

# APPENDIX B SEDIMENT CORE LOGS

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# Lower Duwamish Waterway Sediment Core Log Key

## Visual Sediment Descriptions consist of the following:

Moisture content, density/consistency (estimated based on visual observation), color, (Munsell Number), minor constituent (>30%) MAJOR CONSTITUENT/GROUP NAME with minor constituents (<30%). Amount and shape of minor constituents (e.g., wood, shells) followed by major constituent structure. Sheen and odor.

*Example:* wet, soft, olive green (GLEYS 1, 5/10Y) clayey SILT, little sand, moderate shell fragments, and trace twigs and rootlets. Silt texture is uniform, slightly compressible, massive, blocky, and of low plasticity. Slight hydrocarbon (HC)-like odor and trace sheen.

## Sediment Core Log Layout: recovered versus *in situ* depths

Recovered = measured in the lab, actual sediment contained in the core tube

*in situ* = calculated from recovered length and percent recovery, depths are expanded to match the drive interval and *in situ* conditions

## Example of Sediment Core Log layout:

Heading	Recovered Depth (ft.)	Recovered Interval and Sample #	% Recovery (depth in ft)	Analysis	PID Measurement (on sediment surface)	Sediment Description	Comments	<i>In-Situ</i> Depth (ft)
Category	Recovered	Recovered	Recovered	Recovered	Recovered	Recovered ( <i>In situ</i> depth)	Recovered	<i>In Situ</i>

## Sediment Description Terminology:

### Moisture and Density:

#### Moisture Content

Dry	Little perceptible moisture
Damp	Some perceptible moisture, probably below optimum
Moist	Probably near optimum moisture content, no visible water
Wet	Visible free water, probably above optimum

#### Density: Visual Core Drive Penetration

Density	SAND or GRAVEL		SILT or CLAY
	Visual		Consistency
Very loose	freefall		Very soft
Loose	easy penetration		Soft
	moderate penetration		Medium stiff
Dense	hard penetration		Stiff
	refusal		Very Stiff/Hard

#### Density/Consistency

Soil density and consistency are estimated based on visual observations and are presented in the core logs

### Major and Minor Constituents and Structure:

#### MAJOR and Minor Constituent % (by weight)

Core Logs	Percent	Field Logs
Trace (clay, silt, etc.)	0-5	not identified
Few (clay, silt, etc.)	5-15	Slightly (clayey, silty, etc.)
Little (clay, silt, etc.)	15-30	Clayey, silty, sandy, gravelly
Clayey, silty, sandy, gravelly	30-50	Very (clayey, silty, sandy, etc.)
GROUP NAME	> 50	GROUP NAME

#### Structure

Stratified	Alternating layers of varied material/color at least 1/4" thick
Laminated	Alternating layers of varied material/color at least 1/4 mm thick
Blocky	Cohesive soil that can be broken down into smaller lumps
Spongy	Organic and compressible nature
Lensed	Inclusion of thin discontinuous layers of different sediment
Homogenous/Massive	Same color and appearance throughout
Fibrous	Stringy or rope like structure
Seam	1/16 to 1/2" thick
Layer	greater than 1/2" thick
Interbedded	Multiple beds within a unit
Rolls Easily	Play-dough like (plasticity observation)
Angular	Sharp edges
Subangular	Rounded edges
Subrounded	Well-rounded edges
Rounded	Smoothed, no edges

#### Other Minor Constituents: % (by volume)

(i.e., shells, wood, organics, plastic, non-native debris)

Trace	0-5
Scattered	5-10
Moderate	10-30
Substantial	30-50
GROUP NAME	> 50

### Additional Remarks:

#### Sheen Test- % coverage

S.T. = Sheen test visual analysis	
none, trace	<2
slight sheen	2-15
moderate sheen	15-40
moderate to heavy	40-70
heavy	>70

#### Sheen Test- Visual Description

rainbow	multicolored
metallic	metallic gray-colored
florets	semi-circular and multicolored
streaks	long and flowing shape

#### Odor Descriptions

trace
slight
moderate
strong
HC = Hydrocarbon
H2S = Hydrogen Sulfide

No odor or sheen observed unless noted

#### Contacts: expressed as sharp, transitional, or gradational

-----	color or minor change
_____	major sediment change
_____	depositional change

#### Core Acceptance Guidelines

1. Desired drive depth is reached.
2. Core recovery is greater than 70%.
3. Core tube appears intact (no signs of blocking, bending).
4. Minimal sediment loss out the top or bottom (minimal winnowing).

#### General Notes

( ) = logger observations      r = recent      la = lower alluvium  
 [ ] = inferred from other logs      ua = upper alluvium      fv = fluvial (lower alluvium variant)

#### Stratigraphic Unit

#### Comments

TV = represents Torvane shear stress measurements made on intact core in kg/cm2.  
 GT = represents depth of GeoTech sample collected in 2- or 3-inch push tubes.  
 PID measurements made in breathing zone directly above (1/2") open sediment core.  
 L = Length

#### Other Sediment Descriptions Used

Agglomerate	Fused-appearance, often vesicular
Clast/inclusion	Non-fused appearance
Xenoclasts	Clasts that have been moved
Fresh	No visible sign of decomposition or discoloration
Winnowed	Loss of fines
Slumped	Settled but intact
Pockets/balls	Semicircular to circular inclusion/deposit
Chunky	Mass of unidentified material

#### REMARKS section

Drive notes express penetration depths.

#### NOTES:

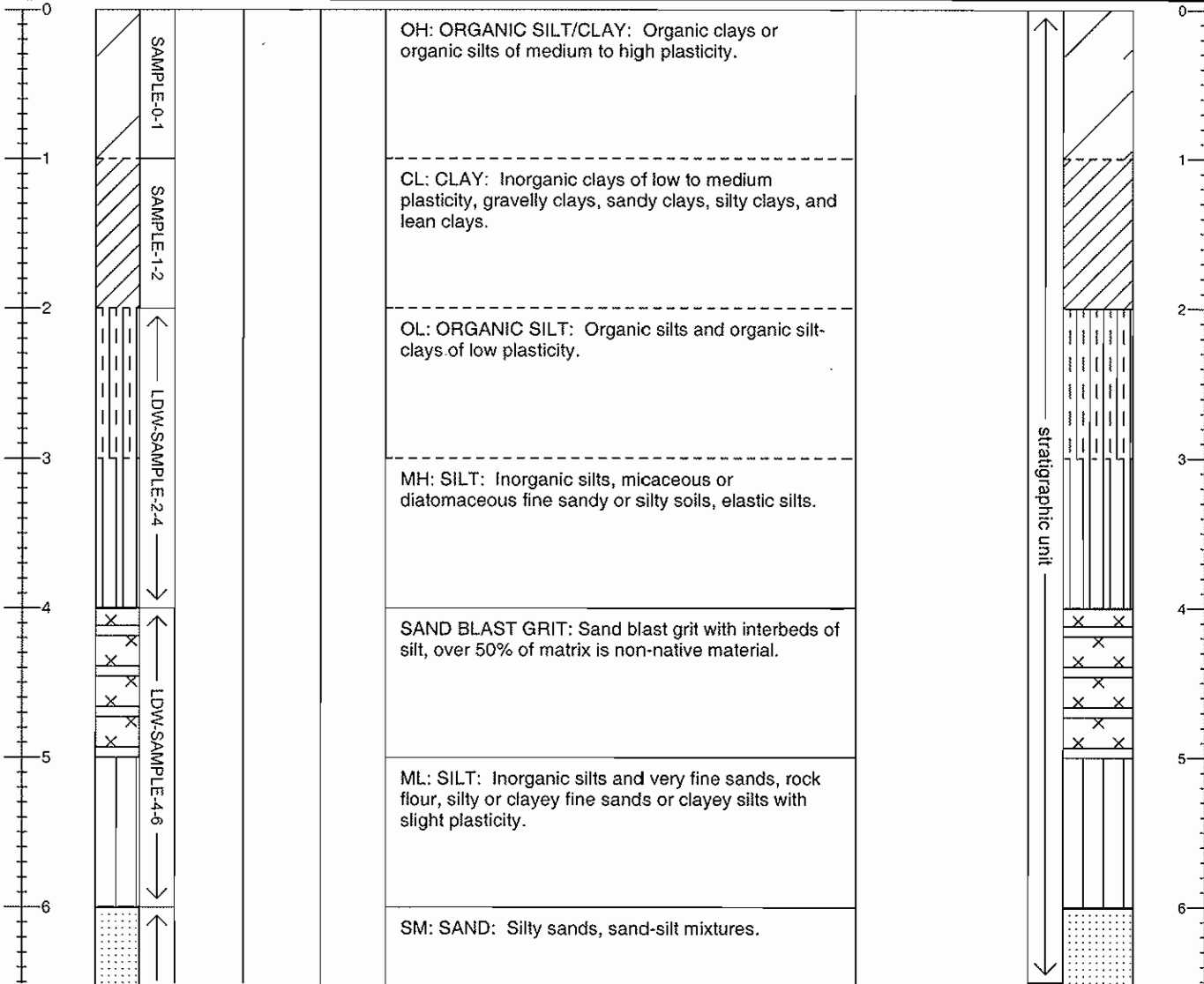
\*Classification of sediment on core logs is based on visual field and laboratory observations which include density/consistency, grain size, and plasticity. Plasticity estimates should not be construed to imply laboratory testing unless presented herein. Unified Soil Classification System ASTM D-2487 and Visual-manual classification method ASTM D-2488 for the description and identification of soils were used as an identification guide. Descriptions were compared to grain size and Atterberg Limit results where applicable.



# Core Log Key SEDIMENT LITHOLOGY

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>xxx</b>
Project #: <b>PORSS-18220-511</b>	Water Elevation (ft)/Tide: <b>xxx</b>	Penetration Depth (ft): <b>xxx</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>xxx</b>	Sample Quality: <b>xxx</b>
Collection Date: <b>xxx</b>	Mudline Elevation (ft): <b>xxx</b>	Recovery in ft (%): <b>xx</b>
Contractor: <b>xxx</b>	N./LAT: <b>xxx</b> E./LONG: <b>xxx</b>	Process Date: <b>xxx</b>
Vessel: <b>xxx</b>	Horiz. Datum: <b>xxx (ft)</b> Vert. Datum: <b>xxx (ft)</b>	Process Method: <b>xxx</b>
Operator: <b>xxx</b>	Method/Tube ID: <b>xxx</b>	Logged By: <b>xxx</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Sediment descriptions (lithology) based on USCS ASTM D2487-93 Standard Classification of Soil for Engineering Purposes (Unified Soil Classification System) and ASTM D2488-93 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

**Calculated Recovery**  
Sample Length/Penetration Length: **xx / xx = xx %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*

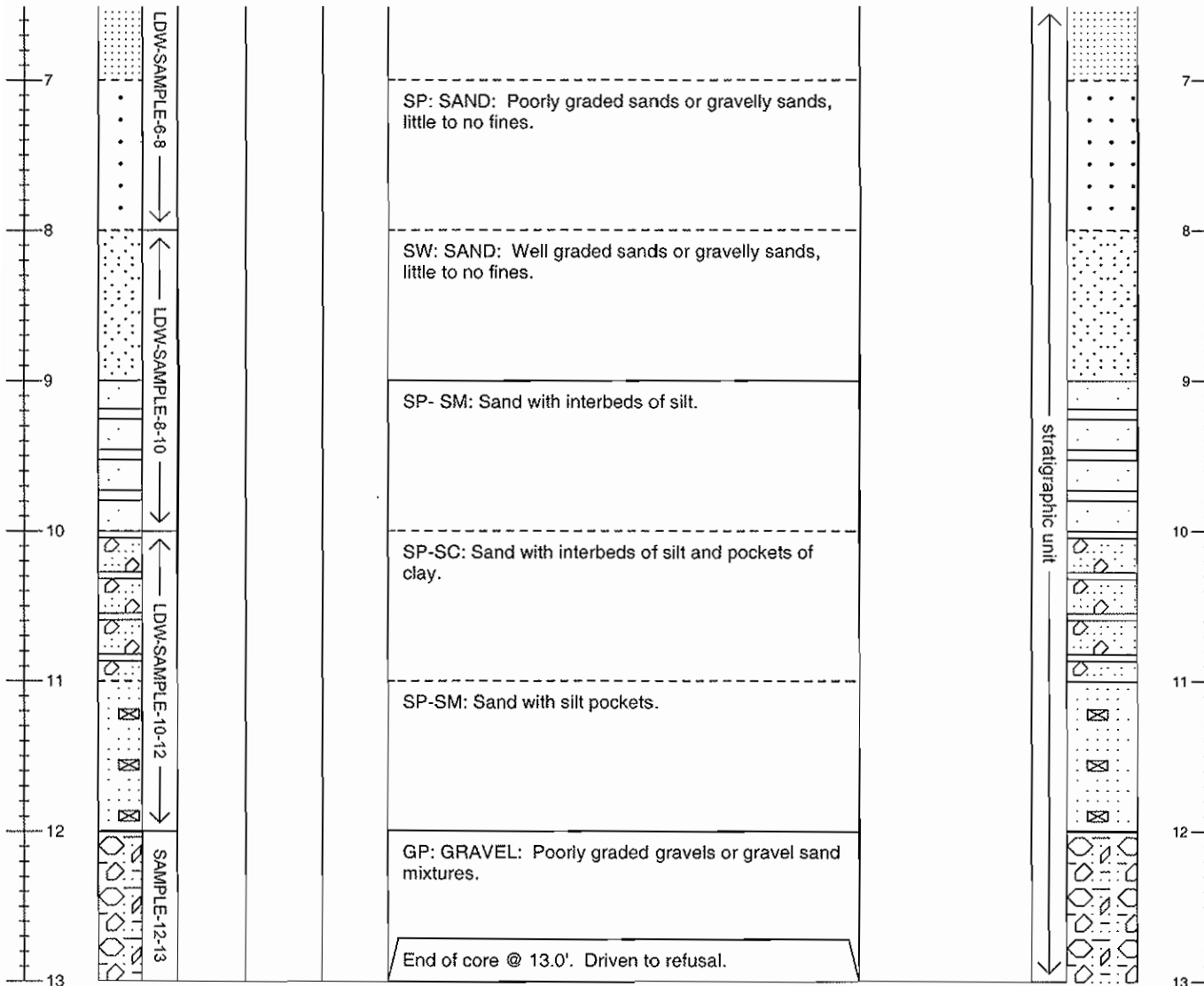


# Core Log Key SEDIMENT LITHOLOGY

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>xxx</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>xxx</b>	Penetration Depth (ft): <b>xxx</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>xxx</b>	Sample Quality: <b>xxx</b>
Collection Date: <b>xxx</b>	Mudline Elevation (ft): <b>xxx</b>	Recovery in ft (%): <b>xx</b>
Contractor: <b>xxx</b>	N./LAT: <b>xxx</b> E./LONG: <b>xxx</b>	Process Date: <b>xxx</b>
Vessel: <b>xxx</b>	Horiz. Datum: <b>xxx (ft)</b> Vert. Datum: <b>xxx (ft)</b>	Process Method: <b>xxx</b>
Operator: <b>xxx</b>	Method/Tube ID: <b>xxx</b>	Logged By: <b>xxx</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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**Calculated Recovery**  
Sample Length/Penetration Length: **xx / xx = xx %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



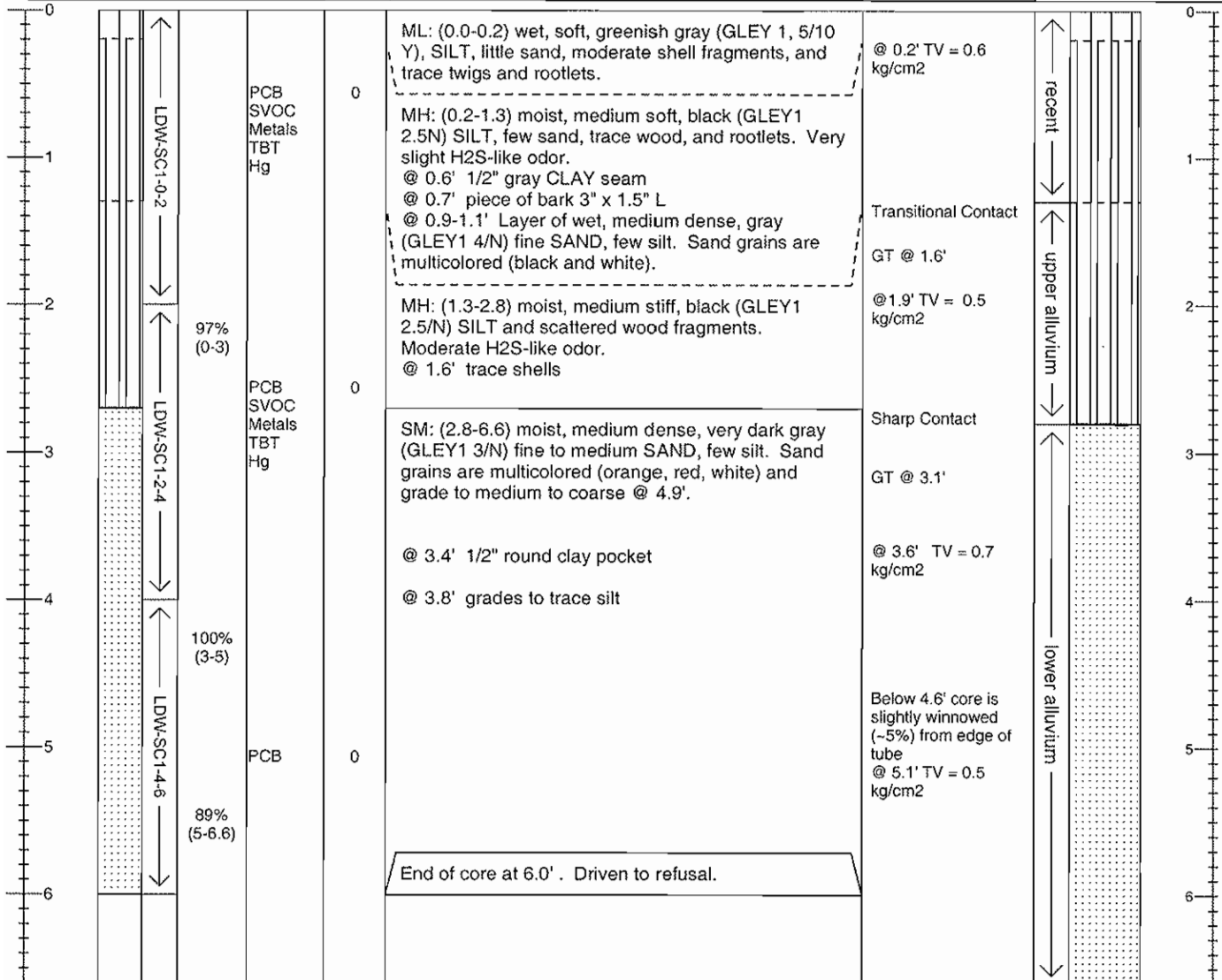
# Sediment Core Log

## LDW-SC-1 (R2)

Sheet 1 of 1

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.1</b>	Penetration Depth (ft): <b>6.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>25.3</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/8/06</b>	Mudline Elevation (ft): <b>-15.7</b>	Recovery in ft (%): <b>6.0 (91)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>211282</b> E./LONG: <b>1266316</b>	Process Date: <b>2/9/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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**Remarks:** Drive Notes: slowed (6.2-3.4'), refusal (6.6').

Two drive attempts made at station.

**Calculated Recovery**

Sample Length/Penetration Length:

**6.0 / 6.6 = 91 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



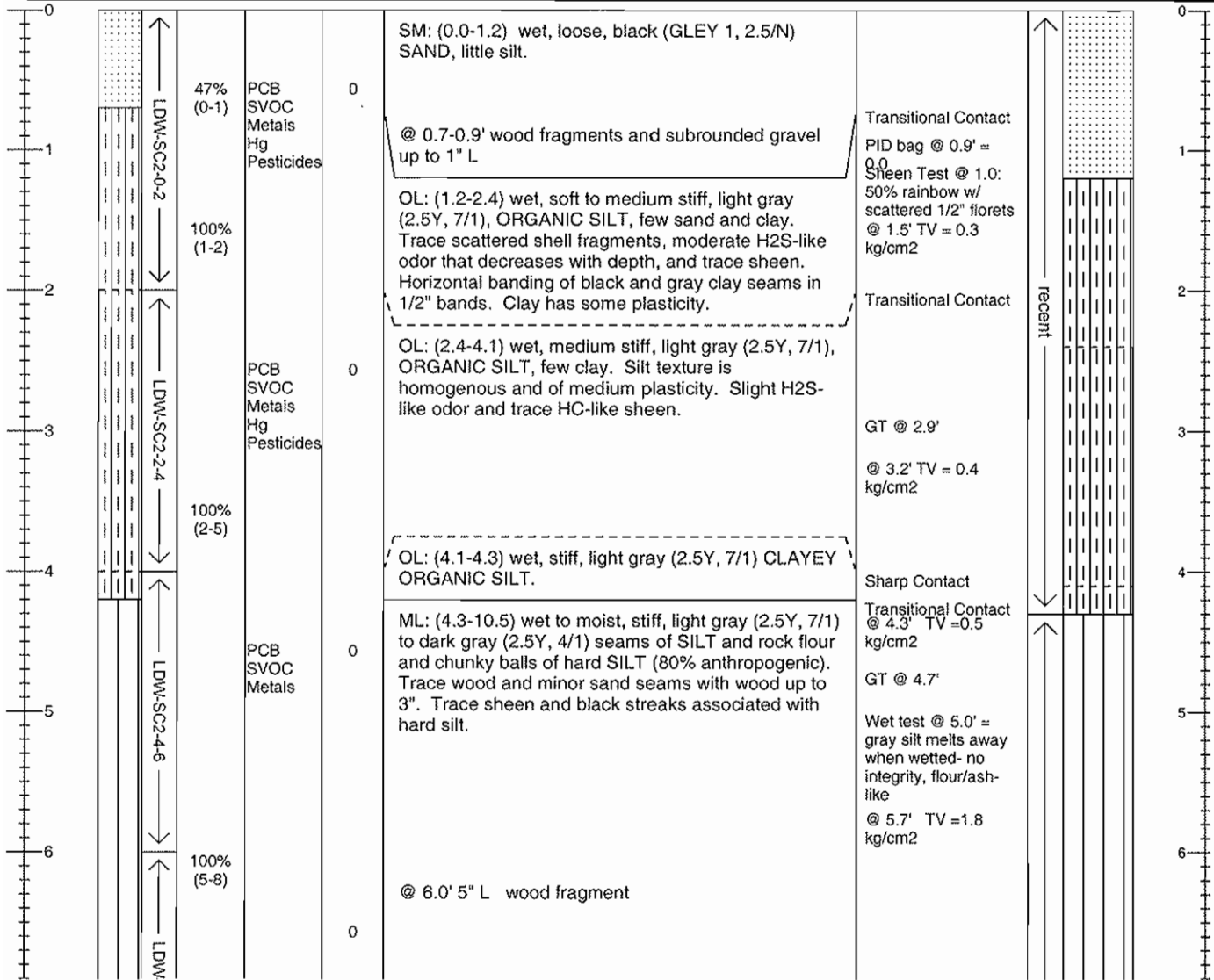
# Sediment Core Log

## LDW-SC-2 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.4</b>	Penetration Depth (ft): <b>13.1</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>31.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-23.7</b>	Recovery in ft (%): <b>13.1 (100)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>211196</b> E./LONG: <b>1267032</b>	Process Date: <b>2/9/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (0.5'), easy (2.2'), moderate (4.9'), hard (13.1'), penetration goal reached. One drive attempt made at station. Core catcher was intact.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>13.1/13.1 = 100 %</b>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



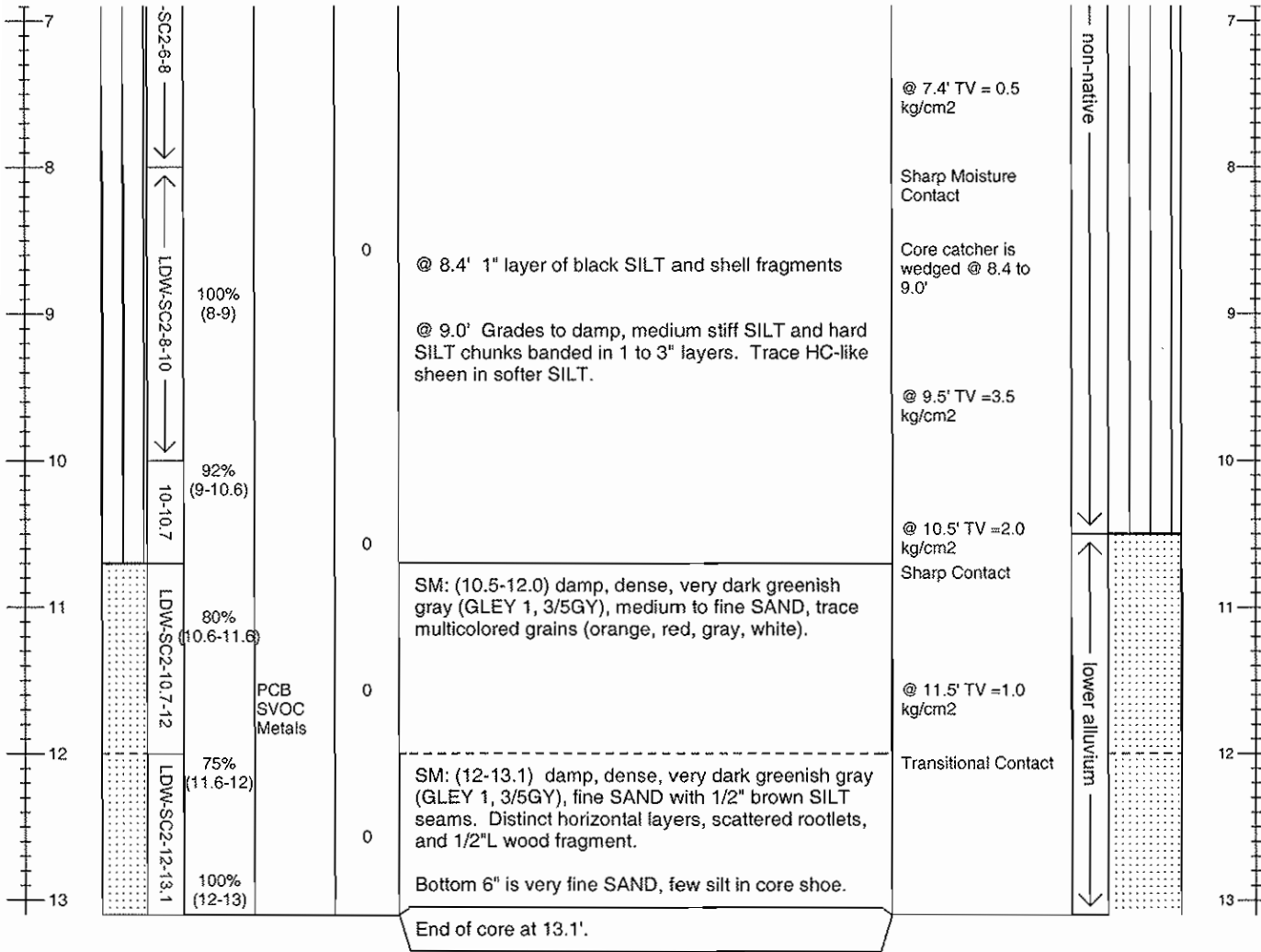
# Sediment Core Log

## LDW-SC-2 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.4</b>	Penetration Depth (ft): <b>13.1</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>31.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-23.7</b>	Recovery in ft (%): <b>13.1 (100)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>211196</b> E./LONG: <b>1267032</b>	Process Date: <b>2/9/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freedfall (0.5')</u> , <u>easy (2.2')</u> , <u>moderate (4.9')</u> , <u>hard (13.1')</u> , penetration goal reached. One drive attempt made at station. Core catcher was intact.	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>13.1/ 13.1 = 100 %</b>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



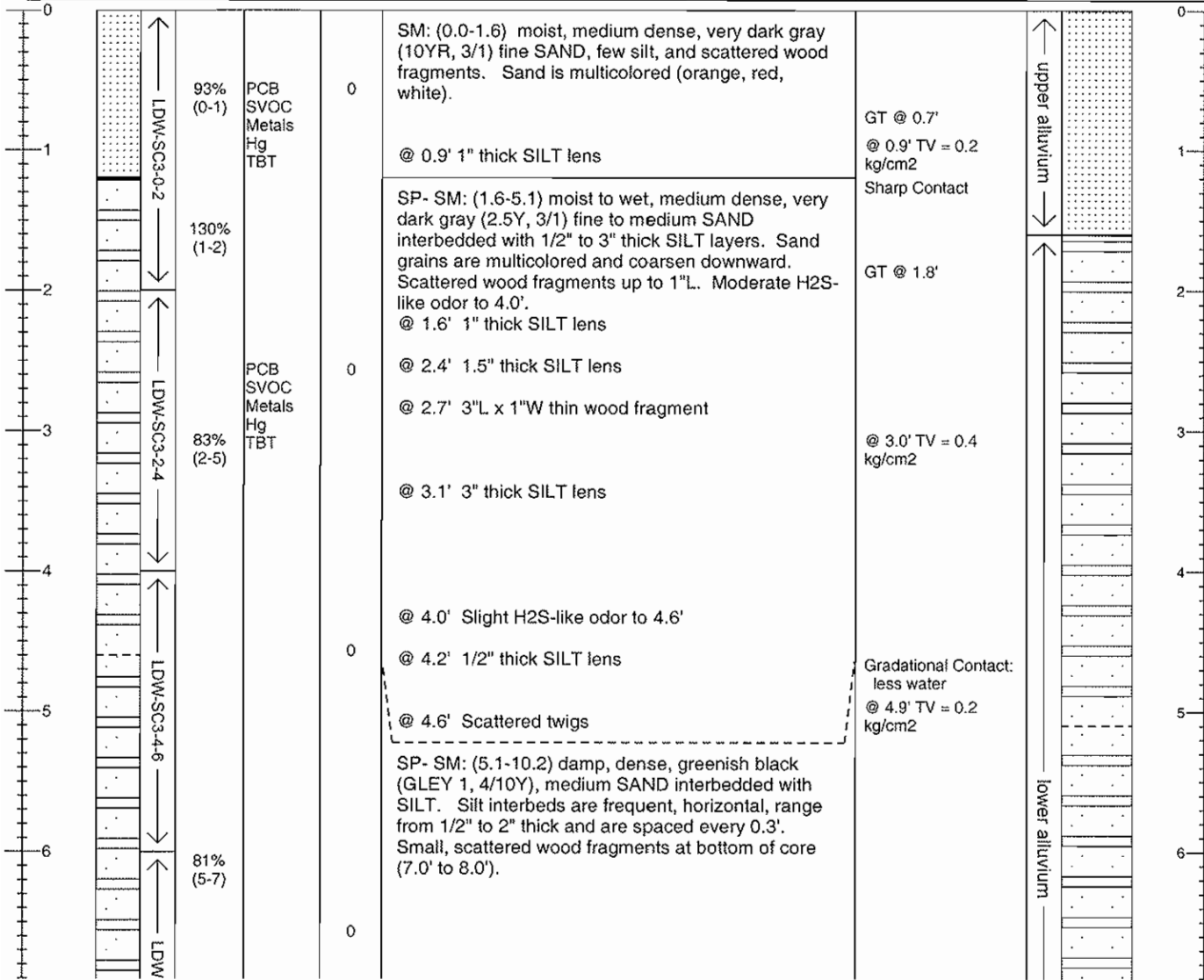
# Sediment Core Log

## LDW-SC-3 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.9</b>	Penetration Depth (ft): <b>8.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>57.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-49.3</b>	Recovery in ft (%): <b>8.5 (83)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>210648</b> E./LONG: <b>1266431</b>	Process Date: <b>2/9/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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**Remarks:** Drive Notes: easy (5.0'), moderate (7.0'), hard (7.8'), refusal (8.7'). One drive attempt made at station.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**8.5 / 10.2 = 83 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.





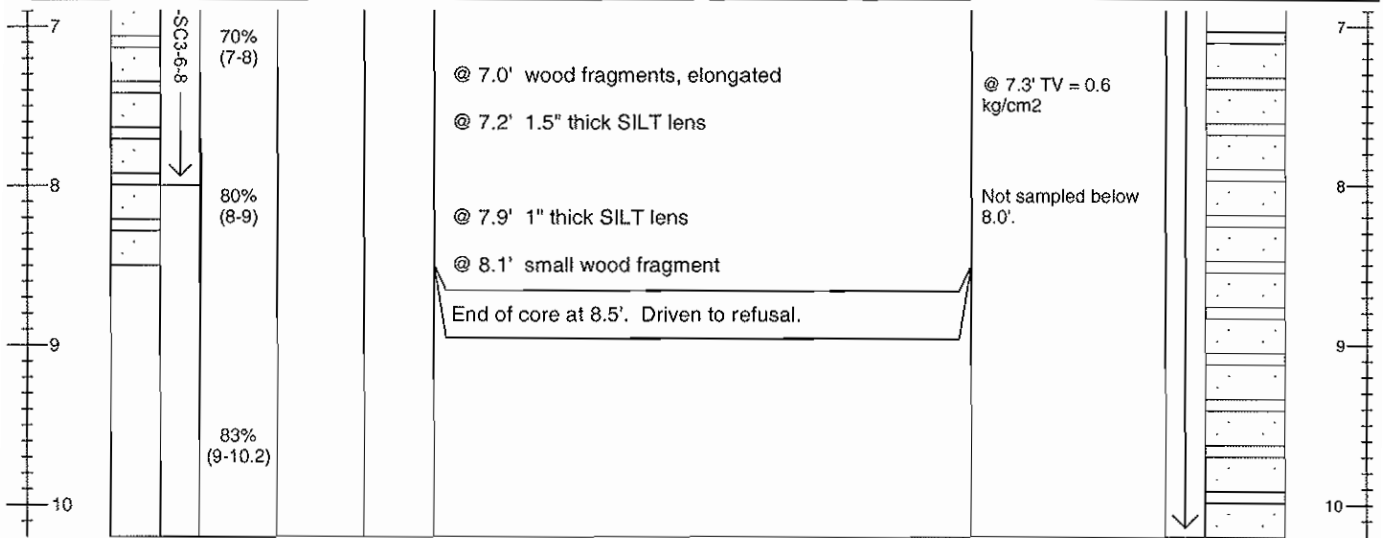
# Sediment Core Log

## LDW-SC-3 (R1)

Sheet 2 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.9</b>	Penetration Depth (ft): <b>8.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>57.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-49.3</b>	Recovery in ft (%): <b>8.5 (83)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>210648</b> E./LONG: <b>1266431</b>	Process Date: <b>2/9/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: easy (5.0'), moderate (7.0'), hard (7.8'), refusal (8.7'). One drive attempt made at station.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $8.5 / 10.2 = 83 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



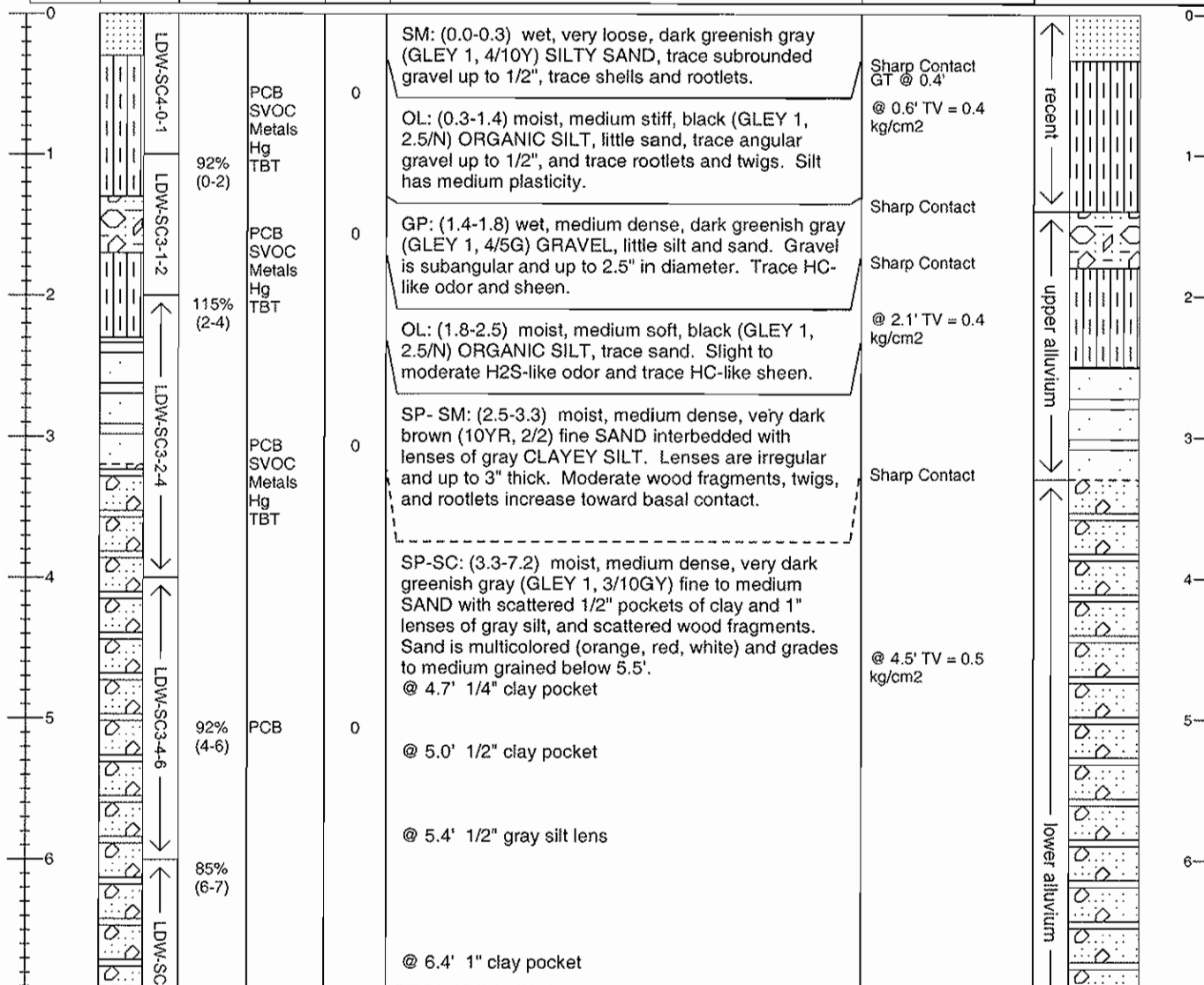
# Sediment Core Log

## LDW-SC-4 (R2)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.9</b>	Penetration Depth (ft): <b>9.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>41.9</b>	Sample Quality: <b>Not indicated</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-34.0</b>	Recovery in ft (%): <b>7.7 (85)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>210597</b> E./LONG: <b>1266933</b>	Process Date: <b>2/9/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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 Phone: (206) 624-9349  
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**Remarks:** Drive Notes: moderate (7.5'), hard (9.0'), refusal (9.0'). Two drive attempts made at station.  
 Core catcher was intact.

**Calculated Recovery**  
 Sample Length/Penetration Length:  
 7.7 / 9.0 = 85 %

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



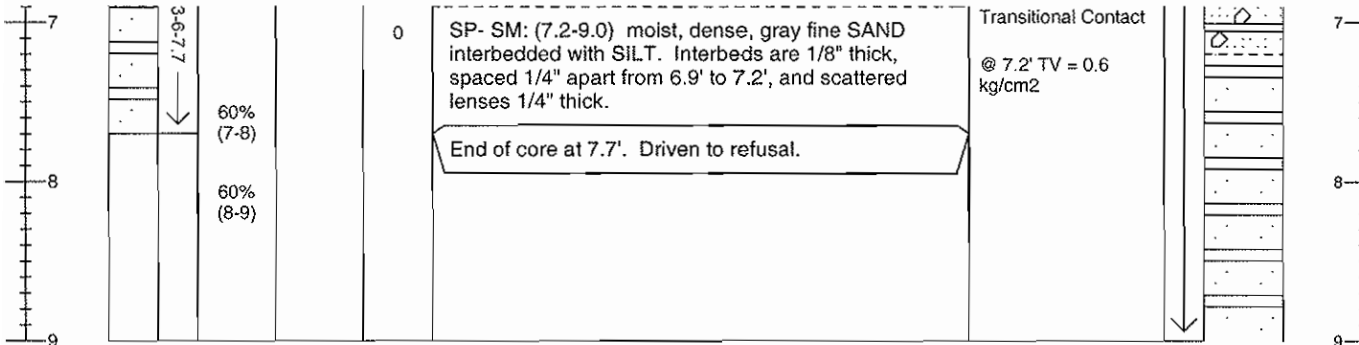
# Sediment Core Log

## LDW-SC-4 (R2)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.9</b>	Penetration Depth (ft): <b>9.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>41.9</b>	Sample Quality: <b>Not indicated</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-34.0</b>	Recovery in ft (%): <b>7.7 (85)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>210597</b> E./LONG: <b>1266933</b>	Process Date: <b>2/9/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



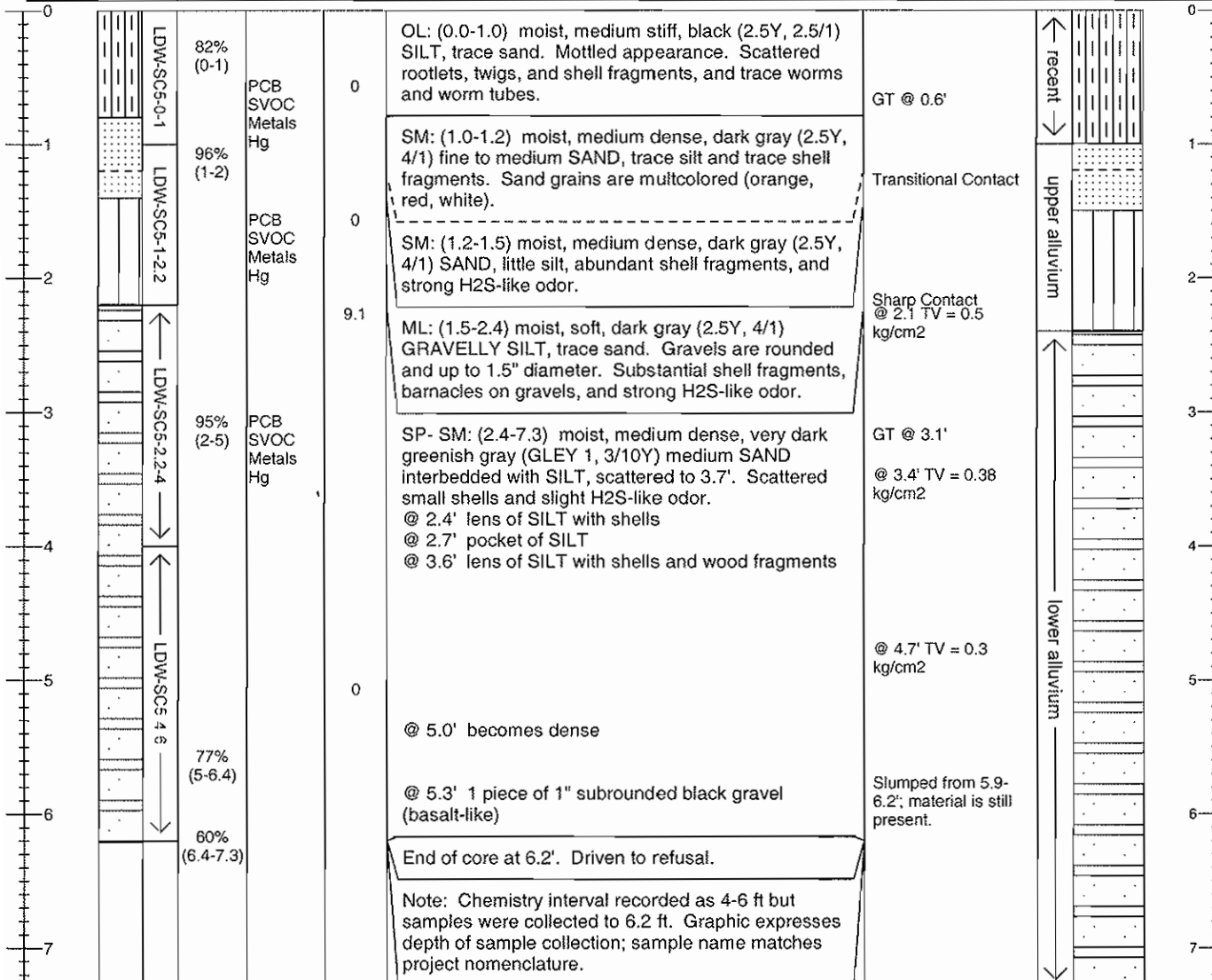
# Sediment Core Log

## LDW-SC-5 (R2)

Sheet 1 of 1

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.7</b>	Penetration Depth (ft): <b>7.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>19.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-10.4</b>	Recovery in ft (%): <b>6.2 (85)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>210543</b> E./LONG: <b>1266048</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.5'), easy (5.0'), moderate (6.3'), hard (7.3'), refusal (7.3'). Two drive attempts made at station. Core catcher was intact. EPA oversight approved processing as Method A.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**6.2 / 7.3 = 85 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



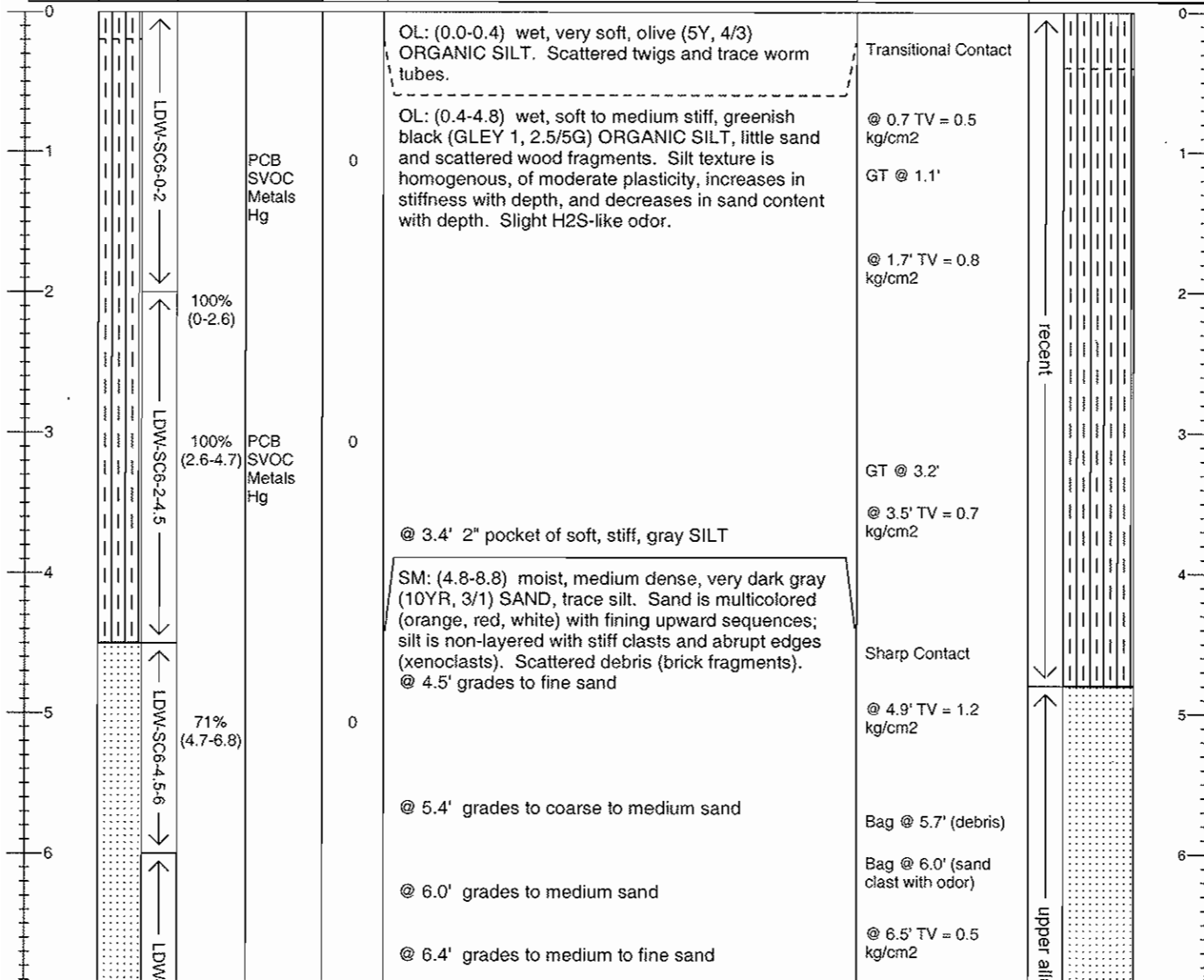
# Sediment Core Log

## LDW-SC-6 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>11.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-33.0</b>	Recovery in ft (%): <b>8.6 (77)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>209838</b> E./LONG: <b>1266285</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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**Remarks:** Drive Notes: easy (2.6'), moderate (8.8'), hard (10.0'), refusal (11.0'). One drive attempt made at station.  
Core catcher was intact.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**8.6 / 11.0 = 78 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



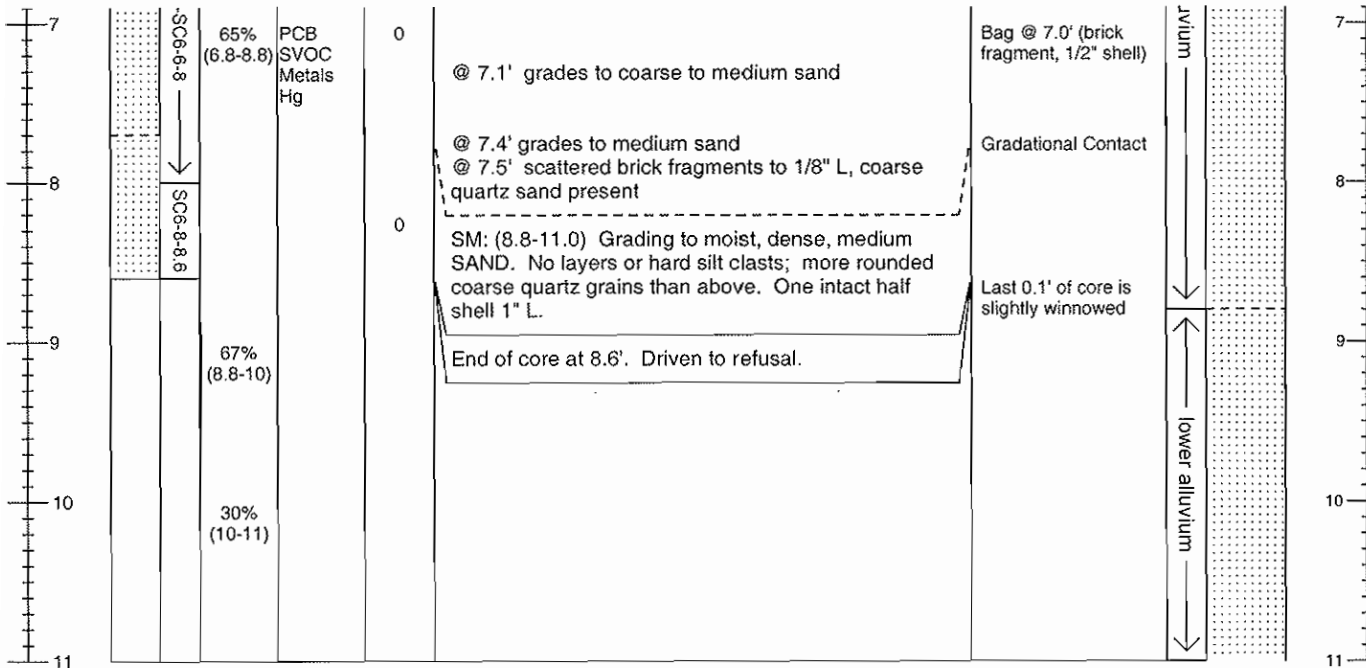
# Sediment Core Log

## LDW-SC-6 (R1)

Sheet 2 of 2

Project: <b>LDW RI/F5</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>11.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/9/06</b>	Mudline Elevation (ft): <b>-33.0</b>	Recovery in ft (%): <b>8.6 (77)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>209838</b> E./LONG: <b>1266285</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>easy (2.6'), moderate (8.8'), hard (10.0'), refusal (11.0'). One drive attempt made at station.</u> <u>Core catcher was intact.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $8.6 / 11.0 = 78 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



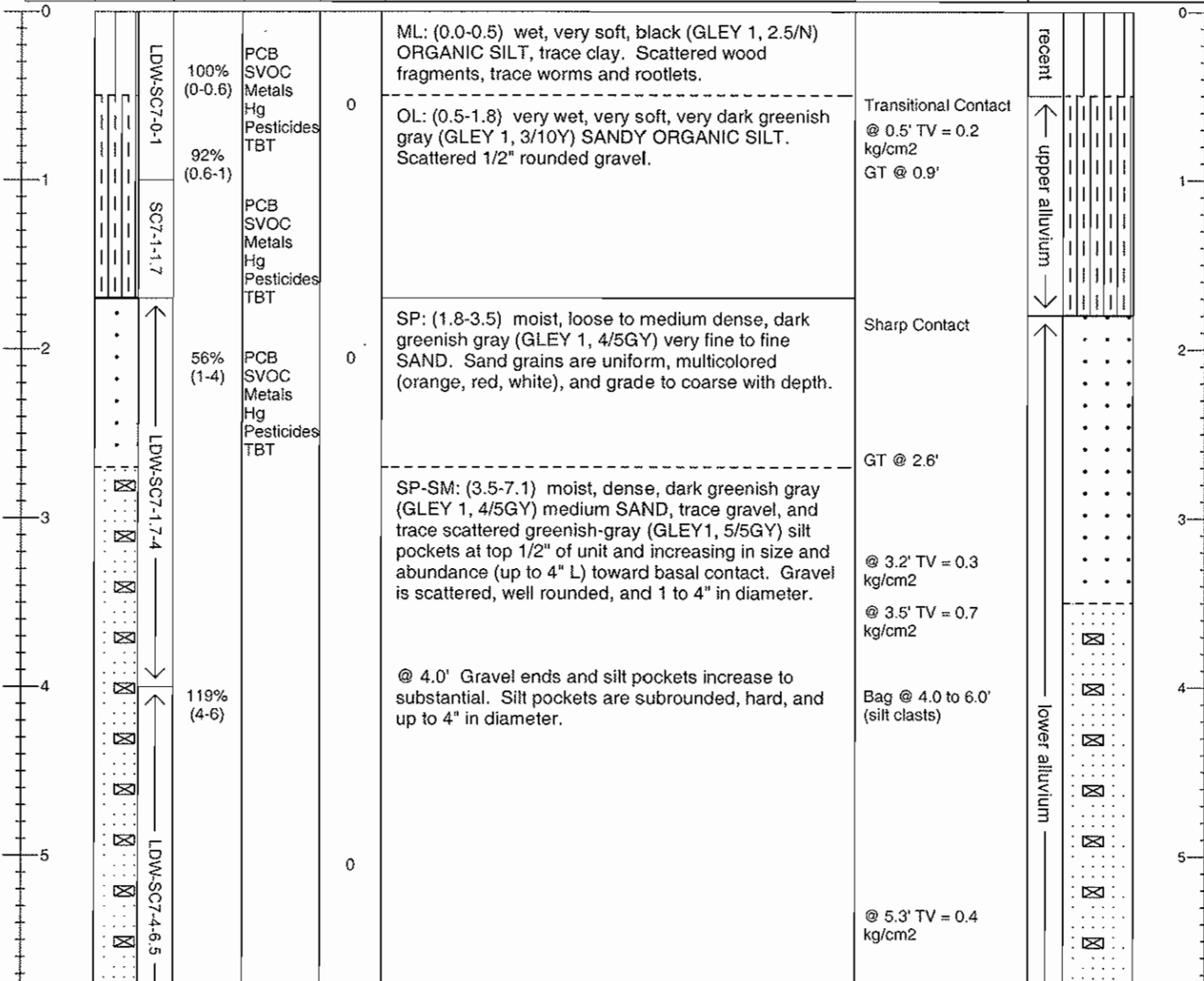
# Sediment Core Log

## LDW-SC-7 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.7</b>	Penetration Depth (ft): <b>11.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>34.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-27.1</b>	Recovery in ft (%): <b>8.7 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>209605</b> E./LONG: <b>1266850</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.6'), moderate (9.4'), hard (10.7'), refusal (11'). One drive attempt made at station.  
Core shoe was 50% full of sand.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**8.7 / 11.0 = 79 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



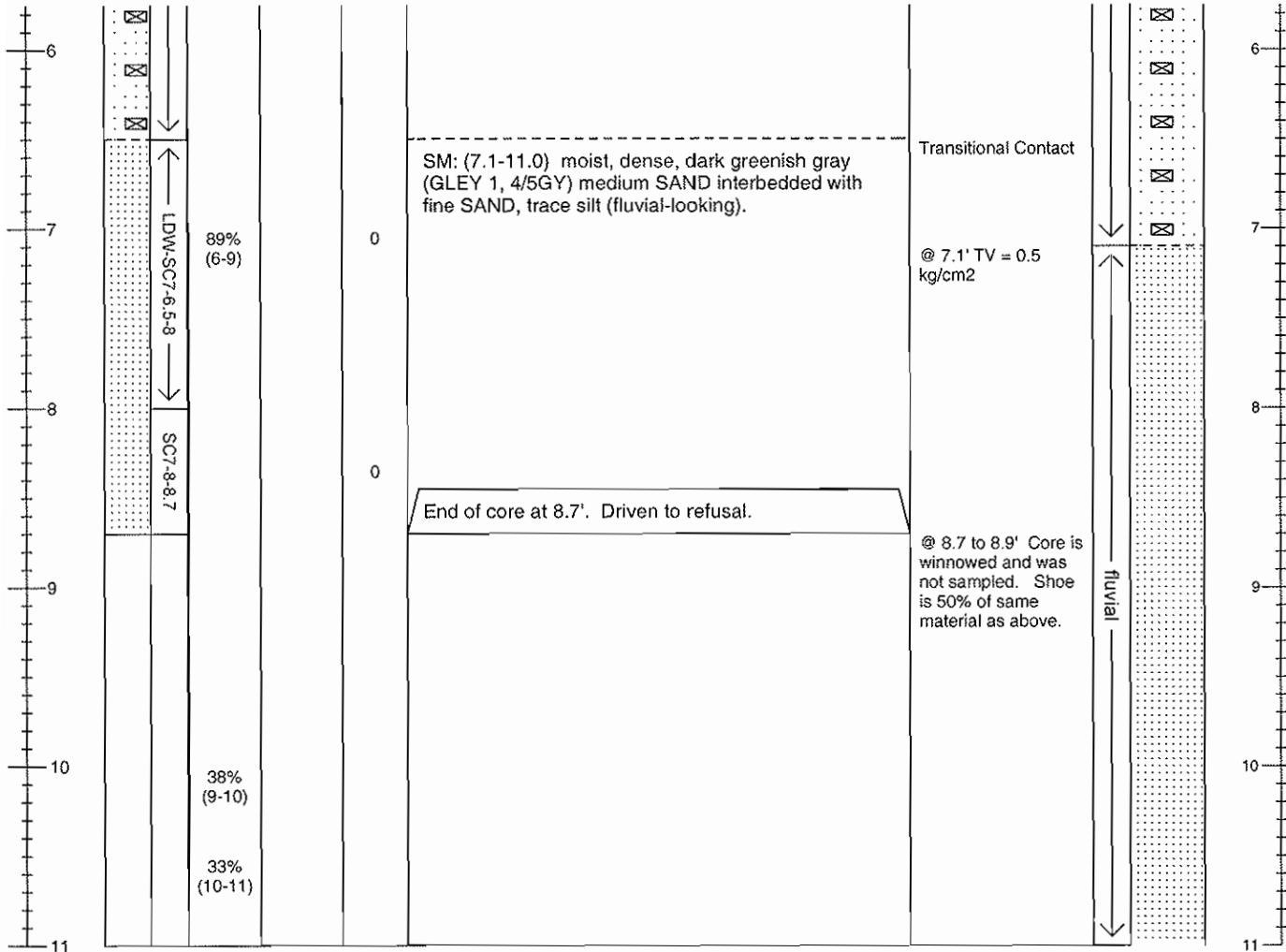
# Sediment Core Log

## LDW-SC-7 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.7</b>	Penetration Depth (ft): <b>11.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>34.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-27.1</b>	Recovery in ft (%): <b>8.7 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>209605</b> E./LONG: <b>1266850</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <b>freefall (0.6'), moderate (9.4'), hard (10.7'), refusal (11'). One drive attempt made at station.</b> <b>Core shoe was 50% full of sand.</b>	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>8.7 / 11.0 = 79 %</b>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*





