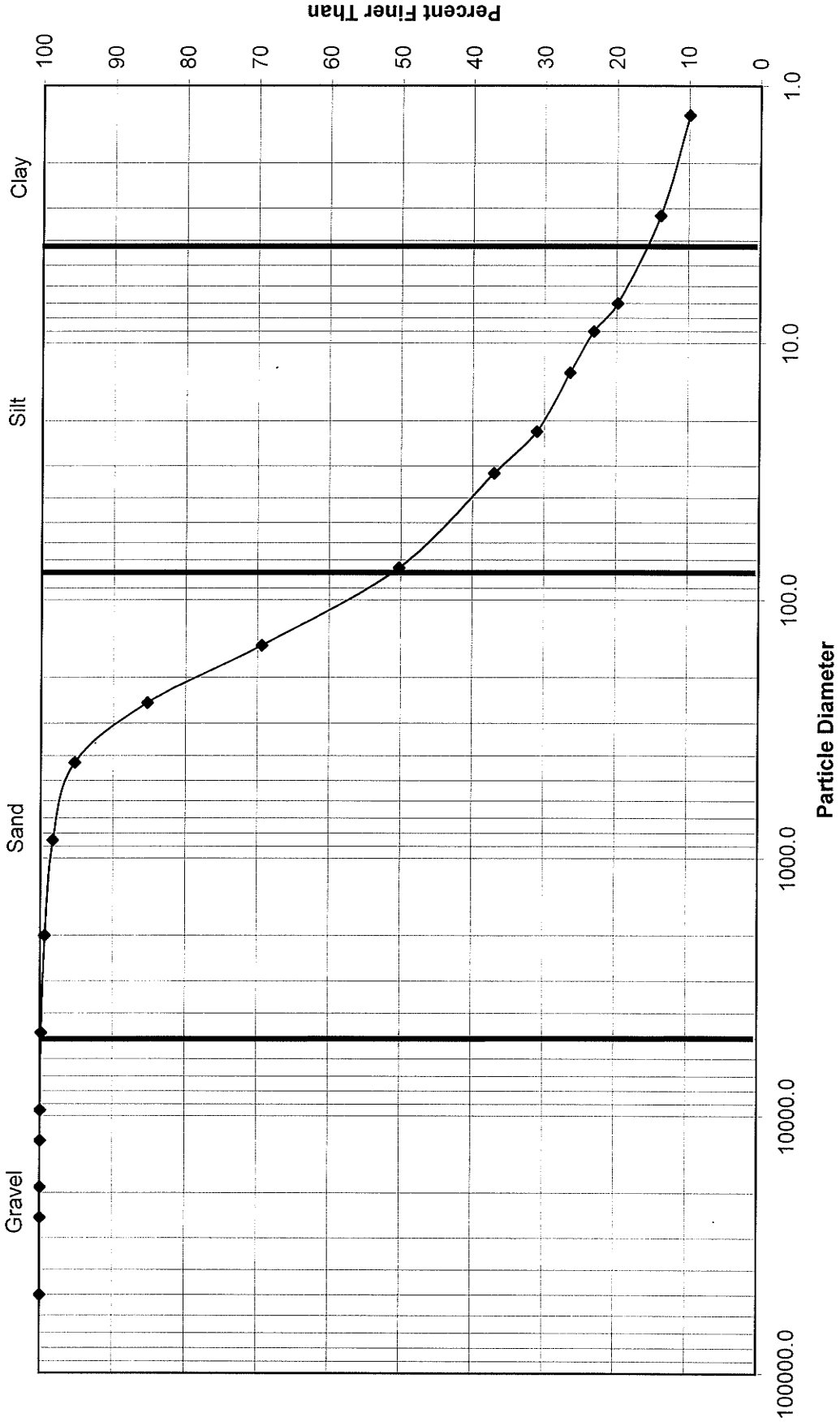
Legend:  
 ◆ DB-01-06-d10  
 ■ DB-03-06-5  
 ▲ DB-03-06-10  
 ◆ DB-03-06-25

### Grain Size Distribution by Hydrometer



DB-03-06-34.5-36    
  DB-03-06-40    
  DB-04-06-15    
  DB-01-06-d32.5-33

Grain Size Distribution by Hydrometer



—◆— DB-01-06-d33-33.5

# Sieve Analysis

ASTM D422

Delta Environmental Consultants  
COP 255353 Westlake

Percent Finer Than Indicated Size, By ASTM D422

Sample ID	Depth (ft)	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
DB-02-06-d20	NA	100	100.0	100.0	100.0	100.0	93.4	61.9	45.1	37.3	32.4	27.6	18.8
DB-03-06-20	NA	100	73.6	58.6	46.5	44.1	41.9	29.2	21.8	17.3	12.4	7.0	2.9
DB-04-06-5	NA	100	76.1	76.1	70.7	66.1	57.4	48.3	41.2	35.0	28.3	23.3	17.5
DB-04-06-10	NA	100	92.3	86.2	83.1	80.7	73.1	65.2	56.5	47.9	38.8	32.0	24.8

