APPENDIX E: COLLECTION FORMS AND FIELD NOTES

ATTACHMENT E-1: BENTHIC INVERTEBRATE AND SEDIMENT COLLECTION FORMS
ATTACHMENT E-2: FIELD NOTES
ATTACHMENT E-3: LABORATORY BENTHIC INVERTEBRATE WEIGHT FORMS
ATTACHMENT E-4: LABORATORY CLAM LENGTH FORMS
ATTACHMENT E-5: BACKGROUND CLAM COLLECTION FIELD NOTES
ATTACHMENT E-6: BACKGROUND CLAM COLLECTION FORMS
ATTACHMENT E-7: CORRECTIVE ACTION FORMS

Attachment E-1: Benthic Invertebrate and Sediment Collection Forms

Windward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Project no.:

Date: 8/12/04

Station: B1a

Start/Stop time: 1045 / 1350

Sampling Method:

X:

Y:

Weather: Sunny, warm

Sample ID:

Crew: MW, TD, SP, HA oversight TG, JN

Subsample #: 1-5 Sample depth: ____ Penetration depth 10cm Time: ____
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	
gravel	(gray)	slight	petroleum	
(sand) C M F	black	moderate	other:	
silt clay	(brown)	strong		
organic matter	brown surface	overwhelming		

Subsample #: 6-10 Sample depth: ____ Penetration depth 10cm Time: ____
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	~~drab olive~~	(none)	H_2S	
gravel	(gray)	slight	petroleum	
(sand) C M F	black	moderate	other:	
silt clay	(brown)	strong		
organic matter	brown surface	overwhelming		

Subsample #: ____ Sample depth: ____ Penetration depth ____ Time: ____
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	black	strong		
organic matter	brown surface	overwhelming		

~~Grab #4 Lat 47°31.324 Long 122°18.419 reject~~

Wind/Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Project no.:

Date: 8/13/04

Station: B1a

Start/Stop time: 0830/0954

X:

Sampling Method:

Y: in notebook

Weather: sunny, warm

Sample ID:

Crew: MAN, TD, SP, MG (SAIC) Brad (ecology)

Subsample #: 11-15 Sample depth: ____ Penetration depth ____ Time: ____

Sampling gear: ____ Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
(cobble)	drab olive	(none)	H_2S	↑ clay in 3rd sample
gravel	gray	slight	petroleum	mostly sandy silt in
(sand C M F)	(black)	moderate	other:	other plots
(silt clay)	(brown)	strong		
(organic matter)	brown surface	overwhelming		

Subsample #: ____ Sample depth: ____ Penetration depth ____ Time: ____

Sampling gear: ____ Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: ____ Sample depth: ____ Penetration depth ____ Time: ____

Sampling gear: ____ Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 08-13-04
Station: B2a
Start/Stop time: 1045 - 1800
X: note book
Sampling Method:
Y:
Weather: sunny warm
Sample ID:
Crew: MW / TD / SP MG (SAIC

Subsample #: 1-5 **Sample depth:** _____ **Penetration depth** _____ **Time:** _____
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	Mucky! Especially at lowest sample
gravel	gray	slight	petroleum	Evidence of mottles + gleys
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

@lowest elevation sample, chks of wood

Subsample #: 6-10 **Sample depth:** _____ **Penetration depth** _____ **Time:** _____
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	Same as above
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: 11-15 **Sample depth:** _____ **Penetration depth** _____ **Time:** _____
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	did not have enough time to collect tissue on this transect
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Date: 8/26/04

Start/Stop time: 0650 –

Sampling Method:

Weather:

Crew: AR, TD, SP, KEVIN LI (KC), SMC

Project no.

Station: 33a

X:

Y:

Sample ID:

Subsample #: 1-18 Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	ALONG RMTS
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: _____ Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: _____ Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:

Date: 8/14/04

Project no.

Start/Stop time: 1030 - 1300

Station: BY4

Sampling Method:

X:

Weather: SUNNY

Y:

Crew: SP, CH, MM, MG

Sample ID:

Subsample #: 1-5 Sample depth: _____ Penetration depth 10 cm Time: 1030-1300

Sampling gear: PUMP, CORE

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	TOP OF DRAWDOWN
(gravel)	(gray) BOTTOM	slight	petroleum	GRAVELLY W/ LOT OF ORG. MATTER
sand C M F	black	moderate	other:	BOTTOM OF DRAWDOWN MUDDY
(silt clay)	(brown) TOP	strong		
(organic matter)	brown surface	overwhelming		

Subsample #: 6-10 Sample depth: _____ Penetration depth 10 cm Time: 1030-1300

Sampling gear: PUMP, CORE

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	DRAWDOWN "MUDDY" THROUGHOUT BUT VERY SOFT AT THE BOTTOM
gravel	(gray)	slight	petroleum	
(sand) C M F	black	moderate	other:	
(silt clay)	(brown)	strong		
organic matter	brown surface	overwhelming		

Subsample #: _____ Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:

Date: 8/15/04

Start/Stop time: 930 - 1045

Sampling Method:

Weather: SUNNY

Crew: CH, JF, TD, MR

Project no.

Station: B4a

X:

Y:

Sample ID:

Subsample #: 11-15 Sample depth: ____ Penetration depth 10cm Time: ____

Sampling gear: PUMP

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
(gravel)	(gray)	(slight)	petroleum
(sand) C M F	(black) BOTTOM	moderate	other:
(silt clay)	(brown) TOP	strong	
(organic matter)	brown surface	overwhelming	

Comments: TOP OF MUNSELL WAS OLIVE GRAY BOTTOM SOFT SILTY ORGANIC SEDIMENT W/ SLIGHT ODOR

Subsample #: ____ Sample depth: ____ Penetration depth ____ Time: ____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:

Subsample #: ____ Sample depth: ____ Penetration depth ____ Time: ____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: ADW

Date: 9/24/04

Start/Stop time: 720 – 1120

Sampling Method:

Weather: cloudy

Crew: AK, TD, DP, RC, MA

Project no.

Station: BS01

X:

Y:

Sample ID:

Subsample #: 1-30 Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	Comments:
cobble	drab olive	none some H_2S	
gravel	(gray)	(slight) of the petroleum	
(sand) C M F	(black) bottom	moderate pumps other:	
(silt) clay	(brown) surface	strong	
organic matter	brown surface	overwhelming	

Subsample #: _____ Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	Comments:
cobble	drab olive	none H_2S	
gravel	gray	slight petroleum	
sand C M F	black	moderate other:	
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Subsample #: _____ Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	Comments:
cobble	drab olive	none H_2S	
gravel	gray	slight petroleum	
sand C M F	black	moderate other:	
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

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SURFACE SEDIMENT COLLECTION FORM

Project Name:

Project no.

Date: 8/15/04

Station: B6a

Start/Stop time: 1055 - 1315

X:

Sampling Method:

Y:

Weather: SUNNY

Sample ID:

Crew: CH, JF, TD, HA

Subsample #: 1-5 Sample depth: ____ Penetration depth 10cm Time: ____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	BOTTOM OF TRANSECT
(gravel)	(gray)	slight	petroleum	ORANGISH - LARGE CEMENT
(sand) C M F	(black) BOTTOM	moderate	other:	BLOCK / BANK
(silt) clay	(brown) TOP	strong		TOP SOFT SILTY SAND
organic matter	brown surface	overwhelming		

Subsample #: 6-10 Sample depth: ____ Penetration depth 10cm Time: ____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	AS 1-5
(gravel)	(gray)	slight	petroleum	
(sand) C M F	(black)	moderate	other:	
(silt) clay	(brown)	strong		
organic matter	brown surface	overwhelming		

Subsample #: 11-15 Sample depth: ____ Penetration depth 10cm Time: ____

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	AS 1-5
(gravel)	(gray)	slight	petroleum	
(sand) C M F	(black)	moderate	other:	
(silt) clay	(brown)	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW Bathtub

Project no. 04-08-04-21

Date: 08-30-04

Station: B7a

Start/Stop time: 1000 - 1400

X:

Sampling Method:

Y:

Weather:

Sample ID:

Crew: TD, MW, FM

Subsample #: 1-5 Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear: _____ Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	↑ gravel close to riprap
gravel	gray	slight	petroleum	v. mucky
(sand) C M F	(black)	moderate	other:	
silt clay	(brown)	strong		
(organic matter)	(brown surface)	overwhelming		

Subsample #: 6-10 Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear: _____ Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	Same
gravel	gray	slight	petroleum	
(sand) C M F	(black)	moderate	other:	
silt clay	(brown)	strong		
(organic matter)	(brown surface)	overwhelming		

Subsample #: 11-15 Sample depth: _____ Penetration depth _____ Time: _____

Sampling gear: _____ Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	Same
gravel	gray	slight	petroleum	
(sand) C M F	(black)	moderate	other:	
silt clay	(brown)	strong		
(organic matter)	(brown surface)	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:

Project no.

Date: 8/17/2004

Station: BCA-3, B8a

Start/Stop time:

X:

Sampling Method: Benthic Community

Y:

Weather: Partly cloudy, sunshine, warm 80s

Sample ID:

Crew: A Rodriguez, S. Pierce, Mary Ann Welsh

Subsample #: BCA-3 Sample depth: 10 cm Penetration depth 10 cm Time: 11:00 am

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	Highest frame had greater % of gravel than sand
(gravel)	gray	slight	petroleum	
(sand C M F)	black	moderate	other:	
silt clay	(brown)	strong		
organic matter	brown surface	overwhelming		

Subsample #: B8a Sample depth: 10 cm Penetration depth Time: 12:15

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	Very soft muddy sediment
gravel	gray	slight	(petroleum)	Dark Black oily substance with strong odor at 2nd transect highest frame
sand C M F	black	moderate	other:	
(silt clay)	(brown)	strong		
(organic matter)	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-026-21

Date: 08-27-04

Station: LDW-B9a

Start/Stop time: ~0800-1200

X:

Sampling Method: Field tissue collection + sediment

Y:

Weather: Overcast

Sample ID: LDW-B9a-T

Crew: MW, MGL, BB, Maureen

Subsample #: 1-5 Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	(drab olive)	(none)	H_2S	clay content was higher up higher on beach. Lowest samples had high sand content. V. little debris. Fairly homogenous matrix.
gravel	gray	slight	petroleum	
(sand) C M F	black	moderate	other:	
(silt clay)	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: 6-10 Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	(drab olive)	(none)	H_2S	Same
gravel	gray	slight	petroleum	
(sand) C M F	black	moderate	other:	
(silt clay)	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: 10-15 Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	(drab olive)	(none)	H_2S	Same
gravel	gray	slight	petroleum	
(sand) C M F	black	moderate	other:	
(silt clay)	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW Benthic Invert
Project no. 04-08-06-21
Date: 8.25.04
Station: B10a
Start/Stop time: 0710 - 0725
X:
Sampling Method: by hand
Y:
Weather: overcast
Sample ID: LDW-B10a-S
Crew: Angelita, Tod, Shannon

Subsample #: ____ Sample depth: ____ Penetration depth ____ Time: ____
Sampling gear: 250 ml glass beaker
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	(drab olive)	(none)	H_2S	200 mL subsample taken from 15 frames on 3 transects
gravel	gray	slight	petroleum	
(sand) C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: ____ Sample depth: ____ Penetration depth ____ Time: ____
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: ____ Sample depth: ____ Penetration depth ____ Time: ____
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/16/04
Station: BCA-1
Start/Stop time:
X:
Sampling Method:
Y:
Weather: PARTLY CLOUDY
Sample ID:
Crew: TD, AM, MR

Subsample #: 1-5 Sample depth: Penetration depth 10cm Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	SILTY SAND W/ LOTS OF WOOD DEBRIS BROWN ON SURFACE TURNING BLACK A FEW CM DOWN. ODOR AT UPPER PART OF TRANSECT
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Date: 9/27/04

Start/Stop time:

Sampling Method: VBW

Weather: Clear

Project no.:

Station: B1b

X:

Y:

Sample ID:

Crew: DP, BC, Hoeven, HA

Subsample #: 1 **Sampling gear:** **Sample depth:** 52 **Penetration depth** **Time:** 0940

Acceptable sample (circle) yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	47 34.070
gravel	gray	slight	petroleum	122 20.936
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: 2 **Sampling gear:** **Sample depth:** 52 **Penetration depth** **Time:** 0905

Acceptable sample (circle) yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	47 34.075
gravel	gray	slight	petroleum	122 20.934
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: 3 **Sampling gear:** **Sample depth:** 53 **Penetration depth** **Time:** 0909

Acceptable sample (circle) yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	47 34.071
gravel	gray	slight	petroleum	122 20.936
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind/Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Project no.:

Date: 9/27/04

Station: B16

Start/Stop time:

X:

Sampling Method:

Y:

Weather:

Sample ID:

Crew:

Subsample #: 4	Sample depth: 52	Penetration depth	Time: 0915	
Sampling gear:			Acceptable sample (circle)	yes (no)
type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 34 073
silt clay	brown	strong		122 20 945
organic matter	brown surface	overwhelming		
Subsample #: 5	Sample depth:	Penetration depth	Time: 0932	
Sampling gear:			Acceptable sample (circle)	yes (no)
type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 34.071
silt clay	brown	strong		122 20.945
organic matter	brown surface	overwhelming		
Subsample #: 6	Sample depth:	Penetration depth	Time: 0940	
Sampling gear:			Acceptable sample (circle)	yes (no)
type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 34,070
silt clay	brown	strong		122 20.935
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 9/27/04
Station: 11b
Start/Stop time:
X:
Sampling Method:
Y:
Weather:
Sample ID:
Crew:

Subsample #: 7 **Sample depth:** 50 **Penetration depth** 7.5 **Time:** 0945
Sampling gear:
Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T
(gravel)	gray	slight	petroleum	
(sand C M F)	black	moderate	other:	47 34.068
silt clay	brown	strong		122 20.8933
organic matter	brown surface	overwhelming		

Subsample #: 8 **Sample depth:** 52 **Penetration depth** **Time:** 0955
Sampling gear:
Acceptable sample (circle): yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 34. 070
silt clay	brown	strong		122 20. 935
organic matter	brown surface	overwhelming		

Subsample #: 9 **Sample depth:** 50-52 **Penetration depth** 5½ 7½ **Time:** 1000
Sampling gear:
Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+C
(gravel)	(gray)	slight	petroleum	
(sand C M F)	black	moderate	other:	47 34. 070
silt clay	brown	strong		122 20. 930
organic matter	brown surface	overwhelming		

HAD TO MOVE OUT INTO BAY DUE TO HARD ROCKY BOTTOM

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Project no.:

Date: 9/27/07

Station: B16

Start/Stop time:

X:

Sampling Method: VAN VEEN

Y:

Weather: CLOUDY

Sample ID:

Crew: RC, DP, MA, MORROW

Subsample #: 10 Sample depth: 51 Penetration depth 6.7 Time: 1015

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	TC
(gravel)	(gray)	slight	petroleum	
(sand C M F)	black	moderate	other:	47 34.070
silt clay	brown	strong		122 20.928
organic matter	brown surface	overwhelming		

Subsample #: 11 Sample depth: 51 Penetration depth Time: 1040

Sampling gear:

Acceptable sample (circle) yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 34.020
silt clay	brown	strong		122 20.932
organic matter	brown surface	overwhelming		

Subsample #: 12 Sample depth: 51 Penetration depth 9.6 Time: 1043

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	TC
(gravel)	(gray)	slight	petroleum	
(sand C M F)	black	moderate	other:	47 34.070
silt clay	brown	strong		122 20.936
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 9/27/04
Station: B16
Start/Stop time:
X:
Sampling Method:
Y:
Weather: CLOUDY
Sample ID:
Crew: BC, DP, WA, MORTON

Subsample #: 13 Sample depth: 50 Penetration depth: Time: 1106
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:
47 34.069
122 20.940

Subsample #: 14 Sample depth: 50 Penetration depth: Time: 1111
Sampling gear:
Acceptable sample (circle) yes (no)

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:
47 34.070
122 20.932

Subsample #: 15 Sample depth: 51 Penetration depth: Time: 1116
Sampling gear:
Acceptable sample (circle) yes (no)

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:
47 34 070
122 20 933

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Date: 9/22/04

Start/Stop time: 820 - 1230

Sampling Method: VAN VEEN

Weather: SUNNY

Crew: BE, DP, HB, MORTON

Project no.