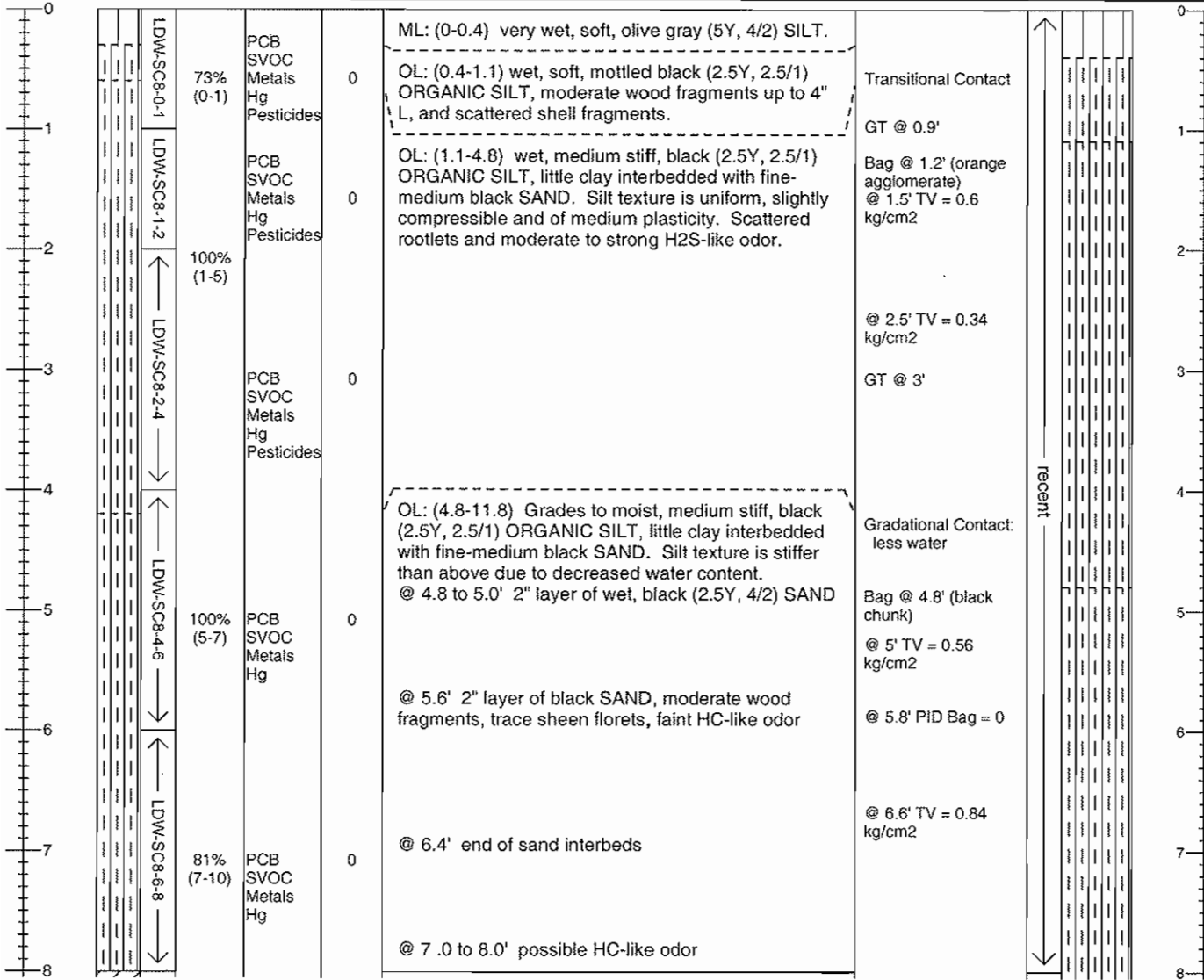
# Sediment Core Log

## LDW-SC-8 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.3</b>	Penetration Depth (ft): <b>14.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>46.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-39.1</b>	Recovery in ft (%): <b>10.0 (68)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>209589</b> E./LONG: <b>1266614</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.8'), easy-moderate (4.8'), easy (9.6'), moderate (14.6'), penetration goal reached. One drive attempt made at station. Core catcher was intact but inverted.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**10.0/ 14.6 = 68 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



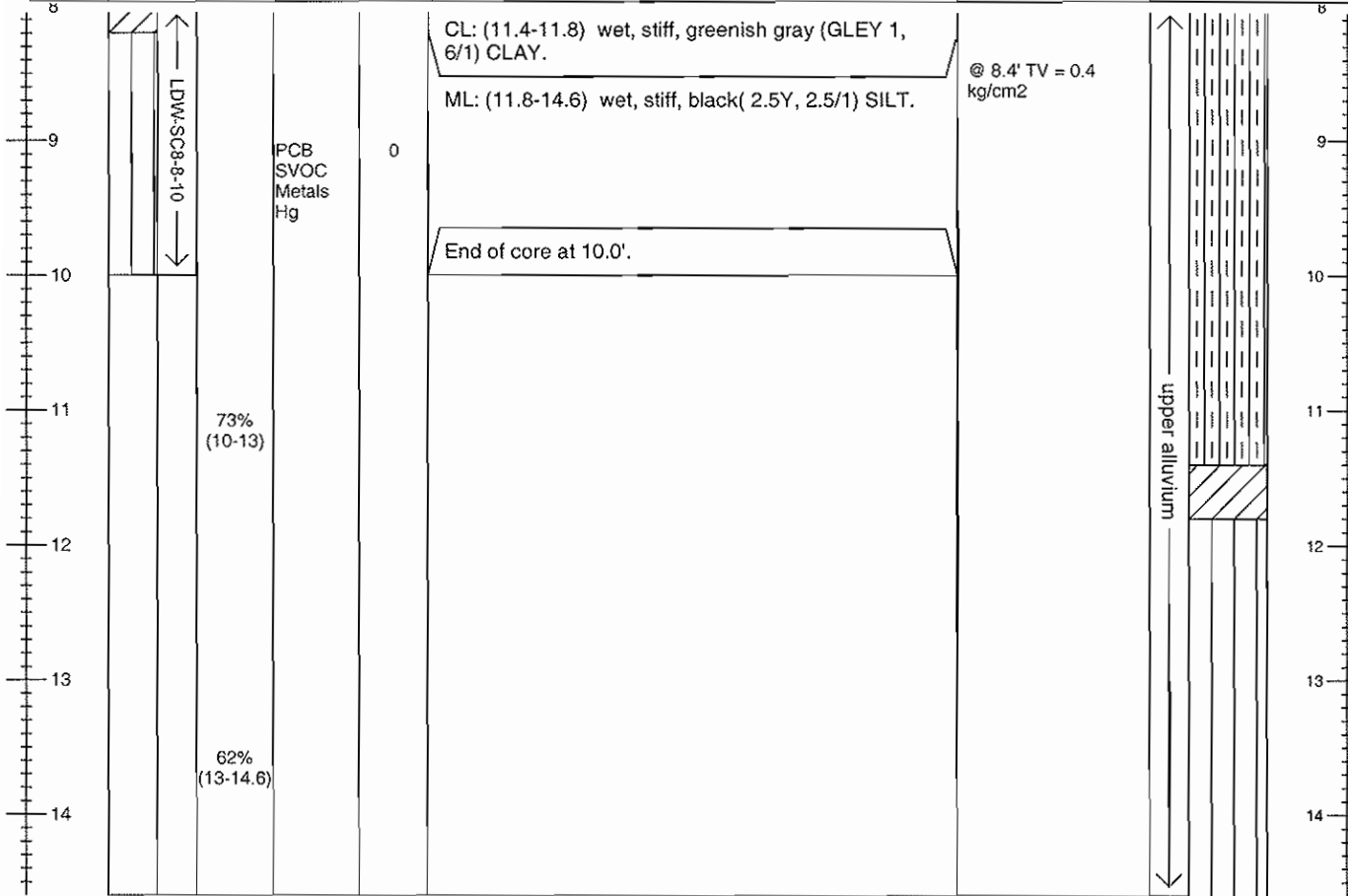
# Sediment Core Log

## LDW-SC-8 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.3</b>	Penetration Depth (ft): <b>14.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>46.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-39.1</b>	Recovery in ft (%): <b>10.0 (68)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>209589</b> E./LONG: <b>1266614</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (0.8')</u> , <u>easy-moderate (4.8')</u> , <u>easy (9.6')</u> , <u>moderate (14.6')</u> , <u>penetration goal reached. One drive attempt made at station. Core catcher was intact but inverted.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $10.0 / 14.6 = 68 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



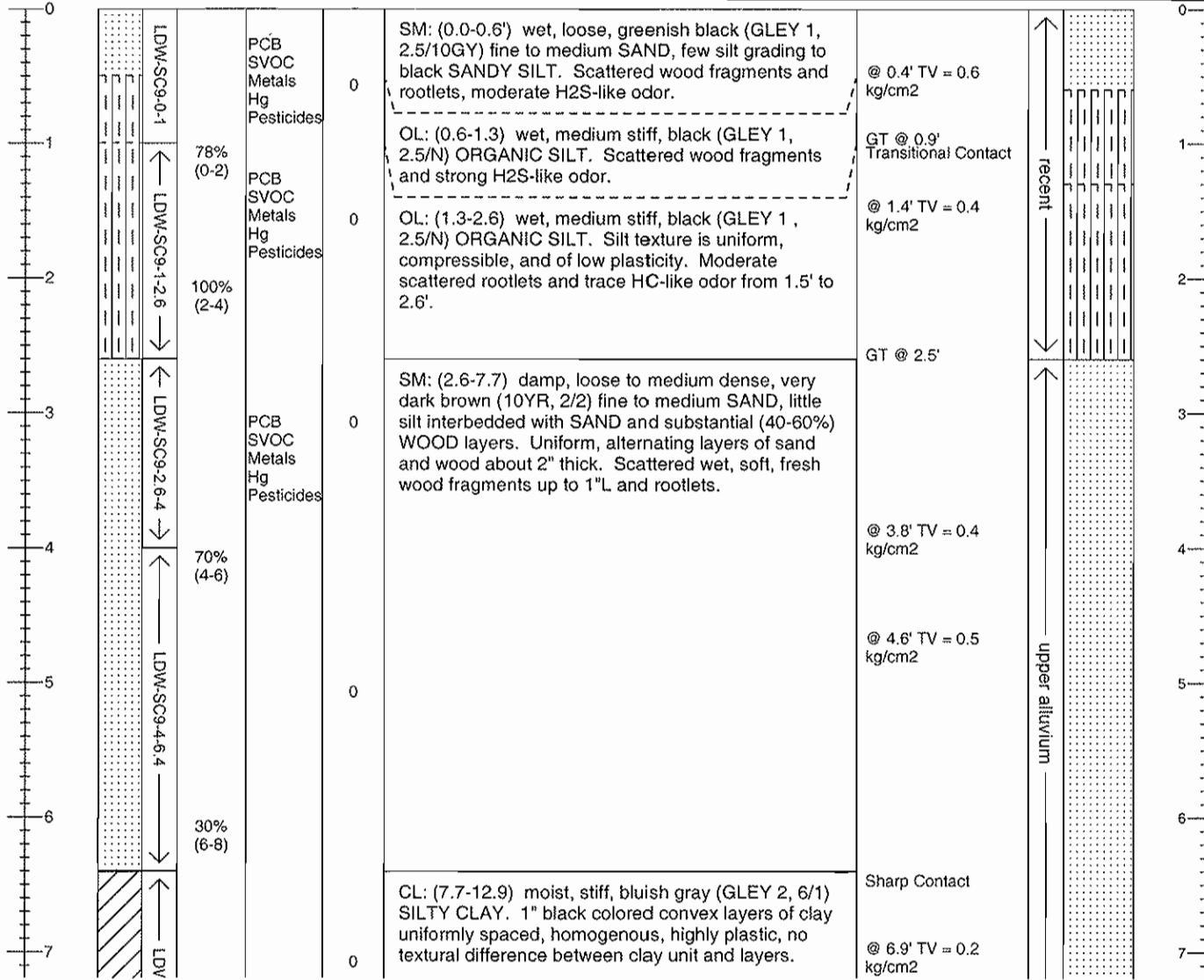
# Sediment Core Log

## LDW-SC-9 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>-1.6</b>	Penetration Depth (ft): <b>12.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>30.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-31.6</b>	Recovery in ft (%): <b>8.5 (66)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>208919</b> E./LONG: <b>1266863</b>	Process Date: <b>2/13/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (1.9'), easy (7.9'), moderate (12.9'), no refusal. One drive attempt made at station. Core was intact but shoe was empty. Water elevation and mudline values were adjusted based on bathymetry.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $8.5 / 12.9 = 66 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



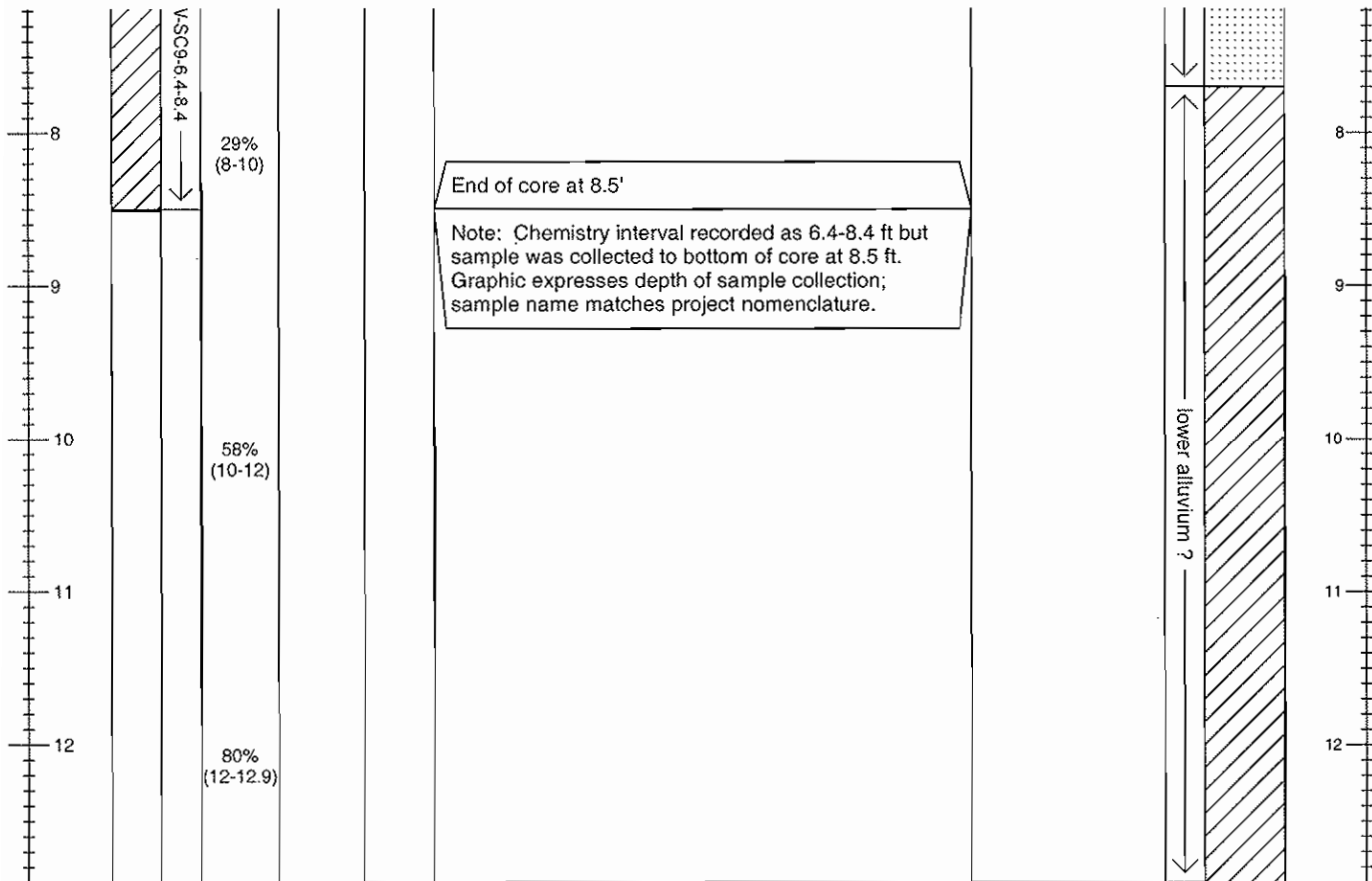
# Sediment Core Log

## LDW-SC-9 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>-1.6</b>	Penetration Depth (ft): <b>12.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>30.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-31.6</b>	Recovery in ft (%): <b>8.5 (66)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>208919</b> E./LONG: <b>1266863</b>	Process Date: <b>2/13/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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**Remarks:** Drive Notes: freelfall (1.9'), easy (7.9'), moderate (12.9'),  
no refusal. One drive attempt made at station. Core was intact but  
shoe was empty. Water elevation and mudline values were  
adjusted based on bathymetry.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**8.5 / 12.9 = 66 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



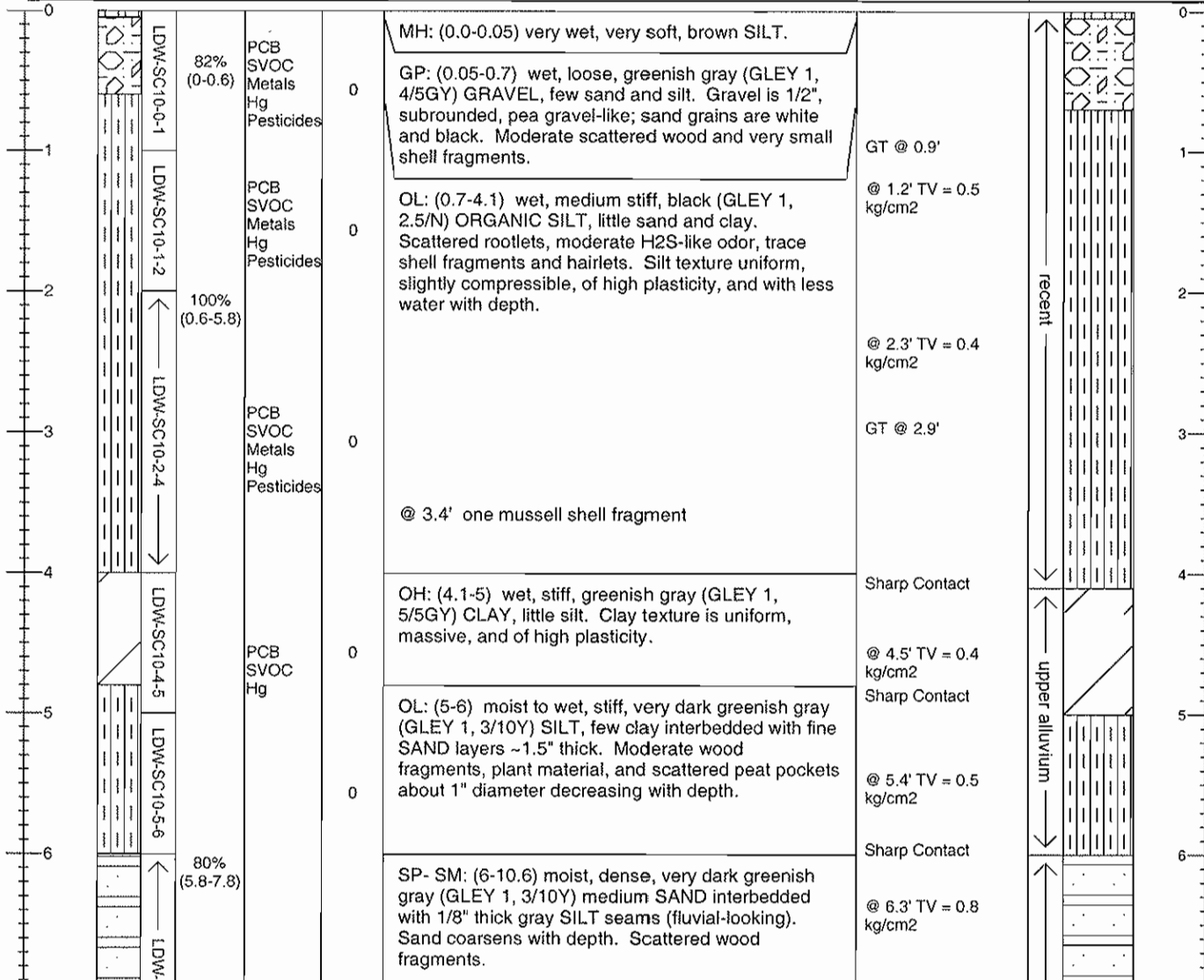
# Sediment Core Log

## LDW-SC-10 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.8</b>	Penetration Depth (ft): <b>10.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>24.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-17.3</b>	Recovery in ft (%): <b>8.9 (83)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>208776</b> E./LONG: <b>1267167</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.6'), easy (7.8'), moderate (9.8'), hard (10.6'), refusal (10.6'). One drive attempt made at station.  
Core catcher was 50% full with partial winnowing. Core tube was intact.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**8.8 / 10.6 = 83 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



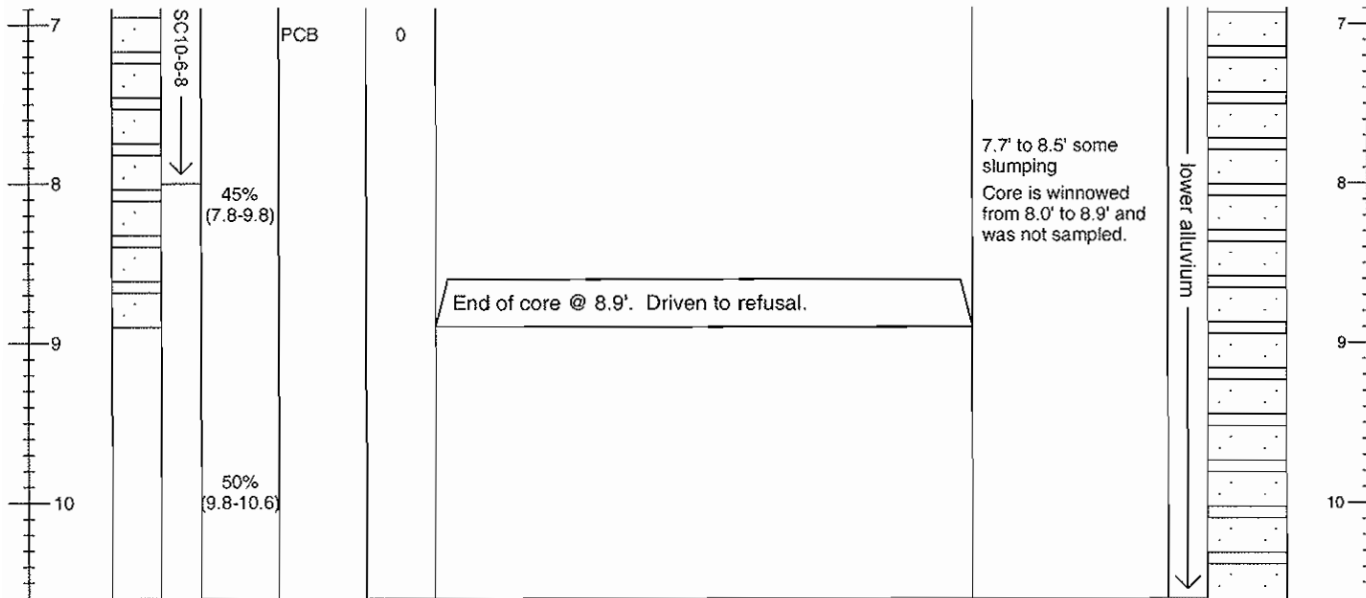
# Sediment Core Log

## LDW-SC-10 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.8</b>	Penetration Depth (ft): <b>10.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>24.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-17.3</b>	Recovery in ft (%): <b>8.9 (83)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>208776</b> E./LONG: <b>1267167</b>	Process Date: <b>2/10/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (0.6')</u> , <u>easy (7.8')</u> , <u>moderate (9.8')</u> , <u>hard (10.6')</u> , <u>refusal (10.6')</u> . <u>One drive attempt made at station.</u> <u>Core catcher was 50% full with partial winnowing. Core tube was intact.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $8.8 / 10.6 = 83 \%$
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



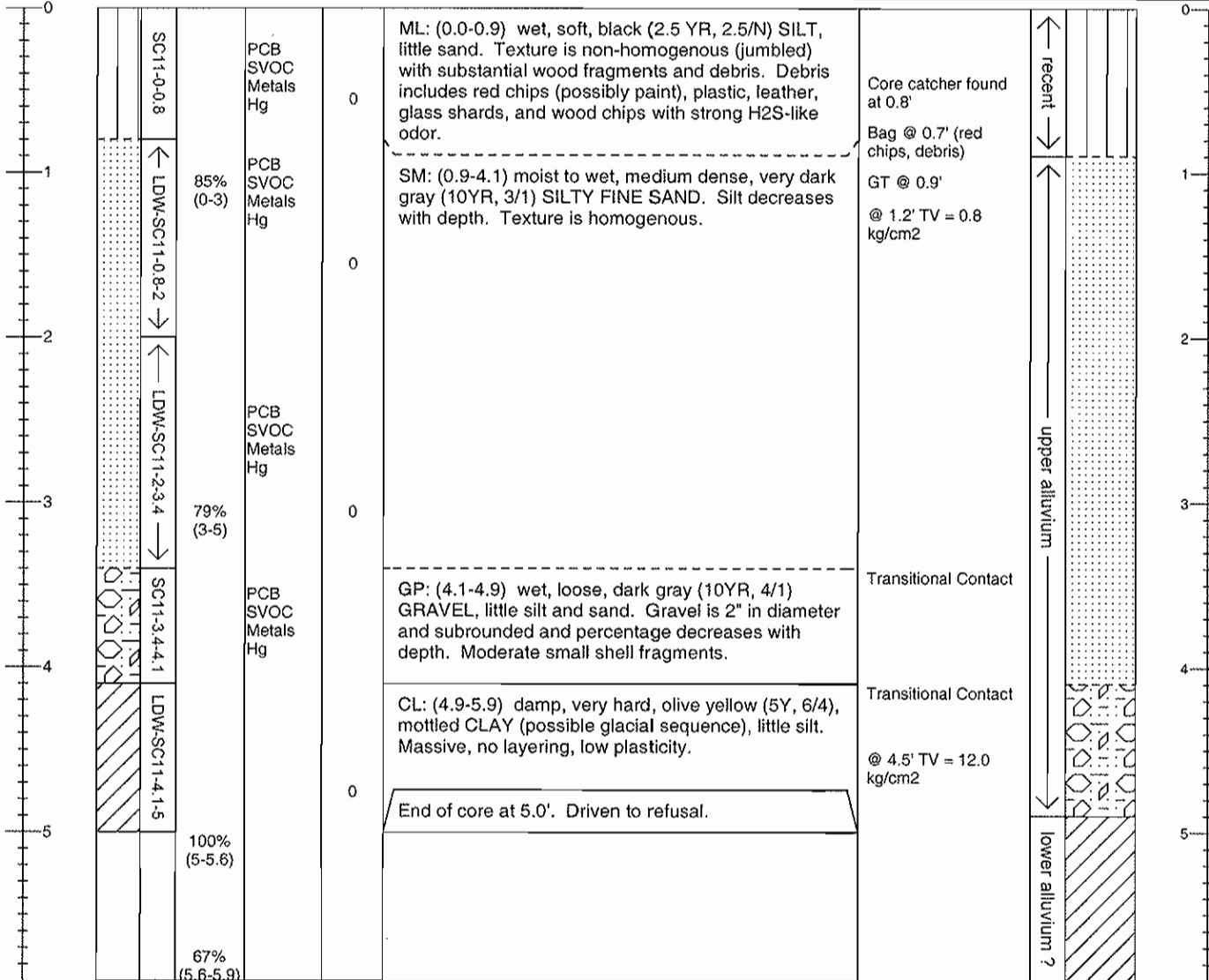
# Sediment Core Log

## LDW-SC-11 (R1)

Sheet 1 of 1

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>5.3</b>	Penetration Depth (ft): <b>5.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-5.1</b>	Recovery in ft (%): <b>5.0 (85)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>208291</b> E./LONG: <b>1265908</b>	Process Date: <b>2/13/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: moderate (4.6), moderate to hard (5.6') hard (5.9'), refusal (5.9'). One drive attempt made at station. Core catcher was intact and 100% full. Difficult extraction.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**5.0 / 5.9 = 85 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



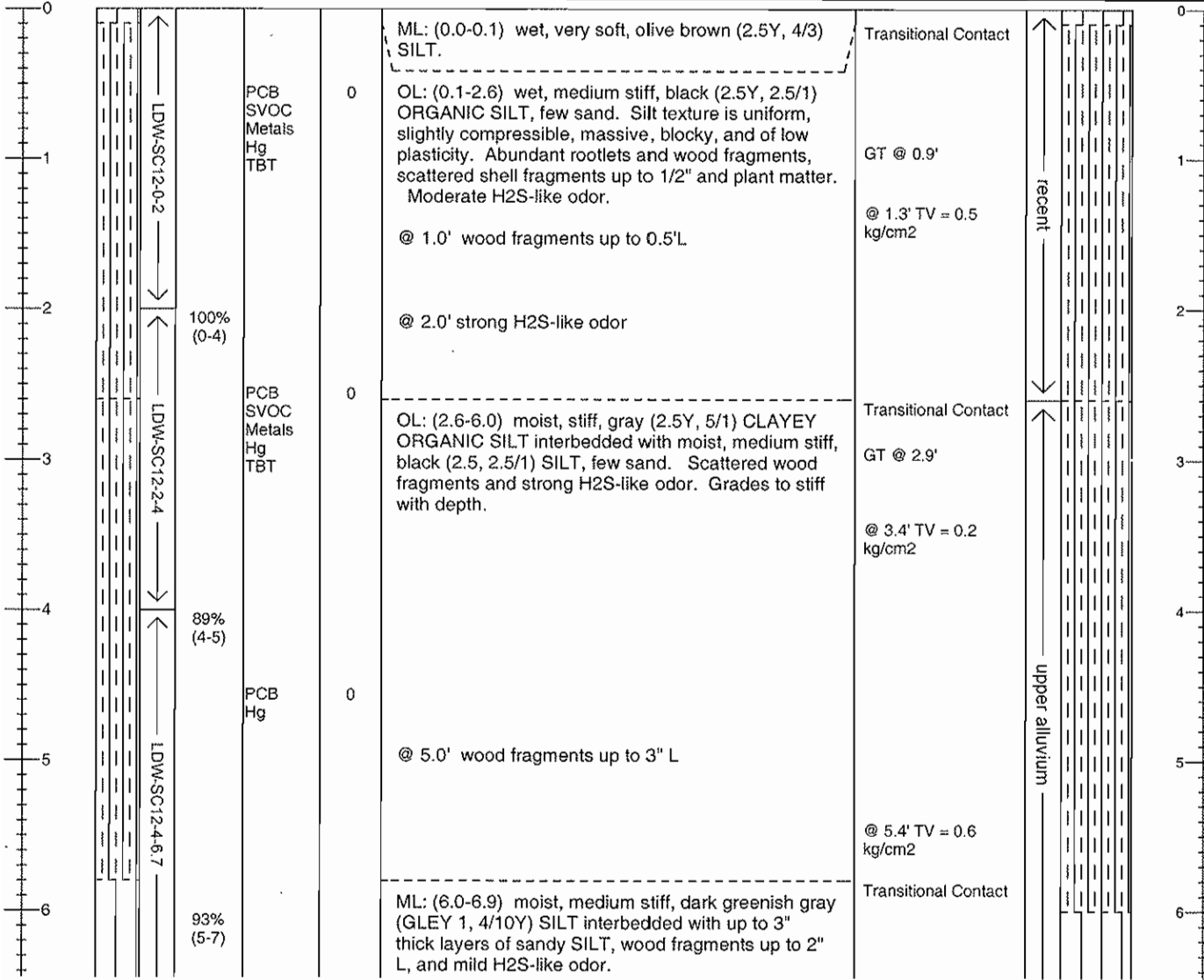
# Sediment Core Log

## LDW-SC-12 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>2.8</b>	Penetration Depth (ft): <b>9.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>13.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-7.5</b>	Recovery in ft (%): <b>8.7 (91)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>208217</b> E./LONG: <b>1266577</b>	Process Date: <b>2/16/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: easy (6.9'), moderate (7.6'), hard (9.6'), refusal (9.6'). One drive attempt made at station. Core catcher was intact and 83% full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**8.7 / 9.6 = 91 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.





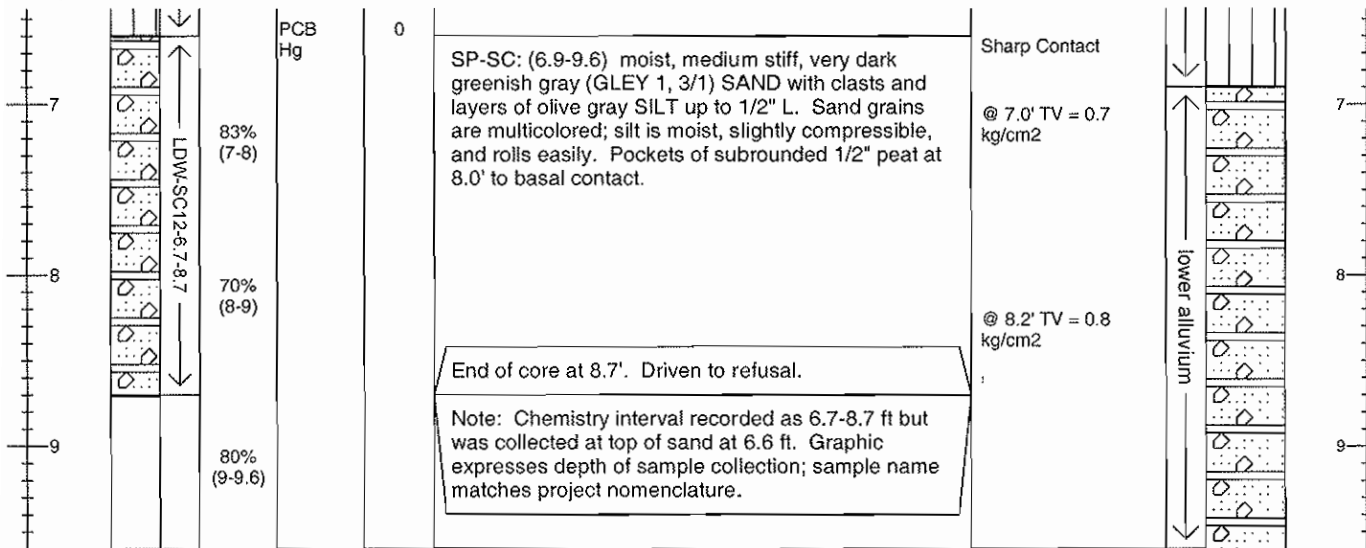
# Sediment Core Log

## LDW-SC-12 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>2.8</b>	Penetration Depth (ft): <b>9.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>13.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-7.5</b>	Recovery in ft (%): <b>8.7 (91)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>208217</b> E./LONG: <b>1266577</b>	Process Date: <b>2/16/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: easy (6.9'), moderate (7.6'), hard (9.6'), refusal (9.6'). One drive attempt made at station. Core catcher was intact and 83% full.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $8.7 / 9.6 = 91 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



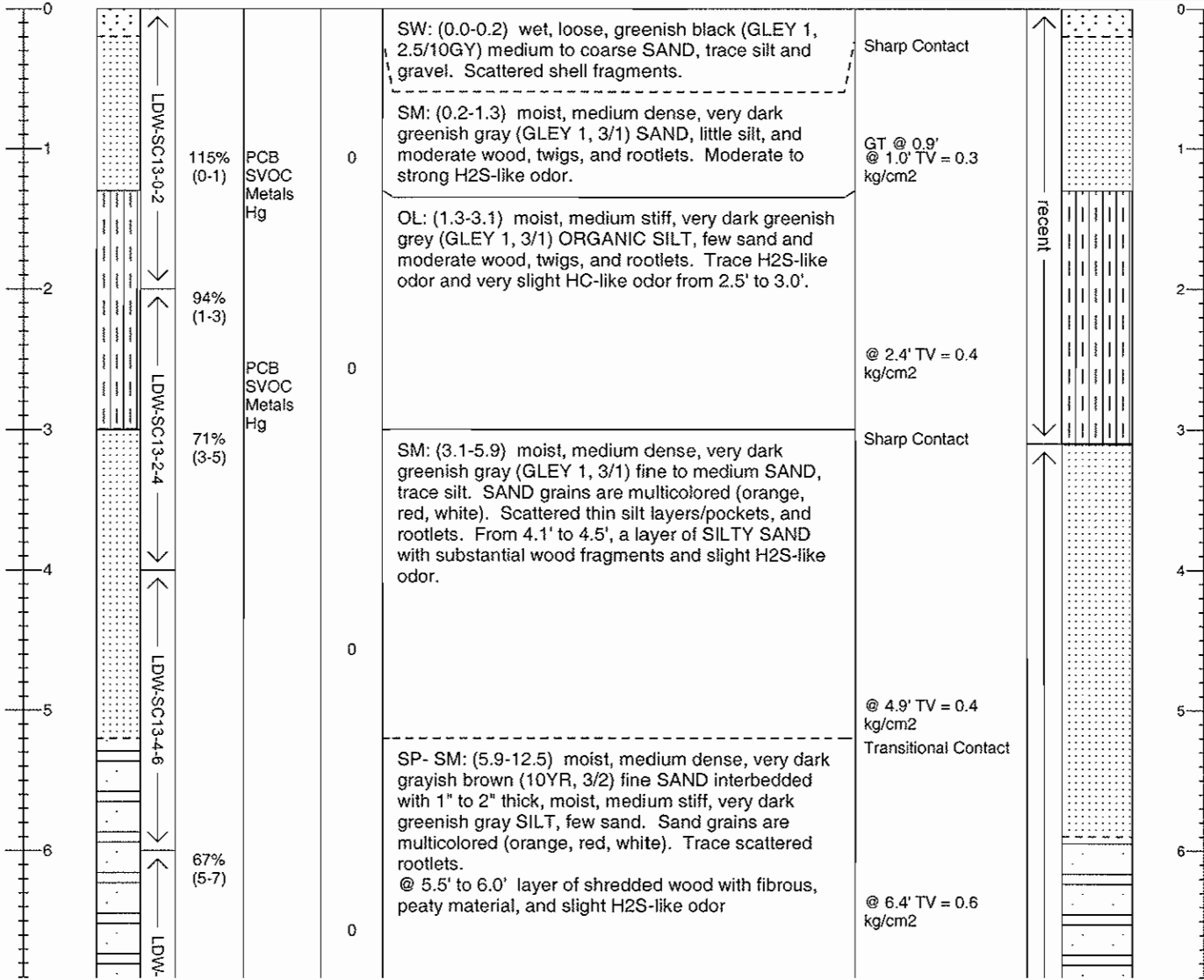
# Sediment Core Log

## LDW-SC-13 (R1)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>4.8</b>	Penetration Depth (ft): <b>12.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>16.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-10.7</b>	Recovery in ft (%): <b>9.9 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>207096</b> E./LONG: <b>1267585</b>	Process Date: <b>2/13/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Fax: (206) 624-2839

**Remarks:** Drive Notes: easy (5.2'), moderate (10.4'), hard (12.5'), penetration goal reached. One drive attempt made at station.  
Core catcher was intact.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**9.9 / 12.5 = 79 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



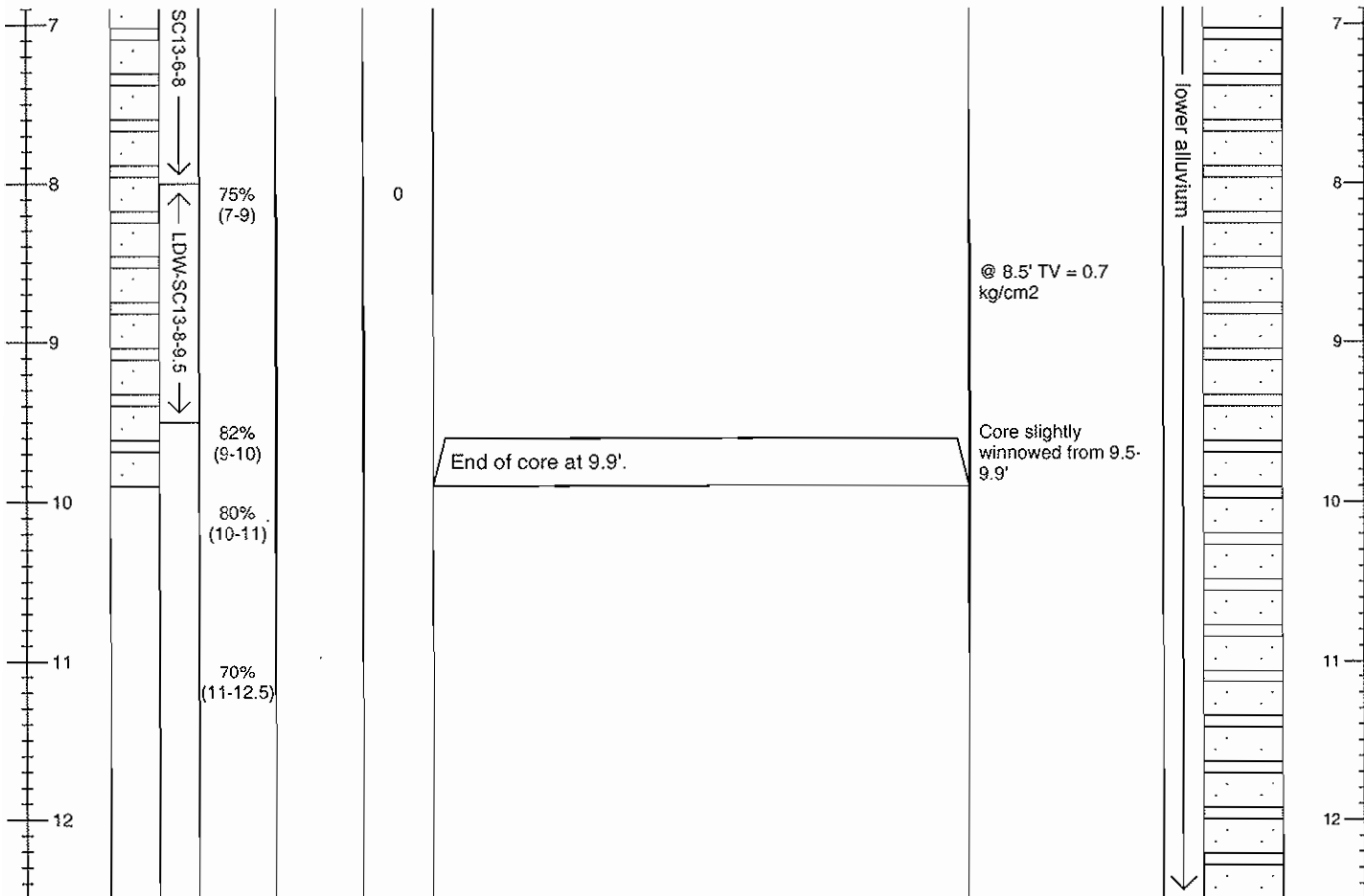
# Sediment Core Log

## LDW-SC-13 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>4.8</b>	Penetration Depth (ft): <b>12.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>16.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-10.7</b>	Recovery in ft (%): <b>9.9 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>207096</b> E./LONG: <b>1267585</b>	Process Date: <b>2/13/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher, A. Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: easy (5.2'), moderate (10.4'), hard (12.5'), penetration goal reached. One drive attempt made at station. Core catcher was intact.	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>9.9 / 12.5 = 79 %</b>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



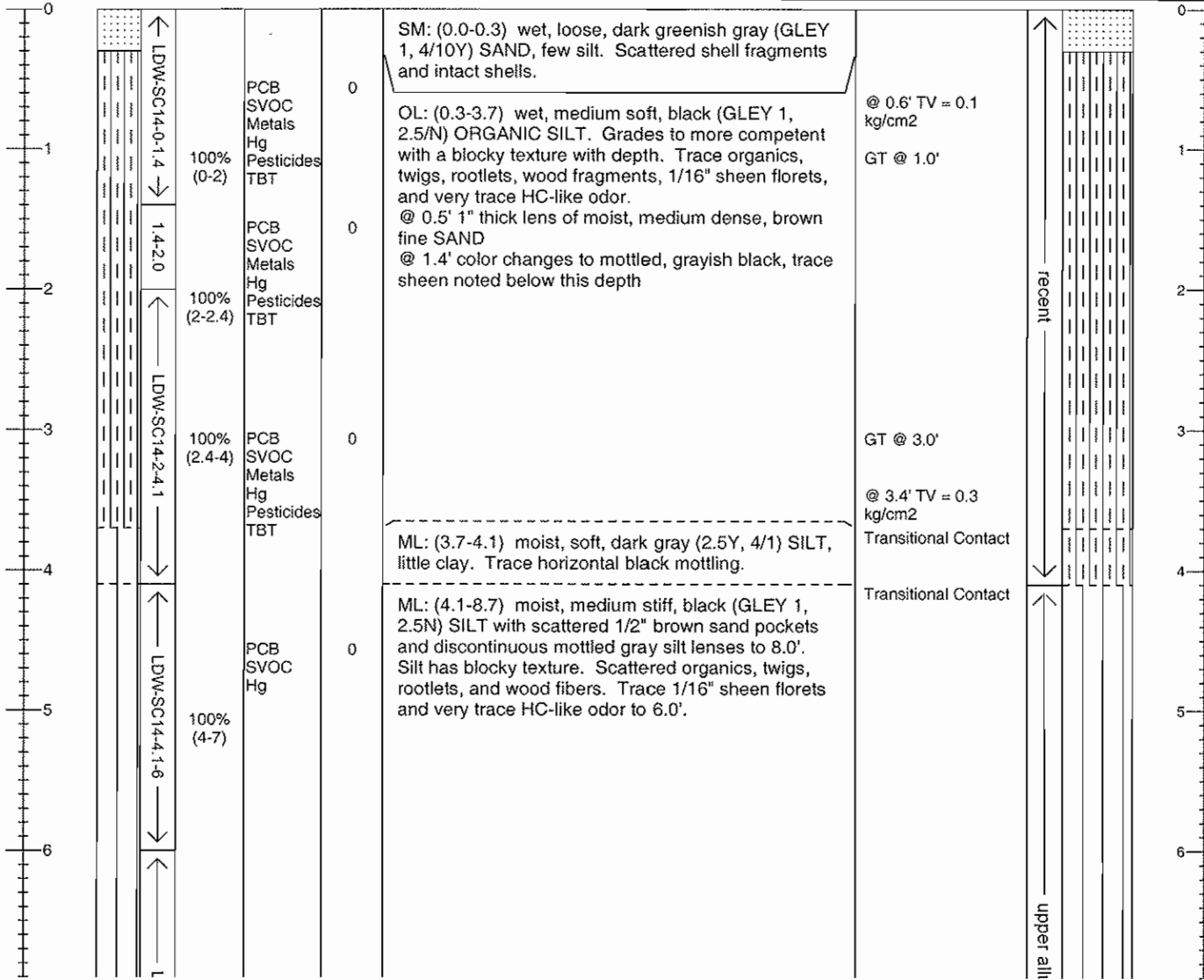
# Sediment Core Log

## LDW-SC-14 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.7</b>	Penetration Depth (ft): <b>12.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>46.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-36.8</b>	Recovery in ft (%): <b>11.6 (92)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>207055</b> E./LONG: <b>1267397</b>	Process Date: <b>2/13/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher</b>

Recovered Depth (ft)	Recov Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (1.8'), easy (9.0'), moderate (12.7'), penetration goal reached. One drive attempt made at station.  
Core catcher was intact.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**11.6/12.6 = 92 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



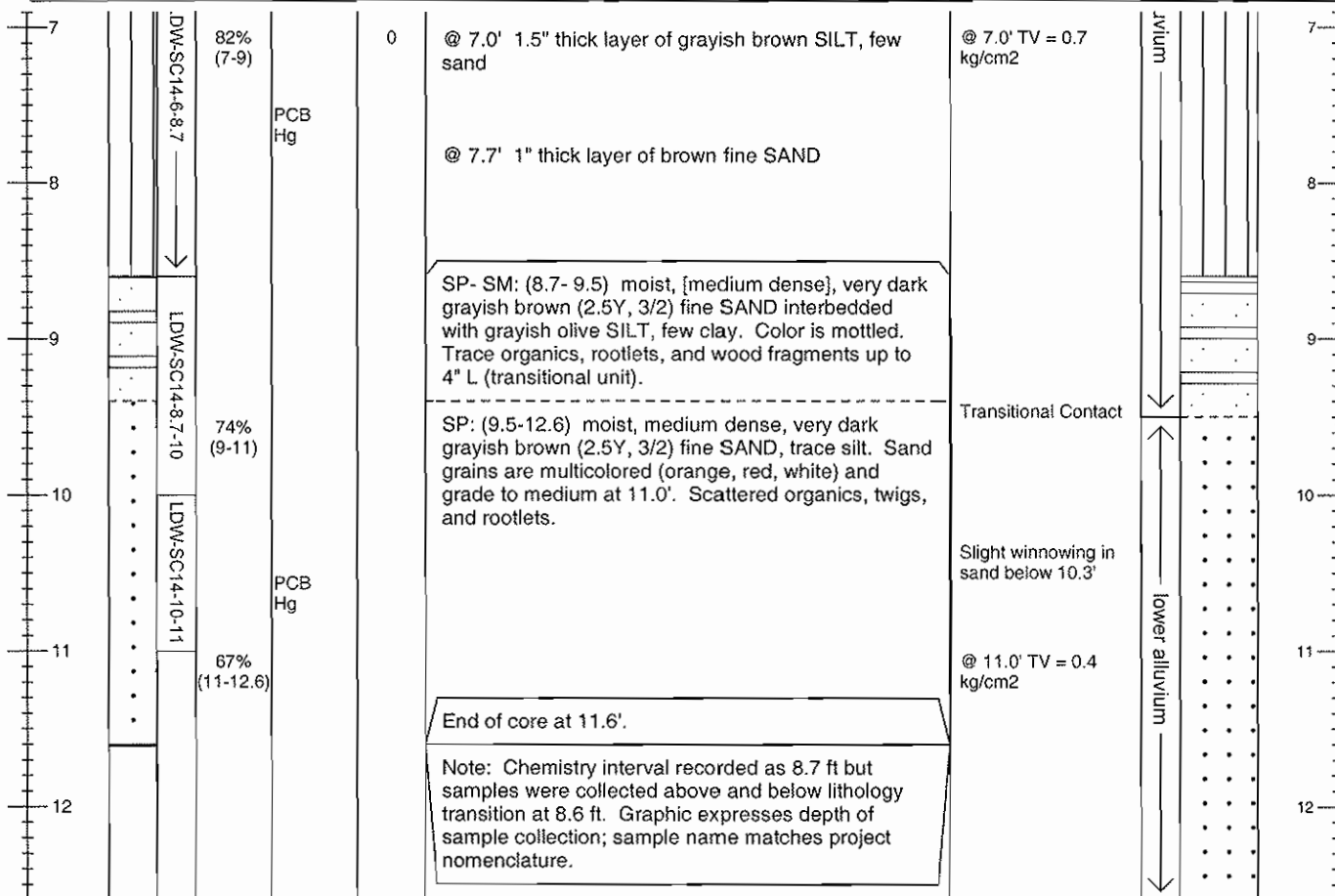
# Sediment Core Log

## LDW-SC-14 (R1)

Sheet 2 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.7</b>	Penetration Depth (ft): <b>12.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>46.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-36.8</b>	Recovery in ft (%): <b>11.6 (92)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>207055</b> E./LONG: <b>1267397</b>	Process Date: <b>2/13/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (1.8')</u> , <u>easy (9.0')</u> , <u>moderate (12.7')</u> , <u>penetration goal reached. One drive attempt made at station.</u> <u>Core catcher was intact.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $11.6/12.6 = 92 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



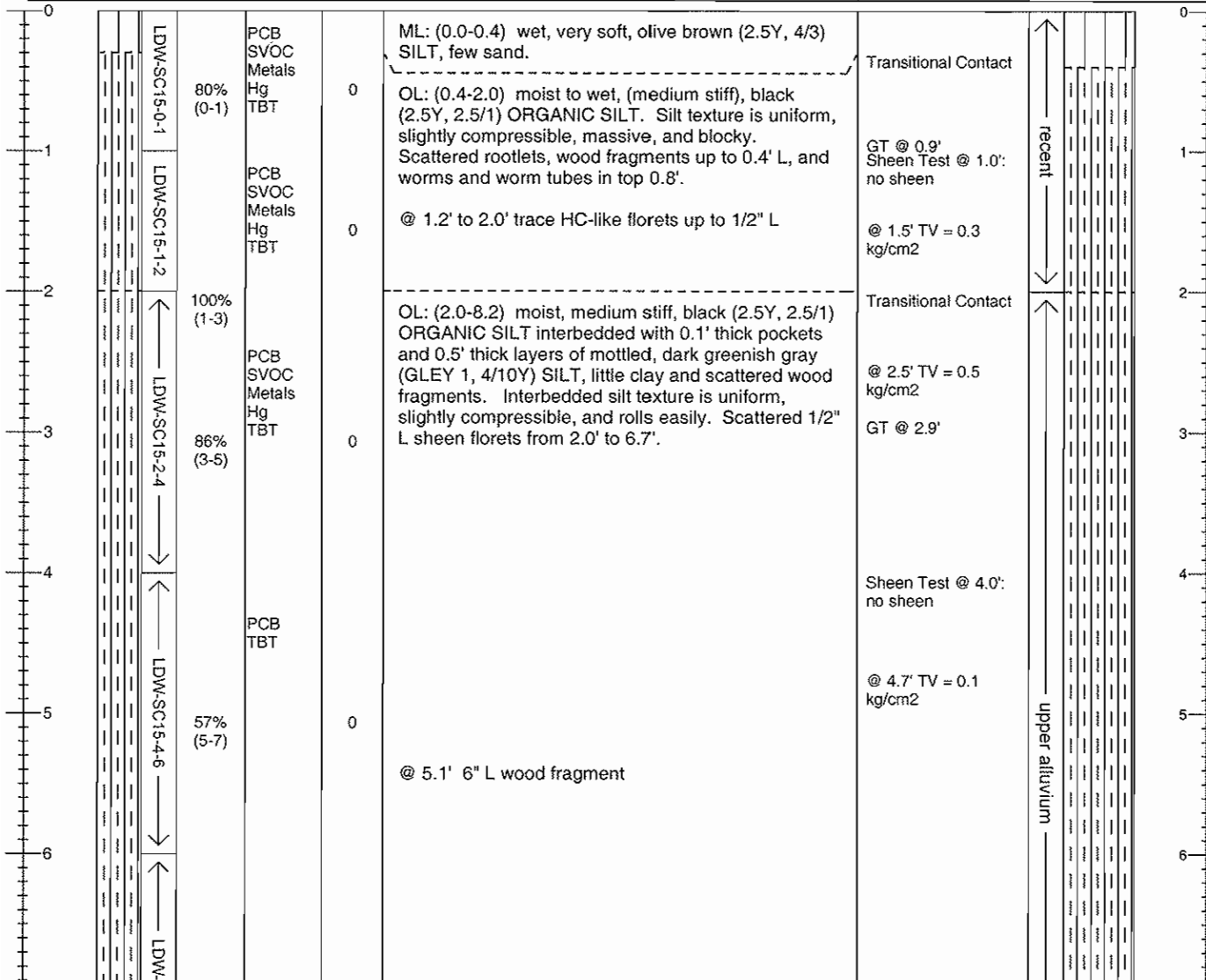
# Sediment Core Log

## LDW-SC-15 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.6</b>	Penetration Depth (ft): <b>12.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>37.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-27.9</b>	Recovery in ft (%): <b>10.1 (80)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206821</b> E./LONG: <b>1267821</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (1.0'), moderate (7.0'), hard (12.7'), refusal (12.7')</u> . One drive attempt made at station.  <u>Core catcher was intact but slightly winnowed.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length:  $10.1 / 12.7 = 80 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



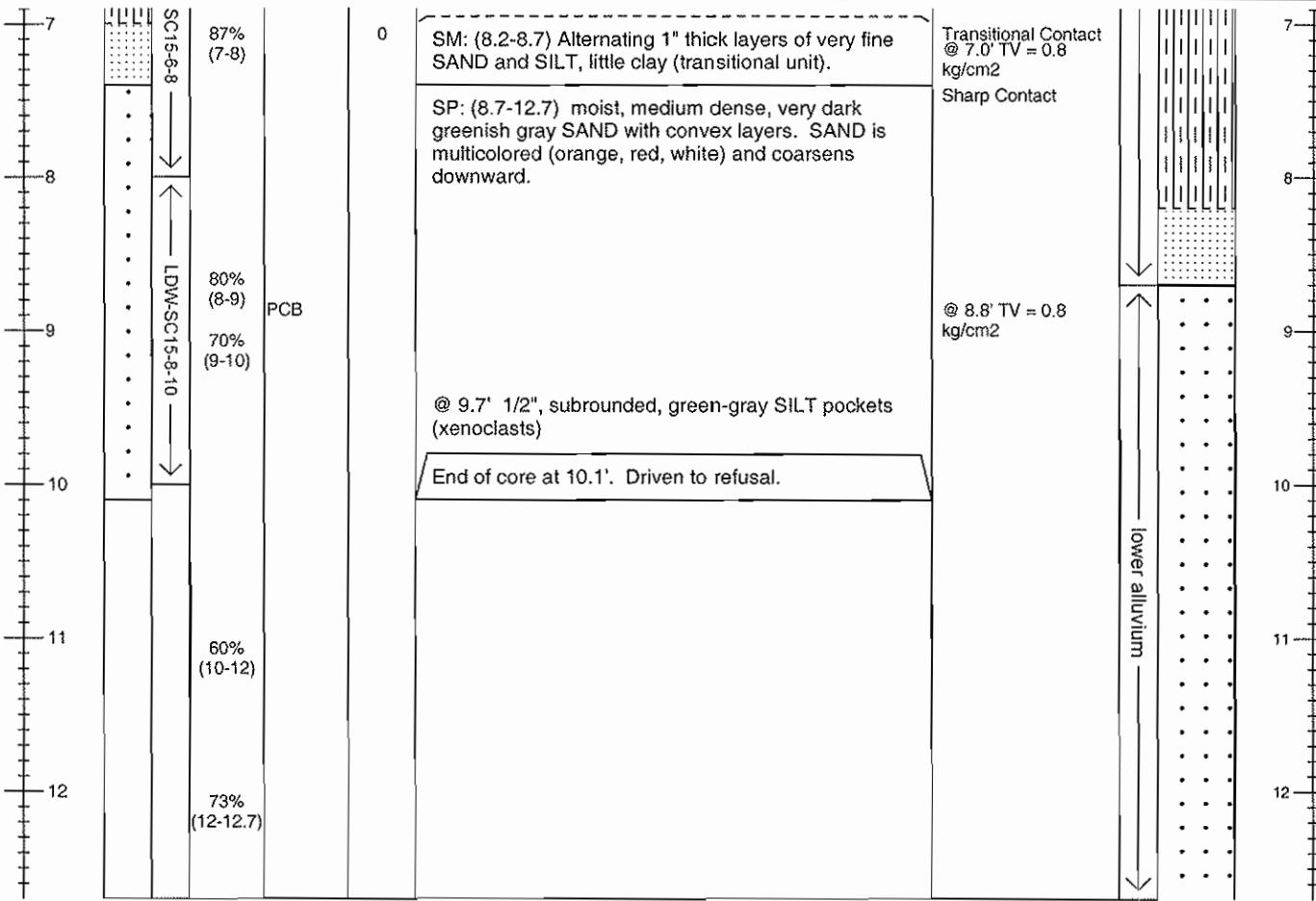
# Sediment Core Log

## LDW-SC-15 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.6</b>	Penetration Depth (ft): <b>12.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>37.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-27.9</b>	Recovery in ft (%): <b>10.1 (80)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206821</b> E./LONG: <b>1267821</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (1.0')</u> , <u>moderate (7.0')</u> , <u>hard (12.7')</u> , <u>refusal (12.7')</u> . One drive attempt made at station. <b>Core catcher was intact but slightly winnowed.</b>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $10.1/12.7 = 80 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



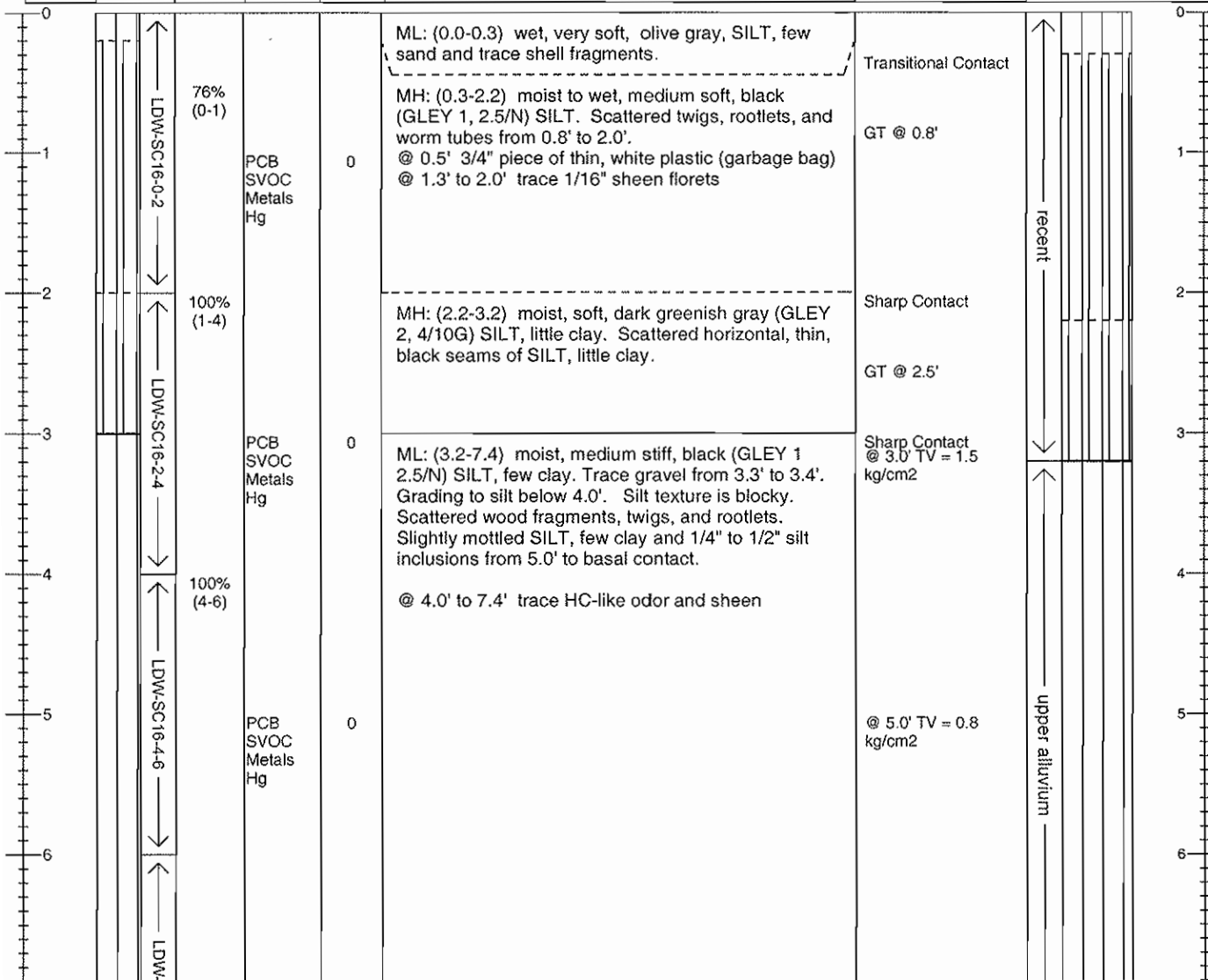
# Sediment Core Log

## LDW-SC-16 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.3</b>	Penetration Depth (ft): <b>13.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>32.3</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-24.6</b>	Recovery in ft (%): <b>10.8 (80)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206669</b> E./LONG: <b>1267959</b>	Process Date: <b>2/14/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher, L. McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc.          1011 SW Klickitat Way, Suite 207          Seattle, WA 98134-1162          Phone: (206) 624-9349          Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (3.8'), easy (8.1'), easy to moderate, (13.5'), penetration goal reached. One drive attempt made at station. Core catcher was intact and 100% full with a silty plug.</u></p>	<p style="text-align: center;"><b>Calculated Recovery</b></p> <p style="text-align: center;">Sample Length/Penetration Length:  <b>10.8/13.5 = 80 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.