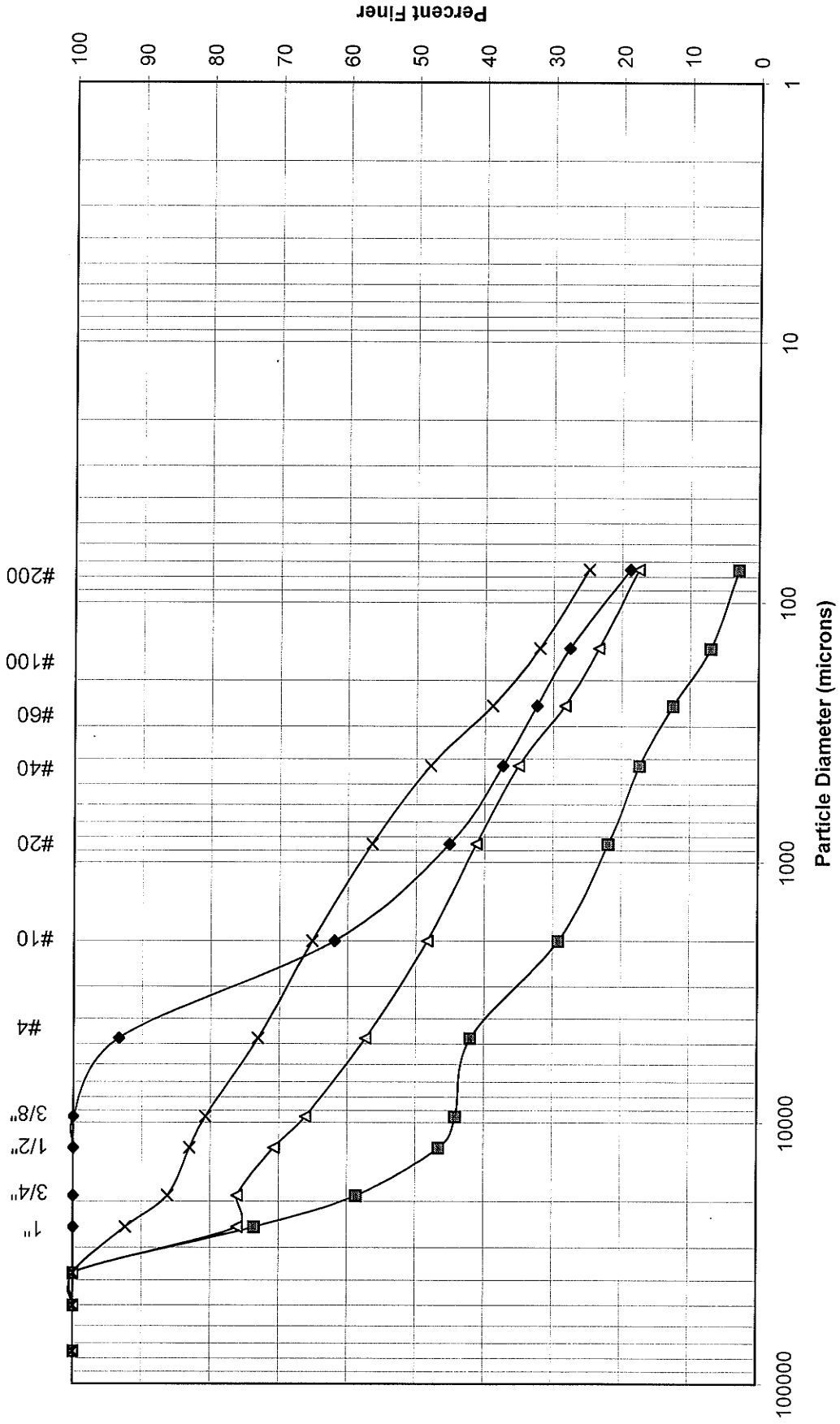


Delta Environmental Consultants  
COP 255353 Westlake

Percent Retained in Each Size Fraction, By ASTM D422

Sieve Size (microns)	3-2"	2-1.5"	1.5-1"	1-3/4"	3/4-1/2"	1/2-3/8"	3/8-#4	4750- 2000	2000-850	850-425	425-250	250-150	150-75	<75
DB-02-06-d20	0.0	0.0	0.0	0.0	0.0	0.0	6.6	31.5	16.8	7.8	5.0	4.8	8.8	18.8
DB-03-06-20	0.0	0.0	26.4	14.9	12.1	2.4	2.2	12.8	7.3	4.5	4.9	5.4	4.1	2.9
DB-04-06-5	0.0	0.0	23.9	0.0	5.3	4.6	8.8	9.0	7.2	6.2	6.7	5.0	5.8	17.5
DB-04-06-10	0.0	0.0	7.7	6.1	3.2	2.3	7.7	7.9	8.7	8.5	9.1	6.9	7.2	24.8

Grain Size Distribution By ASTM D422



DB-02-06-d20    
  DB-03-06-20    
  DB-04-06-5    
  DB-04-06-10

# Flex Wall Hydraulic Conductivity

ASTM D5084

Delta Environmental Consultants  
COP 255353 Westlake

Test Results for Flexible Wall Hydraulic Conductivity Testing

Sample Identification	Depth (ft)	As Received Sample Parameters				After Test Sample Parameters				Gradient (h/l)	Hydraulic Conductivity (cm/s)	
		Wet Density (lbs/ft <sup>3</sup> )	Total Porosity	Saturation	Moisture Content (%)	Wet Density (lbs/ft <sup>3</sup> )	Total Porosity	Saturation	Moisture Content (%)			
DB-01-06-432-5-33	NA	126.5	0.378	0.871	19.4	133.9	1.022	19.4	0.342	1.183	2.08	2.89E-06
DB-01-06-433-33.5	NA	136.5	0.369	1.281	27.6	141.1	0.984	18.5	0.298	0.984	2.38	9.84E-07
DB-03-06-34-5-36	NA	125.7	0.405	0.979	24.5	127.3		23.3	0.391		0.65	2.06E-03

Notes:

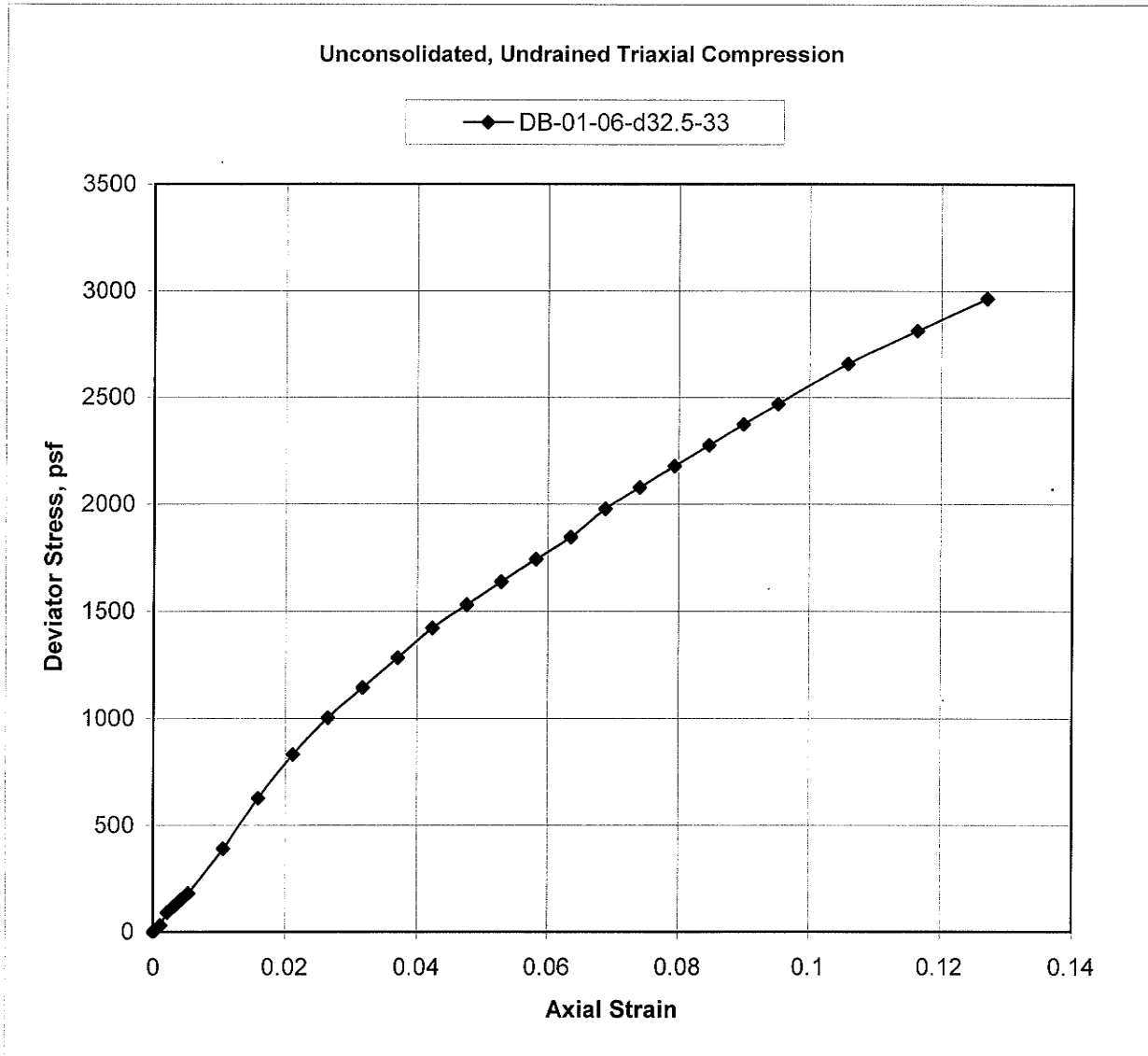
1. The samples were tested in accordance with ASTM D-5084.
2. The tests were performed using tap water for the permeant.
3. The porosity and the saturation were calculated using measured specific gravity values.

Sample Description and Dimensions

Sample ID	Depth (ft)	Visual Description	Confining Pressure (psi)	Initial Average Length (cm)	Initial Average Diameter (cm)	Final Average Length (cm)	Final Average Diameter (cm)
DB-01-06-432-5-33	NA	Gray, clayey silt with fine sand.	5.0	13.56	6.05	12.00	6.24
DB-01-06-433-33.5	NA	Gray, sandy silt with 2" clay lense near middle of sample, .5"- .75" rock	5.0	12.02	6.05	10.71	6.08
DB-03-06-34-5-36	NA	Gray silty fine sand with stems and roots.	5.0	8.86	7.13	8.74	7.10