Station: B16

X:

Y:

Sample ID:

Subsample #: 16 Sample depth: 50 Penetration depth 5½ Time: 1120

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T
(gravel)	(gray)	slight	petroleum	
(sand) C M F	black	moderate	other:	
silt clay	brown	strong		47 34 070
organic matter	brown surface	overwhelming		122 20 936

Subsample #: 17 Sample depth: 50 Penetration depth 5½, 5½ Time: 1130

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+J
(gravel)	(gray)	slight	petroleum	
(sand) C M F	black	moderate	other:	
silt clay	brown	strong		47 34.070
organic matter	brown surface	overwhelming		122 20 .924

Subsample #: 18 Sample depth: 51 Penetration depth 5½, 7 Time: 1120

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+J
(gravel)	(gray)	slight	petroleum	
(sand C M F)	black	moderate	other:	
silt clay	brown	strong		47 34 040
organic matter	brown surface	overwhelming		122 20 936

22 50 52 6½, 6 1230

T+J

TOOK 04 U BIAS SAMPLES W/ TISSUE

2

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Date: 9/27/04

Start/Stop time: 1330 –

Sampling Method: VAN VEEN

Weather: SUNNY

Crew: BC, DP, HA, MONCRIEF

Project no.

Station: B26

X:

Y:

Sample ID:

Subsample #: 1 Sample depth: 40 Penetration depth 6, 8 Time: 1330
Sampling gear: Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+C
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 33.456
silt clay	brown	strong		122 20,647
organic matter	brown surface	overwhelming		

Subsample #: 2 Sample depth: 42 Penetration depth 7.5, 9 Time: 1357
Sampling gear: Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+C
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 33. 454
silt clay	brown	strong		122 20. 649
organic matter	brown surface	overwhelming		

Subsample #: 3 Sample depth: 42 Penetration depth Time: 1415
Sampling gear: Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 33. 448
silt clay	brown	strong		122 20 648
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 9/27/04
Station: B26
Start/Stop time: 1330
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BC, DP, HM MORGAN

Subsample #: 4 **Sample depth:** ~~52~~ 42 HM **Penetration depth** 7.5, 6 **Time:** 1420
Sampling gear:
Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+C
gravel	(gray)	slight	petroleum	
(sand) C M F	(black)	moderate	other:	47. 33. 455
(silt) clay	brown	strong		122 20. 649
organic matter	brown surface	overwhelming		

Subsample #: 5 **Sample depth:** 43 **Penetration depth** **Time:** 1445
Sampling gear:
Acceptable sample (circle): yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47. 33. 456
silt clay	brown	strong		122 20. 645
organic matter	brown surface	overwhelming		

Subsample #: 6 **Sample depth:** 41 **Penetration depth** 7.7cm **Time:** 1447
Sampling gear:
Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+T
gravel	(gray)	slight	petroleum	
(sand) C (M F)	(black)	moderate	other:	47 33. 455
(silt) clay	brown	strong		122 20. 649
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:

Project no.

Date: 9/27/04

Station: B2b

Start/Stop time: 1330

X:

Sampling Method: Van Veen

Y:

Weather: Sunny

Sample ID:

Crew: RC, DP, HA, Moreau

Subsample #: 7 Sample depth: 41 Penetration depth 6.5± Time: 1506

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+T
gravel	(gray)	slight	petroleum	
(sand) C (M F)	(black)	moderate	other:	47 33. 456
(silt clay)	brown	strong	sewage	122 20. 649
organic matter	brown surface	overwhelming		

Subsample #: 8 Sample depth: 45 Penetration depth 8, 7.5 Time: 1523

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+T
gravel	(gray)	slight	petroleum	
(sand) C (M F)	(black)	moderate	other:	47 33 455
(silt clay)	brown	strong		122 20 649
organic matter	brown surface	overwhelming		

Subsample #: 9 Sample depth: 45-46 Penetration depth Time: 1540

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+T
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 33. 455
silt clay	brown	strong		122 20. 648
organic matter	brown surface	overwhelming		

Windward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:	LDW	Project no.	
Date:	8/10/04	Station:	33b
Start/Stop time:	1420 – 1540	X:	
Sampling Method:	VAN VEEN	Y:	
Weather:	SUNNY	Sample ID:	
Crew:	BG, JN, DP, WR		

Subsample #: 1	Sample depth: 18'	Penetration depth 7.5	Time:
Sampling gear:			Acceptable sample (circle) **(yes)** no — ONLY ONE GRAB

type:	color:	odor:		Comments:
(cobble)	drab olive	**(none)**	H_2S	T
(gravel)	**(gray)**	slight	petroleum	47 33.379 W } TIED TO PIER
(sand) C M F	**(black)** BOTTOM	moderate	other:	122 20.387 W } – LAT/LONG ACROSS
silt clay	**(brown)** TOP	strong		FROM SAMPLE
organic matter	brown surface	overwhelming		

Subsample #: 2	Sample depth: 18'	Penetration depth 7.5 cm	Time:
Sampling gear:			Acceptable sample (circle) **(yes)** no

type:	color:	odor:		Comments:
(cobble)	drab olive	**(none)**	H_2S	T
(gravel)	**(gray)**	slight	petroleum	
(sand) C M F	**(black)**	moderate	other:	
silt clay	**(brown)**	strong		
organic matter	brown surface	overwhelming		

Subsample #: 3	Sample depth: 18'	Penetration depth 8 cm	Time:
Sampling gear:			Acceptable sample (circle) **(yes)** no — ONLY 1 GRAB

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Project no.:

Date: 8/10/04

Station: B3b

Start/Stop time: 1420 - 1540

X:

Sampling Method: Van Veen

Y:

Weather: Sunny

Sample ID:

Crew: RG, JN, DP, AM

Subsample #: 4 Sample depth: 10' Penetration depth 9 cm Time:

Sampling gear:

Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
(cobble)	drab olive	(none)	H_2S	T
(gravel)	(gray) Some	slight	petroleum	
(sand) C M F	(black)	moderate	other:	
silt clay	(brown) TOP	strong		
organic matter	brown surface	overwhelming		

Subsample #: 5 Sample depth: 10' Penetration depth 10 x 10cm Time:

Sampling gear:

Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
(cobble)	drab olive	(none)	H_2S	T+C
(gravel)	(gray)	slight	petroleum	
(sand) C M F	(black) some	moderate	other:	
silt clay	(brown) TOP	strong		
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle): yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

WindWard environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:		Project no.	
Date:	8/17/04	Station:	B3b
Start/Stop time:	1035 ~ 1245	X:	
Sampling Method:	van Veen	Y:	
Weather:	sunny	Sample ID:	
Crew:	BG, JN, TD, WA		

Subsample #: 6	Sample depth: 13-14'	Penetration depth 13 & 13 cm	Time: 1035	
Sampling gear:			Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:
cobble	drab olive	(none)	H2S	T+C
gravel	(gray)	slight	petroleum	
sand C M F	(black)	moderate	other:	47 33 .378
(silt clay)	brown	strong		122 20.392
organic matter	brown surface	overwhelming		
Subsample #: 7	Sample depth: 13-14'	Penetration depth 12, 8 cm	Time: 1120	
Sampling gear:			Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:
cobble	drab olive	(none)	H2S	T+C
(gravel)	(gray)	slight	petroleum	
sand C M F	(black)	moderate	other:	47 33, 375
(silt)(clay)	brown	strong		122 20 . 390
organic matter	brown surface	overwhelming		
Subsample #: 8	Sample depth: 11-12'	Penetration depth 12, 9 cm	Time: 1150	
Sampling gear:			Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:
cobble	drab olive	(none)	H2S	T+T
gravel	(gray)	slight	petroleum	
sand C M F	(black) bottom	moderate	other:	47 33 . 376
(silt clay)	(brown) top	strong		122 20.390
organic matter	brown surface	overwhelming		

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T100 TO BAGGS

Wind/Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:

Project no.

Date: 8/17/04

Station: B3b

Start/Stop time: 1035 – 1246

X:

Sampling Method: VAN VEEN

Y:

Weather: SUNNY

Sample ID:

Crew: BG, JN, TD, WM

Subsample #: 9 Sample depth: Penetration depth Time: 1250

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: T

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Subsample #: Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:

Subsample #: Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:

WindWard environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:	LDW	Project no.	
Date:	9/28/04	Station:	B4-b
Start/Stop time:		X:	
Sampling Method:	VAN VEEN	Y:	
Weather:	CLOUDY	Sample ID:	
Crew:	BC, TD, WR		

Subsample #: 1	Sample depth: 16	Penetration depth 16.5, 17.5		Time: 830	
Sampling gear:				Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:	
cobble	drab olive	(none)	H2S	T+C	
gravel	(gray)	slight	petroleum		
(sand) C M (F)	(black)	moderate	other:	47 33. 056	
(silt) clay	brown	strong		122 20.375	
organic matter	brown surface	overwhelming			
Subsample #: 2	Sample depth: 15	Penetration depth 14½ 14		Time: 900	
Sampling gear:				Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:	
cobble	drab olive	(none)	H2S	T+C	
gravel	(gray)	slight	petroleum		
(sand) C M (F)	(black)	moderate	other:	47 33. 056	
(silt) clay	brown	strong		122 20. 376	
organic matter	brown surface	overwhelming			
Subsample #: 3	Sample depth: 14	Penetration depth 13½, 14		Time: 0930	
Sampling gear:				Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:	
cobble	drab olive	(none)	H2S	T+C	
gravel	(gray)	slight	petroleum		
(sand) C M (F)	(black)	moderate	other:	47 33 .057	
(silt) clay	brown	strong		122 20. 376	
organic matter	brown surface	overwhelming			

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 9/28/04
Station: B46
Start/Stop time: 930-
X:
Sampling Method: VAN VAN
Y:
Weather: CLOUDY
Sample ID:
Crew: BC, TD, HEA

Subsample #: 4 Sample depth: 13 Penetration depth: 15, 16 Time: 0955
Sampling gear:
Acceptable sample (circle): yes / no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: TT
47 33 056
122 20 375

Subsample #: 5 Sample depth: 13 Penetration depth: 15, 14 Time: 1025
Sampling gear:
Acceptable sample (circle): yes / no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: TT
47 33.056
122 20.377

Subsample #: 6 Sample depth: 12 Penetration depth: 14, 15 Time: 1055
Sampling gear:
Acceptable sample (circle): yes / no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: TT
47 33. 057
122 20. 376

Wind/Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW

Project no.:

Date: 9/28/04

Station: B46

Start/Stop time:

X:

Sampling Method: VAN VOOW

Y:

Weather: Sunny

Sample ID:

Crew: BC, TD, HA

Subsample #: 7 Sample depth: 11 Penetration depth 14 Time: 1122

Sampling gear:

Acceptable sample (circle) (yes) no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:

47 33. 055
122 20. 376

Subsample #: Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:

Subsample #: Sample depth: Penetration depth Time:

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: NDW

Project no.:

Date: 9/28/04

Station: B5b

Start/Stop time: 1225 –

X: MOVED STATION

Sampling Method: VAN VEEN

Y:

Weather: CLOUDY

Sample ID: OUT FROM SHORE DUE TO LACK OF WATER

Crew: BC, TD, VB

Subsample #: 1	Sample depth: 6	Penetration depth 12, 12	Time: 1225
Sampling gear:		Acceptable sample (circle)	yes / no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+C
gravel	gray	slight	petroleum	47 32. 976
sand C M F	black	moderate	other:	122 20. 328
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: 2	Sample depth: 6	Penetration depth 9, 6	Time: 1245
Sampling gear:		Acceptable sample (circle)	yes / no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+C
gravel	gray	slight	petroleum	47 32. 977
sand C M F	black	moderate	other:	122 20. 329.
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: 3	Sample depth: 9	Penetration depth 10, 10	Time: 1300
Sampling gear:		Acceptable sample (circle)	yes / no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+C
gravel	(gray)	slight	petroleum	47 32. 976
(sand) C (M F)	(black)	moderate	other:	122 20. 329
silt clay	brown	strong	SLIGHT SHEEN	
organic matter	brown surface	overwhelming		

Windward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:	ADW	Project no.	
Date:	9/28/04	Station:	BS6
Start/Stop time:	1225 -	X:	
Sampling Method:	Van Veen	Y:	
Weather:	Sunny	Sample ID:	
Crew:	BC, TD, WR		

Subsample #: 4	Sample depth: 8	Penetration depth 5½	Time: 1325
Sampling gear:		Acceptable sample (circle)	(yes) no
type:	color:	odor:	Comments:
cobble	drab olive	none / H_2S	T
gravel	gray	slight / petroleum	
sand C M F	black	moderate / other:	47 32, 974
silt clay	brown	strong	122 20, 327
organic matter	brown surface	overwhelming	

Subsample #: 5	Sample depth: 8	Penetration depth 10½	Time: 1333
Sampling gear:		Acceptable sample (circle)	(yes) no
type:	color:	odor:	Comments:
cobble	drab olive	(none) / H_2S	T
gravel	(gray)	slight / petroleum	
(sand) C (M F)	(black)	moderate / other:	
silt clay	brown	strong	47 32. 976
organic matter	brown surface	overwhelming	122 20, 329

Subsample #: 6	Sample depth: 9.4'	Penetration depth	Time: 1345
Sampling gear:		Acceptable sample (circle)	yes (no)
type:	color:	odor:	Comments:
cobble	drab olive	none / H_2S	
gravel	gray	slight / petroleum	
sand C M F	black	moderate / other:	47 32. 976
silt clay	brown	strong	122 20. 929
organic matter	brown surface	overwhelming	

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 9/28
Station: BSb
Start/Stop time: 1225 -
X:
Sampling Method: VAN VOOR
Y:
Weather: SUNNY
Sample ID:
Crew: BC, TD, MA

Subsample #: 7 Sample depth: 9 Penetration depth 9, 9.5 Time: 1350
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+T
gravel	(gray)	slight	petroleum	
(sand) C (M) F	(black)	moderate	other:	47 32.976
silt clay	brown	strong		122 20.329
organic matter	brown surface	overwhelming		

7

Subsample #: 8 Sample depth: 9 Penetration depth 9.10 Time: 1405
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+T
gravel	(gray)	slight	petroleum	
(sand) C (M) F	black	moderate	other:	47 32. 975
silt clay	brown	strong		122 20. 327
organic matter	brown surface	overwhelming		