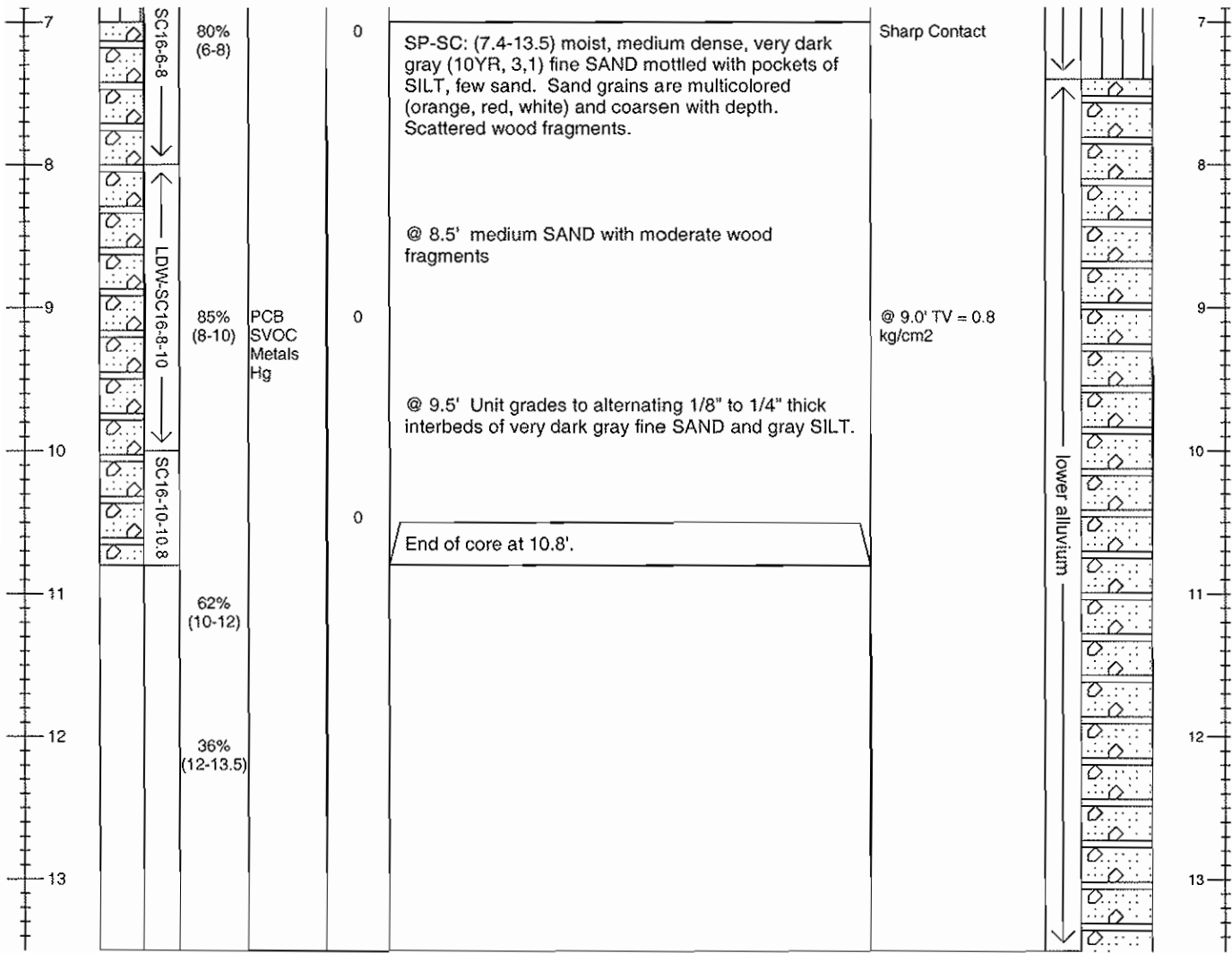
# Sediment Core Log

## LDW-SC-16 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.3</b>	Penetration Depth (ft): <b>13.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>32.3</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-24.6</b>	Recovery in ft (%): <b>10.8 (80)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206669</b> E./LONG: <b>1267959</b>	Process Date: <b>2/14/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher, L. McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> <u>Drive Notes: freefall (3.8'), easy (8.1'), easy to moderate, (13.5'), penetration goal reached. One drive attempt made at station. Core catcher was intact and 100% full with a silty plug.</u></p>	<p style="text-align: center;"><b>Calculated Recovery</b></p> <p>Sample Length/Penetration Length: <b>10.8/13.5 = 80 %</b></p>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*

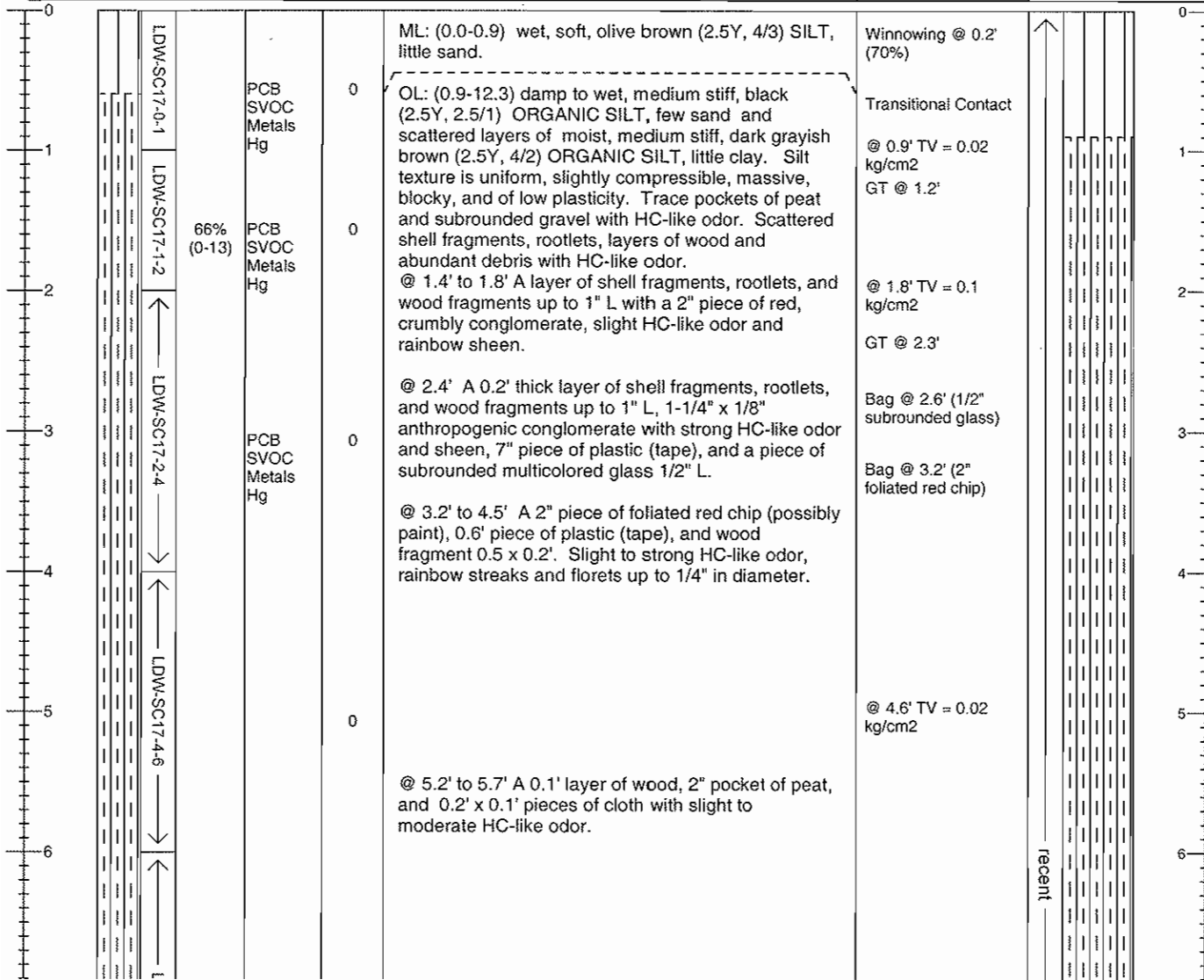


# Sediment Core Log

## LDW-SC-17 (R5)

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>20.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/23/06</b>	Mudline Elevation (ft): <b>-15.1</b>	Recovery in ft (%): <b>8.6 (66)</b>
Contractor: <b>MSS</b>	N./LAT: <b>47 33.3761</b> E./LONG: <b>122 20.3911</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round AI</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (7.0'), moderate (10.0'), easy to moderate (14.0'), penetration goal reached. Five drive attempts made at station. Station re-occupied with vibracore. Rainbow sheen and strong HC-like odor on sidewalls from 2.0' to 6.0'. ua = upper alluvium

**Calculated Recovery**  
Sample Length/Penetration Length:  
**8.6 / 13.0 = 66 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



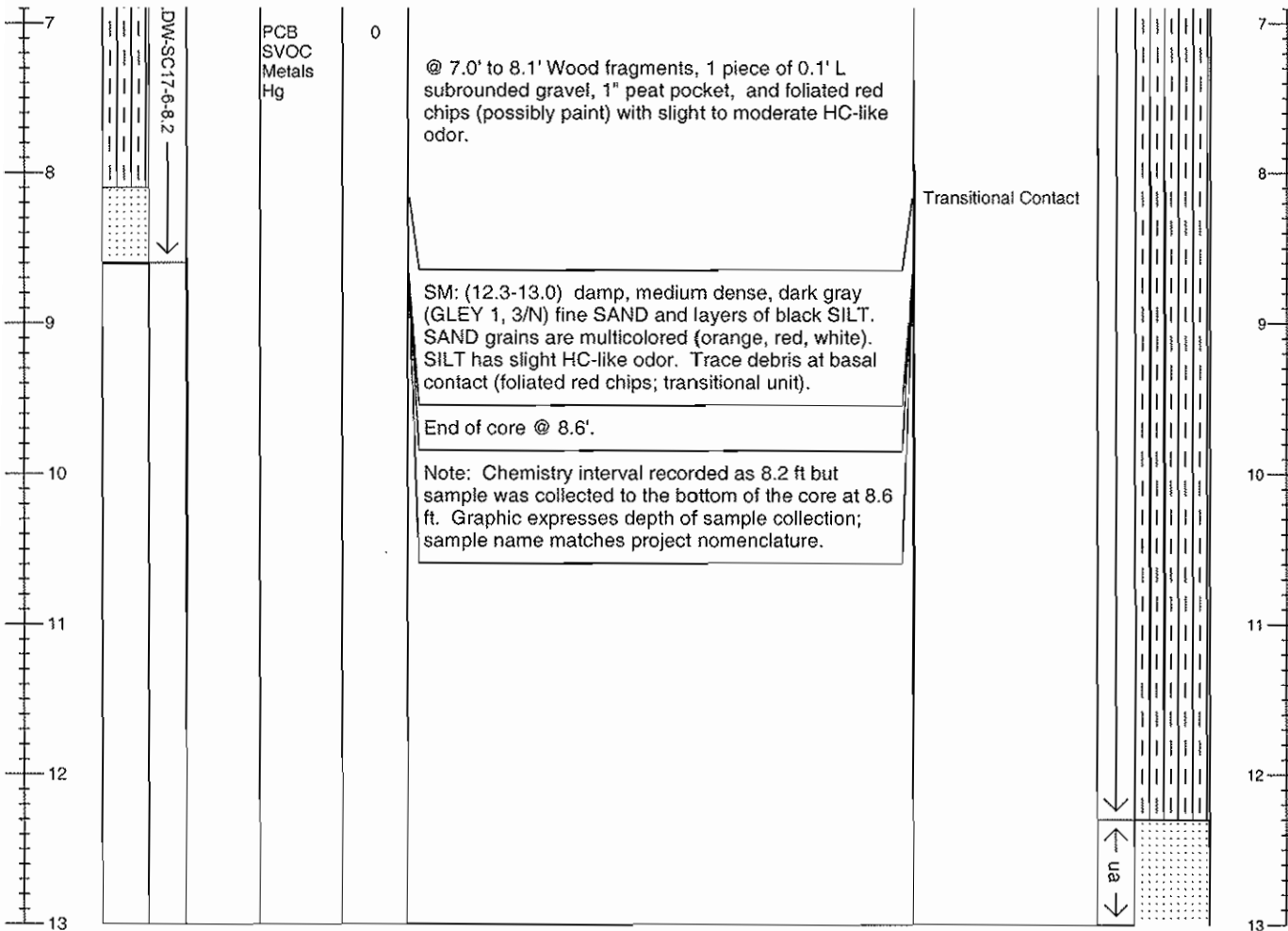
# Sediment Core Log

## LDW-SC-17 (R5)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>20.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/23/06</b>	Mudline Elevation (ft): <b>-15.1</b>	Recovery in ft (%): <b>8.6 (66)</b>
Contractor: <b>MSS</b>	N./LAT: <b>47 33.3761</b> E./LONG: <b>122 20.3911</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round AI</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (7.0'), moderate (10.0'), easy to moderate (14.0'), penetration goal reached. Five drive attempts made at station. Station re-occupied with vibracore. Rainbow sheen and strong HC-like odor on sidewalls from 2.0' to 6.0'. ua = upper alluvium

**Calculated Recovery**  
Sample Length/Penetration Length:  
8.6 / 13.0 = 66 %

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



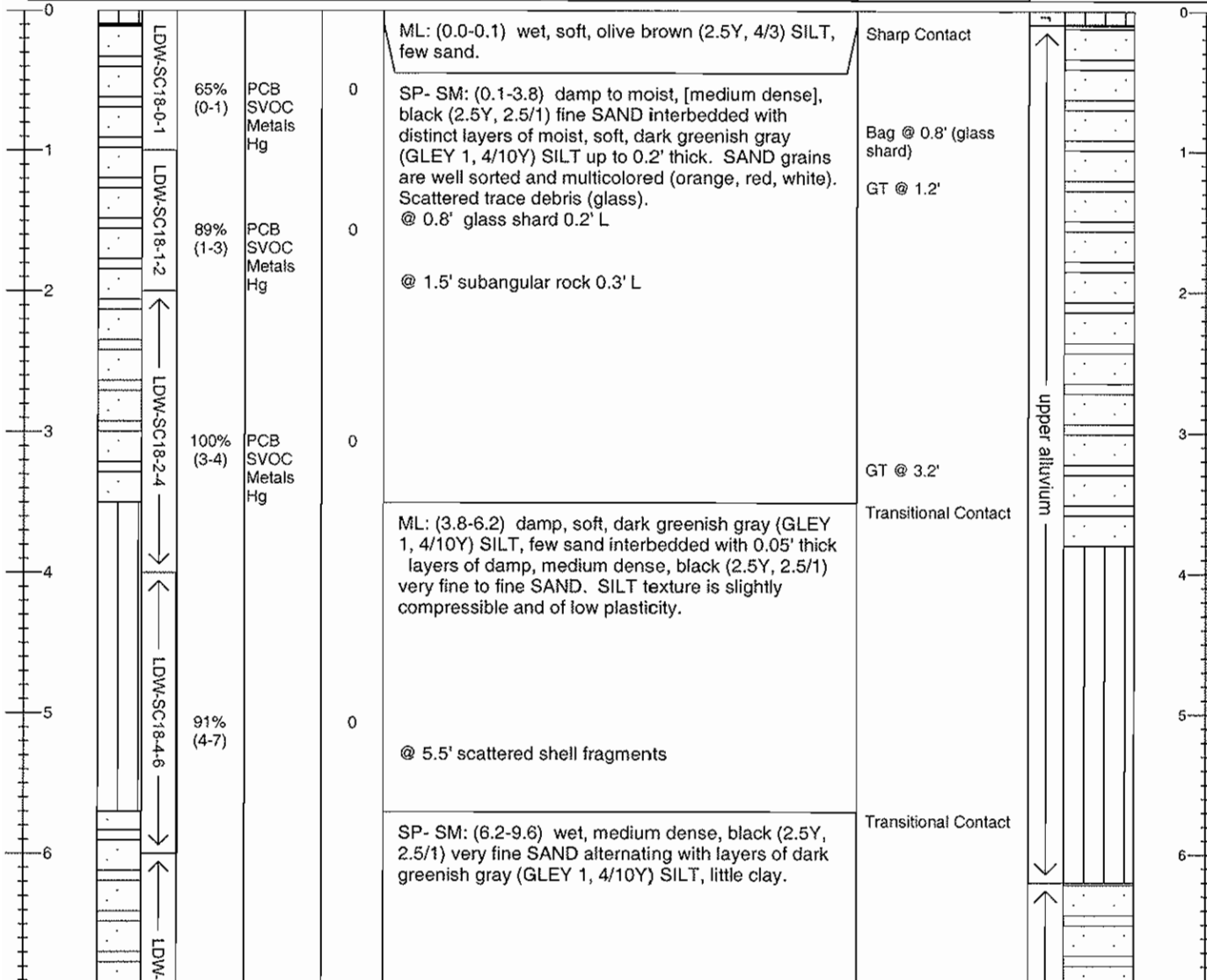
# Sediment Core Log

## LDW-SC-18 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>4.6</b>	Penetration Depth (ft): <b>11.8</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>27.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-19.4</b>	Recovery in ft (%): <b>10.7 (91)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206336</b> E./LONG: <b>1267929</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.8'), moderate (9.8'), moderate to hard (10.8'), hard (11.8'), refusal (11.8'). One drive attempt made at station. Core catcher was intact and 100% full. No torvane measurements recorded. r = recent

**Calculated Recovery**  
Sample Length/Penetration Length:  
**10.7/ 11.8 = 91 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



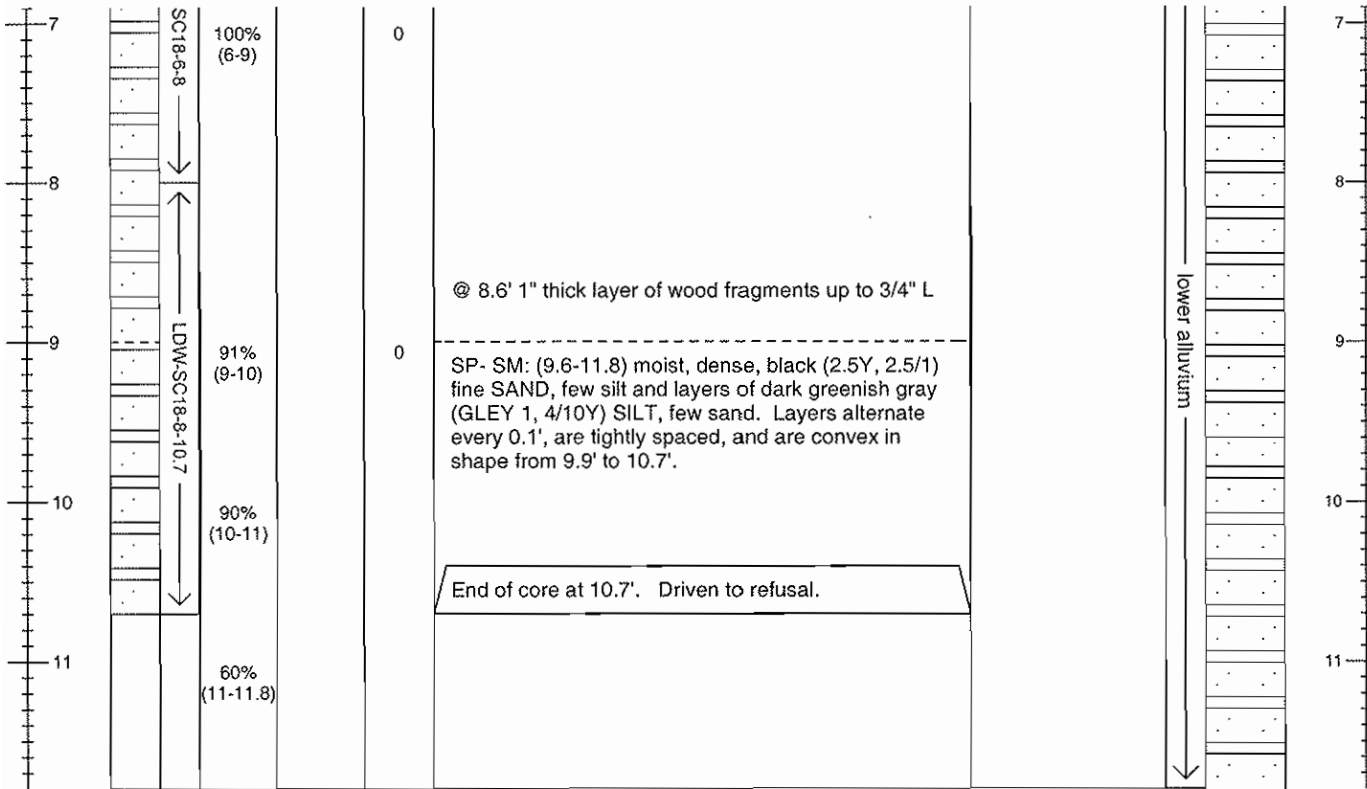
# Sediment Core Log

## LDW-SC-18 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>4.6</b>	Penetration Depth (ft): <b>11.8</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>27.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-19.4</b>	Recovery in ft (%): <b>10.7 (91)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206336</b> E./LONG: <b>1267929</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (0.8'), moderate (9.8'), moderate to hard (10.8'), hard (11.8'), refusal (11.8'). One drive attempt made at station. Core catcher was intact and 100% full. No torvane measurements recorded. r = recent	<b>Calculated Recovery</b> Sample Length/Penetration Length: $10.7/11.8 = 91 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



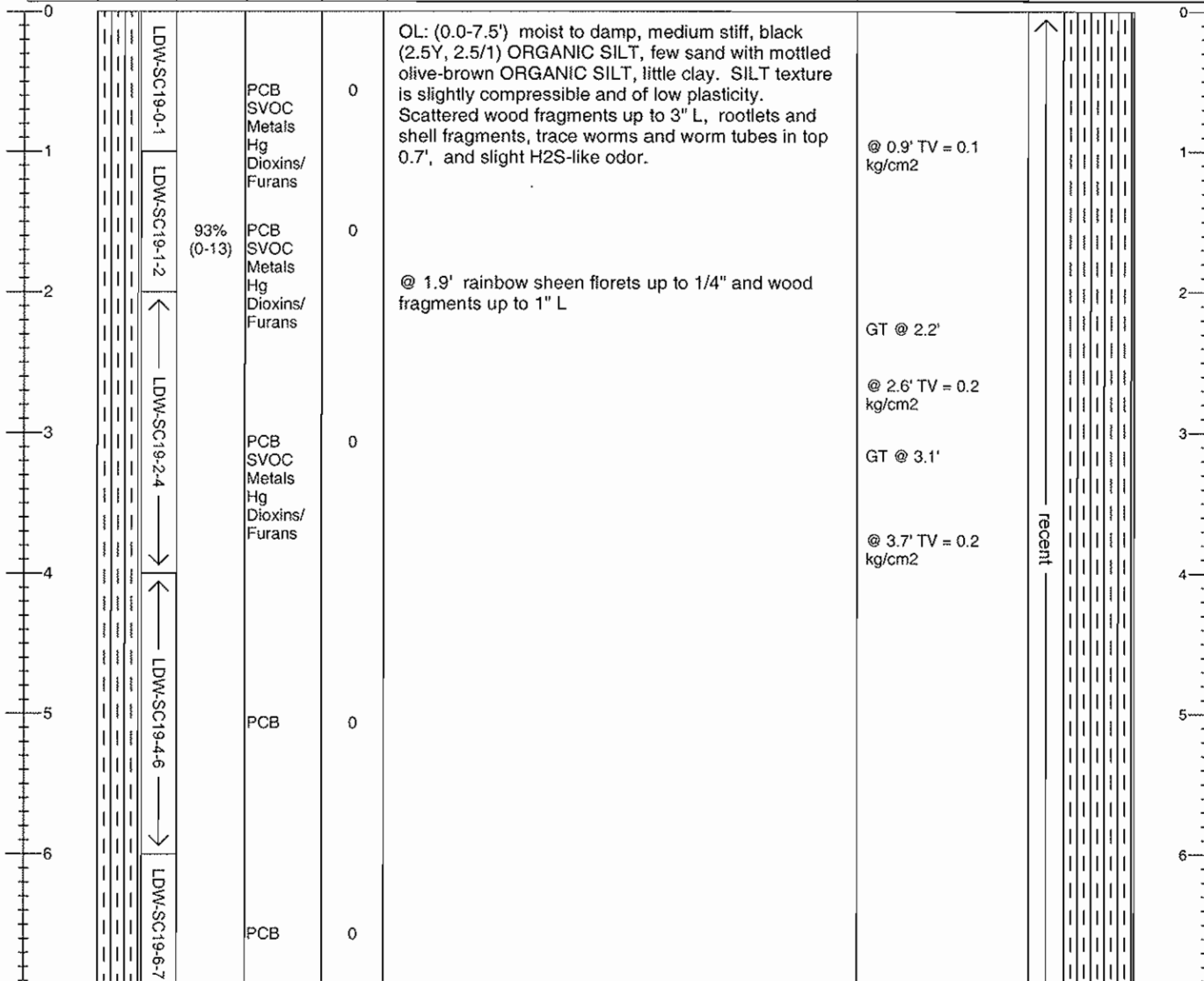
# Sediment Core Log

## LDW-SC-19 (R5)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>34.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/24/06</b>	Mudline Elevation (ft): <b>-25.3</b>	Recovery in ft (%): <b>11.9 (92)</b>
Contractor: <b>MSS</b>	N./LAT: <b>47 33.3172</b> E./LONG: <b>122 20.7486</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round Alum</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (6.0'), moderate (6.5'), easy (13.0'), penetration goal reached. Five drive attempts made at station.</u> <u>Station re-occupied with vibracore. Core catcher was intact intact but empty. Rainbow sheen on sidewalls from 0.8' to 7.0'.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>11.9/ 13.0 = 92 %</b>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*

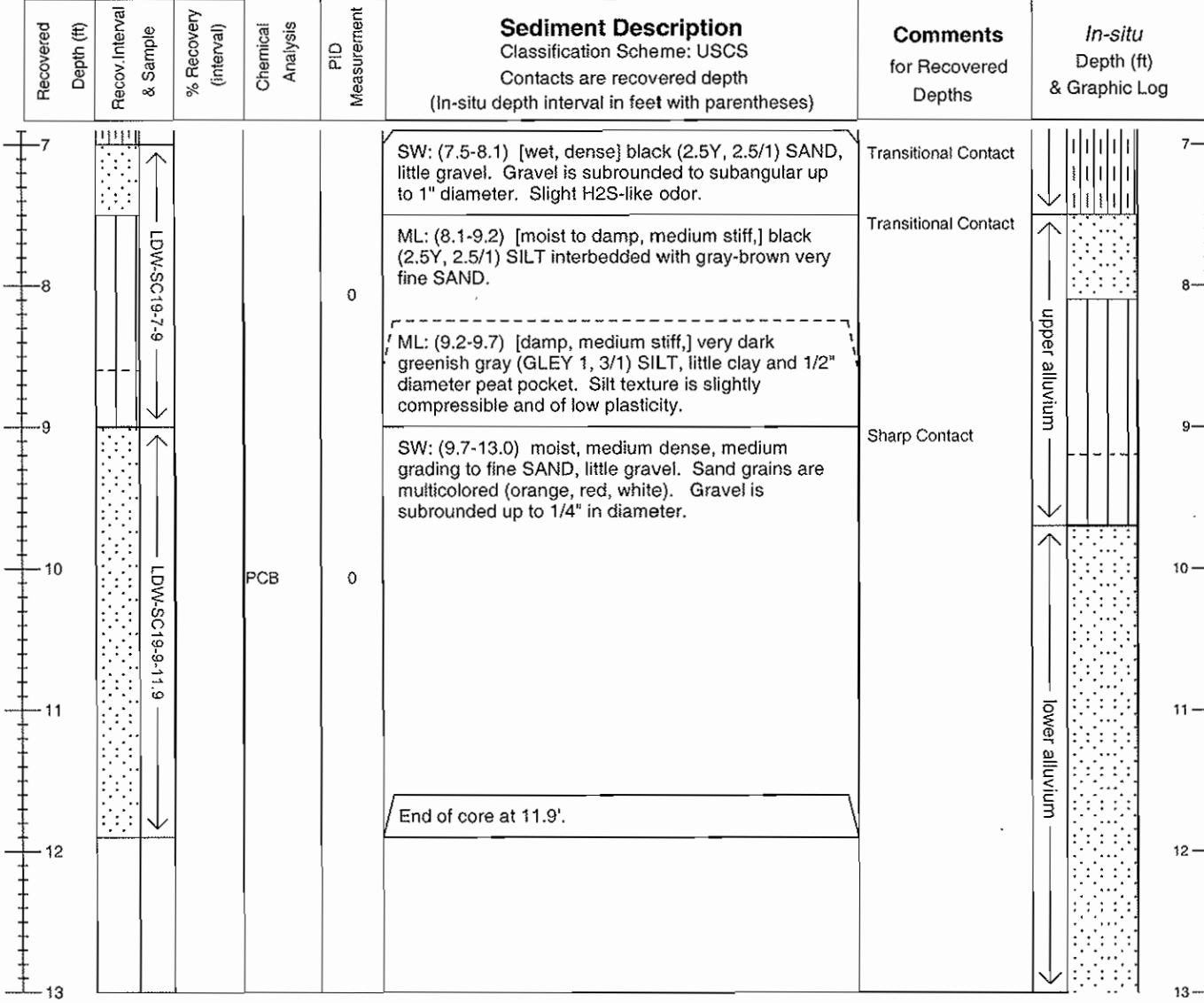


# Sediment Core Log

## LDW-SC-19 (R5)

Sheet 2 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>POR55-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>34.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/24/06</b>	Mudline Elevation (ft): <b>-25.3</b>	Recovery in ft (%): <b>11.9 (92)</b>
Contractor: <b>MSS</b>	N./LAT: <b>47 33.3172</b> E./LONG: <b>122 20.7486</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round Alum</b>	Logged By: <b>L.McKee, C.Brackett</b>



The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (6.0'), moderate (6.5'), easy (13.0'), penetration goal reached. Five drive attempts made at station.</u> <u>Station re-occupied with vibracore. Core catcher was intact</u> <u>intact but empty. Rainbow sheen on sidewalls from 0.8' to 7.0'.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $11.9 / 13.0 = 92 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



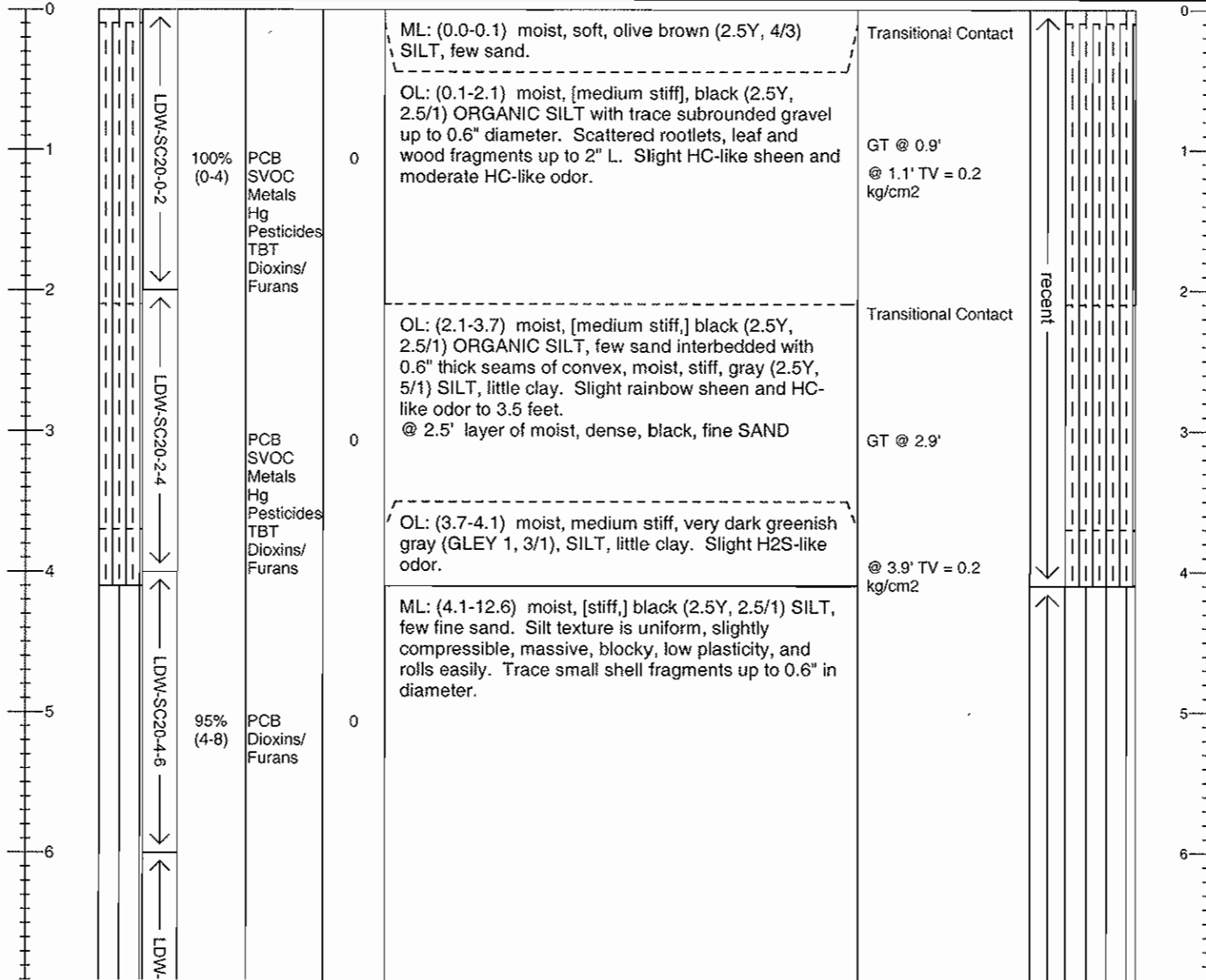
# Sediment Core Log

## LDW-SC-20 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.4</b>	Penetration Depth (ft): <b>12.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>43.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/15/06</b>	Mudline Elevation (ft): <b>-33.9</b>	Recovery in ft (%): <b>10.0 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206177</b> E./LONG: <b>1267735</b>	Process Date: <b>2/15/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.2'), moderate (12.6'), penetration goal reached. One drive attempt made at station.  
Core catcher was 50% full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**10.0/ 12.6 = 79 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.





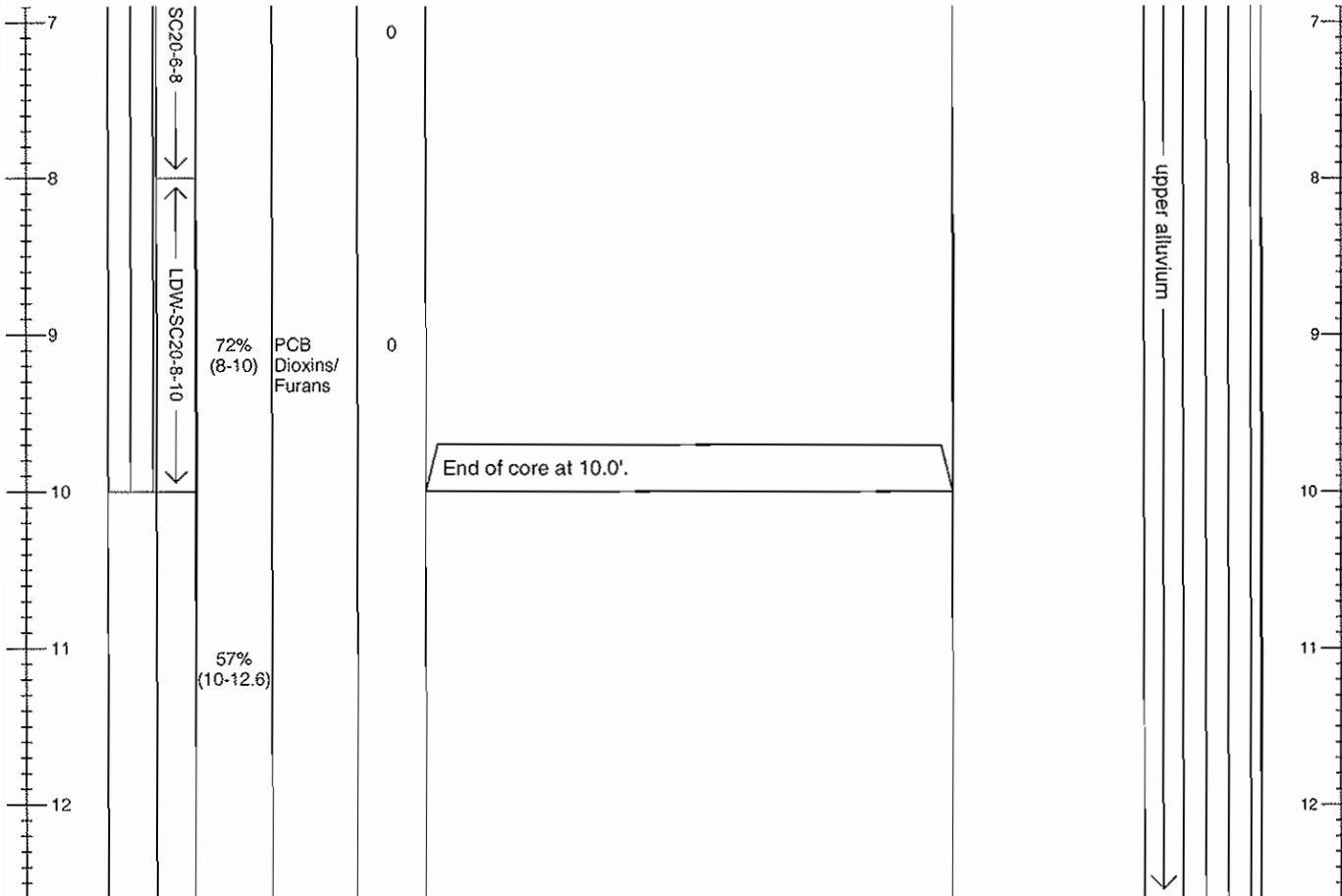
# Sediment Core Log

## LDW-SC-20 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.4</b>	Penetration Depth (ft): <b>12.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>43.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/15/06</b>	Mudline Elevation (ft): <b>-33.9</b>	Recovery in ft (%): <b>10.0 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206177</b> E./LONG: <b>1267735</b>	Process Date: <b>2/15/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (0.2'), moderate (12.6'), penetration goal reached. One drive attempt made at station.</u> <u>Core catcher was 50% full.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $10.0 / 12.6 = 79 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



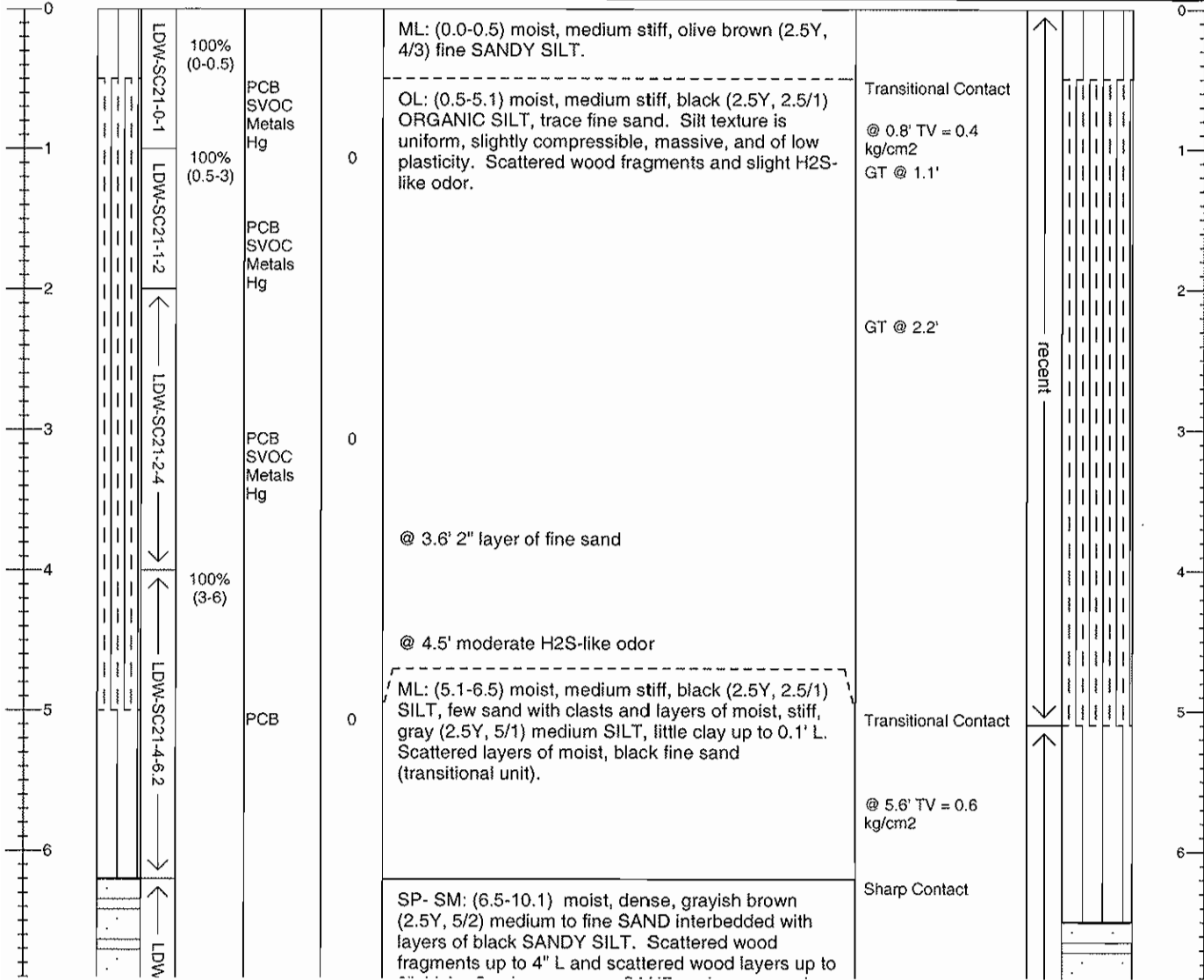
# Sediment Core Log

## LDW-SC-21 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>5.9</b>	Penetration Depth (ft): <b>12.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>34.1</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/14/06</b>	Mudline Elevation (ft): <b>-28.5</b>	Recovery in ft (%): <b>11.3 (89)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>206167</b> E./LONG: <b>1267486</b>	Process Date: <b>2/15/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>A. Fitzpatrick, L.McKee</b>

Recovered Depth (ft)	Recov Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freedfall (0.5'), easy to moderate (8.0'), moderate, (10.0'), hard (12.7'), penetration goal reached. One drive attempt made at station. Core catcher was empty with 0.2' lost from bottom.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**11.3/12.7 = 89 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.

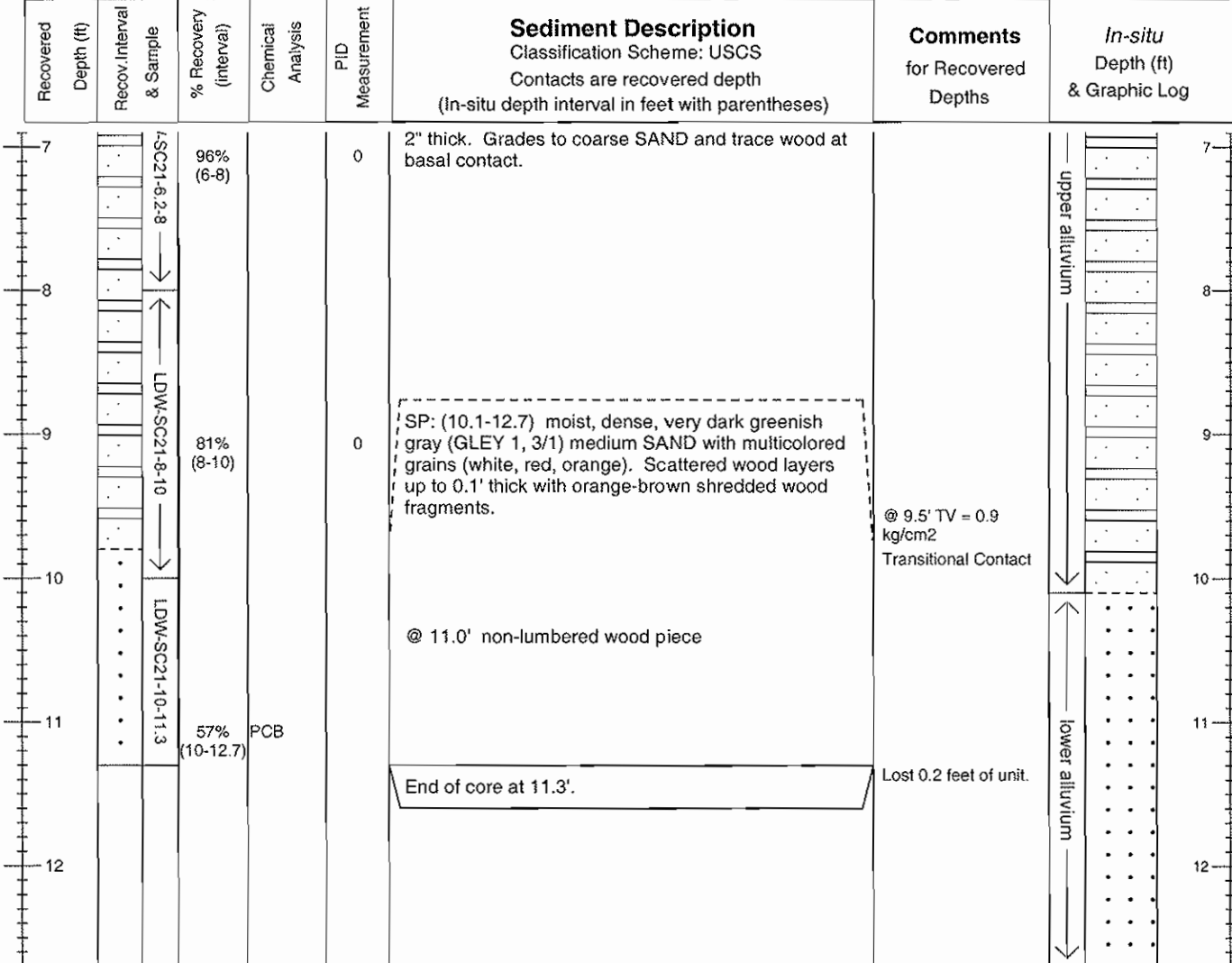


# Sediment Core Log

## LDW-SC-21 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>5.9</b>	Penetration Depth (ft): <b>12.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>34.1</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/14/06</b>	Mudline Elevation (ft): <b>-28.5</b>	Recovery in ft (%): <b>11.3 (89)</b>
Contractor: <b>MCS Environmental, inc.</b>	N./LAT: <b>206167</b> E./LONG: <b>1267486</b>	Process Date: <b>2/15/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>A. Fitzpatrick, L.McKee</b>



The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (0.5'), easy to moderate (8.0'), moderate, Calculated Recovery (10.0'), hard (12.7'), penetration goal reached. One drive attempt Sample Length/Penetration Length: made at station. Core catcher was empty with 0.2' lost from bottom. <span style="float: right;">11.3/ 12.7 = 89 %</span>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



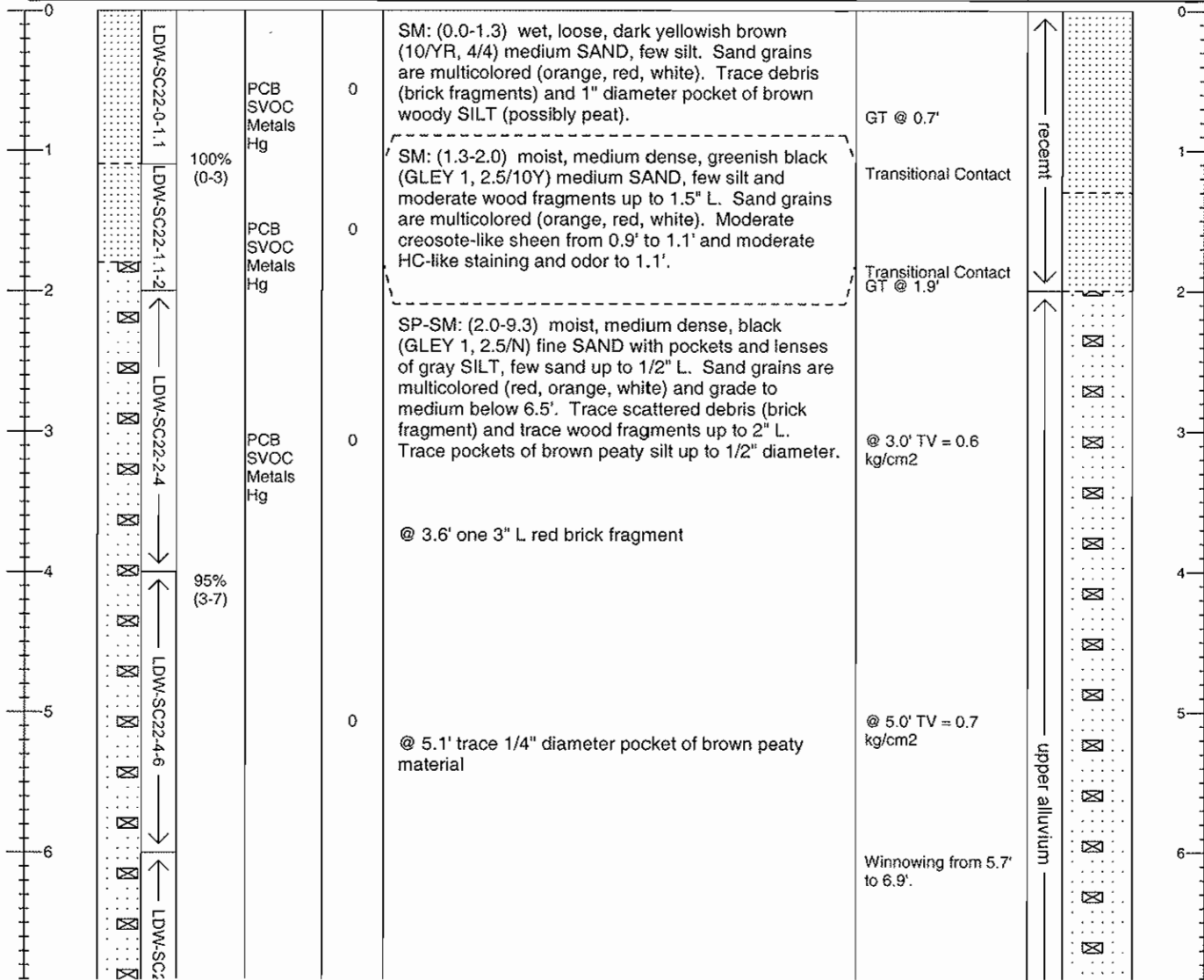
# Sediment Core Log

## LDW-SC-22 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.1</b>	Penetration Depth (ft): <b>9.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>12</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-3.4</b>	Recovery in ft (%): <b>7.7 (83)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>205908</b> E./LONG: <b>1268174</b>	Process Date: <b>2/14/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher, L. McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: no freefall, easy (7.0'), moderate (8.0'), hard (9.0'), refusal (9.3'). One drive attempt made at station.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**7.7 / 9.3 = 83 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



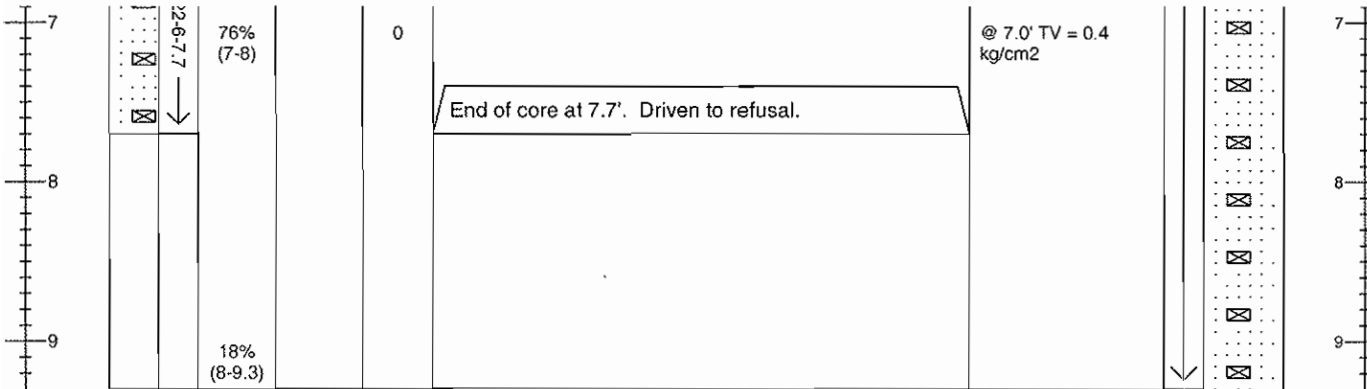
# Sediment Core Log

## LDW-SC-22 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.1</b>	Penetration Depth (ft): <b>9.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>12</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/13/06</b>	Mudline Elevation (ft): <b>-3.4</b>	Recovery in ft (%): <b>7.7 (83)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>205908</b> E./LONG: <b>1268174</b>	Process Date: <b>2/14/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher, L. McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

Remarks: Drive Notes: no freefall, easy (7.0'), moderate (8.0'), hard (9.0'), refusal (9.3'). One drive attempt made at station.

