APPENDIX G-1: SURFACE SEDIMENT CHARACTERISTICS

Table G-1. LDW surface sediment characteristics–Round 2

SAMPLE ID	RPD (cm)	PENETRATION DEPTH (cm)	CHARACTERISTICS
LDW-SS2-010	2	13	gray with brown surface layer, silt, wood debris, shell fragments, fine sand with silt, organic matter, and worms present. No odor.
LDW-SS3-010	none visible	12	grey, gravel, shell fragments, coarse sand, medium sand, fine sand, organic matter. No odor.
LDW-SS6-010	1	14	black w/ brown surface layer, gravel, silt, wood debris, shell fragments, medium sand, fine sand. Strong H2S odor
LDW-SS7-010	1	13	grey w/ brown surface layer, silt, fine sand, shell fragments. Slight petroleum odor
LDW-SS8-010	1.5	17	grey w/ brown surface layer, silt, wood debris, fine sand, organic matter. No odor
LDW-SS9-010	none visible	10	brown w/ brown surface layer, gravel, silt, coarse sand, medium sand, organic matter, glass, plant debris. No odor
LDW-SS11-010	3	11	gray with brown surface layer, clay, wood debris, shell fragments, medium sand, fine sand with silt, organic matter, and worms present. No odor.
LDW-SS16-010	1.5	13	grey w/ brown surface layer, gravel, silt, wood debris, medium sand, fine sand, organic matter and worms. No odor.
LDW-SS19-010	2	15	grey w/ brown surface layer, gravel, silt, wood debris, medium sand, fine sand, organic matter and worms. No odor.
LDW-SS21-010	2	14	grey w/ brown surface layer, silt, wood debris, shell fragment, medium sand, fine sand, organic matter, worms. No odor.
LDW-SS24-010	2	10	gray w/ brown surface layer, gravel, silt, wood debris, fine sand, organic matter, brick, bottles, shell. No odor.
LDW-SS25-010	nv	14	grey with brown surface layer, silt, fine sand, organic matter. No odor.
LDW-SS29-010	1	16	grey with brown surface layer, silt, fine sand, organic matter. No odor.
LDW-SS30-010	2	15	black with brown surface layer, silt, lots of wood debris, fine sand, organic matter. No odor
LDW-SS34-010	nv	9	brown w/ wood debris, shell fragments, coarse sand, medium sand, fine sand, organic matter, worms. No odor.
LDW-SS35-010	nv - surface sheen	14	black with cobble, gravel, silt, wood debris, medium sand, fine sand, organic matter. Strong petroleum odor.
LDW-SS39-010	nv - oil sheen	13	grey with brown surface layer, lots of wood debris, shell fragments, medium sand, fine sand, organic matter. Slight H2S and Petroleum odors.

Table G-1, cont.

SAMPLE ID	RPD (cm)	PENETRATION DEPTH (cm)	CHARACTERISTICS
LDW-SS41-010	2.5	11	grey w/ brown surface layer, gravel, silt, medium sand, fine sand, organic matter, worms. No odor.
LDW-SS45-010	5	15	grey with brown surface layer, silt, wood debris, medium sand, fine sand, organic matter, worms. No odor
LDW-SS46-010	1	13	black w/ brown surface layer, wood debris, shell fragments, coarse sand, medium sand, fine sand, organic matter, worms. No odor.
LDW-SS47-010	nv	14	brown w/ cobble, gravel, silt, wood debris, shell fragments, coarse sand, medium sand, fine sand, organic matter and plant material. No odor.
LDW-SS53-010	1	16	drab olive, grey w/ brown surface layer, silt, wood debris, shell fragments, fine sand, organic matter, worms. No odor.
LDW-SS59-010	2	20	drab olive, grey w/ brown surface layer, gravel, silt, wood debris, shell fragments, medium sand, fine sand, organic matter, worms and plant material. Moderate H2S odor.
LDW-SS61-010	none noted	14	grey, gravel, silt, wood debris, shell fragments, coarse sand, medium sand, fine sand, organic matter, worms, plants. No odor.
LDW-SS62-010	none noted	17	grey with brown surface layer, silt, medium sand, fine sand, organic matter and plant material. Slight H2S odor.
LDW-SS65-010	1	13	grey, gravel, silt, wood debris, shell fragments, medium sand, fine sand, organic matter, worms. No odor.
LDW-SS66-010	pockets of sheen	16	grey, silt, medium sand, fine sand, organic matter, plant material. Slight H2S odor.
LDW-SS68-010	1	17	drab olive with brown surface layer, silt, fine sand, organic material, lots of worms. No odor.
LDW-SS69b-010	1	15	grey with brown surface layer, gravel, silt, wood debris, shell fragments, medium sand, fine sand, organic material, plant material, worms. Slight H2S odor.
LDW-SS71-010	1	12	grey, brown surface layer, silt, wood debris, shell fragments, medium sand, fine sand, organic material, worms, plant material. Strong unknown odor.
LDW-SS73-010	1	13	grey with brown surface layer, gravel, silt, wood debris, shell fragments, medium sand, fine sand, clams. No odor.
LDW-SS74-010	none visible	13	brown w/ brown surface layer, gravel, silt, wood debris, shell fragments, medium sand, fine sand, organic matter, worms. No odor.
LDW-SS77-010	1	12	black w/ brown surface layer, silt, wood debris, fine sand, organic mater, worms, Pepsi can. Strong H2S odor.
LDW-SS78-010	1	12	grey with brown surface layer, silt, wood debris, fine sand, organic material, No odor.

Table G-1, cont.

SAMPLE ID	RPD (cm)	PENETRATION DEPTH (cm)	CHARACTERISTICS
LDW-SS81-010	1	14	black, gravel, silt, clay, wood debris, shell fragments, fine sand, organic material, worms. No odor.
LDW-SS82-010	1	17	grey w/ brown surface layer, silt, wood debris, shell fragments, fine sand, organic matter worms. No odor.
LDW-SS85-010	not visible, oil sheen.	13	brown, gravel, silt, wood debris, shell fragments, medium sand, fine sand, organic material. No odor.
LDW-SS86-010	nv	13	grey, brown, wood debris, shell fragments, coarse sand, medium sand. No odor.
LDW-SS90-010	nv	10	brown, brown surface layer, gravel, silt, coarse sand, medium sand. No odor.
LDW-SS91-010	nv, oil sheen	12	brown surface layer, gravel, silt, wood debris, medium sand, fine sand, organic material, brick. No odor.
LDW-SS93-010	nv - surface sheen	10	grey, silt, wood debris, shell fragment, fine sand, organic matter. No odor.
LDW-SS95-010	1, pockets of oil sheen	12	grey, brown surface layer, gravel, silt, wood debris, shell fragments, fine sand, organic material, worm. Slight Petroleum odor.
LDW-SS98-010	2.5	16	black with brown surface layer, silt, fine sand. N odor.
LDW-SS100-010	not visible	10	brown, gravel, wood debris, shell fragments, coarse sand, medium sand, fine sand, organic matter. No odor.
LDW-SS103-010	2	11	drab olive with brown surface layer, gravel, silt, wood debris, shell fragments, medium sand, fine sand, organic matter. No odor.
LDW-SS105-010	2.5, extended surface sheen on water while sampling, colorful sheen and strong petroleum odor	14	grey w/ brown surface layer, gravel, silt, clay, wood debris, medium sand, fine sand, organic matter. No sediment odor, but strong petroleum odor from surface water.
LDW-SS106-010	nv	12	grey w/ brown surface layer, gravel, silt, wood debris, medium sand, fine sand, organic matter. No odor.
LDW-SS107-010	3	12	grey w/ brown surface layer, silt, medium sand, fine sand. No odor
LDW-SS108-010	1	17	drab olive w/ brown surface layer, silt, wood debris, fine sand, organic matter, plant material. No odor.
LDW-SS122-010	2, airborne petroleum odor at site	14	grey w/ brown surface layer, cobble, gravel, silt, wood debris, medium sand, fine sand, organic matter, worms. No odor.
LDW-SS124-010	nv	10	brown, gravel, silt, coarse sand, medium sand, organic matter, plant, worm. No odor.
LDW-SS131-010	3, pockets of sheen	17	grey w/ brown surface layer, silt, wood debris, fine sand, organic matter, worm. No odor.
LDW-SS132-010	1.5, pockets of sheen	17	grey, brown surface layer, silt, fine sand, organic matter, plants, worms, tubes. Slight H_2S odor.

Table G-1, cont.

SAMPLE ID	RPD (cm)	PENETRATION DEPTH (cm)	CHARACTERISTICS
LDW-SS133-010	1.5	17	black w/ brown surface layer, silt, fine sand, organic matter, plant material. Moderate H_2S odor.
LDW-SS135-010	1	10	grey w/ brown surface layer, silt, coarse sand, medium sand, organic material, worms. Sand layer 2 cm down. Slight H_2S odor.
LDW-SS136-010	1	10	grey w/ brown surface layer, silt, clay, wood debris, medium sand, organic matter, worms. No odor.
LDW-SS137-010	1.5	17	black w/ brown surface layer, silt, fine sand, organic matter, plant material, worms, tubes. Slight H_2S odor.
LDW-SS138-010	3	12	grey w/ brown surface layer, silt, fine sand, organic material, plants, worms. Slight H_2S odor.
LDW-SS139-010	3	13	grey w/ brown surface layer, silt, medium sand, fine sand, organic material, plants, worm tubes. Slight H_2S odor.
LDW-SS140-010	nv, pockets of surface sheen	11	grey w/ brown surface layer, silt, wood debris, medium sand, fine sand, organic material, worms. No odor.
LDW-SS141-010	3	14	black w/ brown surface layer, silt, fine sand. No odor.
LDW-SS144-010	4	10	black w/ brown surface layer, silt, fine sand, slight unknown odor.
LDW-SS145-010	nv	15	brown, shell fragments, coarse sand, medium sand, organic matter. No odor.
LDW-SS146-010	1	13	grey w/ brown surface layer, silt, wood debris, fine sand, organic matter. No odor
LDW-SS147-010	1.5	17	grey, silt, medium sand, fine sand, organic matter, no odor.
LDW-SS148-010	5	14	brown w/ brown surface layer, gravel, silt, wood debris, medium sand, fine sand, organic matter, (orange color sediment at surface, grey at deeper depth). No odor.
LDW-SS149-010	1	12	grey w/ brown surface layer, silt, clay, wood debris, coarse sand, medium sand, fine sand, organic matter, plant material. Slight petroleum odor.
LDW-SS150-010	not clearly visible, mostly sandy.	14	brown, silt, wood debris, medium sand, organic matter, plant material, grass, worm. No odor
LDW-SS151-010	nv	10	grey/brown, gravel, coarse sand, medium sand. NO odor.
LDW-SS152-010	nv	15.5	grey/brown, coarse sand, medium sand, no odor
LDW-SS153-010	8.5	10	black w/ brown surface layer, silt, fine sand. No odor
LDW-SS154-010	2.5	10	black w/ brown surface layer, somewhat red/iron colored, clay, fine sand. Slight unknown odor.
LDW-SS155-010	4.5	10	grey/brown w/ brown surface layer, clay, medium sand, fine sand. Layers of grey, brown and red coloring in sediment. No odor.
LDW-SS156-010	nv	15	brown, coarse sand, medium sand. No odor.

Table G-1, cont.

SAMPLE ID	RPD (cm)	PENETRATION DEPTH (cm)	CHARACTERISTICS
LDW-SS157-010	nv	10	brown, gravel, silt, wood debris, coarse sand, medium sand. No odor
LDW-SS158-010	2	14	grey w/ brown surface layer, silt, wood debris, shell fragments, medium sand, organic matter, worms. No odor.
LDW-SS159-010	2	10	grey, silt, wood debris, medium sand, fine sand, organic matter. No odor.
LDW-SSB2b-010	1	15	black w/ brown surface layer, gravel, wood debris, shell fragments, medium sand, fine sand, organic matter, worms. No odor.
LDW-SSB4a-010	2	11	drab olive w/ brown surface layer, silt, wood debris, shell fragments, medium sand, fine sand, organic matter, worms, plant material. No odor.
LDW-SSB5b-010	1	12	grey w/ brown surface layer, silt, wood debris, shell fragments, medium sand, fine sand, organic matter, plant debris. Moderate H_2S odor.
LDW-SSB6a-010	1	10	grey w/ brown surface layer, silt, wood debris, shell fragments, coarse sand, medium sand, fine sand, organic matter, clams, worms. Slight H_2S odor.
LDW-SSB7a-010	1	7	grey w/ brown surface layer, gravel, silt, fine sand, organic matter. Slight H_2S odor.
LDW-SSB9a-010	3.5	11	black w/ brown surface layer, coarse sand, medium sand. No odor.
LDW-SSC1-010	nv	10	grey, silt, clay, wood debris, shell fragments, medium sand, fine sand, organic material, clams, worms. Slight H_2S odor

RPD – redox potential depth

nv – not visible; no differentiable RPD was present

Table G-2. Surface sediment characteristics –greater Seattle area samples analyzed for dioxins and furans

SAMPLE ID	RPD (cm)	PENETRATION DEPTH (cm)	CHARACTERISTICS
SC-SS1a-010	nv	15	drab olive, brown, sheen, silt, wood debris, coarse sand, medium sand, fine sand organic matter. Outfall did not appear to be flowing. Moderate petroleum odor.
SC-SS1b-010	1.5	16	grey w/ brown surface layer, silt, wood debris, fine sand, organic matter, plant material, worm. Pockets of oil sheen, outfall did not appear to be flowing. Moderate petroleum odor.
EB-SS2a-010	nv	13	black, gravel, silt, shell fragments, medium sand, fine sand, organic matter. Outfall did not appear to be flowing. Moderate H_2S odor.
EB-SS2b-010	pockets of oily sheen	14	black, gravel, silt, medium sand, fine sand, organic matter, plant debris. Moderate H_2S odor.
LW-SS3-010	nv, pockets of oily sheen	18	drab olive, brown, silt, clay, wood debris, fine sand, organic matter. Slight H_2S odor.
LW-SS4-010	nv	16	drab olive, silt, wood debris. Fine sand, organic mater, amphipod, roots, gravel <5%. Slight H_2S odor.
LW-SS5a-010	nv, pockets of oily sheen	15	grey, silt, wood debris, medium sand, fine sand, organic material. Slight H_2S odor and moderate unknown odor. Outfall slowly flowing, plume observed through clear surface water to extend ~10 ft in front of the outfall mouth and ~25 ft on either side.
LW-SS5b-010	nv, pockets of oily sheen	13	drab olive, silt, wood debris, medium sand, fine sand, organic matter, plant material. Slight H_2S odor. Outfall slowly flowing, plume observed through clear surface water to extend ~10 ft in front of the outfall mouth and ~25 ft on either side.
SB-SS6-010	1.5	10	grey w/ brown surface layer, gravel, silt, wood debris, coarse sand, medium sand, fine sand, organic material, plant debris and worm. No odor.
DRD-SS7-010	nv	13	brown, silt, medium sand, fine sand, organic matter. No odor.
UB-SS8-010	nv	10	black, silt, wood debris, fine sand, lots of organic material, roots, weeds, plants, worm. Moderate H_2S odor. Outfall was not flowing.
LU-SS9a-010	nv	13	grey, gravel, wood debris, shell fragments, coarse sand, organic matter, clams, glass. No odor. Outfall did not appear to be flowing.
LU-SS9b-010	nv	16	drab olive, silt, clay, wood debris, fine sand, organic matter, clams, worms. Pockets of oily sheen. Outfall did not appear to be flowing. Slight H_2S odor.

RPD – redox potential depth

nv – not visible; no differentiable RPD was present

APPENDIX G-2: SURFACE SEDIMENT COLLECTION FORMS

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.16.05 **Station:** LDW-SS-2-010

Start/Stop time: 1120 **Crew:** RAC, SP, AR

Sampling Method ~~Double~~ Single 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** Cloudy, windy & rain

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1117	14 ft	—	N	Washout 47°34.152 122°20.927
1120	19 ft	12	Y	47 34.150 122°20.929
1130	19 ft	12	Y	47°34.150 122°20.929
				unable to get target station (lots of rip rap fm outfall) moved on to where sampling was possible.

SAMPLE INFORMATION

Sample ID: LDW-SS-2-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble Sand: C M F

Gravel Silt / Clay

Organic matter ~~Wood debris~~

Shell fragments Other: Worms

Sediment color:

Brown surface Gray

Brown Black

Drab olive Other:

Sediment odor:

None H_2S

Slight Petroleum

Moderate Other:

Strong

Comments: RPD @ 2 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 03.09.05 Station: LDW-SS-3-010

Start/Stop time: 11:13/11:58 Crew: TDO, RAG, LM, C.E., TP

Sampling Method: ~~Double 0.1 m² van Veen grab sampler~~

(circle): ✓Other: Young grab Weather: overcast.

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
11:13	12.2		N	wood caught in jaws
11:20	12.2		N	rocks/gravel in jaws
11:24	12.1		N	chain hung up
11:27	12.1		N	rock, washed out; switch to Young grab
11:36	12.2	12	Y	
11:46	12.2		N	washed out
11:58	12.3	12	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-3-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble	Sand: C M F
Gravel	Silt / Clay
Organic matter	Wood debris
Shell fragments	Other: worm tubes

Sediment color:

Brown surface	Gray
Brown	Black
Drab olive	Other:

Sediment odor:

None	H_2S
Slight	Petroleum
Moderate	Other:
Strong	

Comments: RPD @ none visible cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.10.05 **Station:** LDW-SS-6-010

Start/Stop time: 1258/1258 **Crew:** SMP, STS, TDo, CE, TP

Sampling Method ✓Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** low clouds, sun

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1258	9.3	14	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-6-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C (M) (F)

(Gravel) — (Silt) / Clay

Organic matter — ~~Wood debris~~

~~Shell fragments~~ — Other:

Sediment color:

(Brown surface) — Gray

Brown — (Black)

Drab olive — Other:

Sediment odor:

None — (H_2S)

Slight — Petroleum

Moderate — Other:

(Strong)

Comments: RPD @ 1 cm EPA split sample

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.09.05 **Station:** LDW-SS-7-010

Start/Stop time: 1047/1047 **Crew:** RAC, LM, JDO, CE, TP.

Sampling Method ✓ Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
10:47	10.8	13	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-7-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M (F)	(Brown surface)	(Gray)	None	H_2S
Gravel	(Silt) Clay	Brown	Black	(Slight)	(Petroleum)
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other:			Strong	

Comments: RPD @ 1 cm pockets of sheen

Rinsate blank taken LDW-SS7-RB

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 3.7.05
Station: LDW-SS-8-010
Start/Stop time: 15:46
Crew: TD, SMP, STS CE Boat
Sampling Method: Double 0.1-m^2 van Veen grab sampler
(circle): Other:
Weather: overcast/sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1546	14.6	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-8-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M (F)	(Brown surface)	(Gray)	(None)	H_2S
Gravel	(Silty Clay)	Brown	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 1-2 cm

SURFACE SEDIMENT COLLECTION FORM

Wind/Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.14.05 **Station:** LDW-SS-9-010

Start/Stop time: 1600 **Crew:** AR, RAC

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: By hand with stainless steel spoon **Weather:** Sunny, clear & warm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1600	–	10	Y	coordinates on station
				122°21.015
				47°34.039

SAMPLE INFORMATION

Sample ID: LDW-SS-9-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: (G) (M) F	(Brown surface)	Gray	(None)	H_2S
(Gravel)	(Silt) Clay	(Brown)	Black	Slight	Petroleum
(Organic matter)	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	(Other:) Glass			Strong	

Comments: RPD @ _____cm No noticeable RPD

Plant debris

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.08.05 **Station:** LDW-SS-11-010

Start/Stop time: 1107 - 1127 **Crew:** T.Do, S.Stillman, S.Pierce

Sampling Method (Double 0.1-m^2 van Veen grab sampler) C.Eaton, T. ~~Putnam~~ Putnam

(circle): Other: **Weather:** partly sunny, light wind

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1107	16.3	under -9cm	N	sandy - low penetration.
1113	16.2	11	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS 11 -010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble	(Sand) C M F		
Gravel	(Silt) (Clay)		
(Organic matter)	(Wood debris)		
(Shell fragments)	(Other: worms)		

Sediment color:

(Brown surface)	(Gray)		
Brown	Black		
Drab olive	Other:		

Sediment odor:

(None)		H_2S	
Slight		Petroleum	
Moderate		Other:	
Strong			

Comments: RPD @ 3 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.08.05
Station: LDW-SS-16-010
Start/Stop time: 1053 - 1105
Crew: T. Do, S Shillman, S. Pierce, C. Eaton, T. Putnam
Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other:
Weather: overcast, light wind

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1053	13.0	13	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-16-010
Analyses needed before homogenization (circle): Sulfides / VOC / AVS/SEM / Other:

Sediment type: (circle)
- Cobble
- Sand: C / M / F
- Gravel
- Silt / Clay
- Organic matter
- Wood debris
- Shell fragments
- Other: worm

Sediment color: (circle)
- Brown surface / Gray
- Brown / Black
- Drab olive / Other:

Sediment odor: (circle)
- None / H_2S
- Slight / Petroleum
- Moderate / Other:
- Strong

Comments: RPD @ 1-2 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.08.05 **Station:** LDW-SS-19-010

Start/Stop time: 0954 - 1022 **Crew:** S.Stillman, T. Do, S. Pierce, C. Eaton, T. Putnam

Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other: **Weather:** sunny, light wind

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0954	12.4	—	N	rock caught - wash out
0957	12.3	—	N	rag caught in jaws - wash out
1001	12.4	14	Y	kept 1/2 grab
1014	12.2	15	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-19-010 **Analyses needed before homogenization (circle):** Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other: worms			Strong	

Comments: RPD @ 2 cm

duplicate - LDW-8205-010

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.08.05 **Station:** LDW-SS-21-010

Start/Stop time: 0940 - 0950 **Crew:** T. Do, S. Shillman, S. Pierce, C. Eaton, T. Putnam

Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other: **Weather:** sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0940	12.1	14		

SAMPLE INFORMATION

Sample ID: LDW-SS-21-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

- Cobble
- Gravel
- (Sand) C (M) F
- (Silt) Clay
- Organic matter
- (Wood debris)
- Shell fragments
- (Other: worms)

Sediment color:

- (Brown surface)
- (Gray)
- Brown
- Black
- Drab olive
- Other:

Sediment odor:

- (None)
- Slight
- Moderate
- Strong
- H_2S
- Petroleum
- Other:

Comments: RPD @ 2 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.14.05
Station: LDW-SS-24 -010
Start/Stop time: 1435
Crew: AR, RAC, Kym Takasaki
Sampling Method: Double 0.1-m^2 van Veen grab sampler
(circle): Other: By hand w/ SS spoon
Weather: Sunny, clear + warm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1435	-	10	Y	47° 33.656
				122° 21.019

SAMPLE INFORMATION

Sample ID: LDW-SS-24 -010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble, Sand: C M F, Gravel, Silt/Clay, Organic matter, Wood debris, Shell fragments, Other:

Sediment color:

Brown surface, Gray, Brown, Black, Drab olive, Other:

Sediment odor:

None, H_2S, Slight, Petroleum, Moderate, Other:, Strong

Comments: RPD @ 2 cm

Brick, bottles, shell

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 3.10.05 Station: LDW-SS-25-010

Start/Stop time: 1738/1751 Crew: STS, SMP, TDO, CE, TP

Sampling Method ~~Double 0.1-m² van Veen grab sampler~~

(circle): Other: young grab Weather: sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1738	2.8	13	Y	19m. N of target loc.
1751	2.2	14	Y	18.6m. N. of target loc.