Subsample #: 9 Sample depth: 10 Penetration depth 9 Time: 1425
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T
gravel	(gray)	slight	petroleum	
(sand) C (M) F	(black)	moderate	other:	47 32, 975
silt clay	brown	strong		122 20. 328
organic matter	brown surface	overwhelming		

Windward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:	LDW	Project no.	
Date:	8/18/04	Station:	B6b
Start/Stop time:	1305 ~	X:	
Sampling Method:	Van Veen	Y:	
Weather:	Sunny	Sample ID:	
Crew:	BG, MG, AA, VCA		

Subsample #: 1	Sample depth: 13½'	Penetration depth 12, 13cm	Time: 1315
Sampling gear:		Acceptable sample (circle)	(yes) no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+C
gravel	(gray)	(slight)	petroleum	
sand C M F	(black) bottom	moderate	other:	47 32. 455
(silt clay)	brown	strong		122 19. 882
organic matter	brown surface	overwhelming		

Subsample #: 2	Sample depth: 12'	Penetration depth 15, 15cm	Time: 1353
Sampling gear:		Acceptable sample (circle)	(yes) no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+C
gravel	(gray)	(slight)	petroleum	
sand C M F	(black) Bottom	moderate	other:	47 32. 453
(silt clay)	brown	strong		122 19.882.
organic matter	brown surface	overwhelming		

Subsample #: 3	Sample depth: 13'	Penetration depth 15, 15	Time: 1425
Sampling gear:		Acceptable sample (circle)	(yes) no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+C
gravel	(gray)	(slight)	petroleum	
sand C M F	(black) Bottom	moderate	other:	47 32. 453
(silt clay)	brown	strong		122 19. 882
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/18/04
Station: B66
Start/Stop time: 1305
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, MO, AK, MA

Subsample #: 4	Sample depth: 13'	Penetration depth 13½, 14½cm	Time: 1505
Sampling gear:		Acceptable sample (circle)	yes / no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+T
gravel	(gray)	(slight)	petroleum	
sand C M F	(black) BOTTOM	moderate	other:	47 32.453
(silt clay)	brown	strong	SHEEN	122 19.882
organic matter	brown surface	overwhelming		

Subsample #: 5	Sample depth: 17'	Penetration depth 14, 13cm	Time: 1535
Sampling gear:		Acceptable sample (circle)	(yes) / no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+T
gravel	(gray)	(slight)	petroleum	
sand C M F	(black)	moderate	other:	47 32.454
(silt clay)	brown	strong	SHEEN	122 19.882
organic matter	brown surface	overwhelming		

Subsample #: 6	Sample depth: 13½'	Penetration depth	Time: 1606
Sampling gear:		Acceptable sample (circle)	yes / (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 32.455
silt clay	brown	strong		122 19.881
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/18/04
Station: B66
Start/Stop time: 1305 ~ 1700
X:
Sampling Method: VAN-VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, MO, AK, HM

Subsample #: 7 Sample depth: 16' Penetration depth 12, 13cm Time: 1610
Sampling gear: Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+T
gravel	gray	slight	petroleum	
sand C M F	black BOTTOM	moderate	other:	47 32. 456
silt clay	brown	strong		122 19. 881
organic matter	brown surface	overwhelming		

Subsample #: 8 Sample depth: 16' Penetration depth 13cm Time: 1640
Sampling gear: Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 32. 453
silt clay	brown	strong		122 19. 881
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear: Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/13/04
Station: B7b
Start/Stop time: 1400 – 1650
X:
Sampling Method:
Y:
Weather: SUNNY, BREEZY
Sample ID:
Crew: CH, BG, BC, HM

Subsample #: 1	Sample depth: 24-25'	Penetration depth 10; 10cm	Time: 1404
Sampling gear:		Acceptable sample (circle)	(yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	TfC
gravel	(gray)	slight	petroleum	
(sand) C M F	black	moderate	other:	
(silt clay)	(brown)	strong		47 32. 129
organic matter	brown surface	overwhelming		122 19. 466

Subsample #: 2	Sample depth: 24-25'	Penetration depth 13cm	Time: 1491
Sampling gear:		Acceptable sample (circle)	(yes) no ONLY ONE GRAB

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T
gravel	(gray)	slight	petroleum	
(sand) C M F	black	moderate	other:	
(silt clay)	(brown)	strong		47 32. 129
organic matter	brown surface	overwhelming		122 19 470

Subsample #: 3	Sample depth: 24-25'	Penetration depth 13cm	Time: 15 -1550
Sampling gear:		Acceptable sample (circle)	yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	TfC
gravel	(gray)	slight	petroleum	
(sand) C M F	black	moderate	other:	
(silt clay)	(brown)	strong		47. 32. 130
organic matter	brown surface	overwhelming		122 19. 471

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/13/04
Station: B7b
Start/Stop time: 1400 ~ 1650
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: CH, BC, BA, MA

Subsample #: 4 Sample depth: 24-25 Penetration depth 11, 11 cm Time: 1555
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:	
cobble	drab olive	(none)	H_2S
gravel	(gray)	slight	petroleum
sand C M F	black	moderate	other:
(silt clay)	(brown)	strong	
organic matter	brown surface	overwhelming	

Comments: T+C
47 32. 130
122 19. 466

Subsample #: 5 Sample depth: 26-28' Penetration depth Time: 1695
Sampling gear:
Acceptable sample (circle) yes (no)

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:
47 32. 134
122 19. 469

Subsample #: 6 Sample depth: 26-28' Penetration depth 13±15 cm Time: 1650
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: T+T
47 32. ~~130~~ 129
122 19,473

Only 2 cores sampled in BC.

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/17/04
Station: 37b
Start/Stop time: 850 – 1010
X:
Sampling Method: VAN VEEN
Y:
Weather: CLOUDY – LATER SUNNY
Sample ID:
Crew: JN, BG, TD, HN

Subsample #: 7 Sample depth: 24 L25' Penetration depth Time: 850
Sampling gear:
Acceptable sample (circle): yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 32.125
silt clay	brown	strong		122 19.477
organic matter	brown surface	overwhelming		

Subsample #: 8 Sample depth: 23-24' Penetration depth 11, 12 & 14 cm Time: 0855
Sampling gear:
Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+T
gravel	(gray) BOTTOM	slight	petroleum	
(sand) C M F	black	moderate	other:	47 32.130
(silt clay)	(brown) TOP	strong	slight sheen in 1 area	122 19.469
organic matter	brown surface	overwhelming		

Subsample #: 9 Sample depth: 24 Penetration depth 14 & 14 cm Time: 0930
Sampling gear:
Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+T
gravel	(gray) BOTTOM	slight	petroleum	
(sand) C M F	black	moderate	other:	47 32.128
(silt clay)	(brown) TOP	strong		122 19.474
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 12/5 - 16/30
Station: BPb
Start/Stop time:
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, CH, TD, LM

Subsample #: 1 Sample depth: 4' Penetration depth 15, 15 cm Time: 1245
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:	
cobble	drab olive	(none)	H_2S
gravel	(gray)	slight	petroleum
(sand) C M F	(black) bottom	moderate	other:
(silt) clay	(brown) TOP	strong	
organic matter	brown surface	overwhelming	

Comments: T+C
47 31. 134
122 18. ~~338~~ 339
ACCEPT OW TOP

Subsample #: 2 Sample depth: 5' Penetration depth 14, 15 Time: 1320
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	(gray)	slight	petroleum
(sand) C M F	(black) BOTTOM	moderate	other:
(silt) clay	(brown) TOP	strong	
organic matter	brown surface	overwhelming	

Comments: ACCEPT OW TOP
T+C
47 31. 134
122 18. 338

Subsample #: 3 Sample depth: 5' Penetration depth 15, 14 Time: 1355
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:	
cobble	drab olive	(none)	H_2S
gravel	(gray)	slight	petroleum
(sand) C M F	(black) BOTTOM	moderate	other:
(silt) clay	(brown) TOP	strong	
organic matter	brown surface	overwhelming	

Comments:
T+C
ACCEPT OW TOP
47 31, 135
122 18. 337

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/19/04
Station: B8b
Start/Stop time: 1245 – 1630
X:
Sampling Method: VAN VEEN
Y:
Weather: Sunny
Sample ID:
Crew: BG, CH, TD, MR

Subsample #: 4	Sample depth: 5'	Penetration depth	Time: 1430
Sampling gear:		Acceptable sample (circle)	yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 31.135
silt clay	brown	strong		122 18.337
organic matter	brown surface	overwhelming		

Subsample #: 5	Sample depth: 4-5'	Penetration depth 15, 15cm	Time: 1436
Sampling gear:		Acceptable sample (circle)	(yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	TOP
gravel	(gray)	slight	petroleum	ACCEPT ON TOP
(sand) C M (F)	(black) BOTTOM	moderate	other:	47 31.133
(silt) clay	(brown) TOP	strong		122 18.339
organic matter	brown surface	overwhelming		

Subsample #: 6	Sample depth: 4'	Penetration depth	Time: 1506
Sampling gear:		Acceptable sample (circle)	yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 31.135
silt clay	brown	strong		122 18.335
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW | Project no.:

Date: 9/19/04 | Station: BPb

Start/Stop time: 1245 - 1630 | X:

Sampling Method: VAN VEEN | Y:

Weather: SUNNY | Sample ID:

Crew: BG, CH, TD, LM

Subsample #: 7 | Sample depth: 51 | Penetration depth 14½ cm | Time: 1512

Sampling gear: | Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T
gravel	(gray)	slight	petroleum	ACCEPT ON TOP
(sand) C M F	(black) BOTTOM	moderate	other:	47.31.134
(silt) clay	(brown) TOP	strong		122.18.332
organic matter	brown surface	overwhelming		

Subsample #: 8 | Sample depth: 59' | Penetration depth | Time: 1530

Sampling gear: | Acceptable sample (circle): yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 31.133
silt clay	brown	strong		122 18.338
organic matter	brown surface	overwhelming		

Subsample #: 9 | Sample depth: 61 | Penetration depth 14½ cm | Time: 1535

Sampling gear: | Acceptable sample (circle): yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	T+T
gravel	(gray)	slight	petroleum	ACCEPT ON TOP
(sand) C M (F)	(black) BOTTOM	moderate	other:	47 31.133
(silt) clay	(brown) TOP	strong		122 18.338
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/19/04
Station: 38b
Start/Stop time: 1245 - 1630
X:
Sampling Method: VMV VCOW
Y:
Weather: SUNNY
Sample ID:
Crew: DG, CH, TD, HH

Subsample #: 10 Sample depth: 6.3' Penetration depth 14 15cm Time: 1605
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+T
gravel	(gray)	slight	petroleum	
(sand) C M F	(black) bottom	moderate	other:	47.31, 133
(silt) clay	(brown) TOP	strong		122 18, 338
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:

Project no.

Date: 8/11/09

Station: 39b

Start/Stop time: 1355 -

X:

Sampling Method: VanVeen

Y:

Weather: Sunny

Sample ID:

Crew: BC, BG, CH, HM

Subsample #: 1 Sample depth: 21 Penetration depth 4+12cm Time: 1420

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: T+T

Subsample #: 2 Sample depth: Penetration depth 7½+9cm Time: 1440

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown TOP	strong	
organic matter	brown surface	overwhelming	

Comments: T+T

Subsample #: 3 Sample depth: Penetration depth 13cm Time: 1450

Sampling gear:

Acceptable sample (circle) yes no

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: T+T

	LAT		LONG	
Grab #1	47	31.324 N	122	18.420 W
Grab #2	47	31.325	122	18.423 W
Grab #3	47	31.323	122	18.419

Windward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:	LDW	Project no.	
Date:	8/11/04	Station:	B9b
Start/Stop time:		X:	
Sampling Method:		Y:	
Weather:	Sunny	Sample ID:	
Crew:	BC, BG, CH, MB		

Subsample #: 4 Sample depth: ______ Penetration depth ______ Time: ______
Sampling gear:
Acceptable sample (circle) yes **no** (circled)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: ______ Sample depth: ______ Penetration depth ______ Time: ______
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: ______ Sample depth: ______ Penetration depth ______ Time: ______
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

GRAB #4 47 31.324 122 18.419 REJECTED

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/13/04
Station: B9b
Start/Stop time: 950
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID: 2nd SAMPLING ROUND
Crew: CH, BG, BC, HA

Subsample #: 6 | Sample depth: 10-12' | Penetration depth: 16+ 17cm | Time: 950
Sampling gear:
Acceptable sample (circle): yes (no) — "no" circled

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	VERY LOW TIDE - MOVE
gravel	gray	slight	petroleum	SHALLOW OUT TO AVOID
sand C M F	black	moderate	other:	KICKING UP SEDIMENT
silt clay	brown	strong		47.31.326
organic matter	brown surface	overwhelming		122.18 :435 MOVED OUT DUE TO LOW TIDE

Subsample #: 7 | Sample depth: 6-12' | Penetration depth: 13cm | Time: 1010
Sampling gear:
Acceptable sample (circle): (yes) no — "yes" circled

type:	color:	odor:		Comments:
cobble	drab olive	(none) — circled	H_2S	ONLY 1 GRAB USED FOR TISSUE
gravel	(gray) — circled	slight	petroleum	
sand C M F	(black) — circled; BOTTOM	moderate	other:	47 31.327 T
(silt clay) — circled	(brown) — circled; TOP	strong		122 18.430
organic matter	brown surface	overwhelming		

Subsample #: 8 | Sample depth: 10-12' | Penetration depth: TOO much | Time: 1035
Sampling gear:
Acceptable sample (circle): yes (no) — "no" circled

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 31. 326
silt clay	brown	strong		122 18. 438
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW | Project no.:
Date: 8/13/04 | Station: B9b
Start/Stop time: | X:
Sampling Method: | Y:
Weather: Sunny | Sample ID:
Crew: CH, BG, BC, HA

Subsample #: 9 | Sample depth: 10-12' | Penetration depth 15 & 16 cm | Time: 1100
Sampling gear: | Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+C
gravel	(gray)	slight	petroleum	
sand C M F	(black) Bottom	moderate	other:	47. 31. 326
(silt clay)	(brown) Top	strong		122 18. 433
organic matter	brown surface	overwhelming		

Subsample #: 10 | Sample depth: 10-12' | Penetration depth 15 & 18 cm | Time: 1210
Sampling gear: | Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+C
gravel	(gray)	slight	petroleum	
sand C M F	(black) Bottom	moderate	other:	47 31. 326
(silt clay)	(brown) Top	strong		122 18. 428
organic matter	brown surface	overwhelming		

Subsample #: 11 | Sample depth: 10-12' | Penetration depth 15 & 17 cm | Time: 1300
Sampling gear: | Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	T+C
gravel	(gray)	slight	petroleum	
sand C M F	(black) Bottom	moderate	other:	47 31. 326
(silt clay)	(brown) Top	strong		122 18. 427
organic matter	brown surface	overwhelming		

Windward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:	LDW	Project no.	
Date:	8/19/04	Station:	B10b
Start/Stop time:	0835 - 1210	X:	
Sampling Method:		Y:	
Weather:	sunny	Sample ID:	
Crew:	TD, BG, CH, WM		