Calculated Recovery  
Sample Length/Penetration Length:  
**7.7 / 9.3 = 83 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



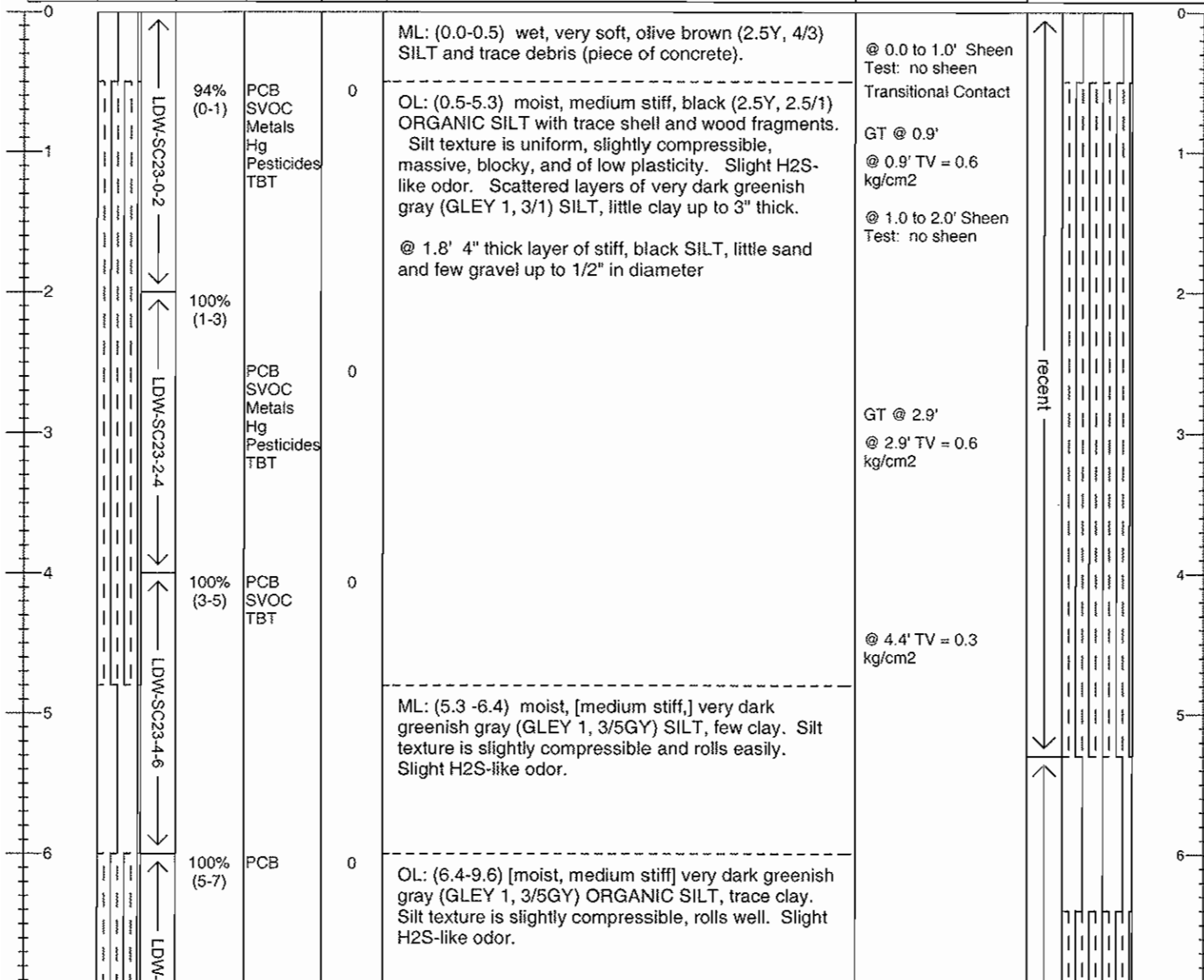
# Sediment Core Log

## LDW-SC-23 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>2.1</b>	Penetration Depth (ft): <b>12.4</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>23.2</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-18.7</b>	Recovery in ft (%): <b>10.7 (86)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>205418</b> E./LONG: <b>1268229</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (1.6'), easy (10.4'), moderate (12.4'),  
penetration goal reached. One drive attempt made at station.  
Torvane had restricted maneuverability due to freezing.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**10.7/ 12.4 = 86 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



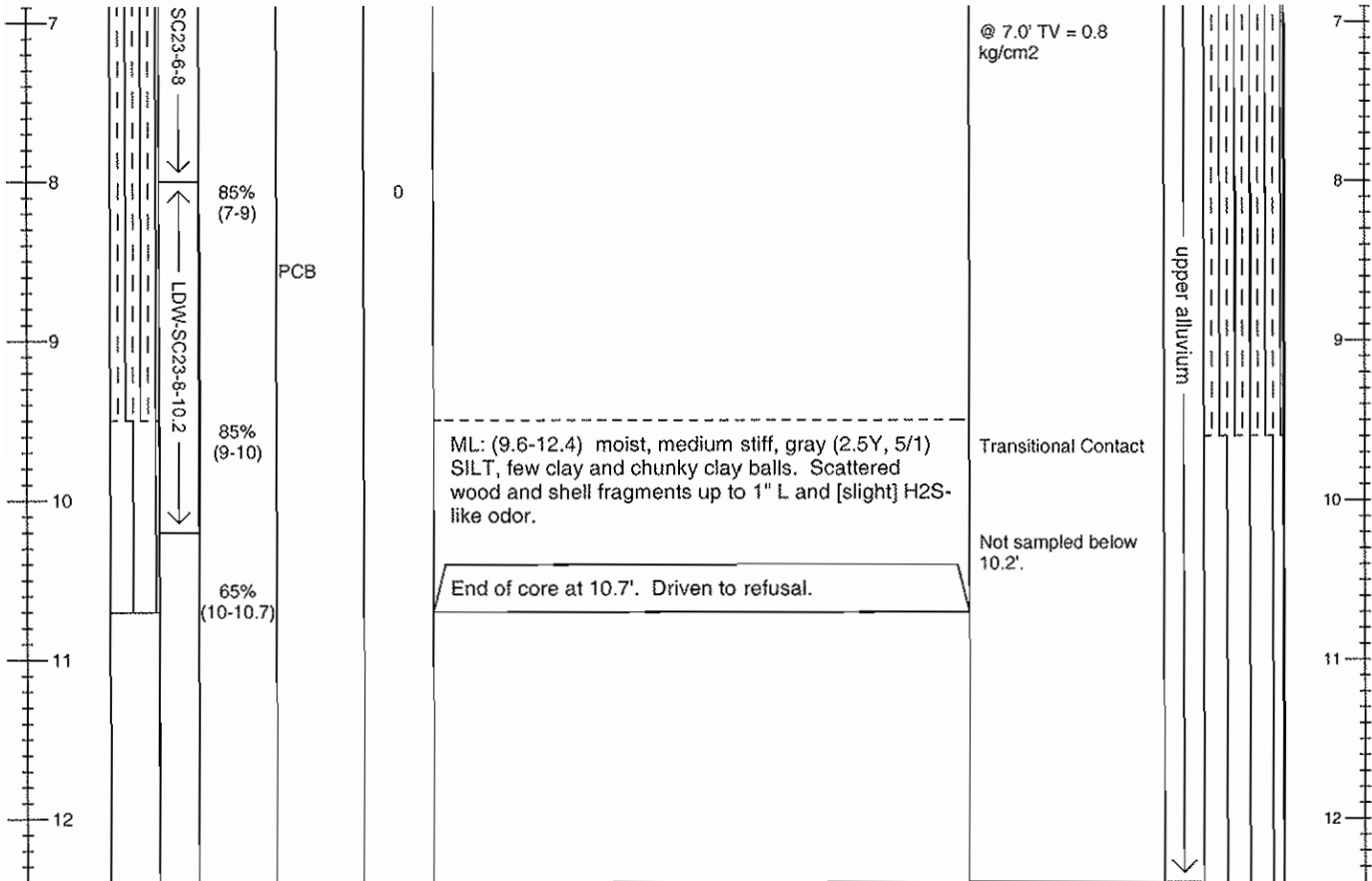
# Sediment Core Log

## LDW-SC-23 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>2.1</b>	Penetration Depth (ft): <b>12.4</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>23.2</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-18.7</b>	Recovery in ft (%): <b>10.7 (86)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>205418</b> E./LONG: <b>1268229</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> <u>Drive Notes: freefall (1.6'), easy (10.4'), moderate (12.4'), penetration goal reached. One drive attempt made at station.</u></p> <p><u>Torvane had restricted maneuverability due to freezing.</u></p>	<p><b>Calculated Recovery</b> Sample Length/Penetration Length: <b>10.7/ 12.4 = 86 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



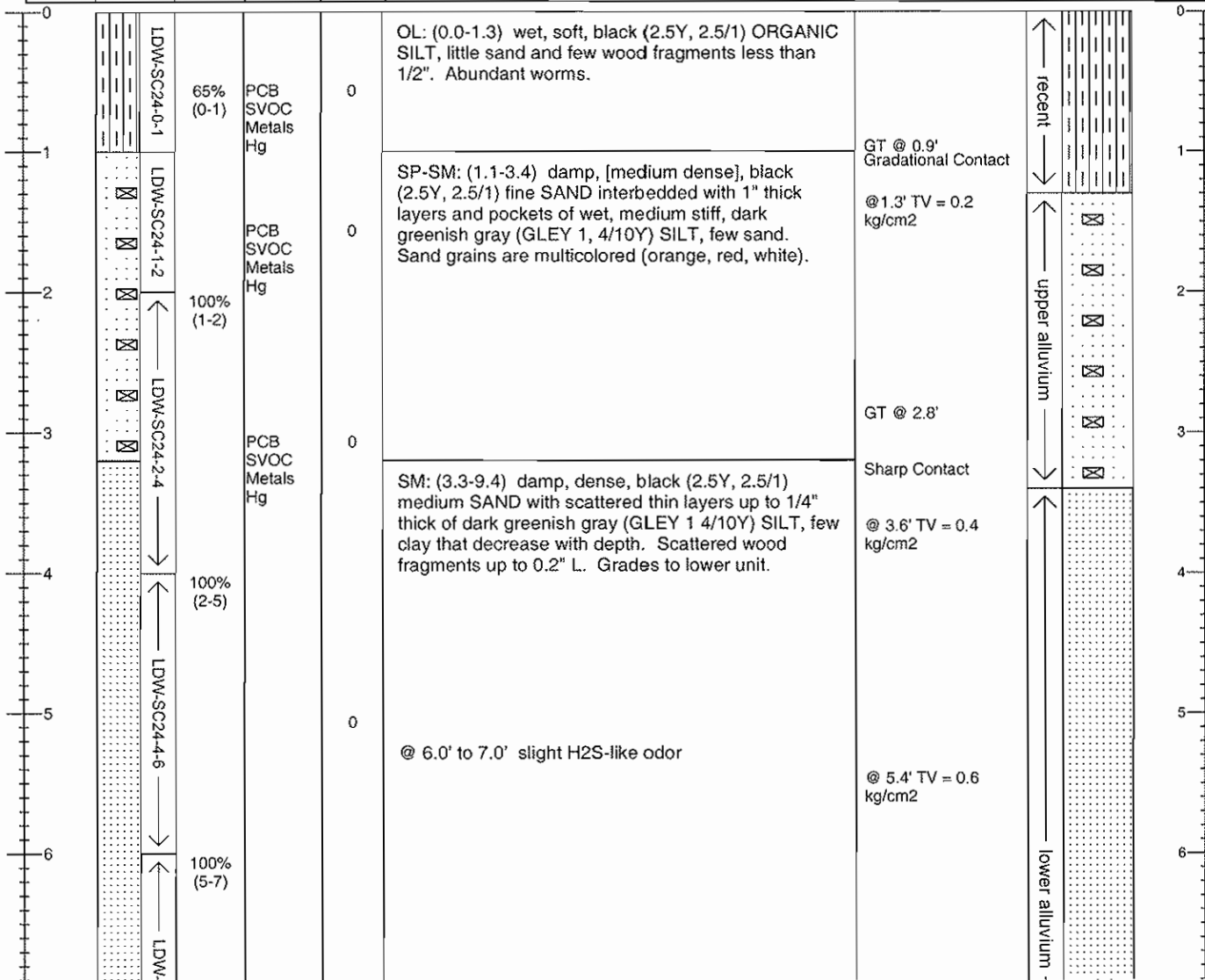
# Sediment Core Log

## LDW-SC-24 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.1</b>	Penetration Depth (ft): <b>12.2</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>26.3</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/17/06</b>	Mudline Elevation (ft): <b>-20.4</b>	Recovery in ft (%): <b>11.8 (97)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>205130</b> E./LONG: <b>1267860</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <b>freefall (1.0'), easy (7.0'), moderate (11.0'), hard (12.2'), penetration goal reached. One drive attempt made at station. Core catcher was 100% full.</b></p>	<p style="text-align: center;"><b>Calculated Recovery</b></p> <p>Sample Length/Penetration Length: <b>11.8/12.2 = 97 %</b></p>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*





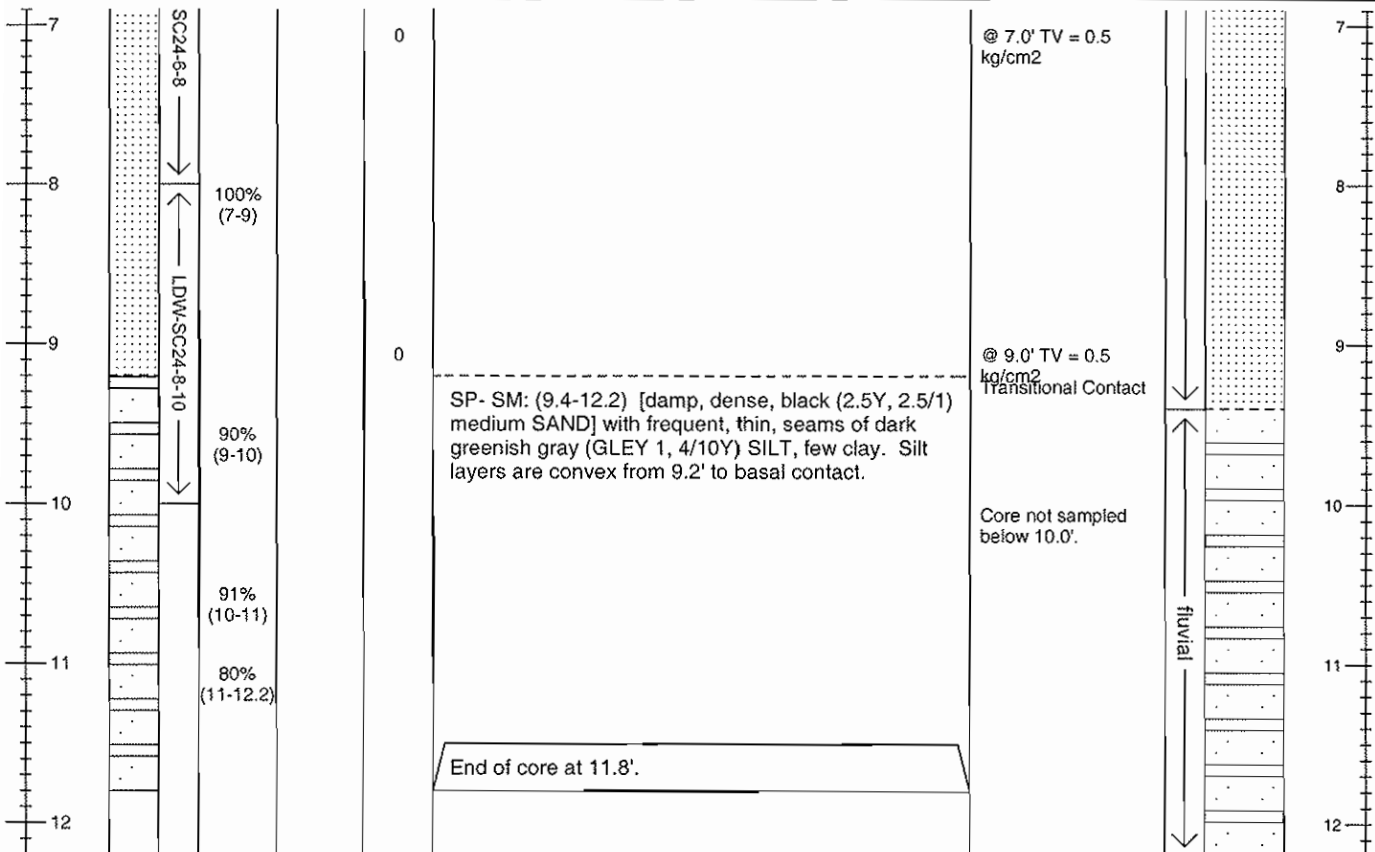
# Sediment Core Log

## LDW-SC-24 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.1</b>	Penetration Depth (ft): <b>12.2</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>26.3</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/17/06</b>	Mudline Elevation (ft): <b>-20.4</b>	Recovery in ft (%): <b>11.8 (97)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>205130</b> E./LONG: <b>1267860</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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**Remarks:** Drive Notes: freefall (1.0'), easy (7.0'), moderate (11.0'), hard (12.2'), penetration goal reached. One drive attempt made at station. Core catcher was 100 % full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**11.8/ 12.2 = 97 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



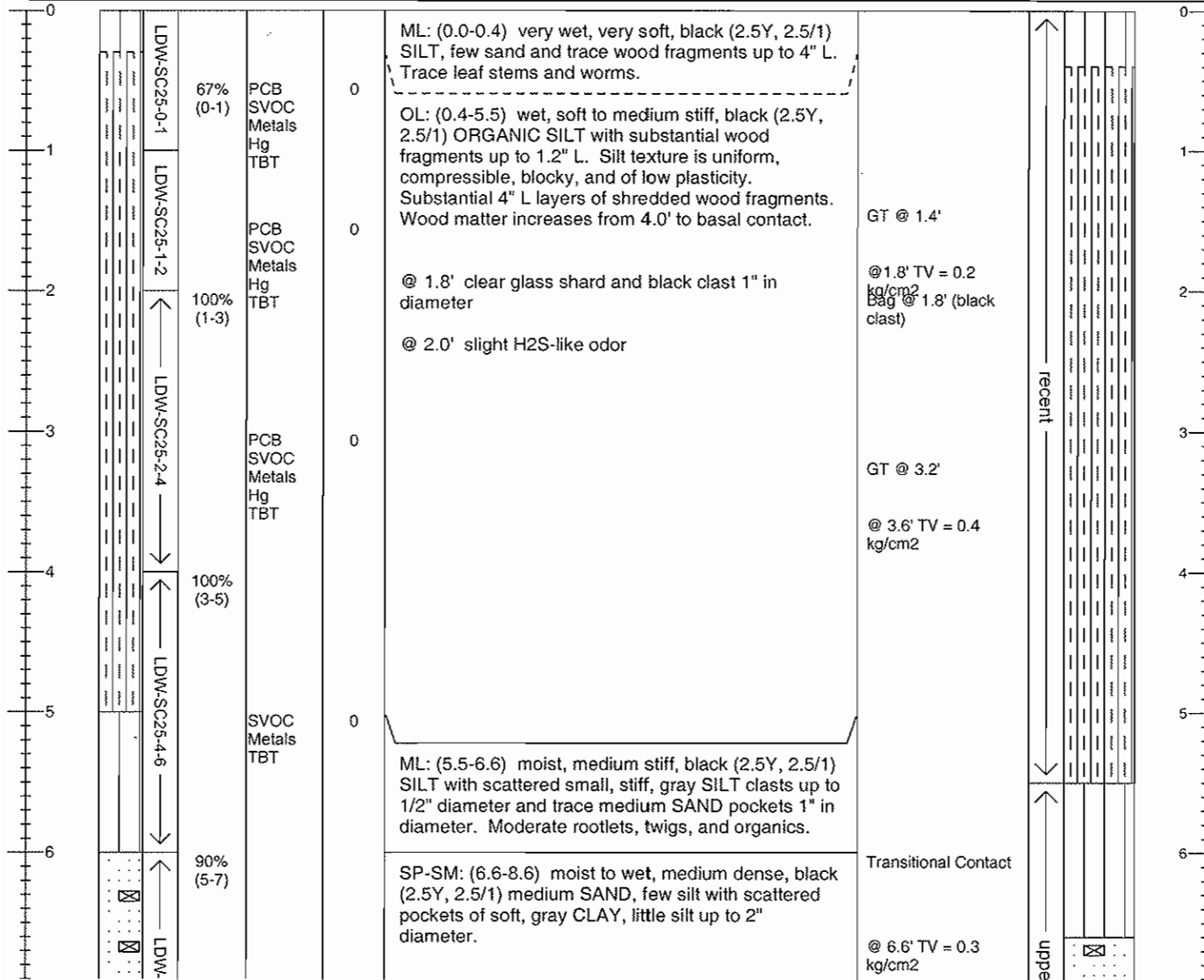
# Sediment Core Log

## LDW-SC-25 (R2)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>18.7</b>	Penetration Depth (ft): <b>10.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>18.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/17/06</b>	Mudline Elevation (ft): <b>-15.2</b>	Recovery in ft (%): <b>9.1 (88)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>204751</b> E./LONG: <b>1267980</b>	Process Date: <b>2/18/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (1.5'), easy (7.0'), moderate (9.0'), hard (10.3'), refusal (10.3'). Two drive attempts made at station.  
Core catcher was 80% full. Slight slumping below 8.3'.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**9.1 / 10.3 = 88 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



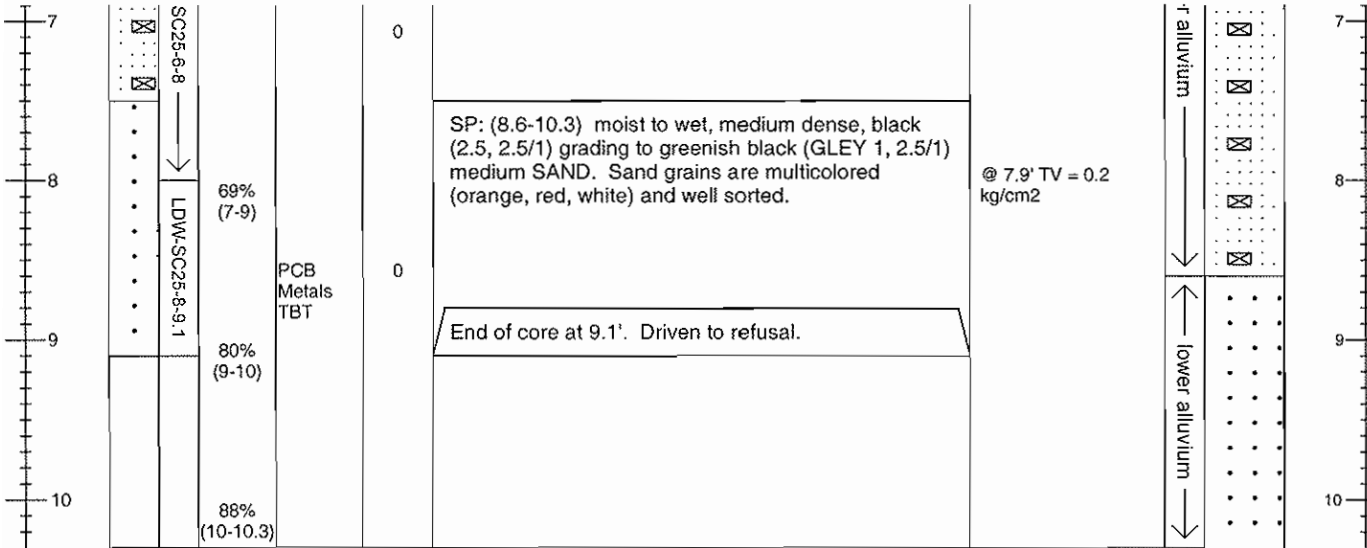
# Sediment Core Log

## LDW-SC-25 (R2)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>18.7</b>	Penetration Depth (ft): <b>10.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>18.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/17/06</b>	Mudline Elevation (ft): <b>-15.2</b>	Recovery in ft (%): <b>9.1 (88)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>204751</b> E./LONG: <b>1267980</b>	Process Date: <b>2/18/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (1.5'), easy (7.0'), moderate (9.0'), hard (10.3'), refusal (10.3'). Two drive attempts made at station. Core catcher was 80% full. Slight slumping below 8.3'.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $9.1 / 10.3 = 88 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.

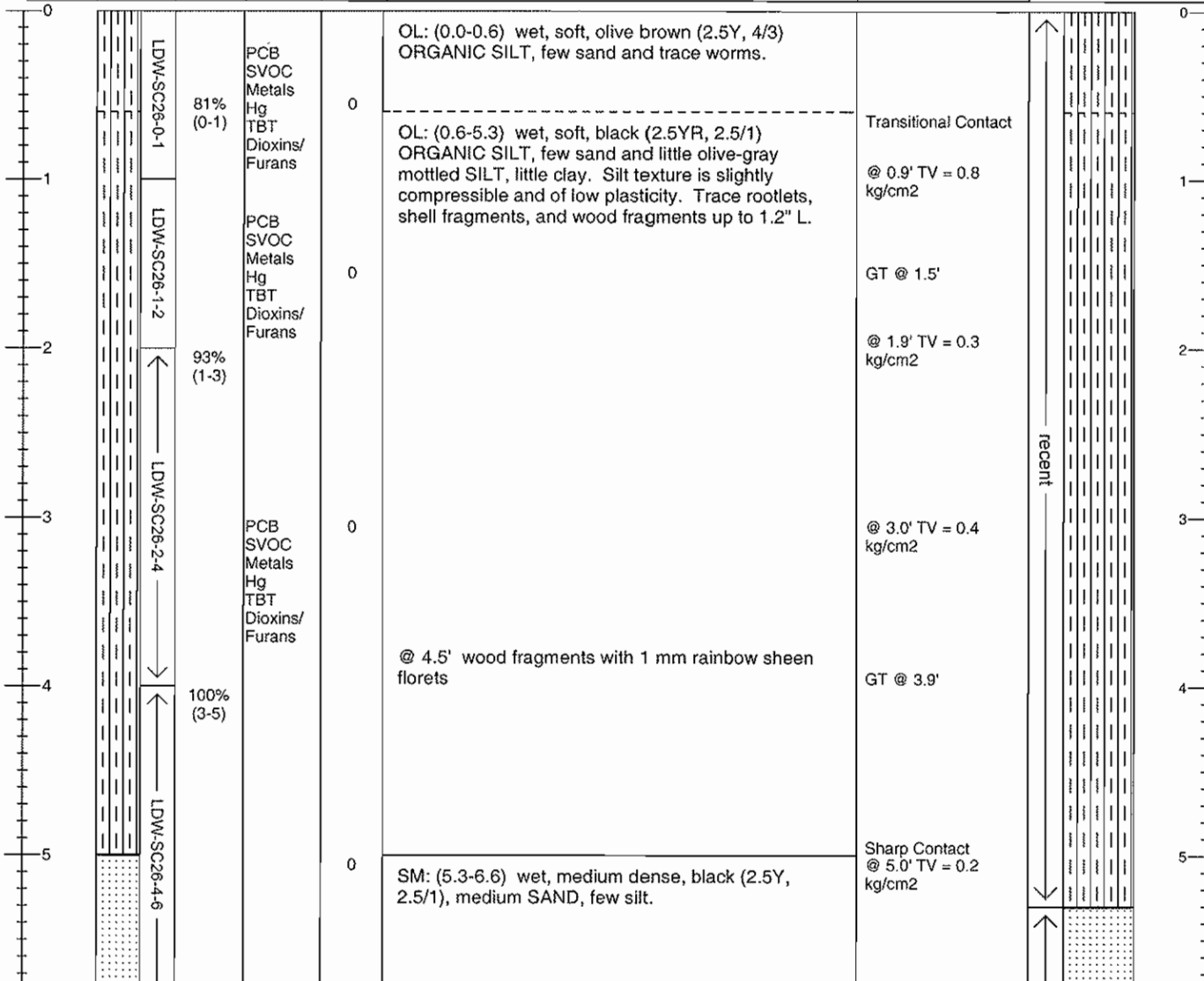


# Sediment Core Log

## LDW-SC-26 (R1)

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>18.7</b>	Penetration Depth (ft): <b>14.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>35.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>-26</b>	Recovery in ft (%): <b>12.3 (84)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>204479</b> E./LONG: <b>1268157</b>	Process Date: <b>2/22/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (1.0'), easy (5.0'), moderate (14.6'), penetration goal reached. One drive attempt made at station.  
Core catcher was 50% full. Rainbow HC-like sheen on sidewalls at 4.6'. Sampled 58' off station around barge.

**Calculated Recovery**  
 Sample Length/Penetration Length:  
 12.3 / 14.6 = 84 %

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



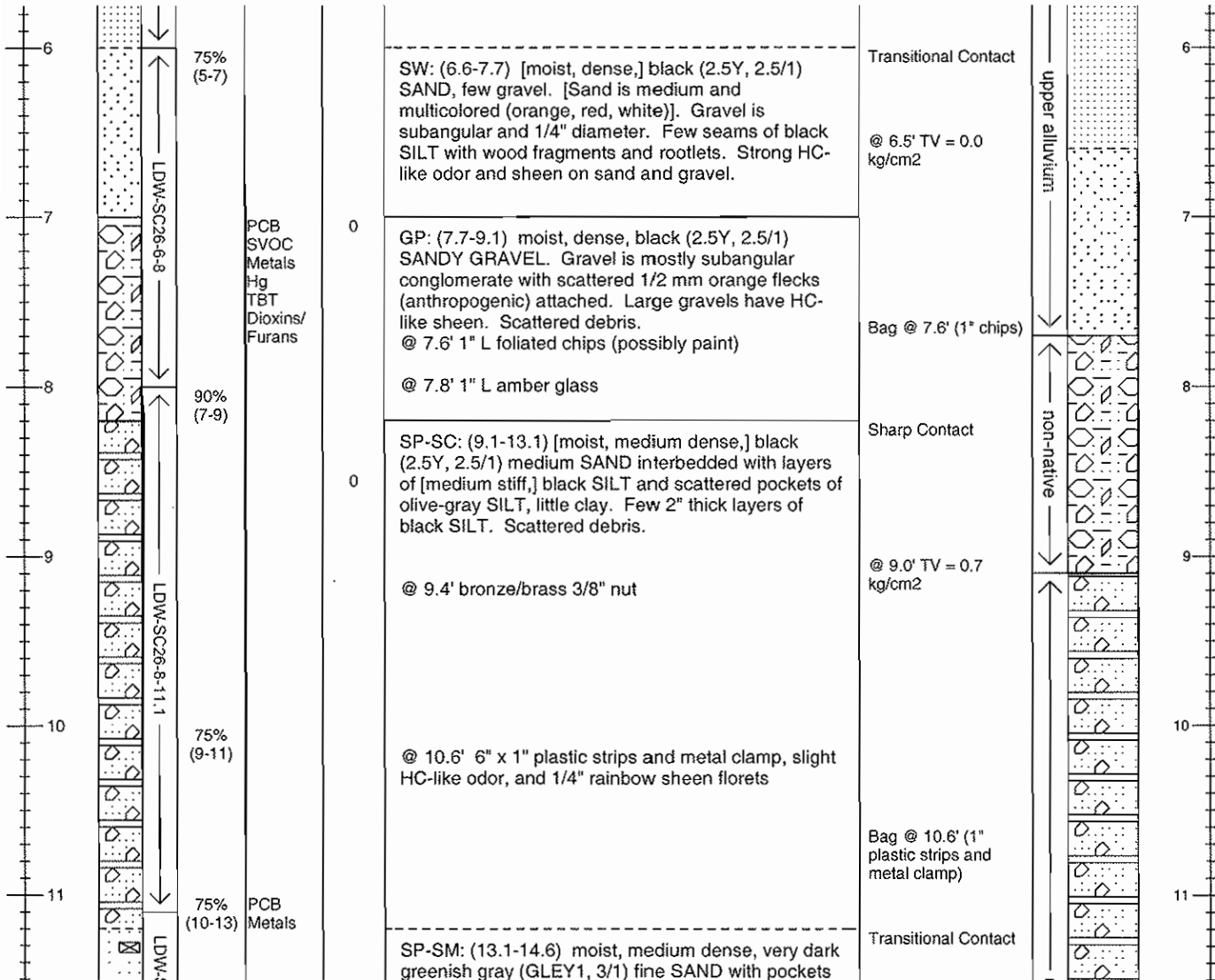
# Sediment Core Log

## LDW-SC-26 (R1)

Sheet 2 of 3

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>18.7</b>	Penetration Depth (ft): <b>14.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>35.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>-26</b>	Recovery in ft (%): <b>12.3 (84)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>204479</b> E./LONG: <b>1268157</b>	Process Date: <b>2/22/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (1.0')</u>, <u>easy (5.0')</u>, <u>moderate (14.6')</u>, penetration goal reached. One drive attempt made at station.</p> <p>Core catcher was 50% full. Rainbow HC-like sheen on sidewalls at 4.6'. Sampled 58' off station around barge.</p>	<p><b>Calculated Recovery</b> Sample Length/Penetration Length: <b>12.3/ 14.6 = 84 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



# Sediment Core Log

## LDW-SC-26 (R1)

Sheet 3 of 3

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>18.7</b>	Penetration Depth (ft): <b>14.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>35.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>-26</b>	Recovery in ft (%): <b>12.3 (84)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>204479</b> E./LONG: <b>1268157</b>	Process Date: <b>2/22/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
<div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">12</div> </div>	SC26-11.1-12.1 	75% (13-14.6)			of olive- gray SILT, little clay. SAND grades to very coarse with multicolored grains (orange, red, white) toward basal contact. Pockets of silt are up to 4" diameter with scattered wood and shell fragments. Strong H2S-like odor.  <div style="border: 1px solid black; padding: 5px; margin: 5px 0;">             End of core at 12.3'.           </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;">             Note: Chemistry interval recorded as 11.1-12.1 ft. but sample was collected to bottom of core at 12.3 ft. Graphic expresses depth of sample collection; sample name matches project nomenclature.           </div>	@ 11.6' TV = 0.2 kg/cm2  Bottom 0.3' winnowed.	upper alluvium <div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">12</div> </div>

The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (1.0')</u> , <u>easy (5.0')</u> , <u>moderate (14.6')</u> , <u>penetration goal reached. One drive attempt made at station.</u> <u>Core catcher was 50% full. Rainbow HC-like sheen on sidewalls at 4.6'. Sampled 58' off station around barge.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $12.3 / 14.6 = 84 \%$
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



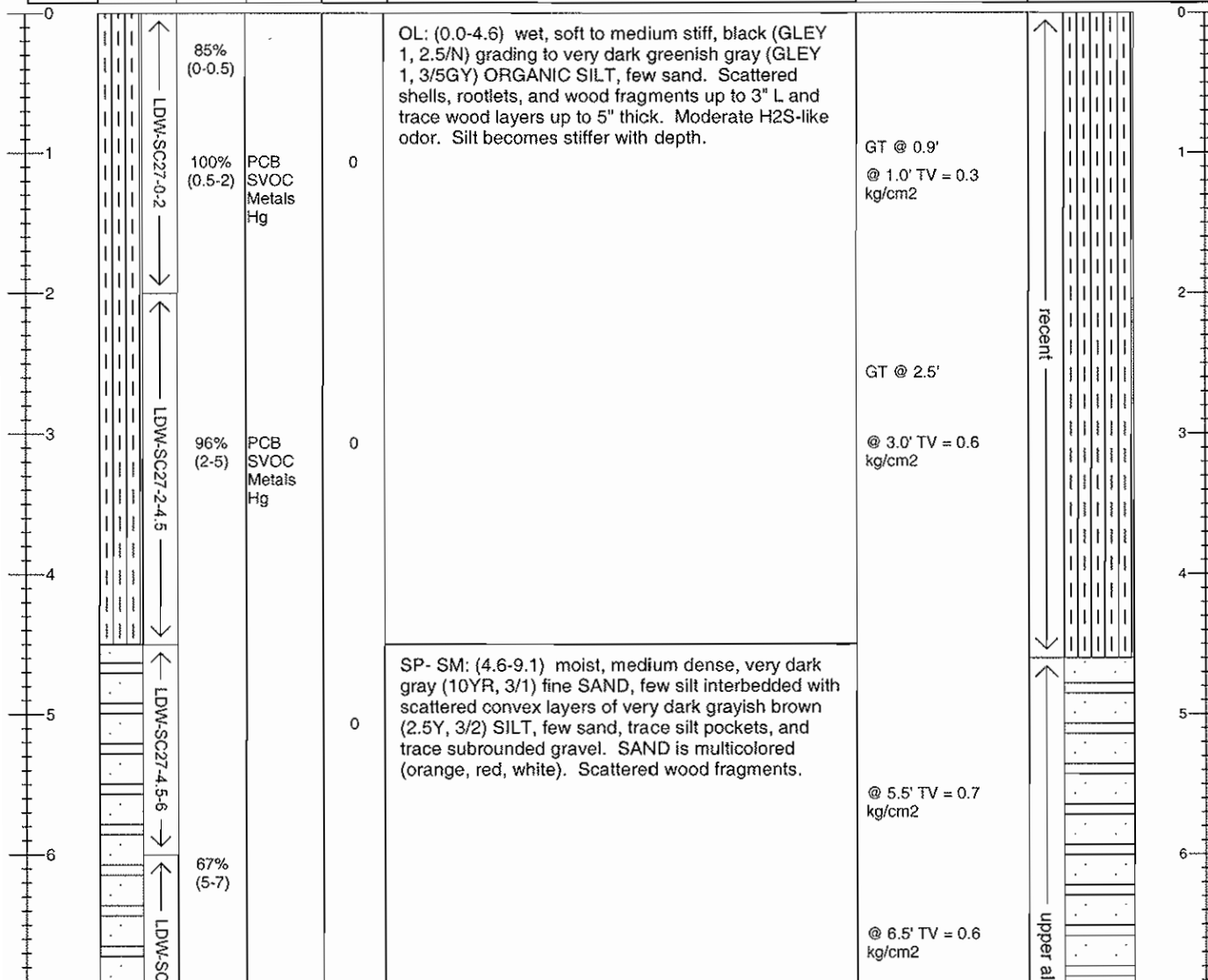
# Sediment Core Log

## LDW-SC-27 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.8</b>	Penetration Depth (ft): <b>11.2</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>20.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/14/06</b>	Mudline Elevation (ft): <b>-10.5</b>	Recovery in ft (%): <b>9.5 (85)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>204441</b> E./LONG: <b>1268518</b>	Process Date: <b>2/14/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, N. Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
 1011 SW Klickitat Way, Suite 207  
 Seattle, WA 98134-1162  
 Phone: (206) 624-9349  
 Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (1.0'), moderate (5.0'), hard (11.2'), refusal (11.2'). One drive attempt made at station.

**Calculated Recovery**  
 Sample Length/Penetration Length:  
 9.5 / 11.2 = 85 %

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*

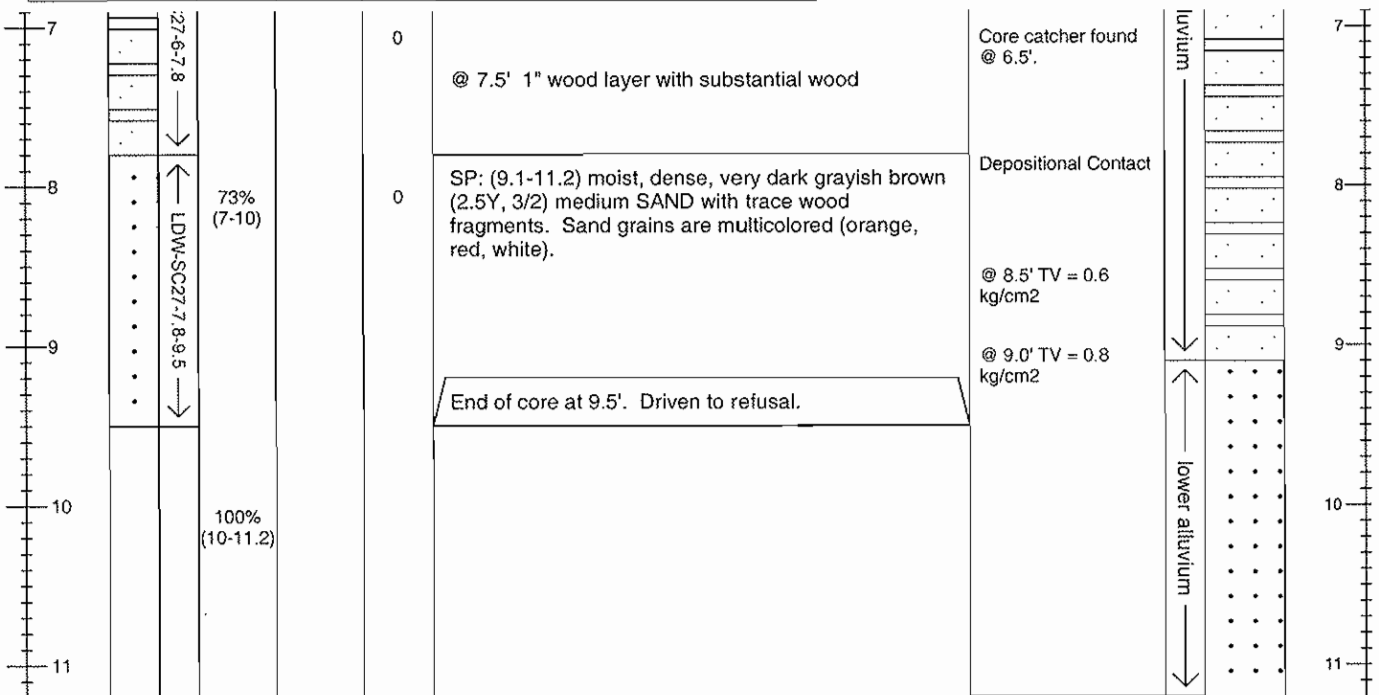


# Sediment Core Log

## LDW-SC-27 (R1)

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.8</b>	Penetration Depth (ft): <b>11.2</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>20.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/14/06</b>	Mudline Elevation (ft): <b>-10.5</b>	Recovery in ft (%): <b>9.5 (85)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>204441</b> E./LONG: <b>1268518</b>	Process Date: <b>2/14/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee, N. Bacher</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (1.0'), moderate (5.0'), hard (11.2'), refusal (11.2'). One drive attempt made at station.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $9.5 / 11.2 = 85 \%$
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*





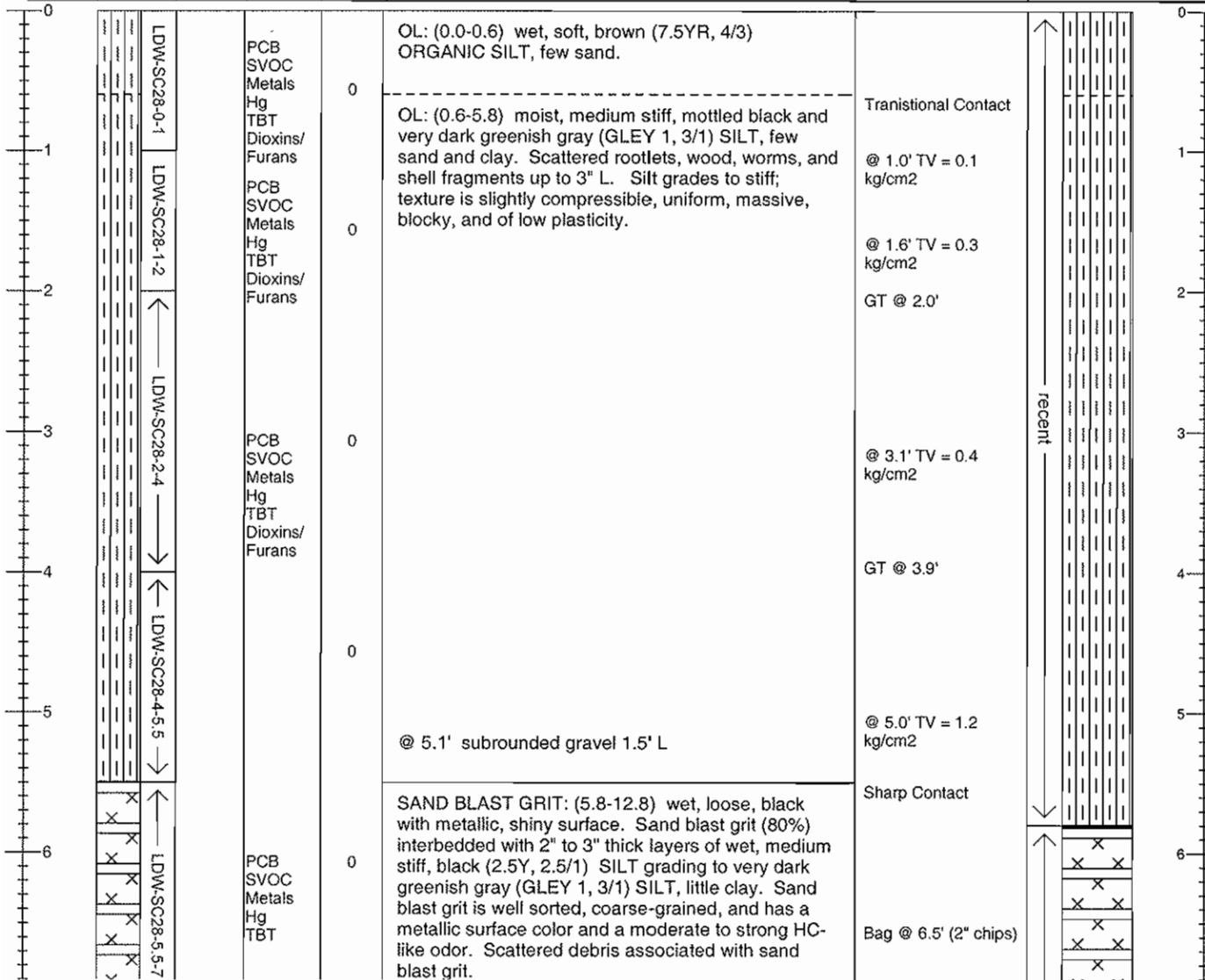
# Sediment Core Log

## LDW-SC-28 (R5)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>38.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/24/06</b>	Mudline Elevation (ft): <b>-30.6</b>	Recovery in ft (%): <b>12.6 (92)</b>
Contractor: <b>MSS</b>	N./LAT: <b>47 32.933</b> E./LONG: <b>122 20.4721</b>	Process Date: <b>2/25/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round AI</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (5.0'), easy (6.0'), very easy (9.0'), hard (11.0'), easy (13.0'), penetration goal reached. Five drive attempts made at station. Core catcher was intact and 100% full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
11.9/ 13.0 = 92 %

Rainbow sheen on sidewalls from 4.0' to 11.3'. ua= upper alluvium

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



# Sediment Core Log

## LDW-SC-28 (R5)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>38.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/24/06</b>	Mudline Elevation (ft): <b>-30.6</b>	Recovery in ft (%): <b>12.6 (92)</b>
Contractor: <b>MSS</b>	N./LAT: <b>47 32.933</b> E./LONG: <b>122 20.4721</b>	Process Date: <b>2/25/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round Al</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
7					<p>@ 5.6' 2" foliated chips (possibly paint)</p> <p>@ 6.25' anthropogenic conglomerates (asphalt-like) up to 0.3' L</p> <p>@ 6.5' 2" foliated red and green chips (possibly paint)</p>	<p>@ 6.9' TV = 0.4 kg/cm2</p> <p>@ 6.5' Sheen Test: rainbow sheen florets and streaks up to 2" L.</p>	7
8				0		<p>@ 8.0' TV = 0.1 kg/cm2</p>	8
9					<p>@ 8.3' 1" foliated red chips (possibly paint)</p>		9
10				0			10
11							11
12			PCB SVOC Metals Hg TBT	0	<p>SP- SM: (12.8-13.0) damp, medium dense, very dark gray (GLEY 1, 3/N) fine SAND interbedded with moist, medium stiff, black SILT, little sand. Sand grains are multicolored (orange, red, white).</p>	<p>Sharp Contact</p>	12
13					<p>End of core at 12.6'. Refusal reached with diver impact core at 7.0 feet. Station re-occupied with vibracore.</p>		13

<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (5.0'), easy (6.0'), very easy (9.0'), hard (11.0'), easy (13.0'), penetration goal reached. Five drive attempts made at station. Core catcher was intact and 100% full.</u></p> <p><u>Rainbow sheen on sidewalls from 4.0' to 11.3'. ua= upper alluvium</u></p>	<p><b>Calculated Recovery</b> Sample Length/Penetration Length: <b>11.9/ 13.0 = 92 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



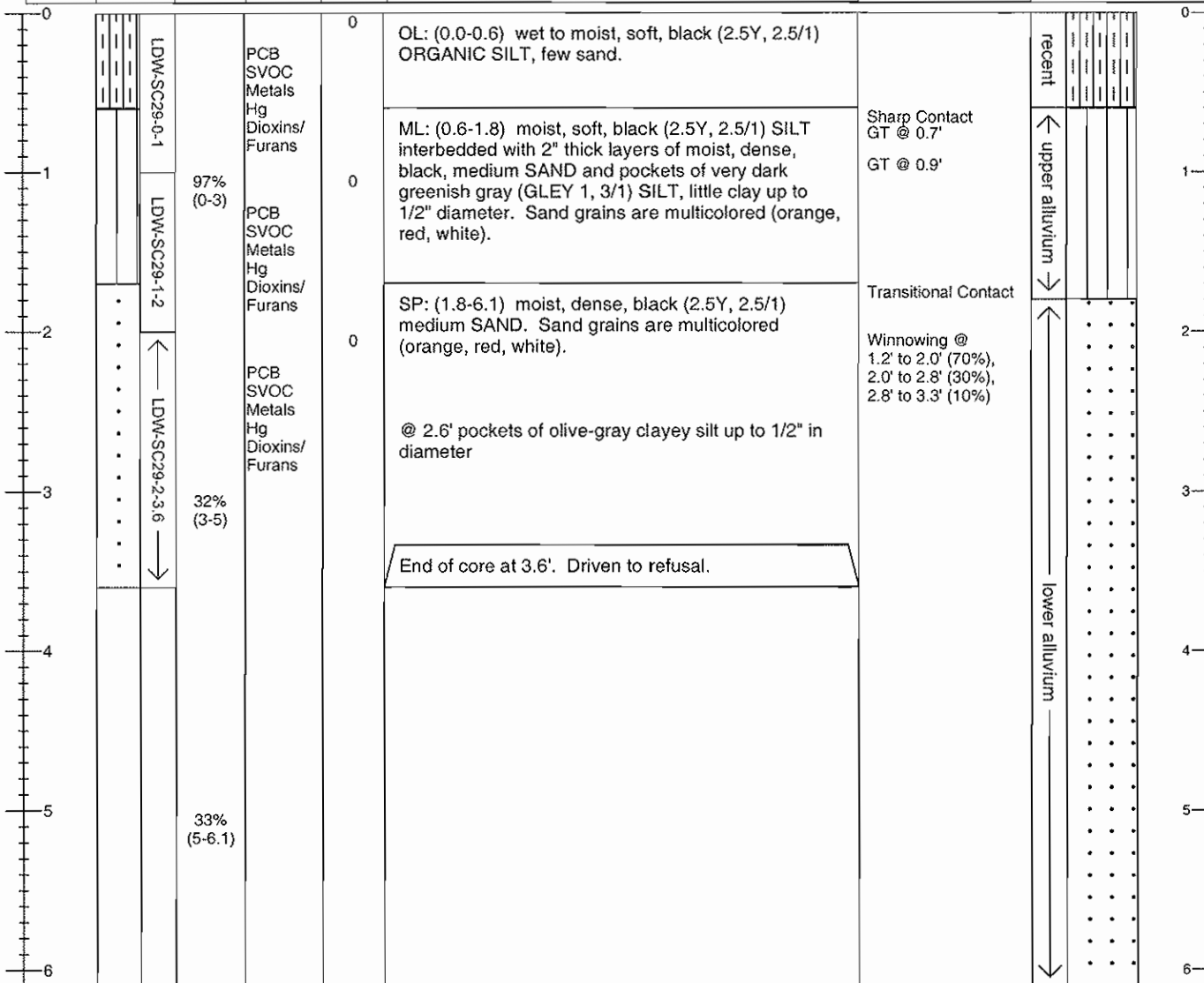
# Sediment Core Log

## LDW-SC-29 (R2)

Sheet 1 of 1

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.9</b>	Penetration Depth (ft): <b>6.1</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>14.1</b>	Sample Quality: <b>Poor</b>
Collection Date: <b>2/21/06</b>	Mudline Elevation (ft): <b>-4.2</b>	Recovery in ft (%): <b>3.6 (59)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>204054</b> E./LONG: <b>1268061</b>	Process Date: <b>2/21/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (in-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (3.0'), hard (6.1'), refusal (6.1'). Two drive attempts made at station. Core catcher was 60% full. No torvane measurements taken. Difficult intertidal access.	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>3.6 / 6.1 = 59 %</b>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



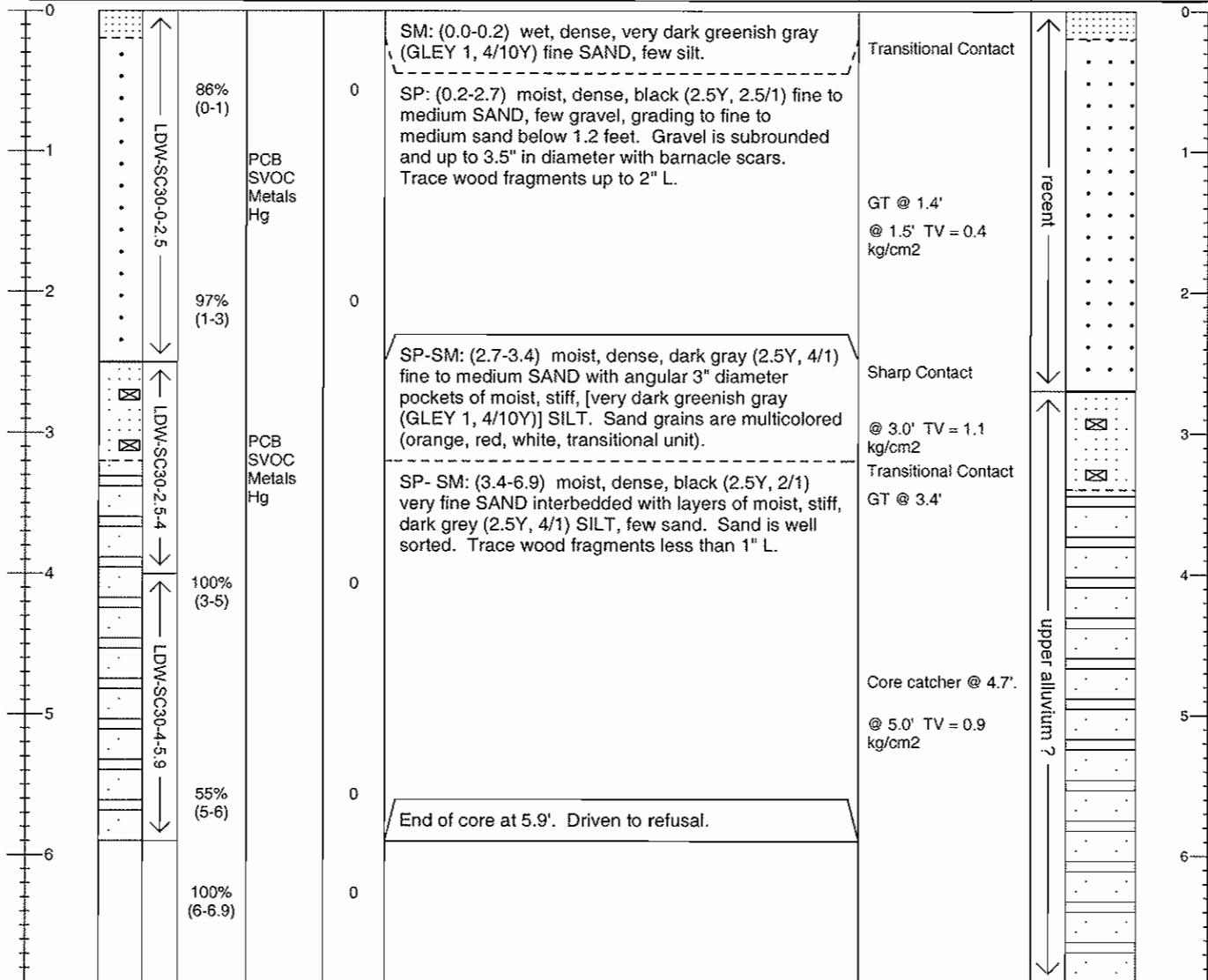
# Sediment Core Log

## LDW-SC-30 (R2)

Sheet 1 of 1

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>3.5</b>	Penetration Depth (ft): <b>6.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>18</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/14/06</b>	Mudline Elevation (ft): <b>-12.2</b>	Recovery in ft (%): <b>5.9 (86)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>203576</b> E./LONG: <b>1268785</b>	Process Date: <b>2/14/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, N.Bacher</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <b>freefall (0.7'), easy (5.0'), moderate-hard (6.0'), hard (6.9'), refusal (6.9')</b> . Two drive attempts made at station.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $5.9 / 6.9 = 86 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