# Unconsolidated, Undrained Triaxial Strength

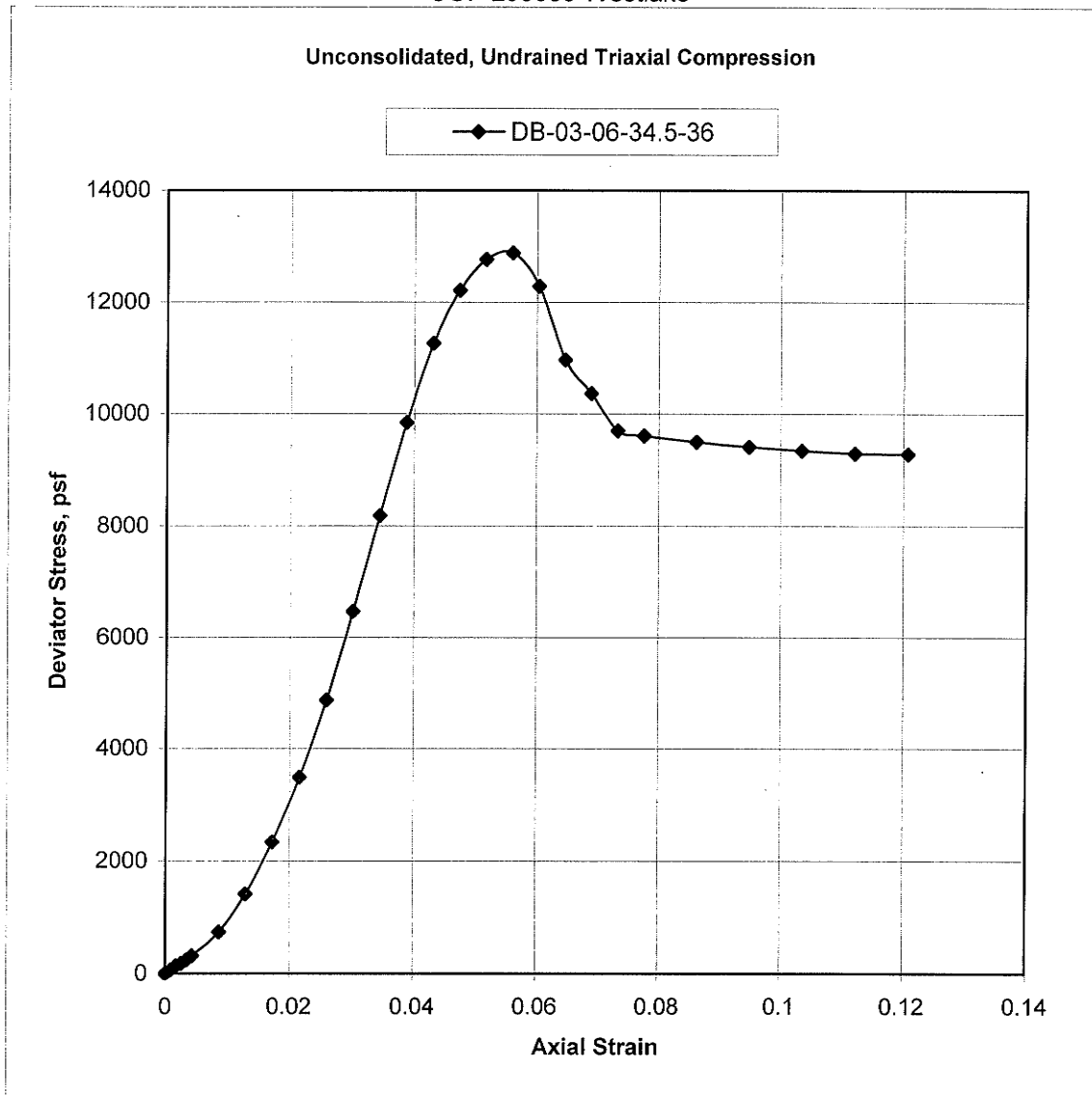
ASTM D2850



Sample ID	Depth (ft)	Confining Pressure (psi)	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)
DB-01-06-d32.5-33	NA	5.0	133.9	19.4	112.1

Notes to the testing:

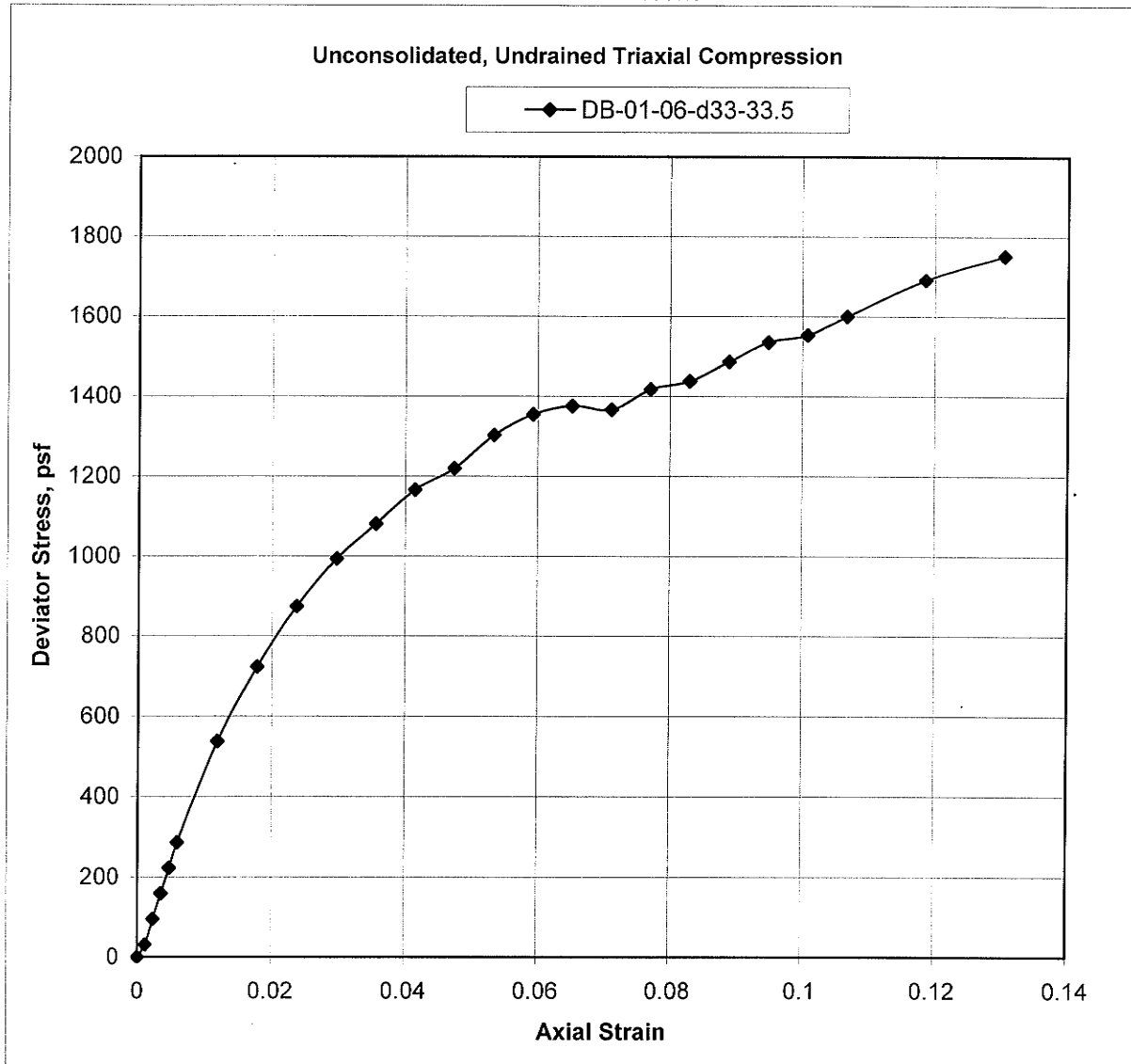
1. The testing was performed according to ASTM D-2850.
2. The sample had a shear failure.