Subsample #: 1	Sample depth: 11'	Penetration depth 11.11 in	Time: 0835	
Sampling gear:			Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:
cobble	drab olive	(none)	H₂S	C+T
gravel	gray	slight	petroleum	algae layer on top
(sand) (C M) F	black	moderate	other:	47 30.984
silt clay	(brown)	strong		122 18.364
organic matter	brown surface	overwhelming		
Subsample #: 2	Sample depth: 9.5'	Penetration depth 11.11 in	Time: 0905	
Sampling gear:			Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:
cobble	drab olive	(none)	H₂S	C+T
gravel	gray	slight	petroleum	47 30.984
(sand) (C) (M) F	black	moderate	other:	
silt clay	(brown)	strong		122 18.364
organic matter	brown surface	overwhelming		algae on top
Subsample #: 3	Sample depth: 8.2'	Penetration depth 10.11 in	Time: 0935	
Sampling gear:			Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments: algae on top
cobble	drab olive	(none)	H₂S	T+C
gravel	gray	slight	petroleum	
(sand) (C M) F	black	moderate	other:	47 30.984
silt clay	(brown)	strong		122 18.365
organic matter	brown surface	overwhelming		

Windward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:	LDW	Project no.	
Date:	8/19/04	Station:	B10b
Start/Stop time:	835 - 1210	X:	
Sampling Method:	Van Veen	Y:	
Weather:	Sunny	Sample ID:	
Crew:	BG, CH, TD, WH		

Subsample #: 4 **Sample depth:** 7 1/2 **Penetration depth** 11, 11a **Time:** 1005
Sampling gear: **Acceptable sample (circle)** yes no

type:	color:	odor:		Comments:
cobble	drab olive	(none) circled	H2S	T+T
gravel	gray	slight	petroleum	ALGAE ON TOP
(sand C M) circled F	black	moderate	other:	47 30. 984
silt clay	(brown) circled	strong		122 18. 365
organic matter	brown surface	overwhelming		

Subsample #: 5 **Sample depth:** 7 1/2 **Penetration depth** 11, 12a **Time:** 1035
Sampling gear: **Acceptable sample (circle)** (yes) circled no

type:	color:	odor:		Comments:
cobble	drab olive	(none) circled	H2S	T+T
gravel	gray	slight	petroleum	ALGAE ON TOP
(sand C M) circled F	black	moderate	other:	47 30. 984
silt clay	(brown) circled	strong		122 18. 364
organic matter	brown surface	overwhelming		

Subsample #: 6 **Sample depth:** 6" **Penetration depth** **Time:** 1100
Sampling gear: **Acceptable sample (circle)** yes (no) circled

type:	color:	odor:		Comments:
cobble	drab olive	none	H2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 30. 984
silt clay	brown	strong		122 18. 364
organic matter	brown surface	overwhelming		

Windward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name:	LDW	Project no.	
Date:	8/19/04	Station:	B10b
Start/Stop time:	835 - 1270	X:	
Sampling Method:	Van Veen	Y:	
Weather:	Sunny	Sample ID:	
Crew:	BG, CH, TD, NH		

Subsample #: 7	Sample depth: 6'	Penetration depth 10, 11cm	Time: 1105	
Sampling gear:			Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:
cobble	drab olive	(none)	H2S	T+T
gravel	gray	slight	petroleum	above on top
(sand C M F)	black	moderate	other:	47 30. 984
silt clay	(brown)	strong		122 18. 364
organic matter	brown surface	overwhelming		
Subsample #: 8	Sample depth: 4½	Penetration depth 10cm	Time: 1140	
Sampling gear:			Acceptable sample (circle)	yes no
type:	color:	odor:		Comments:
cobble	drab olive	none	H2S	T
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 30. 985
silt clay	brown	strong		122 18. 364
organic matter	brown surface	overwhelming		
Subsample #:	Sample depth:	Penetration depth	Time:	
Sampling gear:			Acceptable sample (circle)	yes no
type:	color:	odor:		Comments:
cobble	drab olive	none	H2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/20/04
Station: BCA-2
Start/Stop time: 1005 - 1140
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, TD, WR

Subsample #: 1 Sample depth: 39' Penetration depth 17 cm Time: 1015
Sampling gear:
Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	C
gravel	(gray)	slight	petroleum	
sand C M F	(black)	moderate	other:	47 32. 747
(silt clay)	brown	strong	SCUMMY SHEEN	122 20. 233
organic matter	brown surface	overwhelming		

Subsample #: 2 Sample depth: 39' Penetration depth 17 cm Time: 1040
Sampling gear:
Acceptable sample (circle): (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	C
gravel	(gray)	slight	petroleum	
sand C M F	(black)	moderate	other:	47 32. 747
(silt clay)	brown	strong		122 20. 233
(organic matter)	brown surface	overwhelming		

Subsample #: 3 Sample depth: 38' Penetration depth Time: 1105
Sampling gear:
Acceptable sample (circle): yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47 32. 747
silt clay	brown	strong		122 20. 232
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/20/04
Station: BCA-2
Start/Stop time: 1005 - 1140
X:
Sampling Method: Van Veen
Y:
Weather: Sunny
Sample ID:
Crew: BG, JD, MM

Subsample #: 4 Sample depth: 30' Penetration depth 12+cm Time: 1115
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	C
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47.32.744
silt clay	brown	strong		122 20 232
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/20/04
Station: BCA-4
Start/Stop time: 1240 - 1400
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, TD, HH

Subsample #: 1 Sample depth: 32' Penetration depth Time: 1240
Sampling gear: Acceptable sample (circle) yes (no)

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: DREDGE IN THE ~~DREDGE~~ AREA DISCHARGE STATION
47 33. 060
122 20. 720

Subsample #: 2 Sample depth: ~~31~~ 31' Penetration depth Time: 1250
Sampling gear: Acceptable sample (circle) yes (no)

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments: MOVED STATION 10 BC OUTSIDE DREDGE AREA
47 33. 652
122 20. 720
BOULDERS

Subsample #: 3 Sample depth: 30' Penetration depth Time: 1255
Sampling gear: Acceptable sample (circle) yes (no)

type:	color:	odor:	
cobble	drab olive	none	H_2S
gravel	gray	slight	petroleum
sand C M F	black	moderate	other:
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Comments:
47 33. 650
122 20 722

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/20/04
Station: BCA-4
Start/Stop time: 1240 - 1400
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, TD, HM

Subsample #: 4 Sample depth: ____ Penetration depth ____ Time: 1305
Sampling gear: Acceptable sample (circle) yes (no)

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	ROCKS
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	47.33.650
silt clay	brown	strong		122 20.724
organic matter	brown surface	overwhelming		

Subsample #: 5 Sample depth: 36' Penetration depth 10cm Time: 1320
Sampling gear: Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	C
gravel	(gray)	(slight)	petroleum	
(sand C M F)	(black) BOTTOM	moderate	other:	47 33. 640
silt clay	(brown) TOP	strong		122 20.723
organic matter	brown surface	overwhelming		

Subsample #: 6 Sample depth: 38' Penetration depth 10cm Time: 1325
Sampling gear: Acceptable sample (circle) yes no

type:	color:	odor:		Comments: STICKY STUFF TO SCOOP
cobble	drab olive	(none)	H_2S	C
gravel	(gray)	(slight)	petroleum	
(sand C M F)	(black) BOTTOM	moderate	other:	47 33. 640
silt clay	(brown) TOP	strong	HARDER CALMOUS	122 20. 723
organic matter	brown surface	overwhelming		

7 38' 10cm 1345
SAND C/M GRAY BOTTOM BROWN TOP ODOR: NONE
47 33.641 C
122 20.722

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/17/04
Station: BCA-5
Start/Stop time: 1700
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, JN, TD, MM

Subsample #: 1	Sample depth: 15'	Penetration depth 13cm	Time: 1700
Sampling gear:		Acceptable sample (circle)	(yes) no

type:	color:	odor:		Comments: 47 32.956, 122 20.329 BOTTLE COMMUNITY STATION ONLY 3 SINGLE REPS
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	(black)	(moderate)	other: OIL SHEEN	
(silt clay)	brown	strong		
(organic matter)	brown surface	overwhelming		

Subsample #: 2	Sample depth: 16'	Penetration depth	Time: 1720
Sampling gear:		Acceptable sample (circle)	yes (no)

type:	color:	odor:		Comments: 47 32.957 122 20.328
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: 3	Sample depth: 16'	Penetration depth 9cm	Time: 1725
Sampling gear:		Acceptable sample (circle)	(yes) no

type:	color:	odor:		Comments: 47 32.957 122 20.327
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	(black) REEF	(moderate)	other: OIL SHEEN	
(silt clay)	(brown) MUD	strong		
(organic matter)	brown surface	overwhelming		

Wind/Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/17/04
Station: BCM-5
Start/Stop time: 1700 ~
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, JN, TO, MA

Subsample #: 4 Sample depth: 18" Penetration depth Mon Time: 1740
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown RW	strong	SHEEN	47.32.957
organic matter	brown surface	overwhelming		122.20.327

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/20/04
Station: BCA-6
Start/Stop time: 0825 – 0940
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID: BOWTIE Community only
Crew: RG, TD, HA

Subsample #: 1	Sample depth: 9.3'	Penetration depth		Time: 0835	
Sampling gear:				Acceptable sample (circle)	yes (no)
type:	color:	odor:		Comments:	
cobble	drab olive	(none)	H_2S		
gravel	(gray)	slight	petroleum		
~~sand~~ C (M F)	black	moderate	other:	47 30, 734	
silt clay	(brown) TOP	strong		122 18. 279	
organic matter	brown surface	overwhelming			
Subsample #: 2	Sample depth: 9'	Penetration depth	14 cm	Time: 0845	
Sampling gear:				Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:	
cobble	drab olive	(none)	H_2S	C	
gravel	(gray)	slight	petroleum		
(sand) C (M F)	black	moderate	other:	47 30. 734	
silt clay	(brown) TOP	strong		122 18. 278	
organic matter	brown surface	overwhelming			
Subsample #: 3	Sample depth: 6.3'	Penetration depth	7 cm	Time: 09	
Sampling gear:				Acceptable sample (circle)	(yes) no
type:	color:	odor:		Comments:	
cobble	drab olive	(none)	H_2S	C	
gravel	(gray)	slight	petroleum		
(sand) C (M F)	black	moderate	other:	47 30. 734	
silt clay	(brown) TOP	strong		122 18. 280	
organic matter	brown surface	overwhelming			

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: LDW
Project no.:
Date: 8/20/04
Station: BCA-6
Start/Stop time: 0825 - 0940
X:
Sampling Method: VAN VEEN
Y:
Weather: SUNNY
Sample ID:
Crew: BG, TD, RM

Subsample #: 4 Sample depth: 6' Penetration depth 11cm Time: 0925
Sampling gear:
Acceptable sample (circle) (yes) no

type:	color:	odor:		Comments:
cobble	drab olive	(none)	H_2S	C
gravel	(gray)	slight	petroleum	
(sand) C (M) F	black	moderate	other:	47 30.734
silt clay	(brown) TUP	strong		122. 4P. 280
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Subsample #: Sample depth: Penetration depth Time:
Sampling gear:
Acceptable sample (circle) yes no

type:	color:	odor:		Comments:
cobble	drab olive	none	H_2S	
gravel	gray	slight	petroleum	
sand C M F	black	moderate	other:	
silt clay	brown	strong		
organic matter	brown surface	overwhelming		

Attachment E-2: Field Notes

H. ANDERSON 8/10/04

CREW: DICK, JOHN, DOUG, HEIDI

OCEANSCAN: TOM

0800 MET AT THE BOAT ON PIER 66

0830 LEFT AFTER TOM CAME ON BOARD. HEADING FOR STATION

0905 ON STATION B1b. STARTED W/ CLEANING THE GRABS

STATION B1b

DEPTH 491 GRAB1

47 34.085 N 122 20 944 W

PIC 1, 2, 3 - WORKING THE GRABS

PIC 3 - 1 GRAB TISSUE SAMPLE

Grab #2

10:10 am

47°34.071 N 122° 20. 944 W

REJECTED GRAB MATERIAL IN THE JAWS

GRAB #3 10:25

47 34 080 122 20 947

H. Anderson

Grab #4 @ 11:11

47° 34.068 N 122° 20. 948 W

Grab #5 @ 11:32

47°34.080 N 122° 20. 936 W

Discarded 1 grab - No sample

Grab #6 @ 11:46

47°34.074 N 122° 20.935 W

Grab #7 @ 12:11

47°34.066 N 122° 20. 942 W

Rejected, 1 jaw didn't close little sed. in 2nd grab

Grab #8 @ 12:22

47° 34.070 122° 20. 943 W

empty - rejected

GRABS 1 - 5 ALL SIMILAR GRAIN SIZE - SANDY, GRAY W/ ORGANIC DEBRIS AND SHELLS/ROCKS

GRAB 6 - SILTY GRAY SAND - COMPACT W/ VERY FEW ORGANICS VERY DENSE, ONE SOME SHELL ~~NO SHELL~~ DARKER GREY

T Grab #9 @ 12:34
4~~3~~7°34.069 122° 20.952
7½ cm deep 1 grab empty
1 grab kept

T Grab #10 @ 12:58
47°34.071 N 122° 20.937 W
1 Bucket 5½ cm once 7½ cm
Grey sand w/ some silt
algae and organic debris

Grab #11 @ 1:16
47°34.074 N 122°20.949 W
Rejected empty
Material caught in jaws
↳ Sea Star + Debris

T Grab #12 @ 1:27
47° 34.072 N 122°20.950 W
1 Rejected - empty
1 Kept

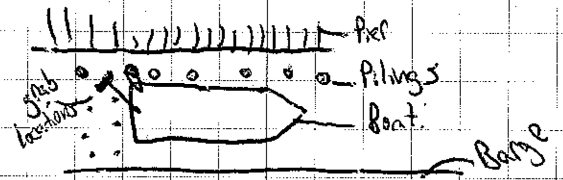
Grab #13 @ 1:45
47°34.078 N 122°20.959 W
[illegible] 8 - 8½ cm

8/10/04 [illegible]

83b arrive @ 2:20 pm 18' deep

Grab #1
47° 33.379 N 122° 20.387 W
b/t Pier + Manson Barge
Tied off to pier on Port side (SW)

T



7.5 cm deep 1 grab empty (material in jaw)
1 kept

Grab #2 @
47° 33.379 N 122° 20.387 W will always be same
T 7.5 cm deep

Grab #3
Same Lat/Long as above
8 cm deep
T 1 grab only after [illegible]

T 1 Grab
9 cm deep

8/10/04 H. Anderson

T+C both OK
10cm & 10cm

1540 LEFT STATION B3b
GOT A TOTAL OF 5 TISSUE
+1 BC sample + sediment
substrate very gravelly
w/ coarse sand and silt
lots of debris and rocks
sheen

H. Anderson 8/17/04

8/17/04

825 LEFT 1ST AVE RAMP
CREW: BG, JN, TD, HA
OVERSIGHT: DEBRA WILLOWS RC
DID REST OF B2b. ENDED
AT 1010. DROPPED DEBRA
OFF AND WENT FOR B3b
1245 LEFT B3b & WENT TO
B4b.
1655 LEFT B4b AND WENT TO
BCA-5

8/18/04

800 meet at 1st ave boat ramp
crew: doreen, Jeff, Bill
Gardiner, Angie, Julie
820 went to B5b
1300 left B5b, had a break
and went to B6b
1700 OFF THE WATER

H. ANDERSON 8/19/04

8/19/04

800 meet at 1st one boat ramp
crew: CH. [illegible], TD, BG, HA
Went to B10b and then RTB

1645 finish and retrieved 1st one

8/20/04

800 left 1 one boat ramp
crew: BG, TD, HA
825 went to BCA-6
940 left station
1005 went to BCA 2
1140 left BCA 2

H. ANDERSON 8/25/04

CLAM SURVEY 8/25/04
CREW: DP, BC, HA

500 MET AT 1ST AVE BOAT RAMP
550 WENT TO BEACH C9 STILL DARK, WAITED
600 STARTED DIGGING @ C9
650 DONE — 21 MYA ARCTARIA

SEDIMENT COARSE TO MEDIUM SAND. BROWN SURFACE GRAY TO BLACK 20-25 cm DOWN SCATTERED ROCKS / GRAVEL

700 Started digging @ C6
730 Done digging - 21 Mya Arcticaria

Sediment coarse to medium sand. BROWN SURFACE GREY TO BLACK AT 25-30 cm DENSE SEDIMENT. AREAS W/ ROCKS AND GRAVEL
750 LEFT BEACH C6

H. Anderson 8/26/04

Beach C7

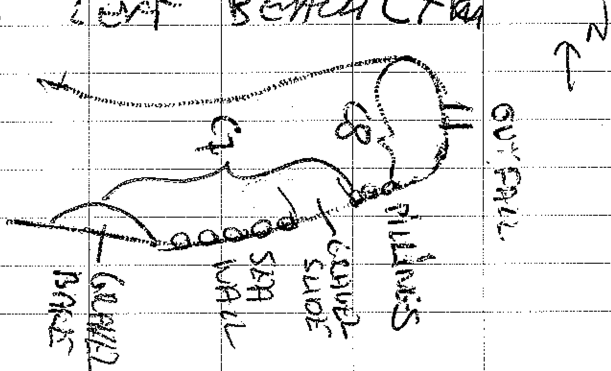
Crew: BC, JN, WA

645 : Started on beach C7

715 : First composite done from southern half of beach. Sediment gravelly w/ coarse to medium sand. Brown surface grey/black 10-15 cm down. 2 people digging 20 clams

735 : Second composite done by BC from eastern half of beach. Sediment gravelly medium to coarse sand. Black below surface, brown surface.