SAMPLE INFORMATION

Sample ID: LDW-SS-25-010 Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M (F)	(Brown surface)	(Gray)	(None)	H_2S
Gravel	(Silt / Clay)	Brown	Black	Slight	Petroleum
~~Organic matter~~	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ not visible cm EPA split sample

1738 – 47° 33.86439 122° 20.6010

1751 – 47° 33.6437 122° 20.6811

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03/14/05 **Station:** LDW-SS-29-010

Start/Stop time: 08:36 - 0848 **Crew:** S. Shillman, S. Pierce, D. Mullins

Sampling Method Double 0.1-m² van Veen grab sampler

(circle): Other: Single 0.1 m2 Van Veen **Weather:** sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
08:36	6'(A)	16	Y	47°33.413
				122°20.967

SAMPLE INFORMATION

Sample ID: LDW-SS 29 -010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M (F)	(Brown surface)	(Gray)	(None)	H_2S
Gravel	(Silt/ Clay)	Brown	Black	Slight	Petroleum
(Organic matter)	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	(Other: plant)			Strong	

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.08.05 **Station:** LDW-SS-30 -010

Start/Stop time: 0923 - 0937 **Crew:** T. Do, S. Shulman, S. Pierce C. Eaton, T. Putnam

Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other: **Weather:** sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0923	8.9	14-15	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-30 -010 **Analyses needed before homogenization (circle):** Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris lots	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 2 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.~~28~~14.05 **Station:** LDW-SS-34-010

Start/Stop time: 0911-0940 **Crew:** S.Shillman, S.Pierce, b.mullins

Sampling Method ~~Double~~ Single 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0911	12(ff)	5	N	
0913	13(ff)	8	N	
0917	~~13~~ 13(ff)	—	N	rock in jaws
0924	13(ff)	~~*~~9	Y	~~*~~ok sample although penetration was only 9cm – would be unable to penetrate > 9 cm deep.
0933	13(ff)	9	Y	
				47°33.360
				122°20.748

SAMPLE INFORMATION

Sample ID: LDW-SS 34 -010 **Analyses needed before homogenization (circle):** (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand: C M F)	Brown surface	Gray	(None)	H_2S
Gravel	Silt / Clay	(Brown)	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other: worms			Strong	

Comments: RPD @ _____cm No defined RPD

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.08.05
Station: LDW-SS-35-010
Start/Stop time: 1142 - 1200
Crew: S. Stillman, T. Do, S. Pierce, C. Eaton, T. Putnam
Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other:
Weather: 8 partly sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1142	8.9	16	Y	½ ok to keep
1149	8.2	-	N	wash out - rock
1153	8.8	12	Y	~~½ ok~~

SAMPLE INFORMATION

Sample ID: LDW-SS 35 -010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:
~~Cobble~~ Sand C M ~~F~~
Gravel Silt / Clay
Organic matter Wood debris
Shell fragments Other:

Sediment color:
Brown surface Gray
Brown (Black)
Drab olive Other:

Sediment odor:
None H_2S
Slight (Petroleum)
Moderate Other:
(Strong)

Comments: RPD @ 1 cm
RPD not visible surface sheen

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 03.11.05 Station: LDW-SS-39-010

Start/Stop time: 0835 - 0905 Crew: S.Shillman, T. Do, S. Pierce, C. Eaton, T. Putnam

Sampling Method: Double 0.1-m² van Veen grab sampler (circle): Other: young Grab sampler - weighted Weather: foggy, cool, calm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0835	2.8	—	N	Jaw not trigger
0839	3.0	—	N	Wash out rebar
0842	2.8	11	Y	lots of wood debris
0851	2.8	—	N	jaws did not close
0854	2.6	15	Y	lots of wood debris

SAMPLE INFORMATION

Sample ID: LDW-SS-39-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type: (circle) Cobble, Sand, C M F, Gravel, Silt / Clay, Organic matter, Wood debris !!!, Shell fragments, Other:

Sediment color: (circle) Brown surface, Gray, Brown, Black, Drab olive, Other:

Sediment odor: (circle) None, H_2S, Slight, Petroleum, Moderate, Other:, Strong

Comments: RPD @ 1 cm

Oil sheen

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.08.05 **Station:** LDW-SS-41-010

Start/Stop time: 0905 - 0920 **Crew:** S. Stillman, T. Do, S. Pierce, C. Eaton, T. Putnam

Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other: **Weather:** Sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0905	10.0	11	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-41-010

Analyses needed before homogenization (circle): Sulfides / VOC / AVS/SEM / Other:

Sediment type: (circle)

- Cobble
- Sand: C M F
- Gravel
- Silt / Clay
- Organic matter
- Wood debris
- Shell fragments
- Other: worms

Sediment color: (circle)

- Brown surface / Gray
- Brown / Black
- Drab olive / Other:

Sediment odor: (circle)

- None / H_2S
- Slight / Petroleum
- Moderate / Other:
- Strong

Comments: RPD @ 2-3 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 3.10.05 Station: LDW-SS-45-010

Start/Stop time: 1032/1032 Crew: SMP, STS, T.DO, CE, TP

Sampling Method: ✓Double 0.1-m² van Veen grab sampler (unweighted) Kym Takasaki

(circle): Other: Weather: foggy, low clouds, sun

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1032	10.5	15	Y	6.4m. east of target; no weights

SAMPLE INFORMATION

Sample ID: LDW-SS 45 -010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C (M) F	(Brown surface)	(Gray)	(None)	H_2S
Gravel	(Silt) Clay	Brown	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
Shell fragments	Other: worms			Strong	

Comments: RPD @ 5 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.10.05 **Station:** LDW-SS-A46 -010

Start/Stop time: 1121/1143 **Crew:** SMP, STS, TDO, CE, TP Kym Takasaki

Sampling Method: ~~Double 0.1 m² van Veen grab sampler~~ (circle): ✓Other: Young grab **Weather:** low clouds, sun

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1121	3.8		N	low recovery; switch to Young grab
1130	3.0	~~14~~ 14	Y	half overpenetrated
1138	3.1	—	N	overpenetrated
1143	3.2	12	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-46 -010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: (C) M F	(Brown surface)	Gray	(None)	H_2S
Gravel	Silt / Clay	Brown	(Black)	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other: worms			Strong	

Comments: RPD @ 1 cm EPA split sample

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 3-10.05 Station: LDW-SS-47-010

Start/Stop time: 1344/1417 Crew: SMP, ST3, TDO, CE, TP

Sampling Method ✓ ~~Double 0.1-m² van Veen grab sampler~~

(circle): ✓ Other: Young grab Weather: Sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1344	3.3	8-9	N	low recovery
1349	3.1	<8	N	washed out; switch to Young
1356	3.3	—	N	washed out; rocks in jaws
1400	3.8	—	N	washed out; rocks in jaws
1403	4.3	—	N	jaws caught; not triggered
1404	4.2	—	N	jaws did not trigger
1406	4.2	—	N	washed out; added more weights
1409	4.0	13-14	Y	3m. east of target
1417	4.0	14	Y	"

SAMPLE INFORMATION

Sample ID: LDW-SS-47-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

(Cobble) Sand: (C) M, F
(Gravel) (Silt) / Clay
(Organic matter) (Wood debris)
(Shell fragments) Other: plant

Sediment color:

Brown surface Gray
(Brown) Black
Drab olive Other:

Sediment odor:

(None) H_2S
Slight Petroleum
Moderate Other:
Strong

Comments: RPD @ none visible cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.18.05
Station: LDW-SS-53-010
Start/Stop time: 0953 - 1010
Crew: S. Shillman, S. Pierce, D. Mullins
Sampling Method (circle): ~~Double~~ Single 0.1-m^2 van Veen grab sampler / Other:
Weather: Sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0953	24 ft	16	Y	47°33.002
				122°20.471

SAMPLE INFORMATION

Sample ID: LDW-SS-53-010
Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand) C M F	(Brown surface)	Gray	(None)	H_2S
Gravel	(Silt) Clay	Brown	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	(Drab olive)	Other:	Moderate	Other:
Shell fragments	(Other) worms			Strong	

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.14.05 **Station:** LDW-SS-59 -010

Start/Stop time: 1058 - 1130 **Crew:** S Stillman, S. Pierce, D. Mullins

Sampling Method (circle): Single Double 0.1-m^2 van Veen grab sampler Other: **Weather:** sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1058	6 ft	10	Y	1/2 volume needed
1111	6 ft	—	N	rock in jaws misfired
1113	6 ft	—	N	
1115	6 ft	14	Y	enough volume
				47°32.901
				122°20.432

SAMPLE INFORMATION

Sample ID: LDW-SS-59 -010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt / Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other: wrms plant			Strong	

Comments: RPD @ 2 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.10.05 **Station:** LDW-SS-61 -010

Start/Stop time: 1628/1642 **Crew:** STS, SMP, TDO, CE, TP

Sampling Method ~~Double 0.1-m² van Veen grab sampler~~

(circle): ✓Other: Young grab **Weather:** sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1628	4.8	—	N	did not trip
1630 TDO	5.4	—	N	did not trip
1634	6.8	13	Y	9.6m W. of target loc.
1642	6.8	15	Y	9.6m W. of target loc.

SAMPLE INFORMATION

Sample ID: LDW-SS 61 -010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: (C) M F

(Gravel) — (Silt) / Clay

Organic matter — (Wood debris)

(Shell fragments) — Other: worms, plants

Sediment color:

Brown surface — (Gray)

Brown — Black

Drab olive — Other:

Sediment odor:

(None) — H_2S

Slight — Petroleum

Moderate — Other:

Strong

Comments: RPD @ not noted cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.9.05 **Station:** LDW-SS-62-010

Start/Stop time: 1802/1807 **Crew:** RAC, TD, LH, CE, TP.

Sampling Method ✓ Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
18:02	12.8	—	N	overpenetrated
18:07	12.9	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS 62-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C (M) F

Gravel — (Silt)/ Clay

(Organic matter) — Wood debris

Shell fragments — Other: plant

Sediment color:

(Brown surface) — (Gray)

Brown — Black

Drab olive — Other:

Sediment odor:

None — (H_2S)

(Slight) — Petroleum

Moderate — Other:

Strong

Comments: RPD @ ——— cm (none noted)

Field dup. LDW-SS207-010

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.08.05 **Station:** LDW-SS-65-010

Start/Stop time: 0844 - 0900 **Crew:** T. Do, S. Stillman, S. Pierce, C. Eaton, T. Putnam

Sampling Method (Double 0.1-m^2 van Veen grab sampler)

(circle): Other: **Weather:** sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0844	5.2	13	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-65-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble	(Sand: C M F)	
(Gravel)	(Silt) Clay	
(Organic matter)	(Wood debris)	
(Shell fragments)	Other: worms	

Sediment color:

Brown surface	(Gray)
Brown	Black
Drab olive	Other:

Sediment odor:

(None)	H_2S
Slight	Petroleum
Moderate	Other:
Strong	

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.09.05
Station: LDW-SS-606-010
Start/Stop time: 1745/1745
Crew: RAL, TDO, LM, CE, TP
Sampling Method: Double 0.1-m^2 van Veen grab sampler
(circle): Other:
Weather: overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
17:45	12.5	16	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS 606 -010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C M F
Gravel — Silt / Clay
Organic matter — Wood debris
Shell fragments — Other: plant

Sediment color:

Brown surface — Gray
Brown — Black
Drab olive — Other:

Sediment odor:

None — H_2S
Slight — Petroleum
Moderate — Other:
Strong

Comments: RPD @ _____cm (not noted) pockets of sheen

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 3-7-05
Station: LDW-SS-68-010
Start/Stop time: 14:26-14:32
Crew: STS, SMP, TDO, CE Boat
Sampling Method Double 0.1-m^2 van Veen grab sampler
(circle): Other:
Weather: Overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
14:26	2.9	—	N	Overpenetrated
14:32	2.8	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS 68 -010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 1 cm
LOTS of WORMS

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.16.05 **Station:** LDW-SS-69b-010

Start/Stop time: 1220 **Crew:** RAC, SP, AR

Sampling Method ~~Double~~ single 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** Cloudy, windy & rain

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1220	16 ft	15	Y	47 32.640 122 20.164

SAMPLE INFORMATION

Sample ID: LDW-SS 69b010

Analyses needed before homogenization (circle): ~~Sulfides~~ VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C (M) (F)

(Gravel) — (Silt) / Clay

(Organic matter) — ~~Wood debris~~

(Shell fragments) — Other: Worms

Sediment color:

(Brown surface) — (Gray)

Brown — Black

Drab olive — Other:

Sediment odor:

None — (H_2S)

(Slight) — Petroleum

Moderate — Other:

Strong

Comments: RPD @ 1 cm

Plant material

Part 1

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.14.05
Station: LDW-SS-71-010
Start/Stop time: 1210 – 1230
Crew: S.Stillman, S.Pierce, K.Takasaki D.Mullins
Sampling Method (circle): Single Double 0.1-m² van Veen grab sampler Other:
Weather: sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1215	5A	—	N	wood / plant debris in jaws
1220	5A	11	Y	½ volume needed
125	5A	—	N wood/plant debris in jaws	need to leave stn, tide is going out
1229	5A	10	Y	½ volume needed
				47°32.600
				122°20.101
				these coordinates plotted on land ~coordinate error recorded in field. replaced actual coordinates w/ target coordinates based on field notes, aerial photos and oversight direction given while sampling

SAMPLE INFORMATION

Sample ID: LDW-SS-71-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt / Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other: worms/plants			Strong	

Comments: RPD @ 1 cm

Rinsate blank taken
LDW-SS71-RB

Part 2

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 3/15/05
Station: LDW-SS-71-010
Start/Stop time: 10:02
Crew: AR, HA, BSB
Sampling Method: ~~Double~~ Single 0.1-m^2 van Veen grab sampler
(circle): Other:
Weather: cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
10:02	10 ft.	14	Y	47 32.592 122 20.804

SAMPLE INFORMATION

Sample ID: LDW-SS-71-010
Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble	(Sand) C M (F)	
Gravel	(Silt) / Clay	
Organic matter	Wood debris	
Shell fragments	Other:	

Sediment color:

(Brown surface) thin	Gray	
Brown	(Black) bottom	
Drab olive	Other:	

Sediment odor:

None	H_2S	
Slight	Petroleum	
Moderate	Other:	
(Strong) other		

Comments: RPD @ <1 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3-7-05 **Station:** LDW-SS-73-010

Start/Stop time: 09:42 **Crew:** SMP, STS, TDD CE Boat

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** Overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
09:42	4.6	13	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-73-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C (M) (F)	(Brown surface)	(Gray)	(None)	H_2S
(Gravel)	(Silt / Clay)	Brown	Black	Slight	Petroleum
Organic matter	(Wood debris)	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other:			Strong	

Comments: RPD @ 1 cm Clams

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24-74
Date: 3-7-05
Station: LDW-SS-74-010
Start/Stop time: 11:25
Crew: STS, SMP, TDO CE Boat
Sampling Method: Double 0.1-m^2 van Veen grab sampler
(circle): Other:
Weather: Overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1125	4.6	12-13	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-74-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble
Sand: C M F
Gravel
Silt / Clay
Organic matter
Wood debris
Shell fragments
Other: worms

Sediment color:

Brown surface
Gray
Brown
Black
Drab olive
Other:

Sediment odor:

None
H_2S
Slight
Petroleum
Moderate
Other:
Strong

Comments: RPD @ _____ cm
NOT VISIBLE

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.14.05 **Station:** LDW-SS-77-010

Start/Stop time: 1247 - 1315 **Crew:** S. Shillman, S. Pierce, K. Takasaki, D. Mullins

Sampling Method (circle): ~~Double~~ Single 0.1-m^2 van Veen grab sampler; Other:

Weather: Sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1247	5 A	–	N	wash out
1252	5 A	–	N	wash out
1257	5 A	11	Y	½ volume needed
1303	5 A	13	Y	enough volume
				47°32.543
				122° 20.805
				→ these coordinates plotted on land – coordinate interference fm. sampling under the pier; replaced actual coordinates w/ target coordinates based on field notes, aerial photos & oversight direction given while sampling

SAMPLE INFORMATION

Sample ID: LDW-SS-77-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand) C M F	(Brown surface)	Gray	None	(H_2S)
Gravel	(Silt) / Clay	Brown	(Black)	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
Shell fragments	(Other:) worms			(Strong)	

Comments: RPD @ 1 cm

pepsi can

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 3·7·05
Station: LDW-SS-78-010
Start/Stop time: 10:01
Crew: STS, SMP, TDo CE Boat
Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other:
Weather: Overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
10:01	7.6	12	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-78-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M (F)	(Brown surface)	(Gray)	(None)	H_2S
Gravel	(Silt / Clay)	Brown	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.08.05 **Station:** LDW-SS-81-010

Start/Stop time: 0749 - 0759 **Crew:** T. Do, S. Shillman, S. Pierce, C. Eaton, T. Putnam

Sampling Method (circle): Double 0.1 m² Van Veen grab sampler / Other: Young Grab (weighted)

Weather: Sunny, calm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0749	6.6	overpenetrated	N	removed partially-weights
0755	6.5	overpenetrated	N	removed all weights
0759	6.5	14	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS 81 -010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand) C M F	Brown surface	Gray	(None)	H_2S
(Gravel)	(Silt) (Clay)	Brown	(Black)	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other: worms			Strong	

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Wind/Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3-7-05 **Station:** LDW-SS-82-010

Start/Stop time: 10:23 **Crew:** SMP, STS, TDo CE Boat

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** Overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
10:23	4.5	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS82-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M (F)	(Brown surface)	(Gray)	(None)	H_2S
Gravel	(Silt) Clay	Brown	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other:			Strong	

Comments: RPD @ 1 cm

WORMS

Field duplicate taken LDW-SS82204-010

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 3·7·05
Station: LDW-SS 85
Start/Stop time: 08:40 - 08:51
Crew: TDo, SMP, STS CE Boat
Sampling Method: 0.1-m^2 van Veen grab sampler
Weather: Overcast
└ Double

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
08:40		~~FF~~ —	N	Rock
08:45		—	N	Rock
08:50	2.4	12-13	Y	OK
08:35		—	N	Rock

SAMPLE INFORMATION

Sample ID: LDW-SS 85 -010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C (M) (F)
(Gravel) — (Silt) Clay
(Organic matter) — (Wood debris)
(Shell fragments) — Other:

Sediment color:

Brown surface — Gray
(Brown) — Black
Drab olive — Other:

Sediment odor:

(None) — H_2S
Slight — Petroleum
Moderate — Other:
Strong

Comments: RPD @ _____cm
NOT DISTINGUISHABLE
OIL SHEEN

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.10.05
Station: LDW-SS-86-010
Start/Stop time: 1529/1529
Crew: SMP, ST3, TDO, CE, TP
Sampling Method ✓ Double 0.1-m^2 van Veen grab sampler
(circle): Other:
Weather: Sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1529	2.2	13	Y	20.7m off target location

SAMPLE INFORMATION

Sample ID: LDW-SS-86-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble	Sand C M F
Gravel	Silt / Clay
Organic matter	Wood debris
Shell fragments	Other:

Sediment color:

Brown surface	Gray
Brown	Black
Drab olive	Other:

Sediment odor:

None	H_2S
Slight	Petroleum
Moderate	Other:
Strong	

Comments: RPD @ not visible cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.14.05
Station: LDW-SS90-010
~~Start/Stop~~ time: 1230
Crew: AR, RAC
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler ~~0.02-m^2 Ekman grab sampler~~, By hand with stainless steel spoon
Weather: Sunny, clear & warm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1230	-	10	Y	47° 32.1532358
				122° 19.5837266

SAMPLE INFORMATION

Sample ID: LDW-SS90-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt/ Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ _____cm
No noticeable RPD

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.7.05 **Station:** LDW-SS-91-010