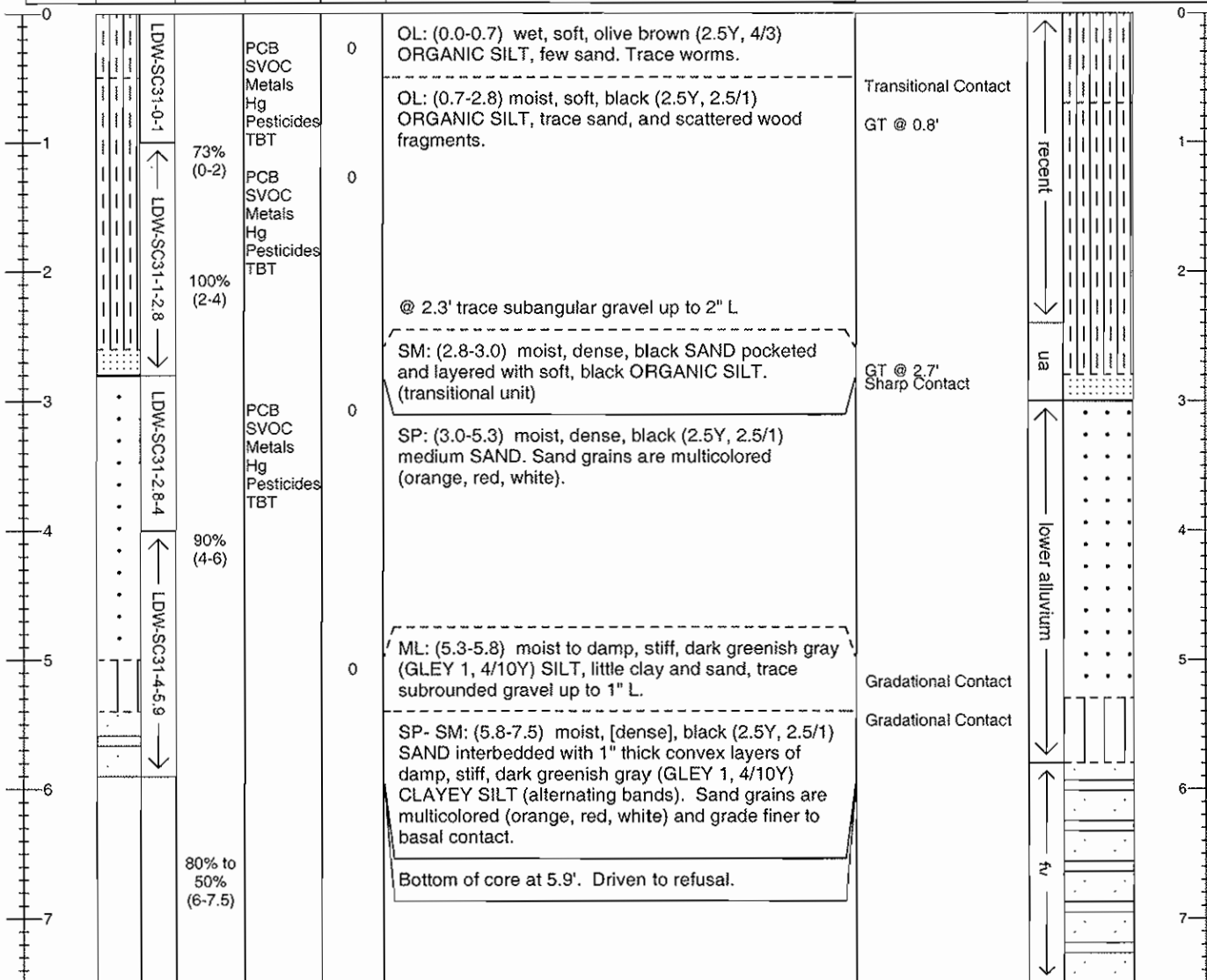
# Sediment Core Log

## LDW-SC-31 (R1)

Sheet 1 of 1

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>7.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>35.3</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/16/06</b>	Mudline Elevation (ft): <b>-31.7</b>	Recovery in ft (%): <b>5.9 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>203092</b> E./LONG: <b>1268934</b>	Process Date: <b>2/17/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (2.0'), easy (6.0'), moderate (7.0'), hard (7.5'), refusal (7.5'). One drive attempt made at station.</u></p> <p><u>Core catcher was empty. Difficult core extraction.</u></p> <p><u>ua = upper alluvium, fv = fluvial</u></p>	<p style="text-align: center;"><b>Calculated Recovery</b></p> <p>Sample Length/Penetration Length: <b>5.9 / 7.5 = 79 %</b></p>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



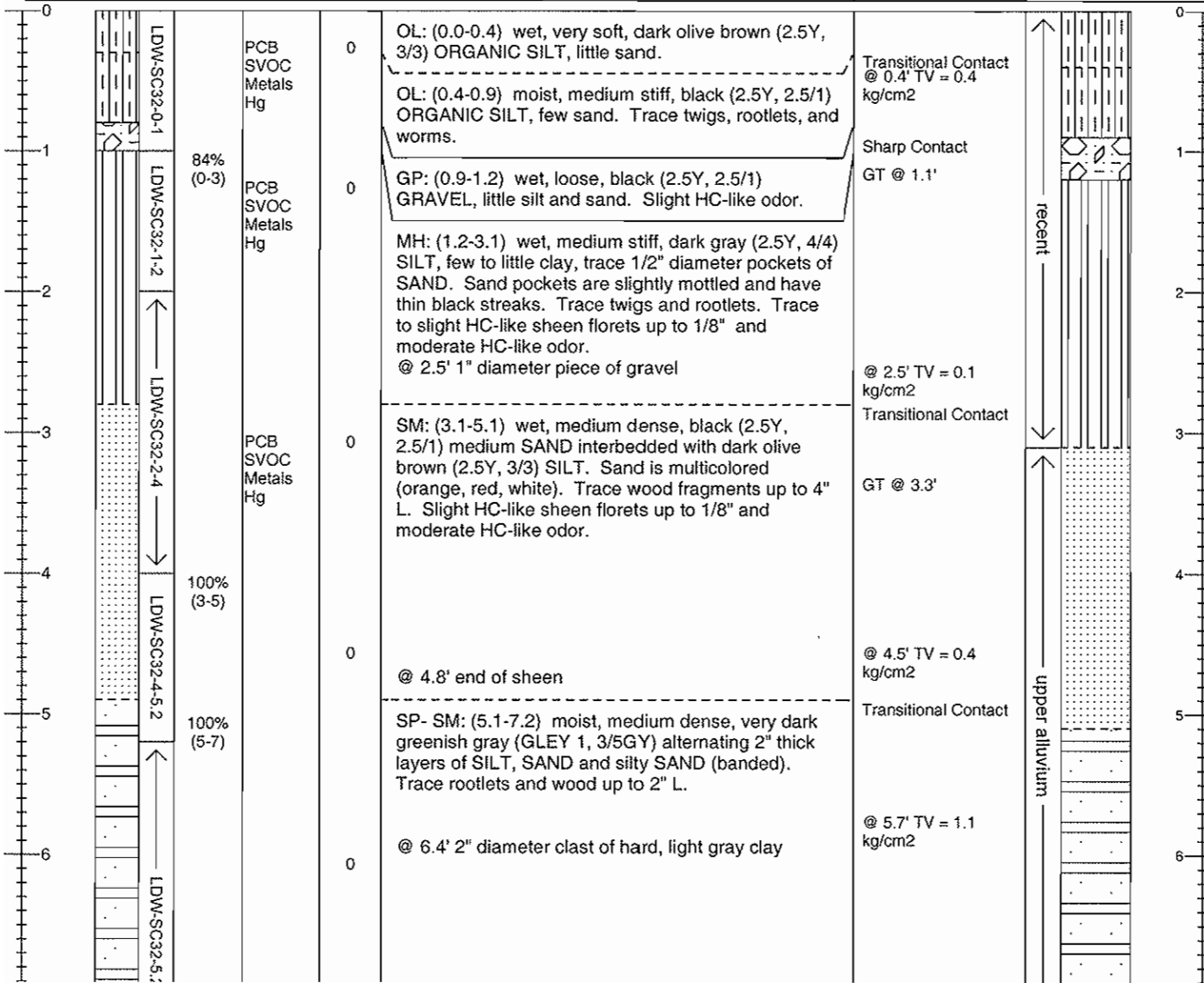
# Sediment Core Log

## LDW-SC-32 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.6</b>	Penetration Depth (ft): <b>12.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>25.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-17.2</b>	Recovery in ft (%): <b>11.2 (88)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202959</b> E./LONG: <b>1269344</b>	Process Date: <b>2/11/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (2.0'), easy (8.0'), moderate (10.0'), hard (12.7'), refusal (12.7')</u>. One drive attempt made at station.</p>	<p style="text-align: center;"><b>Calculated Recovery</b></p> <p style="text-align: center;">Sample Length/Penetration Length: <b>11.2/ 12.7 = 88 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



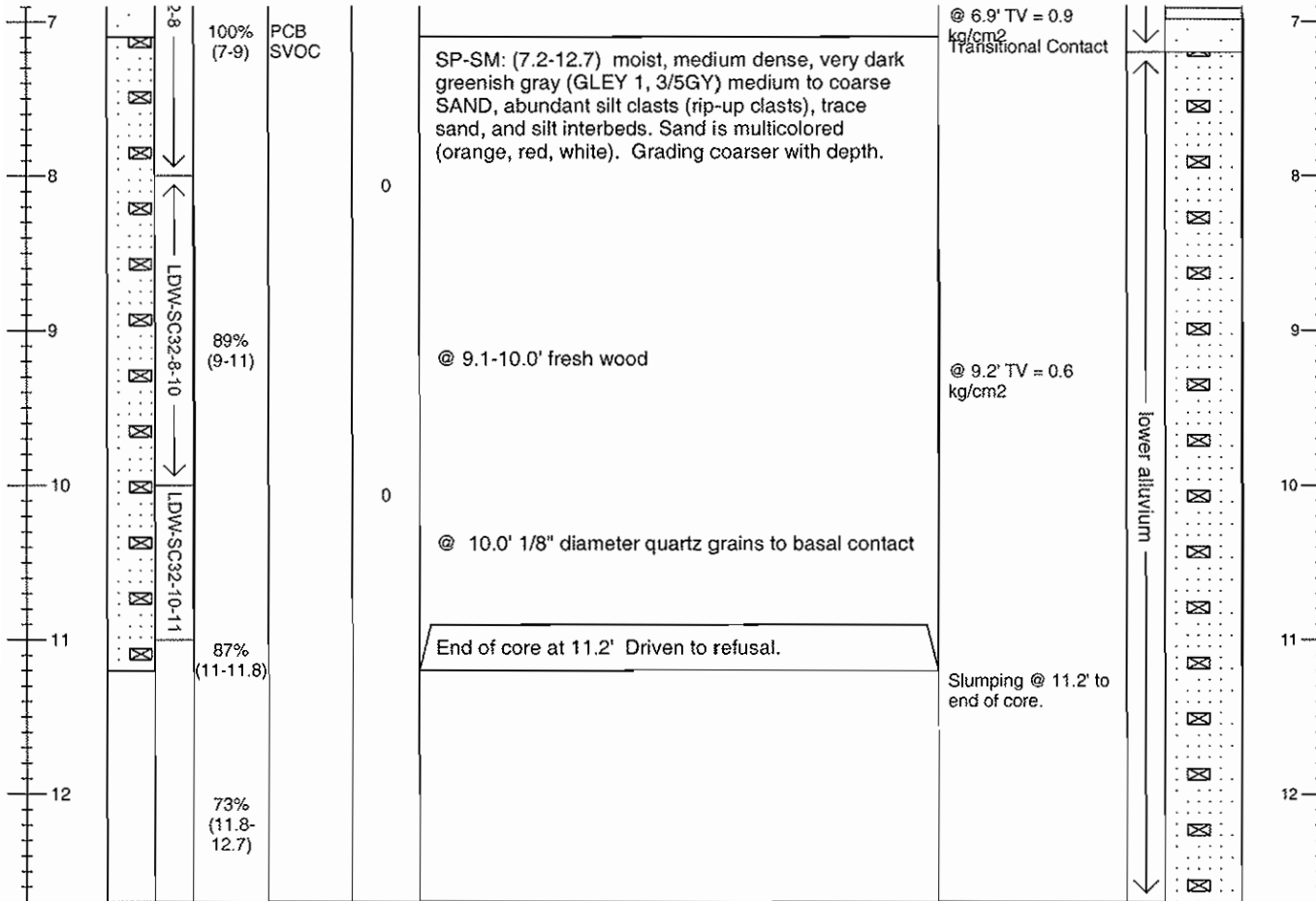
# Sediment Core Log

## LDW-SC-32 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.6</b>	Penetration Depth (ft): <b>12.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>25.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-17.2</b>	Recovery in ft (%): <b>11.2 (88)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202959</b> E./LONG: <b>1269344</b>	Process Date: <b>2/11/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (2.0'), easy (8.0'), moderate (10.0'), hard (12.7'), refusal (12.7'). One drive attempt made at station.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**11.2/ 12.7 = 88 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



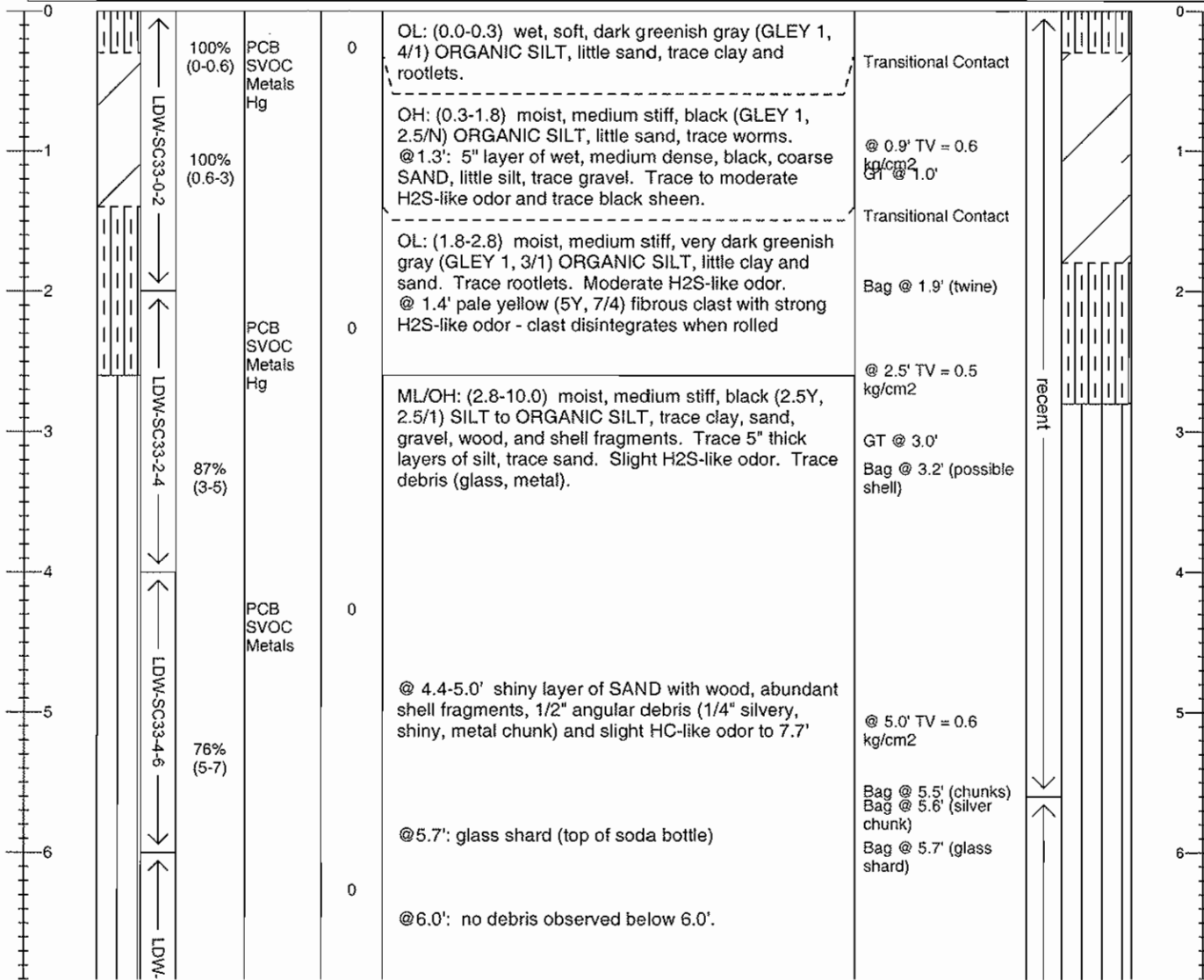
# Sediment Core Log

## LDW-SC-33 (R2)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.4</b>	Penetration Depth (ft): <b>13.1</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>24.1</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-14.7</b>	Recovery in ft (%): <b>10.2 (78)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202056</b> E./LONG: <b>1269267</b>	Process Date: <b>2/11/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (0.6')</u>, <u>easy (9.0')</u>, <u>moderate (13.1')</u>, <u>penetration goal reached. Two drive attempts made at station.</u> <u>Core catcher was empty. Core tip smashed and side walls scored.</u> <u>Field replicate is SC-201.</u></p>	<p style="text-align: center;"><b>Calculated Recovery</b></p> <p>Sample Length/Penetration Length: <b>10.2/ 13.1 = 78 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.





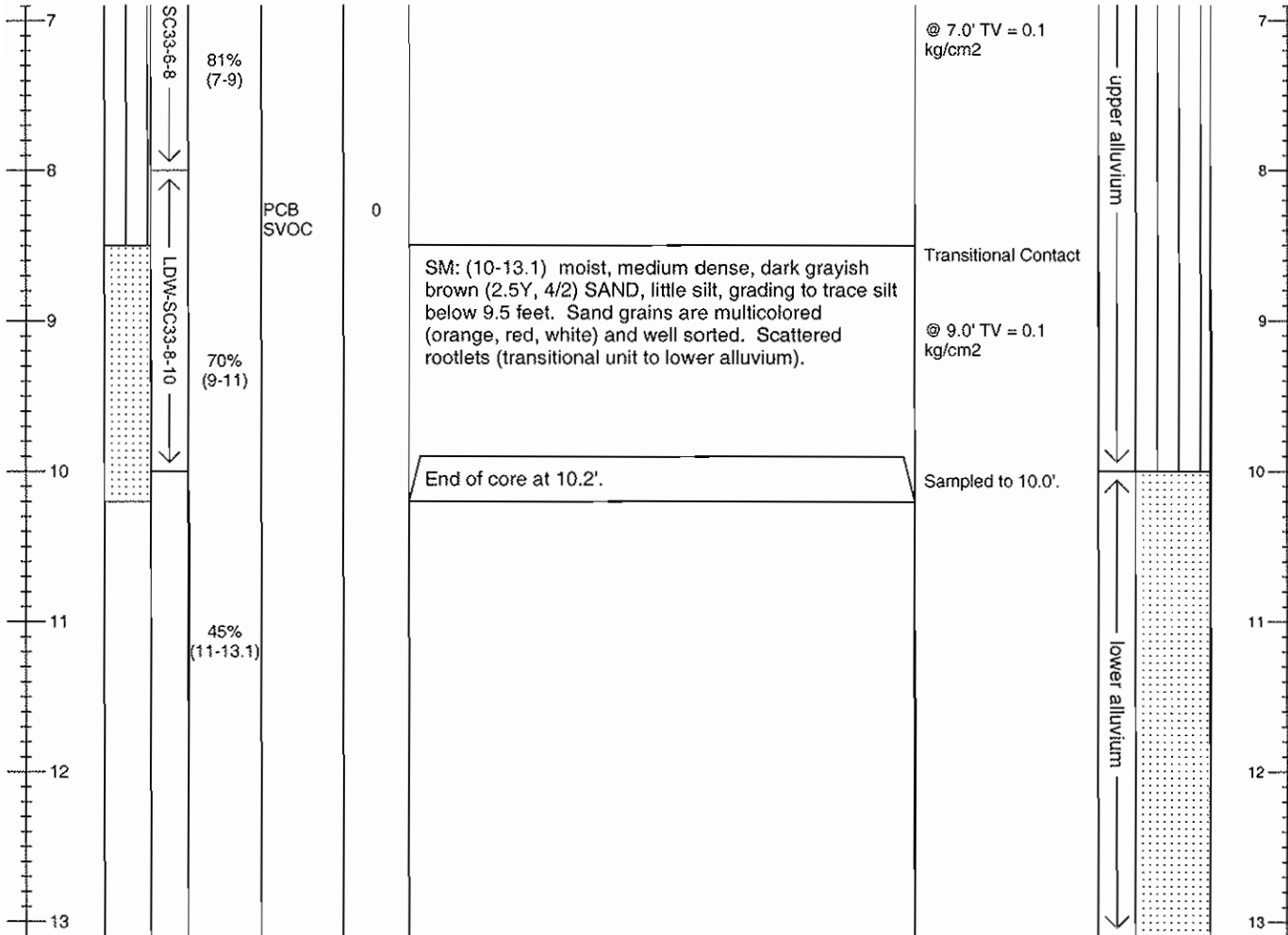
# Sediment Core Log

## LDW-SC-33 (R2)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.4</b>	Penetration Depth (ft): <b>13.1</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>24.1</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-14.7</b>	Recovery in ft (%): <b>10.2 (78)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202056</b> E./LONG: <b>1269267</b>	Process Date: <b>2/11/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: freefall (0.6'), easy (9.0'), moderate (13.1'), penetration goal reached. Two drive attempts made at station.</p> <p>Core catcher was empty. Core tip smashed and side walls scored.</p> <p>Field replicate is SC-201.</p>	<p><b>Calculated Recovery</b> Sample Length/Penetration Length: <b>10.2/13.1 = 78 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



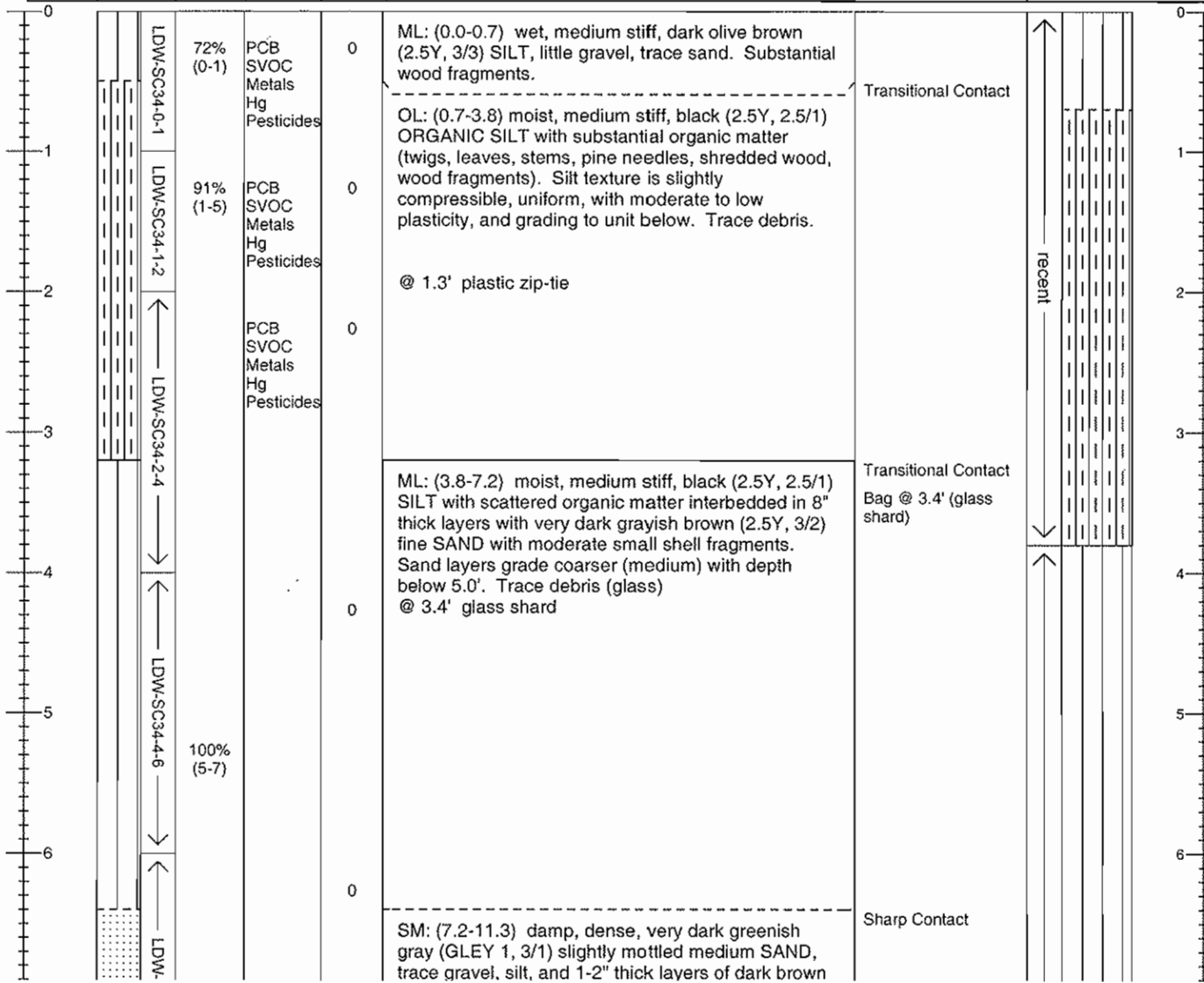
# Sediment Core Log

## LDW-SC-34 (R2)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.1</b>	Penetration Depth (ft): <b>12.2</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>23.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/17/06</b>	Mudline Elevation (ft): <b>-14.5</b>	Recovery in ft (%): <b>9.3 (76)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202014</b> E./LONG: <b>1268831</b>	Process Date: <b>2/18/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>A.Fitzpatrick, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freedfall (1.5'), easy (12.2'), penetration goal reached. Two drive attempts made at station. Core catcher was 100% full. No torvane or geotechnical samples taken due to frozen core. Field replicate of SC-203.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**9.3 / 12.2 = 76 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



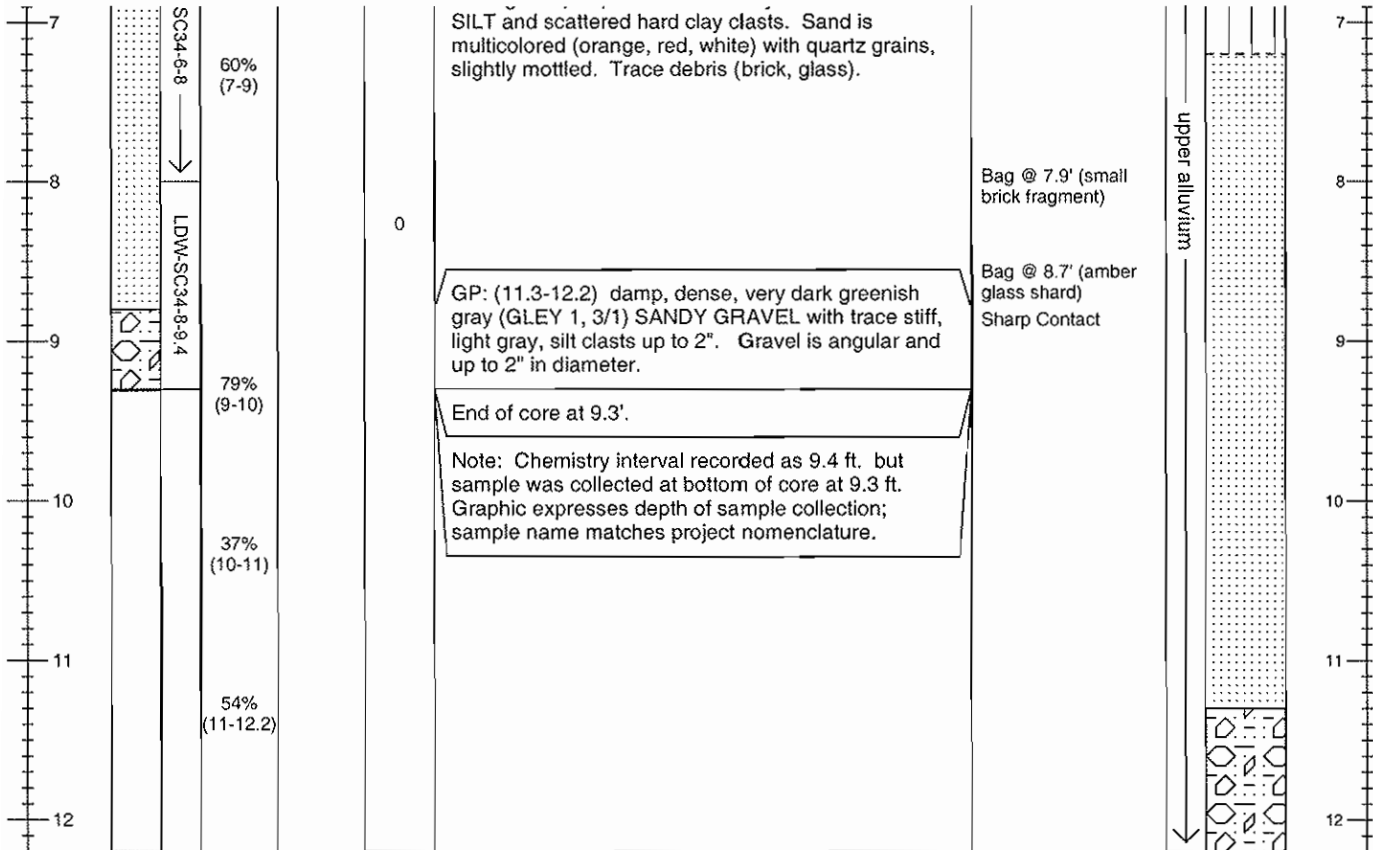
# Sediment Core Log

## LDW-SC-34 (R2)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.1</b>	Penetration Depth (ft): <b>12.2</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>23.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/17/06</b>	Mudline Elevation (ft): <b>-14.5</b>	Recovery in ft (%): <b>9.3 (76)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202014</b> E./LONG: <b>1268831</b>	Process Date: <b>2/18/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>A.Fitzpatrick, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (1.5'), easy (12.2'), penetration goal reached. Two drive attempts made at station. Core catcher was 100% full. No torvane or geotechnical samples taken due to frozen core. Field replicate of SC-203.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $9.3 / 12.2 = 76 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



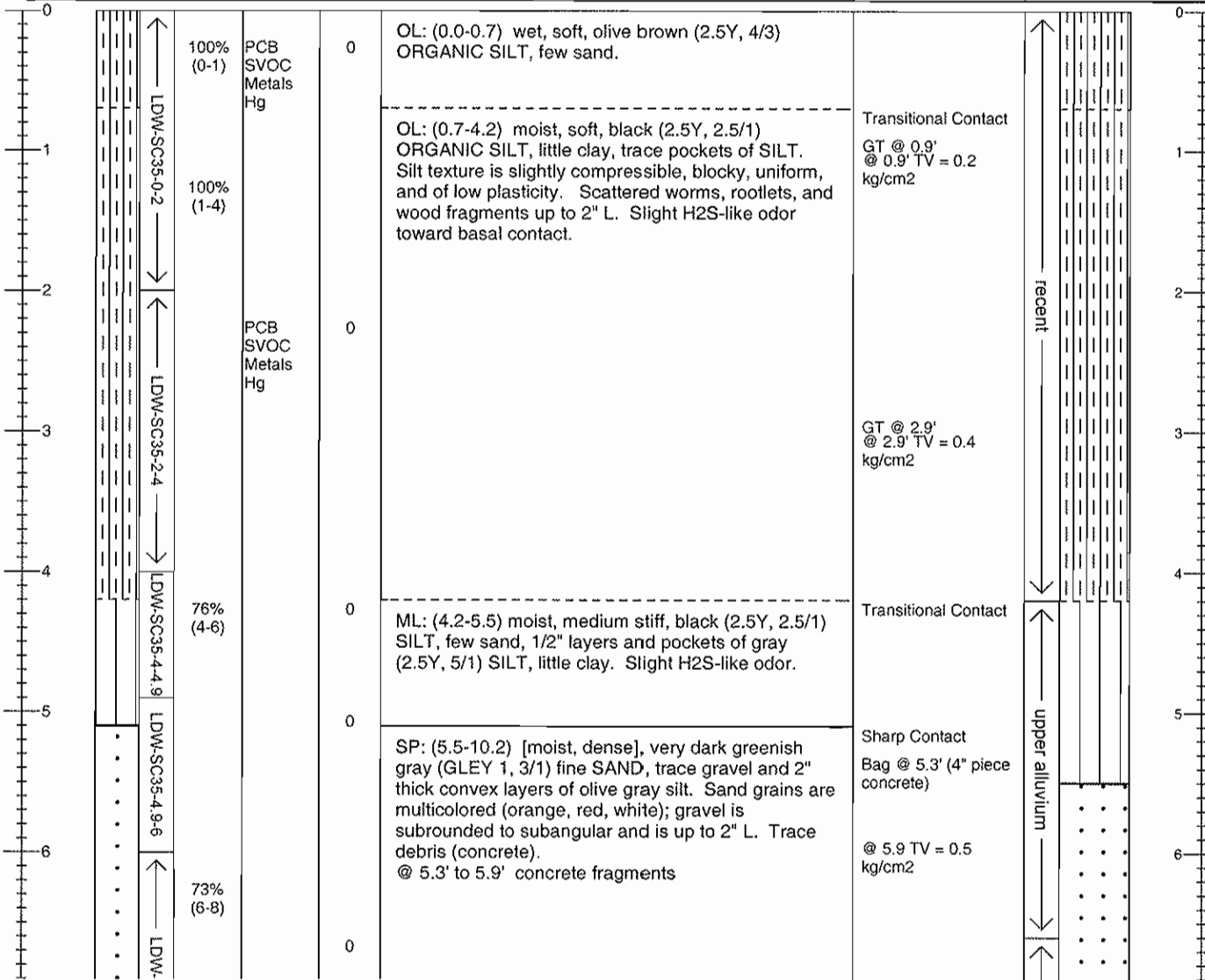
# Sediment Core Log

## LDW-SC-35 (R2)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.7</b>	Penetration Depth (ft): <b>10.2</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>21.2</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/14/06</b>	Mudline Elevation (ft): <b>-13.8</b>	Recovery in ft (%): <b>8.3 (81)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>201602</b> E./LONG: <b>1269260</b>	Process Date: <b>2/15/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.8)', easy (3.7)', moderate (8.0)', hard (10.2)', refusal (10.2)'. Two drive attempts made at this station.  
Core tip crushed, but full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**8.3 / 10.2 = 81 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



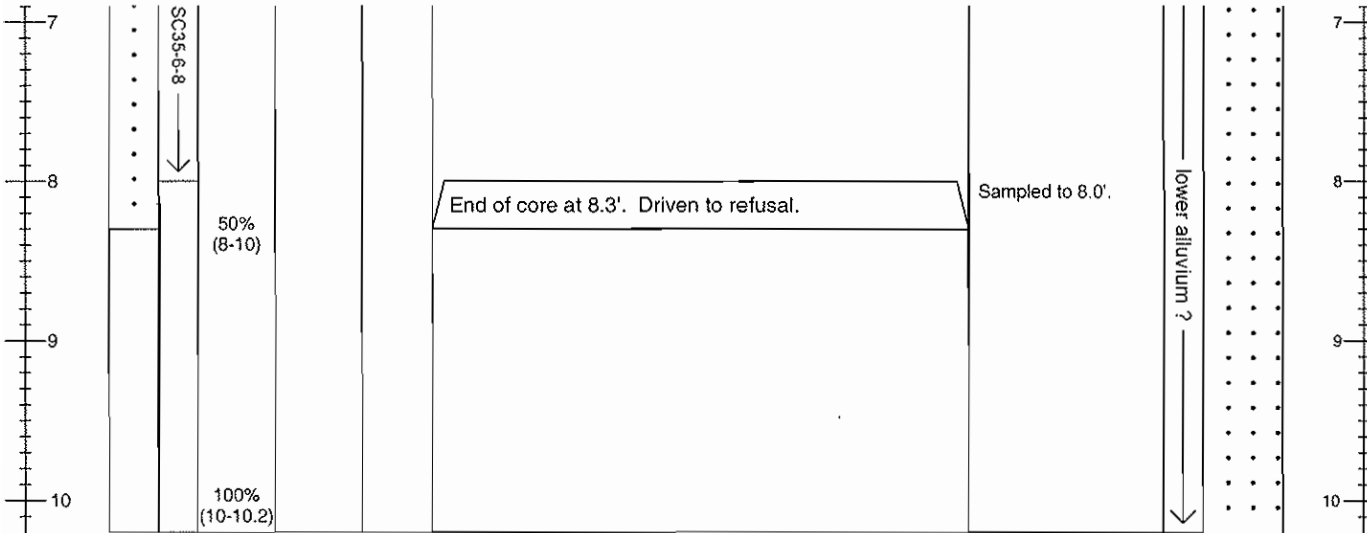
# Sediment Core Log

## LDW-SC-35 (R2)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>6.7</b>	Penetration Depth (ft): <b>10.2</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>21.2</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/14/06</b>	Mudline Elevation (ft): <b>-13.8</b>	Recovery in ft (%): <b>8.3 (81)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>201602</b> E./LONG: <b>1269260</b>	Process Date: <b>2/15/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (0.8')</u> , <u>easy (3.7')</u> , <u>moderate (8.0')</u> , <u>hard (10.2')</u> , <u>refusal (10.2')</u> . <u>Two drive attempts made at this station.</u> <u>Core tip crushed, but full.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $8.3 / 10.2 = 81 \%$
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



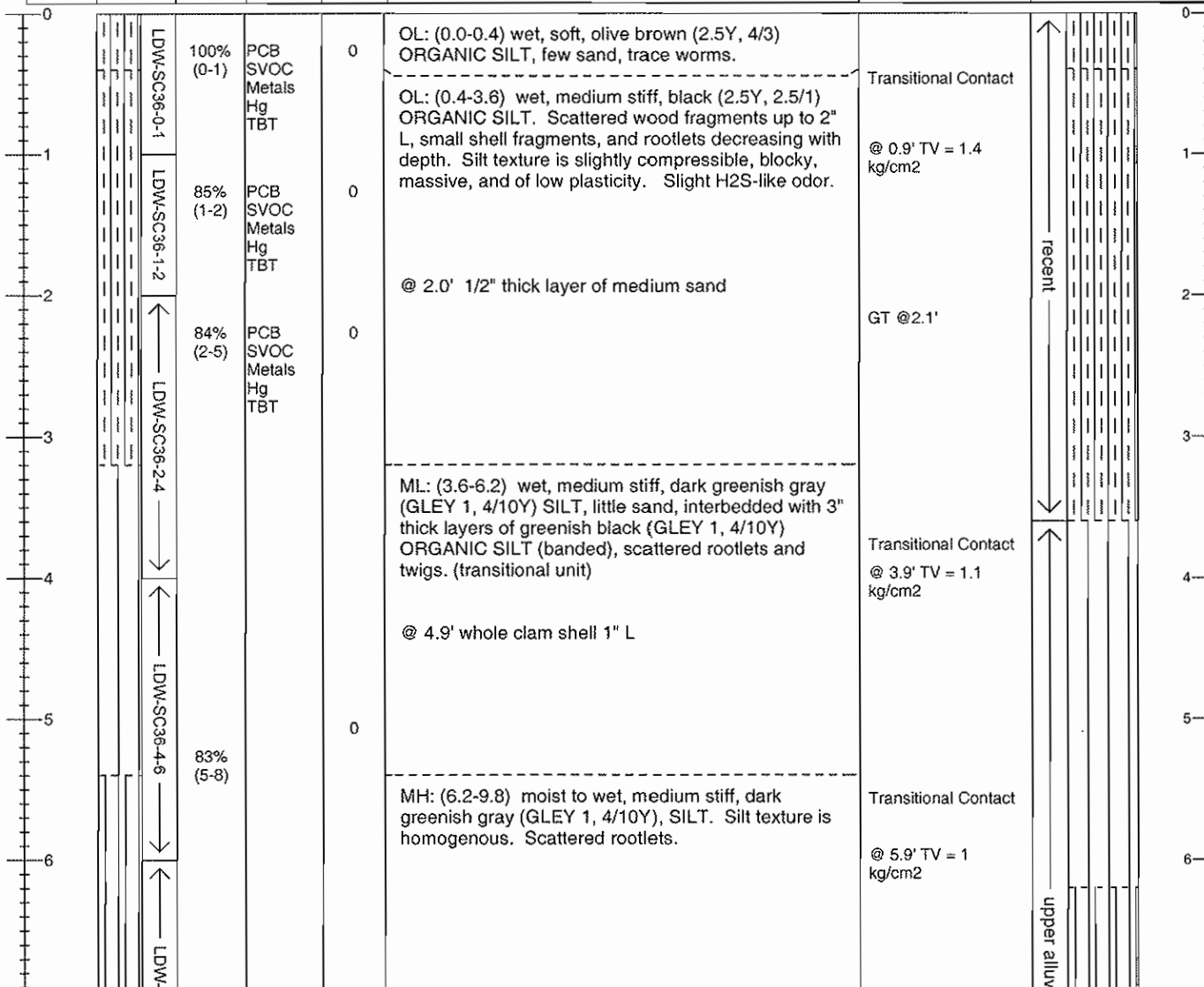
# Sediment Core Log

## LDW-SC-36 (R1)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>2.9</b>	Penetration Depth (ft): <b>12.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>17.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/15/06</b>	Mudline Elevation (ft): <b>-12.3</b>	Recovery in ft (%): <b>10.2 (83)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>201490</b> E./LONG: <b>1269988</b>	Process Date: <b>2/16/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (0.4'), easy (3.0'), moderate (11.0'), hard (12.3'), refusal (12.3')</u>. One drive attempt made at station.</p> <p><u>Core catcher was 50% full. Field replicate of SC-202.</u></p>	<p style="text-align: center;"><b>Calculated Recovery</b></p> <p>Sample Length/Penetration Length: <b>10.2/12.3 = 83 %</b></p>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



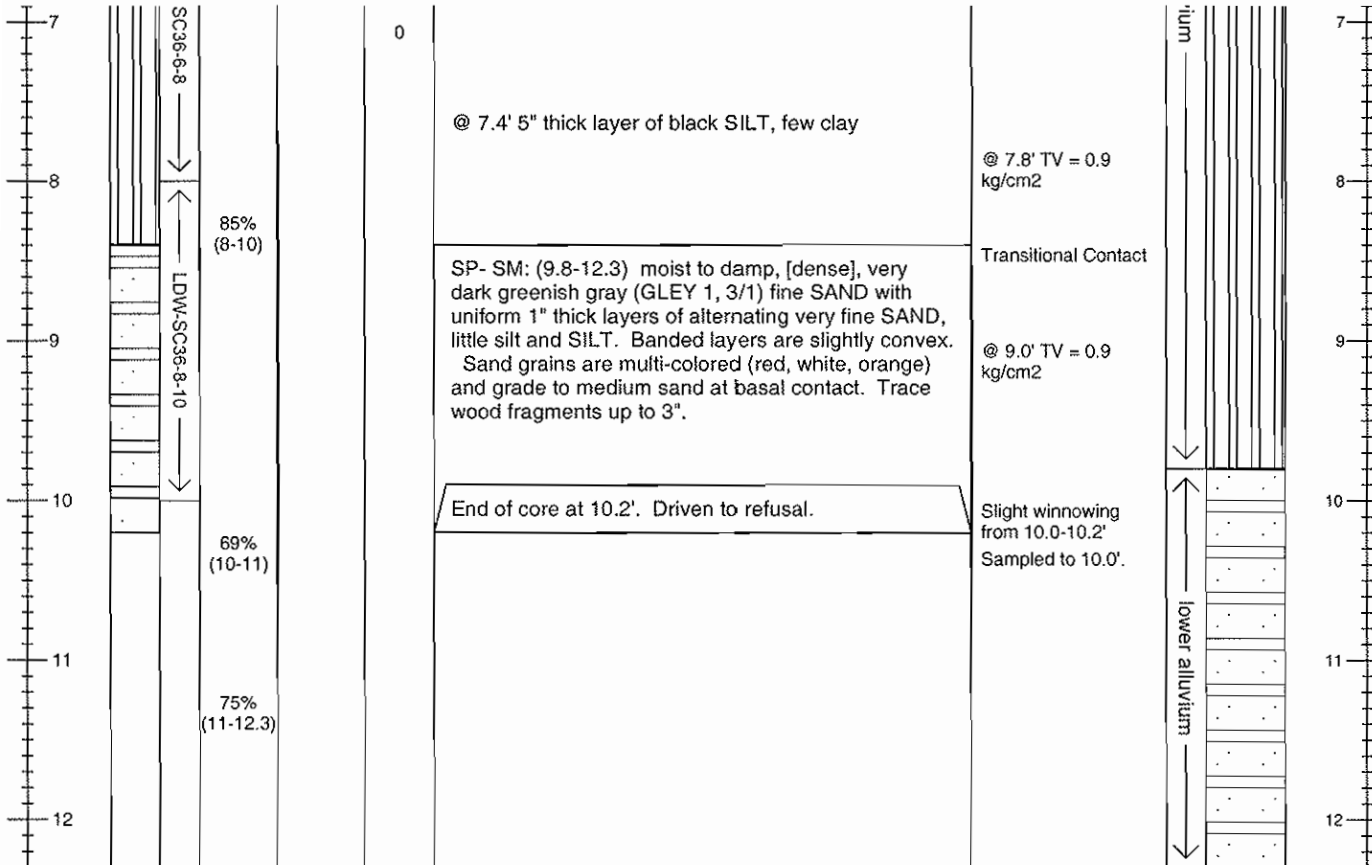
# Sediment Core Log

## LDW-SC-36 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>2.9</b>	Penetration Depth (ft): <b>12.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>17.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/15/06</b>	Mudline Elevation (ft): <b>-12.3</b>	Recovery in ft (%): <b>10.2 (83)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>201490</b> E./LONG: <b>1269988</b>	Process Date: <b>2/16/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (0.4'), easy (3.0'), moderate (11.0'), hard (12.3'), refusal (12.3'). One drive attempt made at station.</u> <u>Core catcher was 50% full. Feild replicate of SC-202.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>10.2/ 12.3 = 83 %</b>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



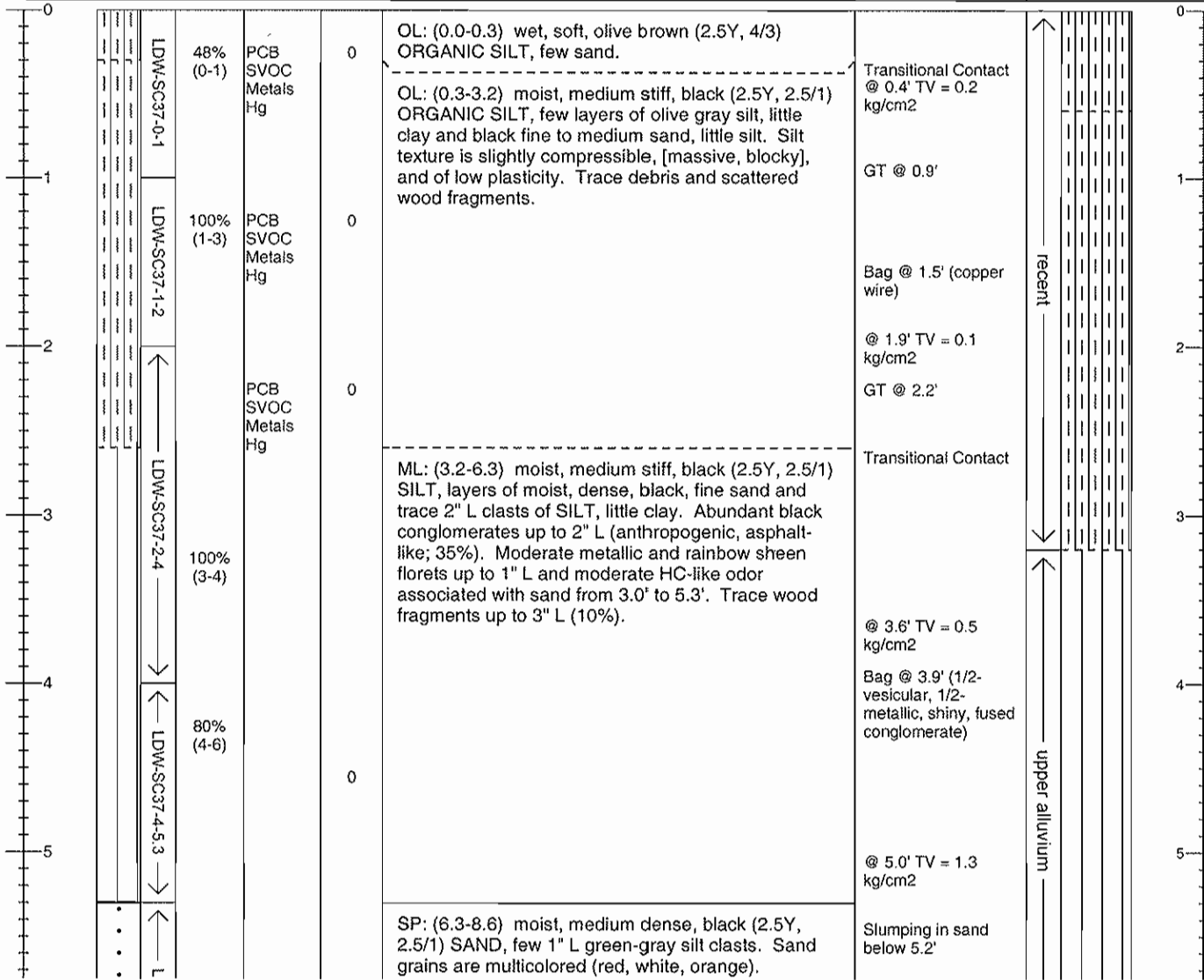
# Sediment Core Log

## LDW-SC-37 (R1)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.2</b>	Penetration Depth (ft): <b>8.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>19.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>-11.4</b>	Recovery in ft (%): <b>6.9 (80)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>201435</b> E./LONG: <b>1270690</b>	Process Date: <b>2/22/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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 Seattle, WA 98134-1162  
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 Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (1.4'), easy (3.0'), moderate (6.5'), hard (8.6'), refusal (8.6'). One drive attempt made at station. Core catcher was 100% full. Steep slope and pier pilings in area. Scattered rainbow sheen florets along sidewalls from 0.5' to 4.0' up to 1/2" diameter.

**Calculated Recovery**  
 Sample Length/Penetration Length:  
 6.9 / 8.6 = 80 %

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.





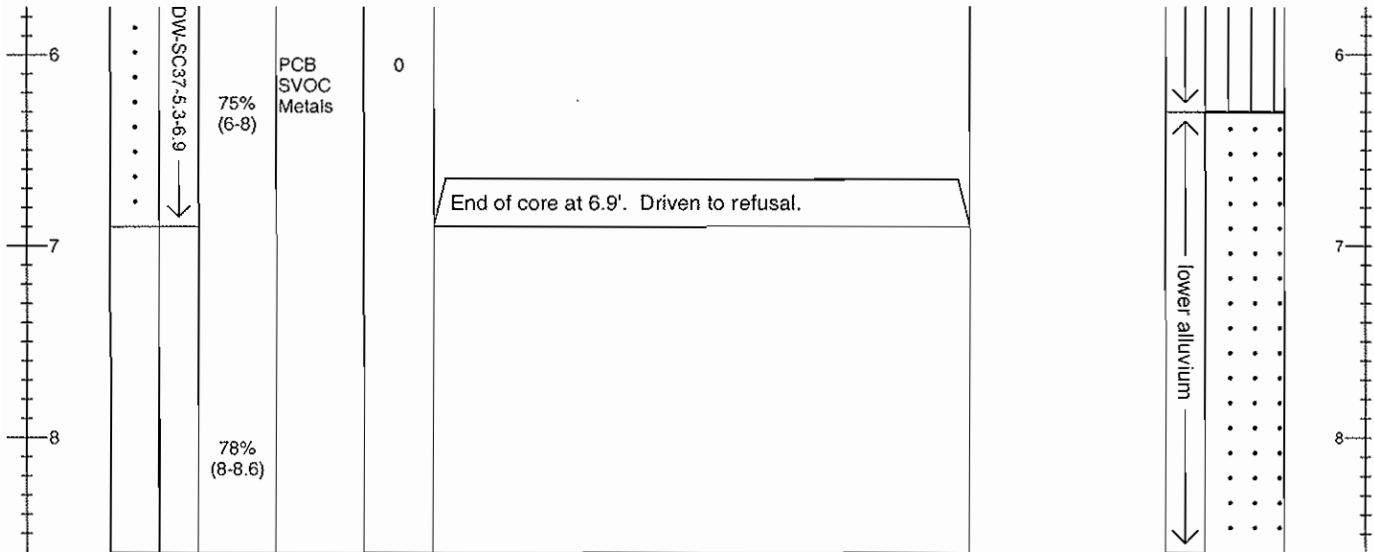
# Sediment Core Log

## LDW-SC-37 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.2</b>	Penetration Depth (ft): <b>8.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>19.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>-11.4</b>	Recovery in ft (%): <b>6.9 (80)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>201435</b> E./LONG: <b>1270690</b>	Process Date: <b>2/22/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (1.4'), easy (3.0'), moderate (6.5'), hard (8.6'), refusal (8.6'). One drive attempt made at station. Core catcher was 100% full. Steep slope and pier pilings in area. Scattered rainbow sheen florets along sidewalls from 0.5' to 4.0' up to 1/2" diameter.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $6.9 / 8.6 = 80 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



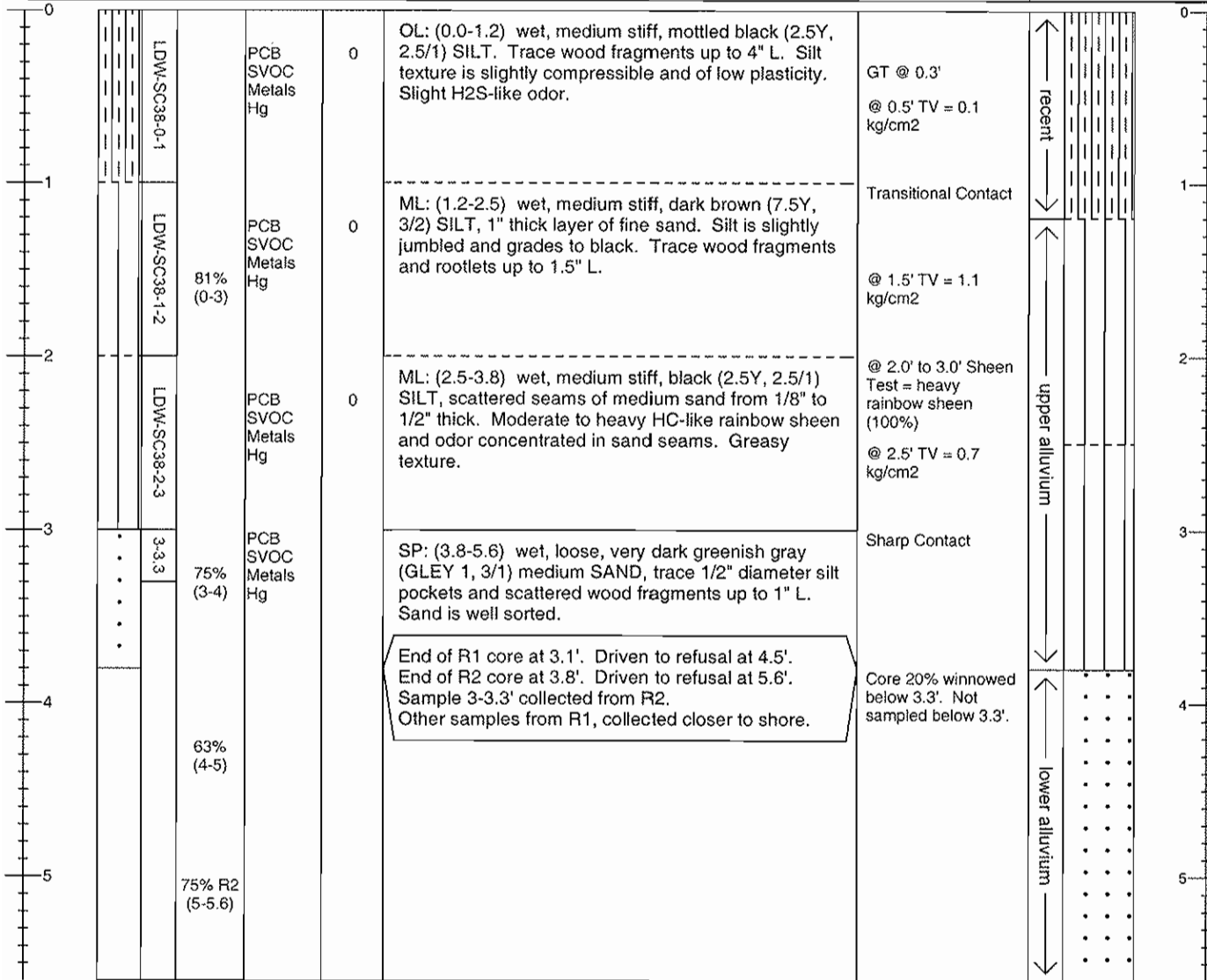
# Sediment Core Log

## LDW-SC-38 (R1/R2)

Sheet 1 of 1

Project: <b>LDW R1/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.8</b>	Penetration Depth (ft): <b>5.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>6.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/20/06</b>	Mudline Elevation (ft): <b>+3.4</b>	Recovery in ft (%): <b>3.8 (68)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>200959</b> E./LONG: <b>1269745</b>	Process Date: <b>2/21/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
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**Remarks:** Drive Notes: no freefall, easy (3'), moderate (4'), hard (5.6'), refusal (5.6'). Two drive attempts made at station. Core tip crushed. **Calculated Recovery** Sample Length/Penetration Length:  
Core is combined: 0-3' (R1) and 3-3.8' (R2). Header notes are from R2. **3.8 / 5.6 = 68 %**  
R1 is from 1st Ave Bridge and R2 from 20' further downslope; tagged sand unit.