755 : Left beach C7



W. Anderson 8/26/04

Beach C8

845 Tried to get a shovel - very soft

850 Made it. Bob went on the N shore of the outfall. JN and I stayed on the S shore

920 ~~Was~~ Done digging total 23 clams. Sediment: clams were in transition between gravelly sed and very soft silt sediment. In clam holes: gravelly ~~sa~~ medium to coarse sand. Brown surface then black - smelly. Lots of polychaetes

930 Left beach

H. Anderson 8/27/04

Beach 8a

845 Landed on beach
Crew: AK, KG, KL, HA
Went upstream of 1st transect just below gravel slide. Made 10 frames at base of slide approx 1 ft down and 1-2 m between frames

950 Left beach 8a
Sediment: silty sand w/ gray brown surface black just below surface
Shrimp, clam siphons, shells

Beach 5a

1003 Landed
Boat coord:
47 32.361 N
122 19.882 W
Did 10 frames along the edge of the water close to the boat. Sediment coarse to medium sand

H. Anderson 8/27/04

Surface layer gray sand 2-3 cm below reddish colored sediment
Sieved part of the sediment at 5a and then took 2 bowls to 9a while we sieved the rest

1225 Left 9a

Beach 10a
All covered by water
Delayed until Monday

Beach 10a 8/30/04

1145 Shannon & Helen went to the beach. Placed 10 frames in between part two of the 400' transect. Went from lower HW (mid beach) to creek. Sediment from silty to gravel

Y. ANDERSON 8/30/04

WITH MEDIUM SAND. BROWN
SURFACE. GREY (BLACK) BELOW
(5-10 cm).

1425 LEFT BEACH

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BEACH B3a

840 am 5 FT ELEVATION
850 PLACING 5 SAMPLING AREA
1ST TOP OF TRANSECT LAT/LONG
47 33 509 N
122 20 032 W
BOTTOM OF TRANSECT LAT/LONG
47 33.514 N
122 20.015 W

- 2nd transect
50' TO THE N ON BEACH

- 3RD TRANSECT
45' TO THE SOUTH
DUE TO CLAY MOUNDS COULD ONLY
DO 30'

PIC 7 + 8 AT B3a TRANSECTS
LOOKING N & S OF 1ST TRANSECT
12' between sampling locations

Beach B1a

1045am 6.5 ft elevation
1350 pm SPOTTED SIGNING 2nd TRANSECT
1st TOP OF TRANSECT: 47 34.010 N
122 21.030 W

BOTTOM OF TRANSECT: 47 34.013 N
122 21.021 W

2nd Transect: 10m to N on beach
(30')

08-13-04
3rd transect: ~~10m (30')~~ to ~~N~~ South on beach
large pile of rocks + debris (unmovable)
@ 30' S
Adjusted transect to lie on
S side of debris pile
= 40' S of 1st transect

4

Beach 2a   8/13/04 con't

1042 am

1st transect : TOP 47 33 393
122 20 893

5' elevation   16' between sampling locations

~~[illegible]~~

Bottom: 47 33.384
122 20.905

2nd 30' (10m) South of transect

3rd 30' (10m) N of transect
collected sediment + porewater
for this transect

1pm - finished 1st + 2nd transect.
did not collect tissue
from 3rd transect (tide rose too quick!)

3rd coords = 47 33390
(at highest flag) 122 20902

W   5

8/14/04

800 meet at Vashon marina SP, FH, ~~[illegible]~~, HA

830 PICK UP [illegible]

845 ON BEACH B2a DOING THE TISSUE SAMPLING ON LAST TRANSECT

1020 LEFT THE BEACH

1030 ON BEACH B4a

1ST TRANSECT LAT 47 32, 948 ~~TOP~~
LONG 122 20, 495 BOTTOM

1040 SET UP 2 TRANSECTS

1300 LEFT BEACH B2a

2nd TRANSECT 30' W OF TRANSECT
8' between sampling locations
TOP OF 1ST TRANSECT

8/15/04

CREW: CHRIS HUNTER, JOANNA, THAI, [illegible]

930 ON BEACH B4a

TOP LAT 47 92, 949
LONG 122 20. 499

1045 LEFT BEACH

ELEVATION 1ST TRANSECT 4'

B6 9

1055 ON BEACH B69

BOTTOM LAT/LONG

47 32 467 N

122 20 048 W

1105 ELEVATION 9' - 5.5' = 3.5'

TOP LAT/LONG

47 32 444

122 20.055

1315 LEFT BEACH

B 59 8/16/04

0955 ON BEACH

TOP OF TRANSECT CREW AK, TD, MG, LA

47 32.349

122 19.884

ELEVATION AT 1015 am

5 - 2½ FT = 2½ FT

BOTTOM LAT/LONG 8' BETWEEN SAMPLING POINTS

47 32 352

122 19 882

LEFT BEACH AT 1215

B5a 8/16/04

30' 2nd and 3rd transect from 1st transect

BCA-1 8/16/04

8/16/04
1230 On Buoy
Bottom Transect corner
47 33.618 W
122 20.995 W
Dr Transect corner
47 33 617 W
122 21 017 W

Elevations 3' at 1250

Left NE Buoy at 1340

08/17/04 B89

1st transect — 31.5' = length; 2.5' = elevation

TOP: 47 31 683
122 18 644

Bottom: 47 31 680
122 18 642

2nd transect — 30' North of 1st ~~transect~~

1st Transect only collected from first 3 flags ; lowest flags on shoreline were flooded

2nd Transect placed 6 flags, 30' transect over sampled

Moved Benthic community analysis from the 1st transect to the 2nd transect due to flooded flagged areas

2nd Transect a dark black odorous sheen was noticed at the 2nd flag

Dropped 1/2 to a full square of sediment from 2nd transect

8/17/04

BCA3 — 1047 am — 46' — elevation 4.5'

TOP: 47 31 948
122 19 259

Bottom 47 31 954
122 19 251

8/25/04

crew: Angelita Rodriguez
Tad Deshler → WW
Shannon Pierce
Renn Li - King County SAIC

leave 1st Ave S Bridge - 5:30am

Beach 9a -
no beach exposed -
should come back at lowest minus tide - Friday?

Beach 10a - 6:45
1st transect
top: 47 30 683 Length = 59'
122 18 077 top = 3'
bottom: 47 30 684 bottom = 6'
122 18 091

Finish sampling @ 0915

Beach 3a Redo 08-26-04
0656

Top of 1st transect elevation 5'
Lat 47 33 518 N
long 122 20 834 W

Bottom of transect
Lat 47 33 521
Long 122 20 820

Length = 65' (flags every 13')

3rd Transect moved 56'S from primary transect due to clay/rock mounds covering beach area

Primary Transect Sandy/clay brown - beige

2nd Transect 30ft' N of primary transect
Some sand mostly clay, algae mats over sed

3rd Transect Very soft sand/clay, brown/gray
Oily sheen at lower flags

* No Benthic Community samples taken b/c they were collected previously on a different day

8/27/04 Beach 9a (0815am)

Crew: MW, BB, MGL, Maureen (SAIC)

TOP OF TRANSECT 1: 47 30.839
122 18.221

Elevation = 2.5'

Length = 585' (flag every 17')

Bottom of transect 1: 47 30 833
122 18 238

2nd transect: 20' N 47 30 844
(flags every 16') 122 18 223

3rd transect: 30' S 47 30 836
122 18 216

11:35am

Beach 7a 08/30/04

1' elevation, 20 ft long

47° 31.890 N
122° 19.150 W

Heading 48°

2&3 transect 30ft N&S

2 30 ft long

47° 31.894 N
122° 19.155 W

3 16 ft long

47° 31.888 N
122° 19.144 W

H. Anderson 9/24/09

BS4

720 47 32 .353N TOP
122 19. 939W

CHANGING COORDINATES WHEN
STANDING STILL
47 32 360 N
122 19 940 W

ELEVATION 5 FT
DISTANCE 46 FT

2nd TRANSECT 25 FT W
3RD TRANSECT 30 FT E

1120 LEFT BEACH
CREW: AR, TD, DP, BC, HA

DID 30 SQUARES
FOR BIOMASS

47 32 355 N BOTTOM
122 19 940 W

HAWDERSON 9/27/04

CREW: DP, HORTON, BC, HR
BOAT: DAVE HOLLINS

812 LEFT BOAT RAMP AFTER LOADING BOAT
840 FIRST GRAB - HAD TO MOVE SLIGHTLY OFF STATION DUE TO ROCKY BOTTOM

1120	47 34.020		50-52'	(#16)
	122 20.936		5 cm T	
1130	47 34.020			(#17)
	122 20.929		50' T+I	
1150	122 20.936		51	(#18)
	47 34.070			
1215	47 34.069			#19
	122 20.940		52'	NO
1220	47 34.071		50'	#20
	122 20.930			NO
1225	47 34.020		50'	#21
	122 20.938			NO
1230	47 34.020		52'	#22
	122 20.930		T+I	

ENDED WORKING AT STATION
B16 12.50

H. ANDERSON 9/29/04

CREW : BC, TD, HR

BOAT : DAVE MULLINS

P&O ON STATION B4b

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LDW Benthic Intertidal:
Clam Survey
08-25-04 to 08-30-0

4 5/8" x 7" - 48 Numbered Pages

C10 (T117)

date: 08-25-04 Crew: Ber
time: 0545-0930 am Joh
Tide = -0.9' @ 0720 Mar

T1 = 1st tissue composite
collected by John N + Mar

started @ N boundary an
worked south
collected most clams @ N
end
~~pace distance~~:
(approx sample area for T1) } ~300' from

T2 = 2nd tissue composite
collected by Bent B, Joh

Sediment Notes: gravelly up h
softer silt w/
clay content

8/26/04 8:21 am

C2 – South – Kathy + Derek

2 composites taken
22 in one bowl
21 in the other
nice clamming – sandy –
high abundance
focused sampling area (20'-30' diameter)
Coordinates
47° 33.452 N
122° 20.792 W

C2 – North – Mangum
1 composite ~ 30 clams
muckier, much smaller
lateral zone ~ 60' across
10' up/down/below
mid coordinates
47° 33.546 N
122° 20.845 W

Transects
N transect flag 4 of 6
47° 33.525 N
122° 20.829 W
middle transect flag 4 of 6
47° 33.520 N
122° 20.826 W

S transect 4 of 6 flags
47° 33.511 N
122° 20.822 W

C1 Clams KG, DP, MW 9:00–10:00
(tidal spread) –
~ 53 x 50' approx
47° 33.491 N
122° 21.608 W
among pilings

8/27/04

Clam collection effort cont'd

crew Bob Compton
Tad Deshler
Derek Poinsette

Weather overcast, cool (~60°F), No wind

Station C4
150' beach sampled
on northern shore
of triangular beach

western extent 47° 32.950
122° 20.505

eastern extent 47° 32.960
122° 20.491

finished 8:15

22 Mya clams in 40 minutes
mucky sediment
anoxic closer to surface
most clams in mid-high reaches of beaches
some close to steep rip-rap bank

Station C5
sampled open shore
south of pier and
under pier
150' shoreline sampled

southern extent 47° 32.705
122° 20.184

northern extent 47° 32.717
122 20.180

sandy shoreline firm
easy digging 15 minutes
finished at 9:00
28 clams (Mya)

Station C3
sampled 50' stretch
on high intertidal
sandy
shoreline to north very
mucky - no shows

Station C3 (cont)

northern extent
47° 33.586
122° 21.009

southern extent
47° 33.578
122° 21.011
26 clams (Mya)
easy digging 20 minutes
finished first sample
at 10:05

2nd sample collected
immediately south of
first sample over
20' stretch of beach
anoxic layer very close
to surface
sandy, easy digging
23 clams (Mya)
center of sampling area
47° 33.569
122 21.007
finished at 1045

Attachment E-3: Laboratory Benthic Invertebrate Weight Forms

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no. BLG

Date: 8/15/04

Station:

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	1.4			
CRUSTACEANS	10.5			
MOLLUSKS	0.1			
MISC	1.3			
TOTAL	13.3			

Comments:

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 10/14/04

Station: B2G

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	8.2			
CRUSTACEANS	2.9			
MOLLUSKS	7.6			
	18.7			
TOTAL	~~20.7~~			

Comments:

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no:

Date: 8/26/04

Station: B30

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	2.1		POLYCHAETES	0.4
CRUSTACEANS	7.0		CRUSTACEANS	1.4
MOLLUSKS	2.0		MOLLUSKS	0.2
MISC	0.5		MISC	0.2
TOTAL	11.6		TOTAL	2.2

COMBINED TOTAL 13.8 g

Comments:

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: _____ Project no. _____

Date: 8/14/04 Station: B4a

X: _____

Y: _____

Sample ID: _____

_____

1st round 2nd round

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	3.7		POLYCHAETE	1.4
CRUSTACEANS	4.0		CRUSTACEANS	~~5.1~~ 5.3
MOLLUSKS	4.7		MOLLUSKS	2.6
TOTAL	12.4			9.3

GRAND TOTAL 21.7

Comments:	2 TRANSECTS	1 TRANSECT
		1 CRAB ~ COULDN'T SIT STILL FOR PHOTO

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name:

Project no.