Sample ID	Depth (ft)	Confining Pressure (psi)	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)
DB-03-06-34.5-36	NA	5.0	124.2	25.7	98.9

**Notes to the testing:**

1. The testing was performed according to ASTM D-2850.
2. The sample had a shear failure.



Sample ID	Depth (ft)	Confining Pressure (psi)	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)
DB-01-06-d33-33.5	NA	5.0	141.1	18.5	119.0

Notes to the testing:

1. The testing was performed according to ASTM D-2850.
2. The sample had a shear failure.



Specific Gravity

ASTM D854

GEOTECHNICAL ANALYSIS DATA SHEET  
Specific Gravity by Method ASTM D854



Data Release Authorized:  
Reported: 04/20/06  
Date Received: 04/04/06  
Page 1 of 1

QC Report No: JF53-Delta Environmental Consultants  
Project: COP 255353 Westlake  
1396DEL023

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
DB-03-06-34.5-36 JF53G 06-5754	04/03/06	Soil	04/20/06 12:00	2.72
DB-01-06-d32.5-33 JF53L 06-5759	04/03/06	Soil	04/20/06 12:00	2.73
DB-01-06-d33-33.5 JF53M 06-5760	04/03/06	Soil	04/20/06 12:00	2.72

Reported in Std Units

Moisture Content

ASTM D2216

GEOTECHNICAL ANALYSIS DATA SHEET  
Moisture Content by Method ASTM D2216



Data Release Authorized:  
Reported: 04/20/06  
Date Received: 04/04/06  
Page 1 of 1

QC Report No: JF53-Delta Environmental Consultants  
Project: COP 255353 Westlake  
1396DEL023

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
DB-01-06-d10 JF53A 06-5748	04/03/06	Soil	04/20/06 12:00	13.73
DB-02-06-d20 JF53B 06-5749	04/03/06	Soil	04/20/06 12:00	145.2
DB-03-06-5 JF53C 06-5750	04/03/06	Soil	04/20/06 12:00	27.61
DB-03-06-10 JF53D 06-5751	04/03/06	Soil	04/20/06 12:00	14.87
DB-03-06-20 JF53E 06-5752	04/03/06	Soil	04/20/06 12:00	214.5
DB-03-06-25 JF53F 06-5753	04/03/06	Soil	04/20/06 12:00	35.41
DB-03-06-34.5-36 JF53G 06-5754	04/03/06	Soil	04/20/06 12:00	25.67
DB-03-06-40 JF53H 06-5755	04/03/06	Soil	04/20/06 12:00	24.07
DB-04-06-5 JF53I 06-5756	04/03/06	Soil	04/20/06 12:00	17.20
DB-04-06-10 JF53J 06-5757	04/03/06	Soil	04/20/06 12:00	15.16
DB-04-06-15 JF53K 06-5758	04/03/06	Soil	04/20/06 12:00	24.87
DB-01-06-d32.5-33 JF53L 06-5759	04/03/06	Soil	04/20/06 12:00	19.44
DB-01-06-d33-33.5 JF53M 06-5760	04/03/06	Soil	04/20/06 12:00	18.51

Reported in Percent

## Sample Delivery Group 2

# Hydrometer Analysis

ASTM D422

Delta Environmental Consultants  
COP 255353 WESTLAKE

Percent Finer (Passing) Than the Indicated Size

Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#20 (850)	#40 (425)	#60 (250)	#100 (150)	#200 (75)	32	22	13	9	7	3.2	1.3
DB-05-06-d10	100.0	97.1	95.3	92.5	86.9	78.8	73.3	68.0	59.9	50.7	40.9	35.9	32.4	23.3	15.5
DB-05-06-34-36	100.0	99.2	98.1	96.3	93.9	90.8	87.8	82.3	67.2	53.2	36.4	27.3	19.6	12.6	8.4