Start/Stop time: 09:27 - 11:53 **Crew:** SMP, TDo, STS CE Boat

Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other: **Weather:** Overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0927	—	—	N	Too Shallow.
1151	2.1	1-2	N	< 7 cm retrieved.
1153	3.0	12	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-91-010 **Analyses needed before homogenization (circle):** Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt / Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 0 cm NONE VISIBLE BRICK OIL SHEEN

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.15.05 **Station:** LDW-SS-93 -010

Start/Stop time: 1115 **Crew:** B. Emplita

S. Pierce

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: Ekman grab **Weather:** overcast, cool

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1115		7	Y	47°32.093 grab 1
1119		7	Y	122° 19.504 grab 2
1121		10	Y	grab 3
1124		10	Y	grab 4
1128		10	Y	grab 5
1130		10	Y	grab 6

SAMPLE INFORMATION

Sample ID: LDW-SS 93 -010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble Sand: C M F

Gravel Silt / Clay

Organic matter Wood debris

Shell fragments Other:

Sediment color:

Brown surface Gray

Brown Black

Drab olive Other:

Sediment odor:

None H_2S

Slight Petroleum

Moderate Other:

Strong

Comments: RPD @ _____ cm

RPD Not visible

surface sheen

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.09.05
Station: LDW-SS-95 -010
Start/Stop time: 12:54/12:34
Crew: RAC, TDO, LM, CE, TP
Kym Takasaki (overnight)
Sampling Method ~~Double 0.1-m² van Veen grab sampler~~
(circle): ✓Other: Young grab
Weather: Overcast

GRAB INFORMATION

Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab? (Y/N)	Comments
12:54	4.0	8/10	N	
12:58	4.1	<8	N	too low recovery, switch to Young grab
13:10	4.6	7	N	too low recovery
13:15	4.6	12	Y	
13:23	4.5	—	N	did not deploy
13:27	4.8	—	N	jaws did not close
13:29	4.7	—	N	over penetrated
13:34	4.8	12	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS95 -010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:
Cobble; Sand: C M (F); Gravel; Silt / Clay; Organic matter; Wood debris; Shell fragments; Other: worm

Sediment color:
(Brown surface) (Gray); Brown; Black; Drab olive; Other:

Sediment odor:
None; H_2S; (Slight); (Petroleum); Moderate; Other:; Strong

Comments: RPD @ 1 cm pockets of oil sheen

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 3/15/05
Station: LDW-SS-98-010
Start/Stop time: 8:02
Crew: AR, BB, HA
Sampling Method (circle): ~~Double~~ Single 0.1-m^2 van Veen grab sampler / Other:
Weather: cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
8:02	12 ft	~~12 ft~~ 16	Y	47 31.972 122 19.295
				able to get at target location
				~~Not at~~ alternative location
				not needed

SAMPLE INFORMATION

Sample ID: LDW-SS-98-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M (F)	(Brown surface) top	Gray	(None)	H_2S
Gravel	(Silt) / Clay	Brown	(Black) bottom	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 2-3 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.11.05 **Station:** LDW-SS-100-010

Start/Stop time: 1213- **Crew:** S.Shillman, T-Do, S.Pierce

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): (Other:) stainless steel spoon by hand **Weather:** sunny, breezy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1213	0 (on shore)	10	Y	~~123° 81. 803~~
				~~122° 19. 186~~
				122°19.191
				47°31.905
				(approx 10 ft. fm target)

SAMPLE INFORMATION

Sample ID: LDW-SS100-010 **Analyses needed before homogenization (circle):** Sulfides VOC AVS/SEM Other:

Sediment type: F

		Sediment color:		**Sediment odor:**	
Cobble	Sand: (C) (M) (F)	Brown surface	Gray	(None)	H_2S
(Gravel)	Silt / Clay	(Brown)	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other:			Strong	

Comments: RPD @ _____cm RPD - not visible coordinates

glass

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3·7·05 **Station:** LDW-SS-103-010

Start/Stop time: 12:57 - 13:10 **Crew:** TDo, SMP, STS CE Boat

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** Overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
12:57	—	—	N	Chain lock
12:59	2.9	11 on one side	1/2 Y	Used half of sample
13:10	3.0	11 " " "	Y	Used one side of sample

SAMPLE INFORMATION

Sample ID: LDW-SS103-010 **Analyses needed before homogenization (circle):** Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 2 cm

Rinsate blank taken
LDW-SS103-RB
@ 12:59

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.08.05 **Station:** LDW-SS-105-010

Start/Stop time: 1310 - 1340 **Crew:** S. Stillman, T. Do, S. Pierce, C. Eaton, T. Putnam

Sampling Method (circle): ~~Double 0.1m² Van Veen grab sampler~~ Other: Young Grab (weighted) **Weather:** sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1310	2.1	—	N	wash out - rock
1317	2.2	—	N	wash out
1320	2.5	—	N	wash out
1325	3.7	—	N	wash out - rock
1327	3.8	—	N	wash out - bike tire in jaws
1330	3.8	14	Y	9.1 m fm target

SAMPLE INFORMATION

Sample ID: LDW-SS-105-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble, (Sand) C (M) F, (Gravel), (Silt) Clay, (Organic matter), (Wood debris), Shell fragments, Other:

Sediment color:

(Brown surface), (Gray) dk, Brown, Black, Drab olive, Other:

Sediment odor:

(None), Slight, Moderate, Strong, H_2S, Petroleum, Other:

Comments: RPD @ 2-3 cm

extended
surface sheen on water while sampling - colorful sheen + strong petroleum odor

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.08.06
Station: LDW-SS-106-010
Start/Stop time: 1350 - 1415
Crew: S. Shillman, T. Do, S. Pierce, C. Eaton, T. Putnam
Sampling Method: Double 0.1-m² van Veen grab sampler
(circle): Other: Young grab (weighted)
Weather: partly sunny, light wind

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1350	2.0	–	N	wash out · concrete block
1353	2.5	~~error~~ 13	~~N~~ Y	~~wash out backpack~~ ½ is OK
1401	2.5	–	N	wash out · stick in jaws
1403	2.5	11	Y	acceptable on ½

SAMPLE INFORMATION

Sample ID: LDW-SS 106 -010
Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:
Cobble, Sand, C, M, F, Gravel, Silt/Clay, Organic matter, Wood debris, Shell fragments, Other:

Sediment color:
Brown surface, ~~Gray~~, Brown, Black, Drab olive, Other:

Sediment odor:
None, H_2S, Slight, Petroleum, Moderate, Other:, Strong

Comments: RPD @ ~~1000~~ cm
Not visible

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.14.05 **Station:** LDW-SS-107-010

Start/Stop time: 1534-1550 **Crew:** S.Stillman, S.Pierce, D.Mullins

Sampling Method (circle): Single ~~Double~~ 0.1-m^2 van Veen grab sampler Other: **Weather:** sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1534	3 ft	up ~5	N	under penetration
1538	3 ft	13	Y	1/2 volume needed
1540	-	-	N	did not grab
1545	3 ft	11	Y	enough volume
				47°31.724
				122°18.844

SAMPLE INFORMATION

Sample ID: LDW-SS-107-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand, C M F	Brown surface	Gray	None	H_2S
Gravel	Silt Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 3 cm

SURFACE SEDIMENT COLLECTION FORM

Wind/Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.10.05 **Station:** LDW-SS-108-010

Start/Stop time: 1446/1453 **Crew:** SMP, STS, TDO, CE, TP

Sampling Method ✓Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1446	3.9	—	N	overpenetrated
1453	3.9	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-108-010 **Analyses needed before homogenization (circle):** (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M (F)	(Brown surface)	Gray	(None)	H_2S
Gravel	(Silt) Clay	Brown	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	(Drab olive)	Other:	Moderate	Other:
Shell fragments	Other: plant			Strong	

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 03.08.05 Station: LDW-SS-122-010

Start/Stop time: 1421 - 1430 Crew: S. Stillman, T. Do, S. Pierce, C. Eaton, T. Putnam

Sampling Method: Double 0.1-m^2 van Veen grab sampler

(circle): (Other) Young grab (weighted) Weather: SUNNY

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1421	2.4	5	N	sand/gravel; low penetration
1425	2.4	14	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-122-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

(Cobble) Sand: C (M) F

(Gravel) (Silt) Clay

(Organic matter) (Wood debris)

Shell fragments (Other) worms

Sediment color:

(Brown surface) (Gray)

Brown Black

Drab olive Other:

Sediment odor:

(None) H_2S

Slight Petroleum

Moderate Other:

Strong

Comments: RPD @ 2 cm

petroleum odor at site (airborne)

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: ~~7215~~ 03.15.06
Station: LDW-SS-124-010
Start/Stop time: 1215 - 1235
Crew: B. Compita
S. Pierce
Sampling Method: Double 0.1-m² van Veen grab sampler
(circle): Other: Stainless steel spoon by hand
Weather: overcast, cool

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1215	—	10	Y	47° 31.250
				122° 18.508
				~~SS~~ target location was in rock piles - moved location S to where sampling was possible

SAMPLE INFORMATION

Sample ID: LDW-SS 124 -010

Analyses needed before homogenization (circle): ~~Sulfides~~ VOC AVS/SEM Other:

Sediment type:

Cobble	(Sand) C M F	Gravel	Silt / Clay
(Organic matter)	Wood debris	Shell fragments	(Other) plant, wrm

Sediment color:

Brown surface	Gray	(Brown)	Black
Drab olive	Other:		

Sediment odor:

(None)	H_2S	Slight	Petroleum
Moderate	Other:	Strong	

Comments: RPD @ _____ cm

no visible RPD

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 03.08.05 Station: LDW-SS-131-010

Start/Stop time: 1450 1502 Crew: S. Stillman, T. Do, S. Pierce

Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler - weighted C. Eaton, T. Putnam

Other: Weather: partly sunny, ~~light~~ wind

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
~~1445~~ 1450	4.0	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-131-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type: (circle)

Cobble; Sand: C M F; Gravel; Silt; Clay; Organic matter; ~~Wood debris~~; Shell fragments; Other: worm

Sediment color: (circle)

Brown surface; Gray; Brown; Black; Drab olive; Other:

Sediment odor: (circle)

None; H_2S; Slight; Petroleum; Moderate; Other:; Strong

Comments: RPD @ 3 cm

pockets of sheen

duplicate station - LDW-SS206-010

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.9.05 **Station:** LDW-SS-132-010

Start/Stop time: 1702/1715 **Crew:** RAC, TDD, CM, CE, T.P.

Sampling Method: Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1702	5.8	17	Y	
1715	5.5	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS132-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C M (F)

Gravel — (Silt) / Clay

(Organic matter) — Wood debris

Shell fragments — Other: plant, wood, twigs

Sediment color:

(Brown surface) (Gray)

Brown — Black

Drab olive — Other:

Sediment odor:

None — (H_2S)

(Slight) — Petroleum

Moderate — Other:

Strong

Comments: RPD @ 1-2 cm packets of sheen

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.9.05 **Station:** LDW-SS-133-010

Start/Stop time: 14:37/14:54 **Crew:** TDD, RAL, LM, CE, TP.

Sampling Method ✓ Double 0.1-m^2 van Veen grab sampler

(circle): ~~Other: young grab~~

Weather: overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
14:37	3.9	—	N	overpenetrated; will take off weights
14:44	4.0	—	N	overpenetrated; switch to Van Veen
14:54	4.0	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS 133-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C M (F)

Gravel — (Silt) / Clay

(Organic matter) — Wood debris

Shell fragments — Other: plant

Sediment color:

(Brown surface) — Gray

Brown — (Black)

Drab olive — Other:

Sediment odor:

None — (H_2S)

Slight — Petroleum

(Moderate) — Other:

Strong

Comments: RPD @ 1-2 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 03.15.05 Station: LDW-SS-135-010

Start/Stop time: 1245 Crew: B Complita

S. Pierce

Sampling Method: Double 0.1-m² van Veen grab sampler

(circle): Other: stainless steel spoon by hand Weather: overcast, cool

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1245	—	10	Y	coordinates on station (target)
				122°18.407
				47°31.013

SAMPLE INFORMATION

Sample ID: LDW-SS 135 -010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble (Sand) (G) (M) F

Gravel (Silt) Clay

(Organic matter) Wood debris

Shell fragments (Other) worms

Sediment color:

(Brown surface) (Gray)

Brown Black

Drab olive Other:

Sediment odor:

None (H_2S)

(Slight) Petroleum

Moderate Other:

Strong

Comments: RPD @ 1 cm

Sand layer 2cm down

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 03.15.05 Station: LDW-SS-136-010

Start/Stop time: 1315 - 1340 Crew: B. Compitra

Sampling Method: Double 0.1-m^2 van Veen grab sampler S. Pierce

(circle): Other: stainless steel spoon by hand Weather: overcast, cool

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1315	-	10	Y	47° 30. 984
				122° 18. 397

SAMPLE INFORMATION

Sample ID: LDW-SS-136-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble Sand: C (M) F

Gravel (Silt / Clay)

(Organic matter) (Wood debris)

Shell fragments (Other) worms

Sediment color:

(Brown surface) (Gray)

Brown Black

Drab olive Other:

Sediment odor:

(None) H_2S

Slight Petroleum

Moderate Other:

Strong

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.9.05 **Station:** LDW-SS-137-010

Start/Stop time: 1536/1641 **Crew:** RAC, TDO, LM, CE, TP.

Sampling Method ✓Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1536	3.2	—	N	overpenetrated
1541	3.2	—	N	overpenetrated; will return w/o weights.
1629	3.9	17/OP	Y/N	overpenetrated on 1 VanVeen, kept other
1641	3.7	17	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-137-010 **Analyses needed before homogenization (circle):** (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C M (F)
Gravel — (Silt) Clay
(Organic matter) — Wood debris
Shell fragments — Other: plant, worm tubes

Sediment color:

(Brown surface) — Gray
Brown — (Black)
Drab olive — Other:

Sediment odor:

None — (H_2S)
(Slight) — Petroleum
Moderate — Other:
Strong

Comments: RPD @ 1-2 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3.9.05 **Station:** LDW-SS-138-010

Start/Stop time: 1516/1516 **Crew:** TDO RAC LM CE TP

Sampling Method (circle): ✓Double 0.1-m^2 van Veen grab sampler / Other: **Weather:** overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1516	2.6	12	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS 138 -010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C M (F)

Gravel — (Silt) / Clay

(Organic matter) — Wood debris

Shell fragments — Other: plant, worms

Sediment color:

(Brown surface) (Gray)

Brown — Black

Drab olive — Other:

Sediment odor:

None — (H_2S)

(Slight) — Petroleum

Moderate — Other:

Strong

Comments: RPD @ 3 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 3.9.05 Station: LDW-SS-139-010

Start/Stop time: 1556/1556 Crew: RAC, TDO, LM, CE, TP

Sampling Method ✓Double 0.1-m^2 van Veen grab sampler

(circle): Other: Weather: overcast

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1556	3.0	13	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-139-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C (M) (F)	(Brown surface)	(Gray)	None	(H_2S)
Gravel	(Silt) Clay	Brown	Black	(Slight)	Petroleum
(Organic matter)	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other: plant material			Strong	

Comments: RPD @ 3 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.08.05
Station: LDW-SS-140-010
Start/Stop time: 1508-1520
Crew: S. Shillman, T. Do, S Pierce, C. Eaton, T. Putnam
Sampling Method (circle): Double 0.1-m^2 van Veen grab sampler / Other:
Weather: sunny, light breeze

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1508	5.0	11	Y	

SAMPLE INFORMATION

Sample ID: LDW-SS-140-010
Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand) C (M) F	(Brown surface)	(Gray)	(None)	H_2S
Gravel	(Silt) / Clay	Brown	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
Shell fragments	(Other) Worms			Strong	

Comments: RPD @ X cm
No visible RPD
pockets of surface sheen

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3/15/05 **Station:** LDW-SS-141-010

Start/Stop time: 8:44 **Crew:** AR, BB, HA

Sampling Method (circle): ~~Double~~ Single 0.1-m^2 van Veen grab sampler / Other:

Weather: cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
8:44	6 ft.	14 cm	Y	47 30.788 122 18.343
8:56	6 ft	14.5 cm	Y	47 30.788 122 18.343

SAMPLE INFORMATION

Sample ID: LDW-SS-141-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand) C M (F)	(Brown surface) top	Gray	(None)	H_2S
Gravel	(Silt) / Clay	Brown	(Black) bottom	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 3 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3/15/05 **Station:** LDW-SS-149-010

Start/Stop time: 15:00 **Crew:** AR, HA, BB

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): (Other:) on foot with stainless steel spoon **Weather:** mostly sunny/hazy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
15:00	—	10	Y	47 30.743 122 17.895
				location moved slightly off target b/c target location was on ~~sand cap~~ land; we moved location to edge of sand cap on shore side

SAMPLE INFORMATION

Sample ID: LDW-SS-149-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble	(Sand) C M (F)	Gravel	(Silt) / Clay
Organic matter	Wood debris	Shell fragments	Other:

Sediment color:

(Brown surface)	(Gray) bottom	Brown	(Black)
Drab olive	Other:		

Sediment odor:

None	H_2S	(Slight) chemical	Petroleum
Moderate	Other:	Strong	

Comments: RPD @ 4 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.14.05 **Station:** LDW-SS-145-010

Start/Stop time: 1505 -1510 **Crew:** S.Shillman, S.Pierce, D.Mullins

Sampling Method (Single) ~~Double~~ 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** Sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1505	44	—	N	did not give
1508	44	15	Y	47°30.717
				122°17.763

SAMPLE INFORMATION

Sample ID: LDW-SS-145-010 **Analyses needed before homogenization (circle):** (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand) C M F	Brown surface *	Gray	(None)	H_2S
Gravel	Silt / Clay	(Brown)	Black	Slight	Petroleum
(Organic matter)	Wood debris	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other:			Strong	

Comments: RPD @ _____ cm

No Visible RPD

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: ~~03.08.05~~ 03.09.05
Station: LDW-146
Start/Stop time: 1305 - 1348
Crew: F. McNair, S. Pierce, E. Parker
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler
Weather: partly cloudy, cool

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1305	2.6 (ft)	11	Y	122°18.051
1321	2.6 (ft)	14	Y	47°30.714

SAMPLE INFORMATION

Sample ID: LDWG-146
Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type: (circle)
Cobble; Sand: C M (F); Gravel; Silt / Clay; (Organic matter); (Wood debris); Shell fragments; Other:

Sediment color: (circle)
(Brown surface); (Gray) dk lt; Brown; Black; Drab olive; Other:

Sediment odor: (circle)
(None); Slight; Moderate; Strong; H_2S; Petroleum; Other:

Comments: RPD @ 1 cm

coordinates on target

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: ~~03.08.05~~ 03.09.05
Station: LDWG-147
Start/Stop time: 1350 - 1415
Crew: S.Pierce, F.McNair, E.Parker
Sampling Method (circle): Single 0.1-m^2 ~~van Veen~~ grab sampler / 0.02-m^2 Ekman grab sampler
Weather: light rain ☺

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1350	3.9 ft	17	Y	122°18.274
				47°30.703

SAMPLE INFORMATION

Sample ID: LDWG-147
Analyses needed before homogenization (circle): Sulfides / VOC / AVS/SEM / Other:

Sediment type: (circle)
Cobble; Sand: C M F; Gravel; Silt / Clay; Organic matter; Wood debris; Shell fragments; Other:

Sediment color: (circle)
Brown surface; Gray dark; Brown; Black; Drab olive; Other:

Sediment odor: (circle)
None; Slight; Moderate; Strong; H_2S; Petroleum; Other:

Comments: RPD @ 1-2 cm

coordinates on target

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: ~~03.08.05~~ 03.09.05
Station: LDWG-148
Start/Stop time: 1438 - 1305
Crew: S.Pierce, F.McNair, K.Takasaki, E.Parker
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler
Weather: overcast, cool

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1438	7.3 ft	14	Y	122°18.097
1452	7.4 ft	13	Y	47°30.682

SAMPLE INFORMATION

Sample ID: LDWG-148
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type: Cobble, Sand, C, M, G, Gravel, Silt, Clay, Organic matter, Wood debris, Shell fragments, Other:

Sediment color: Brown surface, Gray, Brown, Black, Drab olive, Other:

Sediment odor: None, H_2S, Slight, Petroleum, Moderate, Other:, Strong

Comments: RPD @ 5 cm

orange ~ colors @ surface
gray at deeper depth

coordinates on target

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name:	LDW RI-Surface Sediment Chemistry/Toxicity	Project no.	04-08-06-24
Date:	~~03.08.05~~ 03.09.05	Station:	LDWG-~~150~~ 149
Start/Stop time:	1608 - 1621	Crew:	F. McNair, S. Pierce, E. Parker
Sampling Method (circle):	Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler	Weather:	overcast, light breeze.