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



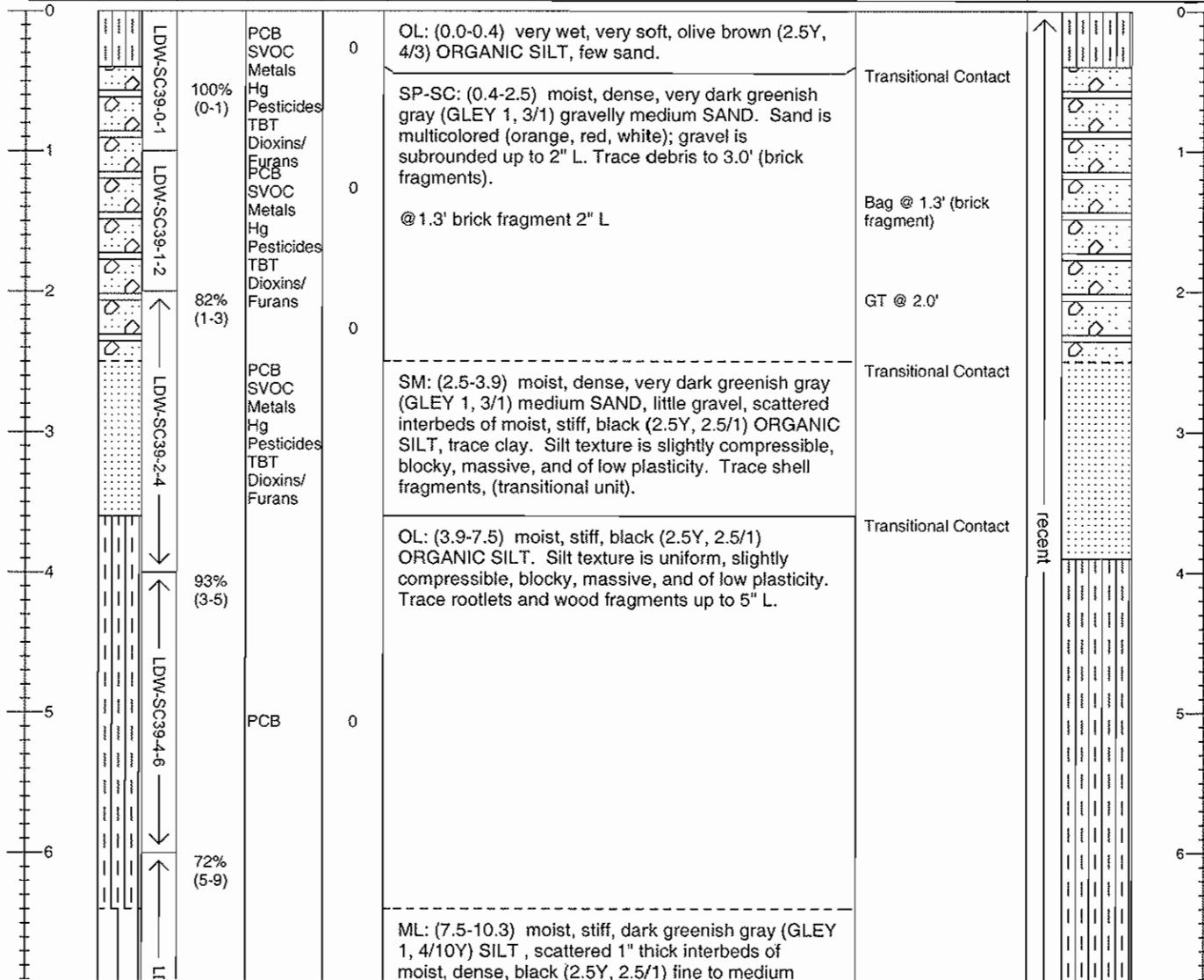
# Sediment Core Log

## LDW-SC-39 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>5.3</b>	Penetration Depth (ft): <b>12.4</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>9.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/15/06</b>	Mudline Elevation (ft): <b>-5</b>	Recovery in ft (%): <b>9.2 (74)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>200657</b> E./LONG: <b>1270056</b>	Process Date: <b>2/16/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: no freefall, easy (1.0'), moderate (9.0'), hard (12.4'), penetration goal reached. One drive attempt made at station. <b>Core catcher was 100% full. Difficult core extraction. No torvane measurements taken.</b>	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>9.2 / 12.4 = 74 %</b>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



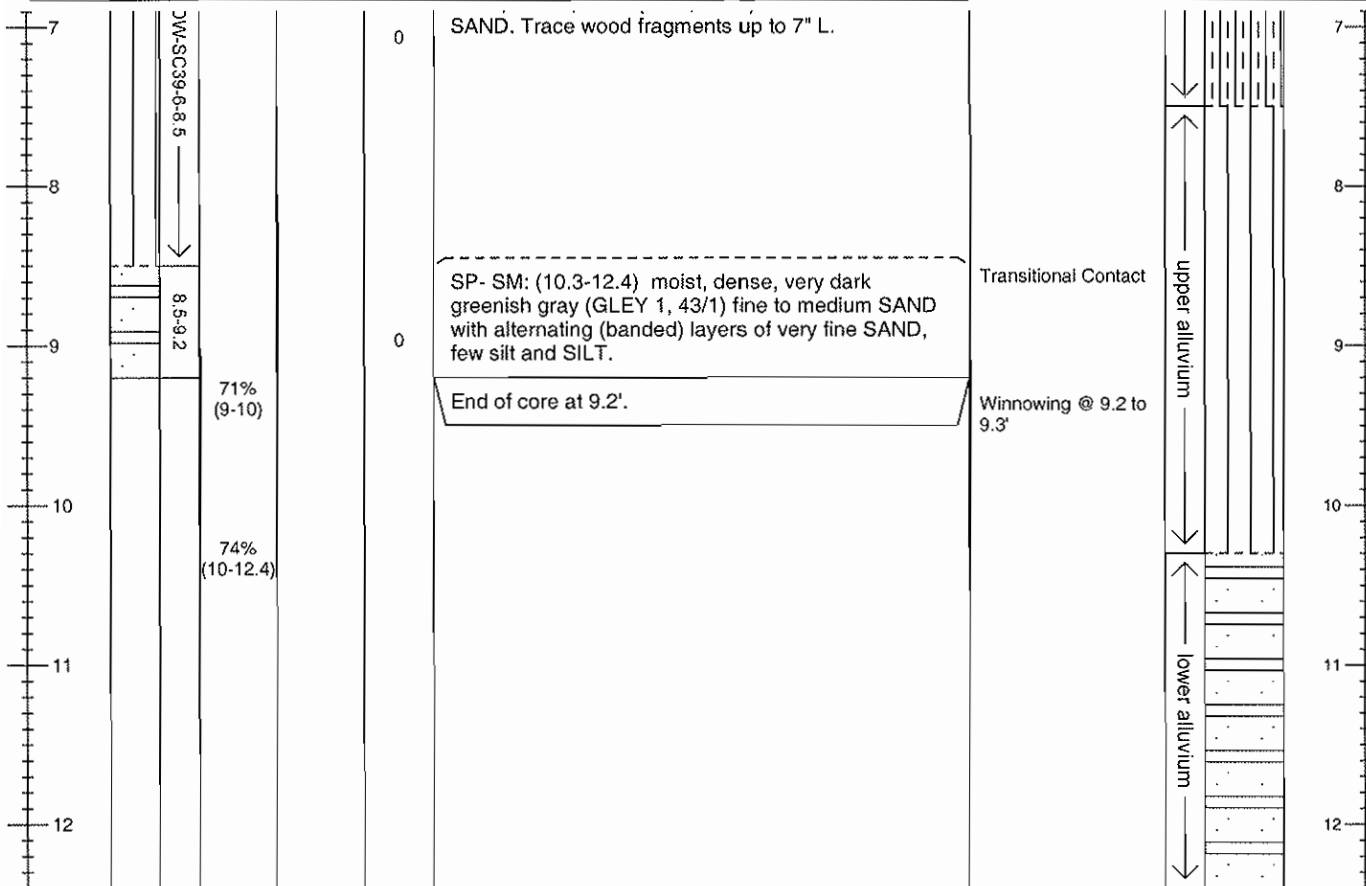
# Sediment Core Log

## LDW-SC-39 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>5.3</b>	Penetration Depth (ft): <b>12.4</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>9.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/15/06</b>	Mudline Elevation (ft): <b>-5</b>	Recovery in ft (%): <b>9.2 (74)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>200657</b> E./LONG: <b>1270056</b>	Process Date: <b>2/16/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: no freefall, easy (1.0'), moderate (9.0'), hard (12.4'), penetration goal reached. One drive attempt made at station. <b>Core catcher was 100% full. Difficult core extraction. No torvane measurements taken.</b>	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>9.2 / 12.4 = 74 %</b>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



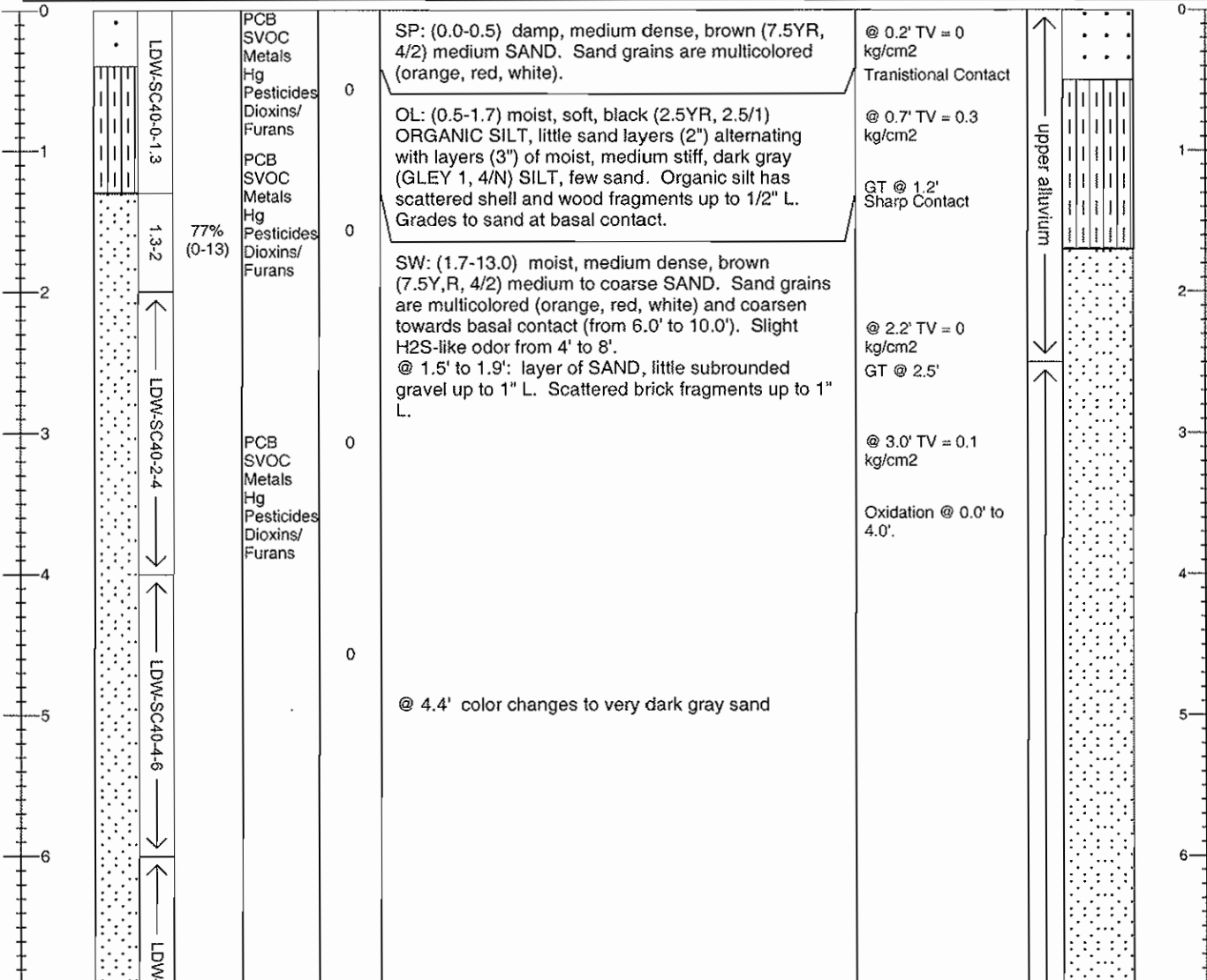
# Sediment Core Log

## LDW-SC-40 (R3)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>10.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/23/06</b>	Mudline Elevation (ft): <b>-1.0</b>	Recovery in ft (%): <b>10.0 (77)</b>
Contractor: <b>MSS</b>	N./LAT: <b>200339</b> E./LONG: <b>1270298</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracore/3.5" round AI</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: no freefall , easy (13.0'), penetration goal reached. Three drive attempts made at station. Station re-occupied with vibracore after MCS drives. Core catcher was empty (0.5' sediment loss).

**Calculated Recovery**  
Sample Length/Penetration Length:  
**10.0/13.0 = 77 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



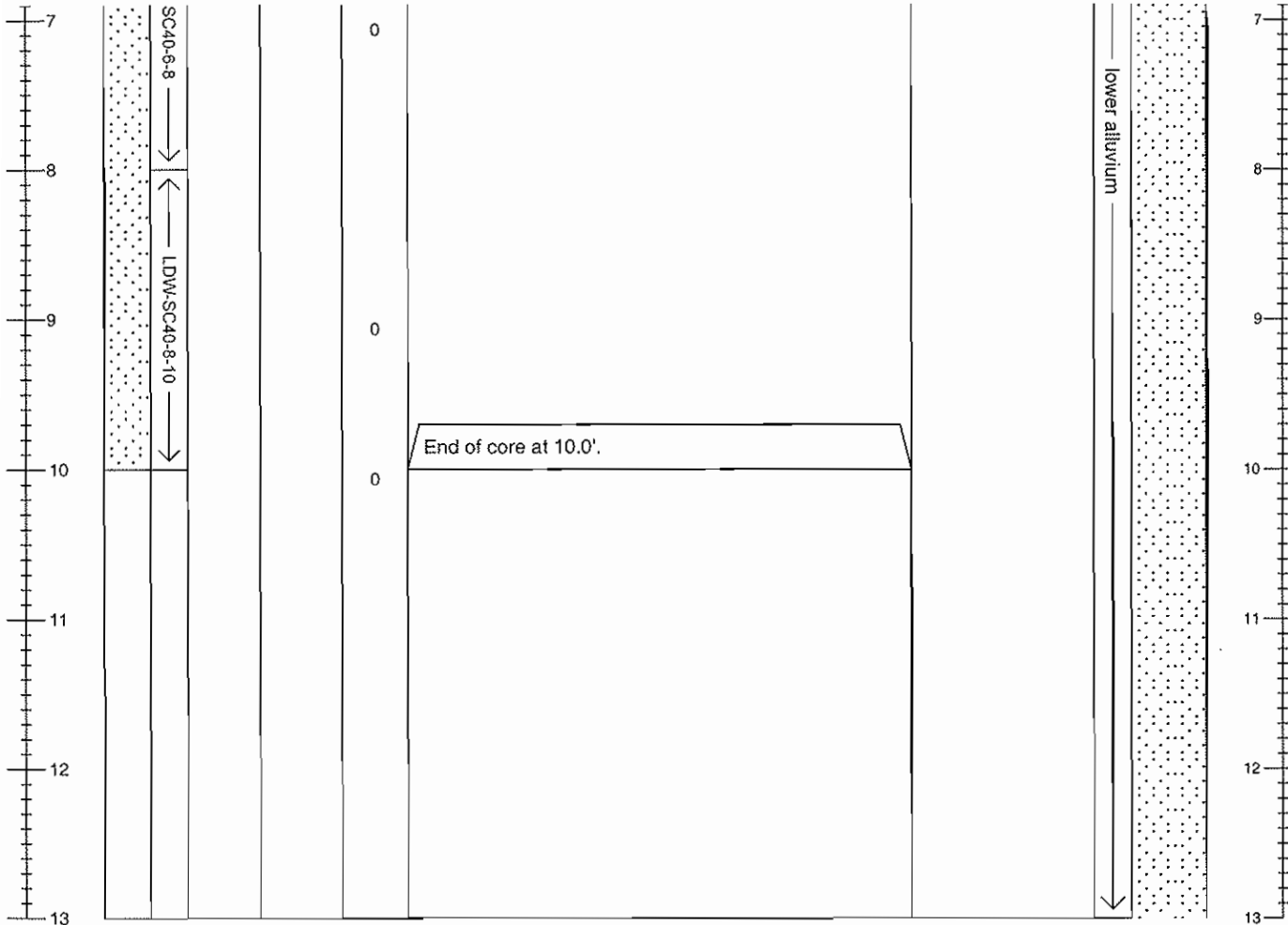
# Sediment Core Log

## LDW-SC-40 (R3)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>10.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/23/06</b>	Mudline Elevation (ft): <b>-1.0</b>	Recovery in ft (%): <b>10.0 (77)</b>
Contractor: <b>MSS</b>	N./LAT: <b>200339</b> E./LONG: <b>1270298</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracore/3.5" round Al</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: no freefall , easy (13.0'), penetration goal reached. Three drive attempts made at station. Station re-occupied with vibracore after MCS drives. Core catcher was empty (0.5' sediment loss).	<b>Calculated Recovery</b> Sample Length/Penetration Length: $10.0 / 13.0 = 77 \%$
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



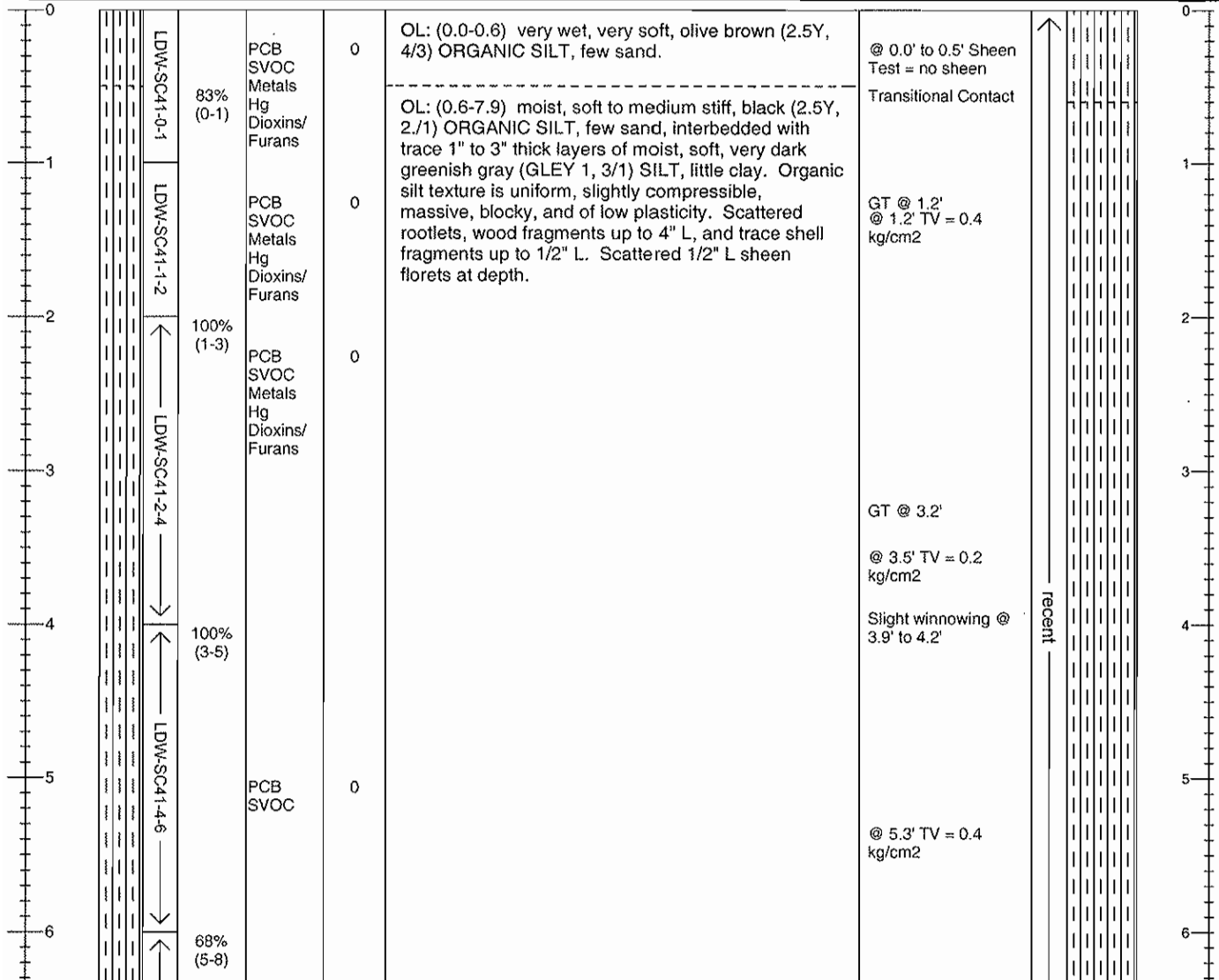
# Sediment Core Log

## LDW-SC-41 (R1)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.9</b>	Penetration Depth (ft): <b>11.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>15.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/20/06</b>	Mudline Elevation (ft): <b>-6.5</b>	Recovery in ft (%): <b>7.9 (66)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>200294</b> E./LONG: <b>1271170</b>	Process Date: <b>2/21/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (2.0'), easy (11.6'), penetration goal reached. One drive attempt made at station. Scattered HC-like sheen florets along sidewalls from 4.0' to 5.4'.  
la = lower alluvium

**Calculated Recovery**  
Sample Length/Penetration Length:  
**7.7 / 11.6 = 66 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



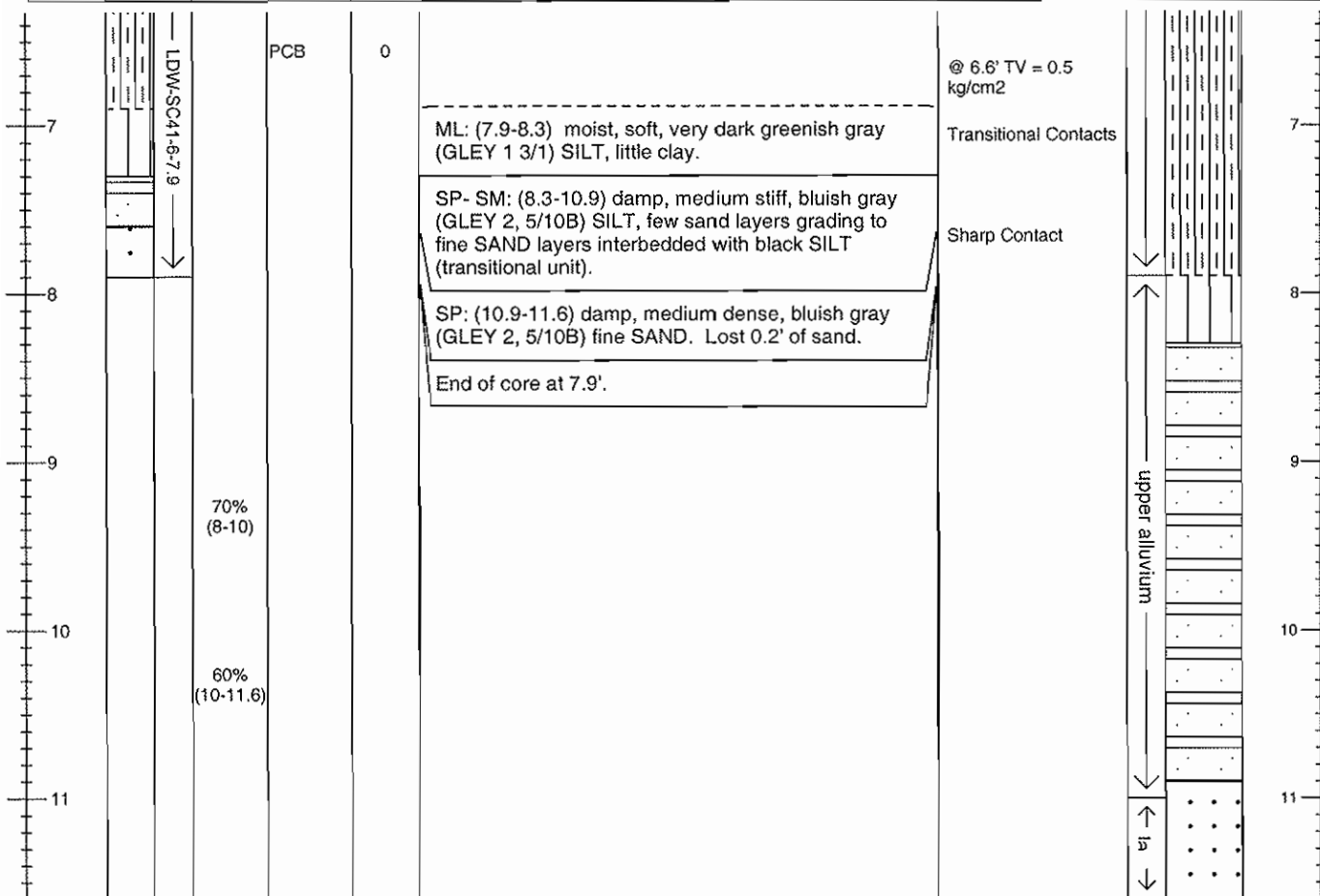
# Sediment Core Log

## LDW-SC-41 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.9</b>	Penetration Depth (ft): <b>11.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>15.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/20/06</b>	Mudline Elevation (ft): <b>-6.5</b>	Recovery in ft (%): <b>7.9 (66)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>200294</b> E./LONG: <b>1271170</b>	Process Date: <b>2/21/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (2.0'), easy (11.6'), penetration goal reached. One drive attempt made at station. Scattered HC-like sheen florets along sidewalls from 4.0' to 5.4'.</u> <u>la = lower alluvium</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $7.7 / 11.6 = 66 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



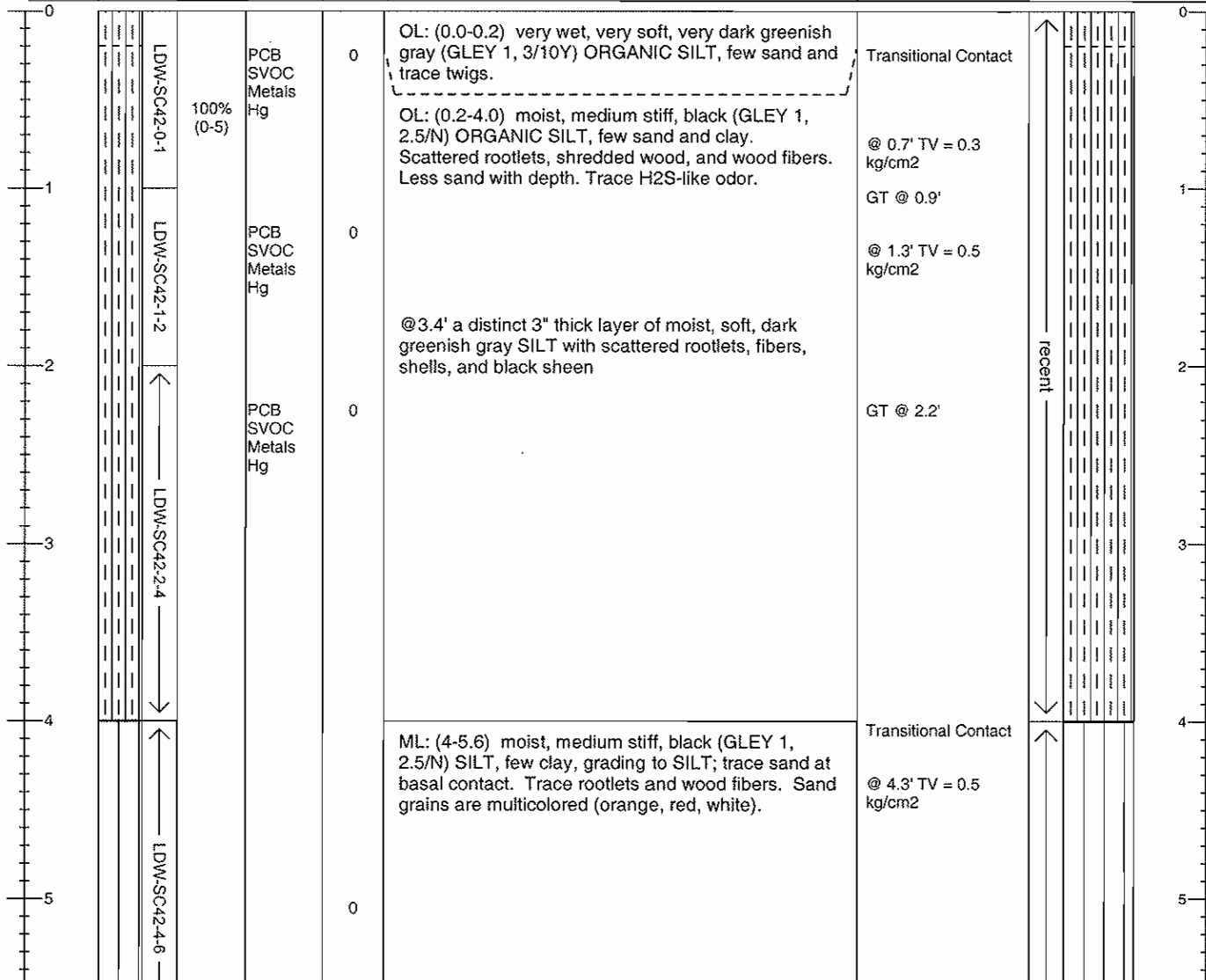


# Sediment Core Log

## LDW-SC-42 (R2)

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.8</b>	Penetration Depth (ft): <b>15.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>20.2</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/8/06</b>	Mudline Elevation (ft): <b>-11.9</b>	Recovery in ft (%): <b>12.8 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>199898</b> E./LONG: <b>1271361</b>	Process Date: <b>2/8/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N. Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> <u>Drive Notes: freefall (0.0'), easy (2.4'), moderate (15.9'), penetration goal reached. Two drive attempts made at station.</u> <u>Core catcher was empty, but natural plug as described by boat crew.</u> <u>Fine sand in shoe.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $12.8 / 15.9 = 81 \%$
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



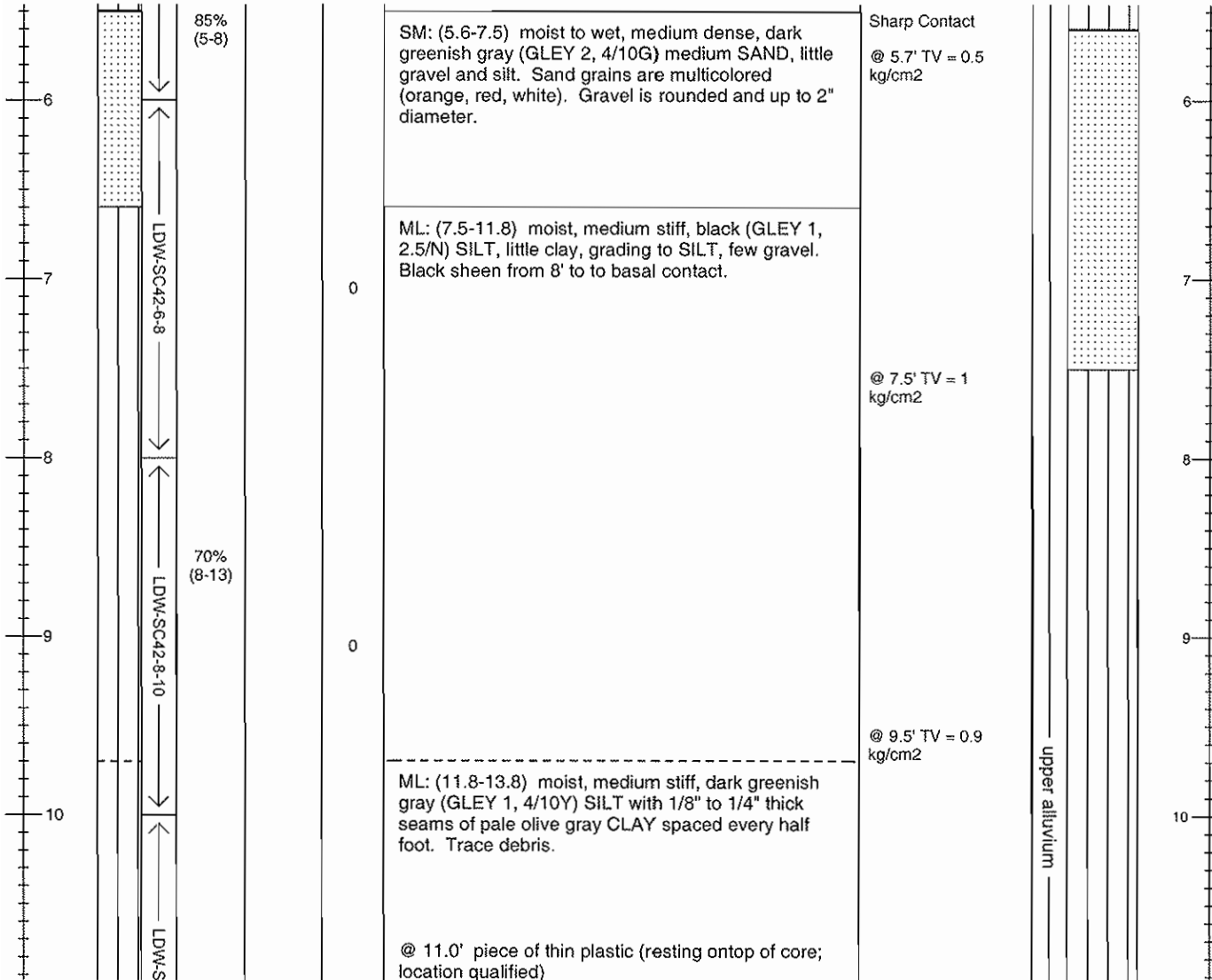
# Sediment Core Log

## LDW-SC-42 (R2)

Sheet 2 of 3

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.8</b>	Penetration Depth (ft): <b>15.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>20.2</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/8/06</b>	Mudline Elevation (ft): <b>-11.9</b>	Recovery in ft (%): <b>12.8 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>199898</b> E./LONG: <b>1271361</b>	Process Date: <b>2/8/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.0'), easy (2.4'), moderate (15.9'), penetration goal reached. Two drive attempts made at station.

**Core catcher was empty, but natural plug as described by boat crew.**

**Fine sand in shoe.**

**Calculated Recovery**  
Sample Length/Penetration Length:  
**12.8/ 15.9 = 81 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



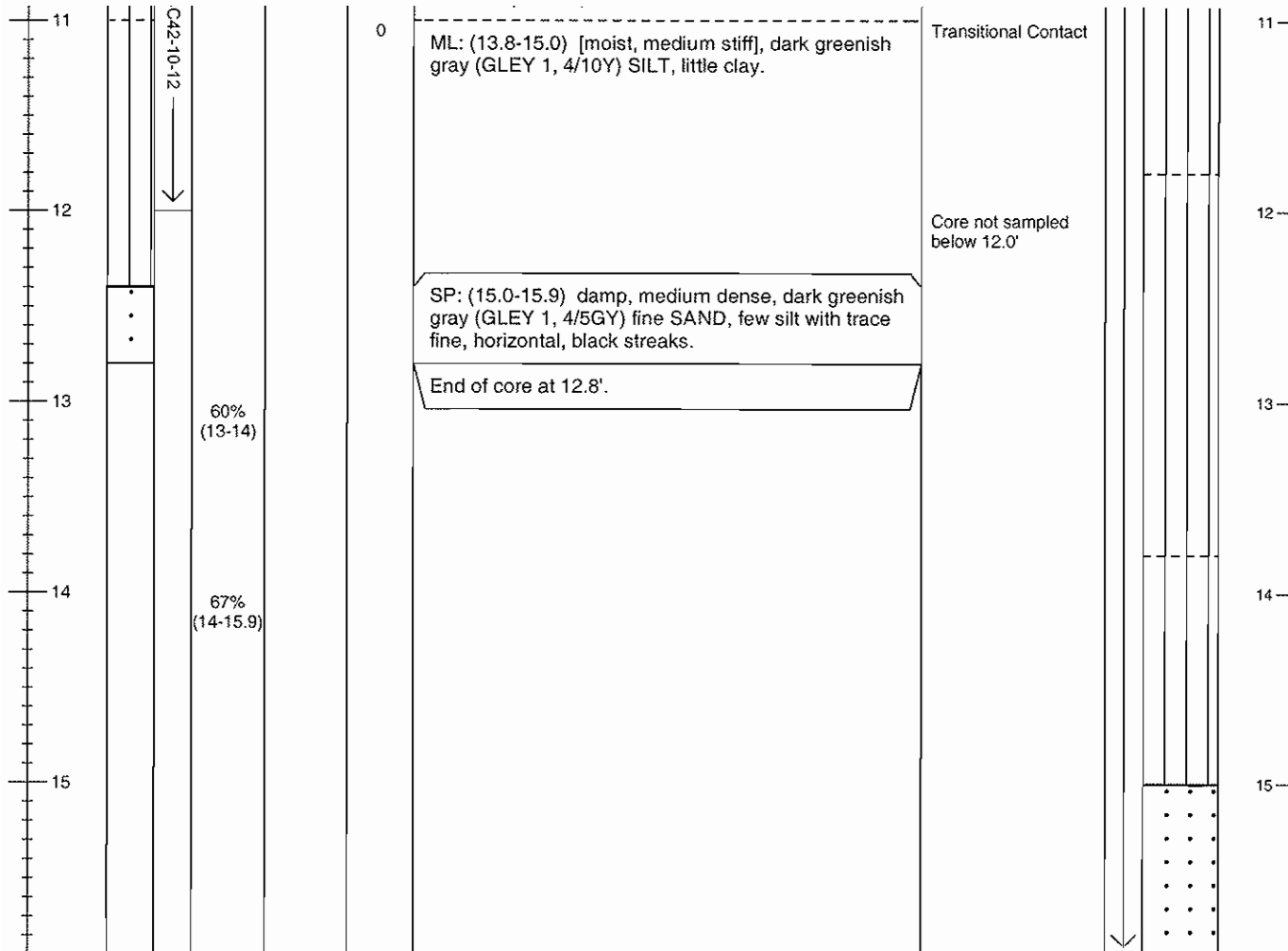
# Sediment Core Log

## LDW-SC-42 (R2)

Sheet 3 of 3

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8.8</b>	Penetration Depth (ft): <b>15.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>20.2</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/8/06</b>	Mudline Elevation (ft): <b>-11.9</b>	Recovery in ft (%): <b>12.8 (79)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>199898</b> E./LONG: <b>1271361</b>	Process Date: <b>2/8/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N. Bacher</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>fre fall (0.0'), easy (2.4'), moderate (15.9'),</u> <u>penetration goal reached. Two drive attempts made at station.</u> <u>Core catcher was empty, but natural plug as described by boat crew.</u> <u>Fine sand in shoe.</u></p>	<p><b>Calculated Recovery</b> Sample Length/Penetration Length: <b>12.8/ 15.9 = 81 %</b></p>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



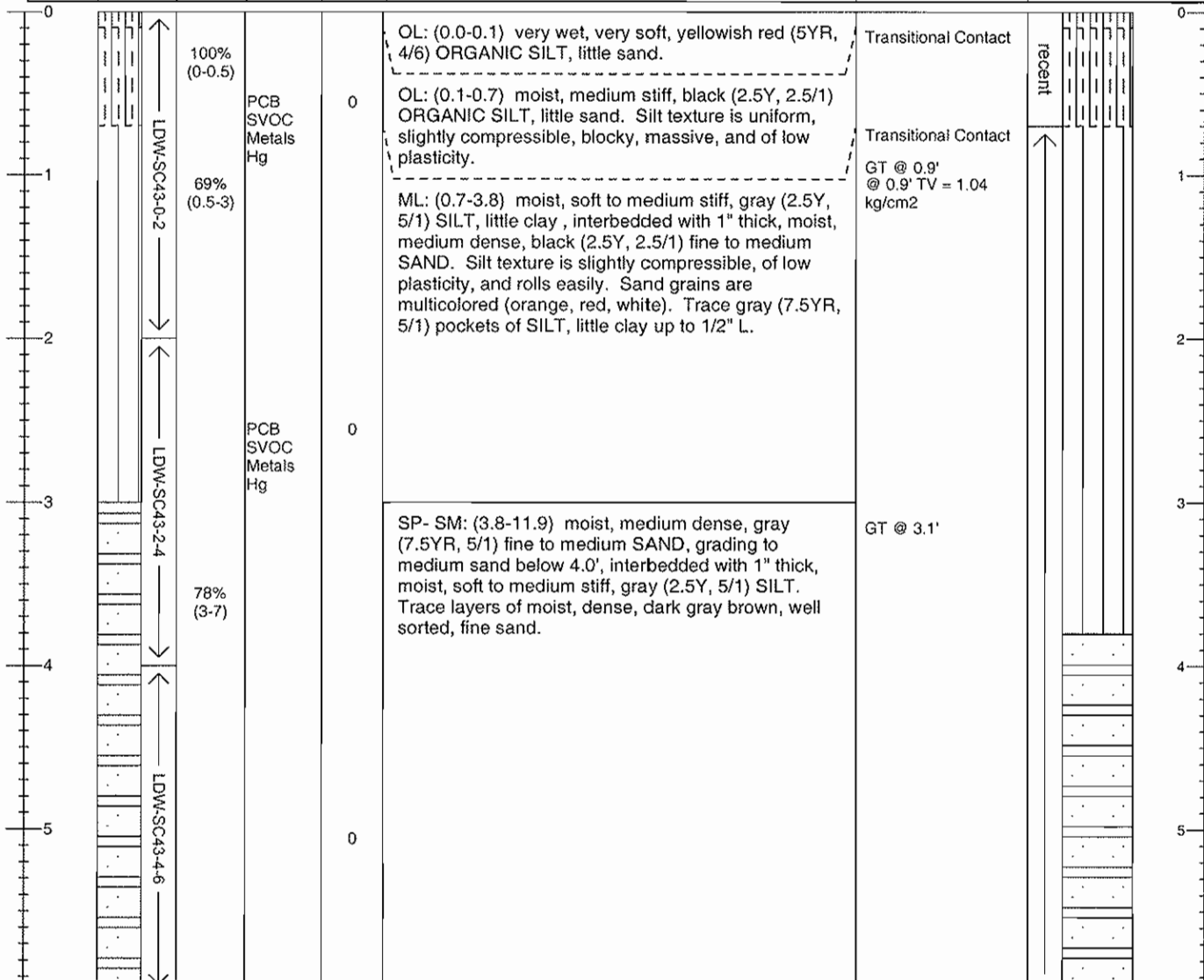
# Sediment Core Log

## LDW-SC-43 (R3)

Sheet 1 of 3

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>3.9</b>	Penetration Depth (ft): <b>15.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>11.1</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>-6.8</b>	Recovery in ft (%): <b>9.8 (62)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>199287</b> E./LONG: <b>1271846</b>	Process Date: <b>2/23/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (0.5')</u>, <u>easy (7.0')</u>, <u>moderate (13.0')</u>, <u>hard (14.0')</u>, <u>penetration goal reached. Core catcher was half full.</u></p> <p>Torvane measurements taken from R2. 1/2" HC-like sheen</p> <p>sheen florets on sidewalls from 8.5' to 8.9'.</p>	<p><b>Calculated Recovery</b></p> <p>Sample Length/Penetration Length:</p> <p style="text-align: center;">9.8 / 15.9 = 62 %</p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



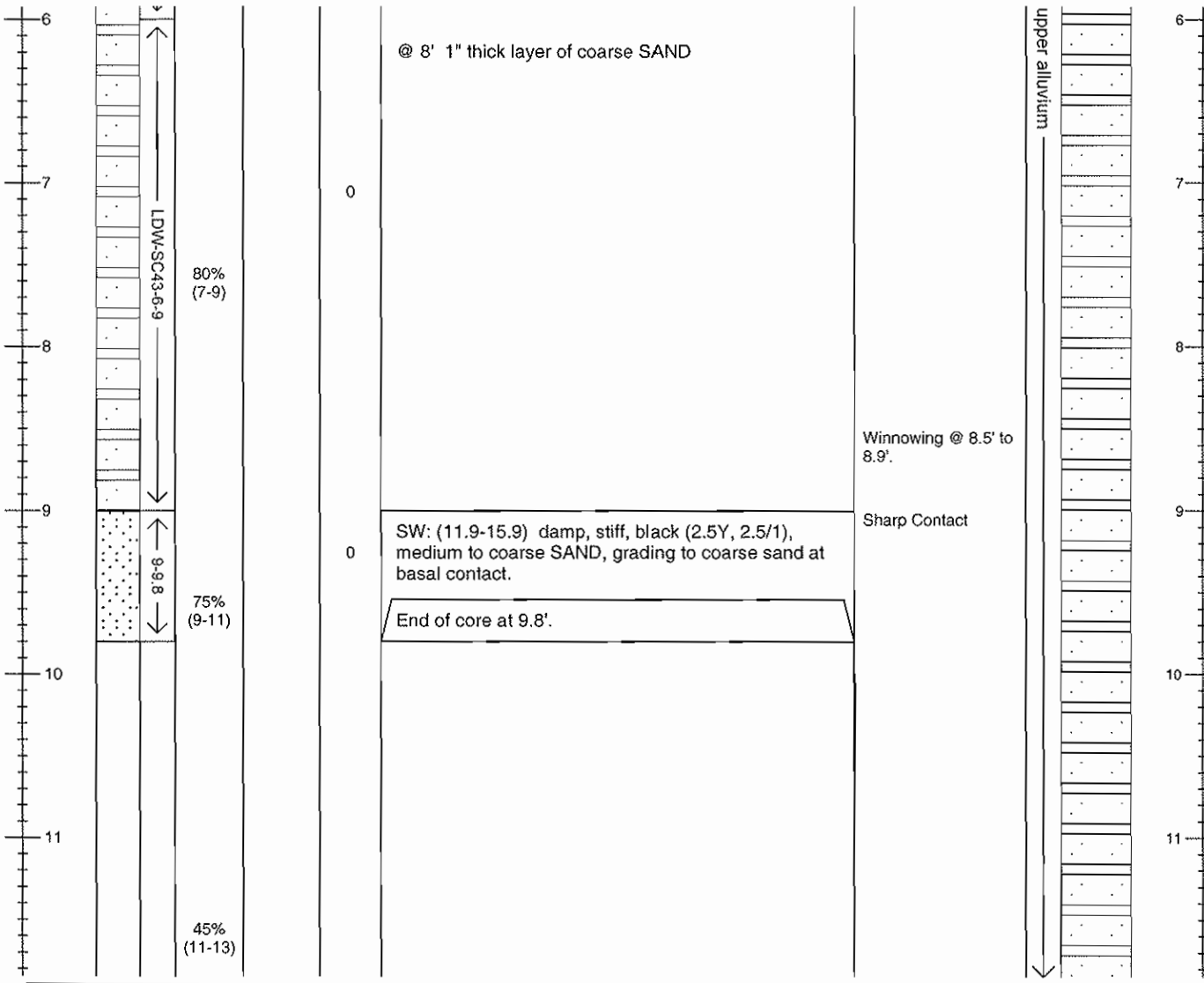
# Sediment Core Log

## LDW-SC-43 (R3)

Sheet 2 of 3

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>3.9</b>	Penetration Depth (ft): <b>15.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>11.1</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>-6.8</b>	Recovery in ft (%): <b>9.8 (62)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>199287</b> E./LONG: <b>1271846</b>	Process Date: <b>2/23/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (0.5'), easy (7.0'), moderate (13.0'), hard (14.0'), penetration goal reached. Core catcher was half full. Torvane measurements taken from R2. 1/2" HC-like sheen sheen florets on sidewalls from 8.5' to 8.9'.	<b>Calculated Recovery</b> Sample Length/Penetration Length: 9.8 / 15.9 = 62 %
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



# Sediment Core Log

## LDW-SC-43 (R3)

Sheet 3 of 3

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>3.9</b>	Penetration Depth (ft): <b>15.9</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>11.1</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>-6.8</b>	Recovery in ft (%): <b>9.8 (62)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>199287</b> E./LONG: <b>1271846</b>	Process Date: <b>2/23/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (0.5'), easy (7.0'), moderate (13.0'), hard (14.0'), penetration goal reached. Core catcher was half full.</u> <u>Torvane measurements taken from R2. 1/2" HC-like sheen sheen florets on sidewalls from 8.5' to 8.9'.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>9.8 / 15.9 = 62 %</b>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



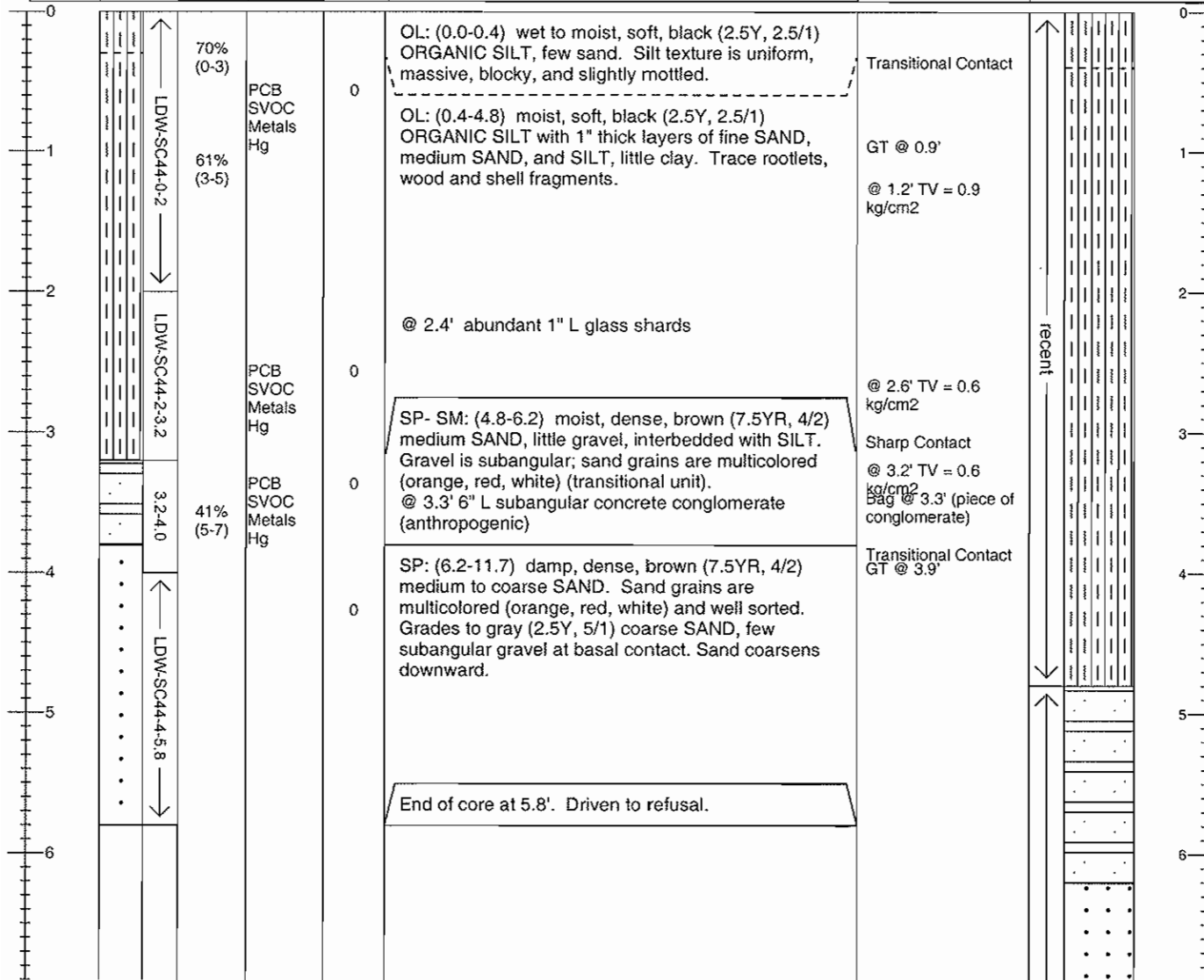
# Sediment Core Log

## LDW-SC-44 (R2)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>10.0</b>	Penetration Depth (ft): <b>11.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>12.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/21/06</b>	Mudline Elevation (ft): <b>-2.1</b>	Recovery in ft (%): <b>5.8 (50)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>198925</b> E./LONG: <b>1272230</b>	Process Date: <b>2/21/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Driver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (3.0'), moderate (7.0'), hard (11.7'), refusal (11.7'). Two drive attempts made at station.  
Core catcher was 66% full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**5.8 / 11.7 = 50 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*

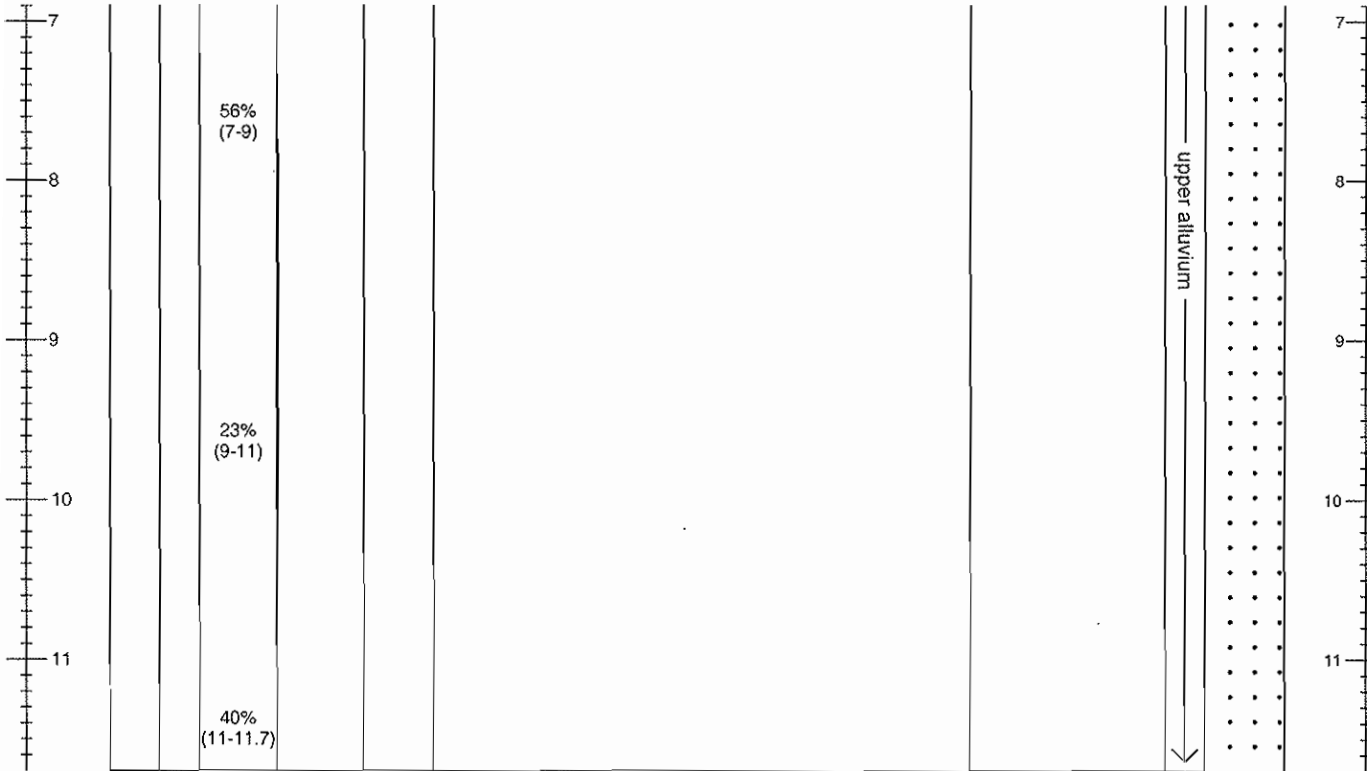


# Sediment Core Log

## LDW-SC-44 (R2)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>		Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>		Water Elevation (ft)/Tide: <b>10.0</b>	Penetration Depth (ft): <b>11.7</b>
Client: <b>LDWG</b>		Water Depth (ft): <b>12.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/21/06</b>		Mudline Elevation (ft): <b>-2.1</b>	Recovery in ft (%): <b>5.8 (50)</b>
Contractor: <b>MCS Environmental, Inc.</b>		N./LAT: <b>198925</b> E./LONG: <b>1272230</b>	Process Date: <b>2/21/06</b>
Vessel: <b>MCS barge</b>		Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>		Method/Tube ID: <b>Driver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>
Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis  PID Measurement
<b>Sediment Description</b>		<b>Comments</b>	<i>In-situ</i> Depth (ft) & Graphic Log
		for Recovered Depths	
		Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	



The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (3.0'), moderate (7.0'), hard (11.7'), refusal (11.7')</u> . Two drive attempts made at station. <hr/> Core catcher was 66% full.	<b>Calculated Recovery</b> Sample Length/Penetration Length: <hr/> $5.8 / 11.7 = 50 \%$
	<hr/>	