Date: 9/24/04

Station: BSa

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	7.5			
CRUSTACEAN	0.3			
MOLLUSKS	3.9			
TOTAL	11.7g			

Comments:

WindWard environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 8/15/04

Station: 364

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
WORM ANNELIDS	11.6			
CRUSTACEANS	1.5			
MOLLUSKS	6.5			
TOTAL	19.6			

Comments:

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 8/30/04

Station: B29

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	7.2			
CRUSTACEANS	6.0			
MOLLUSKS	5.3			
TOTAL	18,5			

Comments:

WindWard environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.:

Date: 8/17/04

Station: B8a

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	2.0		POLYCHAETES	2.1
CRUSTACEANS	4.6		CRUSTACEANS	5.0
MOLLUSKS	0.9		MOLLUSKS	1.2
TOTAL	7.5			8.3

GRAND TOTAL 15.8g

Comments:

COROPHIUM — CAS weight 20.4575g

RLW M. BARBER

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 8/27/04

Station: B9a

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	9.0			
CRUSTACEANS	9.2			
MOLLUSKS	4.3			
MISC	0.0			
TOTAL	22.5			

Comments:

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 8/25/04

Station: B10a

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	4.1		POLYCHAETES	2.5
CRUSTACEANS	~~5.6~~ 4.8		CRUSTACEANS	3.5
TOTAL	~~9.7~~ 8.9			6.0

GRAND TOTAL 14.9g

Comments:

JAR WEIGHT = 18.2371g

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 9/27/04

Station: B16

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	~~8.7~~ 7.4			
CRUSTACEANS	~~2.8~~ 1.6			
MOLLUSKS	2.0			
MISC	1.0			
TOTAL	12.0			

Comments: BASED ON 4 SINGLE VAN VEEN GRABS

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 9/27/04

Station: B26

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	9.5			
CRUSTACEANS	0.2			
MOLLUSKS	2.6			
MISC	2.7			
TOTAL	15.0			

Comments:

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW - RI

Project no. 04-08-06-21

Date: 8/10/04

Station: BSb

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	6.2		POLYCHAETES	6.1
CRUSTACEANS	0.3		CRUSTACEANS	0.4
MOLLUSKS	0.4		MOLLUSKS	0.6
			MISC	3.0
TOTAL	6.9 g			10.1

GRAND TOTAL 17.0 g

Comments:
BASED ON 5 SINGLE 0.1 m² VAN VEEN GRABS
WORMS: POLYCHAETES
2 CRANGON
FEW M. BALTHICA

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 9/28/04 1

Station: B46

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	26.7			
MOLLUSKS	2.5			
MISC	1.6			
TOTAL	30.8			

Comments:

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 9/28/04

Station: BSb

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	17.9			
CRUSTACEANS	0.1			
MOLLUSKS	3.9			
MISC	6.3			
TOTAL	28.2			

Comments:
NEMATODES

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: 2DW

Project no.

Date: 8/18/04

Station: B66

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	11.9			
CRUSTACEAN	0.1			
MOLLUSKS	0.2			
MISC	0.1			
TOTAL	12.3			

Comments:
1 CRAB/COW
FEW M. BALTICA

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 9/15/04

Station: B7b

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)	Invertebrate Group	Estimated weight (ww)
POLYCHAETES	6.2	POLYCHAETES	9.4
CRUSTACEAN	0.2	CRUSTACEANS	0.1
MOLLUSCS	1.6	MOLLUSCS	2.9
		MISC	0.1
TOTAL	8.0		12.5

GRAND TOTAL 20.5

Comments:

~~BASED ON 6 SAMPLE VIAL VIEW~~

1 SHRIMP

LOTS OF POLYCHAETES

1 MOON SNAIL

FEW M. BALTICA

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: _____ Project no. _____

Date: _____ Station: B8 b

X: _____

Y: _____

Sample ID: _____

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	20.5			
CRUSTACEANS	5.0			
MOLLUSKS	6.7			
MISC	0.3			
TOTAL	32.5			

Comments:
A LOT OF POLYCHAETES
COLORATION + GAMMARIDS
M. BALTICA

WindWard environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 8/11/04

Station: B96

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group		Estimated weight (ww)	
POLYCHAETES	0.8+0.4 =	1.2	POL		3.6	= 4.8
CRUSTACEANS	3.8 + 1.6 =	5.4	CRUST		3.9	= 9.3
MOLLUSKS	2.4 + 0.2 =	2.6	MOL		2.0	= 4.6
1						
TOTAL	~~7.0~~		9.2	TOTAL *	9.5	GRAND TOTAL 18.7

Comments: BASED ON 6 SINGLE VAN VEEN GRABS (0.1 m2)

* BASED ON 4 SINGLE VAN VEEN GRABS

Wind Ward environmental LLC

LAB TISSUE FORM

Project Name: LDW

Project no.

Date: 8/19/04

Station: B10b

X:

Y:

Sample ID:

Invertebrate Group	Estimated weight (ww)		Invertebrate Group	Estimated weight (ww)
POLYCHAETES	3.0			
CRUSTACEANS	14.5			
MOLLUSKS	0.5			
TOTAL	18.0 g			

Comments:
MOSTLY OLIGOCHAETES AND AMPHIPODS
FEW M. BALTHICA

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Invert

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C1

Start/Stop time: 0900-1015

X:

Sampling Method: targeted clam collection

Y:

Weather: Sunny

Sample ID: LDW-C1-T

Crew: DP, MW, KG

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	7.9		Mya arenaria	21	5.7
	2	7.5			22	6.6
	3	5.5			23	6.7
	4	7.9			24	6.1
	5	6.0			25	2.9
	6	6.2				
	7	7.6				
	8	6.6				
	9	7.0				
	10	~~6~~ 6.9				
	11	3.2				
	12	2.9				
	13	2.2				
	14	6.7				
	15	7.7				
	16	8.2				
	17	7.4				
	18	2.2				
	19	4.9				
	20	5.6				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Invert

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C2-T1

Start/Stop time: 0645 - 0810

X:

Sampling Method: targeted clam sampling

Y:

Weather: Sunny

Sample ID: LDW-C2-T1

Crew: MW

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	6.5	Mya arenaria	21	4.3
	2	6.7		22	4.3
	3	5.7		23	2.3
	4	6.1		24	3.1
	5	4.5		25	7.4
	6	5.1		26	5.8
	7	5.8		27	6.4
	8	5.5		28	4.6
	9	6.6		29	3.8
	10	7.3		30	3.7
	11	6.2		31	2.9
	12	5.6		32	4.6
	13	5.0			
	14	6.0			
	15	4.8			
	16	5.1			
	17	4.7			
	18	4.9			
	19	4.3			
	20	3.9			

Comments: Collected by MW.
Mucky soil, ↑ clay content

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Invert

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C2

Start/Stop time: 0645-0810

X:

Sampling Method: targeted clam collection

Y:

Weather: sunny

Sample ID: LDW-C2-T2

Crew: DP, KG

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	7.9	Mya arenaria	21	8.7
	2	7.8		22	8.9
	3	8.6		23	7.4
	4	7.5		24	8.9
	5	8.2		25	9.9
	6	7.2		26	7.8
	7	7.6		27	6.7
	8	6.3		28	7.7
	9	8.9		29	7.1
	10	7.9		30	7.6
	11	9.9		31	6.5
	12	7.7		32	3.6
	13	7.4		33	8.9
	14	7.1		34	7.7
	15	6.7		35	7.2
	16	6.5		36	7.9
	17	8.6		37	8.0
	18	9.7		38	7.5
	19	8.4		39	8.6
	20	7.7		40	6.8

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Invert

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C2

Start/Stop time: 0645-0810

X:

Sampling Method: targeted clam collection

Y:

Weather: sunny

Sample ID: LDW-C2-T2

Crew: DP, KG

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	41	7.2				
	42	8.1				
	43	7.2				
	44	8.0				
	45	8.5				
	46	7.6				
	47	7.9				
	48	7.9				
	49	8.4				
	50	7.9				
	51	7.4				
	52	7.9				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-27-04

Station: LDW-C3

Start/Stop time: 1000

X:

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: LDW-C3-T1

Crew: BC, TD, DP

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	7.9		Mya arenaria	21	5.6
	2	8.2			22	5.8
	3	7.3			23	5.3
	4	7.4			24	4.9
	5	8.8			25	4.7
	6	6.8			26	5.1
	7	7.1				
	8	7.1				
	9	6.1				
	10	6.5				
	11	6.0				
	12	8.4				
	13	8.4				
	14	8.3				
	15	9.3				
	16	7.7				
	17	6.2				
	18	6.0				
	19	6.1				
	20	5.1				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-27-04

Station: LDW-C3

Start/Stop time: 1045

X:

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: LDW-C3-T2

Crew: DP, BC, TD

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	7.0	Mya arenaria	21	8.1
	2	7.1		22	7.9
	3	7.5			
	4	6.5			
	5	6.8			
	6	6.2			
	7	6.8			
	8	7.1			
	9	7.0			
	10	6.4			
	11	5.3			
	12	6.2			
	13	7.5			
	14	8.3			
	15	8.3			
	16	8.6			
	17	7.1			
	18	8.4			
	19	5.8			
	20	8.5			

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-01-21

Date: 08-27-04

Station: LDW-CH

Start/Stop time: 0745 - 0810

X:

Sampling Method: targeted clam collection

Y:

Weather: Sunny / overcast

Sample ID: LDW-CH-T

Crew: DP, TD, BC

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	8.3		Mya arenaria	21	6.7
	2	7.3			22	6.4
	3	7.9				
	4	9.1				
	5	8.3				
	6	8.2				
	7	7.1				
	8	7.8				
	9	8.0				
	10	7.6				
	11	7.1				
	12	8.9				
	13	8.3				
	14	7.7				
	15	7.5				
	16	7.2				
	17	7.4				
	18	4.7				
	19	5.1				
	20	5.7				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-27-04

Station: LDW-C5

Start/Stop time: 0830-0900

X:

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: LDW-C5-T

Crew: BC, DP, TD

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	9.0	Mya arenaria	21	4.3
	2	7.5		22	9.0
	3	7.9		23	8.7
	4	8.1		24	8.1
	5	8.7		25	8.1
	6	8.1		26	8.0
	7	7.5		27	6.9
	8	7.6		28	7.0
	9	8.2			
	10	8.4			
	11	7.8			
	12	8.2			
	13	7.5			
	14	8.2			
	15	7.4			
	16	6.8			
	17	6.7			
	18	6.3			
	19	4.7			
	20	5.9			

Comments:

WindWard environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic / Clam

Project no.: 04-08-06-21

Date: 08-25-04

Station: C6

Start/Stop time: 0545 - 0930

X:

Sampling Method: targeted clam sampling

Y:

Weather: overcast

Sample ID: LDW-C6-T

Crew: HA, BC, DP

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	8.9		Mya ↓	21	8.1
	2	8.6			22	8.0
	3	7.8				
	4	8.8				
	5	8.3				
	6	8.2				
	7	7.4				
	8	9.2				
	9	6.9				
	10	6.0				
	11	5.7				
	12	4.8				
	13	4.9				
	14	5.4				
	15	5.9				
	16	7.0				
	17	8.3				
	18	8.6				
	19	9.5				
	20	7.3				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no. 04-08-06-21

Date: 08-26-04

Station: LDW-C7

Start/Stop time: 0725

X:

Sampling Method: targeted clam collection

Y:

Weather: Sunny

Sample ID: LDW-C7-T1

Crew: HA

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Macoma nasuta	1	2.3				
↓	2	2.3				
	3	2.2				
Mya arenaria	4	7.5				
	5	6.2				
	6	7.1				
	7	7.8				
	8	7.3				
	9	5.7				
	10	7.5				
	11	8.3				
	12	6.4				
	13	5.1				
	14	6.6				
	15	8.1				
	16	8.9				
	17	7.2				
	18	9.0				
	19	8.7				
	20	7.8				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no. 04-08-06-21

Date: 08-26-04

Station: LDW-C7

Start/Stop time: 0745

X:

Sampling Method: targeted clam collection

Y:

Weather:

Sample ID: LDW-C7-T2

Crew: BC, JN, HA

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	7.2	Mya arenaria ✓	21	5.8
	2	7.3		22	6.7
	3	7.8			
	4	7.5			
	5	5.6			
	6	7.2			
	7	6.8			
	8	8.2			
	9	7.4			
	10	4.9			
	11	3.6			
	12	5.1			
	13	7.5			
	14	6.8			
	15	8.0			
	16	8.1			
	17	8.1			
	18	7.5			
	19	5.9			
	20	6.2			

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C8

Start/Stop time: 0945

X:

Sampling Method: targeted clam collection

Y:

Weather: Sunny

Sample ID: LDW-C8-T

Crew: BC, HA, JN

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	10.0		Mya arenaria	21	3.8
	2	8.5			22	4.7
	3	7.0			23	3.8
	4	7.0				
	5	7.7				
	6	7.1				
	7	5.4				
	8	6.4				
	9	7.8				
	10	5.8				
	11	8.4				
	12	7.8				
	13	8.0				
	14	7.7				
	15	7.4				
	16	3.9				
	17	6.4				
	18	5.0				
	19	5.4				
	20	6.4				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic / Clam

Project no.: 04-08-06-21

Date: 08-25-04

Station: C9

Start/Stop time: 0545 - 0930

X:

Sampling Method: targeted clam collection

Y:

Weather: Overcast

Sample ID: LDW-C9-T

Crew: HA, BC, DMP

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	8.1		Mya arenaria	21	3.7
	2	9.3		↓	22	8.0
	3	8.0				
	4	7.1				
	5	7.9				
	6	8.0				
	7	6.9				
	8	7.5				
	9	8.9				
	10	9.0				
	11	8.5				
	12	9.0				
	13	8.4				
	14	6.3				
	15	8.5				
	16	9.3				
	17	9.1				
	18	8.0				
	19	8.0				
↓	20	5.6				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Intertidal

Project no.: 04-08-06-21

Date: 08-25-04

Station: C10

Start/Stop time: 0545 / 0930

X:

Sampling Method: targeted clam sampling

Y:

Weather: overcast, no rain

Sample ID: LDW-C10-T1

Crew: MW, JN, ~~BB~~ BB

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	8.7	Mya arenaria	21	8.7
↓	2	7.5			
	3	7.9			
	4	7.5			
	5	8.5			
	6	7.0			
	7	6.2			
	8	7.7			
	9	5.3			
	10	2.9			
Macoma nasuta	11	2.2			
↓	12	2.2			
Mya arenaria	13	6.2			
	14	6.4			
	15	7.2			
	16	6.7			
	17	8.3			
	18	6.8			
	19	6.7			
	20	8.3			

Comments:

Sediment = gravelly @ higher elevations, clay content increased near water (low tide), soft, easy to dig

This composite collected at northern end of T1T, many clams or shows found near debris (logs, rocks, pilings, etc).