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1608	4.7	12	Y	122°18.200
1621	4.8	11	Y	47°30.675

SAMPLE INFORMATION

Sample ID: LW LDW-~~150~~ 149

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type: (Sand) C M F; Cobble; Gravel; (Silt) (Clay); (Organic matter); (Wood debris); Shell fragments; (Other: plant)

Sediment color: (Brown surface) (Gray); Brown; Black; Drab olive; Other:

Sediment odor: None; (Slight); Moderate; Strong; H_2S; (Petroleum); Other:

Comments: RPD @ 1 cm (@ surface)

coordinates on target

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name:	LDW RI-Surface Sediment Chemistry/Toxicity	**Project no.**	04-08-06-24
Date:	~~03.08.05~~ 03.09.05	**Station:**	LDWG-~~HA9~~ 150
Start/Stop time:	1534 - 1555	**Crew:**	F. McNair, S. Pierce, E. Parker
Sampling Method (circle):	(Single 0.1-m^2 van Veen grab sampler) / 0.02-m^2 Ekman grab sampler	**Weather:**	overcast, cool

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1534	5.4 ft	11	Y	tide - 10.2 ft
1544	5.0 ft	17	Y	122°18.127
				47°30.640

SAMPLE INFORMATION

150

Sample ID: LDWG-~~HA9~~

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand) C (M) F	Brown surface	Gray	(None)	H_2S
Gravel	(Silt) Clay	(Brown)	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
~~Shell fragments~~	(Other: plant/grass, worm)			Strong	

Comments: RPD @ _____cm

RPD not clearly visible

mostly sandy

coordinates on target

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3/15/05 **Station:** LDW-SS-151-010

Start/Stop time: 14:25 **Crew:** AR, HA, BB

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: **Weather:** partly cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
17:25	5ft	—	N	sampler didn't close
14:29	—	—	N	wash out
14:30	5ft	10	Y	47 30.699 122 17.729

SAMPLE INFORMATION

Sample ID: LDW-SS-151-010 **Analyses needed before homogenization (circle):** (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble	Sand: (C-M) F	
(Gravel)	Silt / Clay	
Organic matter	Wood debris	
Shell fragments	Other:	

Sediment color:

Brown surface	(Gray)
(Brown)	Black
Drab olive	Other:

Sediment odor:

(None)	H_2S
Slight	Petroleum
Moderate	Other:
Strong	

Comments: RPD @ _____cm none

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 3/15/05
Station: LDW-SS-152-010
Start/Stop time: 14:07
Crew: AR, HA, BB
Sampling Method (circle): ~~Double~~ 0.1-m² van Veen grab sampler / Other: Single
Weather: cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
14:07	9 ft	15.5	Y	47 30.600 122 17.619

SAMPLE INFORMATION

Sample ID: LDW-SS-152-010
Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand: C-M F)	Brown surface	(Gray)	(None)	H_2S
Gravel	Silt / Clay	(Brown)	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ _____cm none

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3/15/05 **Station:** LDW-SS-153-010

Start/Stop time: 1345 **Crew:** AR, HA, ~~AB~~ BB

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: On foor w/ stainless steel spoon **Weather:** cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
13:45	—	10	Y	47 30.524 122 17.566

SAMPLE INFORMATION

Sample ID: LDW-SS 153 -010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble	Sand: C M F	
Gravel	Silt Clay	
Organic matter	Wood debris	
Shell fragments	Other:	

Sediment color:

Brown surface	Gray	below redox depth
Brown	Black	
Drab olive	Other:	

Sediment odor:

None	H_2S
Slight	Petroleum
Moderate	Other:
Strong	

Comments: RPD @ 8-9 cm pockets of iron/red deposits

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3/15/05 **Station:** LDW-SS-154-010

Start/Stop time: 13:11 **Crew:** AR, HA, BB

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: by hand with stainless steel spoon **Weather:** cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
13:11	—	—	N	empty grab - Van Veen
13:15	—	10	Y ? by hand	47 30.327 122 17.717

SAMPLE INFORMATION

Sample ID: LDW-SS 154 -010 **Analyses needed before homogenization (circle):** (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:			Sediment odor:	
Cobble	(Sand) C M (F)	(Brown surface)	Gray	bottom	(None)	H_2S
Gravel	Silt (Clay) mostly	Brown	(Black)		(Slight) organic	Petroleum
Organic matter	Wood debris	Drab olive	Other:		Moderate	Other:
Shell fragments	Other:				Strong	

Comments: RPD @ 2-3 cm A bit of red/iron

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3/15/05 **Station:** LDW-SS-155-010

Start/Stop time: 12:35 **Crew:** AR, HA, BB

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other: by hand with stainless steel spoon **Weather:** cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
12:35	—	TO	Y	47 30.242 122 17.769
				target coordinates were on land; sample was actually taken as close as possible to target while still on beach

SAMPLE INFORMATION

Sample ID: LDW-SS-155-010 **Analyses needed before homogenization (circle):** (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	(Sand:) (M-F)	(Brown surface)	(Gray)	(None)	H_2S
Gravel	Silt / (Clay) layers of gray, brown & red	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ 4-5 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3/15/05 **Station:** LDW-SS-156-010

Start/Stop time: 11:41 **Crew:** AR, HA, BSB

Sampling Method ~~Double~~ 0.1-m^2 van Veen grab sampler

(circle): Other: Single **Weather:** cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
11:41	5 ft	<10 cm	N	47 30.143 122 17.829
11:49	5 ft		N	47 30.143 122 17.829
11:51	4 ft		N	47 30.145 122 17.820
11:53	4 ft		N	47 30.145 122 17.820
11:56	3 ft	15 cm	Y	47 30.144 122 17.820

SAMPLE INFORMATION

Sample ID: LDW-SS-156-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: (C) M F	Brown surface	Gray	(None)	H_2S
Gravel	Silt / Clay	(Brown)	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ _____cm none

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 3.16.05 Station: LDW-SS-157-010

Start/Stop time: 1500 Crew: RAC, SP, AR

Sampling Method: Double 0.1-m^2 van Veen grab sampler

(circle): Other: By hand with stainless steel spoon Weather: Partly cloudy, sunshine & windy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1500	—	10	Y	47°31.454
				122°18.464

SAMPLE INFORMATION

Sample ID: LDW-SS-157-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble	Sand: (C) M F
(Gravel)	(Silt) / Clay
Organic matter	(Wood debris)
Shell fragments	Other:

Sediment color:

Brown surface	Gray
(Brown)	Black
Drab olive	Other:

Sediment odor:

(None)	H_2S
Slight	Petroleum
Moderate	Other:
Strong	

Comments: RPD @ _____cm No noticeable RPD

Orange flecks

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 3.16.05
Station: LDW-SS-158-010
Start/Stop time: 1341
Crew: RAC, SP, AR
Sampling Method (circle): ~~Double~~ Single 0.1-m^2 van Veen grab sampler / Other:
Weather: cloudy, windy & rain

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1341	9ft	11	Y	47° 31.452 122° 18.483
1347	9ft	16	Y	47° 31.452 122° 18.483

SAMPLE INFORMATION

Sample ID: LDW-SS158-010
Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C (M) F	(Brown surface)	(Gray)	(None)	H_2S
Gravel	(Silt) / Clay	Brown	Black	Slight	Petroleum
(Organic matter)	(Wood debris)	Drab olive	Other:	Moderate	Other:
(Shell fragments)	Other: Worms			Strong	

Comments: RPD @ 2 cm

Wind Ward environmental LLC SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 3.16.05 Station: LDW-SS-159-010

Start/Stop time: 1430 Crew: RAC, SP, AR

Sampling Method ~~Double~~ Single 0.1-m^2 van Veen grab ~~sampler~~

(circle): Other: By hand with stainless steel spoon Weather: Partly cloudy, sunshine & windy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1430	~~0~~ —	10	Y	47°31.440
				122°18.454

SAMPLE INFORMATION

Sample ID: LDW-SS-159-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble Sand: C (M) F

Gravel (Silt) / Clay

~~Organic matter~~ (Wood debris)

Shell fragments Other:

Sediment color:

Brown surface (Gray)

Brown Black

Drab olive Other:

Sediment odor:

(None) H_2S

Slight Petroleum

Moderate Other:

Strong

Comments: RPD @ 2 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.11.05 **Station:** LDW-SS-B2b-010

Start/Stop time: 10:10 - 1050 **Crew:** S.Shillman, T.Do, S.Pierce, C.Eaton, T.Putnam

Sampling Method (Double 0.1-m^2 van Veen grab sampler) **(circle):** Other: **Weather:** foggy, cool, calm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1010	12.3	under penetration	N	
1025	~~12.1~~ 12.1	8 cm (UP)	N	
1036	12.2	15	Y	switched to Young grab

SAMPLE INFORMATION

Sample ID: LDW-SS-B2b-010 **Analyses needed before homogenization (circle):** (Sulfides) VOC AVS/SEM Other:

Sediment type:

- Cobble
- (Sand: C M F)
- Gravel
- ~~Silt~~ / Clay
- (Organic matter)
- ~~Wood debris~~
- Shell fragments
- (Other: worms)

Sediment color:

- (Brown surface)
- Gray
- Brown
- (Black)
- Drab olive
- Other:

Sediment odor:

- (None)
- H_2S
- Slight
- Petroleum
- Moderate
- Other:
- Strong

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.14.05 **Station:** LDW-SS-B4a-010

Start/Stop time: 1020 - 1030 **Crew:** S Stillman, S. Pierce, D. Mullins

Sampling Method (circle): Single Double 0.1-m^2 van Veen grab sampler Other: **Weather:** Sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1020	5ft	9	N	47°32.949
1025	5ft	11	Y	122°20.497

SAMPLE INFORMATION

Sample ID: LDW-SS-B4a-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other: worms, plant			Strong	

Comments: RPD @ 2 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.14.05 **Station:** LDW-SS-B5b-010

Start/Stop time: 1339 - 1350 **Crew:** S. Shillman, S. Pierce, D. Mullins

Sampling Method (circle): ~~Double~~ Single 0.1-m^2 van Veen grab sampler / Other: **Weather:** sunny, clear

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1339	6 ft	12	Y	1/2 volume needed
1349	5 ft		Y	enough volume
				47°32.976
				122°20.328

SAMPLE INFORMATION

Sample ID: LDW-SS B5b-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble (Sand: C M F) Gravel (Silt) Clay (Organic matter) (Wood debris) (Shell fragments) (Other: plant)

Sediment color:

(Brown surface) (Gray) Brown Black Drab olive Other:

Sediment odor:

None (H2S) Slight Petroleum (Moderate) Other: Strong

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 03.15.05
Station: LDW-SS-B6a-010
Start/Stop time: 1445 - 1500
Crew: B. Compleda
S. Pierce
Sampling Method: Double 0.1-m² van Veen grab sampler
(circle): Other: stainless steel spoon by hand
Weather: overcast, cool

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1445	—	10	Y	coordinates on target location
				47° 32.456
				122° 20.051

SAMPLE INFORMATION

Sample ID: LDW-SS-B6a-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble, Sand, (G) M, E
Gravel, Silt, Clay
Organic matter, Wood debris
Shell fragments, Other: clams, worms

Sediment color:

Brown surface, Gray
Brown, Black
Drab olive, Other:

Sediment odor:

None, H_2S
Slight, Petroleum
Moderate, Other:
Strong

Comments: RPD @ 1 cm

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 03.18.05 **Station:** LDW-SS-B7a-010

Start/Stop time: 1000 **Crew:** M. Luxon, S. Pierce

Sampling Method Double 0.1-m^2 van Veen grab sampler

(circle): Other Ekman grab **Weather:** overcast, light breeze

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1000	—	5	Y	following 5 misfires (rocks) took ~9 grabs ave penetration = 5-10cm
				47° 31. 889 122° 18.150
				47° 31. 890 122° 18.148
				47° 31. 899 122° 18.148

SAMPLE INFORMATION

Sample ID: LDW-SS-B7a-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble, Sand: C M (F), (Gravel), (Silt)/ Clay, (Organic matter), (Wood debris), Shell fragments, Other:

Sediment color:

(Brown surface), (Gray), Brown, Black, Drab olive, Other:

Sediment odor:

None, (H_2S), (Slight), Petroleum, Moderate, Other:, Strong

Comments: RPD @ 1 cm

Rinsate blank taken LDW-SSB7a-RB

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 3/15/05 **Station:** LDW-SS-B9a-010

Start/Stop time: 9:23 **Crew:** AR, HA, BB

Sampling Method ~~Double~~ 0.1-m^2 van Veen grab sampler

(circle): Other: single **Weather:** cloudy

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
9:23	8 ft.	11 cm	Y	47 30.835 122 18.229
9:31	8 ft	10.5 cm	Y	47 30.835 122 18.229

SAMPLE INFORMATION

Sample ID: LDW-SS-B9a-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

Cobble	(Sand: C-M F)	
Gravel	Silt / Clay	
Organic matter	Wood debris	
Shell fragments	Other:	

Sediment color:

(Brown surface)	Gray	
Brown	(Black) bottom	
Drab olive	Other:	

Sediment odor:

(None)	H_2S
Slight	Petroleum
Moderate	Other:
Strong	

Comments: RPD @ 3-4 cm

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 03.15.05 Station: LDW-SS-BC1-010

Start/Stop time: 1530 - 1549 Crew: B. Complita, S. Pierce

Sampling Method: Double 0.1-m^2 van Veen grab sampler

(circle): Other: stainless steel spoon by hand Weather: sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1530	—	10	Y	coordinates on target - 47°33.991 122°21.008

SAMPLE INFORMATION

Sample ID: LDW-SS-BC1-010

Analyses needed before homogenization (circle): (Sulfides) VOC AVS/SEM Other:

Sediment type:

- Cobble
- Gravel
- Organic matter
- Shell fragments
- (Sand) C M F
- (Silt / Clay)
- (Wood debris)
- (Other: Clams, Worms)

Sediment color:

- Brown surface
- (Gray)
- Brown
- Black
- Drab olive
- Other:

Sediment odor:

- (None)
- (Slight)
- Moderate
- Strong
- (H_2S)
- Petroleum
- Other:

Comments: RPD @ _____ cm

No clearly visible RPD

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name:	LDW RI-Surface Sediment Chemistry/Toxicity	**Project no.**	04-08-06-24
Date:	2/1/05	**Station:**	1a [redacted]
Start/Stop time:	2:35 - 3:42	**Crew:**	Bob, Derek, Kathy, Dave M.
Sampling Method (circle):	Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler	**Weather:**	Calm, Sunny

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
2:38	17 ft.	9cm	N	4739.565 12222.252 Sandy
2:48	17 ft	11cm	y	4739.565 12222.252 a1
3:00	12 ft	12cm	y	4739.566 12222.249 a2
3:20	21 ft	15cm	y	4739.562 12222.252 a3
3:25	20 ft	overpenetrati	N	4739.557 12222.253 [redacted]
3:27	19 ft	21cm	y	4739.560 12222.250 a4
3:30	20 ft	18cm	y	4739.562 12222.255 a5
3:34	20 ft	3cm	N	near SNing barge
3:37	21 ft	14cm	y	4739.563 12222.256 a6

SAMPLE INFORMATION

Sample ID: SC-551a-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt / Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:		Sheen	Strong	

Comments: RPD @ _____cm

No noticeable RPD.

Outfall did not appear to be flowing

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 02.10.05
Station: SC-SS16-010
Start/Stop time: 1435-1526
Crew: STS, SMP, AR
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler
Weather: Sunny, clear, no wind

GRAB INFORMATION

	Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab? (Y/N)	Comments
	1435	–	–	N	overpenetrated
	1440	–	–	N	overpenetrated
161	1449	23ft	17	Y	slight petroleum, very fine sheen, plant material
162	1456	19ft	17	Y	dark, very fine, sheen
163	1501	18ft	15	Y	" "
164	1507	22ft	11	Y	" "
	1515	20ft	–	N	overpenetrated
165	1517	20ft	17	Y	warm
##	1522	18ft	–	N	overpenetrated
166	1526	19ft	17	Y	no sheen, brown surface

SAMPLE INFORMATION

Sample ID: SC-SS16-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other: None

Sediment type: Cobble; Gravel; Organic matter; Shell fragments; Sand; C; M; Silt/Clay; Wood debris; plant; Other:

Sediment color: Brown surface; Gray; Brown; Black; Drab olive; Other:

Sediment odor: None; Slight; Moderate; Strong; H_2S; Petroleum; Other:

Comments: RPD @ 1-2 cm (at surface)

pockets of oil sheen
warm

outfall did not appear to be flowing

2a
pg 1 of 2

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 02/02/05
Station: [redacted] - EB - SS2a
Start/Stop time: 1239 - 1405
Crew: RAC, MW, STS, EP, DM
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler
Weather: clear, sunny, no wind

GRAB INFORMATION

	Grab Time	Bottom Depth (m)	Penetration Depth (cm)	Acceptable Grab? (Y/N)	Comments
2a1 ~~2a4~~	1239	5'	12 cm	[redacted] Y	Woody debris, silt, F-M sand, gravel
~~2a5~~	1250	7'	—	N	All sand. Not retained.
~~2a4a~~	1253	6'	—	N	Sample washed out.
~~2a4a~~	1254	6'	5 cm	N	Not enough sediment.
~~2a4a~~	1255	6'	5cm	N	Not enough sediment.
2a2	1300	5.5'	14 cm	Y	Silt, 5-10% organics, 5% gravel, mod H_2S
2a3	1305	~~X~~ 4'	15 cm	[redacted] BY	All F-M Sand.
2a6	1338	4.5'	13 cm	Y	F-M sands, organics
2a5	1344	6'	—	N	Wash out.
2a5	1345	6'	—	N	Wash out. Rock.
2a5	1347	5.5'	—	N	Not enough sediment.
2a5	1351	5'	—	N	Wash out.
	1352	—	—	N	Wash out.
	1353	—	—	N	Washout - Wood chip
	1355	9'	—	N	Not enough sediment.
	1359	5'	—	N	Not enough sediment.
	1403	4.5'	—	N	Wash out
	1405	4'	—	N	Wash out.

SAMPLE INFORMATION

-010

Sample ID: [redacted] - EB - SS2a
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt / Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ _____cm

outfall did not appear to be flowing

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name:	LDW RI-Surface Sediment Chemistry/Toxicity	Project no.	04-08-06-24
Date:	02/02/05	Station:	[redacted]-SS2a-EB-010 cont'd.
Start/Stop time:	1410 - 1437	Crew:	RAC, MW, STS, EP, DM
Sampling Method (circle):	Single 0.1-m² van Veen grab sampler / 0.02-m² Ekman grab sampler	Weather:	Clear, Sunny, no wind.

GRAB INFORMATION

	Grab Time	Bottom Depth (m)	Penetration Depth (cm)	Acceptable Grab? (Y/N)	Comments
	1410	4'	—	N	Wash out
	1412	4'	—	N	Wash out - rock.
	1413	2'	—	N	Wash out
	1421	4'	—	N	Good recovery but 60% gravel.
	1425	4'	—	N	Wash out
2a5	1428	4'	13cm	Y	Silty, sand, black, mod H_2S, orgs.
2a4	1437	3.5'	13 cm	Y	Same as 1428.

SAMPLE INFORMATION

Sample ID: [redacted]-EB-SS2a D10

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other: NONE

Sediment type:	Sediment color:	Sediment odor:
Cobble; Sand: C M F; Gravel ~ 5%; Silty Clay; Organic matter; Wood debris; Shell fragments; Other:	Brown surface; Gray; Brown; Black; Drab olive; Other:	None; H_2S; Slight; Petroleum; Moderate; Other:; Strong

Comments: RPD @ NONE cm

cut full did not appear to be flowing

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name:	LDW RI-Surface Sediment Chemistry/Toxicity	**Project no.**	04-08-06-24
Date:	2/2/05	**Station:**	EB-SS26-010
Start/Stop time:	1459	**Crew:**	RAC, MW, STS, EP
Sampling Method (circle):	Single 0.1-m^2 (van Veen) grab sampler 0.02-m^2 Ekman grab sampler	**Weather:**	clear, sunny, no wind

GRAB INFORMATION

	Grab Time	Bottom Depth (m)	Penetration Depth (cm)	Acceptable Grab? (Y/N)	Comments
261	1459	4'	15 cm	Y	Silt/sand, plant mat'l, mod H_2S,
262	1507	3.5'	15 cm	Y	Same as 1459. Both <5% gravel
	1511	3.5'	13 cm	N	50% gravel. Pockets of sheen.
263	1517	4'	13 cm	Y	Organics, silty sand, woody debris
264	1520	4'	13 cm	Y	Same as 1517
	1527	7'	—	N	Washed out.
	1528	3'	—	N	Not enough sediment.
	1529	3'	8 cm	N	Not enough sediment.
	1531	4'	—	N	Washed out.
265	1532	5'	15 cm	Y	Black, high H_2S, black, silty, lots of
	1543	4'	11 cm	Y	woody debris, organics.
	1545	Homogenized!			
	1515	—	—	N	50% gravel

SAMPLE INFORMATION

Sample ID: EB-SS26-010 **Analyses needed before homogenization (circle):** Sulfides VOC AVS/SEM Other:_____

Sediment type:	Sediment color:	Sediment odor:
Cobble, Sand: C (M) F	Brown surface, Gray	None, (H_2S)
Gravel <5%, Silt, Clay	Brown, (Black)	Slight, Petroleum
Organic matter, Wood debris (plant debris)	Drab olive, Other:	(Moderate), Other:
Shell fragments, Other:		Strong

Comments: RPD @ _____cm pockets of oily sheen

ant fall did not appear to be flowing

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 2/1/05 **Station:** 3 LW-553-010

Start/Stop time: 12:00 – 12:50 **Crew:** Bob, Derek, Kathy, Dave

Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler **Weather:** Sunny, calm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
12:00	10 ft	overpenetration	N	fine sandy, silty @ 3a — Van Veen
12:06	10 ft	20 cm	Y	4745.386 12215.457; 3a — Van Veen
12:16	19 ft	20 cm	Y	4745.374 12215.444; 3b — Van Veen
12:20	16 ft	overpenetration	N	next to barge on S side — Van Veen
12:23	16 ft	overpenetration	N	Will try Ekman next
12:27	15 ft	10-11 cm	Y	4745.368 12215.435; 3c — Ekman
12:34	13 ft	20 cm	Y	4745.365 12215.489; 3d — Van Veen
12:37	13 ft	overpenetration	N	3e (Van Veen)
12:40	13 ft	6 cm	N	Ekman @ 3c
12:43	18 ft.	13 cm	Y	Ekman; 3c; 4745.354 12215.475
12:45	18 ft	6 cm	N	Ekman – 3f –
12:47	18 ft	22 cm	Y	4745.354, 12215.466; 3f – Ekman