Testing performed according to ASTM D421/D422

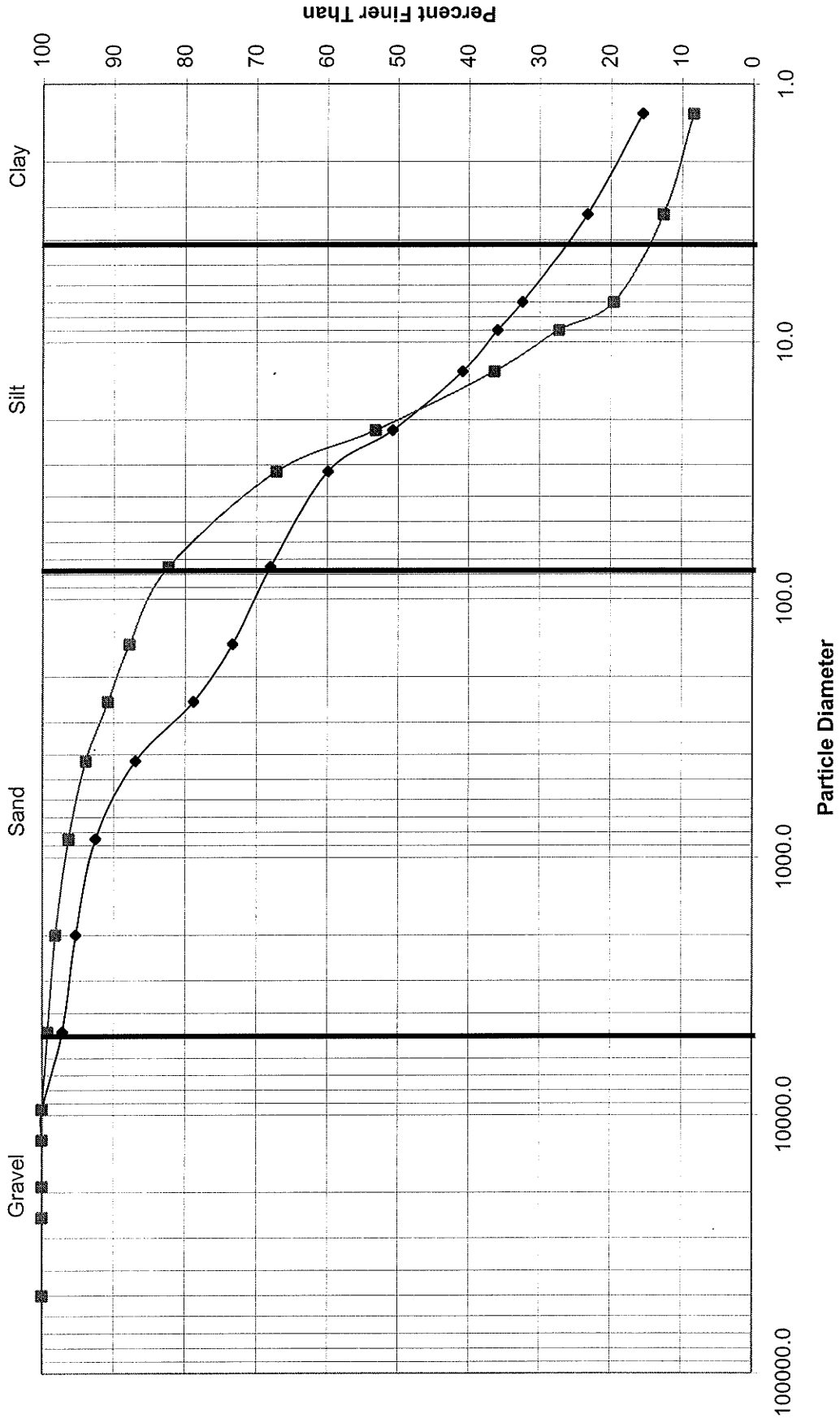
Delta Environmental Consultants  
COP 255353 WESTLAKE

Percent Retained in Each Size Fraction

Description	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Very Coarse Silt	% Coarse Silt	% Medium Silt	% Fine Silt	% Fine Silt	% Very Fine Silt	% Clay
Particle Size (microns)	> 4750	4750-2000	2000-425	425-75	75-32	32-22	22-13	13-9	9-7	7-3.2	<3.2
DB-05-06-d10	2.9	1.8	8.4	18.9	8.1	9.2	9.9	4.9	3.5	9.2	23.3
DB-05-06-34-36	0.8	1.1	4.2	11.6	15.2	14.0	16.8	9.1	7.7	7.0	12.6



### Grain Size Distribution by Hydrometer



DB-05-06-34-36

DB-05-06-d10

# Flex Wall Hydraulic Conductivity

ASTM D5084

Delta Environmental Consultants  
COP 255353 Westlake

Test Results for Flexible Wall Hydraulic Conductivity Testing

Sample Identification	Depth (ft)	As Received Sample Parameters				After Test Sample Parameters				Hydraulic Conductivity (cm/s)	
		Wet Density (lbs/ft <sup>3</sup> )	Total Porosity	Saturation	Moisture Content (%)	Wet Density (lbs/ft <sup>3</sup> )	Total Porosity	Saturation	Moisture Content (%)		Gradient (h/l)
DB-05-06-34-36	NA	126.6	0.395	0.940	22.4	139.7	0.319	1.175	20.1	1.80	8.75E-07

Notes:

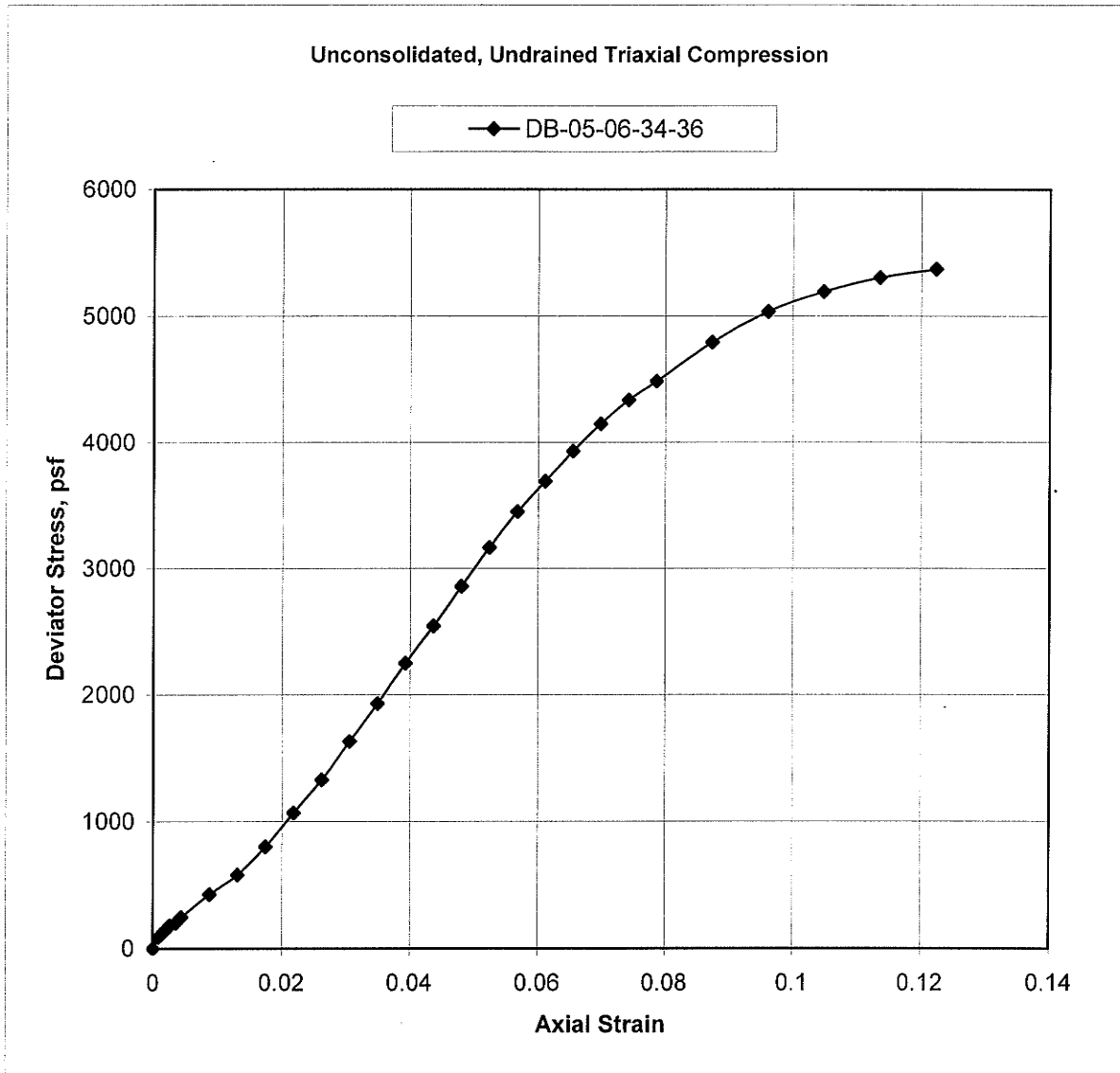
1. The samples were tested in accordance with ASTM D-5084.
2. The tests were performed using tap water for the permeant.
3. The porosity and the saturation were calculated using measured specific gravity values.

Sample Description and Dimensions

Sample ID	Depth (ft)	Visual Description	Confining Pressure (psi)	Initial Average Length (cm)	Initial Average Diameter (cm)	Final Average Length (cm)	Final Average Diameter (cm)
DB-05-06-34-36	NA	Light gray clay with silty fine sand layers in top 2" of sample.	5.0	8.34	7.20	7.93	6.96

# Unconsolidated, Undrained Triaxial Strength

ASTM D2850



Sample ID	Depth (ft)	Confining Pressure (psi)	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)
DB-05-06-34-36	NA	5.0	129.8	20.8	107.4

Notes to the testing:

1. The testing was performed according to ASTM D-2850.
2. The sample had a bulging failure.

Specific Gravity

ASTM D854

GEOTECHNICAL ANALYSIS DATA SHEET  
Specific Gravity by Method ASTM D854



Data Release Authorized:  
Reported: 04/20/06  
Date Received: 04/05/06  
Page 1 of 1

QC Report No: JF58-Delta Environmental Consultants  
Project: COP 255353 WESTLAKE  
1396DEL023

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
DB-05-06-34-36 JF58B 06-5789	04/04/06	Soil	04/20/06 12:00	2.74

Reported in Std Units

Moisture Content

ASTM D2216



GEOTECHNICAL ANALYSIS DATA SHEET  
Moisture Content by Method ASTM D2216



Data Release Authorized:  
Reported: 04/20/06  
Date Received: 04/05/06  
Page 1 of 1

QC Report No: JF58-Delta Environmental Consultants  
Project: COP 255353 WESTLAKE  
1396DEL023

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
DB-05-06-d10 JF58A 06-5788	04/04/06	Soil	04/20/06 12:00	26.65
DB-05-06-34-36 JF58B 06-5789	04/04/06	Soil	04/20/06 12:00	20.85

Reported in Percent

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **SES3** Turn-around Requested:

ARI Client Company: **Delta Env.** Phone: **425-498-7718**

Client Contact: **Eric Larson**

Client Project Name: **COP 255353 Westlake**

Client Project #: **139WDEL023** Samplers: **AF/JP**

Sample ID	Date	Time	Matrix	No. Containers
-----------	------	------	--------	----------------

**DB-01-06-d10** 4/3/06 8:30 soil 1

~~DB-01-06-d10~~ ~~12:30~~ ~~12:30~~ ~~soil~~ ~~1~~

**DB-02-06-d20** 4/3/06 14:30 soil 1

**DB-03-06-d5** 4/3/06 11:50 soil 1

**DB-03-06-d10** 4/3/06 12:00 soil 1

~~DB-03-06-d10~~ ~~12:30~~ ~~12:30~~ ~~soil~~ ~~1~~

**DB-0306-d20** 4/3/06 12:10 soil 1

**DB-03-06-d25** 4/3/06 12:30 soil 1

**DB-03-06-345-36** 4/3/06 12:45 soil 1

**DB-03-06-40** 4/3/06 12:50 soil 1

~~DB-03-06-40~~ ~~12:50~~ ~~12:50~~ ~~soil~~ ~~1~~

Comments/Special Instructions

Page: **1** of **2**  
 Date: **4/3/06** Ice Present? **no**  
 No. of Coolers: **1** Cooler Temps: **AMPB**

Analysis Requested	Notes/Comments
<b>D422/D1140</b>	
<b>D2216</b>	
<b>D2850</b>	
<b>D854</b>	
<b>D2434</b>	

Relinquished by: (Signature) Printed Name: Company:	Received by: (Signature) Printed Name: Company:	Relinquished by: (Signature) Printed Name: Company:	Received by: (Signature) Printed Name: Company:
<b>Eric Fishman</b> Delta Env	<b>Bryan B. Bussery</b> ARI		
Date & Time: <b>4/4/06, 7:38</b>	Date & Time: <b>4-4-06</b>	Date & Time: <b>1235</b>	Date & Time:



Analytical Resources, Incorporated  
 Analytical Chemists and Consultants  
 4611 South 134th Place, Suite 100  
 Tukwila, WA 98168  
 206-695-6200 206-695-6201 (fax)

**Limits of Liability:** ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

**Sample Retention Policy:** All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **3553** Turn-around Requested:

ARI Client Company: **Delta Env.** Phone: **425-498-7718**

Client Contact: **Eric Larson**

Client Project Name: **COP 255353 Westlake**

Client Project #: **1396 DEL023** Samplers: **AP/JP**

Sample ID	Date	Time	Matrix	No. Containers
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DB-04-06-05 4/3/06 14:00 Soil 2

DB-04-06-01D 14:10

DB-04-06-01S 14:30

DB-01-06-0325-33 13:00

DB-01-06-033-33.5 13:00

Page: **2** of **2**

Date: **4/3/06** Ice Present? **NO**

No. of Coolers: **1** Cooler Temps: **AMR**

Analysis Requested

D422/D1140	D2216	D2850	D854	D2434
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Notes/Comments

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested	Notes/Comments
DB-04-06-05	4/3/06	14:00	Soil	2	D422/D1140 D2216 D2850 D854 D2434	
DB-04-06-01D		14:10		1		
DB-04-06-01S		14:30		1		
DB-01-06-0325-33		13:00		1		
DB-01-06-033-33.5		13:00		1		

Comments/Special Instructions	Relinquished by: (Signature) <b>Musford</b>	Received by: (Signature) <b>W</b>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: <b>Aric Frohman</b>	Printed Name: <b>Bryan R. Busey</b>	Printed Name:	Printed Name:
	Company: <b>Delta Env</b>	Company: <b>ARI</b>	Company:	Company:
	Date & Time: <b>4/4/06 7:45</b>	Date & Time: <b>4-4-06 12:35</b>	Date & Time:	Date & Time:



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**Sample Retention Policy:** All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

# Cooler Receipt Form



ARI Client: Delta Project Name: COP 255353 Westlake  
COC NO.: \_\_\_\_\_ Delivered By: ARI  
Tracking NO.: \_\_\_\_\_ Date: 4.4.06  
ARI Job No.: JF53 Lims NO.: \_\_\_\_\_

### Preliminary Examination Phase:

- 1. Were intact, properly signed and dated custody seals attached  
To the outside of the cooler? ..... YES  NO
- 2. Were custody papers included with the cooler ..... YES  NO
- 3. Were custody papers properly filled out (ink, signed etc.)? ..... YES  NO
- 4. Complete custody forms and attach all shipping documents ..... OK  NA

Cooler Accepted BY: [Signature] Date: 4.4.06 Time: 1235

### Log-IN Phase:

- 5. Was a temperature blank include in the cooler? ..... YES  NO
- 6. Record Cooler Temperature..... AMB °C
- 7. What kind of packing material was used? .....
- 8. Was sufficient ice used (if appropriate)? ..... YES  NO
- 9. Were all bottles sealed in separate plastic bags? ..... YES  NO
- 10. Did all bottles arrive in good condition (unbroken)? ..... YES  NO
- 11. Were all bottle labels complete and legible? ..... YES  NO
- 12. Did all bottle labels and tags agree with custody papers? ..... YES  NO
- 13. Were all bottles used correct for the requested analyses? ..... YES  NO
- 14. Do any of the analyses (bottles) require preservative?  
(If so, Preservation checklist must be attached) ..... YES  NO
- 15. Were all VOA vials free of air bubbles? ..... YES  NO
- 16. Was sufficient amount of sample sent in each bottle? ..... YES  NO
- 17. Notify Project Manager of any discrepancies or concerns..... OK  NA

Cooler Opened By: [Signature] Date: 4.4.06 Time: 1235

Explain any discrepancies or negative responses:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# Cooler Receipt Form



ARI Client: Delta Project Name: Westlake  
COC NO.: \_\_\_\_\_ Delivered By: counter  
Tracking NO.: \_\_\_\_\_ Date: 4-5-06  
ARI Job No.: 5858 Lims NO.: \_\_\_\_\_

### Preliminary Examination Phase:

- 1. Were intact, properly signed and dated custody seals attached  
To the outside of the cooler? ..... YES  NO
- 2. Were custody papers included with the cooler ..... YES  NO
- 3. Were custody papers properly filled out (ink, signed etc.)? ..... YES  NO
- 4. Complete custody forms and attach all shipping documents ..... OK  NA

Cooler Accepted BY: [Signature] Date: 4-5-06 Time: 1230

### Log-IN Phase:

- 5. Was a temperature blank include in the cooler? ..... YES  NO
- 6. Record Cooler Temperature..... Amb °C
- 7. What kind of packing material was used? ..... none
- 8. Was sufficient ice used (if appropriate)? ..... YES  NO
- 9. Were all bottles sealed in separate plastic bags? ..... YES  NO
- 10. Did all bottles arrive in good condition (unbroken)? ..... YES  NO
- 11. Were all bottle labels complete and legible? ..... YES  NO
- 12. Did all bottle labels and tags agree with custody papers? ..... YES  NO
- 13. Were all bottles used correct for the requested analyses? ..... YES  NO
- 14. Do any of the analyses (bottles) require preservative?  
(If so, Preservation checklist must be attached) ..... YES  NO
- 15. Were all VOA vials free of air bubbles? ..... YES  NO
- 16. Was sufficient amount of sample sent in each bottle? ..... YES  NO
- 17. Notify Project Manager of any discrepancies or concerns ..... OK  NA

Cooler Opened By: [Signature] Date: 4-5-06 Time: 1230

Explain any discrepancies or negative responses:  
\_\_\_\_\_  
\_\_\_\_\_  
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