Wind/Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Intertidal

Project no.: 04-08-06-21

Date: 08-25-04

Station: C10

Start/Stop time: 0545 / 0930

X:

Sampling Method: targeted clam sampling

Y:

Weather: overcast, no rain

Sample ID: LDW-C10-T2

Crew: MW, JN, BB

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	6.2				
↓	2	6.2				
	3	7.0				
	4	8.6				
	5	8.5				
	6	6.8				
	7	6.2				
	8	7.8				
	9	6.7				
↓	10	6.8				
Macoma nasuta	11	2.0				
↓	12	2.4				
Mya arenaria	13	2.6				
↓	14	6.7				
	15	7.7				
	16	7.6				
	17	7.6				
	18	8.1				
↓	19	7.5				

Comments:

Sediment = Same as T1

This composite collected from northern end to approximately the southern bound of T117 property (fence line). Tide came in and shows were not as apparent as they were earlier in am.

Attachment E-4: Laboratory Clam Length Forms

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Invert

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C1

Start/Stop time: 0900-1015

X:

Sampling Method: targeted clam collection

Y:

Weather: Sunny

Sample ID: LDW-C1-T

Crew: DP, MW, KG

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	7.9	Mya arenaria	21	5.7
	2	7.5		22	6.6
	3	5.5		23	6.7
	4	7.9		24	6.1
	5	6.0		25	2.9
	6	6.2			
	7	7.6			
	8	6.6			
	9	7.0			
	10	* 6.9			
	11	3.2			
	12	2.9			
	13	2.2			
	14	6.7			
	15	7.7			
	16	8.2			
	17	7.4			
	18	2.2			
	19	4.9			
	20	5.6			

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Invert

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C2-T1

Start/Stop time: 0645 - 0810

X:

Sampling Method: targeted clam sampling

Y:

Weather: Sunny

Sample ID: LDW-C2-T1

Crew: MW

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	6.5	Mya arenaria	21	4.3
	2	6.7		22	4.3
	3	5.7		23	2.3
	4	6.1		24	3.1
	5	4.5		25	7.4
	6	5.1		26	5.8
	7	5.8		27	6.4
	8	5.5		28	4.6
	9	6.6		29	3.8
	10	7.3		30	3.7
	11	6.2		31	2.9
	12	5.6		32	4.6
	13	5.0			
	14	6.0			
	15	4.8			
	16	5.1			
	17	4.7			
	18	4.9			
	19	4.3			
	20	3.9			

Comments: Collected by MW.
Mucky soil, ↑ clay content

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Invert

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C2

Start/Stop time: 0645-0810

X:

Sampling Method: targeted clam collection

Y:

Weather: sunny

Sample ID: LDW-C2-T2

Crew: DP, KG

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	7.9	Mya arenaria	21	8.7
	2	7.8		22	8.9
	3	8.6		23	7.4
	4	7.5		24	8.9
	5	8.2		25	9.9
	6	7.2		26	7.8
	7	7.6		27	6.7
	8	6.3		28	7.7
	9	8.9		29	7.1
	10	7.9		30	7.6
	11	9.9		31	6.5
	12	7.7		32	5.6
	13	7.4		33	8.9
	14	7.1		34	7.7
	15	6.7		35	7.2
	16	6.5		36	7.9
	17	5.6		37	8.0
	18	9.7		38	7.5
	19	8.4		39	8.6
	20	7.7		40	6.8

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Invert

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C2

Start/Stop time: 0645-0810

X:

Sampling Method: targeted clam collection

Y:

Weather: sunny

Sample ID: LDW-C2-T2

Crew: DP, KG

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	41	7.2				
	42	8.1				
	43	7.2				
	44	8.0				
	45	8.5				
	46	7.6				
	47	7.9				
	48	7.9				
	49	8.4				
	50	7.9				
	51	7.4				
	52	7.9				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-27-04

Station: LDW-C3

Start/Stop time: 1000

X:

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: LDW-C3-T1

Crew: BC, TD, DP

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	7.9	Mya arenaria	21	5.6
	2	8.2		22	5.8
	3	7.3		23	5.3
	4	7.4		24	4.9
	5	8.8		25	4.7
	6	6.8		26	5.1
	7	7.1			
	8	7.1			
	9	6.1			
	10	6.5			
	11	6.0			
	12	8.4			
	13	8.4			
	14	8.3			
	15	9.3			
	16	7.7			
	17	6.2			
	18	6.0			
	19	6.1			
	20	5.1			

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-27-04

Station: LDW-C3

Start/Stop time: 1045

X:

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: LDW-C3-T2

Crew: DP, BG, TD

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	7.0		Mya arenaria	21	8.1
	2	7.1			22	7.9
	3	7.5				
	4	8.5				
	5	6.8				
	6	6.2				
	7	6.8				
	8	7.1				
	9	7.0				
	10	6.4				
	11	5.3				
	12	6.2				
	13	7.5				
	14	8.3				
	15	8.3				
	16	8.6				
	17	7.1				
	18	8.4				
	19	5.8				
	20	8.5				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-27-04

Station: LDW-C4

Start/Stop time: 0745 - 0810

X:

Sampling Method: targeted clam collection

Y:

Weather: Sunny / overcast

Sample ID: LDW-C4-T

Crew: DP, TD, BC

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	8.3		Mya arenaria	21	6.7
	2	7.3			22	6.4
	3	7.9				
	4	9.1				
	5	8.3				
	6	8.2				
	7	7.1				
	8	7.8				
	9	8.0				
	10	2.6				
	11	7.1				
	12	8.9				
	13	8.3				
	14	7.7				
	15	7.5				
	16	7.2				
	17	7.4				
	18	4.7				
	19	5.1				
	20	5.7				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-27-04

Station: LDW-C5

Start/Stop time: 0830-0900

X:

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: LDW-C5-T

Crew: BC, DP, TD

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
Mya arenaria	1	9.0	Mya arenaria	21	4.3
	2	7.5		22	9.0
	3	7.9		23	8.7
	4	8.1		24	8.1
	5	8.7		25	8.1
	6	8.1		26	8.0
	7	7.5		27	6.9
	8	7.6		28	7.0
	9	8.2			
	10	8.4			
	11	7.8			
	12	8.2			
	13	7.5			
	14	8.2			
	15	7.4			
	16	6.8			
	17	6.7			
	18	6.3			
	19	4.7			
	20	5.9			

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic / Clam

Project no.: 04-08-06-21

Date: 08-25-04

Station: C6

Start/Stop time: 0545 - 0930

X:

Sampling Method: targeted clam sampling

Y:

Weather: overcast

Sample ID: LDW-C6-T

Crew: HA, BC, DP

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	8.9		Mya ↓	21	8.1
	2	8.6			22	8.0
	3	7.8				
	4	8.8				
	5	8.3				
	6	8.2				
	7	7.4				
	8	9.2				
	9	6.9				
	10	6.0				
	11	5.7				
	12	4.8				
	13	4.9				
	14	5.4				
	15	5.9				
	16	7.0				
	17	8.3				
	18	8.6				
	19	9.5				
	20	7.3				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C7

Start/Stop time: 0725

X:

Sampling Method: targeted clam collection

Y:

Weather: Sunny

Sample ID: LDW-C7-T1

Crew: HA

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Macoma nasuta	1	2.3				
↓	2	2.3				
	3	2.2				
Mya arenaria	4	7.5				
	5	6.2				
	6	7.1				
	7	7.8				
	8	7.3				
	9	5.7				
	10	7.5				
	11	8.3				
	12	6.4				
	13	5.1				
	14	6.6				
	15	8.1				
	16	8.9				
	17	7.2				
	18	9.0				
	19	8.7				
	20	7.8				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C7

Start/Stop time: 0745

X:

Sampling Method: targeted clam collection

Y:

Weather:

Sample ID: LDW-C7-T2

Crew: BC, JN, HA

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	7.2		Mya arenaria ✓	21	5.8
	2	7.3			22	6.7
	3	7.8				
	4	7.5				
	5	5.6				
	6	7.2				
	7	6.8				
	8	8.2				
	9	7.4				
	10	4.9				
	11	3.6				
	12	5.1				
	13	7.5				
	14	6.8				
	15	8.0				
	16	8.1				
	17	8.1				
	18	7.5				
	19	5.9				
	20	6.2				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic

Project no.: 04-08-06-21

Date: 08-26-04

Station: LDW-C8

Start/Stop time: 0945

X:

Sampling Method: targeted clam collection

Y:

Weather: Sunny

Sample ID: LDW-C8-T

Crew: BC, HA, JN

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	10.0		Mya arenaria	21	3.8
	2	8.5			22	4.7
	3	7.0			23	3.8
	4	7.0				
	5	7.7				
	6	7.1				
	7	5.4				
	8	6.4				
	9	7.8				
	10	5.8				
	11	8.4				
	12	7.8				
	13	8.0				
	14	7.7				
	15	7.4				
	16	3.9				
	17	6.4				
	18	5.0				
	19	5.4				
	20	6.4				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic / Clam

Project no.: 04-08-06-21

Date: 08-25-04

Station: C9

Start/Stop time: 0545 - 0930

X:

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: LDW-C9-T

Crew: HA, BC, DMP

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	8.1		Mya arenaria	21	3.7
	2	9.3		↓	22	8.0
	3	8.0				
	4	7.1				
	5	7.9				
	6	8.0				
	7	6.9				
	8	7.5				
	9	8.9				
	10	9.0				
	11	8.5				
	12	9.0				
	13	8.4				
	14	6.3				
	15	8.5				
	16	9.3				
	17	9.1				
	18	8.0				
	19	8.0				
↓	20	5.6				

Comments:

Wind/Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Intertidal

Project no.: 04-08-06-21

Date: 08-25-07

Station: C10

Start/Stop time: 0545/0930

X:

Sampling Method: targeted clam sampling

Y:

Weather: overcast, no rain

Sample ID: LDW-C10-TI

Crew: MW, JN, ~~BB~~ BB

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	8.7		Mya arenaria	21	8.7
	2	7.5				
	3	7.9				
	4	7.5				
	5	8.5				
	6	7.0				
	7	6.2				
	8	7.7				
	9	5.3				
	10	2.9				
Macoma nasuta	11	2.2				
	12	2.2				
Mya arenaria	13	6.2				
	14	6.4				
	15	7.2				
	16	6.7				
	17	8.3				
	18	6.8				
	19	6.7				
	20	8.3				

Comments:

Sediment = gravelly @ higher elevations, clay content increased near water (low tide), soft, easy to dig

This composite collected at northern end of TIT, many clams or shows found near debris (logs, rocks, pilings, etc).

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: LDW Benthic Intertidal

Project no.: 04-08-06-21

Date: 08-25-04

Station: C10

Start/Stop time: 0545 / 0930

X:

Sampling Method: targeted clam sampling

Y:

Weather: overcast, no rain

Sample ID: LDW-C10-T2

Crew: MW, JN, BB

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
Mya arenaria	1	6.2				
↓	2	6.2				
	3	7.0				
	4	8.6				
	5	8.5				
	6	6.8				
	7	6.2				
	8	7.8				
	9	6.7				
↓	10	6.8				
Macoma nasuta	11	2.0				
↓	12	2.4				
Mya arenaria	13	2.6				
↓	14	6.7				
	15	7.7				
	16	7.6				
	17	7.6				
	18	8.1				
↓	19	7.5				

Comments:

Sediment = Same as T1

This composite collected from northern end to approximately the southern bound of T117 property (fence line). Tide came in and shows were not as apparent as they were earlier in am.

Attachment E-5: Background Clam Collection Field Notes

9/23/04 Seahorst Park: Clam Reference Sampling (Photo #106-0647)

Crew: Tad, Sarah, Linda, Bob, Derek

arrive @ site: 6:40 am: cloudy, foggy, warm

Low tide + sunrise @ 7:00 am

Clam Sample 1: sampled by dmp (Photo #106-0649)

finished @ 8:00 am

47° 28.517 N
122° 21.978 W

all collected w/in 5' of this point

~25 small clams, cobble/sandy substrate, near south most bench
lots of shells on surface, many w/ boreholes, snails

Clam samples 2-5: sampled by RAC, SS, TD (EPA split will come from one of these)

finished @ 8:10 am (Photo #106-0648)

47° 28.605 N
122° 21.897 W

all collected w/in 20' of this point

larger clams, sandy substrate, just south of picnic shelter
↳ butter + horse?

Clam sample 6: collected by Linda (same as photo above)

finished @ 8:10 am

47° 28.625 N
122° 21.897 W

all w/in 10' of this point

same substrate as above, near eelgrass beds, near picnic shelter
↳ butter + horse?

Clam Background Collection
Windward Environmental
Low Tide = 0658
9/23/04

CREW= Angie, Thai Do, Manyann Welsch, Rodriguez Shannon Pierce, Kathy Godtfredsen

Fay Bainbridge State Park

Composite	Crew	Coords	Approximate area	# clams
1	Manyann	47 42 309 N 122 30 433 W	50' line to water	15 (4 lg)
2	Angie	47 42 282 N 122 30 433 W	10' line	21 (~5 lg)
3	Thai	47 42 275 122 30 420	20' x 50' (to water)	11 (5 lg)
4	Shannon	47 42 262 N 122 30 408 W	20' x 20'	11 (9 lg)
5	Kathy/Elsa	47 42 249 N 122 30 395 W	40' x 40'	12 (8 large)
6	Thai	47 42 234 N 122 30 383 W	20'	13 (5 lg)
7	Angie	47 42 212 122 30 373	20'	9 lg (all large)

Little composite

Clam Background Collection
Windward Environmental

Low tide = 0803
9/24/04

FAM BAINBRIDGE STATE PARK
crew: Maryann Welsch, Shannon Pierce

Composite	9/23 # clams	9/24 #clms	9/24 crew	
✓ 1	19		SP+MW	
2	17	3	SP+MW	same coords; found holes from yesterday (9/23/04)
3	13	7	SP+MW	"
4	14	7	SP	"
5	12	8	MW	"
✓ 6	21		MW	

Attachment E-6: Background Clam Collection Forms

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background Clam Sampling
Project no.: 04-08-06-22
Date: 9/23/04
Station: SP
Start/Stop time: 0700
X: field notes
Sampling Method: targeted clam collection
Y:
Weather: overcast
Sample ID: SP-T1
Crew: DMP

Clam species	#	Shell length (~~cm~~) mm	Clam species	#	Shell length (~~cm~~) mm
C. nuttalii	1	36	T. capax	21	29
↓	2	44	↓	22	31
	3	32		23	31
T. capax	4	39	↓	24	27
	5	29	Prototheca staminea	25	25
	6	30	↓	26	27
	7	33			
	8	34			
	9	37			
	10	29			
	11	26			
	12	30			
	13	31			
	14	36			
	15	36			
	16	31			
	17	30			
	18	30			
	19	31			
↓	20	38			

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background Clam Sampling

Project no.: 04-08-06-22

Date: 9/23/04

Station: SP

Start/Stop time: 0700

X: field notes

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: SP-T2

Crew: BC

Clam species	#	Shell length (cm) mm	Clam species	#	Shell length (cm) mm
M. Secta	1	68	M. Secta	21	65
	2	62		22	63
	3	68		23	70
	4	60		24	69
	5	63			
	6	63			
	7	63			
	8	67			
	9	66			
	10	64			
	11	49			
	12	47			
	13	49			
	14	39			
	15	47			
	16	53			
	17	62			
	18	66			
	19	70			
	20	70			

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Clam Background

Project no. 04-08-06-22

Date: 9/23/04

Station: SP

Start/Stop time: 7am

X: field notes

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: SP-T3

Crew:

Clam species	#	Shell length (cm) mm		Clam species	#	Shell length (cm) mm
M. secta	1	66				
	2	57				
	3	63				
	4	61				
	5	63				
	6	66				
	7	64				
	8	69				
	9	62				
	10	66				
	11	59				
	12	52				
	13	62				
	14	63				
	15	64				
	16	53				
	17	61				
	18	69				
	19	50				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background Clam Sampling

Project no.: 04-08-01e-22

Date: 9/23/04

Station: SP Seahurst Park

Start/Stop time: 0700

X: field notes

Y:

Sampling Method: targeted clam collection

Weather: overcast

Sample ID: SP-T4

Crew: TD

Clam species	#	Shell length (~~cm~~) mm	Clam species	#	Shell length (~~cm~~) mm
Macoma secta	1	67	M. secta	21	61
	2	67			
	3	59			
	4	63			
	5	68			
	6	50			
	7	65			
	8	58			
	9	50			
	10	63			
	11	59			
	12	39			
	13	53			
	14	61			
	15	61			
	16	64			
	17	65			
	18	62			
	19	66			
	20	63			

Comments:

May be macoma indentata -> need to check out inside of shells.