Van Veen @ 3a, 3b, Ekman @ 3c, Van Veen @ 3d, attempted 3e

(* Duplicate @ location 3 LW-556-010)

SAMPLE INFORMATION

Sample ID: LW-553-010 **Analyses needed before homogenization (circle):** Sulfides VOC AVS/SEM Other:

Sediment type: Cobble; Sand: C M F; Gravel; Silt / Clay; Organic matter; Wood debris; Shell fragments; Other:

Sediment color: Brown surface; Gray; Brown; Black; Drab olive; Other:

Sediment odor: None; H_2S; Slight H_2S; Petroleum; Moderate; Other:; Strong

Comments: RPD @ _____ cm

No observable RPD in any sample.

oily sheen pockets

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 02.8.05
Station: LW-SS4-010
Start/Stop time: 0902 / 0958
Crew: RAC, SP, AR
Sampling Method (circle): (Single 0.1-m^2 van Veen grab sampler) / 0.02-m^2 Ekman grab sampler
Weather: sunny, cool, calm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
0902	4 ft	16	Y	lots of organic debris, <5% gravel
0910	1.5ft	17	Y	& pockets of oily sheen
0920	7.0ft	—	N	Cable caught in grab
0922	5.0ft	17	Y	brown sediment & woody material
0928	0 ft		N	over penetration
0936	2ft	17	Y	silty
0945	4ft	—	N	Washout
0947	4ft	17	Y	
0949	2ft	—	N	Wood caught in grab & washout
0951	2ft	—	N	Empty
0952	2ft	—	N	Wood caught in grab & washout
0958	3ft	13	Y	

SAMPLE INFORMATION

Sample ID: LW-SS4-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble — Sand: C M (F)
Gravel — (Silt) Clay
(Organic matter) — (Wood debris)
Shell fragments — Other:

Sediment color:

Brown surface — Gray
Brown — Black
(Drab olive) — Other:

Sediment odor:

None — (H_2S)
(Slight) — Petroleum
Moderate — Other:
Strong

Comments: RPD @ _____cm No distinct RPD

Amphipod
Roots
gravel <5%

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 02.8.05
Station: LW-S55a-010
Start/Stop time: 1057/1148
Crew: RAC, SP, AR
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler
Weather: Sunny, cool, calm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1057	3 ft	13	Y	Outfall is slowly flowing observed
1104	2.5ft	17	Y	thru the clear water surface &
1111	6 ft	—	N	the plume extends ~10ft directly
1112	6 ft	16	Y	in front of the area. the plume
1135	3ft	12	Y	extends ≈ 10' out from
~~1144~~	~~sm~~	~~sm~~	~~sm~~	outfall mouth and ≈25'
1139	2ft	14	Y	on either side.
1147	—	—	N	
1148	4ft	15	Y	

SAMPLE INFORMATION

Sample ID: LW-S55a-016

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:
Cobble — Sand: C (M) F
Gravel — Silt / Clay
Organic matter — Wood debris
Shell fragments — Other:

Sediment color:
Brown surface — (Gray)
Brown — Black
Drab olive — Other:

Sediment odor:
None → H_2S
Slight → Petroleum
Moderate → Other: Fecal
Strong

Comments: RPD @ _____cm None observed

Pockets of oily sheen

see comment above

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 02.8.05
Station: LW-SS5b-010
Start/Stop time: 1248/1306
Crew: RAC, SP, AR
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler @ 1254
Weather: Sunny, cool, calm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1248	3 ft	—	N	over penetration
1250	3 ft	—	N	over penetration
1254	3ft	16	Y	Use Ekman grab
1256	3ft	11	Y	
1300	3ft	12	Y	
1302	3ft	12	Y	
1304	4 ft	11	Y	
1306	3ft	13	Y	

SAMPLE INFORMATION

Sample ID: LW-SS5b-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:
Cobble; Sand: C/M/F; Gravel; Silt / Clay; Organic matter; ~~Wood debris~~; Shell fragments; Other:

Sediment color:
Brown surface; Gray; Brown; Black; Drab olive; Other:

Sediment odor:
None; H_2S; Slight; Petroleum; Moderate; Other:; Strong

Comments: RPD @ _____ cm None observed

Plant material
Pockets of oily sheen
outfall is slowing flowing (see comments on 5a sed collection form)

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity **Project no.** 04-08-06-24

Date: 01.31.05 **Station:** ~~LDW-SS~~ SB-SS6-010

Start/Stop time: 1415-1500 **Crew:** AR, TD, SP

Sampling Method: Stainless steel spoon/scoop **Weather:** partly sunny, partly cloudy, no ppt, light wind

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1415	—	~~mm~~ 16	Y	
1419	—	10	Y	
1425	—	10	Y	
1428	—	10	Y	some gravel ~8 cm depth
1431	—	10	Y	
1435	—	10	Y	worm

SAMPLE INFORMATION

Sample ID: ~~LDW-SS-010~~ SB-SS6-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:

Cobble (Sand: C M F) (Gravel) (Silt) Clay (Organic matter) (Wood debris) Shell fragments (Other)

Sediment color:

(Brown surface) (Gray) Brown Black Drab olive Other:

Sediment odor:

(None) H_2S Slight Petroleum Moderate Other: Strong

Comments: plant debris worm

RPD = 1-2 cm (average over all six locations)

7a

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 02/02/05
Station: DRD-SS7-010
Start/Stop time: 0958 - 11:08
Crew: RAC, MW, STS, EP, DM
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler
Weather: Sunny, clear, no wind

GRAB INFORMATION

	Grab Time	Bottom Depth (m)	Penetration Depth (cm)	Acceptable Grab? (Y/N)	Comments
7A	0958	20'	20 cm	N	good recovery, coarse sand
7C	1003	11'	17 cm	N	med - coarse sand
7-1012	1012	15'	—	N	Washed out. Coarse sediment
7-1016	1016	5'	11 cm	Y	Brown silt, fine-med sand, cohesive
7-1024	1024	5'	—	N	Washed out - sample held open by stick.
etc.	1026	7'	11 cm	Y	Brown silt, fine-med sand, cohesive
	1032	13'	—	N	Sand.
	1035	7'	—	N	Washed out. Wood in jaws.
	1036	9'	—	N	Not enough sediment.
	1039	6'	11 cm	Y	Like 1016, 1026
	1044	17'		N	Too little sediment
	1046	8'	—	N	Rock in jaws - no recovery.
	1047	12'	—	N	Wood in jaws - no recovery
	1049	21'	—	N	Too much debris - washout
	1051	9'	—	N	Not enough sed.
	1103	5'	15 cm	Y	Like 1016, 1026, 1039
					Lots of plant material.
	1105	8'	13 cm	Y	Like 1103
	1108	10'	16 cm	Y	Like 1103, 1105 but more coarse.

SAMPLE INFORMATION

Sample ID: DRD-SS7-010
Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other: NONE

Sediment type: (circle)
Cobble; Sand: C M F; Gravel; Silt Clay; Organic matter; Wood debris; Shell fragments; Other:

Sediment color: (circle)
Brown surface; Gray; Brown; Black; Drab olive; Other:

Sediment odor: (circle)
None; H_2S; Slight; Petroleum; Moderate; Other:; Strong

Comments: RPD @ NONE cm

Wind Ward environmental LLC SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity Project no. 04-08-06-24

Date: 02.02.05 Station: UB-SS8-010

Start/Stop time: 1308 Crew: AR, SP

Sampling Method (circle): ~~Single 0.1 m² van Veen grab sampler~~ ~~0.02 m² Ekman grab sampler~~ Single 0.25 m² Van Veen hand grab Weather: sunny, clear

GRAB INFORMATION

	GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
1	1224	—	10	N	% med sands too high
2	1238	—	10	N	"
3	1251	—	10	N	"
4	1308	—	10	Y	~80 ft fm. outfall - greater % fines than 1-3
5	1325	—	10	Y	90 ft " "
6	1340	—	10	Y	~100 ft " "
7	1347	—	10	Y	~110 ft " "
8	1408	—	10	Y	~120 ft " "
9	1415	—	10	Y	~125 ft " "

SAMPLE INFORMATION

Sample ID: UB-SS8-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:		Sediment color:		Sediment odor:	
Cobble	Sand: C M F	Brown surface	Gray	None	H_2S
Gravel	Silt/ Clay	Brown	Black	Slight	Petroleum
Organic matter	Wood debris	Drab olive	Other:	Moderate	Other:
Shell fragments	Other:			Strong	

Comments: RPD @ _____cm

lots of organic material - roots, wood, plants

No RPD (no distinct layer) worm

Outfall was not flowing

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 1/31/05
Station: 9a
Start/Stop time: Start 9:08 Stop 12:55
Crew: RAC, MW, BAB
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler
Weather: partly cloudy

GRAB INFORMATION

	Grab Time	Bottom Depth (m)	Penetration Depth (cm)	Acceptable Grab? (Y/N)	% gravel	Comments	
1A	9:23	6 ft	12	N		47 39.217	122 19.359
4B	9:58	9 ft	17	N		39.214	19.357
2A	10:05	3 ft	14	Y	<10%	39.217	19.350
3A	10:25	2.5 ft	14	N	>50%	39.218	19.346
5A	11:09	15.5 ft	12	Y	<10%	39.213	19.350
6A	11:16	8 ft	12	Y	<10%	39.215	19.344
	11:56	10 ft	12	Y	<10%	39.214	19.347
	12:16	12 ft	12	Y	<10%	39.215	19.349
	12:24	8 ft	13	N	40%	39.216	19.346
	12:32	2 ft	12	N	40%	39.217	19.343
	12:48	7 ft	13	Y	<10%	39.216	19.351
	9:40	–	–	N		not retained, contained woody material	

SAMPLE INFORMATION

Sample ID: LU-SS9a-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type: (circle)
Cobble; Sand: C M F; Gravel; Silt / Clay; Organic matter; Wood debris; Shell fragments; Other:

Sediment color: (circle)
Brown surface; Gray; Brown; Black; Drab olive; Other:

Sediment odor: (circle)
None; H_2S; Slight; Petroleum; Moderate; Other:; Strong

Comments: RPD @ _____ cm — no RPD observed in any grabs

clams, glass

outfall did not appear to be flowing.

Wind Ward environmental LLC SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW RI-Surface Sediment Chemistry/Toxicity
Project no. 04-08-06-24
Date: 2/1/05
Station: 96
Start/Stop time: 9:15 am - 10:31
Crew: Bob, Derek, Kathy, Dave
Sampling Method (circle): Single 0.1-m^2 van Veen grab sampler / 0.02-m^2 Ekman grab sampler
Weather: Sunny, calm

GRAB INFORMATION

GRAB TIME	BOTTOM DEPTH (M)	PENETRATION DEPTH (CM)	ACCEPTABLE GRAB? (Y/N)	COMMENTS
9:08	27 ft	7cm	N	silty sand w/ clams
9:15	27 ft	13cm	Y	4739.205 12219.349 silty, organic (962)
9:25	27 ft	5cm	N	fine leaves etc.
9:32	27 ft.	12cm	Y	961 - 4739.210 12219.365
9:49	22 ft	~4cm	N	gravel w/ clams
9:50	29 ft	17cm	Y	4739.206 12219.343 963 mod
9:57	28 ft	19cm	Y	4739.202 12219.349 965
10:01	28 ft	6cm	N	fines 964
10:07	29 ft	23cm	Y	4739.206 12219.367 964
10:15	29 ft	2cm	N	fines
10:28	29 ft	11cm	Y	4739.205 12219.334 966

SAMPLE INFORMATION

Sample ID: LU-SS96-010

Analyses needed before homogenization (circle): Sulfides VOC AVS/SEM Other:

Sediment type:
Cobble; Sand: C M (F); Gravel; (Silt / Clay); (Organic matter); (Wood debris); Shell fragments; Other: clams/worms

Sediment color:
Brown surface; Gray; Brown; Black; (Drab olive); Other:

Sediment odor:
(None); H_2S; (Slight H_2S); Petroleum; Moderate; Other:; Strong

Comments: RPD @ _____ cm

- No noticeable RPD @ any layers
- Pockets of oily sheen
outfall did not appear to be flowing

APPENDIX G-3: FIELD NOTES

01/10/05

Station	Time	Comments
LDWG 95	1312	Sample by boat @ high tide
LDWG 96	1312	"
LDWG 97	1313	"
LDWG 98	1315	Sample by boat @ high tide
LDWG 99	1316	" " "
LDWG 101	1317	" " "
LDWG 102	"	" " "
LDWG 104	1320	" " "
LDWG 105	"	" " "
~~LDWG 106~~		Station plots on land needs to be moved off shore 20'
LDWG 106	1321	Barges on Station no access
LDWG 114	1327	Sample w/ boat @ high tide
E17	1325	Photo 70+71 Logs (floating) Limit access to Station. Possibly move it.
LDWG 87	1338	Photo 72
End of Recon		
1415 return to boat House		

RAC

~~10/04~~ 01/10/05

Crew: Bob Compliton, Brett Baggquist, Maryann Welsch, Dave Mullins } wind wand

Weather: Patchy clouds, Sun, wind 25 mph.

835 - Station 1a/b. This station is located @ Divers Institute of Technology. Divers present until 1500, so moving on to 9a/b.

908 - Arrive 9a/b

outfall Photo 105

9:23 1st grab Photo 108 - lots of decaying plant material on surface of grab; not retained; 1A

9:40 2nd grab @ ~ 30 ft out from 1st grab; contained woody material; not retained

9:58 3rd grab photos 109, 110 organic sediment; not retained 4A

10:05 photo 111; sandy sediment 2A; retained

10:25 3A; >50% gravel; not retained 2½ ft.

11:09 5A photo 112; <10% gravel sandy; retained

11:16 6A photo 113; fine sand / some organics retained <10% gravel

118 - 122

11:56 btwn 5A + 6A Photo 116
Sandy ; retained <10% gravel
12:16 Fine sand <10% gravel Photo 117; retained
12:29 btwn 2A and 6A Photo 118, 119
too coarse ~40% gravel; not retained
12:32 btwn 2A and 3A Photo 120
40% gravel; not retained
12:48 E. of 2A/5A ; Photo 121 ; Sandy
12:48 <10% gravel ; retained
12:55-9a Samples composited and put in jars

1:40 Start at 9b
1:42 B1 - First grab - fine sand/silt,
low penetration so not retained
1:46 B1: 2nd + 3rd grabs over penetration
Photo 122, several more grabs had
over penetration even with buoys added
no samples retained
2:03 B3 First grab had large woody debris
and over penetration
2:05 B2 First grab over penetration
End of sampling for day

Crew Bob Complita
Heather Gottfredson
Derek Pelletier
Dave Mullins
} windward

Weather Clear, Sunny, no wind

0800 - met Dave Mullins at Ballard Boat
launch near Ballard Fred Meyer. On water
0810 - Surveyed site 1a/1b @ Divers Institute
of Technology. Photos 124 + 125 + 126 + 127
8:15 Talked to Divers - They offered to ↑ on 6 11
take grabs. We use staying
128 - Ekman grab as above. They
Sediments noted sediments @ ~30ft are
& Sand thick muck (not gravelly).
Coord: 47 39.567
Site of outfall 122 22.249] 1a/1b outfall
Will need Canal Boat yard denying access?
Vanveen Ted to check & call Tom Newton
9:00 9a/9b - Will take 9b w/ Ekman
9:08 Grab 1 9b2 Ekman grab,
Photo 129 7cm - Not retained
fine/silty sand - clay
Will try mix of Ekman/Van Veen
9:15 9b2 Again - 13cm accept take - retained
Photo 130 - silty, organic <1% gravel

9:24 Grab @ 9b1 - 5cm - Not retained
fine w/ organic matter in shell/leaves

9:32 Another grab @ 9b1 -
Same appearance as 9b2 -
fines w/ some organic debris retained

9:39 Grab @ 9b3 - need to redo -
didn't close

9:47 9b3 2nd - Photo 131
>50% gravel, clams
Didn't retain

9:50 try in between 9b2 & 9b3
Photo 132
17cm recovery - retained
Same appearance as other grabs retained

9:57 Grab @ 9b5
19cm - retained - same appearance - finer
- photo 133

10:01 Grab @ 9b4 - 6cm - Not retained

10:07 Grab @ 9b4 - 23cm - retained
Same appearance

10:15 9b6 - 2cm - Not retained

10:28 9b6 - 11cm - retained
Same appearance except
silt pockets (photo 135)
photo 134 is 9b
- homogenized & jars filled.

10:50 location 6
(Photo 136 - boat aground
137 & 138 & 139) } investigating land access.
* could not collect samples

11:52 140, 141, 142 photos @ location 3
Looked for outfalls - only 1
observed @ head - v. small.
- went to marina per @ APP

Canal Boat — location 1a/1b.
Seattle Yacht Service boat -
paranoid about unmarked boat

phone call Paul → 2:00 today.
re access @ Marin Norton @ Stock Boyes.
to Shipyard & Yacht Service - ok.
386-7598

12:00 Van Veen @ Location 3a
overpenetrated - not retained
fine sandy/silty muds

12:06 - Van Veen @ location 3a - 20 cm
penetration - retained
photo 145
sandy, silty - a little coarser
dust below 10 cm

12:16 3b - 20 cm sandy, silty } retained
12:20 3c - photo 147 - overpenetration (near barge)
12:23 3c again - overpenetrated again - will try the Ekman
12:27 Ekman - 10-11 cm - Retained Silty/sandy @ 3c
12:34 3d w/ VanVeen 20 cm - retained - fine sandy/silt
12:37 3e w/ VanVeen - overpenetration
12:40 Trying Ekman @ 3e - 6 cm - NOT retained
12:43 Ekman [redacted]; 13 cm; retained
12:45 3f (6 cm - photo 148 - 4745.354 12215.466 (not retained) in corner by barges
12:47 3f - Ekman - 22 cm - fine sandy, silt
12:48 homogenized & grass filled
TRAVEL BACK TO la/lb

location la/lb
2:38 a1 middle.
4735.565 12222.252 17 ft.
4 cm - Not retained
2:48 a1 middle - VanVeen
11-12 cm - retained
10-15% wood debris <5% gravel
rest fine sands
3:00 a2 same sed's.
VanVeen - 12 cm - retained
3:05 - a3 - [redacted]
3:18 (many attempts - hard layer of clay? & other debris)
3:20 - 15 cm - a3 - VanVeen
Photo 149 - a1, a2, & a3 - retained
all appeared v. similar
3:24 - 50 ft out - a4
overpenetration - not retained
3:27 a4 - 21 cm - VanVeen - Some sandy material
3:30 a5 - middle @ 50 ft. - hose - not retained in grass
3:30 a5 - middle @ 50 ft. - retained
same sed material. (photo 150)
Still some woody debris / sandy
3:34 a6 - Not retained - 3 cm

3:37 A6 — 14cm - retained
Same sandy, woody.

3:45 Homogenize & fill jars

Done for the day

02/02/05

Crew: Bob Complita, Maryann Welsh, Sara Stillman } Windward
Emile Pitre COE
Dave Mullins

Weather: Clear, sunny, no wind

0830 Arrive Alki. boat launch to load gear + Head to Station 7

0905 Kathy called re: Sediment grain size at Station 7. we should target Sediments Similar to what we saw in the LDW (ie: fine grained material), Station ~~X~~ 7 is just an upstream location that was arbitrarily placed. we should target the grained Material.

9:34 On Stn 7A - sand, not retained. 20'

9:37 Stn 7F - Sand, not retained. 6'

9:40 Kathy said go downstream to get a mud Sample.

9:58 7A w/ VanVeen. 47 30.269 122 17.805
Good recovery but all coarse sand. 20' depth, 20 cm penetration.

47 30.257 122 17.777

1003 7C- med- coarse sand
Not retained recovery 17 cm
photo 155, 154
site photo 153 looking upstream.
11' bottom depth, 17 cm recovery.

1012 Moved downstream 15' depth
47 30.469 122 17.550
Jaws opened- sample washed out.
Coarse sediment still. Moving
downstream more, closer to bank.
Sediment prob. due to recent floods (DM)

10:16 47. 30.547 122 17.579 5' depth
retained photo 156 11 cm pene.
Brown silt + fine/med sand, cohesive

1024 47 30.540 122 17.573 5' depth
~~photo 157~~ Jaws held open by stick.
Sample washed out.

1026 47 30.540 122. 17.573 7' depth
photo 157 Steep slope, same location. 11 cm pene.
retained Brown silt + fine/med sand, cohesive.

1032 47 30.536 122 17.562
Off slope. Sand. Not retained.
photo 158.

1035 47 30.525 122 17.567 7'
Wood in the jaws. No sediment.

1036 47 30.526 122 17.566 9'
Low recovery. No ~~sediment~~ enough recovery.

1039 47 30.5~~3~~515 122 17.5~~3~~562 6'
retained photo 159
identical to 1026 and 1016. 11 cm pene.

1044 47 30.480 122 17.516 17'
Wood in bucket, most sed washed out.
* other side of channel *

1046 47 30.480 122 17.516 8'
Rock in jaws- no recovery.
On side hill.

1047 47 30. ~~480~~479 122. 17.515 12'
Wood in jaws. No recovery.

1049 47 30.484 122 17.513 21'
Way in by shore.
Too much debris - washed out.
No recovery. Moving away from bank.
Still on steep slope.

1051 47 30.490 122 17.515 9'
~~photo 160~~ Not enough sed.

1103 47 30.494 122 17.560 5'
retained photo 160 15 cm pene.
Like 1016, 1026, 1039 with lots
of plant

1105 47 30.494 122 17.557 8'
retained Like 1103 •13cm pene.
photo 161.