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*





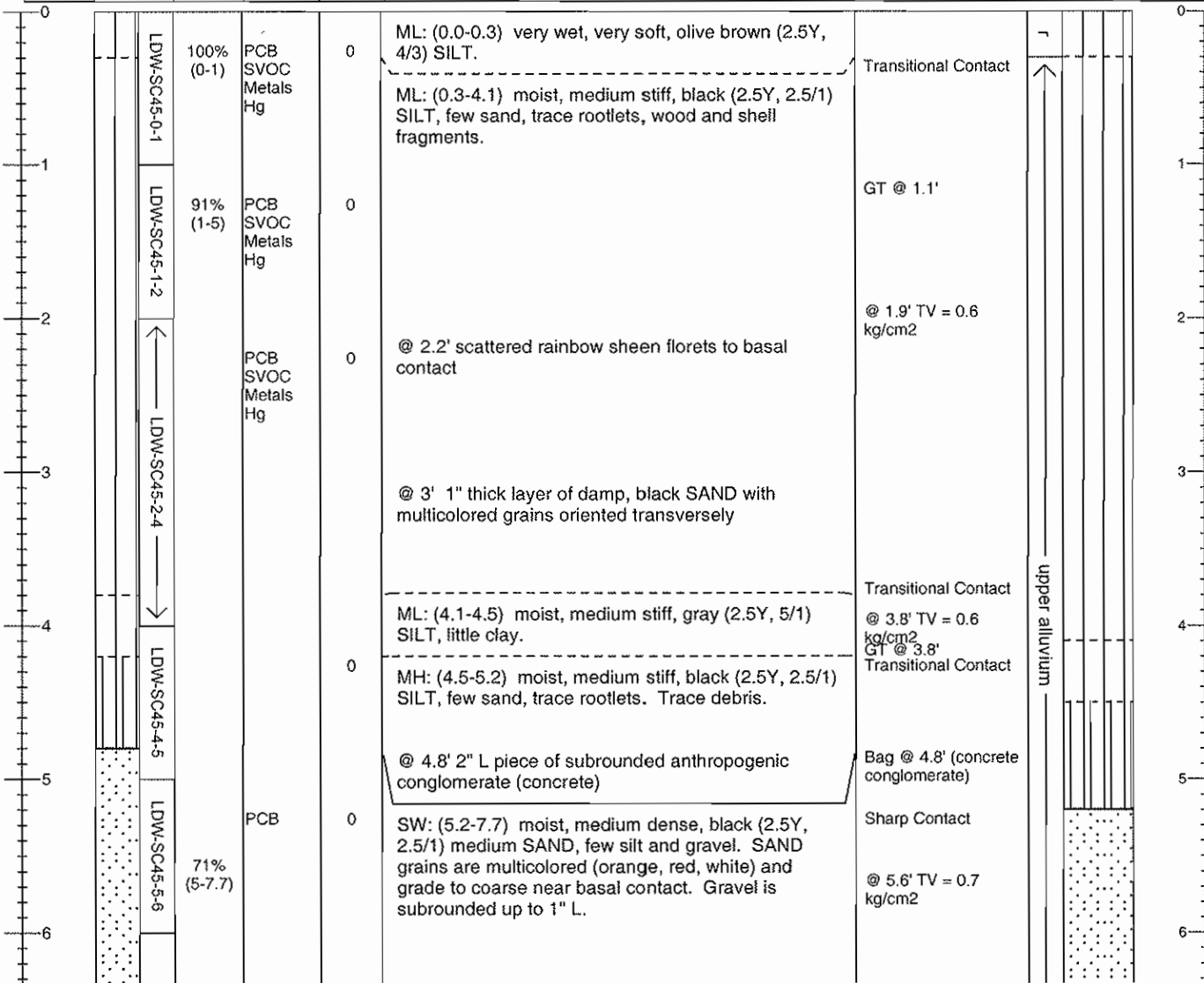
# Sediment Core Log

## LDW-SC-45 (R3)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.2</b>	Penetration Depth (ft): <b>7.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>22.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/21/06</b>	Mudline Elevation (ft): <b>-13.5</b>	Recovery in ft (%): <b>6.5 (84)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>198588</b> E./LONG: <b>1272647</b>	Process Date: <b>2/21/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Driver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (0.8'), easy (5.0'), moderate (7.5'), hard (7.7'), refusal (7.7'). Three drive attempts made at station. Core catcher was 50% full. HC-like rainbow sheen on sidewalls and parting seams from 1.8' to 4.2'. r = recent

**Calculated Recovery**  
Sample Length/Penetration Length:  
**6.5 / 7.7 = 84 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



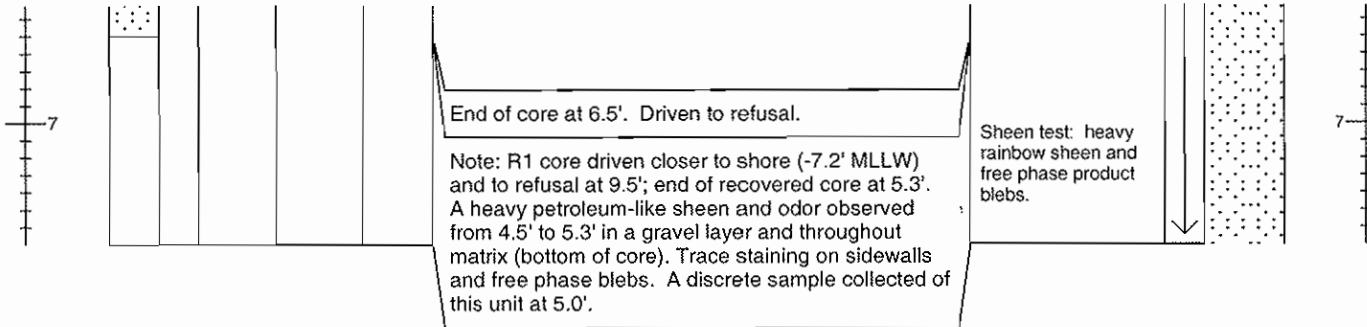
# Sediment Core Log

## LDW-SC-45 (R3)

Sheet 2 of 2

Project: <b>LDW R1/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.2</b>	Penetration Depth (ft): <b>7.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>22.7</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/21/06</b>	Mudline Elevation (ft): <b>-13.5</b>	Recovery in ft (%): <b>6.5 (84)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>198588</b> E./LONG: <b>1272647</b>	Process Date: <b>2/21/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Driver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> <u>Drive Notes: freefall (0.8'), easy (5.0'), moderate (7.5'), hard (7.7'), refusal (7.7'). Three drive attempts made at station. Core catcher was 50% full. HC-like rainbow sheen on sidewalls and parting seams from 1.8' to 4.2'. r = recent</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $6.5 / 7.7 = 84 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



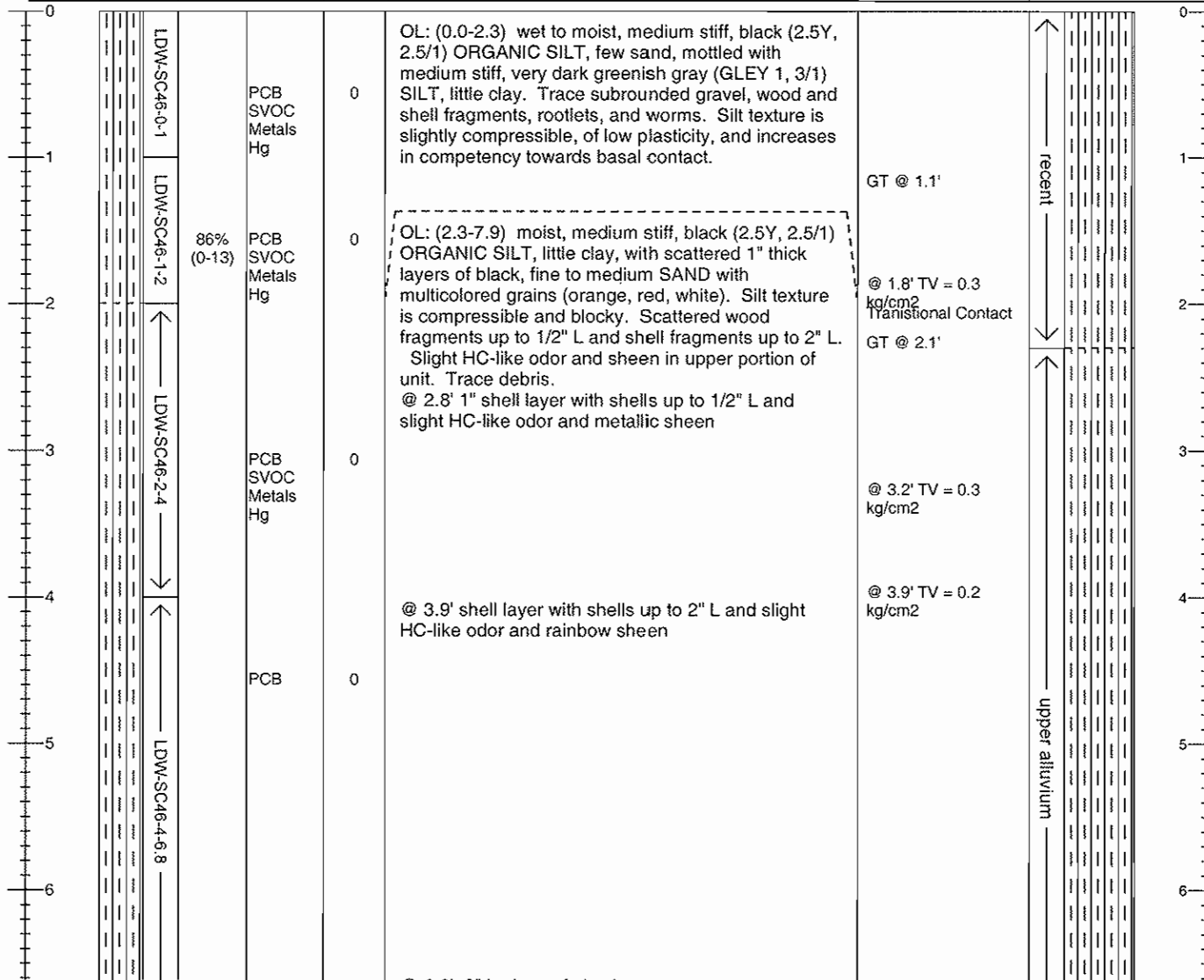
# Sediment Core Log

## LDW-SC-46 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>16.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/24/06</b>	Mudline Elevation (ft): <b>-7.6</b>	Recovery in ft (%): <b>11.2 (86)</b>
Contractor: <b>MSS</b>	N./LAT: <b>198577</b> E./LONG: <b>1272117</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round AI</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (3.5'), easy (13.0'), penetration goal reached. One drive attempt made at station. Core catcher was empty (0.5' sediment loss).	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>11.2/ 13.0 = 86 %</b>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



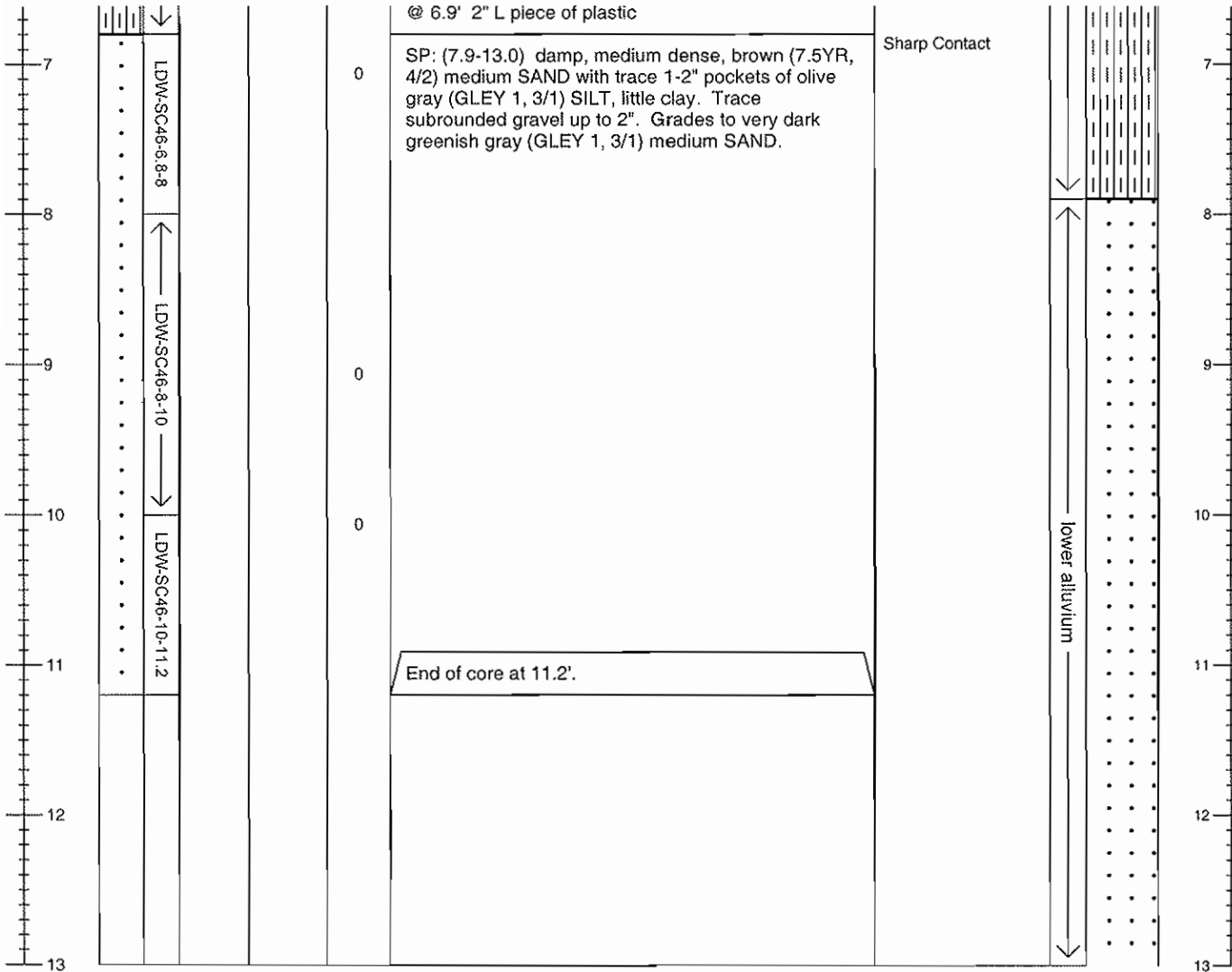
# Sediment Core Log

## LDW-SC-46 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>16.8</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/24/06</b>	Mudline Elevation (ft): <b>-7.6</b>	Recovery in ft (%): <b>11.2 (86)</b>
Contractor: <b>MSS</b>	N./LAT: <b>198577</b> E./LONG: <b>1272117</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round Al</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (3.5'), easy (13.0'), penetration goal reached. One drive attempt made at station. Core catcher was empty (0.5' sediment loss).	<b>Calculated Recovery</b> Sample Length/Penetration Length: $11.2 / 13.0 = 86 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



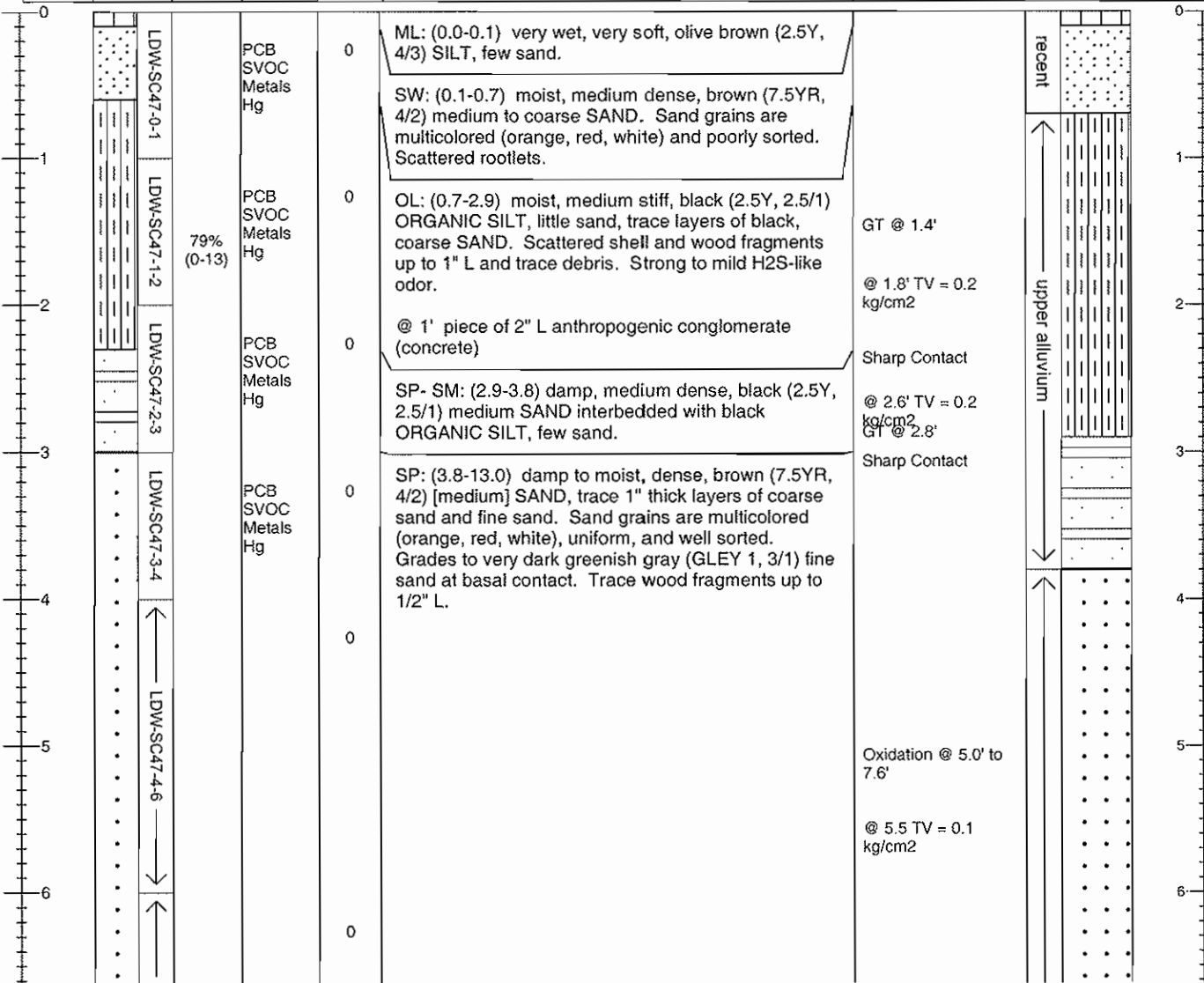
# Sediment Core Log

## LDW-SC-47 (R3)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>10</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/23/06</b>	Mudline Elevation (ft): <b>-0.4</b>	Recovery in ft (%): <b>10.3 (79)</b>
Contractor: <b>MSS</b>	N./LAT: <b>197422</b> E./LONG: <b>1273340</b>	Process Date: <b>2/23/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round AI</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: moderate (8.0'), hard (10.0'), refusal (13.0'). Core catcher was 50% full. Instrument not reading correctly during early part of the drive. Three drive attempts made at station; station re-occupied with vibracore.</p>	<p><b>Calculated Recovery</b> Sample Length/Penetration Length: <b>10.3/13.0 = 79 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



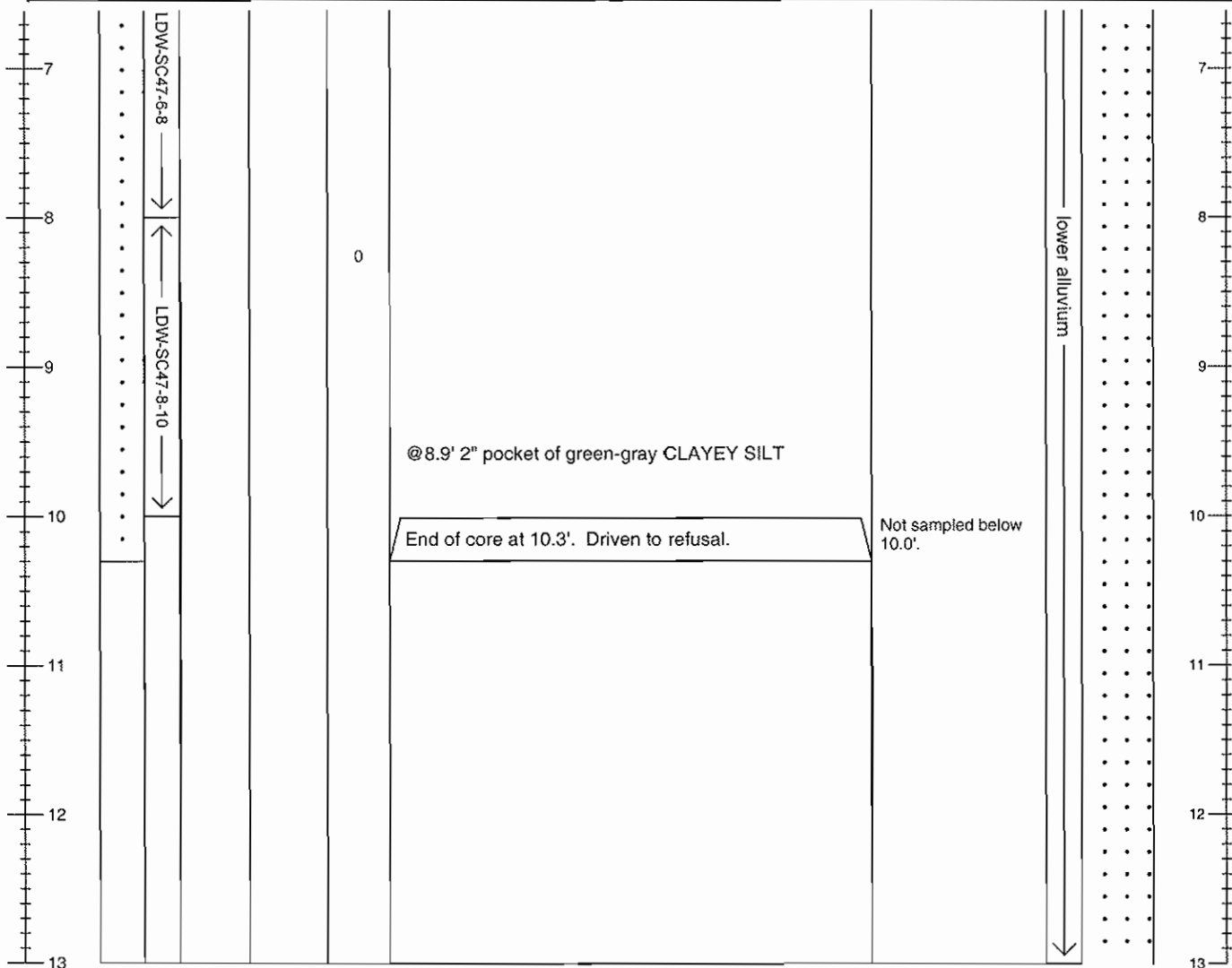
# Sediment Core Log

## LDW-SC-47 (R3)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>10</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/23/06</b>	Mudline Elevation (ft): <b>-0.4</b>	Recovery in ft (%): <b>10.3 (79)</b>
Contractor: <b>MSS</b>	N./LAT: <b>197422</b> E./LONG: <b>1273340</b>	Process Date: <b>2/23/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round AI</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: moderate (8.0'), hard (10.0'), refusal (13.0'). Core catcher was 50% full. Instrument not reading correctly during early part of the drive. Three drive attempts made at station; station re-occupied with vibracore.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $10.3 / 13.0 = 79 \%$
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



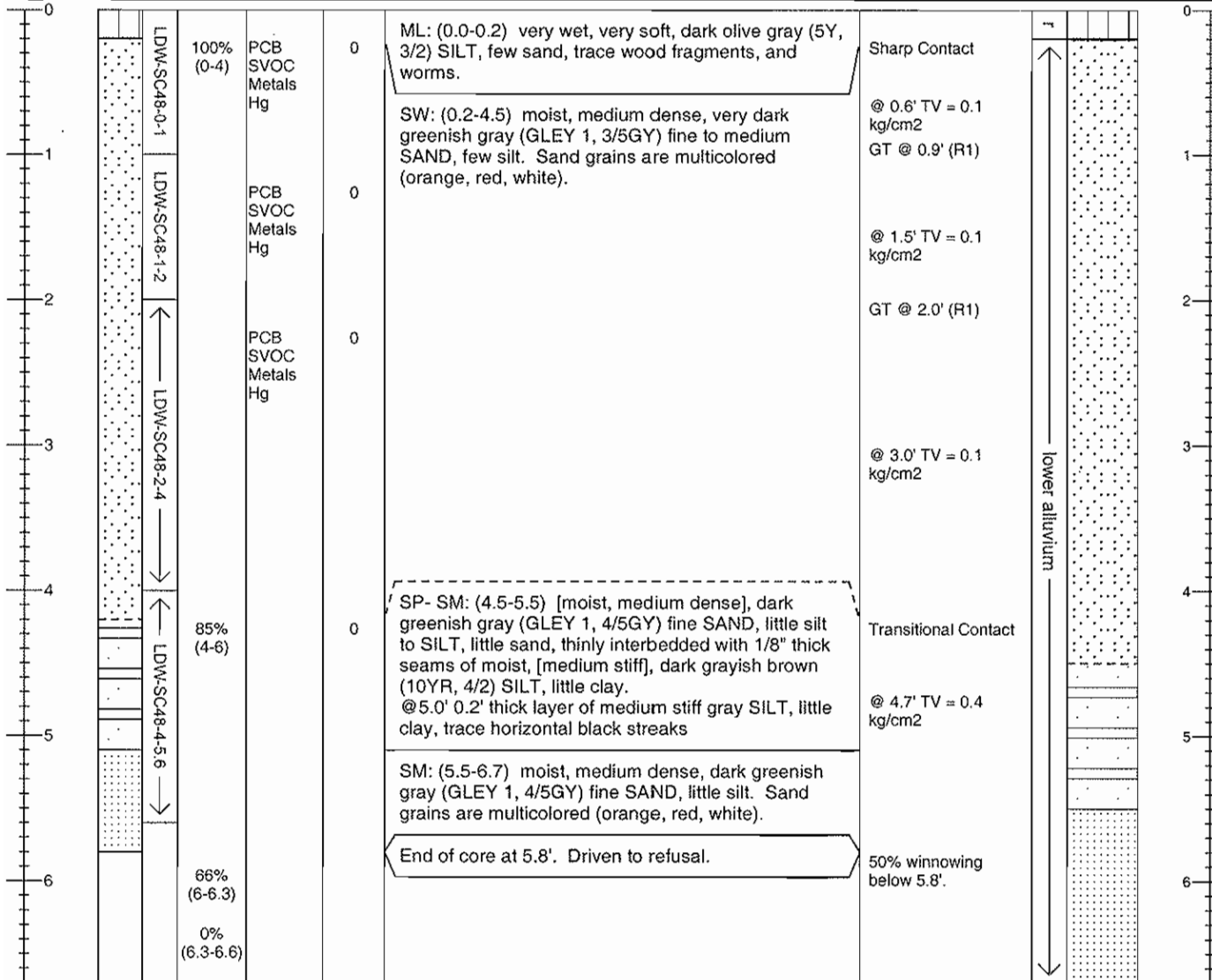
# Sediment Core Log

## LDW-SC-48 (R2)

Sheet 1 of 1

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.4</b>	Penetration Depth (ft): <b>6.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>37.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/8/06</b>	Mudline Elevation (ft): <b>-22.3</b>	Recovery in ft (%): <b>5.8 (86)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>196658</b> E./LONG: <b>127453</b>	Process Date: <b>2/8/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N.Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (0.2')</u> , <u>easy (6.0')</u> , <u>hard (6.6')</u> , <u>refusal (6.7')</u> . Two drive attempts made at station. Core catcher was 50% full. r = recent	<b>Calculated Recovery</b> Sample Length/Penetration Length: $5.8 / 6.7 = 86 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



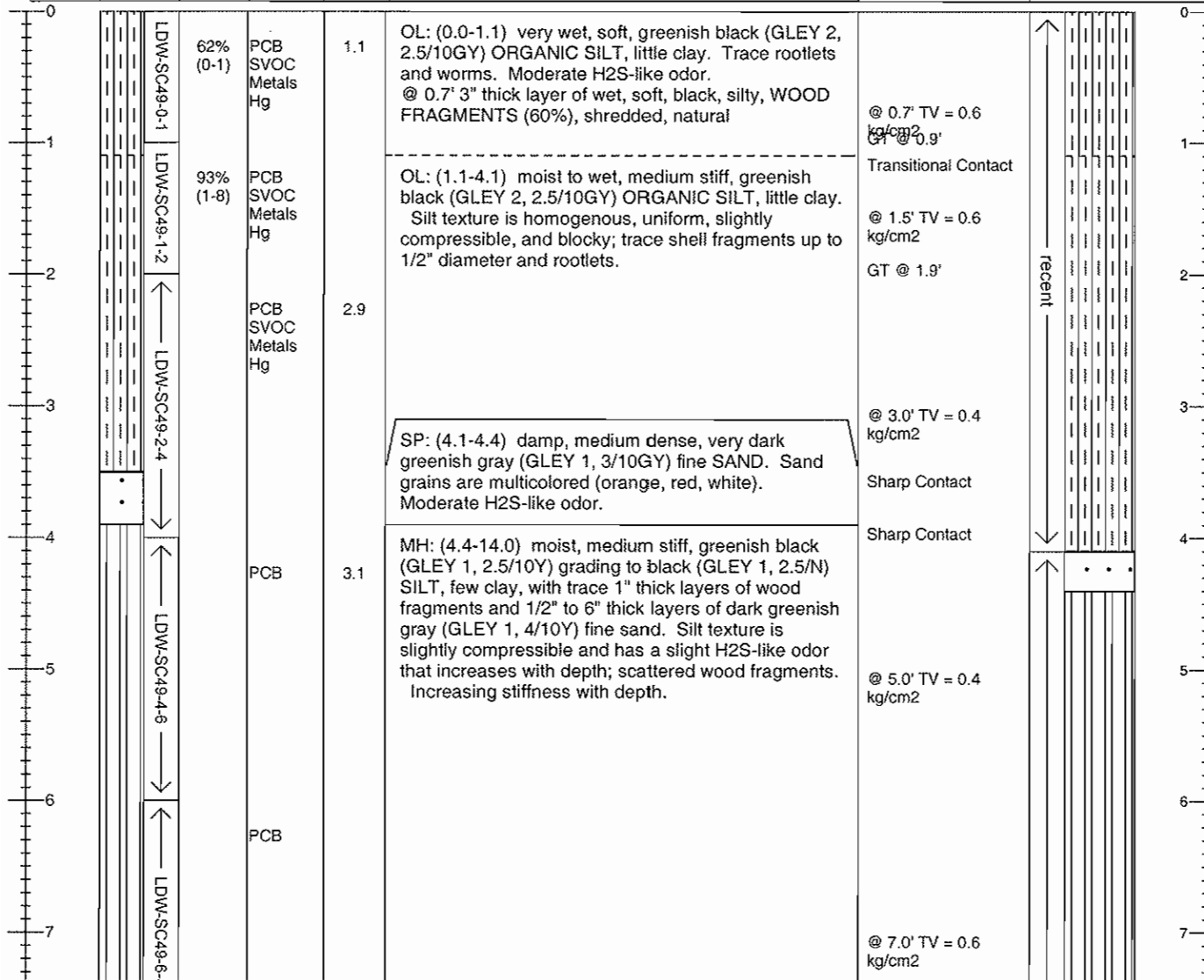
# Sediment Core Log

## LDW-SC-49 (R1)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>5.5</b>	Penetration Depth (ft): <b>14.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>28.9</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/6/06</b>	Mudline Elevation (ft): <b>-19.8</b>	Recovery in ft (%): <b>11.4 (81)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>195851</b> E./LONG: <b>1275477</b>	Process Date: <b>2/6/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: none taken. One drive attempt made at station. Core shoe was 100% full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**11.4 / 14.0 = 81 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*





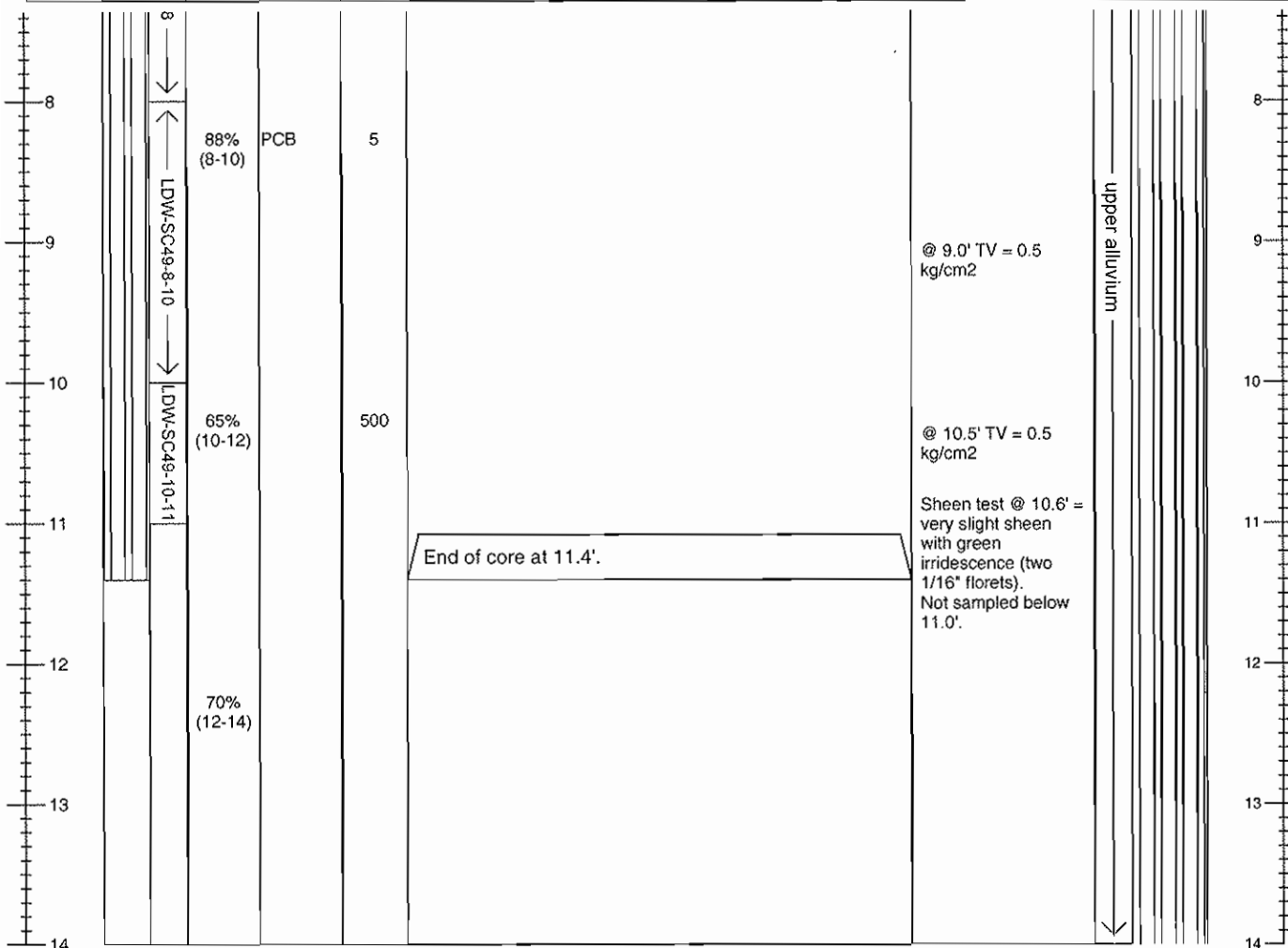
# Sediment Core Log

## LDW-SC-49 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>5.5</b>	Penetration Depth (ft): <b>14.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>28.9</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/6/06</b>	Mudline Elevation (ft): <b>-19.8</b>	Recovery in ft (%): <b>11.4 (81)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>195851</b> E./LONG: <b>1275477</b>	Process Date: <b>2/6/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: none taken. One drive attempt made at station. Core shoe was 100% full.	<b>Calculated Recovery</b> Sample Length/Penetration Length:  <b>11.4/ 14.0 = 81 %</b>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



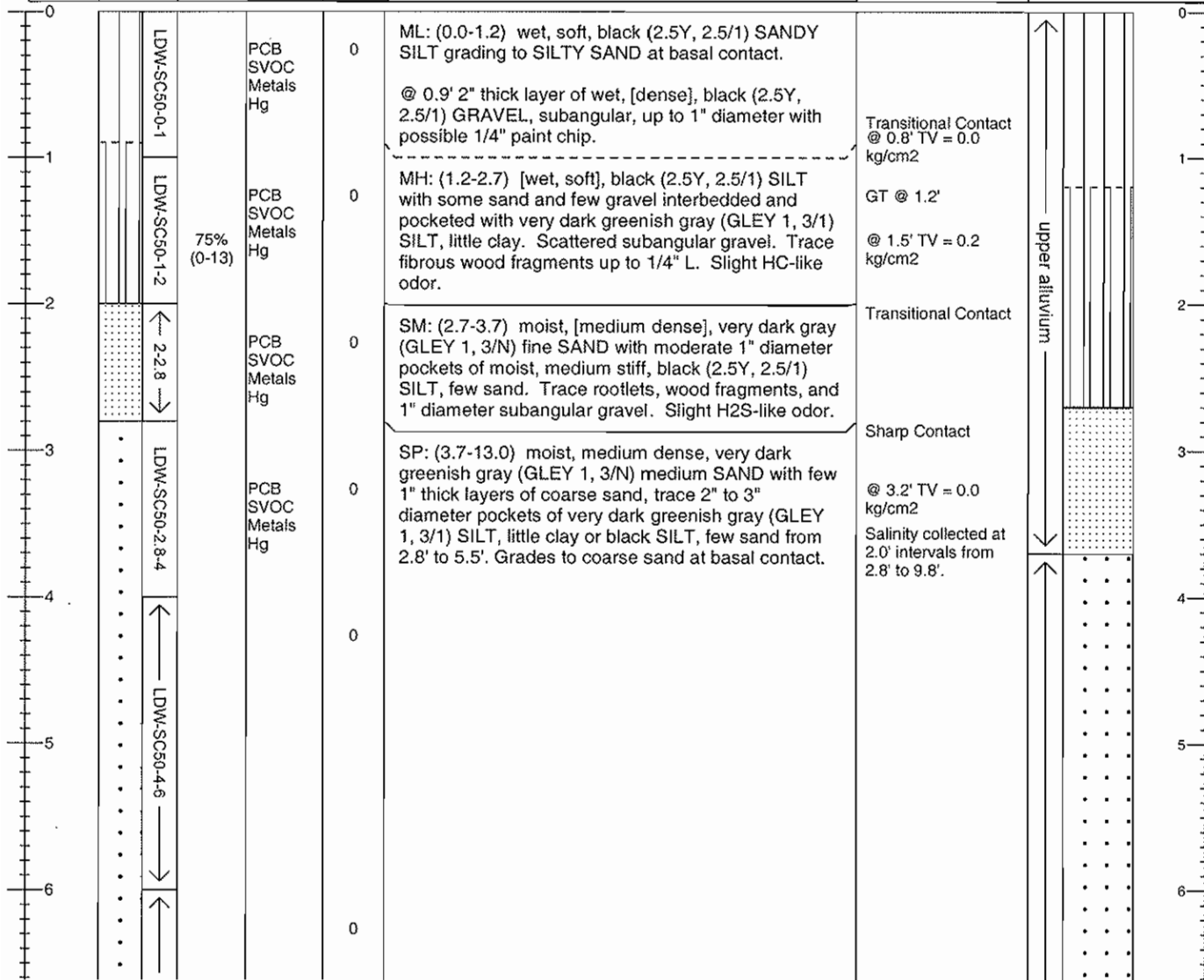
# Sediment Core Log

## LDW-SC-50 (R3)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>11.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/24/06</b>	Mudline Elevation (ft): <b>-4.0</b>	Recovery in ft (%): <b>9.8 (75)</b>
Contractor: <b>MSS</b>	N./LAT: <b>194871</b> E./LONG: <b>1276045</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round AI</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
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Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (4.0'), easy (10.0'), hard (13.0'), penetration goal reached. Three drive attempts made at station; station reoccupied with vibracore. Core catcher was 100% full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**9.8 / 13.0 = 75 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



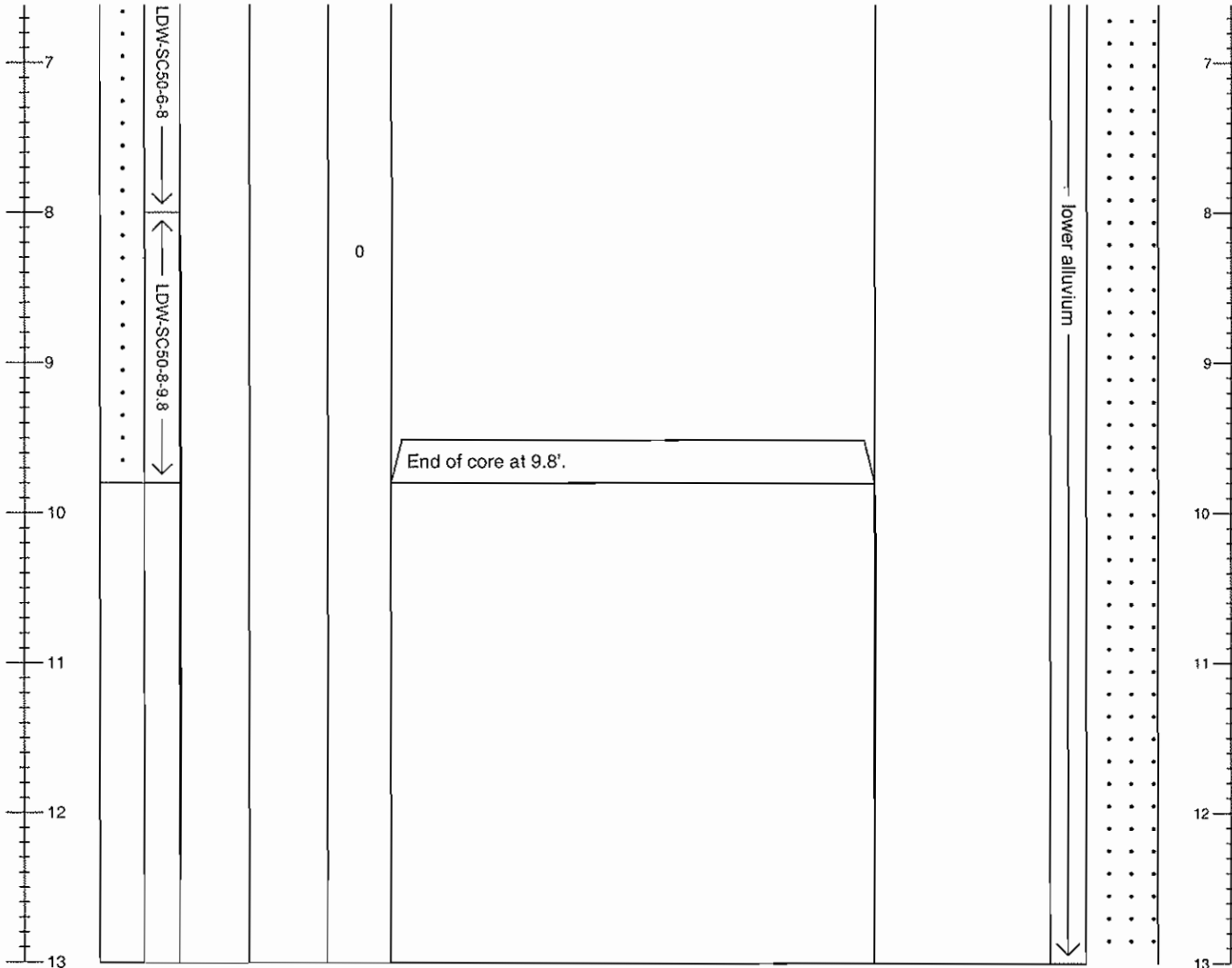
# Sediment Core Log

## LDW-SC-50 (R3)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>11.6</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/24/06</b>	Mudline Elevation (ft): <b>-4.0</b>	Recovery in ft (%): <b>9.8 (75)</b>
Contractor: <b>MSS</b>	N./LAT: <b>194871</b> E./LONG: <b>1276045</b>	Process Date: <b>2/24/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round Al</b>	Logged By: <b>L.McKee, C.Brackett</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freelfall (4.0'), easy (10.0'), hard (13.0'),</u> <u>penetration goal reached. Three drive attempts made at station;</u> <u>station reoccupied with vibracore. Core catcher was 100% full.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: $9.8 / 13.0 = 75 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



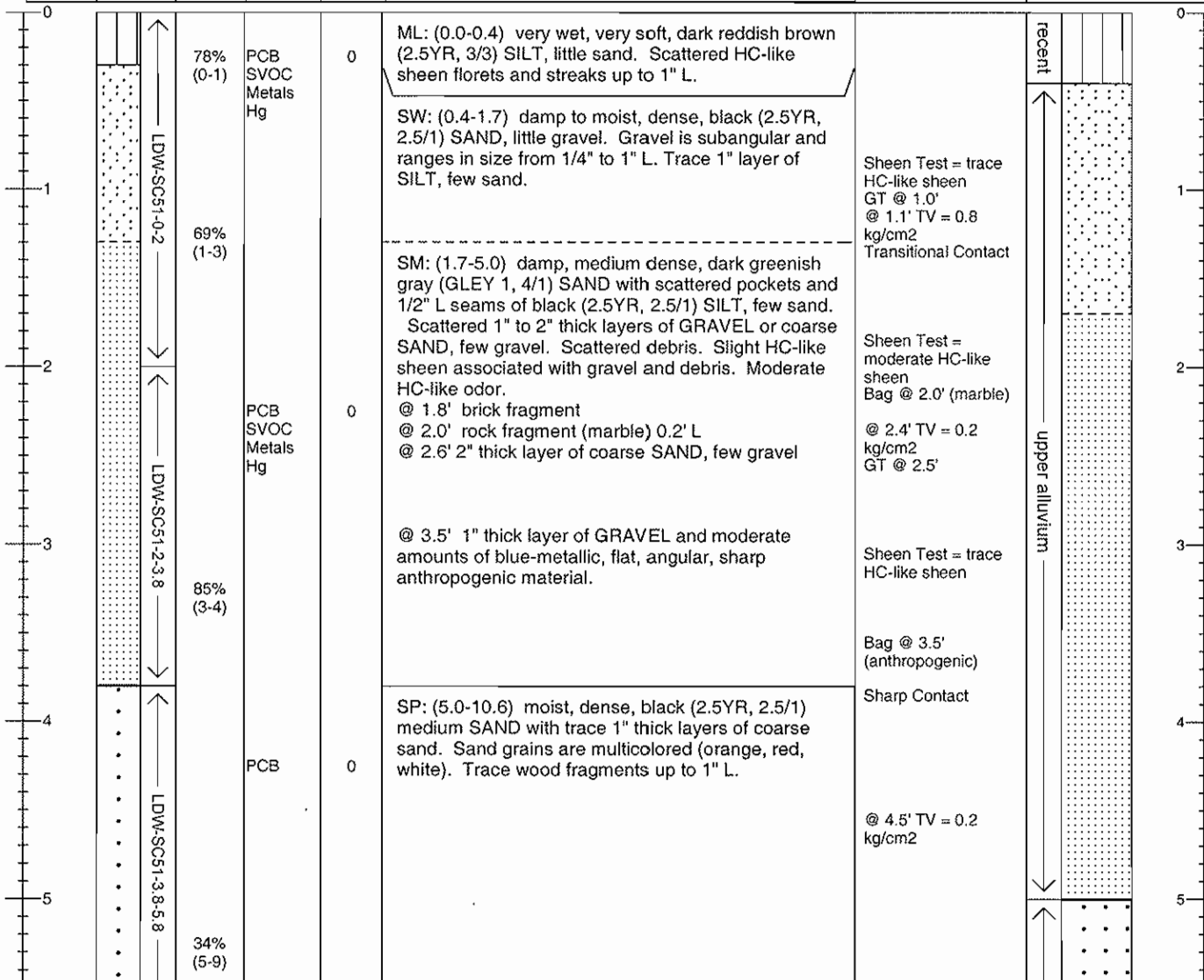
# Sediment Core Log

## LDW-SC-51 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.2</b>	Penetration Depth (ft): <b>10.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.5</b>	Sample Quality: <b>fair</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>0.8</b>	Recovery in ft (%): <b>6.1 (58)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>194728</b> E./LONG: <b>1276135</b>	Process Date: <b>2/22/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: freefall (1.4'), moderate (5.6'), hard (10.6'), refusal (10.6'). One drive attempt made at station. Core catcher was 50% full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**6.1 / 10.6 = 58 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



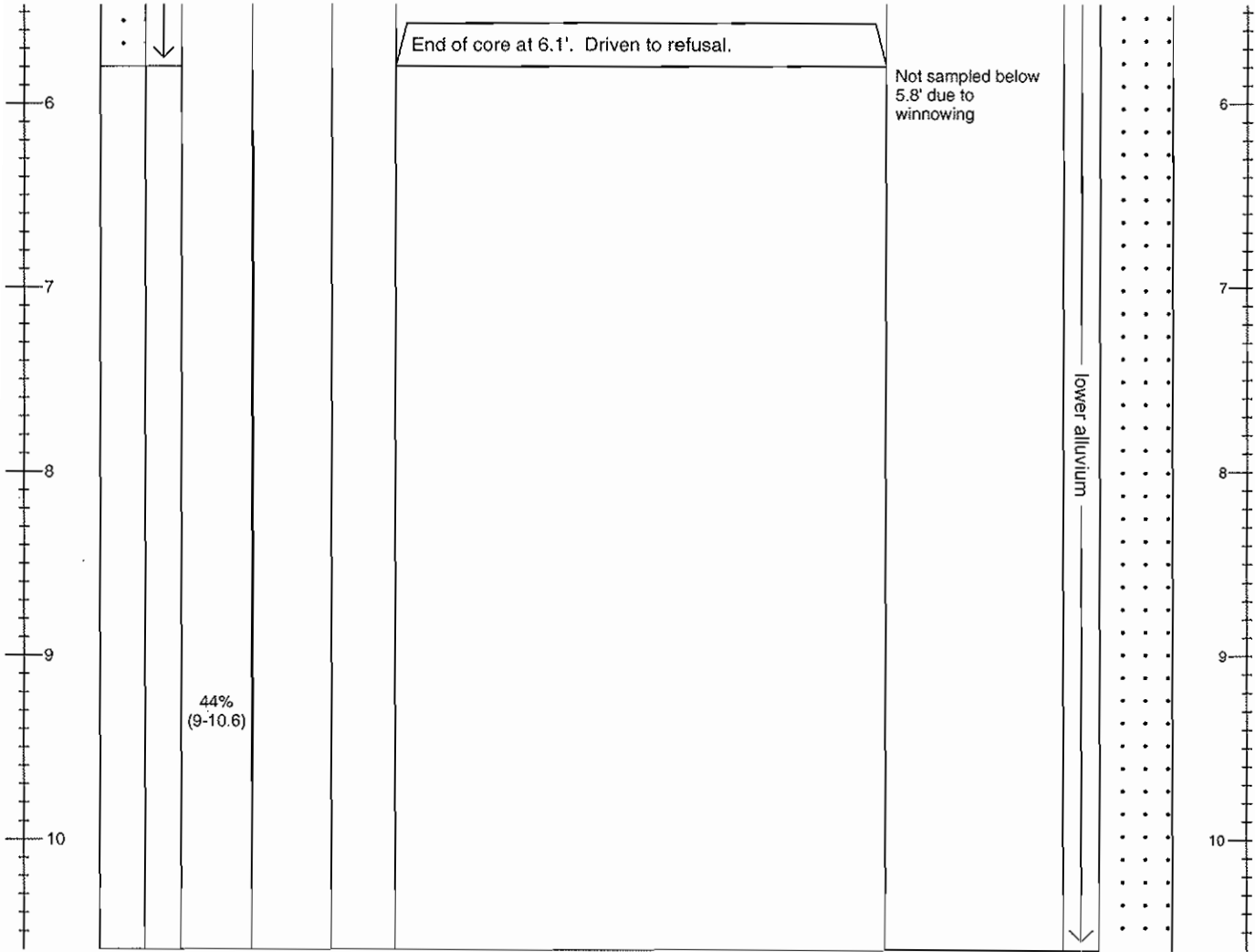
# Sediment Core Log

## LDW-SC-51 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.2</b>	Penetration Depth (ft): <b>10.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.5</b>	Sample Quality: <b>fair</b>
Collection Date: <b>2/22/06</b>	Mudline Elevation (ft): <b>0.8</b>	Recovery in ft (%): <b>6.1 (58)</b>
Contractor: <b>MCS Environmental, inc.</b>	N./LAT: <b>194728</b> E./LONG: <b>1276135</b>	Process Date: <b>2/22/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: <u>freefall (1.4'), moderate (5.6'), hard (10.6'), refusal (10.6')</u> . One drive attempt made at station. Core catcher was 50% full.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $6.1 / 10.6 = 58 \%$
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



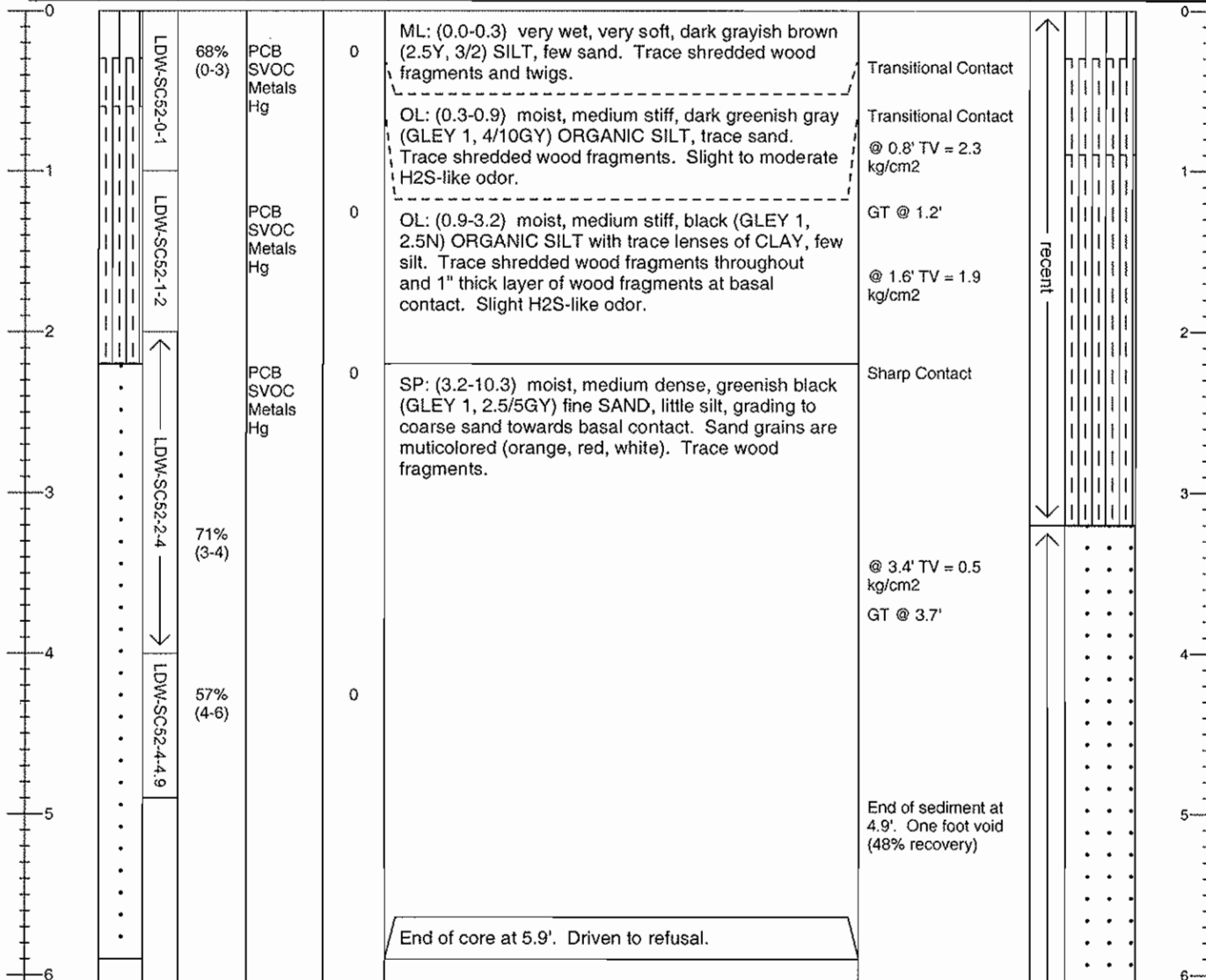
# Sediment Core Log

## LDW-SC-52 (R3)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>4</b>	Penetration Depth (ft): <b>10.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>5.8</b>	Sample Quality: <b>fair</b>
Collection Date: <b>2/7/06</b>	Mudline Elevation (ft): <b>1.3</b>	Recovery in ft (%): <b>5.9 (57)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>194160</b> E./LONG: <b>1276279</b>	Process Date: <b>2/8/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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**Remarks:** Drive Notes: moderate (4'), hard (10.3'), refusal (10.3').  
Three drive attempts made at station. One foot of void space between 2.0' and 3.0' at silt/sand contact; logged continuously.  
EPA oversight.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**5.9 / 10.3 = 57 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



# Sediment Core Log

## LDW-SC-52 (R3)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>4</b>	Penetration Depth (ft): <b>10.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>5.8</b>	Sample Quality: <b>fair</b>
Collection Date: <b>2/7/06</b>	Mudline Elevation (ft): <b>1.3</b>	Recovery in ft (%): <b>5.9 (57)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>194160</b> E./LONG: <b>1276279</b>	Process Date: <b>2/8/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
6		64% (6-7)					6
7		46% (7-9)					7
8							8
9		31% (9-10.3)					9
10							10

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**Remarks:** Drive Notes: moderate (4'), hard (10.3'), refusal (10.3').  
Three drive attempts made at station. One foot of void space between 2.0' and 3.0' at silt/sand contact; logged continuously.  
EPA oversight.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**5.9 / 10.3 = 57 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



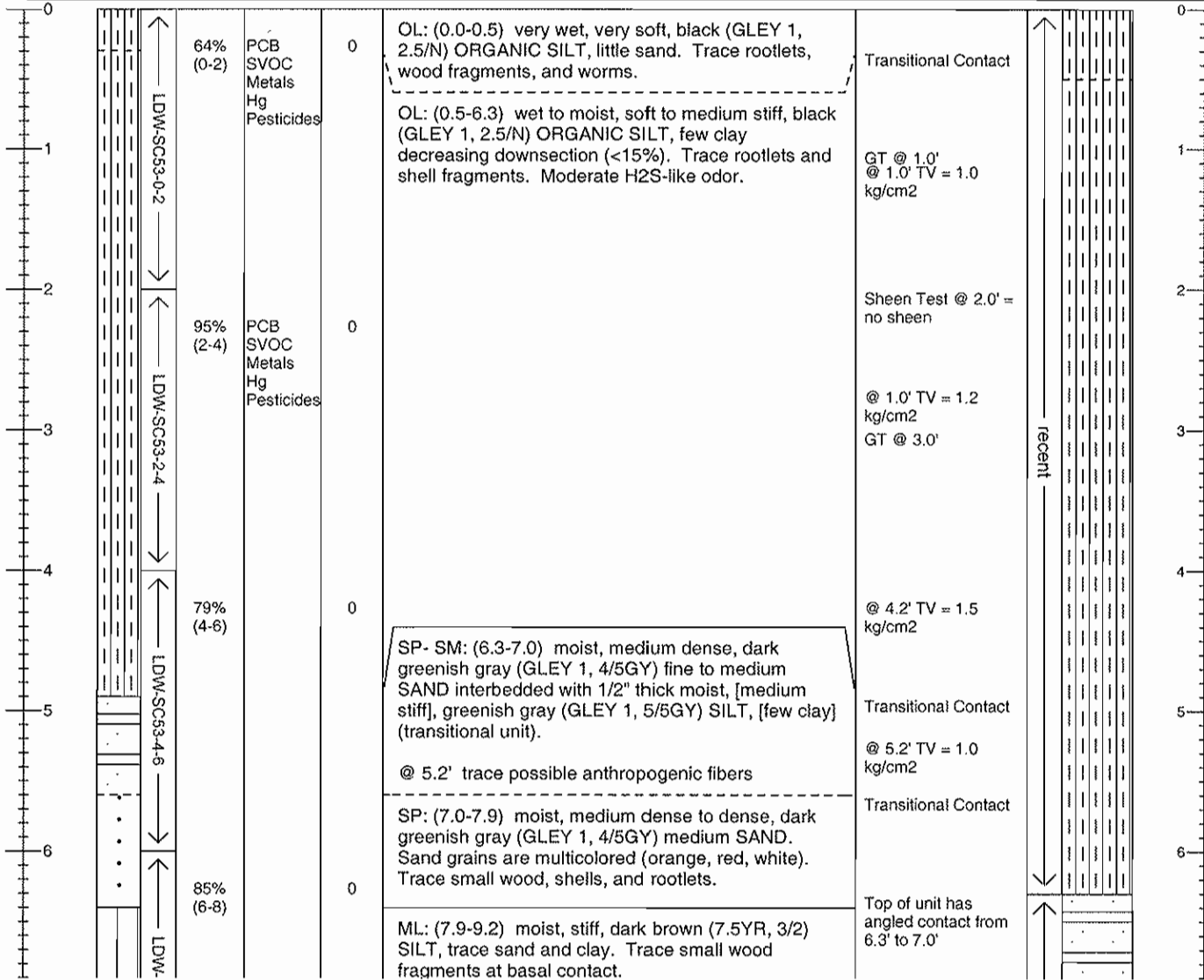
# Sediment Core Log

## LDW-SC-53 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>0.8</b>	Penetration Depth (ft): <b>13.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>16.3</b>	Sample Quality: <b>NA</b>
Collection Date: <b>2/6/06</b>	Mudline Elevation (ft): <b>-12.6</b>	Recovery in ft (%): <b>11.1(82)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>192927</b> E./LONG: <b>1277458</b>	Process Date: <b>2/7/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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**Remarks:** Drive Notes: none taken. One drive attempt made at station. Core catcher was 100% full.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**11.1/ 13.6 = 82 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*





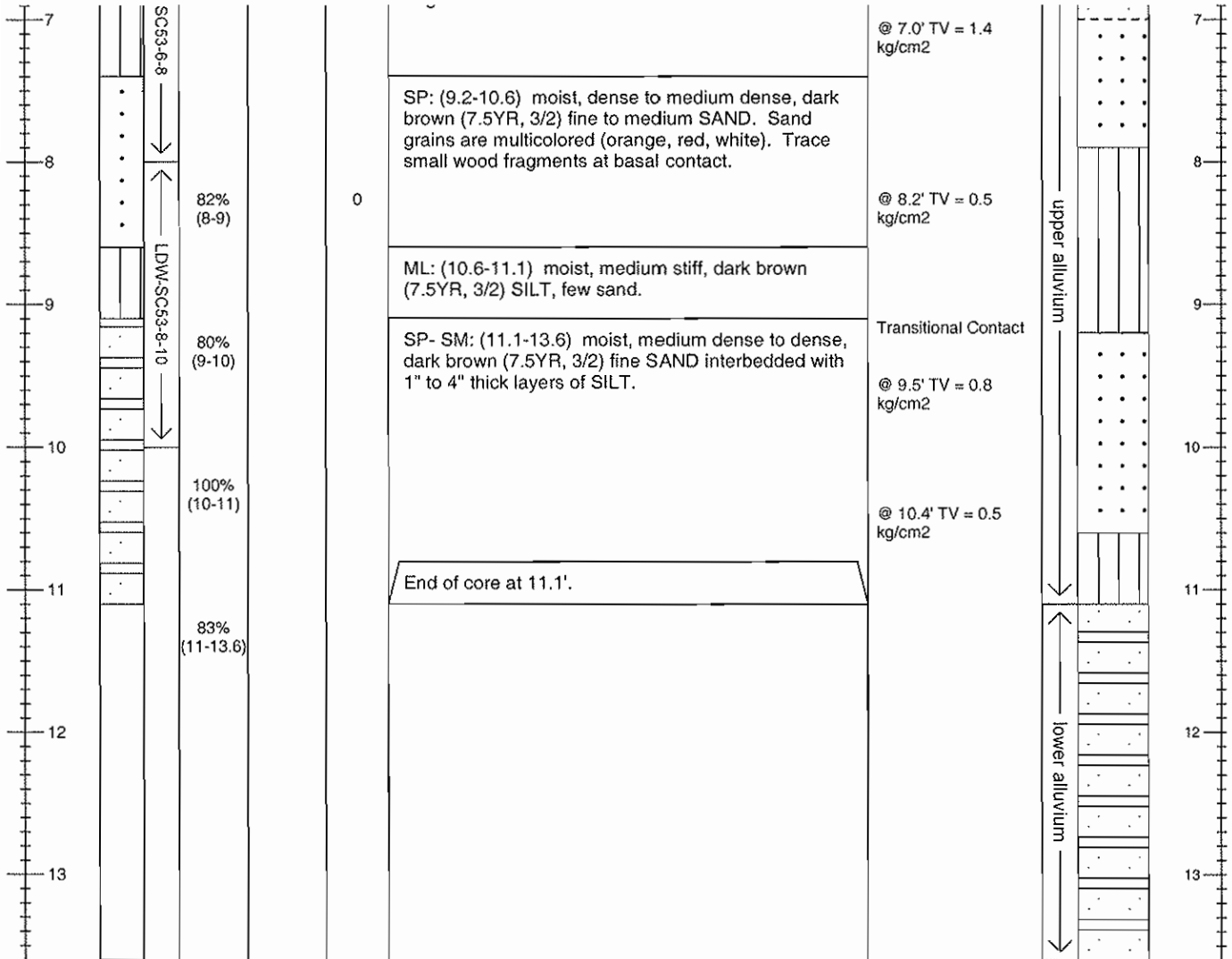
# Sediment Core Log

## LDW-SC-53 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>0.8</b>	Penetration Depth (ft): <b>13.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>16.3</b>	Sample Quality: <b>NA</b>
Collection Date: <b>2/6/06</b>	Mudline Elevation (ft): <b>-12.6</b>	Recovery in ft (%): <b>11.1(82)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>192927</b> E./LONG: <b>1277458</b>	Process Date: <b>2/7/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: none taken. One drive attempt made at station. Core catcher was 100% full.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $11.1 / 13.6 = 82 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.