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Clam Background

Project no. 04-08-06-22

Date: 9/23/04

Station: SP

Start/Stop time: 7am

X:

Sampling Method: targeted clam collection

Y: field notes

Weather: overcast

Sample ID: SP-T5

Crew: STS

Clam species	#	Shell length (cm) mm		Clam species	#	Shell length (cm) mm
M. secta	1	69				
	2	67				
	3	68				
	4	70				
	5	62				
	6	66				
	7	66				
	8	68				
	9	53				
	10	65				
	11	59				
	12	50				
	13	56				
	14	60				
	15	71				
	16	71				
	17	74				
	18	45				
	19	51				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: clam background
Project no. 04-08.06.22
Date: 09.23.04
Station: SP
Start/Stop time:
X: field notes
Y:
Sampling Method: targeted clam collection
Weather: overcast
Sample ID: SP-T6
Crew: Linda

Clam species	#	Shell length (~~cm~~) mm		Clam species	#	Shell length (~~cm~~) mm
Macoma secta	1	64				
	2	61				
	3	65				
	4	52				
	5	60				
	6	55				
	7	54				
	8	65				
	9	60				
	10	55				
	11	52				
	12	52				
	13	50				
	14	50				
	15	45				
	16	45				
	17	43				
	18	41				
↓	19	34				
M. nasuta	20	32				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background Clam collection

Project no.: 04-08-06-22

Date: 9.23.04

Station: BI

Start/Stop time: 7am

X: field notes

Y:

Sampling Method: targeted clam sampling

Weather: foggy

Sample ID: BI-T1

Crew: MW

Clam species	#	Shell length ~~(cm)~~ (MM)		Clam species	#	Shell length ~~(cm)~~ (MM)
Saxidomus gigantea	1	~~6~~79				
Clinocardium nuttalii	2	75				
↓	3	60				
↓	4	69				
S. gigantcus	5	77				
↓	6	81				
C. nuttalii	7	64				
↓	8	56				
Macoma nasuta	9	65				
↓	10	64				
↓	11	72				
↓	12	52				
↓	13	63				
↓	14	52				
↓	15	55				
↓	16	50				
↓	17	53				
↓	18	38				
↓	19	55				

Comments: Dense sediment, dark gray sand
Many shows present in exposed intertidal

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background Clam Sampling

Project no. 04-08-06-22

Date: 9.23.04

Station: BI-

Start/Stop time: 7 Am

X:

Sampling Method: Targeted clam sampling

Y: field notes

Weather: Foggy

Sample ID: BI-T2

Crew: AR

Clam species	#	Shell length (~~cm~~) (mm)		Clam species	#	Shell length (cm)
Saxidomus giganteus	1	80				
Clinocardium nuttalli	X 2	27				
Macoma nasuta	X 3	71				
	2 4	52				
	3 5	36				
	4 6	58				
	5 7	42				
	6 8	48				
	7 9	40				
	8 10	53				
	9 11	67				
	10 12	34				
	11 13	68				
	12 14	49				
	13 15	27				
	14 16	70				
S. giganteus	2 17	36				
M. nasuta	15 18	53				
↓	16 19	49				
↓	17 20	42				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background Clam Sampling
Project no.: 04-08-06-22
Date: 9.23.04
Station: BI - Bainbridge
Start/Stop time: 7AM
X:
Sampling Method: Targeted clam sampling
Y:
Weather: Foggy
Sample ID: BI-T3
Crew: THAN DG

Clam species	#	Shell length (cm) mm		Clam species	#	Shell length (cm)
C. nuttalii	1	66				
	2	31				
	3	35				
	4	26				
M. nasuta	X 5	45				
	2 6	34				
	3 7	43				
	4 8	46				
	5 9	69				
Tresus capax	X 10	63				
	2 11	22				
C. nuttalii	5 12	78				
Tresus capax	3 13	101				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background Clam Sampling
Project no. 04-DB-06-22
Date: 9.23.04
Station: BAINBRIDGE ISLAND
Start/Stop time: 7AM
X:
Sampling Method: Targeted clam sampling
Y:
Weather: Foggy
Sample ID: BI-T4
Crew: SP

Clam species	#	Shell length (cm)		Clam species	#	Shell length (cm)
C. nuttalii	1	67				
↓	2	71				
↓	3	78				
Protothaca staminea	X4	52				
↓	Z5	45				
↓	X6	20				
S. giganteus	X7	82				
↓	Z8	61				
M. nasuta	X9	54				
↓	Z10	51				
↓	X11	41				
↓	X12	23				
T. capax	X13	104				
↓	Z14	104				

Comments: Protothaca staminea identified by its sunken ligament & no pattern

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background clam collection
Project no.: 04-08-06-22
Date: 9/23/04
Station: BI
Start/Stop time: 7am
X:
Sampling Method: targeted clam sampling
Y:
Weather: Foggy
Sample ID: BI · T5
Crew: KG

Clam species	#	Shell length (~~cm~~) mm		Clam species	#	Shell length (cm)
S. gigenteus	1	89				
↓	2	96				
M. nasuta	3	55				
↓	4	44				
	5	47				
	6	30				
↓	7	35				
S gigenteus	8	95				
C. nuttalli	9	61				
↓	10	78				
	11	90				
	12	74				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Background Clam Sampling
Project no. 04-08-06-22
Date: 9/23/04
Station: BI (Bainbridge)
Start/Stop time: 0700
X:
Sampling Method: targeted clam collection
Y:
Weather: Foggy
Sample ID: BI-T6
Crew: TD/AR/KG/SP/MW

Clam species	#	Shell length (cm)	Clam species	#	Shell length (cm)
C. nuttalii	1	87	Tresus capax	21	97
	2	79			
	3	80			
	4	65			
	5	86			
	6	83			
Tresus capax	7	89			
Tresus capax	8	70			
S. gigantea	9	75			
	10	47			
M. nasuta	11	48			
	12	56			
	13	59			
	14	56			
	15	44			
	16	64			
C. nuttalii	17	~~33~~ 89		—	
S. gigantea	18	102			
Tresus capax	19	160			
Tresus capax	20	119			

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Clam background
Project no.: 04-08-06-22
Date: 9/24/04
Station: BI
Start/Stop time: 0700 - 0800
X:
Sampling Method: targeted clam collection
Y:
Weather: overcast
Sample ID: BI-T2
Crew: SP

Clam species	#	Shell length (~~cm~~) mm		Clam species	#	Shell length (cm)
C. nuttalli	1	43				
↓	2	30				
M. nasuta	3	56				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Clam background
Project no.: 04-08-06-22
Date: 9/24/04
Station: BI
Start/Stop time: 0700 - 0800
X:
Sampling Method: targeted clam collection
Y:
Weather: Overcast
Sample ID: BI-T3
Crew: SP/MW

Clam species	#	Shell length (cm) mm		Clam species	#	Shell length (cm)
C. nuttalii	1	90				
↓	2	89				
↓	3	79				
↓	4	89				
S. gigantaus	5	94				
N. nasuta	6	69				
↓	7	61				
↓	8	47				

Comments:

Wind Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Clam Background

Project no. 04-08-06-22

Date: 9/24/04

Station: B1

Start/Stop time: 0700 - 0800

X:

Sampling Method: targeted clam collection

Y:

Weather: overcast

Sample ID: B1-T4

Crew: SP

Clam species	#	Shell length ~~(cm)~~ mm		Clam species	#	Shell length (cm)
Tresus capax	1	138				
↓	2	38				
S. gigantea	3	94				
MY Nasuta	4	37				
↓	5	52				
C. nuttalli (cockles)	6	86				
↓	7	68				

Comments:

Wind/Ward environmental LLC

CLAM COLLECTION FORM

Project Name: Clam background
Project no. 04-08-06-22
Date: 9/24/04
Station: BI
Start/Stop time: 0700-0800
X:
Sampling Method: targeted clam collection
Y:
Weather: overcast
Sample ID: BI-T5
Crew: MW | SP

Clam species	#	Shell length ~~(cm)~~ (mm)		Clam species	#	Shell length (cm)
Butter (S. gigantea)	1	94				
↓	2	87				
	3	79				
Tresus capax	4	100				
↓	5	58				
C. nuttalii	6	81				
↓	7	79				
	8	78				

Comments:

Attachment E-7: Corrective Action Forms

Wind Ward environmental LLC

CORRECTIVE ACTION FORM

Project Name and Number: LDW 04-08-06-21

Sample Dates Involved: 8/30/04 THRU 9/10/04 AND 9/23-24/04

Measurement Parameter: SAMPLING TIME OF CLAMS AT BACKGROUND AREAS

Acceptable Data Range: THE QAPP STATES THAT SAMPLING OF CLAMS AT THE BACKGROUND LOCATIONS SHOULD BE DONE IN THE PERIOD OF 8/30 - 9/10/04

Problem Areas Requiring Corrective Action:

Measures Required to Correct Problem: SAMPLING WAS DELAYED TO 9/23-24/04, TO TAKE ADVANTAGE OF THE LOWEST TIDES AVAILABLE

Means of Detecting Problems and Verifying Correction:

Initiators Name: Debra Goodstein Date: 9/24/04

Project Officer: Date:

QA Officer: Jad Dreher Date: 10/4/04

Wind Ward environmental LLC

CORRECTIVE ACTION FORM

Project Name and Number: LDW 04-08-06-21

Sample Dates Involved: 8/25/04

Measurement Parameter: NUMBER OF CLAMS AND DISTANCE BETWEEN CLAM SAMPLING AREAS AT C10

Acceptable Data Range: THE QAPP STATES A MINIMUM OF 20 CLAMS AND THAT THE TWO SAMPLING AREAS SHOULD BE SEPARATE

Problem Areas Requiring Corrective Action: THE LIMITED NUMBER OF CLAMS WAS LOCATED IN A RELATIVELY SMALL AREA AT THE NORTHERN END OF THE INTERTIDAL AREA

Measures Required to Correct Problem: ONLY 19 CLAMS COULD BE COLLECTED BEFORE THE TIDE COVERED THE AREA. BECAUSE IT WAS DIFFICULT TO FIND CLAMS THE TWO SAMPLING AREAS OVERLAPPED.

Means of Detecting Problems and Verifying Correction:

Initiators Name: Jessica Anderson Date: 8/25/04

Project Officer: Date:

QA Officer: Jodi Date: 10/4/04

Wind Ward environmental LLC

CORRECTIVE ACTION FORM

Project Name and Number: LDW 04-08 - 06-21

Sample Dates Involved: 8/27/04 AND 8/30/04

Measurement Parameter: STATION LOCATION

Acceptable Data Range:

Problem Areas Requiring Corrective Action: VERY LITTLE INVERTEBRATE PREY WERE PRESENT AT THE TWO SAMPLING LOCATIONS B2a AND B9a

Measures Required to Correct Problem: STATION B2a WAS MOVED APPROXIMATELY 0.1 MILE TO THE NORTH OF THE ORIGINAL LOCATION AND B9a APPROXIMATELY 0.2 MILES TO THE SOUTH OF THE ORIGINAL LOCATION

Means of Detecting Problems and Verifying Correction:

Initiators Name: Jelli S Anderson Date: 8/30/04

Project Officer: Date:

QA Officer: Jad Daskalov Date: 10/4/04

Wind Ward environmental LLC

CORRECTIVE ACTION FORM

Project Name and Number: LDW 04-09-06-21

Sample Dates Involved: 8/12 THRU 9/24/04

Measurement Parameter: SAMPLING PERIOD OF BENTHIC INVERTEBRATE

Acceptable Data Range: THE QAPP STATES THAT BENTHIC INVERTEBRATES WOULD BE COLLECTED BETWEEN 8/9 AND 8/20/04

Problem Areas Requiring Corrective Action: COLLECTION OF BENTHIC INVERTEBRATES WAS VERY TIME CONSUMING AND IT WAS NOT POSSIBLE TO DO IT IN THAT TIME FRAME.

Measures Required to Correct Problem: ~~FEDEX LOST~~ SAMPLES WERE LOST AT B1b, B2b, B4b & B5b DUE TO FEDEX OR COLUMBIA. THE SAMPLING PERIOD WAS EXTENDED TO 9/24/04

Means of Detecting Problems and Verifying Correction:

Initiators Name: Julie Anderson Date: 9/24/04

Project Officer: Date:

QA Officer: Date: 10/4/04

Wind Ward environmental LLC

CORRECTIVE ACTION FORM

Project Name and Number: 2DW 04-DP-06-21
Sample Dates Involved: 8/17/04 & 8/27/04
Measurement Parameter: NUMBER OF TRANSECTS

Acceptable Data Range: THE QAPP STATES THAT 3 TRANSECT SHOULD BE SAMPLED AT EACH INDIVIDAL STATION

Problem Areas Requiring Corrective Action: ONLY 2 TRANSECT WERE SAMPLED AT STATION 3 & 9 BECAUSE OF VERY SOFT MUD MADE IT VERY DIFFICULT TO SAMPLE

Measures Required to Correct Problem: 10 ADDITIONAL FRAMES WERE PLACED NEAR THE END OF THE PREVIOUSLY TRANSECT IN MORE SOLID SUBSTRATE

Means of Detecting Problems and Verifying Correction:

Initiators Name: Nellie Anderson Date: 8/27/04
Project Officer: Date:
QA Officer: Paul Dorbler Date: 10/4/04

Wind Ward environmental LLC

CORRECTIVE ACTION FORM

Project Name and Number: LDW 04-08-06-21

Sample Dates Involved: 8/26/04 & 9/24/04

Measurement Parameter: DISTANCE BETWEEN TRANSECTS

Acceptable Data Range: ~~The~~ THE QAPP STATES THAT THE DISTANCE BETWEEN THE 3 TRANSECT SHOULD BE 10m

Problem Areas Requiring Corrective Action: ROCK COVERED THE AREA 10 m AWAY FROM THE PRIMARY TRANSECT AT TWO STATIONS B3a AND B5a

Measures Required to Correct Problem: THE THIRD TRANSECT WAS PLACED 8 AND 17m FROM THE PRIMARY TRANSECT AT STATIONS B5a AND B3a, RESPECTIVELY.

Means of Detecting Problems and Verifying Correction:

Initiators Name: Shelly Anderson Date: 8/26/04 & 9/24/04

Project Officer: Date:

QA Officer: Jack Dost Date: 10/4/04