1108 47 30.495 122 17.553 10'
retained. photo 162 16cm pene.
Like 1103, 1107 but more coarse.

1112 Got 6 samples. Homogenized!
+ filled jars. photo 163.

1226 Arrive stn 2a
outfall: photo ~~165~~ 164, 165, 169, 174

1239 47 37.980 122 22.759 5'
2A1 ~~stn 2a1~~ 12cm
photo 166
A lot of woody debris, silt, fine-med sand
gravel 5%, 20% woody debris.
* taken right off outfall. [redacted] Retained.
Sample influenced by outfall.
2a1 → 2a3 - onshore, not accessible
2a4 - done.

1250 stn 2a5 47 37.977 122 22751 7'
[redacted] All sand. Not retained.

1253 Same location. Sample washed aft.

1254 1b| 2a4 and 2a5 (split the difference)
5cm retention - Not retained.

1255 Same location as 1254, 1253, 1250. 6'
5cm retention - not retained.

1300 47 37.977 122.22.753 5.5'
retained in middle, out in front of outfall. 14 cm penetr.
photo 167
~~2A3~~ Silt. lots of organics, black.
2A2 moderate H_2S, some fine sand,
5% gravel. less plant than 1239
5-10% plant mat'l.

1305 47 37.977 122 22.749 4'
retained. photo 168 15cm
~~2A2~~ 30' to SE of stn.
2A3 All med-fine sand. Not retained.
2285741

1338 Stn 2a6 4.5'
47 37.974 122 22.747 13cm
Retained, photo 170
M-F sands, so

1344 47 37.975 122 22.759 6'
Wash out

1345 ~~Same as 1344.~~ 6'
Stn 2a5 47 37.976 122 22.760 Rock-wash out.

Same as 1345

1347 Stn 2a5 - 3rd attempt. 5.5'
Not enough penetration.

1351 Same as 1345, 1347 5'
Washout.

1352 47 37.976 122 22.756
Washout.

1353 47 37.975 122 22.757
Wood chip keeping jaws open - No ret.

1355 47 37.975 122 22.758 9'
Not enough sediment.

1359 37.974 22.756 5'
Not enough sediment.

1403 37.974 22.758 4.5'
Wash out

1405 37.975 22.751 4'
Wash out.

1410 37.978 22.752 Washout 4'

1412 Same location. Rock washout. 4'

1413 Same location. Rock washout 2'

1421 37.980 22.759 4.5'
Same location as 2a1
Good recovery but 60% gravel

1425 37.979 22.755 4'
Rock wash out

1428 37.976 22.752 black, organics 4'
Retained! Stn 2a5 silty, sand, mod H_2S smell 13 cm

1437 Stn 2a4 13 cm
37.975 22.753 3.5'
photo 173
Same descript. as 1428

1439 homogenized !!!
photo 174 - great outfall Photo!

1459 37.969 22.764 4'
Stn 2b1 ~~photo 177~~ no photo 15cm
Retained. Silt, sand, plant material, mod H_2S <5% gravel

1507 37.967 22.764 3.5'
Stn 2b2 ~~photo 178~~ photo 177 15 cm
Retained. <5% gravel
Like 1459, Some organics, less than "a" stns.

1511 37.969 22.768 3.5'
~~Stn 2b3~~ 13cm
Pockets of sheens.
50% gravel. Not Retained.

1515 37.968 22.770 4'
50% gravel. Not Retained

1517 37.968 22.759 4'
Stn 2b3 photo 178 13cm

1520 37.968 22.765 4'
Stn 2b4 photo 179 13cm
organics, silty-sand, black, woody debris

1527 37.965 22.768 4' ~~7~~' air bubbles
Washed out.

1528 37.965 22.768 3'
Not enough recovery.

1529 37.966 22.768 3'
Not enough recovery 8cm.

1531 37.966 22.760 4'
Washed out.

1532 37.967 22.770 5'
Retained. photo 180 15cm
Silty, High H_2S smell. black.
Lots of woody debris, organic.

1543 37.967 22.774 4'
Stn 266 11cm
Sandier, med + fine sand.
No smell. 5-10% gravel.
Retained. slight H_2S

1545 Homogenized !!

1550
Done with 2a 2b.
Motored to Alki to drop off Emil P.

1610 Head to GlacierNW sites on LDW RM 1.5

02/02/05 * Glacier NW Sampling RM 1.5

Stn		
53	47 33.0050	122 20.4719
59	47 32.9012	122 20.4311

3 of each / stn.

Sample IDs:
LDW-SS-53-010 and 59.

1633 Arrive Stn 53.
47 33.002 122 20.477
~~Actual~~ Target coords were under dock.
Very near shore on W bank.

1645 2nd grab sample, same loc.
Homogenized samples. + filled jars

1702 47 32.901 122. 20.431 8'
Stn 59 20 cm
~~Filled~~ filled jars.

1705
Returned to Alki

STS

02/08/05

dioxin background sampling - station 4, 5a/5b

crew: Angie Rodriguez, Bob Complita, Shannon Pierce } WW
Dave Mullins

825 - meet @ Mercer Island boat launch, weather - calm, sunny, cool

851 Motor to LW-SS4-010 sampling location
902 LW-SS4-010 1st grab 16 cm penetration
Location 4b 47° 34.716 122° 11.278 4 ft (depth)
lots of organic debris, < 5% gravel, pockets of oily sheen
4a 47° 34.723 122° 11.285 1.5 ft
0910 lots of organic debris, < 5% gravel, pockets of oily sheen 17 cm recovery
0920 4c 47° 34.710 122° 11.269 7.0 ft
caught cable in grab not an acceptable grab
0922 4c 47° 34.711 122° 11 270 5 ft
17 cm recovery; brown sediment with more decomposed organic material & more woody material

0928 4d 47° 34.705 122° 11.308 ~ 0 ft
Boat sitting in mud; over penetration
0936 4d 47° 34.705 122° 11.308 2 ft
17 cm recovery; silty less organic matter amphipods
0945 4e 47° 34.699 122° 11.312 4 ft
washout
0947 4e same coordinates as above 4 ft
17 cm recovery
0949 4f 47° 34.696 122° 11. 290 2 ft
wood caught in grab & washout
0951 4f same coordinates 2 ft
Empty grab
0952 4f same coordinates 2 ft
Wood caught in grab & washout
Dave's boat is overheating due to submerged wood & milfoil
0958 4f 47° 34.704 AR 122° 11.299 3 ft
13 cm recovery
1005 Dave cleans out his pump that is filled with wood debris & milfoil
1009 Motor to LW-SS5a-010
1023 Arrive to sampling location LW-SS5a-010
Bob talks to Kathy & Berit about the location of outfall

1037 called Renton airport to talk to Bruce Fisher re: location of outfall.
" " not available, left message with his secretary. He will call back hopefully soon.

1050 Spoke w/ Bruce Fisher and verified the outfall location and informed him we would be sampling. He OK'd our presence in the area.

1056 LW-555a-010 grab @ 30ft outfall is slowly flowing observed thru the clear water surface & the plume extends ~ 10ft directly in front of the area (photos 14-18)

1057 5a1 47° 30.036 122° 13.126 3ft
13 cm recovery grab @ 30ft
Silt, fine & med sand, wood debris
< 5% gravel

1104 5a2 47° 30.036 122° 13.128 2.5ft
17cm recovery Slight H_2S odor
Med & fine sand, silt, worms grab @ 30ft
<5% gravel Photo taken

1111 5a3 47° 30.035 122° 13.120 6 ft
No recovery due to chain hang

1112 5a3 Redo with same coordinates
Silt, fine & medium sand < 5% gravel
16 cm recovery grab @ 30ft

1120 Bob spoke with Kathy & Berit to verify we are targeting the correct sampling area

1135 5a4 47° 30.038 122° 13.125 3ft
12cm recovery grab @ 50ft
organic material & plant debris
Pockets of oily sheen; fine & med sand
Strong feces odor

1139 5a5 47° 30.038 122° 13.128 2ft
14 cm recovery grab @ 50ft
organic matter & leafy debris
Pockets of oily sheen; fine & mad sand, silt
Moderate H_2S & mild feces odor
< 5% gravel

1147 5a6 Washout grab @ 50ft

1148 5a6 47° 30.037 122° 13.119 4ft
15 cm recovery grab @ 50ft
Organic matter & leafy debris
Fine & med Sand
Pockets of oily sheen
Moderate H_2S & mild feces odor

1248 LW-SS5b-010 grab @ 100ft
47°30.046 122°13.115 3ft
overpenetration 2X

1252 Switch sampling equipment from the single 0.1-m^2 van Veen grab to the 0.02 m^2 Ekman grab

1254 5b1 same coordinates as above 3ft
16 cm recovery grab @ 100ft
Silt & fine sand; organic plant debris

1256 5b2 47°30.046 122°13.125 3ft
11 cm recovery grab @ 100ft
Silt & fine sand; organic plant debris

1300 5b3 47°30.043 122°13.130 3ft
12 cm recovery grab @ 100ft
Silt, fine & med sand; organic plant debris

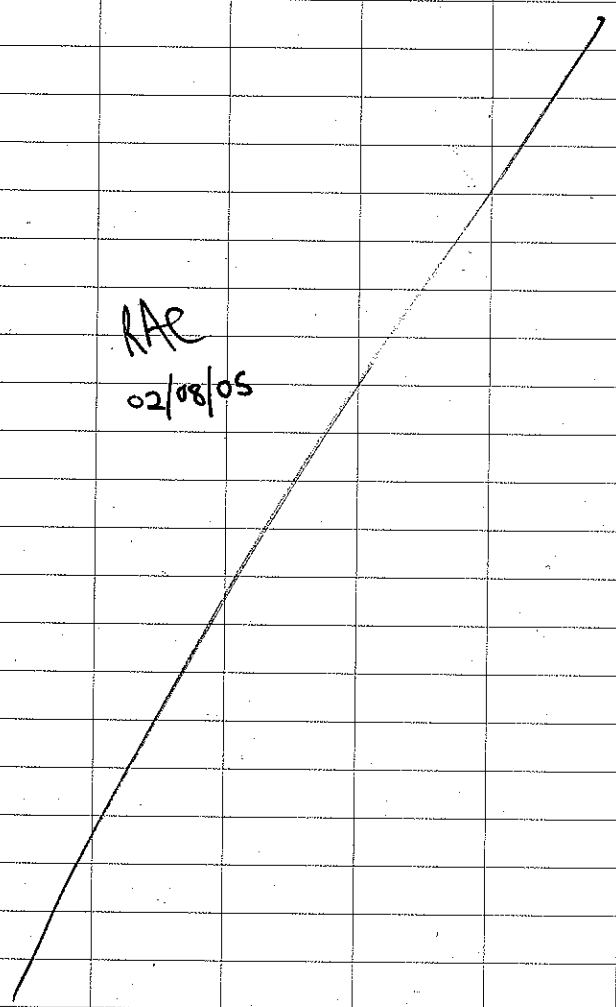
1302 5b4 47°30.047 122°13.117 6ft
12 cm recovery grab @ 120ft
Silt, fine & med sand; organic plant debris

1304 5b5 47°30.048 122°13.122 4ft
11 cm recovery grab @ 120 ft
Lots of organic plant debris; silt
some fine sand

1306 5b6 47°30.045 122°13.131 3ft
13 cm recovery grab @ 120ft

1317 Motor back to Mercer Island boat ramp End of sampling

RAE
02/08/05



3/3/05

Rd 2 surface sediment recon.
crew: Bob Complita
Shannon Police

meet @ T-91: 0930
begin recon
LDWG 3 - ok w/ Charlie
LDWG-2 - Dave's boat - low water depth
station ok - don't need to relocate
LDWG-6 → ok w/ Charlie
LDWG-7 →
LDWG-8 - ok w/ Charlie
LDWG-9 - Dave ok * possible Charlie (spl c)
LDWG-11 - OK w/ Charlie
[illegible]
LDWG-16 - OK w/ Charlie; barge not in way
LDWG-19 - OK Charlie
LDWG-21 - OK Charlie
LDWG-24 - by car @ low tide
EPA split - meet @ park
LDWG-25 - 1020; depth ~10 ft
OK w/ Charlie's boat @ high tide - HH area - seems too deep to be exposed @ low tide - ok location

not a reoccupy

1026; 6 ft depth; Dave @ high tide; may need to move out slightly
LDWG-29 -
LDWG-30 - Charlie's boat - OK - tie to pilings
LDWG-34 - station on barge - tie up to barge + take as close to station as possible (not reoccupy)
LDWG 35 - Viking - manson - barge is on station ~ could sample next to barge N is too far up fm target
LDWG-39 - lots of debris; Charlie at high tide
LDWG-41 - ok w/ Charlie
LDWG 45 - OK w/ Charlie
LDWG 46 → back behind barge - line
LDWG 47 → may affect sampling
try w/ Charlie first to attempt split; if not - use Dave's boat
LDWG 53 → Glacier slip - Dave's boat
LDWG 59 →
LDWG 61 - along shore - use Dave's boat (difficult navigating)
LDWG 62 - barge not in way - Charlie's boat
LDWG 65 - use Dave's boat - difficult navigating

LDWG 66 - OK w/ Charlie
LDWG 68 - OK w/ Charlie
LDWG 69 - 1057; 7 ft depth
OK - Charlie @ high tide
LDWG 71 - Dave's boat - difficult
navigation - EPA split ~ pick
up oversight fm 1st Ave boat launch
LDWG 74 - Charlie OK ~ good @ high tide
LDWG 73 - OK - Charlie - preferably high tide
LDWG 77 - barge Sam M Tagalak
on pier - No access - unable
to see if targetting under
pier is possible
LDWG 78 - no barge in slip - ok to access
+ sample w/ Charlie
LDWG 80 - ~~Dave's boat @ high~~
Charlie @ high tide - if not
able use Dave @ high tide
LDWG 81 - Beaufort 20 - barge still
on station
LDWG 82 - Barge on station - ~~not able to access~~ South East provider
if barge moves - use Charlie
if barge stays use Dave to
get behind barge

LDWG 85 - Dave's boat
LDWG 86 - no access - sunken boat; debris
possible to move slightly
south? if OK to move ~
use Charlie's boat
LDWG 90 - unable to access - footbridge
necessary to sample? (right
next to 91
LDWG 91 - Charlie at high tide
if not - use Dave
LDWG 93 - barge in way - no access;
no access if barge was out
of way - impossible access location
LDWG 95 - TLINGIT barge in way -
unable to access - @APP says
sampling will occur only if
accessible during sample event
LDWG 98 - unable to access station
need to move S of footbridge - see map
LDWG 100 - sample @ low tide by ~~Dave~~ car
LDWG 103 - 1125 - depth 8 ft
Charlie sampling @ high tide
LDWG 105 - 1130 depth <8 ft - Charlie @ high tide
LDWG 106 - Charlie high tide -
lots of riprap near shore

LDWG 107 - Next to cement under bridge - Charlie @ high tide - if not use Dave

LDWG 108 - Dave's boat - unsure of access b/w boat rows

LDWG 122 - OK w/ Charlie @ high tide

LDWG 124 - Dave's boat to access - may have to sample by hand at low tide (Whaler?)

LDWG 131 - Charlie OK

LDWG 132 - OK w/ Charlie

LDWG 133 - OK w/ Charlie - doesn't look like intertidal H use area

LDWG 135 - use Dave for sampling to access - may need to sample by hand @ low tide (Whaler?)

LDWG 136 - use Dave for sampling to access may need to sample by hand @ low tide (Whaler?)

LDWG 137 - Charlie @ high tide - lots of riprap near shore

LDWG 138 - Charlie @ high tide

LDWG 139 - Station on shore w/ rap rap - will need to move out of riprap for sampling - Charlie @ high tide

LDWG-140 - similar to 139; will need to move out for riprap; use Charlie @ high tide

LDWG-141 - Dave's boat - intertidal area

~~LDWG-142~~ -

* over pedestrian bridge - no Charlie *

LDWG-145 - Dave's boat

LDWG-144 - Dave's boat - need oversight

LDWG-146
LDWG-147
LDWG-148
LDWG-149
LDWG-150 — all intertidal - use Dave's boat to access; may sample @ low tide by hand (Whaler?)

LDWG-151 - Dave's boat (mid-channel)

* upstream of second bridge *

LDWG-152
LDWG-153
LDWG-154
LDWG-155
LDWG-156 → did not drive up - all look mid-channel + will be sampled using Dave's boat

@ 1230

end of recon - back to T-91.

GMP 03.03.05

01.26.05 cont'd

SS143 cont'd

1139 began sampling SS143 (reoccupy EPA split)
coords: 4730.71990
122 17.93050
recovery #2 4cm = too low

1144 2nd try: 14cm penetration = good

1154 3rd try: 12 cm penetration = good
sufficient volume

1155 Kym called → will call her back to coordinate her picking EPA split for SS143

1240 Head back to FI Island

MW 1/26/05

1/31/05 - Dioxin Sampling - Background
Foot sampling at Springbrook Creek (SB-SS6-010)
Crew: Angie Rodriguez, Thai Do, Shannon Peirce
Individual locations

#1 - 47° 28.513 olive/brown surface
122° 14.455 drab olive, wood/
1415 plant debris
RPD = not visible silt, mostly fine sand

#2 - 47° 28.539 brown surface
122° 14.457 gray, wood/
1419 plant debris
RPD = 1-2cm silt, mostly sand
can see retaining wall / dam to N/NW

#3 47° 28.537 gray, wood/
122° 14.429 plant debris
1425 silt, mostly sand
RPD = 1-2cm

01.31.05 cm+

		brown surface
#4	47° 28.529	gray, wood
	122° 14.426	debris
	1428	silt, mostly sand
	RPD = <1 cm	gravel ~8 cm
facing dirt path along stream		gray
#5	47° 28.533	brown surface
	122° 14.395	wood/plastic
	14:31	debris
	RPD = 1-2 cm	sand, silt
		at deepest depth
#6	47° 28.542	brownish-gray
	122° 14.382	sand (med coarse),
	14:35	worm, wood/
	RPD = 2-3 cm	plant debris

location description:
70 ft x 200 ft (approximate)
sampled on sandbar accessible
by foot fm. dirt path off of
bike trail To N/NW dam or
retaining wall

01.31.05 cm+

looks like near where stream runs
into pond (at mouth)
rushes on sandbar
+ cattail
Pond area surrounded by
alder, salmonberry, nonative
blackberry
blue heron, Canada geese

Weather - slightly cloudy
no ppt, light wind

did photo documentation of the site.
end sampling 1500

SWP 1/31/05

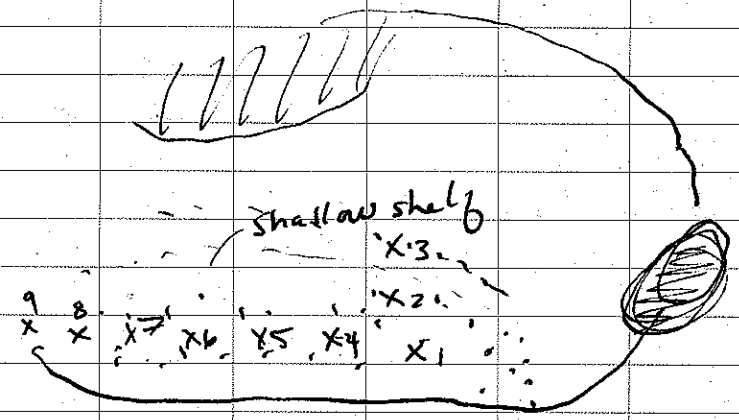
02.02.05

Dioxin Background Sampling
UB-SS8-010

Crew: Angelita Rodriguez
Shannen Pierce

Sunny, clear.

Sampling from outfall



1224
Station 1 - approx 40 ft from outfall near shoreline

47° 39.393
122° 17.257
~~1229~~
Photo #13

Station 2 Time 1238 Approx 45 ft fm outfall + 20 ft off shore
47° 39.390
122° 17.256

Station 3 Time 1251 Dumped sample 1330
47° 39.389
122° 17.266
Approx 50 ft fm outfall + 30 ft off shore

*Station 4 Time 1308 ~80 ft from outfall
47° 39.383
122° 17.262

Station 5 Time 1325 ~90 ft from outfall
47° 39.386
122° 17.257

Station 6 Time 1340 ~100 ft
47° 39.383
122° 17.262

Station 7 Time 1347 ~110 ft
47° 39.381
122° 17.257
Photo# 12 (Homogenized Station 6+7)

Stations 1, 2, 3 - lots of organic debris w/ sand. Debris and sand all along outfall ~~area~~ discharge area until 80 ft where station 4 was taken. Stations 4, 5, 6, 7 - with finer sediment + lots of wood debris

Photo# 11 - 63 μm sieve from Stations 6+7 to determine grain - fine sand + organic debris left in sieve
% fines (silt) at Station 6+7 = ~40%
60% → fine sand + organic material

Station 8 Time 1408 ~ 120ft
47° 39.380
122° 17.259

Station 9 Time 1415 ~ 125ft
47° 39.380
122° 17.253

very unstable/ soft sampling areas; difficult to get grab

end of sampling 1440

GMP 02.02.05

10 02.09.05 (cont)

1221 – 21st station – stainless steel spoon scoop fm beach
47°29.401
122°16.694
<40% fines
sandy

1238 – 22nd station – stainless steel spoon fm beach
47°29.525
122°16.826
40% fines
DR-SS17-010 acceptable grab

1235 – called Kathy + Tad about sampling done for the day – OK to call a day – have exhausted sampling area and targeted % fines (>40%)

1255 – finish sampling – back to 1st Ave S. launch

SMP

13

2-10-05 Stn 1b Drop'n Sampling Sunny Clear no wind.