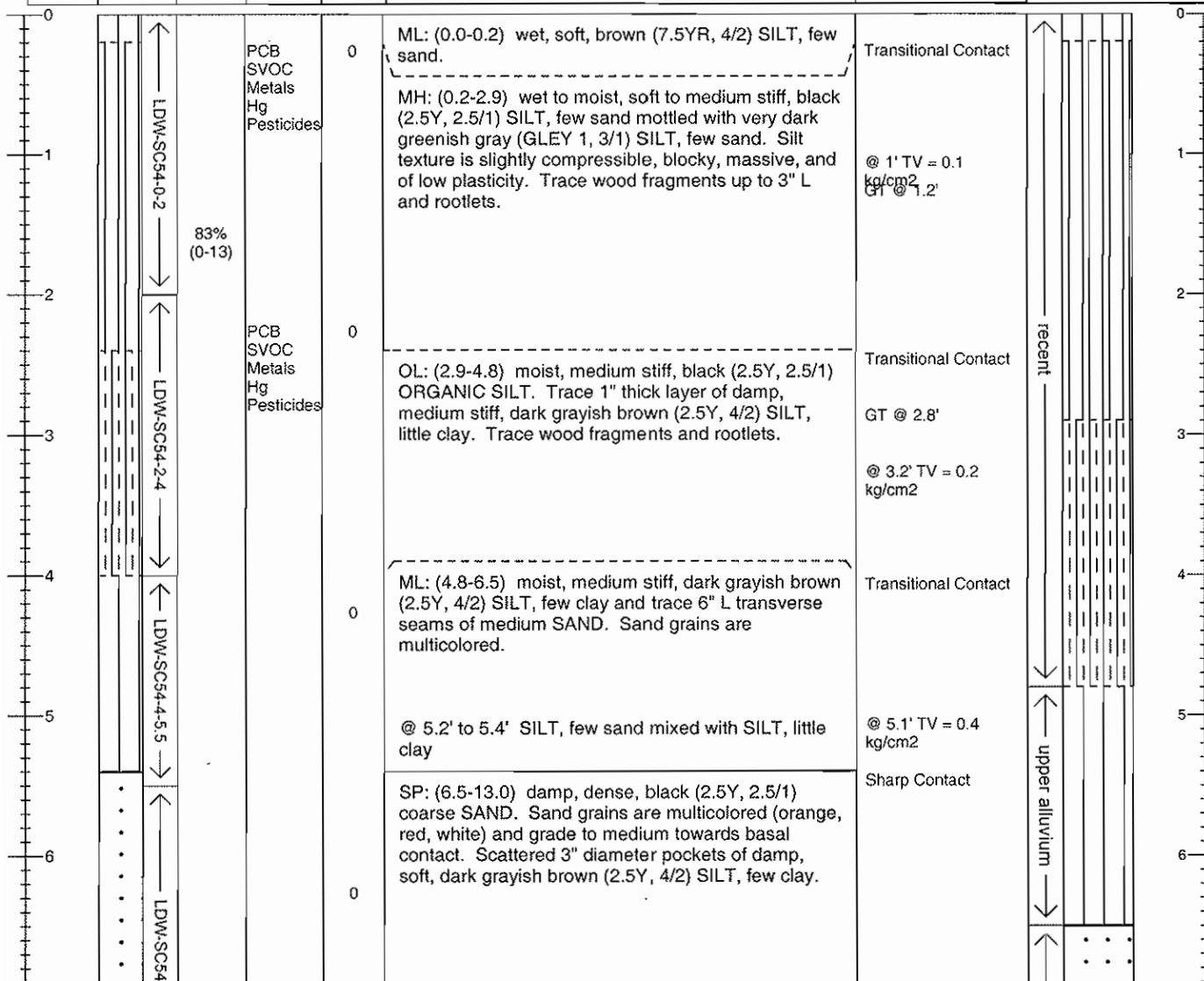


# Sediment Core Log

## LDW-SC-54 (R3)

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>9.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/23/06</b>	Mudline Elevation (ft): <b>-0.2</b>	Recovery in ft (%): <b>10.2 (78)</b>
Contractor: <b>MSS</b>	N./LAT: <b>192179</b> E./LONG: <b>1276342</b>	Process Date: <b>2/23/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round Al</b>	Logged By: <b>L.McKee, N.Bacher</b>

Recovered Depth (ft)	Recov interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

**Remarks:** Drive Notes: easy to moderate (10.0'), hard (11.0'), moderate (13.0'), penetration goal reached. Three drive attempts made at station. Core catcher was 50% full. Station re-occupied with vibracore.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**10.2/13.0 = 78 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



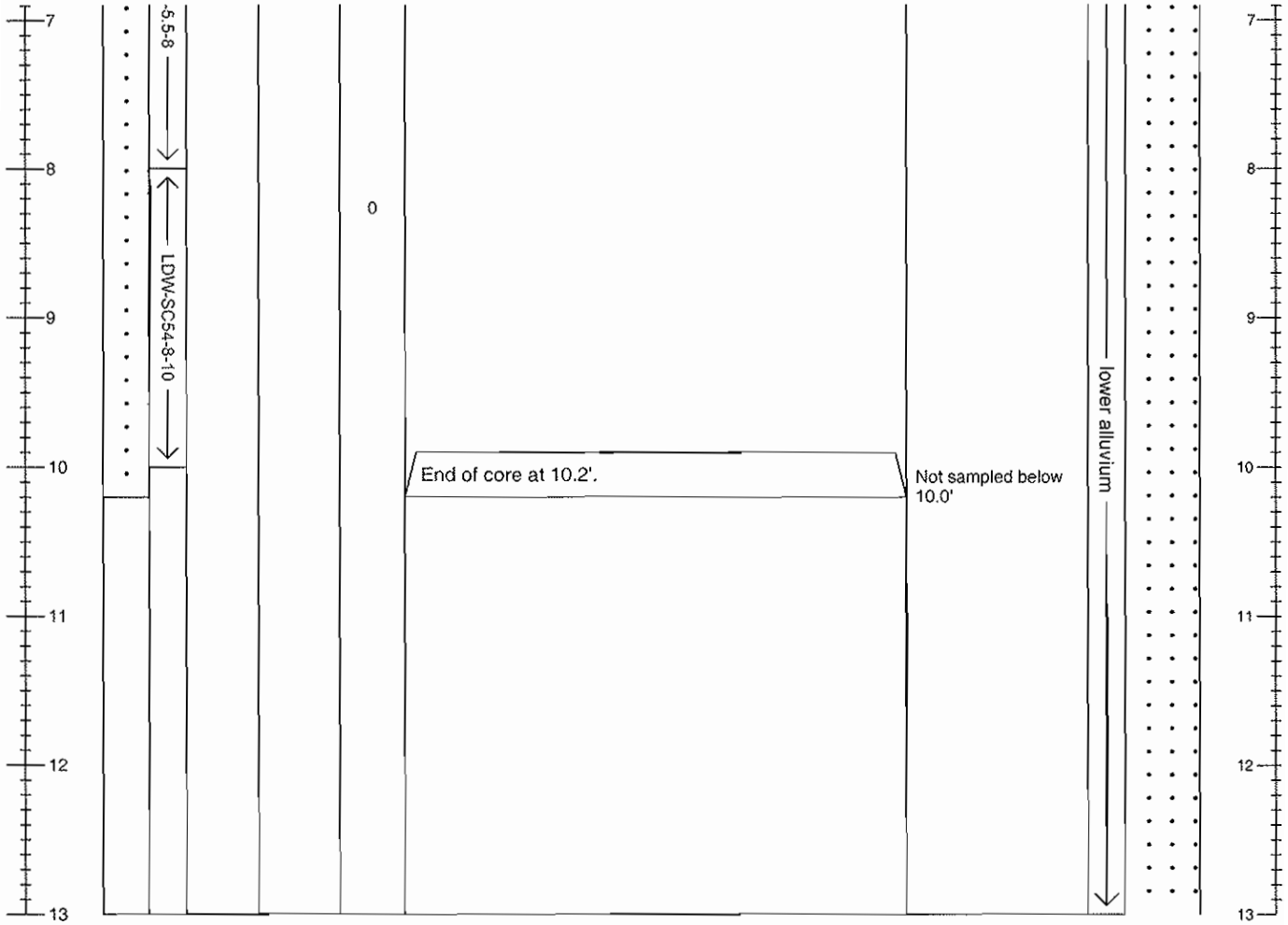
# Sediment Core Log

## LDW-SC-54 (R3)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>14.0</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>NA</b>	Penetration Depth (ft): <b>13.0</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>9.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/23/06</b>	Mudline Elevation (ft): <b>-0.2</b>	Recovery in ft (%): <b>10.2 (78)</b>
Contractor: <b>MSS</b>	N./LAT: <b>192179</b> E./LONG: <b>1276342</b>	Process Date: <b>2/23/06</b>
Vessel: <b>R/V Nancy Anne</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Bill Jaworski</b>	Method/Tube ID: <b>Vibracorer/3.5" round AI</b>	Logged By: <b>L.McKee, N.Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: easy to moderate (10.0'), hard (11.0'), moderate (13.0'), penetration goal reached. Three drive attempts made at station. Core catcher was 50% full. Station re-occupied with vibracore.</p>	<p><b>Calculated Recovery</b> Sample Length/Penetration Length: <b>10.2/ 13.0 = 78 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



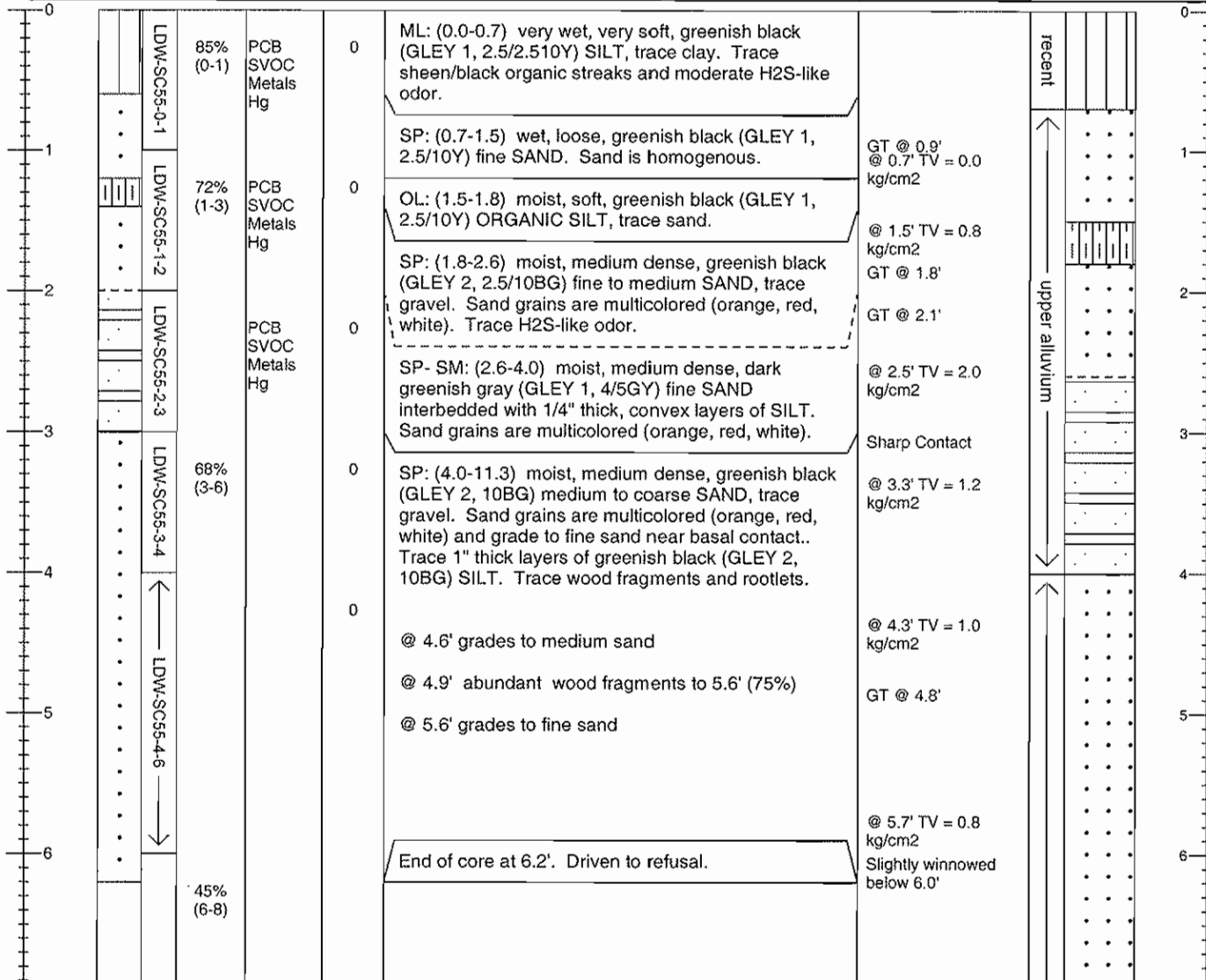
# Sediment Core Log

## LDW-SC-55 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>10.4</b>	Penetration Depth (ft): <b>11.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.5</b>	Sample Quality: <b>NA</b>
Collection Date: <b>2/6/06</b>	Mudline Elevation (ft): <b>1.6</b>	Recovery in ft (%): <b>6.2 (55)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>190389</b> E./LONG: <b>1278266</b>	Process Date: <b>2/6/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
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**Remarks:** Drive Notes: refusal (11.3). Three drive attempts made at station. Abundant logs/wood observed in vicinity. Wood found in core catcher.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**6.2 / 11.3 = 55 %**

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.

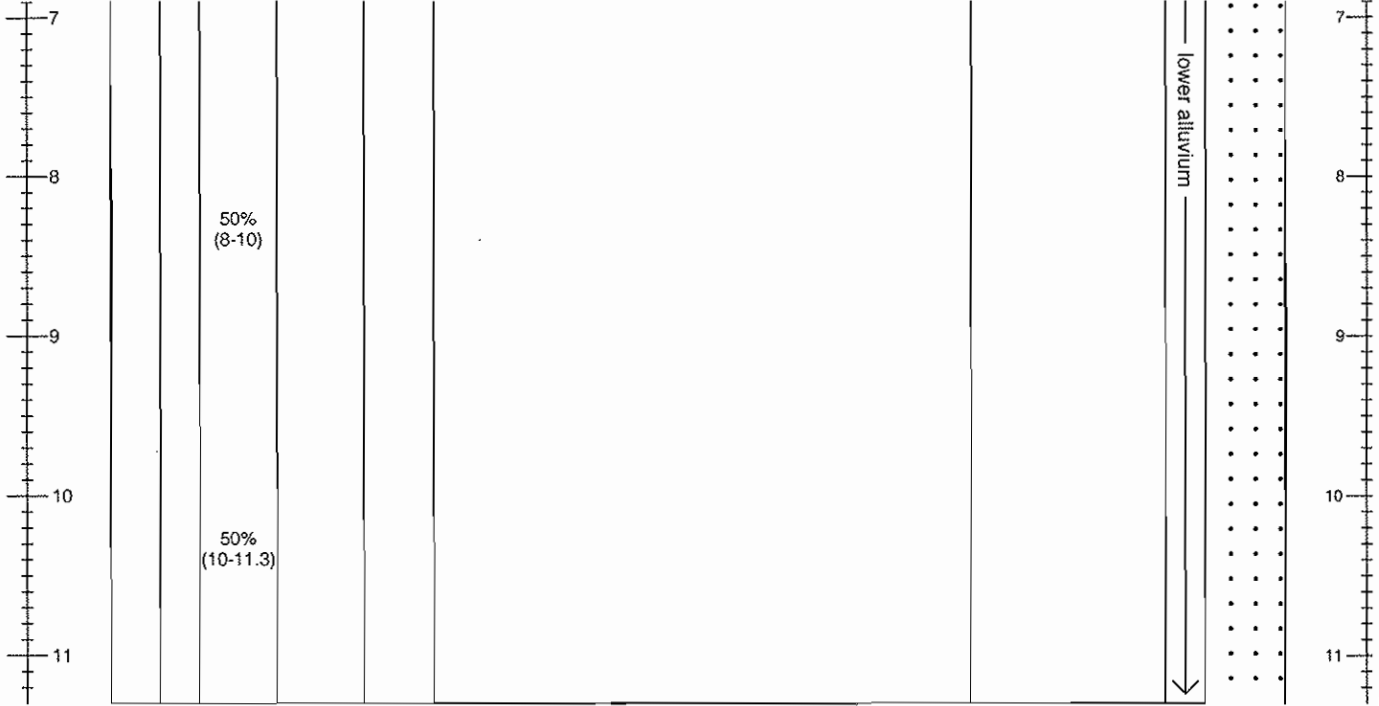


# Sediment Core Log

## LDW-SC-55 (R1)

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>10.4</b>	Penetration Depth (ft): <b>11.3</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.5</b>	Sample Quality: <b>NA</b>
Collection Date: <b>2/6/06</b>	Mudline Elevation (ft): <b>1.6</b>	Recovery in ft (%): <b>6.2 (55)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>190389</b> E./LONG: <b>1278266</b>	Process Date: <b>2/6/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Fax: (206) 624-2839

**Remarks:** Drive Notes: refusal (11.3). Three drive attempts made at station. Abundant logs/wood observed in vicinity.  
Wood found in core catcher.

**Calculated Recovery**  
Sample Length/Penetration Length:  
**6.2 / 11.3 = 55 %**

*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*



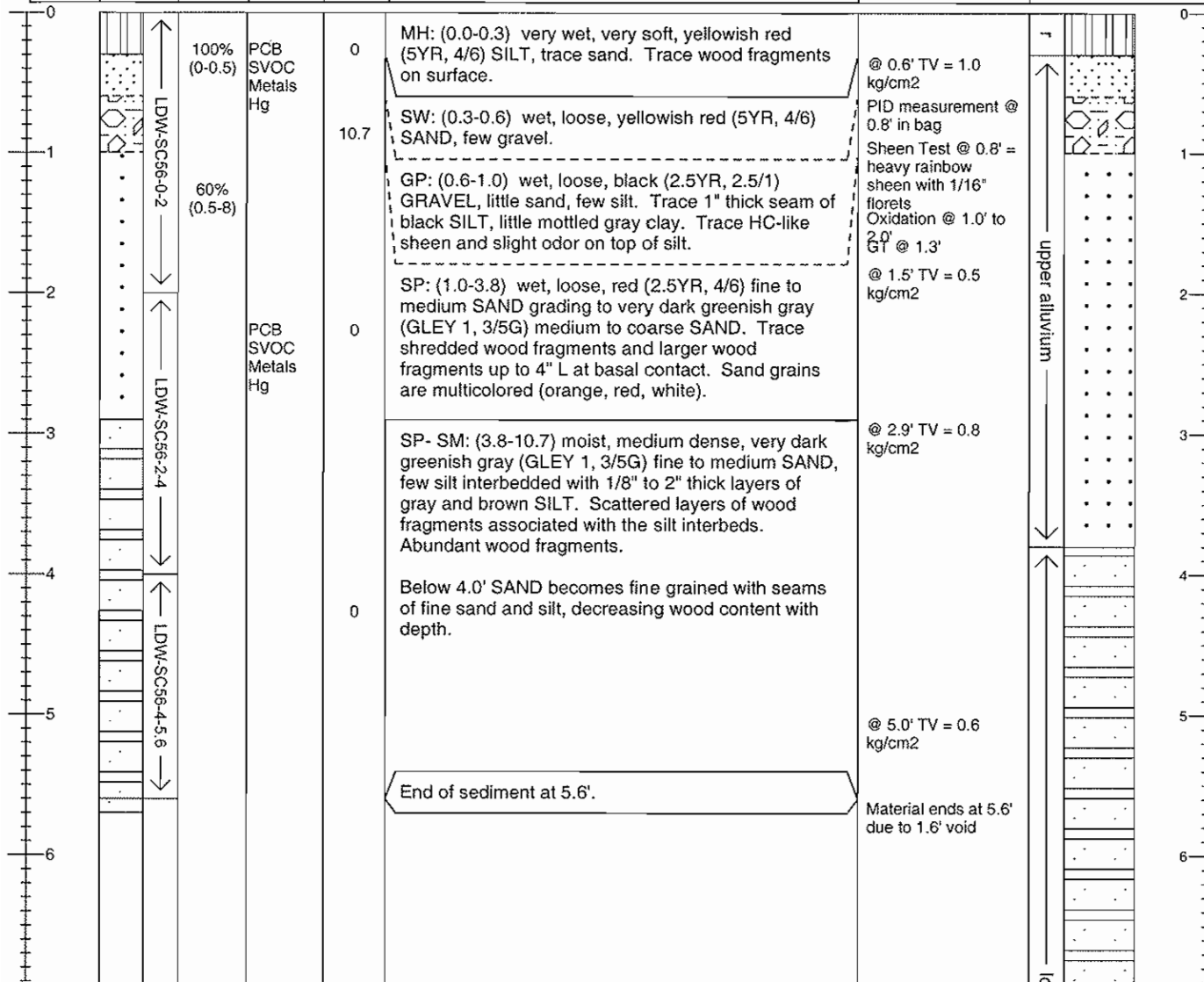
# Sediment Core Log

## LDW-SC-56 (R3)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.6</b>	Penetration Depth (ft): <b>10.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.5</b>	Sample Quality: <b>fair</b>
Collection Date: <b>2/7/06</b>	Mudline Elevation (ft): <b>1.0</b>	Recovery in ft (%): <b>5.6 (52)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>190022</b> E./LONG: <b>1277575</b>	Process Date: <b>2/7/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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 Fax: (206) 624-2839

**Remarks:** Drive Notes: easy (5.4'), hard (10.7'), refusal (10.7'). Three drive attempts made at station. Void space in bottom 1.6'; lost fine sand. r = recent

**Calculated Recovery**  
 Sample Length/Penetration Length:  
 5.6 / 10.7 = 52 %

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



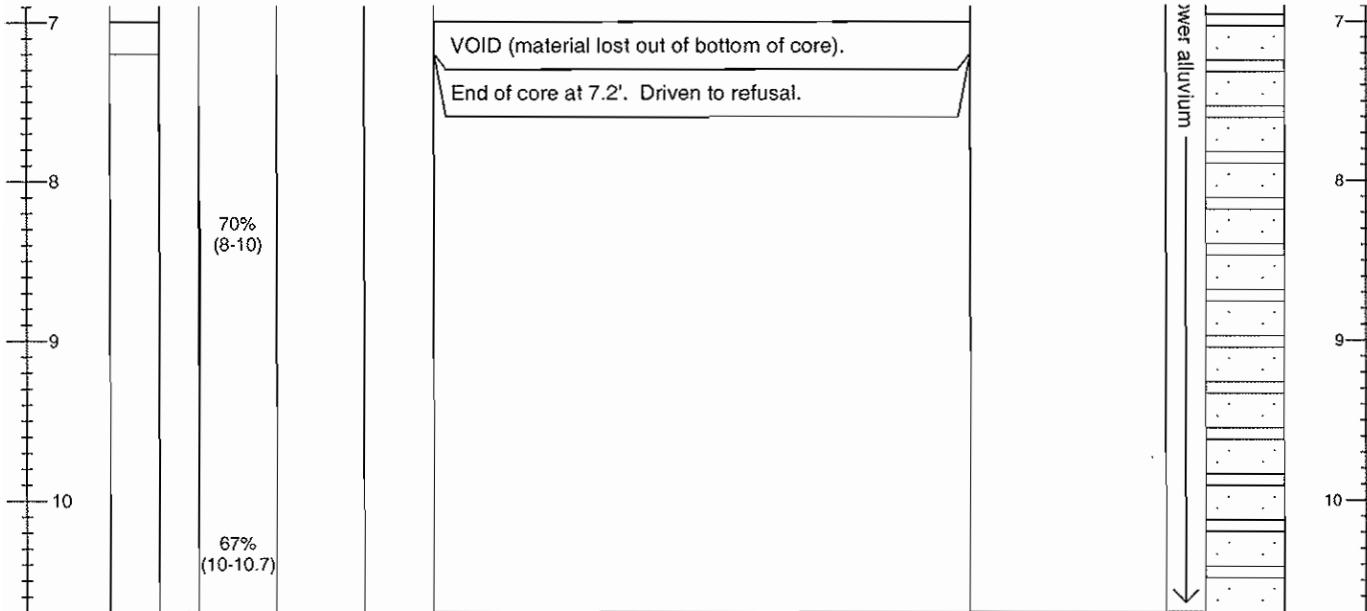
# Sediment Core Log

## LDW-SC-56 (R3)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>9.6</b>	Penetration Depth (ft): <b>10.7</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>8.5</b>	Sample Quality: <b>fair</b>
Collection Date: <b>2/7/06</b>	Mudline Elevation (ft): <b>1.0</b>	Recovery in ft (%): <b>5.6 (52)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>190022</b> E./LONG: <b>1277575</b>	Process Date: <b>2/7/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: easy (5.4'), hard (10.7'), refusal (10.7'). Three drive attempts made at station. Void space in bottom 1.6'; lost fine sand. r = recent	<b>Calculated Recovery</b> Sample Length/Penetration Length: $5.6 / 10.7 = 52 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



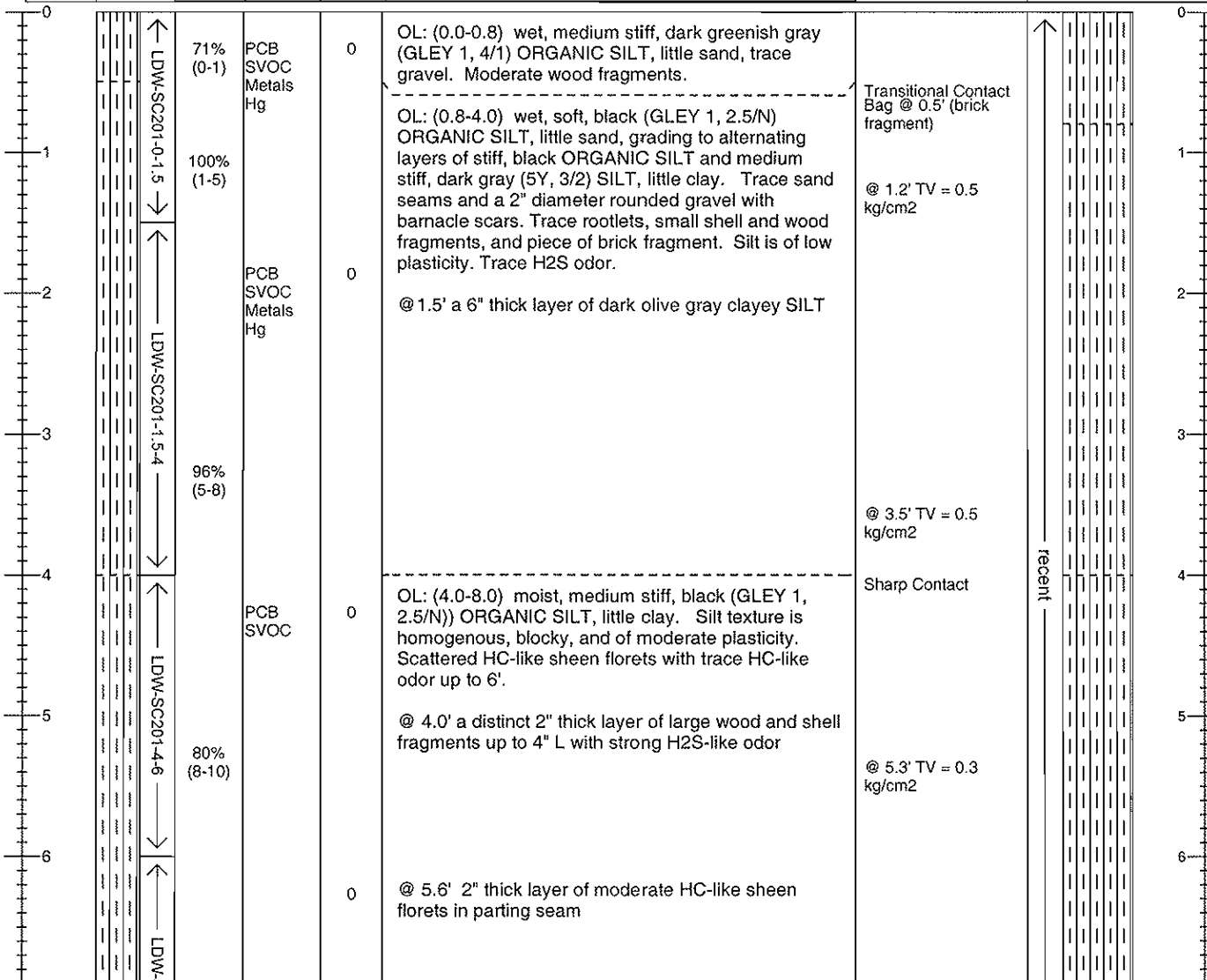
# Sediment Core Log

## LDW-SC-201 (R1)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>POR55-18220-511</b>	Water Elevation (ft)/Tide: <b>8</b>	Penetration Depth (ft): <b>13.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>24.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-14.6</b>	Recovery in ft (%): <b>11.8 (87)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202052</b> E./LONG: <b>1269266</b>	Process Date: <b>2/11/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Fax: (206) 624-2839

<b>Remarks:</b> Drive Notes: <u>freefall (1.0'), moderate (8.0'), easy (13.6'), penetration goal reached. One drive attempt made at station.</u> <u>Orange-silver film settled over residual sediment in core shoe.</u> <u>Field replicate of SC-33. Core shoe empty.</u>	<b>Calculated Recovery</b> Sample Length/Penetration Length: <b>11.8/ 13.6 = 87 %</b>
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*Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.*





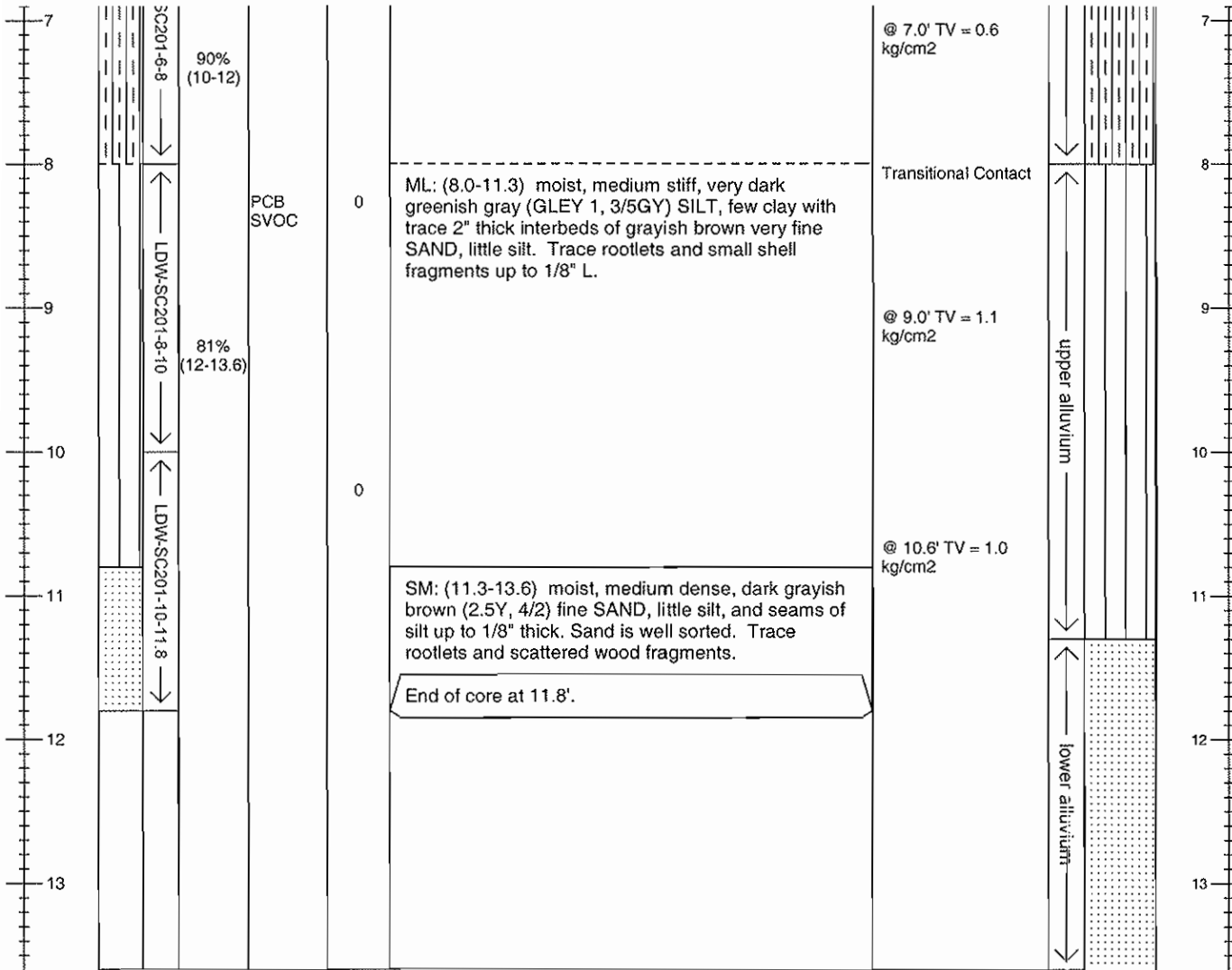
# Sediment Core Log

## LDW-SC-201 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>8</b>	Penetration Depth (ft): <b>13.6</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>24.0</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/10/06</b>	Mudline Elevation (ft): <b>-14.6</b>	Recovery in ft (%): <b>11.8 (87)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202052</b> E./LONG: <b>1269266</b>	Process Date: <b>2/11/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>N.Bacher, A.Fitzpatrick</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (1.0'), moderate (8.0'), easy (13.6'), penetration goal reached. One drive attempt made at station. Orange-silver film settled over residual sediment in core shoe. Field replicate of SC-33. Core shoe empty.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $11.8 / 13.6 = 87 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



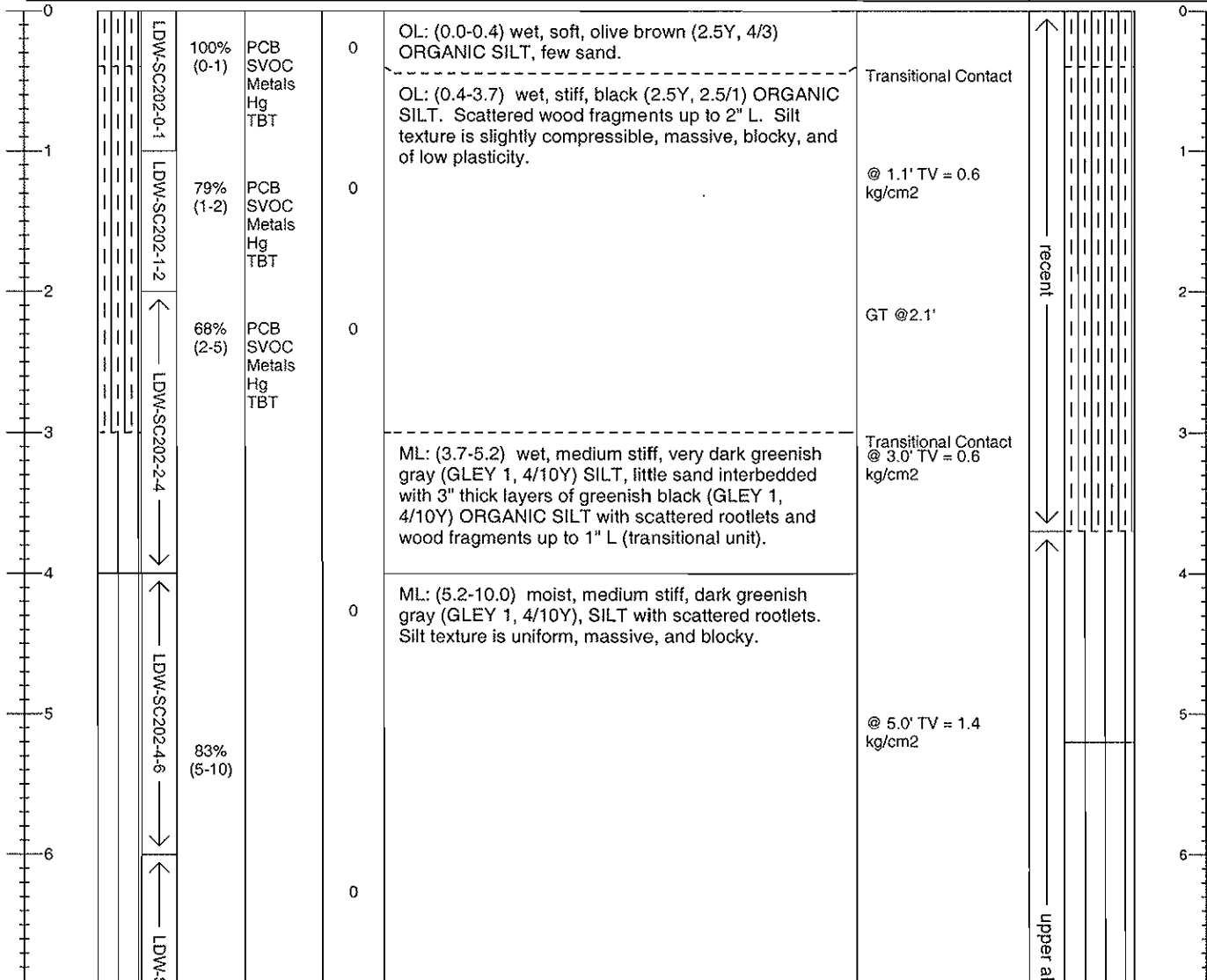
# Sediment Core Log

## LDW-SC-202 (R1)

Sheet 1 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>3.8</b>	Penetration Depth (ft): <b>12.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>16.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/15/06</b>	Mudline Elevation (ft): <b>-12.2</b>	Recovery in ft (%): <b>10.1 (81)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>201491</b> E./LONG: <b>1269986</b>	Process Date: <b>2/16/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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Seattle, WA 98134-1162  
Phone: (206) 624-9349  
Fax: (206) 624-2839

<b>Remarks:</b> Drive Notes: <u>freefall (0.1')</u> , <u>easy (5.3')</u> , <u>moderate (11.0')</u> , <u>hard (12.5')</u> , <u>refusal (12.5')</u> . One drive attempt made at station. Core catcher was 75% full. Field replicate of SC-36.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $10.1 / 12.5 = 81 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



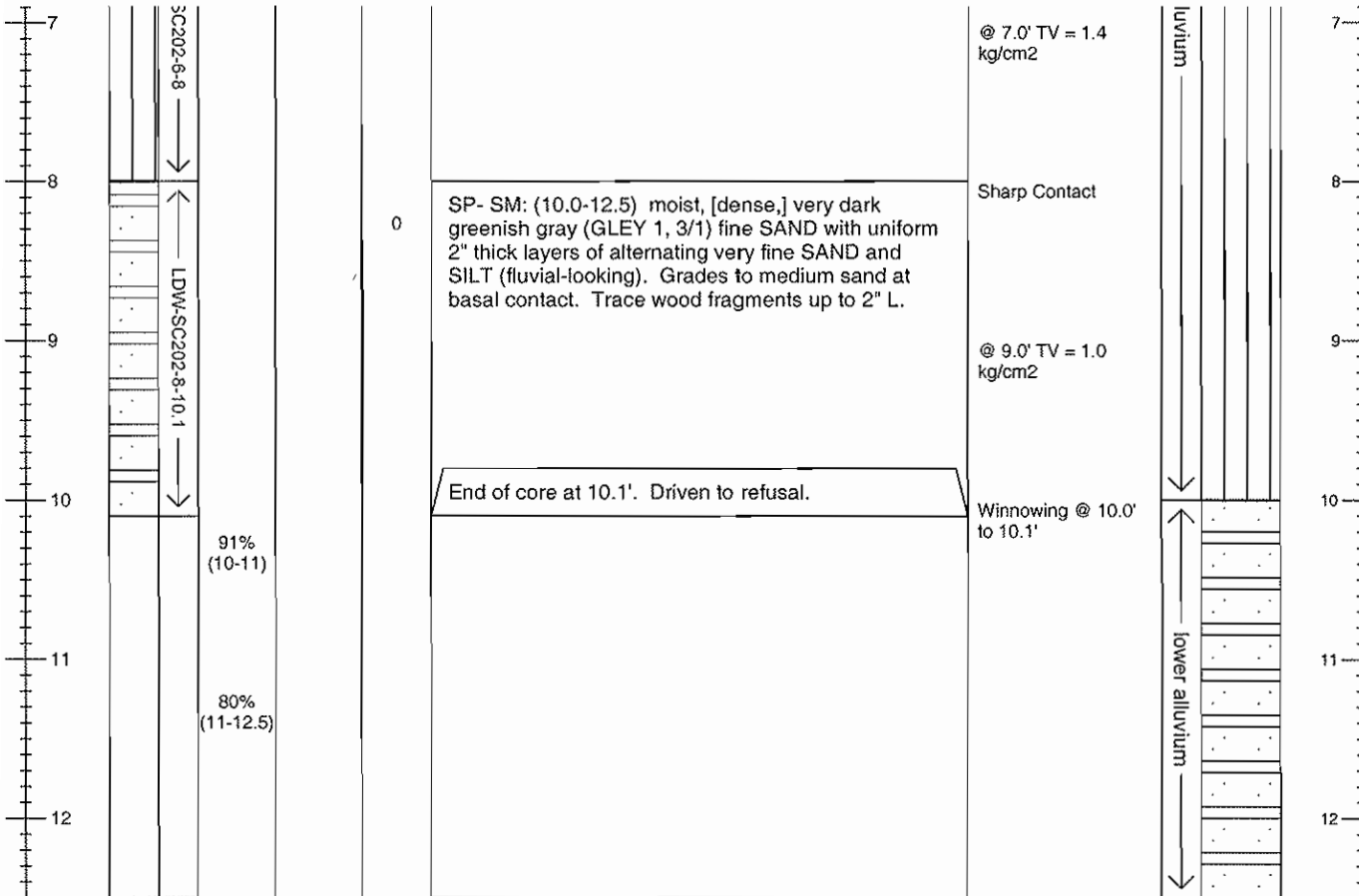
# Sediment Core Log

## LDW-SC-202 (R1)

Sheet 2 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>3.8</b>	Penetration Depth (ft): <b>12.5</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>16.5</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/15/06</b>	Mudline Elevation (ft): <b>-12.2</b>	Recovery in ft (%): <b>10.1 (81)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>201491</b> E./LONG: <b>1269986</b>	Process Date: <b>2/16/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>L.McKee</b>

Recovered Depth (ft)	Recov Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839	<b>Remarks:</b> Drive Notes: freefall (0.1'), easy (5.3'), moderate (11.0'), hard (12.5'), refusal (12.5'). One drive attempt made at station. Core catcher was 75% full. Field replicate of SC-36.	<b>Calculated Recovery</b> Sample Length/Penetration Length: $10.1 / 12.5 = 81 \%$
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



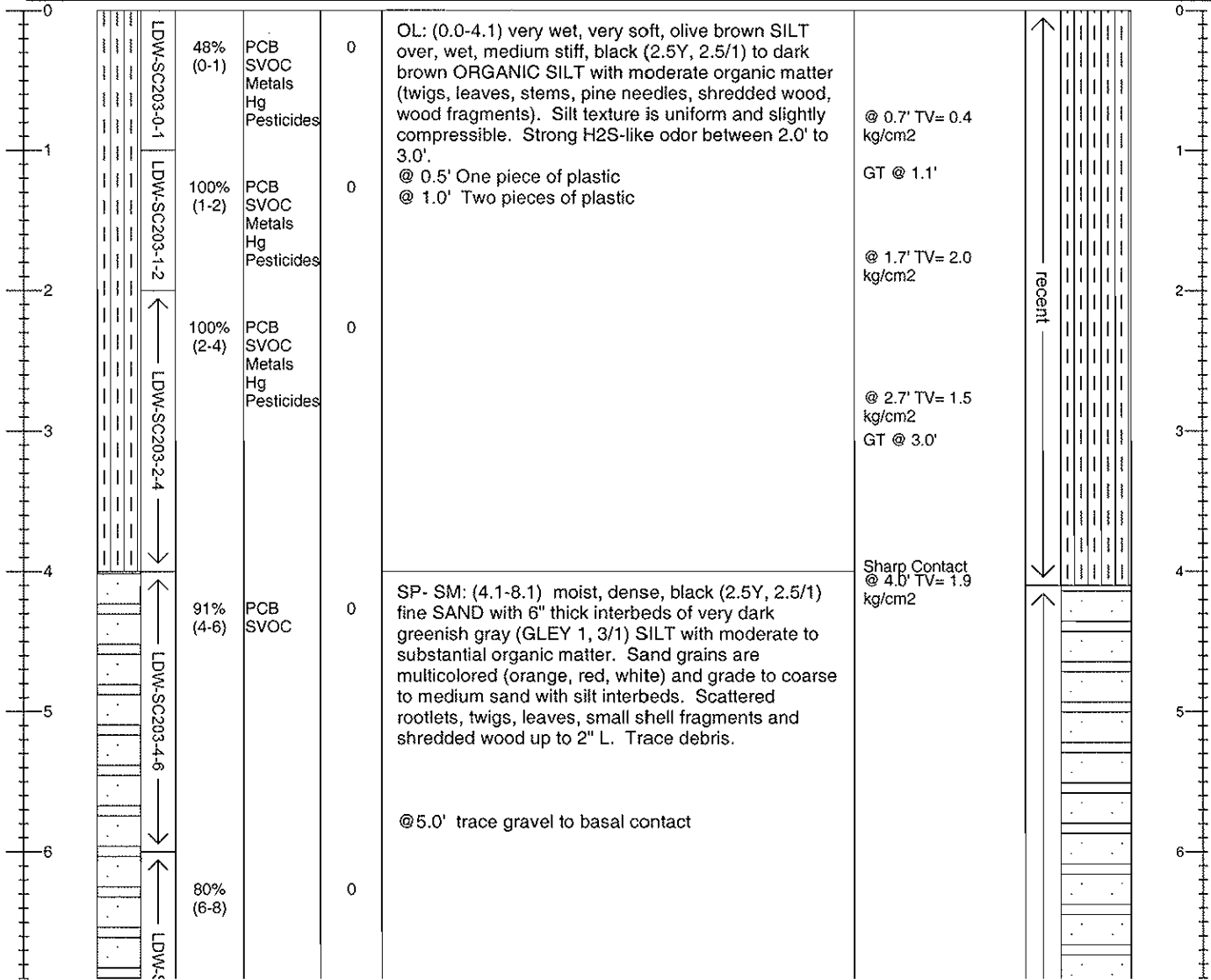
# Sediment Core Log

## LDW-SC-203 (R1)

Sheet 1 of 2

Project: <b>LDW RI/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.8</b>	Penetration Depth (ft): <b>12.1</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>24.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/17/06</b>	Mudline Elevation (ft): <b>-16.6</b>	Recovery in ft (%): <b>8.8 (73)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202013</b> E./LONG: <b>1268832</b>	Process Date: <b>2/18/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq Al</b>	Logged By: <b>A.Fitzpatrick, N.Bacher</b>

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (Interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: <u>freefall (1.5')</u>, <u>easy (12.2')</u>, <u>penetration goal reached. One drive attempt made at station. Core catcher was 80% full. Torvane measurements skewed high. Field replicate of SC-34.</u></p>	<p style="text-align: center;"><b>Calculated Recovery</b></p> <p>Sample Length/Penetration Length:</p> <p style="text-align: center;"><b>8.8 / 12.1 = 73 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



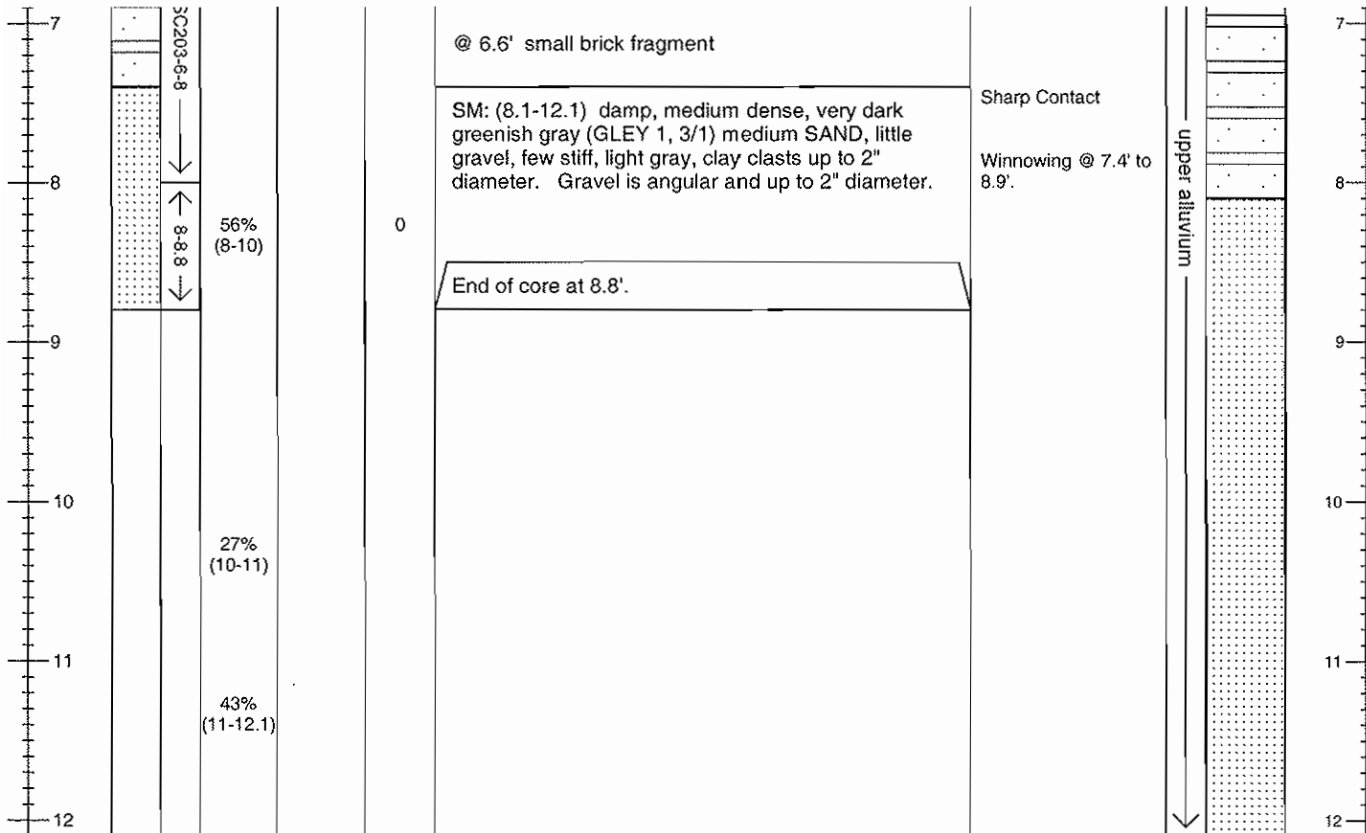
# Sediment Core Log

## LDW-SC-203 (R1)

Sheet 2 of 2

Project: <b>LDW R/FS</b>	Water Body Type: <b>Lower Duwamish Waterway</b>	Tube Length (ft): <b>16.1</b>
Project #: <b>PORS5-18220-511</b>	Water Elevation (ft)/Tide: <b>7.8</b>	Penetration Depth (ft): <b>12.1</b>
Client: <b>LDWG</b>	Water Depth (ft): <b>24.4</b>	Sample Quality: <b>Good</b>
Collection Date: <b>2/17/06</b>	Mudline Elevation (ft): <b>-16.6</b>	Recovery in ft (%): <b>8.8 (73)</b>
Contractor: <b>MCS Environmental, Inc.</b>	N./LAT: <b>202013</b> E./LONG: <b>1268832</b>	Process Date: <b>2/18/06</b>
Vessel: <b>MCS barge</b>	Horiz. Datum: <b>NAD 83 N</b> Vert. Datum: <b>MLLW</b>	Process Method: <b>Cut tube</b>
Operator: <b>Gary Maxwell</b>	Method/Tube ID: <b>Diver Impact Core/4" sq AI</b>	Logged By: <b>A.Fitzpatrick, N.Bacher</b>

Recovered Depth (ft)	Recov. interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
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<p>The RETEC Group, Inc. 1011 SW Klickitat Way, Suite 207 Seattle, WA 98134-1162 Phone: (206) 624-9349 Fax: (206) 624-2839</p>	<p><b>Remarks:</b> Drive Notes: freefall (1.5'), easy (12.2'), penetration goal reached. One drive attempt made at station. Core catcher was 80% full. Torvane measurements skewed high. Field replicate of SC-34.</p>	<p><b>Calculated Recovery</b> Sample Length/Penetration Length: <b>8.8 / 12.1 = 73 %</b></p>
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Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.