Crew: Angelita Rodriguez
Sara Stillman
Shannon Pierce
Dave Mullins

1430 & 1330 Arrive 14th Ave S boat ramp (Ballard) learn + test winch grabs

~~1450~~ & ~~1450~~ 1435 Stn 1b1 – 100 ft – Radius Stations
47° 39.556
122 22.266

~~1530~~ & ~~1530~~ 1440 Possible over penetration – REDO
Stn 1b1
47 39.557
122 22.267
Over penetration – remove weights on Van Veen grab.

1449 & 1549 Stn 1b1
15 23' 47° 39.557 pic #1
122° 22.267

1456 & ~~1556~~ Stn 1b2
19' 47° 39.552 pic #2
122° 22.260

15:01 & ~~16:01~~ Stn 1b3
18' 47° 39.552 pic #3
122° 22.248

– Dave, Jethan – 7:15 –
– Matt –

Stns 161, 162, 163: all have patches of oily sheen, dark, very fine, slight petroleum order, plant material (roots).

120' radius stations:

1507
~~1607~~ Stn 164
8P 22' 47°39.558 pic #4
122°22.271

8P 1515
~~1615~~ Stn 165
20' 47°39.551 pic #5
122°22.262

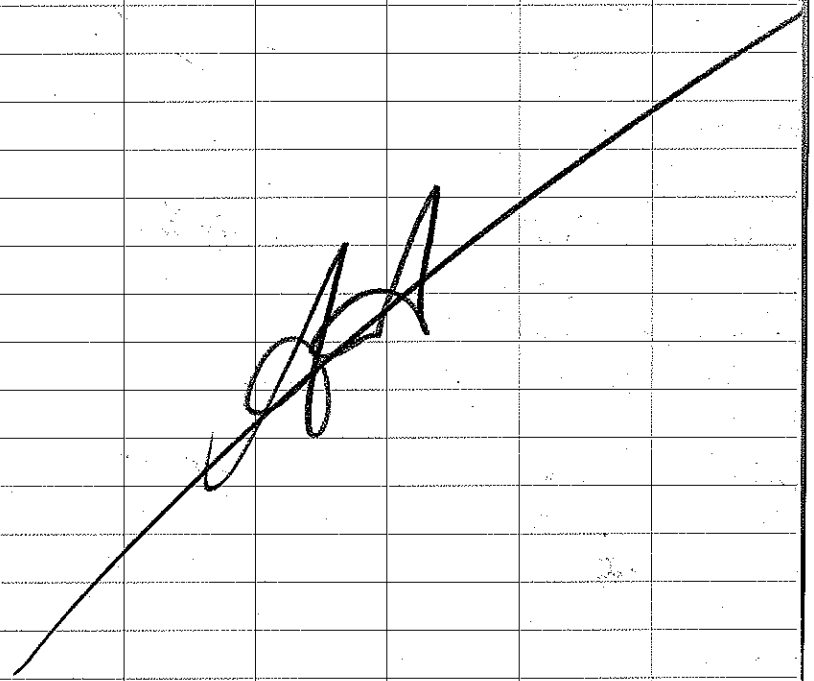
8P 1517 Overpenetrated – REDO.
~~1617~~ – same coords. 165

1522
8P ~~1622~~ – Stn 166 ~~pic #6~~
47°39.549
18' 122°22.248
Overpenetrated – REDO.

1526
8P ~~1626~~ Stn 166
47°39.547 pic #6
19' 122°22.246

Composite sample from 6 stns.
SC-5516-010 taken.
pic #7

1600
8P ~~1700~~ Return to 14th Ave S boat ramp.



Round 2 Sampling

03.07.05 - Day 1 Rd 2 sampling on C. Eaton's boat

crew: Thai Do, Charlie Eaton, Sara Shillman, Tom Putnam, Shannon Pierce

0700 - meet at Harbor Island marina - unload gear; mobilize sampling
0715 - Charlie left to get a new monitor Current monitor not working
0740 - begin decon
0812 - set sail
0830 - Arrive Stn 82. Can not get under lines (b) barge + shore. Use DM's boat.
0834 - Barge is still on Stn 81.
0841 - Stn. 85.
0851 - Sample taken @ 85.
0923 - Stn 86 inaccessible. Use DM's boat.
0927 - Stn 91 - tried one sample - unsuccessful. Return at higher tide
0942 Stn. 73. Successful sample!
10:01 Stn 78. " " depth 7.5.
10:23 82. Took 204 Dupe. 4.5m

10:57 Stn 80. Directly under 1st Ave S bridge so cannot take coords. Moved 21.6[redacted]m north of bridge.
11:05 Stn 80 sampled.
11:24 Stn 74 sampled 4.6m
11:52 Returned to Stn. 91 3.0, 12 cm
11:53 Successful Sample.
12:00 LUNCH BREAK!
12:56 Stn 103
12:57 ↙ sampled 3m - Chainlock
12:59 Stn 103 sample 2.9m Half-sample
13:10 Stn 103 - add'l sample 3m Other Half.
13:23 Stn 105 - NO GOOD - Chain lock
13:26 Stn 105 - NO GOOD - Rock
13:29 Stn 105 - 2.9m depth - EMPTY
13:31 Stn 105 - " " - Rock
13:34 Stn 105 - 3.1m depth - Rock
13:38 Switch to Young Grab
13:46 Stn 105 3.6m - Rock
* We have to move more than 10' from this stn. Use Young w/ weights.
14:01 Stn. 106 2.2m Rock
14:03 Stn. 106 2.2m Rock
14:06 Stn. 106 2.3m Rock.
Left Stn. 106. Return w/ Young.

03.07.05

14:26 Stn. 68 Van Veen. Overpenetrated.
14:32 Stn 68 2.8m depth, 17' pen.
14:55 Stn 69 2m All gravel.
Moved apt. 7.2 m from stn.
15:04 Stn 69 2.8m All gravel.
At 10m radius, so left.
15:06 Shannon spotted the Beaufort barge.
Go to Stn. 81 (reoccupy) to sample.
15:17 Stn 81 - 6.8 m
Hard sand, shallow. Need young.
15:27 Stn 66 - under the corner of barge (Tongass Provider)
15:30 Stn 66 - under 10m off barge.
Overpenetration. Return w/o weights.
15:46 Stn. 8. 14.6 m depth.
16:15 Return to Harbor Island Marina
Unload coolers.

3.7.05

03.08.05

Rd 2 sediment sampling on Charlie & Eaton's boat

crew: Sara Stillman, Thai Do, Shannon Pierce
Charlie Eaton, Tom Putnam
weather: sunny, slightly overcast

0700 - meet at Harbor Island
begin set-up, mobilization
0730 - head to stn 81
0749 - sampling stn 81 - barge is gone;
used weighted Young Grab
stn 69; gravel in grab ~
moved approx. 10 m. fm target.
Will keep moving off target
until gravel is no longer in grab
moved to 12m away - still
predominately gravel - photos 26-27
0830 - called Kathy + left msg for
direction on what to do
@ stn 69
0844 - stn. 65 (sampled)
0850 - Kathy said to move towards
C-5 on stn 69 along shore in to
skip in capture intertidal area

0905 - stn 41 (sampled)
0923 - stn. 30 (sampled)
0940 - stn 21 (sampled)
0954 - stn 19 + duplicate stn 205 (sampled)
1020 - talked to Berit - see if 90 if possible by foot sampling stn.
1045 - shrt break - called Eric Parker about sampling tomorrow; called WW to get someone to meet up us @ S. Park Marina w/ sampling jars
1107 - stn 11 (sampled)
1110 - Chris from WW will meet us @ 12 w/ sampling jars
1045 - talked to Berit - she wants to know if stn 91 is possible to station by foot (access by boat). We will check out this station today or later this week to determine accessibility.
1135 stn 35 - stn is paper; barge is gone - resampled here doesn't look like it is possible

to access even if barge is gone; lots of floating debris behind barge photos fm stn 35 28, 29, 30, 31 can get w/in ~~19.3~~ 19.3m of target
1140 - called Berit to see if ok to sample; not available - went ahead to take sample - will decide later whether we can keep or not;
1142 took sample - stn 35
1200 checked possibility of sampling to N as suggested by QHPP; could only get w/in 75m of the target station - lots of barges in way (Manson)
1200 - head to S. Park marina to meet Chris, stop for lunch
1300 - resume sampling - head to stn 105 + 106; observed large oil/petroleum sheen N of S. Park Marina; Charlie reported to Coast Guard.
1310 - stn 105 - unable to move along shore away fm target to get station, so moved out fm shore away fm target (sampled) (very rocky substrate - catch in jaws)

03.08.05 cont

1350 - stn 106 (sampled)
1421 - stn 122 (sampled)
1450 - stn 131+ (sampled)
duplicate stn LDW-206
1502 - barge on station @ stn. 133 gravel for 3rd runway - not sure how long barge will be ~~occupied~~ occupying site
1508 - stn 140 (sampled)
1530 - back to Harbor Island Marina
1545 - stopped at stn 90 - may be able to access using whaler at ~~high tide~~ low tide - still may be tough to access. back @ H.I. Marina

SMP 3/8/05

03.09.05

10:00 Arrived at Harbor Island Marina Set up supplies for Rd. 2 sampling on R/U Kittiwake.
crew: Bob Camplita, Charlie Eaton, Linda Marsh, Tom Putnam, Thai DO
10:20 Began decon. Head to stn. 7
10:45 Rinsate taken LDW-557-RB
10:48 Stn 7 (sampled)
11:27 After 4 attempts @ stn 3, we are switching to young sampler. All 4 prior attempts had no/low recovery b/c of rocks/wood caught in jaws
11:36 Stn 3 (sampled), need more volume
11:58 Stn 3 (sampled). Head back to South Base Marina to pick up Kym Takasaki (EPA oversight). + eat lunch
12:20 p/u Kym and motoring to LDWG-95
12:45 Arrive station LDWG-95. Proposed location is under a barge, though a space is open ~8ft 5m NW of the proposed location we are going to take a sample before the barge returns in ~30 minutes.
12:54 1st attempt at Station 95 (4.2 m from Proposed location)

03.09.05

8-10 cm recovery ∴ sample discarded.

12:58 2nd attempt got <8 cm. Switch to Young grab, discarded grab

13:10 3rd attempt got 7 cm. Rejected/Discarded

13:15 4th attempt successful. Need more volume.

13:15 Kathy called to check on status of Site 77 and 95. I told her we were taking grabs @ 95 b/c barge is gone. We'll check on 77 after rounds. She said she will call again

13:23-1329 3 more attempts unsuccessful

13:34 Successful grab. Stn 95 completed. 2.8m off target for 1st acceptable grab 4m off target for 2nd acceptable grab.

13:48 Heading to stn 77. Barge on location (Sam M. Tazlak) next to pier. Crewman on board said it will remain there until the end of the month.* Drop off K Takasaki

14:37 1st grab @ stn 133 overpenetrated. Taking off weights off of Young grab.

14:44 2nd grab @ stn 133 overpenetrated. Switching to VanVeen grab (w/weights)

*Note: for stn. 77, there is a space b/w barge and pier that may be accessible at lowertide. Will check out using D. Mullin's boat

03.09.05

next week. Dropped off Kym on Eric Parker's boat, to join Shannon & Fiona.

14:54 Stn 133 grab successful; station completed.

15:16 Stn 138 completed

15:36 1st grab at Stn 137 overpenetrated.

15:41 2nd grab overpenetrated. Moving on to Stn 139. Will come back to Stn ~~139~~ 137 w/o weighted VanVeen.

15:56 Stn 139 completed. Taking off weights before returning to Stn ~~138~~ 137

16:29 1st grab at Stn 137, half was good (1 VanVeen); other VanVeen overpenetrated. Need more volume.

16:41 2nd grab successful. Stn 137 completed

17:02 Stn 132 - 1st grab successful, need more volume.

17:15 2nd grab successful, station 132 complete

17:45 Stn 62 completed.

18:02 1st grab at Stn 62 overpenetrated

18:07 2nd grab at Stn 62 good, stn. 62 complete

18:30 Head back to Harbor Island Marina, Take samples back to office. End of sampling day.

T.D. 03.09.05

03.10.05

10:00 Arrived at Harbor Island Marina. Set up for R2 sed. sampling aboard R/V Kittiwake

Crew: Shannon Revee, Charlie Eaton, Sara Stillman, Tom Peterson, Thai Do, Kym Takasaki

10:10 Kathy called to make sure we got instructions for B1 sites.

10:32 Stn 45 completed, unweighted VanVeen.

10:40 Weights added for next stations.

11:21 1st grab at stn 46 unsuccessful, low recovery. Switch to Young sampler

11:30 2nd grab - half overpenetrated; kept ½ that did not; need more volume (EPA split sample site)

11:38 3rd grab - overpenetrated - ejected grab.

11:43 4th grab - successful; stn 46 complete. Head back to Harbor Island Marina to drop off Kym Takasaki, Took lunch break.

12:58 Stn 6 completed. (EPA split sample site)

13:30 Called Kathy to ask about Stn 34. Two barges have moved in and

03.10.05

are blocking the area. She said to try to get as close as possible, but sample at same depth/distance off shore as target location. Also got analysis instructions for 2 Benthic sites - SMS, SIM, Pest.

13:35 Called Kym Takasaki to ask what she wants us to do with her EPA split samples (left message)

13:44 1st grab at stn. 47 rejected, low recovery

13:49 2nd grab rejected: washed out.

13:56 Switched to Young grab sampler; 3rd grab rejected: washed out, rocks in jaws

14:00 4th grab rejected: washed out, rocks in jaws

14:03 5th grab rejected: jaws did not trigger

14:04 6th grab rejected. jaws did not trigger

14:06 7th grab rejected: washed out; adding weights

~~14:09~~

14:09 8th grab successful; need more vol. (this was 3m east of target location)

14:17 9th grab accepted; stn. 47 completed.

14:30 Called Kathy about decision status of Stns 86 & 98. She said to collect and pixel them on hold for analysis

03.10.04

until a decision is made.

1446 1st grab at stn. 108 rejected (overpenet)

1453 2nd grab accepted. Stn 108 completed.

1515 Jeff @ ARI called about sample LDW-SS80-010. They've analysed for total solids already but will hold the rest for further instruction for analysis until we decide the sample is okay to keep.

1529 Completed stn 86. (20.7m off from target location b/c of sunken boat, and footbridge in the way). Sample will be put on hold for analyses until decision is made. Switched to Young grab for next station (69)

1550 1st grab at stn 69 rejected; low recov. (gravel)

1552 2nd grab at stn 69 rejected; low recov. (cobble) 32 m. N. of target. Heading north along shoreline

1555 3rd grab rejected; cable & iron debris

1558 4th grab accepted (52m. N. of target location); need more volume; penetration depth is 10cm but we're keeping it because many prior attempts produced even less penetration. Also adding extra weights to next grab at this

03.10.04

location.

1605 5th grab rejected (debris w/cocosote in jaws) Sampler decovered.

1611 6th grab accepted; 52m. N. of target location

1628 1st grab at stn 61 ~~Repo~~ Do unsuccesful (jaws did not trigger.)

1631 2nd grab at stn 61 unsuccessful - did not trigger

1634 3rd grab accepted; 9.6m W. of target location; need more volume

1642 4th grab accepted; 9.6m W. of target. Station 61 completed.

1713 1st grab at stn 98 rejected, all rocks, need to go deeper. Will come back in smaller boat next week

1738 1st grab at Stn 25 accepted. 19m. N. of target location. Need more volume. (EPA split sample site).

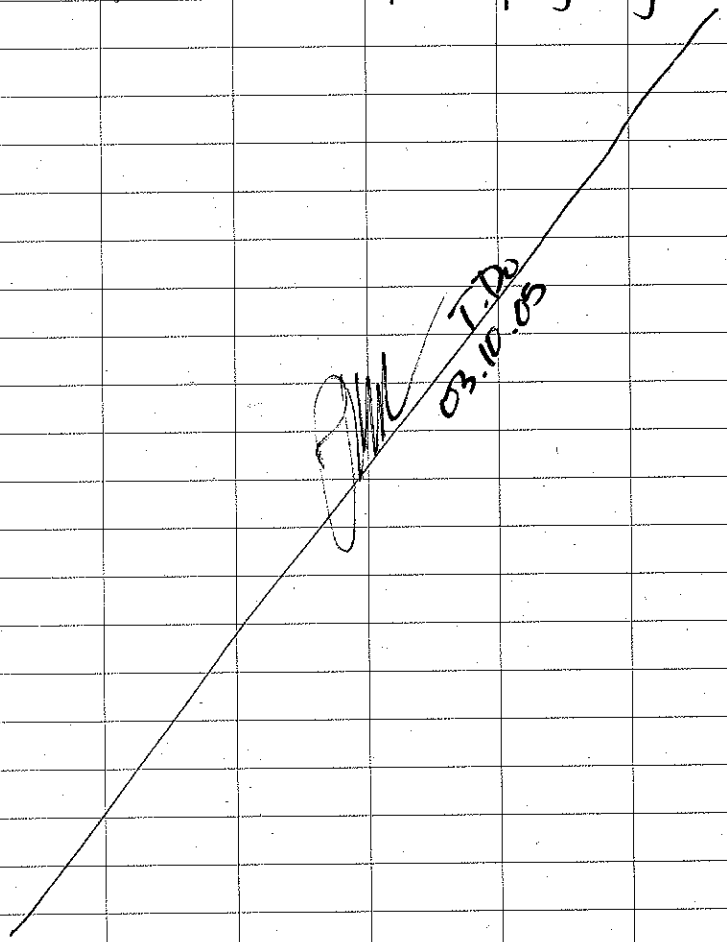
1751 2nd grab at Stn. 25 accepted, 18.6m N. of target location.

1st grab coordinates: 47° 33.6439
122° 20.6810

2nd grab coordinates 47° 33.6437
122° 20.6811

03.10.05

1804 Stn 9 - 1st grab rejected. no recovery Will come back and sample by hand at low tide. Return to Harbor Island Marina. End of sampling day



03.11.05

0800 - Harbor Island Marina: RV 2
Sediment sampling
crew - Sara Shillman
Thai Do
Shannon Pierce
Charlie Eaton
Tom Putnam
weather - foggy, cool, calm
0830 - begin heading to stn ~~39~~
0842 - stn. 39 (sampled)
0910 - talked to Kathy about analysis for benthic invert sed reoccupy stns - will analyze ~~Pesticides~~ + SIM for all and put TBT ~~analysis~~ analysis on hold except for BC1 - put pesticides on hold.
0920 - left msg for Berit about reference sampling
0925 - left msg. for Dave Mullins about sampling on Monday 3/14; plan to meet him at 7:00 am at H. Island Marina
1003 - B56 is behind barges, unable to sample today.; station unable to get B9a + B9a because tide is not low enough

1010 - stn B26 (sampled)
1050 - finished sampling on Charlie's boat; back to H. Island Marina
1150 - leave H. Island Marina
1213 - 122°19.191 → approx 10 ft fm. target
47°31.905
stn 100 - access by car sample by hand during low tide
1230 - unable to reach stn B7a - tide too high; ~~leave S. Park beach~~
1250 - leave S. Park beach
1300 - checked out access to stn. 93 fm. land - off 7th Ave. took photos near outfall (outfall submerged)
photos - 39, 40, 41
1313 took photo of stn. 93 - photo 42
possible to access by land - ask property owner @ 604 S Riverside (W of S. Austin's)
1330 - back to office

GMP

03.17.05

Surface sed sampling on Dave Mullen's boat.

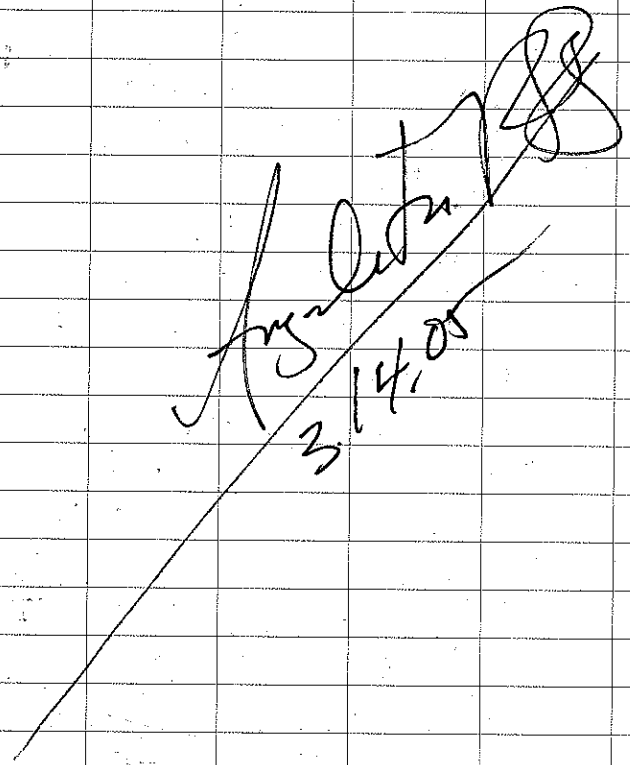
Crew: Sara Stillman
Shannon Purcell
Dave Mullins

Weather: Sunny, clear, cool

0700 - met at H. Island Marina loaded gear.
0745 - computer problems - D. Mullins trying to fix
0800 - begin sampling
0804 - stn 2 - attempted to sample 5 grabs - rocks ~sloped; unable to get successful grab; will return to station later.
0836 - stn 29 (sampled)
0911 - stn 34 (sampled)
0953 - stn 53 (sampled)
1620 - stn B4a (sampled)

1058 - stn 59 (sampled)
1130 - head to 1st Ave Boat launch
break for lunch, wait for
oversight at noon
1200 - meet Kym @ 1st Ave Boat Launch
1208 - rinsate blank sample
1220 - stn 71 (sampled) + EPA splits
need to leave stn b/c tide
was ebbing
1257 - stn. 77 (sampled)
1320 - dropped Kym off at 1st Ave
Bridge
1339 - stn B5b (sampled
1415 - stn 98 - will catch at a higher
tide tomorrow (03/15)
1430 - stn 14[illegible]1 - will wait @ high
tide or low tide (by hand +
1501 hand held GPS)
[illegible] - stn 145 (sampled)
1530 - stn 107 (sampled)
- talked to Kathy - there will
be 3 additional stations:
115 reoccupy
899 - reoccupy
1 add'l station upstream

will take 1-2 gm. stn 107 tomorrow
will check coords on stn 145
to make sure on location
will talk about stn. 2
1615 - back to H. Island marina



3.15.05

Rd 2 Surface Sediment Sampling
Helle Anderson
Berit Bergquist
Angelita Rodriguez
Dave Mullins

0600 Loaded up van & met at office

0700 Met Dave Mullins at Harbor Island Marina & loaded gear on boat

0720 Motor to Station 98

0802 Acceptable grab collected

0827 Motor to station 141

0844 collected 1st grab - acceptable

0856 collected 2nd grab - acceptable

0918 Motor to Station 89a

0923 collected 1st grab - acceptable 9:31 2nd grab

0937 motor to Station 71 to collect 1 L that wasn't collected yesterday

10:02 collect acceptable grab - couldn't get in quite as far as

the sample collected yesterday because the tide was higher so a rope was in the way of the davit (~ 10 ft off)

10:15 Motor to station 144

10:20 Stop @ 1st Ave S. boat ramp to take down davit
Meet Shannon & Bob to give them GPS

11:04 Stop after ped. bridge to put up davit (Boeing). Actually, decided not to put up davit yet, will motor to 156 and put up davit there

11:26 Arrive at 156 and put up davit

11:41 1st grab at 156 - insufficient depth

11:49 2nd grab - washout

11:51 3rd grab - washout

11:53 4th grab - washout

11:56 5th grab - successful and sample collected

12:35 ~~GPS Coor~~ motor to 155 and sampled by hand because of low tide. GPS coordinates were on land, so sampled as close as we could get and still stay on the beach and not in vegetation

13:11 1st grab at 154 - empty
13:15 Decided to sample on foot because location is right on water line - sampled at 13:15
13:40 Arrive onshore at 153 to sample on foor because of low tide
13:45 collected sample at 153
14:07 collected sample at 152
14:25 Sample at 151 - ~~xxx~~ sampler didn't close
14:29 2nd grab - washout
14:30 3rd grab - acceptable
15:00 collect sample on foor at 149
photo # 49, 50 sample location
photo # 51 upstream from location
photo # 52 looking downstream
" 53 another angle of location
54 looking across the river
15:50 Arrive back at HI marina

Brian Rogers

3.16.05

Rd 2 Surface Sediment Sampling
Crew: BOB COMPLITA
SHANNON PIERCE
ANGELITA RODRIQUEZ
DAVE MULLINS, BOAT DRIVER

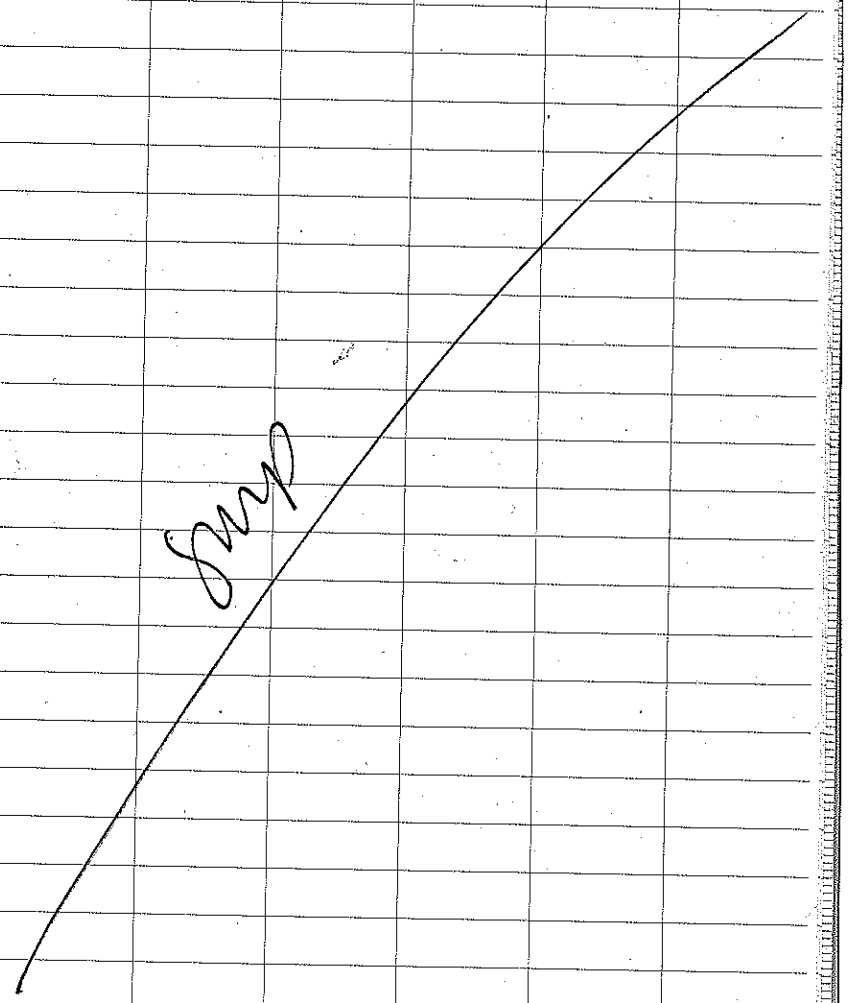
1000 Picked up Dave at 1st Ave S boat ramp & drove to Harbor Island Marina
Weather: Cloudy, windy & rain
1030 Bob & Shannon arrived at HI Marina & unloaded gear
1115 Arrive at station 2
1120 Collected 1st grab at station 2 approximately 100 ft from the outfall
1130 Collected acceptable final grab at station 2
1148 Motor to station 69b
1210 Arrived at station 69b that has a barge & a tug obstructing access to the sample location
Photos taken #55-59 looking downstream
Photos taken #60-63 looking upstream

3.16.05

1220	Collected 1st acceptable grab at station 696
1242	Motor to station 157
1300	Arrived at station 157
1325	Tad phoned with coordinates for station 157: 47° 31.462 122° 18.463 station 158: 47° 31.463 122° 18.483
1329	Bob accessed the shoreline to retrieve coordinates for the rockpile in front of outfall Coordinates 47° 31.458 122° 18.461 Photos taken #65-68 of sampling area
1337	Arrived at station 158 which is approximately 25 ft from station 899 & ~120 ft from outfall
1341	Collected sample at station 158
1422	Motor to station 159
1430	Collect sample at station 159 47° 31. 440 N 122° 18. 454 W Photos taken #70-71 By hand with stainless steel spoon
1455	Arrive at station 157
1500	Collect sample at station 157 47° 31. ~~452~~ 454 (454) 122° 18. ~~503~~ 464

3.16.05

1502	Photos taken #72-73 at station 157
1508	Motor back to Harbor Island Marina



3.18.05

Surface sediment sampling on POS whaler

crew: Matt Luxon
Shannon Pierce

weather: partly sunny
cool

0900 – meet a T-91, head across Elliot Bay to station B7a (reoccupy)

1000 – station B7a (sampled using Ekman)

47° 31 890 889 > coords #1
122° 18. 150

47° 31. 890 > coords #2
122° 18. 148

47° 31. 889 > coords #3
122° 18. 148

10:40 – leave stn; back to T-91

SMP 03.18.05

03.09.05

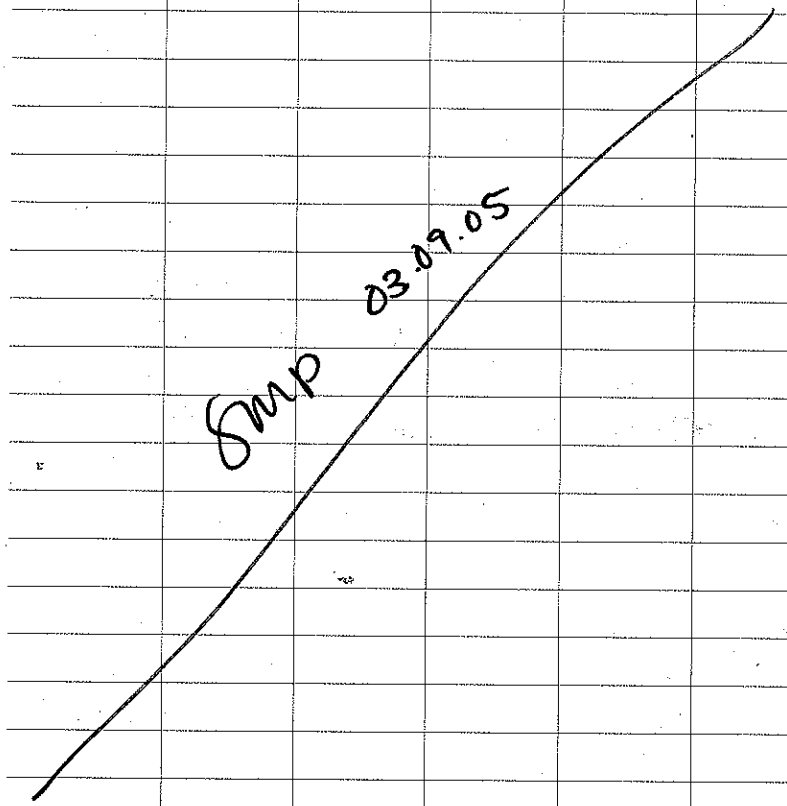
Rd 2 Surface Sediment sampling on Eric Parker's Boat

crew: Fiona McNair
Shannon Pierce
Eric Parker

weather: overcast, cool

1200 - meet at 1st Ave S. boat launch, set up + mobilize
1230 - head upstream to target intertidal stations at 148, 149, 150, 146, 147. pick up split jars ~~@~~ stn 148 fm. C. Eatm's boat at S. Park Marina Will pick up Kym w/ jars after some sampling - will call other boat
1305 stn 146 (sampled)
1350 stn 147 (sampled)
1410 - picked up EPA oversight (Kym) fm Kittiwake for split sampling at stn 148
1438 - Stn 148 (sampled) + EPA splits (Kym)
1510 - took Kym back to S. Park Marina

1534 - stn 150 (sampled)
1608 - stn 149 (sampled)
1640 finish intertidal sampling back to 1st Ave Bridge Boat launch



03.14.05

Rd. 2 Surface Sediment Sampling on foot

Crew: Bob Complita, Angie Rodriguez } Windward

Weather: Sunny, clear, no wind

1100 - Arrived Duwamish Waterway Park
Set up + mobilize to Sample Station B7a

1200 - Tide is still too high to Sample by hand. We will head to station 90 and come back later in the day.

1230 Collected sample at station 90

1315 Arrived to Duwamish Waterway Park and collect rinsate LDW-SS B7a-RB

1330 collected sample at station B7a

1350 Motor to station 24

1400 Lunch @ Station 24 (Herring's House)

1422 Kym (COE) arrived at Herring's House & prepared jars for collecting the sample

1430 Called Thad to clarify the sampling location for station 24

1435 Collected sediment sample at station 24

1545 Arrive Station 9

1600 Collected sediment sample at station 9

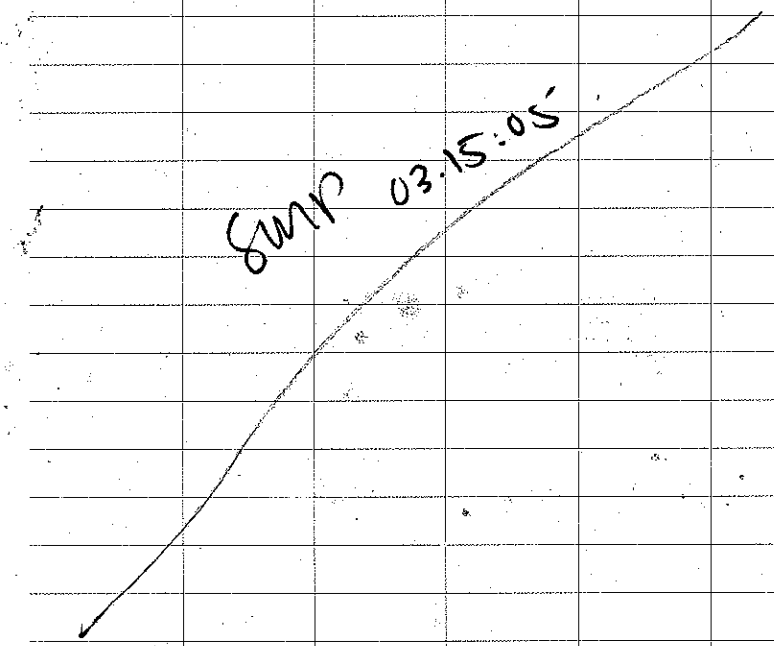
1700 Arrive ART to drop off samples.

RAC
03.14.05

03.15.05

Rd 2 surface sediment sampling on Port's Whaler
crew: Bob Compton
Shannon Pierce
1015 - meet at T-91 set up + begin ~~sampling~~ heading to Duwamish River
1030 - get GPS fm. Dave Mullins boat
1055 - stn ~~B~~93 (sampled @ 1115) w/ Ekman grab - 6 grabs
1215 - stn 124 (sampled @ 1215)
coordinates 47°31.250
122°18.508
~~target 47°31.013~~
~~122°18.407~~
1245 - stn 135 (sampled @ 1245)
coordinates @ target location
1315 - stn 136 (sampled @ 1315)
coordinates
47°31.250
122°18.508
1400 - Lunch @ S. Park Marina

on target @1445
1445 - stn B6a (sampled)
1530 - Stn C1 (sampled)
1600 - back to T-91 -
will sample remaining stns tomorrow on D. Mullins boat -
meeting @ 1030 am at H. Island marina



APPENDIX G-4: PROTOCOL MODIFICATION FORMS

04-08-06-24
R2

PROTOCOL MODIFICATION FORM

Project Name and Number: LDW RI-Surface sediment chemistry/toxicity
Material to be Sampled: sediment (grab)
Measurement Parameter:

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):
Sediment grab sampling using a 0.1m² van Veen (Windward QAPP, 2005)

Reason for Change in Field Procedure or Analysis Variation: van Veen jaws would not fully close where bottom surface was sloped and/or a rocky substrate was encountered

Variation from Field or Analytical Procedure: Switch to a 0.04-m² Young grab sampler at the following 11 station locations: LDW-SS3, LDW-SS25, LDW-SS39, LDW-SS46, LDW-SS47, LDW-SS61, LDW-SS81, LDW-SS95, LDW-SS105, LDW-SS106, and LDW-SS122.

Special Equipment, Materials or Personnel Required: 0.04-m² Young grab

Initiator's Name:	[signature]	Date:	3/10/05
Project Officer:	[signature]	Date:	3/10/05
QA Officer:	[signature]	Date:	3/10/05

04-08-06-24
Rd 2

PROTOCOL MODIFICATION FORM

Project Name and Number: LDW RI-Surface sediment chemistry/benthic
Material to be Sampled: sediment (grab)
Measurement Parameter:

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):
sediment grab sampling using a 0.1-m² van Veen (Windward, QAPP, 2005)

Reason for Change in Field Procedure or Analysis Variation: Boston Whaler
was used in sampling; cannot be equipped w/ van Veen
davit + winch gear

Variation from Field or Analytical Procedure: switched to 0.02m²
Ekman grab (hand operated) at two locations: LDW-5593 and
LDW-5537a

Special Equipment, Materials or Personnel Required:
0.02-m² Ekman grab

Initiator's Name:	Shannon Pierce	Date:	3/19/05
Project Officer:	[signature]	Date:	3/18/05
QA Officer:	Jed Dell	Date:	3.18.05

04-08-06-24
Rd 2

PROTOCOL MODIFICATION FORM

Project Name and Number: LDW RI - surface sediment chem/toxicity
Material to be Sampled: sediment (grab)
Measurement Parameter:

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):
Actual sampling location will not be sampled > 10 m fm target sampling location (Windward 2005 QAPP)

Reason for Change in Field Procedure or Analysis Variation: unable to obtain a successful grab sample at target (is w/in 10m) because of access issues, debris or rocks in water preventing van Veen jaws fm closing, or unacceptable sediment recovery.

Variation from Field or Analytical Procedure: The following ~~this~~ samples were collected >10 m fm. target location due to sampling difficulty: LDW-552, LDW-5535, LDW-5586, LDW-5591, LDW-5598, LDW-5524, LDW-5515?, and LDW-5515.

Special Equipment, Materials or Personnel Required:
0.1-m² van Veen

Initiator's Name: Shannon Reese Date: 3/16/05
Project Officer: [signature] Date: 3/16/05
QA Officer: [signature] Date: 3.16.05

04-08-06-24
Rd 2

PROTOCOL MODIFICATION FORM

Project Name and Number: LDW RI-Surface Sediment Chem/Toxicity
Material to be Sampled: sediment (grab)
Measurement Parameter:

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):
Actual sampling locations will not be sampled >10 m fm. target sampling location (Windward 2005 QAPP)

Reason for Change in Field Procedure or Analysis Variation: LDWG and EPA agreed to move target locations due to sampling accessability (by hand) or intended purpose for collection (e.g. intertidal area).

Variation from Field or Analytical Procedure: The following samples were >10 m fm. target locations (as specified in QAPP) b/c target locations were moved: LDW-SS24, LDW-SS69, LDW-SS25, and LDW-SS144.

Special Equipment, Materials or Personnel Required:
0.1-m² van Veen sampler

Initiator's Name:	Shannon Pierce	Date:	3/16/05
Project Officer:	[signature]	Date:	3/16/05
QA Officer:	[signature]	Date:	3.16.05

04-08-06.24
R12

PROTOCOL MODIFICATION FORM

Project Name and Number: LDW RI-surface sediment chemistry/toxicity
Material to be Sampled: sediment (grab)
Measurement Parameter:

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):
A penetration depth of at least 11 cm is achieved @ grab samples (Windward 2005, QAPP)

Reason for Change in Field Procedure or Analysis Variation: low recovery was encountered due to hard native packed sediment (e.g. sand) or other obstructions (e.g. rocks, wood debris):

Variation from Field or Analytical Procedure: an average penetration depth of <11 cm was collected for sediment in the following three locations: LDW-SS34, LDW-SS151, and LDW-SS87a.

Special Equipment, Materials or Personnel Required:
0.02-m² Ekman grab. 0.1-m² van Veen

Initiator's Name:	Shannon Pierce	Date:	3/18/05
Project Officer:	[signature]	Date:	3/18/05
QA Officer:	Jodi Dutt	Date:	3.18-05

04-08-06-24
Rd 2

PROTOCOL MODIFICATION FORM

Project Name and Number: LDW RI-Surface sediment chemistry/toxicity
Material to be Sampled: sediment (grab)
Measurement Parameter:

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):
sediment will be collected at LDW-5580 (Windward 2005-QAPP)

Reason for Change in Field Procedure or Analysis Variation: Target coordinates could not be obtained b/c 1st Ave Bridge obstruction interfered w/GPS readings.

Variation from Field or Analytical Procedure: Sample was collected ~70 ft from target and sample was discarded/not submitted for analysis. (Station LDW-BG6 was considered sufficient for area characterization.

Special Equipment, Materials or Personnel Required:

Initiator's Name:	Thomas Pierce	Date:	3/15/05
Project Officer:		Date:	3/15/05
QA Officer:	Jeff Ludwig	Date:	3.15.05

04-08-06-24
BG-dioxin/furans

PROTOCOL MODIFICATION FORM

Project Name and Number: LDW RI - Surface Sed chemistry / Toxicity
Material to be Sampled: sediment (grab)
Measurement Parameter:

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):
Dioxin/furan location upstream LDW will be identified as DR-557 (Appendix E, Windward 2005 QAPP)

Reason for Change in Field Procedure or Analysis Variation: Location ID
"DR-557" was previously used in background arsenic sampling

Variation from Field or Analytical Procedure: dioxin/furan sample was identified & labeled as "PRD-557"

Special Equipment, Materials or Personnel Required:

Initiator's Name: Shannon Pierce Date: 2/2/05
Project Officer: [signature] Date: 2/2/05
QA Officer: [signature] Date: 2.2.05

04-08-06-24
BG-dioxin/furan

PROTOCOL MODIFICATION FORM

Project Name and Number: LDW RI - Surface Sediment Chemistry/Toxicity
Material to be Sampled: Sediment (grab)
Measurement Parameter:

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):
Sediment grab sampling using an Ekman grab (Appendix E, Windward 2005 QAPP)

Reason for Change in Field Procedure or Analysis Variation: single 0.1 m2 van Veen was available for use (more efficient/successful sampler) or location couldn't be accessed by boat (needed a hand grab sampler)

Variation from Field or Analytical Procedure: a 0.1 m2 (single) van veen was used at the following ten dioxin/furan locations: SC-SS1a SC-SS1b, EB-SS2a, EB-SS2b LW-SS3, LW-SS4, LW-SS5a, ORD-SS7, LU-SS9a, LU-SS9b.

Special Equipment, Materials or Personnel Required:
single 0.1-m2 Van Veen sampler
0.025 m2 van Veen (hand held) sampler

→ a hand held 0.025 m2 van Veen hand grab sampler was used at UB-SS8 (only accessible by foot)

Initiator's Name: Shannon Pierce Date: 2/2/05
Project Officer: [signature] Date: 2/2/05
QA Officer: Jill Dorsch Date: 2.2.05